

# PETERSON

85 Years and Going Strong



Oct. 18, 1949.

R. A. PETERSON

2,485,407

BULLDOZER

Filed April 8, 1947

4 Sheets-Sheet 3

R. A. PETERSON

3,296,885

ACCELERATOR SYSTEM FOR MULTIFIRE ENGINE CONTROL

Fig. 4.

July 12, 1955

R. A. PETERSON

2,712,873

PIPE LAYING TRACTOR

Filed Nov. 22, 1954

5 Sheets-Sheet 1

3,550,691

Fig. 6.

INVENTORS  
ROBERT A. PETERSON  
FRANK A. GROSS

BY

ATTORNEYS

Fig. 8.

INVENTOR  
ROBERT A. PETERSON

BY

ATTORNEYS

INVENTOR  
ROBERT A. PETERSON

BY  
ATTORNEYS

Fig. 1.

INVENTOR  
ROBERT A. PETERSON

BY  
ATTORNEYS



FIG. 1

Feb. 20, 1968

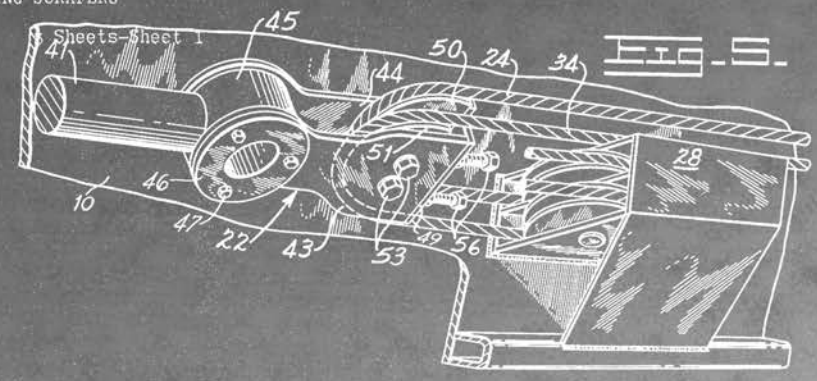
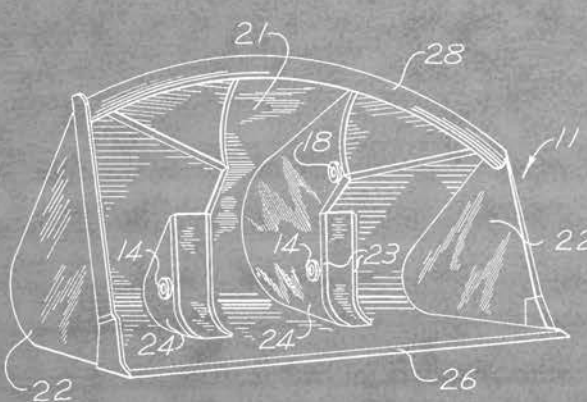
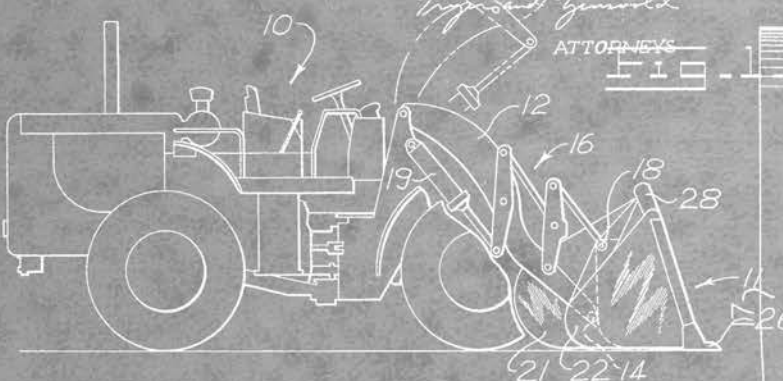
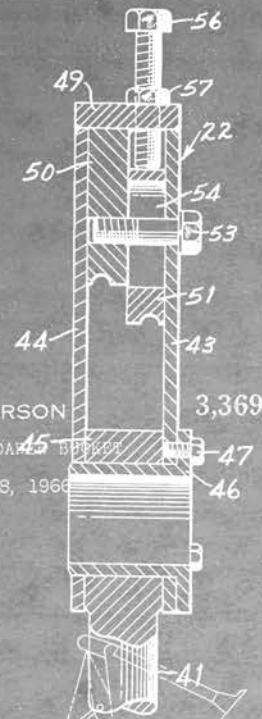


FIG. 3



INVENTOR.  
ROBERT A. PETERSON  
BY  
*Fryer and Ginn*  
ATTORNEYS

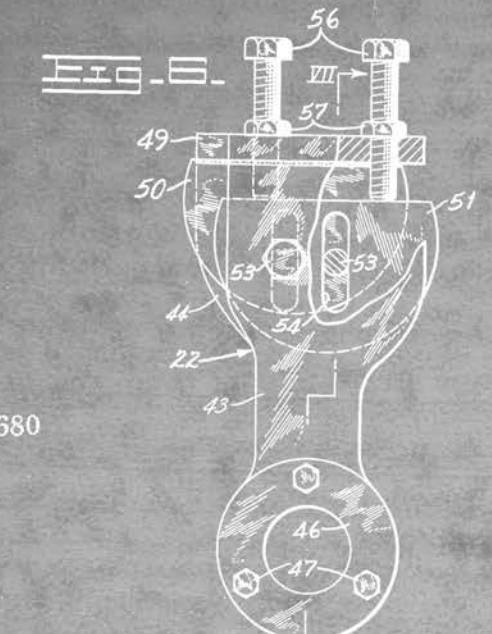


FIG. 5

INVENTOR.  
*Robert A. Peterson*  
Patented April 13, 1971  
*Fryer and Ginn*  
ATTORNEYS

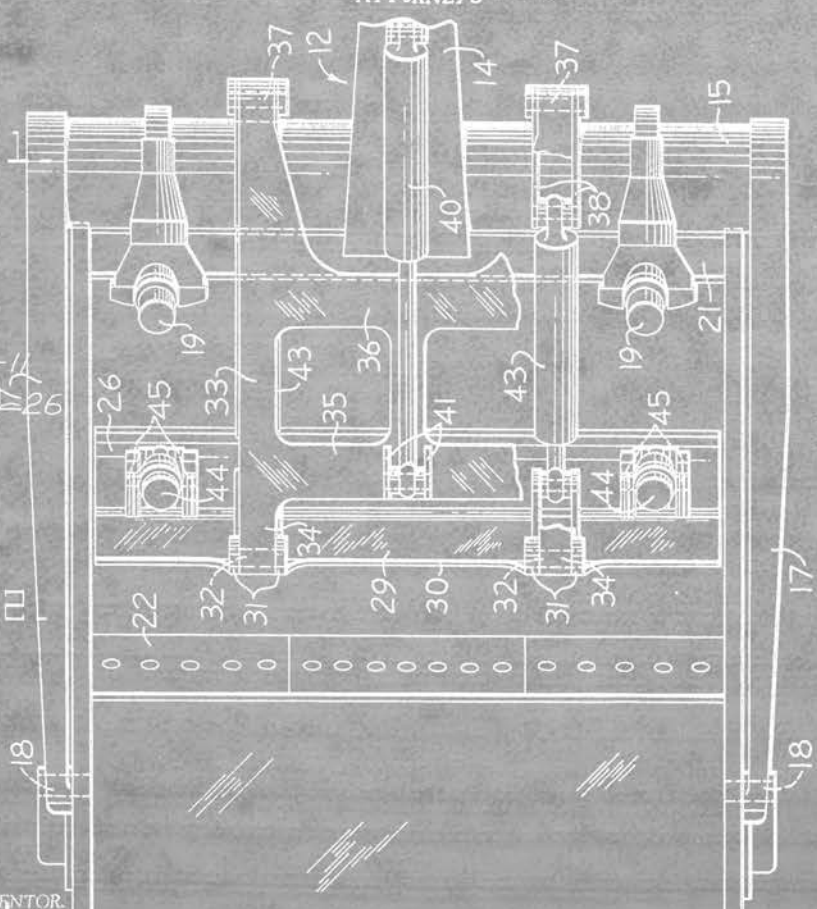
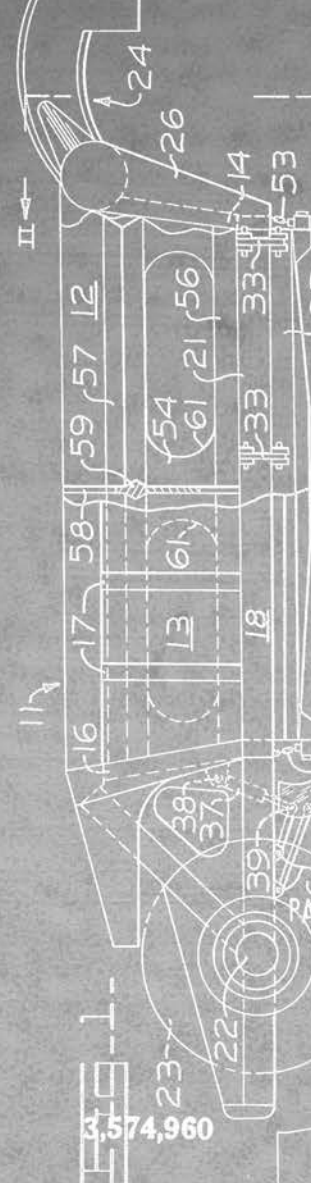


FIG. 6

INVENTOR.

R. A. PETERSON  
LARGE CAPACITY LOADER BUCKET  
Filed July 18, 1966  
3,369,680



3,574,960

FIG. 7









## DEDICATION

This book is dedicated to my brother, Duane Sr., who has always been short on words, but long on compassion, wisdom, vision and fairness. And just like E.F. Hutton, when Duane speaks, everyone listens, because it's usually worth listening to. I have learned a lot from my vantage point, two years his junior. One thing that stands out above the rest is his quiet reliance on God, both in good times and bad. And because of that, Peterson has truly been blessed.

---

Peterson Holding Co., 2021  
P.O. Box 5258, San Leandro, CA 94577

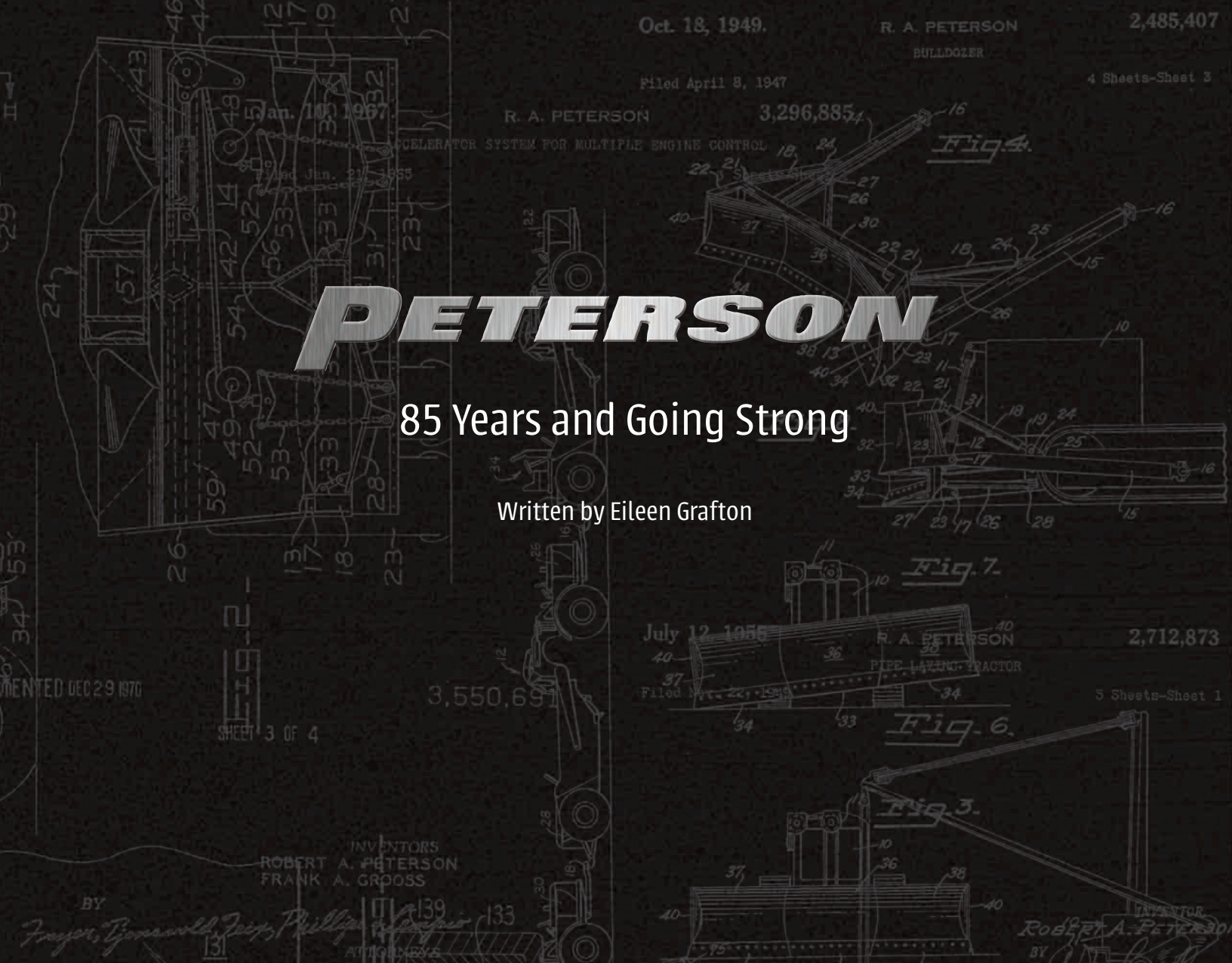
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This work is based largely on the oral history of employees, customers and family members who have been a living part of Peterson's history. We will gratefully accept any further factual, historic information readers would like to contribute. Please send to [egrafton@petersoncat.com](mailto:egrafton@petersoncat.com) or Peterson Holding Co., Peterson Archives, 955 Marina Blvd., San Leandro, CA 94577.







# PETERSON

85 Years and Going Strong

Written by Eileen Grafton





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**ACKNOWLEDGEMENTS**

They say it takes a village to raise a child. Apparently so does a book of this nature. The book in your hands is the culmination of hundreds of interviews from employees, customers and family members whose experiences tell the story of Peterson’s past. I am grateful for each of you. Much appreciation goes to research colleagues Tom Berry, Edgar Browning, Ad Gevers, Keith Haddock, Randy Krieg, Eric Orlemann, Deas Plant and others whose expertise and material contributions lent substantive credibility to the project. A big thanks to family and friends who spend countless hours transcribing interviews: Sue Doyle, Diana Tavis-Doyle, Pat Shapland, Kathy Weese, Jackie Weese, Allie Weese and Katie Weese. Another heart-felt Thank You to those who helped keep this project afloat through the multi-year process, including my daughter, Jen Grafton, my sister, Diana Tavis-Doyle, and my good friend Debbie Blake. A very special thanks to my brother, Duane Sr., whose patience, guidance, and funding made it all possible. Last but not least, to my team-members—Tara Jacobs (graphic designer) and Josh Franklin (Peterson photographer)—whose expertise, artistry and collaboration brought it over the finish line. I am deeply grateful.





*The Doyles—Duane Sr., Sue, Erin and Duane Jr. in 2020*

## FOREWORD

We are both proud and humbled to share this living history of Peterson with you. This book is about the people who made Peterson successful, our cherished customers, and Caterpillar, our iconic partner for eighty-five years. As the third-generation leader, I have been actively involved at Peterson for over fifty years, my dad served forty-five years and my grandfather was in charge for forty-one years. We have been a hands-on family operation from day one and have spent our entire careers representing Caterpillar to customers who demand the best and give their loyalty in trade.

Peterson has evolved from humble beginnings in the five San Francisco Bay Area counties and a handful of locations, to a three-state enterprise operating out of forty-six facilities. At Peterson, what we do matters. Every job is an essential part of serving our customers. Together with our customers, we will continue to build the infrastructure that serves our communities and our country so well.

As I round the corner on the last lap of my career at Peterson, I am pleased to be able to hand the reins of the company over to the very competent and skilled fourth generation team of my daughter Erin, as our CFO, and my son Duane Jr., as the newest principal owner. With one-hundred years in sight, the company is well positioned to continue as the leader in the industries we serve, taking care of our customers and doing what matters with great people who care deeply about being the best. I hope you enjoy this history that you may well have had a part in making. A big credit to my sister, Eileen, who worked tirelessly to research and write the stories that illustrate lifetimes of dedication. And finally, a huge thank you to our customers for without you we would not be here today.

Duane Doyle, Sr.





*Peterson's support on SF Bay Area bridges through the years.  
Clockwise from top/left: SF-Oakland Bay Bridge; Benicia-Martinez Bridge; Work on the new & old eastern section of the Bay Bridge.*

## INTRODUCTION: THE TEST OF TIME

The year 2021 marks Peterson's eighty-fifth year as a Caterpillar dealer. After three generations, fifteen acquisitions, and thousands of cumulative years of employee dedication and customer loyalty, Peterson is still as vibrant and hungry as a start-up. Each generation has brought with it fresh blood, new ideas, and the drive to be the best in the business.

In many ways, Peterson's history parallels the lives of the bridges that link our communities together in the San Francisco Bay Area—Peterson's original home turf. Howard Peterson opened his doors for business on November 16, 1936—just four days after the opening of the San Francisco–Oakland Bay Bridge. Six months later, the first commuters crossed the iconic span of the Golden Gate Bridge. Both were built by contractors who got the machines and product support they needed from Peterson Tractor & Equipment Co. and its predecessor, Robinson Tractor & Equipment Co.—the original San Francisco Caterpillar dealership.

Today, the area's original bridges have all been retrofitted or rebuilt to reflect the newest construction methods and safety standards for our growing population. Likewise, Peterson has streamlined and refocused itself through the years to better meet the needs of its employees and customer base. Many changes have come through new market opportunities, sometimes even before they were recognized by the mainstream marketplace. Others have been more painful, like shedding aspects of the business that just didn't pencil out anymore. But each adjustment has built a better company more attuned and responsive to its customers and its employees. That stamina is a direct result of the core values Howard Peterson set forth from the beginning.

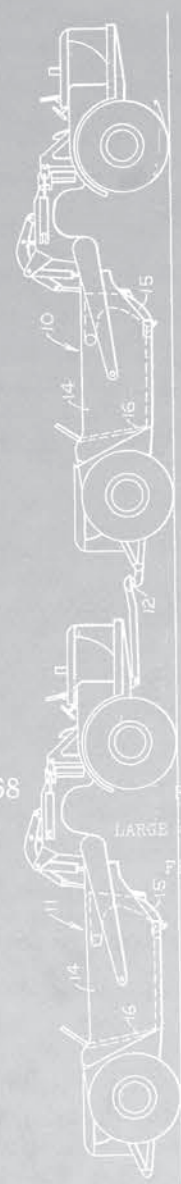
In 2010, Howard's grandson—third-generation owner Duane Doyle Sr.—formalized those original values into Peterson's Corporate Core Values: *Customer First. Integrity. Excellence. Teamwork. Fun.* He further prioritized them in the hearts and minds of the 1,700 people who work across Peterson with a company-wide program called Brand Ambassador (see Chapter 2).

Peterson has been tested in the crucible of change many times through its history. The net result is a company of resilience and opportunity, made strong by eighty-five years of innovation, elbow grease, taking risks, and living out its core values. Every day. Even now, it's being driven by its fourth generation, with its fifth generation in the wings. That is the true hallmark of success.

In the following pages, you will read stories of Peterson's Core Values in action over the past twenty-five years. As our loyal employees, world-class manufacturers, and coveted customers, we hope that you enjoy them and are proud to be part of the extended Peterson family.



FIG. 1--



Feb. 20, 1968

R. A. PETERSON 3,369,680

LARGE CAPACITY LOADER BUCKETS

Filed July 18, 1966

FIG. 2--

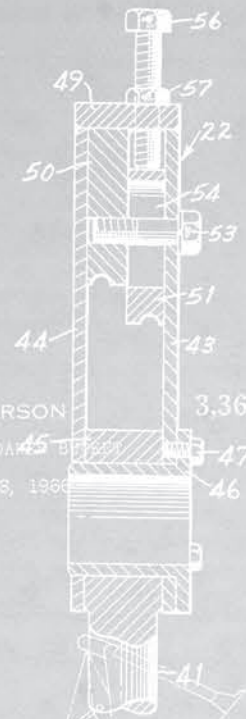
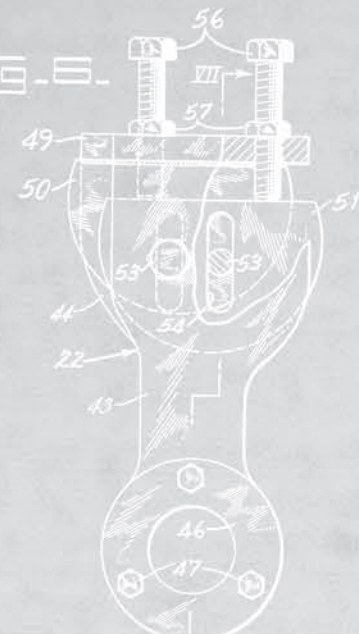
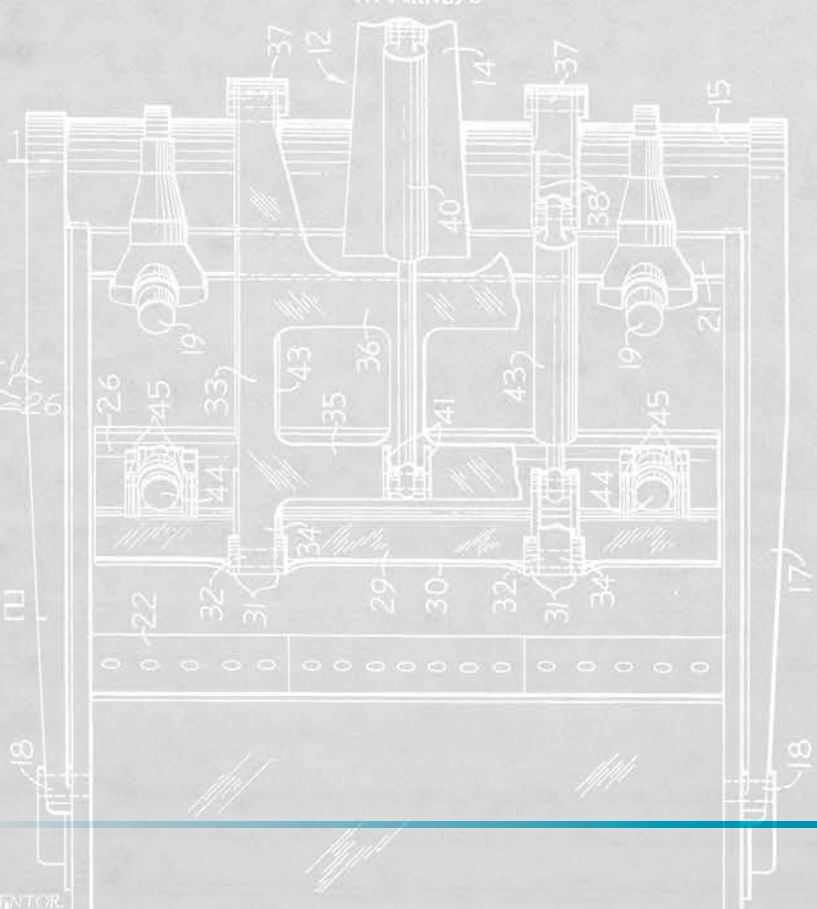
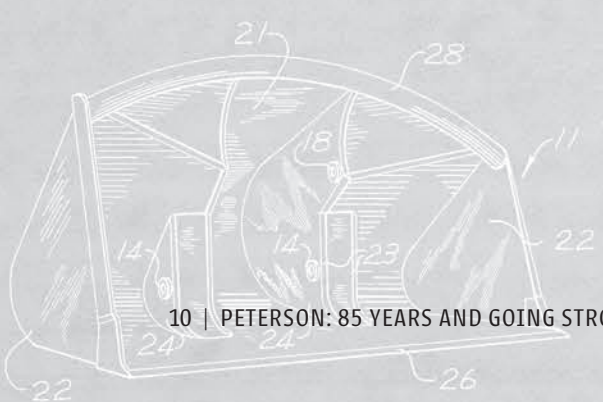


FIG. 3--



INVENTOR  
 Robert A. Peterson  
 Patented April 13, 1971  
 By *Frederick E. Ginnell*  
 ATTORNEYS

Sheet 3



INVENTOR



Section I

# PETERSON TERRITORY







*Allan Emmons standing with the new equipment pre-ordered for Peterson's acquisition of Pape in 2003*





## ACQUISITIONS

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### GAINING GROUND THE PETERSON WAY

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**I**t was a bright August morning in 2003. Allan Emmons was standing out by the railroad spur behind Peterson’s Eugene store, looking at all the new Cat equipment and grinning from ear to ear. Machines were lined up on railcars as far as the eye could see. The old Papé territory (Cat’s former dealer) was now officially Peterson Machinery Co. New signage was up. Peterson executives were out visiting jobsites. Customers were talking. The place was abuzz.

Taking risks has always been a big part of Peterson’s culture. And 2002–03 was full of them. It was a time of change and growth: restructuring with three new company presidents under a CEO; stepping over the border into a new state; and settling into a territory where the former owner was now the competition. And all with Caterpillar’s blessing, indeed—at their request. Papé had been heavily invested in other businesses to fill in the gap for Oregon’s slumping timber industry, which accounted for 70 percent of their market. But then they bought two John Deere franchises with competing product lines and Cat had finally had enough.

In May 2002, Caterpillar approached Peterson. “It was a complete surprise to us,” explains Duane Doyle Sr., Peterson’s owner and CEO. “We had no designs on Oregon whatsoever. When Caterpillar approached us about assuming the territory, they had already been at the negotiating table for a year. By the time we got involved, it took another whole year.” At several points, it seemed like the deal would fold. Even up to the last minute. But then it didn’t.

On July 1, 2003, Peterson Machinery Co. opened its doors to the southern portion of Oregon and the northernmost reaches of California. Ernie Fierro, PMCo president at the time, remembers it well. “One of the most successful things we did upfront was to order fifty machines even before Peterson officially became the new Oregon Cat dealer. The construction community was shocked when Eugene’s rail yard was packed with





(L-R) Ernie Fierro & Duane Doyle Sr. with Don Arndt of D&S Logging, and Gary LeVar/Cat district rep, shortly after Papé acquisition in 2003

car after car of new Caterpillar equipment shortly after we opened. It gave us a huge jumpstart that our competition wasn't expecting."

Sales manager Allan Emmons was thrilled at the changeover. "It was amazing to have all that product on hand. It was a big risk, but it paid off because we were able to hit the ground running. The entire sales staff was excited about being a real Cat dealer again. Coming from no support to having complete support, supplied us with a lot of new opportunities."

The new territory brought with it two hundred former Papé employees, a decent market share, good machine population, and a half dozen store locations. It also grew Peterson's territory by 53,000 square miles, creating a contiguous stretch of opportunity from Santa Cruz County in California to Linn County, Oregon. The only thing better would have been a total sweep of Oregon. But that wasn't to be. Yet.

One of the subtler challenges Peterson faced was the perception of a big California corporate takeover. Those former Papé employees had already

been dragged through a contentious two years of negotiations and uncertainty. It was important to show them that Peterson meant to rebuild their faith and confidence in being a Caterpillar dealer by providing the best product support around. "It's very interesting to import another belief system into a group of people who have never experienced it before," says Jeff Goggin, Peterson's chief operating officer (COO). "It's especially challenging when you're faced with people who have been devoted to that company for twenty, thirty, forty years and don't understand the difference. *We're all Cat dealers. Papé is a Cat dealer. Peterson is a Cat dealer. What's the difference?*" Well, it's huge! It's another whole culture. It's the Peterson Way. And it starts at the top."

Where Papé was highly centralized and tightly controlled from the top, Peterson is not. "Our model pushes responsibility downward, allowing people to do what they were hired to do," states Goggin. "Our challenge was to push more opportunity and authority into their hands and help them believe that if they made a mistake, they weren't going to be crucified for it. And you can only do that by proving it over time."

For Duane Sr., it's all about core values. "These values are who we are, who we've always been, and who we will continue to be. It's putting our customers first, having integrity, pursuing excellence, and so forth. It's how we do business."

---

## GROWING NORTH

---

Papé was the ninth Caterpillar dealer territory Peterson has absorbed through the years. And it had to be earned like all the rest. Peterson's template for growth has always been the same: *Put the customer first. Do an exceptional job. Don't be afraid to take risks. And let Providence take care of the rest.* "Growth has been a part of our culture since the very beginning," says Duane Sr. "When the opportunity comes, you need to take it because it

won't come around twice. Whether it's convenient at the time or not can't be a factor." That mindset has characterized the tenures of each of Peterson's three owners, making it one of the most territory-enriched dealerships in the Caterpillar network.

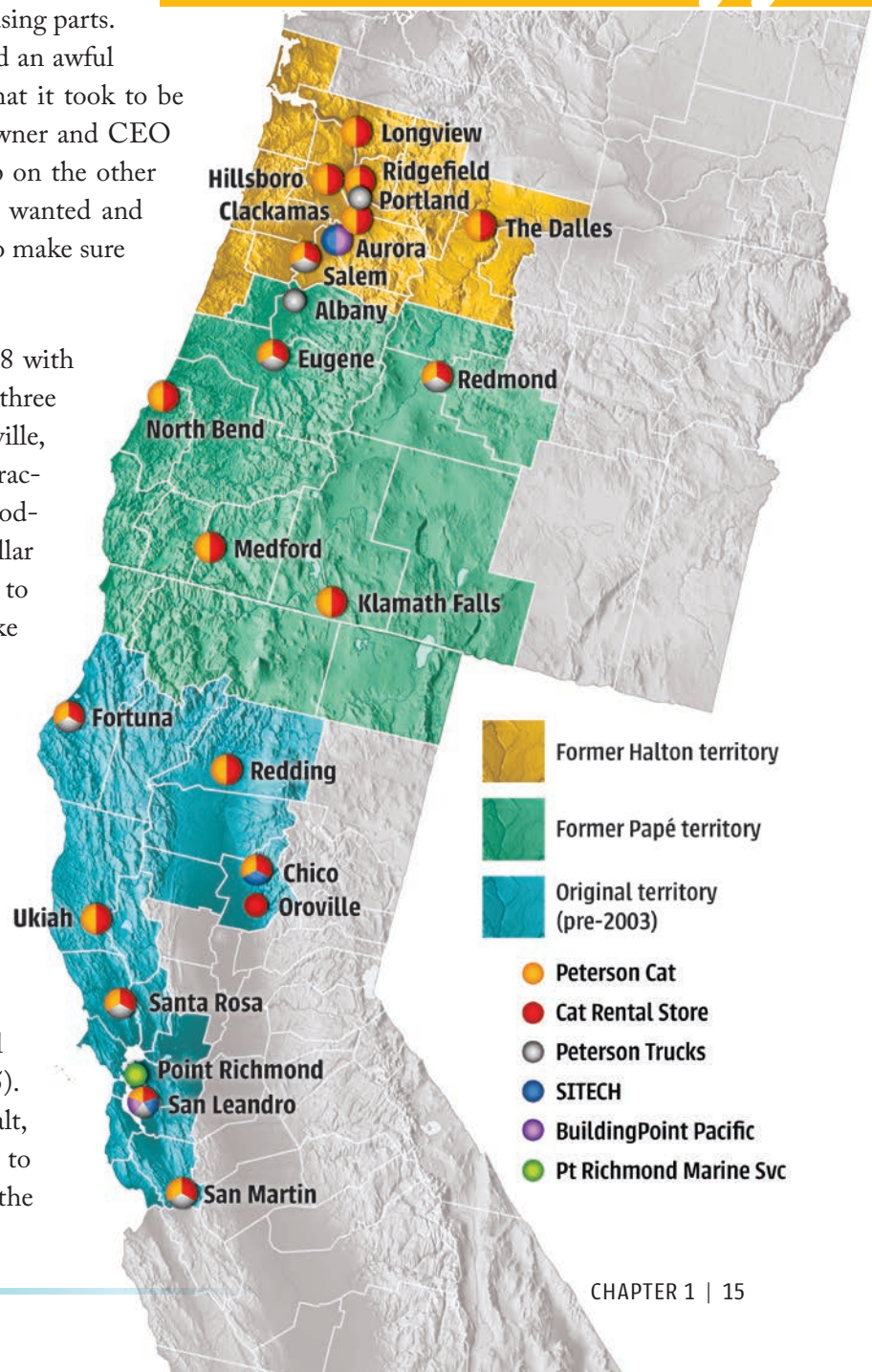
From the get-go, Peterson was different. When Howard Peterson launched his company in 1936, there were twenty-seven Caterpillar dealers in California alone. Most were small ag-and-industrial dealers with shops and parts departments to match. But Peterson's focus lay elsewhere. Howard had come from a construction background. He knew what it was like to be broken down in the dirt, chasing parts. "As a mechanic and foreman, Howard had an awful lot of experience and appreciation for what it took to be a contractor," says Bill Doyle, Peterson owner and CEO from 1977 to 1995. "It gave him a leg up on the other dealers because he knew what customers wanted and why they wanted it. And he did his best to make sure they got it."

Peterson's first growth spurt came in 1958 with the Trinity Dam project, a massive thirty-three million-cubic-yard dam near Weaverville, California. The local Cat dealer, Sierra Tractor, was struggling to keep up with the product support demands of a multimillion-dollar contract. After a year, the contractor went to Caterpillar requesting that Peterson take over. The territory switched hands from Sierra Tractor to Peterson on July 1, 1958. The contractor, Guy F. Atkinson, was happy. Caterpillar was satisfied. Howard was thrilled.

"We were awarded territories because we were very aggressive in taking care of our customers," says Bill Doyle, who watched every expansion Peterson took on—most from the driver's seat as general manager (1967–77) and owner (1977–95). "Other dealers like Sierra Tractor, Zumwalt, and Berglund were small and didn't want to invest the time or money it took to meet the

“ Peterson won the Papé territory because of the support and loyalty they have toward their customer base. Those first few months after the acquisition, Duane Sr. got on an airplane, pulled on his boots, and drove out to meet his new customers and see what he could do for them. And he did it over and over again because that's what's important to him.

– Gary LeVar, SF district manager, Caterpillar, 2000–04







*Peterson moved into its new Chico facility on July 1, 1958 to serve the Oroville Dam project and local customers.*

needs of the heavy construction contractor. We had the inventories. We had the parts drops. We had the customer training, the equipment and tooling, the people and the trucks. And many of the big contractors were already our customers in the Bay Area. When they took on big jobs outside our territory, they wanted the same kind of customer service they were used to. The smaller dealers thought that after the dam was finished, business would dry up. They didn't see a future in it. We got that territory, and all the others, because we put a high priority on customer service—meeting their needs, providing custom fabrication for tough problems, doing whatever it took. Caterpillar liked that so they awarded us the territories as they came up.”

## SECOND GENERATION OWNERSHIP

By the time Bill Doyle took ownership in 1977, the glory days of California's interstate program and huge water projects were over. Still, Peterson continued to take on new territory whenever the opportunity arose—both in good times and bad. The four years of the Carter Administration (1977–81) took a heavy toll on Peterson as the company transitioned into its second generation. “Nobody could borrow money because interest rates were so high,” recalls Bill Doyle of the historic 22 percent prime lending rate in late 1980. “Everything came to a dramatic slowdown. We just adjusted to live within that and survive.” During Doyle's first de-

“ From a Caterpillar perspective, the Peterson transition between Bill and Duane Sr. was one of our best. When Bill made the decision, it was decisive. He turned over operations and, while he provided guidance, he did not meddle in the business or undermine Duane's authority with the executive committee.

– Ed Rapp, group president, Caterpillar, retired 2016

”



*Peterson transitioned to second generation ownership in July 1977; (L-R) Bill Doyle and Howard Peterson*

cade, Peterson took on three new Cat territories: Matthews Machinery (1981), I.G. Zumwalt Co. (1982), and Berglund Tractor (1988). And all despite the recession of 1981–82 and the heavy influx of competitive foreign equipment—especially in the hydraulic excavator market. Armed with an aggressive marketing plan, Peterson’s sales force

shut down the competition within its territory under the marketing banner, *If it’s not a Cat, it’s a dog!* No competitor could withstand the onslaught longer than twenty-two months, tops. By the time the Berglund territory came up in 1988, Peterson had recovered and was pushing record-high sales volumes again.



“ Looking back, Bill Doyle is the reason we’re still in business. He made a decision to not let a competitor get a foothold in our territory and that’s why we’re here. In my opinion, it’s also why we’ve been given more territory. As subtle as he is, Bill Doyle did more for Peterson to get us to where we are today than most people will ever realize.

– Jeff Goggin, COO, Peterson-Cat

”



Top left, clockwise: Changing ownership in Eureka in 1981; new Santa Rosa store in 1991; new Peterson signs in Eugene; updating Redding signage in early 2000s; new San Martin store in 2002





*Three generations of Peterson leadership in 1996; (L-R) Bill Doyle, Howard Peterson, Duane Doyle Sr.*

## HALTON: CLOSING THE GAP

Peterson's third generation kicked off in 1995 with Howard's grandson, Duane Doyle Sr. Where Howard's era was characterized by explosive growth and Bill's by tenacity and perseverance, Duane's era would be defined by phenomenal growth and protracted bouts of economic depression. Right out of the chute, Duane Sr. took on a huge risk with the purchase of a local rental company—Cresco—setting Peterson on a new trajectory. And from there it has been one continuous ride, with highs of record growth and deep troughs of economic depression and belt-tightening.

The newest chapter in Peterson's Caterpillar-territory expansion came in 2010 with the purchase of Portland-based Halton Co. On July 6, 2010, Peterson became a three-state Caterpillar dealership with its tenth territory addition of central Oregon into southern Washington. Financially, the timing was far from ideal, but the company's commitment to growth prevailed. "In retrospect, Papé was just the initial piece," states Duane Sr.

"Having only one part of the state didn't work out too well. It wasn't until the Halton territory came up—and Peterson consolidated all of Oregon under one company—that it started functioning well as a cohesive whole." In the seven years between the acquisitions of Papé and Halton, Peterson Machinery was able to upgrade its southern Oregon facilities and refine its processes so that when Halton did come up, Peterson was ready to roll.

With over 1,200 employees across three states, Peterson needed to restructure once again. The previous three-company model—Peterson Tractor, Peterson Power Systems, and Peterson Machinery—had created silos. In 2011 Duane Sr. separated the chief operating officer responsibilities from his own position and tasked his new COO, Jeff Goggin, with unifying the entire enterprise into one team. It flattened the decision-making process for better response time and strengthened Peterson's customer outreach, reaffirming its "customer first" priority. That freed up Duane Sr. to focus more time and energy on building customer relationships. To that end, he stepped up his ride-alongs with sales reps, connecting with customers on their own turf on a regular basis. And with over 100,000 square miles to cover, that was a lot of turf.



*Duane Doyle Sr. with Ted Halton in 2010*





*In 2017–18 Peterson built a new facility on 22-acres in Hillsboro, for its Oregon/Washington home base.*

The difference in market share between Peterson’s pre-Halton Oregon territory and today is quite significant. Back in 2007, Peterson Machinery—comprised of the old Papé territory of southern Oregon—sold 681 units a year versus 1,481 sold in California. In 2013, a few years after the Halton acquisition, the Oregon/Washington market opportunity grew to 1,252 units a year versus 979 in California. And in 2019, the industry opportunity jumped to 2,616 units (OR/WA) versus 2,307 (CA). The Halton acquisition increased Peterson Machinery’s opportunity by 75 percent. And while the market mix between the two areas is quite different, the dollar volume is fairly similar.

As Peterson and other aggressive Cat dealers have grown stronger, the total number of Cat dealers has shrunk through the years. Today, Caterpillar has 164 dealers worldwide, which includes forty-three in North America and four in California.

# PETERSON

## PETERSON HOLDING CO.

- Peterson Tractor Co. (CA)
- Peterson Machinery (OR/WA)
- Peterson Power Systems Inc.
- Peterson Trucks Inc., Peterson Idealease
- Cresco—The Cat Rental Store (CA)
- Peterson—The Cat Rental Store (OR/WA)
- SITECH, BuildingPoint Pacific





# GROUNDBREAKING—THEN & NOW



Feb. 20,



*Top to bottom: Founder Howard Peterson takes the first shovel of dirt for new Peterson HQ in San Leandro, California in 1947; Duane Doyle Jr. takes the first bite of property in Hillsboro, Oregon for a new HQ facility for Oregon/Washington in May 2016*





**NEW STORES IN CLACKAMAS, OR & RIDGEFIELD, WA**

The Clackamas, Ridgefield and Hillsboro facilities now provide a triangle of coverage for customers in the Portland metro area. The new Clackamas and Ridgefield stores are dedicated retail facilities catering to the contractor with 1-3 machines. Each offers inventories of small compact equipment. The new facilities were designed for walk-in customers who, in many cases, can walk out with a new machine the same day.



*Top to bottom: Clackamas store opened in June 2020; Ridgefield shop opened in December 2020; First sale out of Ridgefield store—a Cat 303.5E2 mini excavator to new customer KLS Contracting in December 2020*



# CORE VALUE: TEAMWORK

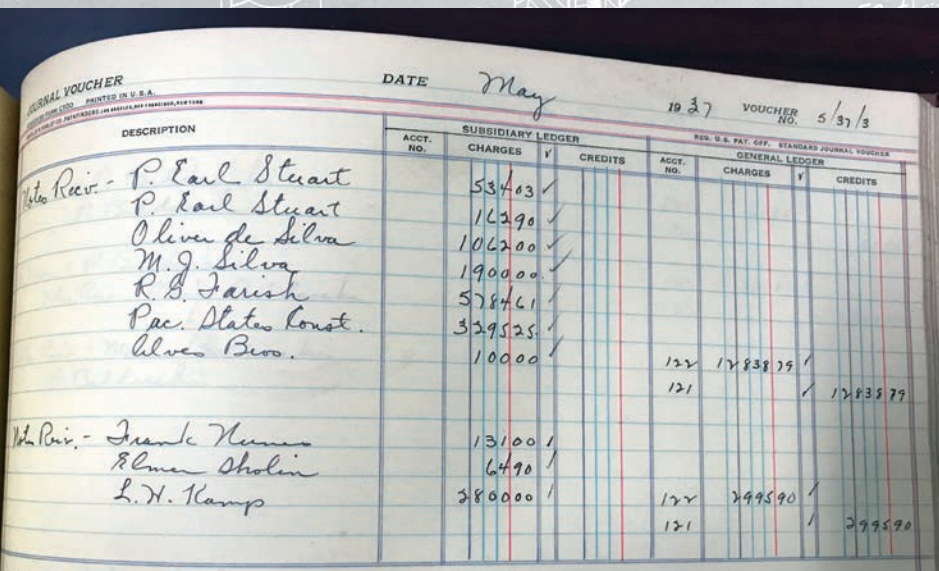
## DESILVA-GATES: PETERSON'S LONGEST-STANDING CUSTOMER

May 3, 1937, was a big day for Peterson, although back then nobody knew it. That's the day Oliver de Silva made his first purchase from Peterson Tractor & Equipment Co.—a transaction for \$1,062.00. Oliver de Silva, Inc. (ODS) was just five years old at the time. Peterson was just getting started. In the ensuing years, that relationship has grown into a partnership. ODS—now DeSilva-Gates—has racked up some very impressive firsts over their eighty-nine-year history, and Peterson has been there through most of it. In short, DeSilva-Gates is Peterson's longest-standing customer. The proof is on the books.

Today, DeSilva-Gates stands as one of the premier general engineering contractors in Northern California, with five affiliate companies all under the banner of the DeSilva Companies. DeSilva was the first local contractor to “go vertical” with the partnered acquisition of Dumbarton Quarry back in 1975—before vertical integration became popular. In 1987, they led a joint venture with CC Myers on the I-238 / I-580 interchange in Castro Valley, where the bid-with-bonus concept was born.

And in 1998, DeSilva was the first contractor in California to go 3D, using Trimble's robotic Total Station on their contract at the San Jose Airport.

Accolades aside, the company has had its rough patches. In 1958, Ed DeSilva came on board to help his father salvage the nearly bankrupt company. “Oliver owed a half million on a job up north,” explains Rich Gates, president of DeSilva-Gates Construction. “Someone had convinced him to bid a job up in Alturas on I-395. He bid it in the snow and when the snow melted, it was solid rock.” Ed persuaded the employees to forego four months of pay with the promise of later recompense.



“DeSilva and Peterson have been in business for a long time, so we know we’re going to get support because of that consistency. There’s equity in our business relationship.”

– Dave Vandegriff, equipment manager, DeSilva-Gates



Together we can do what we couldn't do alone



DeSilva has used Peterson field service decade after decade.

“They were very committed to Oliver because they’d started with him, hauling sand from Crown Beach in Alameda to Piedmont—literally with shovels, wheelbarrows, and an old pickup. Half of them worked for me at one point.” As Ed got the company back on its feet financially, he started forming relationships with local builders, which eventually led to one of DeSilva’s mainstays: the residential market.

## Oliver de Silva, INC

But what really grew ODS was the move into the public works arena in the early 1980s. “Our first real big project was building both approaches for the current Dumbarton Bridge,” says Gates, who hired on in 1976 as a junior engineer. “We beat Kiewit by \$200,000 on the \$10.5 million job. That’s what really put us on the map.” Ownership in nearby Dumbarton Quarry allowed them to deliver several million tons of fill for the project. “We made millions on that job. It was a tremendously successful job for us.”

ODS landed most of the development work in the surrounding area and also caught the eye of Prudential Insurance, who was just gearing up to develop Hacienda Business Park in Pleasanton, CA. “We negotiated that deal at the Pleasanton Hotel on a Thursday night in 1983,” recounts Gates. “The next day, we had twenty pieces of equipment on the job. It was all for show. The city was going to turn the project down, and the developer wanted equipment out there to show intent. We pirated everything we could and had it moving in at 4:00 and 5:00 in the morning. We didn’t have a contract. There wasn’t even a design yet. But our scrapers were out there, running around, ready to go.” In one night, DeSilva locked in eighteen months and \$86 million worth of work before anyone else had more than a whiff of the job.



For the next decade, DeSilva continued to shape the face of the East Bay with both public and private projects. In 1987, they won the largest Caltrans project awarded to-date: the \$43 million I-238/I-580 interchange in Castro Valley. “There were 550 days left on the original 1,000-day schedule when Caltrans kicked the first contractor off the job,” recalls Gates. “We formed a joint venture with CC Myers and bid the project using the early completion bonus as our profit. That’s where we hatched this idea, right there in our office in Hayward. It was a risky move, but it worked. We finished fifty days early with a sizeable profit.”

It wasn’t until DeSilva started tackling the really big projects that they went Cat. Before that, they had “very little Cat equipment and very little new,” according to Gates. In April 1980, that all changed with the purchase of six new Cat machines for the Dumbarton contract. “We’d never spent that kind of money on equipment before,” says Gates. “After that job, we started realizing that buying new was much better than buying used junk. It was expensive to buy new, but we were much better off because of the maintenance costs.” Since then, DeSilva has bought hundreds of Cat machines. “For years, we did all our business with Peterson in the last week of December because of the ten-percent investment tax credit. So we’d trade in our old stuff to Peterson and buy new—ten, fifteen, twenty pieces at a time.”

“If you look at the history of this type of technology, it really all goes back to DeSilva-Gates. They were the first on the West Coast to buy the 3D grading system.”

— Tom King, salesman, SITECH

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Through much of the 1990s, DeSilva dominated the grading side of the local residential market. “We are always looking for new ways to improve our production performance, anywhere we can find it,” says Mike Archibald, DeSilva’s director of field operations, who spearheaded their move into 3D technology. “We started with 2D electronics, and that morphed into Total Station 3D technology. We bought our first 3D system for the San Jose International Airport contract

in 1998.” Prior to that, Tom King, current Peterson/SITECH salesman, flew Archibald back to Utah to see it in action. “I wanted him to see the proof-of-concept working on a jobsite, for himself,” says King, who was with Spectra 3D at the time (SITECH’s predecessor). DeSilva ended up buying the Blade Pro 3D system with ATS—or robotic total station—for two Cat 16G motor graders. “That San Jose airport runway job really opened their eyes to this technology because it made them more efficient, which saved them time and money,” recalls King. “If you look at the history of Spectra 3D and this type of technology, it really all goes back to DeSilva-Gates. They were the first on the West Coast to buy the 3D grading system. And once they got going, the other big contractors started to take notice.”

The 1990s were also a time of intense growth for DeSilva with the formation of DeSilva-Gates Construction (1995), Pacific States Environmental (1996), and the acquisition of Gallagher & Burk (1998). Through all that, the company relied heavily on outside rentals from Southern California to supplement their own fleet—until that source dried up. “By then, we needed more capacity and decided 657s were the way to go,” explains Gates.

In 1998 DeSilva bought eight new Cat 657 scrapers from Peterson. Five years later, they inked the deal that set off the Scraper Revolution of 2003–06 within the Caterpillar community. By the fall of 2003, the Bay Area housing market was on the verge of exploding. “We made a conscious choice to be Number One,” states Dave Vandegriff, DeSilva’s equipment manager (2001–present). “To do that, we needed to have the best machines available.”



R. A. PETERSON

3,296,885



(L-R) Duane Doyle, Sr. with Rich Gates/DeSilva-Gates president, and Jerry Lopus/retired Peterson Tractor president

# DESILVA GATES

CONSTRUCTION

That fall, Peterson spent countless hours and weeks working on a deal with DeSilva that would become the single largest scraper purchase in Peterson's history. It included twenty-four 657 scrapers and nearly three-dozen support machines, totaling over \$40 million. It also tied up Caterpillar's worldwide production of 657s for that season. At one point, the VP in charge of Caterpillar's Overseas Division called Jerry Lopus, president of Peterson Tractor Co. at the time. "He told me the king of Saudi Arabia wanted eight 657s for highway construction. And Caterpillar's International Group wanted to break our deal. I touched bases with Rich Gates who said, 'Hell no, we need those machines!' So, of course, we declined." Cat's Decatur plant built and shipped all those machines from October 2003 to June 2004.

For the next three years, DeSilva continued to RPO (lease-purchase) machines, forty and fifty at a time. And the partnership between Peterson and DeSilva continued to grow. "In the past, we'd go to our outside rental guys, but we didn't see the need," says Vandegriff of the housing boom of 2003-06. "We had plenty of work, we had the staff, and we knew Peterson would support us. That was one of the biggest partnership deals we've had with Peterson."



DeSilva scrapers doing site prep at the old Leona Quarry in Oakland, CA circa 2004





DeSilva-Gates D8T in Peterson's San Leandro shop in 2020

INVENTOR.  
Robert A. Peterson  
Patented April 3, 1971

3,574,960

Today, no one understands the importance of that relationship better than Vandegriff. “DeSilva and Peterson have both been in business for a long time, so we know we’re going to get support because of that consistency. There’s equity in our business relationship.” Back in 1990, that rapport led to DeSilva gaining access to Peterson’s internal computer system off-site—a sort of pre-PartStore capability.<sup>1</sup> “We’re really proud of being the first,” states Vandegriff. “By hooking into Peterson’s computer, we were able to order our own parts and cut out a lot of time. Then it morphed to where we could check parts availability and fill our own backorders. So we’ve gone from being the first off-site ‘green screen’ to now, where our guys have laptops and wireless cards and order all their own parts. That’s been huge for us.” For the head of DeSilva’s entire centralized equipment fleet, that has translated into dollars saved, year-in and year-out.



Dave Vandegriff, DeSilva's equipment manager

<sup>1</sup> PartStore is a Cat-hosted online parts ordering system that allows customers to check availability and order their own parts 24/7.



Section II

# PETERSON CULTURE







*Duane Doyle Sr. teaching Peterson's core values at Brand Ambassador*





## BRAND AMBASSADOR

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### PETERSON'S CULTURE REVOLUTION

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It's 8:30 on a Tuesday morning, 2013. A crowd of fifty employees gathers in an off-site room, antsy to see what the day will hold. They know little except that they're here for a two-day seminar and they're supposed to keep an open mind. Nervous energy percolates through the room as they settle into their seats. Today nobody is boss—just a roomful of regulars with a common purpose. They don't know what that is yet. But they're about to find out.

Once most of the morning jitters have been worked through, the company owner walks to the front of the room, steps up on stage, clasps his hands together, and begins.

“We've all just been through the Great Recession. But none of us in this room lived through the Great Depression, although we've all heard stories about it. Back in the late 1930s, a young man and his young family lived in San Francisco. The young man, Ed, owned an automobile repair shop. But the business went broke and he lost everything. He had to figure out how he was going to provide for his wife and two young sons, and how he was going to make ends meet. So he went knocking on the doors of people he knew.

One guy had an auto parts business where Ed used to buy his parts. So Ed kept going back day after day asking for a job. And the guy kept telling him, 'I don't have any work for you.' But Ed persisted. He went back again and again, until the guy finally said, 'I guess the only way I'm going to get rid of you is to hire you'. So he did.

“Fast-forward a few years. Ed and his wife are now living in Oakland, and he is a salesman for the Gates Tire & Rubber Company traveling throughout California, Oregon, and Idaho. Ed is on the road all week and only comes home on the weekends. Back in those days, people had incinerators in the backyard and they burned a



lot of their garbage. One day his youngest son was playing in the backyard and found some gasoline and poured it into the incinerator. It exploded and burnt him really bad. He was in the hospital for three days, and then he died. They didn't have burn care like they do today. Ed and his wife blamed themselves—Ed in particular because he was away when the kids found the gasoline. And when you lose a child, you never really get over it. But Ed and his wife persevered. They went back to work and lived life.

“I was named after the boy who died. One of the things that I learned from my grandfather, Ed, is that you never give up. That story had a big impact on me. Because he lost everything, and he persevered. He lost his son and he persevered. He was always upbeat, always friendly, always doing things. There might have been times when he did get down, but he always overcame it. So if things are down or aren't going right, you don't give up. You never give up.”

With that, Duane Doyle Sr. walks off stage.

“Brand Ambassador is all about living our values, having good communication, and knowing how to treat our customers and each other.

– Duane Doyle Sr., owner and CEO, Peterson-Cat

That experience is the heartbeat of Brand Ambassador—sharing personal stories that break down barriers, build empathy, and inspire people toward excellence. Telling our stories helps us understand why we've become the people we are today. “Most people come into this course thinking that everybody else has it all figured out,” says Tom Bagwell, now the executive VP & GM of Peterson Trucks, who spearheaded Peterson's Brand Ambassador program. “They think that they're the only one

who's broken. But after listening to these stories, they realize that their co-workers have stories and challenges too. Even the owner has problems and things that get to him. Being able to see a deeper side of their co-workers makes Peterson a more human place.”



Tom Bagwell, the Godfather of Peterson's Brand Ambassador program

All 1,500 Peterson employees went through that first phase of the Leader as Brand Ambassador course back in 2012–14, with continuing education as more courses evolved. Each class is made up of a cross section of employees from across the Peterson spectrum: sales people, technicians, office personnel, parts people, managers, top leadership. Everyone participates. And because leaders lead, the executive team has been involved in every workshop. Since the beginning, Duane Doyle Sr. has been to over seventy. “If we're expecting people to move out of their comfort zone and change their behavior, and we're not there, then why should they do it? For most people, this training is uncomfortable until they experience it and learn from it. So how can I expect them to participate if I'm not willing to be there too?”

Brand Ambassador is Peterson's way of sinking its core values deep into the bones of its employees. People emerge with a fresh attitude and renewed enthusiasm for the future. “It's all about living our



values, having good communication, and knowing how to treat our customers and each other,” explains Duane Sr. “How we treat each other and our customers is what defines how well we’re going to do as a company. That’s our competitive edge.”

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## CATALYST FOR CHANGE

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Today, Peterson is a big company trying to act like a small company, according to Duane Doyle Jr., president of the earthmoving division, and Peterson’s fourth-generation heir apparent. Over the past eighty-five years, Peterson has assimilated fifteen different companies into its fold. Each has brought a different culture with it. The last twenty-five years alone have seen major changes in Peterson’s makeup, with the acquisition of Cresco (1997), Papé-Cat (2003), SITECH (2009), Halton-Cat (2010), Bayshore International (2011), BuildingPoint Pacific (2015), and Brattain International Trucks (2018). The influx of new employees, product diversity, and the sheer volume of business have demanded a new platform of unity in order to succeed.

“The last two Cat dealer acquisitions [Papé and Halton] were very large and had very different cultures from our own,” says Erin Sorgel, Peterson’s CFO. “It was apparent from the beginning that we needed to find a common language in order to serve our customers well. We needed a baseline to be able to say, ‘This is how we’re going to conduct ourselves. This is how we’re going to do business to succeed’. Brand Ambassador is part of the foundation for that.” It is the driving force behind Peterson’s culture change.

The other catalyst was the strategy work done in 2009–2011, which laid out Peterson’s values and vision. The challenge then became how to teach these values. How do we embed them? How do we make sure people understand what they mean and how to use them on a daily basis? That’s a big part of what Brand Ambassador does. “Brand Amba-



*Erin Sorgel/CFO, helped develop the Four Communication Principles taught in Brand Ambassador.*

sador is about values,” says Sorgel. “As we continue to grow as a company, we get further and further away from the family feel. In order to maintain that hometown atmosphere and still get excellent results, we need to be able to see people for who they really are and give them grace. That’s the kind of relationship that gets things done.” That’s straight out of Brand Ambassador.

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## FROM NO TO GO!

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The evolution of Brand Ambassador at Peterson began with a course called Leading High Impact Teams that Tom Bagwell and Eric Martin (then president of Peterson Power Systems) attended at Northwestern University in Chicago. One-third of the attendees were CIA; another third was FBI. “One of the teachers was an old white guy, overweight, disheveled hair, dressed all in black,” recalls Bagwell. “He started off by saying, ‘Every employee wants four things: they want to be seen, to be heard, to make a contribution, and to be recognized for the work they do.’ Through a series of exercises—like curtain up / curtain down, self-portrait envelopes, and others—I saw the entire mood in the room shift. In the beginning, the CIA and





Brand Ambassador helps build teamwork, communication, empathy and personal growth throughout the company.

FBI weren't talking to each other, but after sharing their stories, some were crying and hugging each other and giving high-fives. And I was thinking: *Who the hell is this guy? How does he do that?*"

At break time, Bagwell googled Professor Rittenberg and discovered that he was a lecturer at UC Berkeley—fifteen miles from Peterson's headquarters in San Leandro. "If he'd been at Columbia or Harvard, it would never have gone anywhere," says Bagwell. "I think God intervened and put him at Berkeley." From there, Bagwell and other Peterson people attended some of Rittenberg's classes at UC Berkeley, then Bagwell hosted a few at Peterson University.<sup>1</sup> And each time, Rittenberg recreated the magic. In 2012, Bagwell was finally able to get Duane Doyle Sr. and Professor Rittenberg together in a meeting. It took off from there.

## EVOLVING CURRICULUM

Since that first round of workshops, Brand Am-

bassador has evolved into a series of courses: Leader as Coach, Leader as Teacher, the Leadership Academy, and Leading the Peterson Way. Peterson assumed the leadership role halfway through the original Brand Ambassador series, at which point the Berkeley team exited. "Over time, we've Petersonized the whole thing," explains Duane Sr. "Half the content is our own." Some of the newer concepts include Grace, Slice of the Pie (for personal responsibility), the Flywheel of Success, the Trust Factor, the Customer First Equation, and the Four Communication Principles. "Leading the Peterson Way focuses primarily on the Customer First Equation and communication skills," explains Duane Sr. "Both were in the original Brand Ambassador workshop, but we didn't have enough time to do a deep dive into them." The Peterson Way is taught in workgroups so employees can benefit from learning alongside their co-workers.

Much of the curriculum came out of the six-month, Berkeley Executive MBA course at Peterson called the Leadership Academy. "We recognized that

<sup>1</sup> Peterson University launched in 2009 to provide continuous training for Peterson's employees, its customers, and other Caterpillar and Navistar dealer employees. See full story in CH19 Peterson University, on pg 305.





“ One of the things that stands out about Duane Sr.’s tenure at Peterson is his absolute focus on maintaining the Peterson Culture. Brand Ambassador does that by asking what are our values, how do we treat one another, and how do we always put the customer first. Brand Ambassador is the legacy of the Peterson Culture, capturing it in a way that’s sustainable over the long haul.

– Ed Rapp, group president, Caterpillar, retired 2016



*Brand Ambassador uses Minute-to-Win-it games that allow employees to have fun and see a different side of their coworkers.*



# JumpStart

## JUMPSTART—CONTINUOUS ENCOURAGEMENT

there was a customer piece missing in our first workshop,” says Shannon Thomas, Peterson’s director of marketing and retail sales manager, and one of three dozen employees who went through the Leadership Academy in 2015. “The curriculum for Leading the Peterson Way stemmed from the Leadership Academy and focuses on our responsibility to our customers. I love that we’re assessing as we go. We are constantly refining the curriculum based on what Peterson needs.”

JumpStart is perhaps the most enduring element that came out of Brand Ambassador. Work groups gather weekly—sometimes daily—for a short, interactive meeting to keep the new habits fresh in people’s minds. It’s a check-in of sorts to keep everyone on the same page. According to Thomas, a.k.a. the Queen of JumpStart, “It’s the sustainability piece. JumpStart is what keeps Brand Ambassador alive.”





## BRAND AMBASSADOR COURSES

### Brand Ambassador (original course)

- Introduces Peterson Values and how to incorporate those into daily life.
- Four Communication Principles; Peterson's Success Equation; Jumpstart.
- For all Employees.

### Leading the Peterson Way

- Deeper dive into Brand Ambassador curriculum.
- For all Employees.

### Leader as Coach

- Teaches coaching and mentoring skills.
- For all Peterson managers.

### Leader as Teacher

- Teaches how to teach others to learn and stay engaged.
- For Peterson managers interested in facilitating Brand Ambassador workshops.

### Leadership Academy

- Focuses on self-reflection, collaboration, and resilience skill building.
- For senior leadership team.

The fifteen-minute meetings follow a simple five-part plan. First, there's a warm-up consisting of some type of physical exercise to get the blood pumping and energy flowing. Next is a discussion of what happened yesterday followed by what's on deck for today: what went well, what didn't, and who needs help. Next comes the three A's—Appreciations, Acknowledgements, and Apologies—for recognition and clearing the air. And last is an inspirational quote or story to get the group revved up for the day. Responsibility for running the meetings rotates among each work group's members. "Once in a while we'll throw in a game just to switch things up," explains Sorgel, who attends several JumpStart meetings a week for her different work groups. "One time we played Heads Up for the first ten minutes—the game where they tape a word on your forehead and then you ask questions to figure out what it is. It got everyone loosened up and laughing. And then we got down to business and got a ton accomplished over the next several hours."

Staying in communication and building teamwork are two of Peterson's top priorities. They are also the backbone of JumpStart. "Knowing what's going on is what brings a department together as a team," says Duane Sr. "Then people can ask for help or offer to help somebody else if they need it. That's exactly what JumpStart is for."

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## DAILY DOSE OF POSITIVITY

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Today, with over 1,500 employees across Peterson, it's hard to keep track of all the things people are doing as a result of their Brand Ambassador training. One personal practice, however, spreads throughout the company on a daily basis. Early in 2014, Julie Cunha, Peterson's controller, started sending out inspirational quotes and uplifting memes through company email to any employee who requested it. Today, 150 employees start their day off with Cunha's daily dose of positivity.



“For me, the big takeaway in Brand Ambassador was Rule No. 6,” says Cunha. “Don’t take yourself so seriously. No one or thing is perfect; everything is a process. If you strive for perfection, you’ll never feel like you’ve accomplished anything. People make mistakes and that’s okay. The learning is in knowing how the mistake happened and what can be done to mitigate it in the future.”

Brand Ambassador struck a different chord for Aaron Ingraham, general service manager for Peterson Tractor. “The things I learned through Brand Ambassador and Leading the Peterson Way have helped me a great deal in my day-to-day life. Now, instead of seeing a situation as a problem, it may be an opportunity. I also use ‘Playback’ a lot. It comes in handy with customers, employees, family members, and anyone I come in contact with throughout the day.”

“One of the biggest takeaways for me was empowering people to do things for themselves,” says Kevin Sinclair, parts operations manager for Peterson Trucks in San Leandro. “And not having to have everything done my way. People will surprise you, doing it that way. Being open to outcome, not attached to it, has also helped me run my cost center. And being open-minded and showing grace—as well as receiving grace—at work and at home has also been a huge takeaway.”

Klamath Falls service manager Jason Dolan plugged into a greater knowledge base from the contacts he made at Brand Ambassador as a field tech. “I’ve got a whole list of field guys from other stores I can call on now, and that’s really nice because our product line is so big. You find your niche in what you’re really good at, and then someone else is really good at excavators, somebody else is good at hydraulics,

or whatever. So you can call them and say, ‘Hey, I met you at Brand Ambassador, and you were always talking about excavators. And I’m having this problem.’ It’s that type of teamwork that sets us apart from other places.”

Alexis Evans, Peterson Power sales coordinator, came pre-wired with optimism. Yet even she got a lot out of Brand Ambassador. “The skills I learned are still fresh in my mind and heart. I come to work every day choosing to be present, both physically and mentally. Life and work are so much easier when you, and those around you, are happy. Small acts of kindness, consistency, and good communication skills are the Brand Ambassador values I use daily.”

For Albany ag technician Justin Moote (2013–19), Brand Ambassador is all about communication. “It’s helped a ton with going out and calling on customers. I’m not a big people person or a big fan of talking. But Brand Ambassador helped me with public speaking because it pushed me to do something I’m uncomfortable with. The more people told their stories, the more I started relating to things they’d seen or done, and then my comfort level started to increase. Before, I would go do my job, and as long as I didn’t hear anything back . . . no news was good news. But now I call to make



*Brand Ambassador teams are made up of employees from all across the company.*





“ We tell our stories to break down barriers and help us understand why we’ve become the people and leaders we are today.

– Shannon Thomas, director of marketing and retail sales manager, Peterson-Cat



*Brand Ambassador is all about Peterson’s Core Values of Customer First, Integrity, Excellence, Teamwork and Fun.*

sure that everything is still working for the customer and ask if there’s any issues. I would never do that before. It’s not that I didn’t care; I just didn’t want to mess with it. Now, I’m being more interactive instead of ‘just get to the bottom of it and be done with it’ type of thing. I can definitely see the value of a bit more communication.”

Everyone who has been through Brand Ambassador has their own story to tell and takeaways

they’ve incorporated into their everyday life. Brand Ambassador itself has come a long way since its inception at Peterson in 2012. Commitment and follow-through are why it’s been such a success. According to Shannon Thomas, co-leader of the program, “Brand Ambassador helps us have empathy for one another; it helps us connect and unites us into the family we need to be. And it’s not going away. Brand Ambassador is a part of who we are now. This is Peterson.”



## CORE VALUE: FUN

### CHAMPIONSHIP BLING (2014)

R. A. PETERSON  
BULLDOZER

2,485,407

Filed April 8, 1947

4 Sheets-Sheet 3

Peterson teams across the company have been holding JumpStart meetings every week since Brand Ambassador kicked off. But nobody has done a JumpStart quite like Portland's PDX Truck Shop. In late 2014, a couple of truck techs came up with an idea that took it to a whole new level—a championship level. “We’d all been through Brand Ambassador that year,” says Jason Billings, who initiated the concept. “So we started talking about what we could do to honor the guys in our shop, like having a Technician of the Month and giving them a better parking spot. Then it evolved into tying it into the core values.” Out of that came the PDX Truck Shop Core Values Champion. The purpose was to honor the truck shop employee who best exemplified the company’s core values for a given month and to encourage participation in their weekly JumpStart meetings. Jason Billings and fellow truck tech, Tim Clark, fine-tuned the idea and formalized it with a set of rules to make it official.

#### THE BLING

Billings also proposed a prize-fighter style championship belt to go with the title. “I always wanted an excuse to buy a championship belt. The idea came from the Piston’s 2004 Championship when Rasheed Wallace bought all his teammates championship belts so they would have something a bit more substantial than a ring,” says Billings. “I always thought that was pretty funny.” After finding an online company that could produce customized belts at a decent price, Billings passed the idea up the chain of command. They all thought it was a great idea.

The belt Billings and Clark designed looks just like a championship wrestling belt made of leather and metal, with adjustable snaps to fit different size people. Across the top it reads “PDX Truck Shop Core Values Champion” with the Peterson-Cat logo at the bottom. All five of the core values run across the sides: Customer First. Integrity. Excellence. Teamwork. Fun. “It’s actually pretty nice,” says Clark, who has been with Halton, and now Peterson, since 1999. “I wore it to the 2015 Christmas dinner, and some people thought it was kind of funny. But I told them, ‘Hey, I’m the Champion. I was voted in by everybody out in the shop.’ It’s a sacred thing to us; we take it very seriously. Everybody sees you get the belt and you take charge of the JumpStart meetings and get involved a little bit more with everyone,” says Clark. “I think some people strive to be the best and try to do a little extra in order to be the Champion.”





Feb. 20, 1966

PDX Truck Shop Core Values Champions (top left, clockwise) Tim Clark, Jason Billings, and Dave Brooks

INVENTOR  
ROBERT A. PETERSON

BY

## THE PROCESS

The championship title and belt are passed on each month with a vote by everyone in the PDX shop—both shop and office personnel. “When you vote monthly, you have to think back on who’s been staying late, working extra hours, doing something extra to take care of a customer, or doing something outstanding,” says Clark. “Those are the things that stick out in people’s minds and that’s how you get voted in.”

At the first JumpStart of the following month, the new champion is announced and receives the belt, then gets to hoist it up in victory. And for that entire month, the new champion leads the JumpStart meetings, with the belt proudly strapped around his/her middle. If there are any special company events during that month, the champion will show up wearing the belt as a badge of pride to show the shop’s commitment to living out the core values every day.

Some champions have a bit more energy than others. Some own it just a little bit more. But everyone gets to lead the JumpStart meetings in their own style. “Matt Ford [then a truck tech, now a power tech in Hillsboro], was the first person I saw get super excited about it,” says Billings. “He brought in his boom box and played a little entrance song to get everybody pumped up. He was really fired up about it.”



Once the championship belt is presented, those who voted for that person are encouraged to share why they wanted to acknowledge him/her as the new champion. It's another way of passing on the Brand Ambassador message of encouragement and support. "All of us have gotten the belt a few times," says Clark, who moved to the hydraulic shop in February 2018. "Some of the ThinkBIG kids come in here and see what we're doing.<sup>2</sup> They can see that we're all involved in what everybody is doing out here. It's not just one person doing everything. It's a team effort. We're trying to lead by example."

It's also about adding fun into the everyday routine of work. "If you're having fun, it's so much easier to do your job and be part of the team," says Clark. "We've even had some that have caught the fun bug because people who are having fun are infectious. Others just want to be a part of that."

## KEEPING IT ALIVE (2018)

In November 2018, the PDX shop moved into the newly acquired Peterson Trucks facility (formerly Brattain International). The championship belt went too. "We brought it with us and continue it to this day, here at PTI," says Doron Zentmire, PTI's lead tech in Portland. "I was there when the belt was created, and I have worn the belt in 2014 and 2015. It's cool to see how different people handle it. One of the recent champions decided to do the Quote of the Week himself at our Tuesday afternoon JumpStart meetings instead of assigning it to someone else. He opened up with a story about something that had happened to him during the week and then the quote went along with that, which was really cool."

So far, the PDX-turned-PTI Portland shop is the only one that has done something like this. It shows how much pride they take in their work and in themselves. And it's one more way that Peterson's core values are being instilled and practiced every day, in different ways, across the company.



Doron Zentmire with the championship belt, now at the 'new' Portland Truck Shop.

### THE RULES

- The Champion is selected by his/her peers by blind vote, and tallied by the shop supervisor.
- Employees cast their vote based on the co-worker they feel best lives up to the core values during the previous month.
- Employees cannot vote for themselves.
- In the event of a tie, the employee with the highest productivity rating will be named Champion.
- If all things are equal, a contest of physical strength will be the deciding factor.
- The Champion will lead the JumpStart meetings for one month.

<sup>2</sup> ThinkBIG is a 2-year Cat-specific program, which earns an Associate's Degree in Applied Science. See full story in CH20 ThinkBIG, on pg 317.





*Gil Ortiz/IT tech goes over computer issues with Ashley Harden/field tech who uses computer diagnostics to troubleshoot repairs everyday.*





## STRATEGIC PLANNING

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### ONE COMPANY, ONE TEAM

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In 2010, Peterson underwent a major revamp and recommitment to its vision and values. By then the nation's economy had been in a three-year slide. Even so, during that period Peterson took on a couple of opportunities that came with a now-or-never price tag: SITECH (December 2009), the new Halton territory (July 2010), and an International Truck dealership (June 2011). It was time for Peterson to look at who we were, where we were going, and who we wanted to be in the future.

Top management adopted Caterpillar's Strategic Development Program in early 2010 to do just that. The program was part of Caterpillar's Vision 2020, designed to get its entire supply chain pulling in the same direction. Peterson was the sixth Cat dealer to undergo the sweeping process. According to owner/CEO Duane Doyle Sr., the purpose was "to create a one company, one team approach where everybody gets involved". Peterson developed its plan based on teamwork, integration, and cross-function synergy.

Peterson's entire executive committee went through a rigorous six-month training process to re-envision and realign the company for the current business environment. Then they rolled it out to all employees at all twenty-two Peterson locations in November and December 2010. "We've become a very large company, even in the depths of the recession," explained Duane Sr. during those meetings, "so this new strategy is very important. We need to have a very clear sense of direction and set of guidelines to know that we're going in the right direction. Our core values have not changed. They are still who we are and who we will continue to be. This strategy is just a new way of applying them."

Several things emerged from the strategy process:

- Concise, easy-to-understand Core Values





Peterson's Executive Committee in 2010: (L-R) Duane Doyle Sr./CEO, Tom White/Treasurer, Rich Hasper/HR director, Jerry Lopus/Tractor president, Jeff Goggin/PMCo president, Keith Davidge/CFO, Bill Nicholson/IT director, Chris Smith/Cresco president, Mark Ebni/GM Parts, Eric Martin/Power president

- Commitment to better communication from the top down
- Pushing decision-making down into the company to involve and empower more people
- A finely honed, five-year roadmap
- Resolve to engage and encourage all employees to participate
- Melding the company into one team
- Promoting the family-feel of the original company
- Long-term accountability through regular monthly governance meetings



“Strategy is about choices. Success is all about governance,” explained Pete Issitt, Caterpillar’s growth services manager at the time, who guided Peterson through the process. “Those that stick with this process will be the long-term survivors. They will be the ones who get the market share and win the loyalty of their customers. The ones who get—and keep—the best employees. The ones who make their competition irrelevant. Peterson definitely gets it.”

While the strategy realigned and streamlined Peterson in many ways, some things did not change. Peterson’s core values are still the same foundational beliefs Howard Peterson laid out back in 1936. Through the years, those founding values have come to form Peterson’s corporate character. They underlie everything the company is and does.

“ Strategy is about choices. Success is all about governance. Peterson definitely gets it. ”  
 – Pete Issitt, growth services manager, Caterpillar



In 2008, Howard Peterson's granddaughter discovered a document in the basement archives outlining those original core principles. The header read: "Company Goals—Peterson Tractor Co." and was compiled by Buster Peterson, Peterson's VP and general manager at the time. Duane Doyle Sr. presented that chart—by then over forty years old—to his own executive committee. The two corporate visions were amazingly consistent, proving Howard's initial philosophy—that trust, follow-through, and basic decency are the building blocks upon which lasting relationships are built.

Those original objectives are reflected in Peterson's Core Values of today:

**Customer First:** The reason we exist.

**Integrity:** We do what we say.

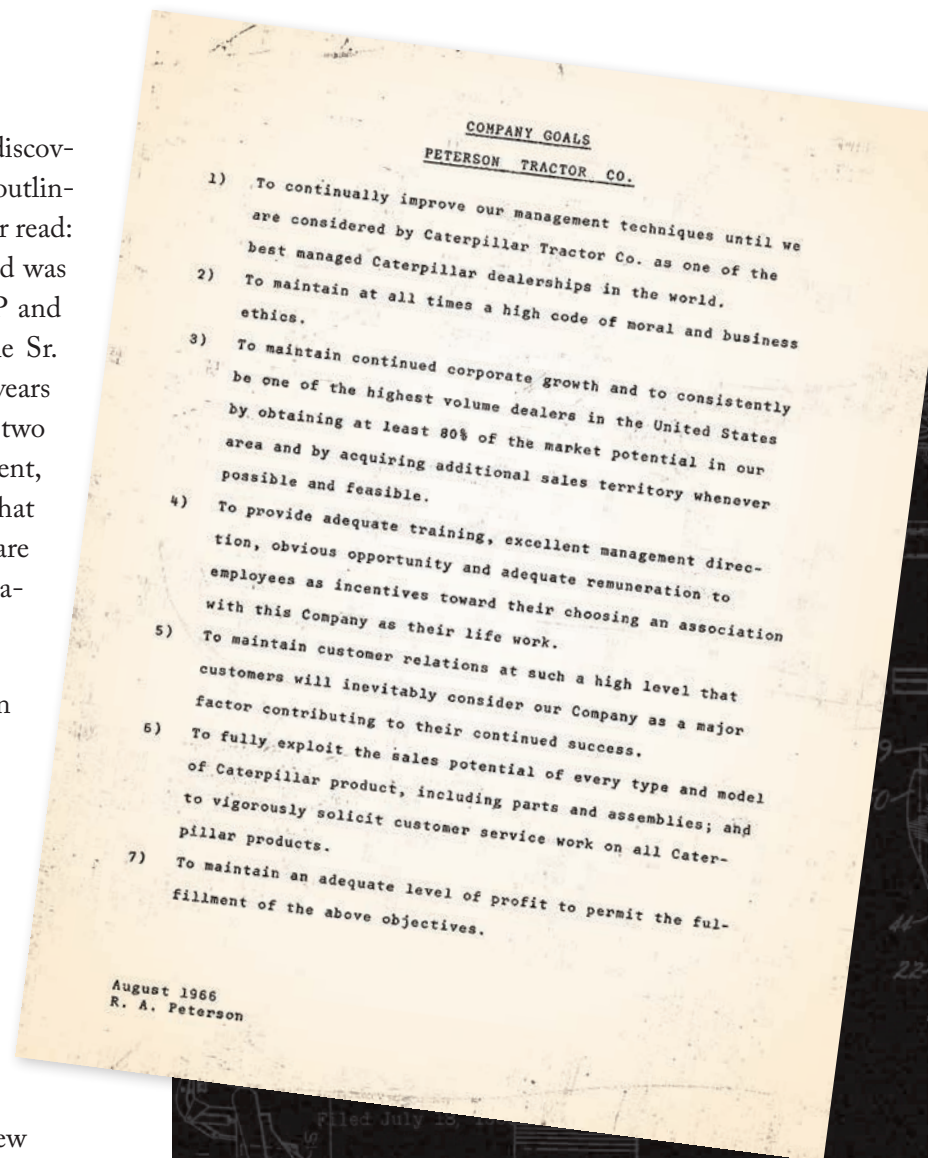
**Excellence:** Best in all we do.

**Teamwork:** Together we do what we couldn't do alone.

**Fun:** We enjoy what we do.

In March 2011, Peterson underwent a top-down reorganization to usher in the new strategy. "We were organized for a much higher volume of business than we were doing during the recession," explains Duane Sr. "We had so many things going on that we needed a more structured, collaborative approach. We were too large to manage by the seat of our pants anymore." Peterson was organized into distinct companies—Peterson Tractor Co., Peterson Power Systems, Peterson Machinery, Cresco and SITECH—all under the umbrella of Peterson Holding Co.<sup>1</sup> And that created business silos—each with its own president, its own operating budget, and its own goals. The restructure retained those same legal entities but reporting to a common COO—Jeff Goggin. What emerged was a leaner company built on a whole-team, cross-function platform. In essence, One Company—One Team: Peterson.

<sup>1</sup> Peterson Trucks Inc., or PTI, was added in June 2011.



## PETERSON'S CORE VALUES:

### Customer First:

The reason we exist.

### Integrity:

We do what we say.

### Excellence:

Best in all we do.

### Teamwork:

Together we do what we couldn't do alone.

### Fun:

We enjoy what we do.



“We’re a big company now but our goal is to always feel like a small family company. That’s where our roots are,” explains Duane Doyle Jr., who became president of Peterson’s Earthmoving Division in February 2020. “But you can’t be small anymore and survive. To be successful, you have to work really hard to feel small and make sure that people feel like they’re part of a team. You have to bring it back to how each person in the company helps accomplish the big goal—whatever that is. Peterson is about a lot more than just selling tractors, but that’s how many people view us. The guy in IT (Information Technology), for example, might not see that what he does is crucial. But if a technician’s computer doesn’t work, then he can’t fix that tractor. So the IT guy’s part in making sure that the customer’s tractor gets fixed is fixing the technician’s computer so that he can repair the tractor, which makes the customer happy.” And so it goes across the company, from parts to accounting to training to sales. It’s the classic ankle-bone-connected-to-the-shin-bone continuum. In short, everyone’s job is important.

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## IT AND TECHNICIANS TEAM UP

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One of the goals of Peterson’s new strategy is to break down silos within the company and build an atmosphere of teamwork and trust. Peterson’s Information Technology group has taken that to heart. “When I first came on board, there were a lot of silos,” recalls Bill Nicholson, who hired on in 2006. “IT was one group that kind of did their own thing; it wasn’t coordinated with what the other groups were doing. When I became the IT director, I started looking at the issue of trust. The service techs didn’t trust us to provide them with what they thought they needed. And we didn’t trust them to tell us what they needed. There was a definite gap there. So I started asking the techs how we could better help them do their job. And when they identified their need, I didn’t wait to get it resolved. I took care of it right away. We started developing relationships. To this day, those tech-

nicians still come to see me, both on the Tractor and Power side.” Nicholson’s efforts touched off a grassroots awareness among the San Leandro technicians. When one of them got a frustrating computer issue resolved, they would pass the word along. And from there it started to grow.

Peterson’s IT crew began to change too. “I empowered my team to make decisions to facilitate what needed to get done. And to make that a part of our culture, which is a culture of service,” explains Nicholson. “Now when they’re out in the field and a technician needs a new computer, they don’t have to come back here and ask permission. We just do it and ask for permission later. Because the cost of a single computer isn’t the issue. It’s about efficiency and what’s going to help us make money in the long run. It’s about what’s good for our customers and the company as a whole.”

The first technician Nicholson approached was Ashley Harden, back then a ten-year tractor field tech out of San Leandro. “Sometimes the IT De-



*Bill Nicholson/VP of Information Technology*



partment doesn't understand exactly what we do," says Harden, who averages eighty hours a week—rain, shine, or otherwise. "To be honest, a lot of people in the office don't have a clue what we do out in the field. We're working three to four hours away from the shop, and if that laptop doesn't work, we can't fix the tractor. It's no longer just about pulling a wrench. You have to be computer savvy. It's a completely different era from twenty-five years ago. If you took somebody that was awesome back in the 1980s and 90s and put them on one of these new machines today, they wouldn't know what to do. Some of these machines have anywhere from four computers onboard to fourteen with the new D7E electric drive. It's crazy."

Collaboration between IT and Peterson's service technicians has yielded several benefits. In 2015, IT created a new arm of the Help Desk—the IT Service Group—dedicated to Peterson's 600 techs. "Our job is to find different ways to save the technicians time and help them so they don't have to worry about computer problems," says Alex Diaz,



*Alex Diaz/IT Service Area manager*

R. A. PETERSON Filed 03/22/1960 3,290,806  
ADJUSTABLE CABLE HOPPER DOOR ACT  
HOW CATERPILLAR'S ET WORKS  
Travis Hetrick, San Leandro Field Service  
"The first thing you do when you get to a machine is hook up your computer into the console in the cab. Then you retrieve any logged information—codes that are active or present. And then you do a product status report—basically a download of the whole history of the machine from the last time someone connected to it until now. The ECM [Electronic Control Module, or computer] has all the fault codes, lifetime of fuel burned, lifetime history—everything. So if you end up losing data on your laptop, the machine's ECM has all that valuable information stored in it. And then if you need to, you can send it to a TC [Technical Communicator] so they can understand what you're working on and what you're up against. For a younger guy like me, in my thirties, working with computers isn't a bad thing because we grew up with them. It's like playing video games, in a sense. You're basically troubleshooting and fixing machines straight through your computer without having to get greasy. It's pretty advanced."  
Alex Diaz, IT Service Area Manager  
"Once you plug into the tractor using a Comm Adapter III, you can read all the ECMs, which gives you all the fault codes. Peterson Trucks technicians use a different adapter—a Nexiq USB Adapter II. They track down issues in the same way. For example, say you have an eighteen-wheeler with a backlight out. In the old days, you'd have to trace that wire connection from the cab all the way back to the bumper. Today, you plug in your laptop and the program tells you exactly which light is the problem. It's a whole different world now."



IT Service Group manager. “Instead, they can focus on what their customers need and spend their time working on their equipment.” One of the first things the new group did was build a backup library of all the technicians’ computers. “Now if someone’s computer breaks, we can re-image and replace it so their downtime is minutes instead of days.” They also created a basic template of the three software set-ups techs use across the company—for Tractor, Power, Truck—to have on hand if a replacement is needed or a new tech comes on board.

Back in 2010, even before the new service group was formed, IT introduced a remote-access program. “Bomgar is an application we use to remote into people’s computers. They can be anywhere as long as they’re online,” says Diaz. “Anywhere. Anytime. Anybody in the company. This is one of the greatest remote-access programs I’ve seen in my life, and I’ve used many. It’s stable. It’s straight-forward and easy to use. And it’s paying off because it helps us take care of our customers and technicians.”

Another big win was a rethink of the quarterly SIS updates. SIS is Caterpillar’s digital reference bible of all the parts, blueprints, and schematics for every machine Cat makes. It’s a vital tool every Peterson technician relies on—daily—along with Caterpillar’s Electronic Technician software (ET). And it comes on twenty-three DVDs. In 2017, the IT Service Group changed the time-consuming update process by loading all that information onto external hard drives. “Now every couple of months when we come in for a safety meeting, there’s a box of external hard drives by the door,” says Harden. “They’re constantly updated with the latest software from Caterpillar. So you turn in your old one and grab a new one from the box.” Before, it took two to three hours to feed all twenty-three discs into a laptop. Now it takes twenty minutes or less.

“Having SIS on hard drives is especially important for field technicians out in remote areas with no internet access,” explains Diaz. “It saves time because they don’t have to come back to the office or drive to a spot with a better internet connection. There’s a lot less to deal with. And they don’t have



*Larry Miller/Medford shop technician*



to worry about losing any discs.”

Field techs also work in unpredictable, often rough conditions—not your typical computer environment. In 2013, IT switched them over to the tougher Panasonic Rough CF-53 laptop. “We used to have technicians come in almost every day with broken screens, broken keyboards, water damage, broken hard drives—multiple issues,” says Diaz, “because their environment is not like an office. They’re out there in the rain and heat and dust. They’re climbing up on tractors to plug into the machine’s computer. Their environment is just not appropriate for a regular office computer.” Today, they’ve graduated to the Dell Rugged Latitude 5414 and started migrating technicians over whenever a new system is required.

Smartphones are also IT’s responsibility—and all the attending issues, including cell service out in the boonies. Travis Hetrick, San Leandro tractor field tech (2005–17), knew all about being stranded in a remote location without Wi-Fi or cell service. As a resident tech working at LeHigh’s Cupertino quarry, he had to deal with that a lot, even though the quarry was less than ten miles from the Silicon Valley. “We had some very high-profile machines out there. One was a field follow unit; the other was the sixth production machine. Both were Cat 6015Bs, which are giant excavators—like a 5110 on steroids.” Ironically, the field follow was doing great. It was the production machine that kept Hetrick working overtime. “I had Caterpillar engineers trying to call me all the time, so I needed to be able to answer their calls and send pictures and other information back and forth,” says Hetrick. “We had a real tight area of cell service out there and Ken [McEntire] and Gil [Ortiz] helped us out with that. They gave us Verizon; they gave us AT&T; they tried Sprint. Then they tried to figure out a rectifier-booster to help with the coverage. They tried everything they could think of to get us the resources we needed.”



*Ashley Harden/San Leandro field service tech*

### TESTING, TESTING, ONE, TWO, THREE.

Using a laptop computer outside in the sun can be frustrating. The glare makes it all but impossible to read the screen. A lot of the field techs are outside all day, working in the bright sunlight. San Leandro field tech Ashley Harden brought that problem to IT, which resulted in a special glare-proof screen for all technicians’ laptops. “They use me as their guinea pig to see if something will actually work out in the field. I do the testing and give them the pros and cons so they can adjust. I also give them ideas on what the field guys need like apps or different computer features, and what functions we like and ones that we don’t need.” Harden is one of the go-to guys IT uses to test out different ideas, software, and technologies before they roll out anything new.





*Truck tech using the EZ-Tech laptop to troubleshoot repair issues*

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## THE SAME ONLY DIFFERENT

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When it comes to computer diagnostics, the big difference between Power and Tractor is the software. “The Power Division is really diverse,” explains Patrick Fleming, Power tech out of Santa Rosa (2006–19). “For the tractor world, most of the stuff they deal with is Caterpillar. On the power side, we have lots of different software programs for different brands of switchgear, transfer switches, control panels, and ECMs. The IT guys have helped acquire a lot of those for us.”

Although the Tractor and Power techs all use SIS and ET, Tractor techs generally use half a dozen software programs to get the job done. Power techs have over two hundred programs to draw from, depending on a wide range of components and brand names. “Everybody thinks Power is just about generators, but it goes a lot farther than that,” says Fleming. “It goes into the switchgear room, into the building management system, and even remote monitoring. The amount of controls we deal with is crazy. You might go a couple of months before you see a particular system again, but when the customer calls up, you’ve got to start jogging your memory because you’re the expert.”

And then there’s the International Truck side of the business. PTI (Peterson Trucks Inc) is a completely different animal because it’s not the traditional Caterpillar product anymore. International Truck technicians troubleshoot with their own specially formatted computer called the EZ-Tech. “Those first couple years we only had seven or eight EZ-Techs to share among us,” recalls Mike Lasater, San Leandro Peterson Truck tech at the time. “Before that, we got our computers from the IT Dept. at Tractor, with Caterpillar’s ET program on it. Now we’re dealing with a lot of other engine manufacturers—basically the entire vehicle—which comes down to anti-lock braking systems and driver display systems. And each one of those use a different program. The EZ-Tech comes as a whole package with everything you need to diagnose a truck from bumper to bumper.”

In early 2019, Diaz and Lasater created the first Peterson-built EZ-Tech computer. “I downloaded all the software that Navistar puts in their EZ-Techs onto a computer we had in inventory,” says Diaz. “Then Mike Lasater tested it to make sure it worked.” Since then, it has saved Peterson a lot of money. “Andrew Olivero [PTI shop tech] called me one day and said his laptop wasn’t working,” says Diaz. “I went over there and saw that it just kept rebooting. We tried updates and several other things, but it ended up being an operating system failure. There was nothing we could do but replace it.” Instead of buying a replacement EZ-Tech from Navistar, Diaz re-imaged the computer with his Peterson EZ-Tech backup, which saved the company \$700. Olivero was back working the same day. That scenario has played out several times since, making the Peterson-built EZ-Tech a very savvy move.

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## THE RIGHT TOOLS

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“IT is really starting to listen and understand what our needs are,” says Harden. “They’re starting to pay more attention to what’s coming up in tech-





*(L-R) Alex Diaz & Mike Lasater built Peterson's version of the EZ-Tech laptop for truck diagnostics*

nology and what we could possibly use out in the field. Since Bill Nicholson took charge, things have really changed. It's a night-and-day difference."

Finding ideas and tools that make technicians' lives better is what the IT Service Group is all about. Tackling the daily service report, however, has been a tough challenge. "One of our main goals is to minimize the time technicians spend typing out their service reports," says Diaz. "Most techs hate to type. It takes up a lot of time they could be working on machines. We've tried several different speech-to-text apps, but the technology just isn't there yet 100 percent. We're still looking for the right tool for them."

Redundancy and risk management are also a big deal for the IT group. In 2017, they added a new cloud-based backup system to their toolbox. It can create an image of a technician's computer while he's still using it. "With Carbonite, we don't have to take their computers away to create a backup for their system anymore," says Diaz. "It's a low-bandwidth, low-impact program, so the technician doesn't even see the backup running in the background. That's the beauty of it."

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## BEING THE DIFFERENCE

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The collaboration between Peterson's six hundred service techs and the IT group is just one example of proactively shutting down old silos and working more as a team. It's also a great illustration of getting Peterson's Strategy off the poster and down into the day-to-day operations.

In November 2016, Kevin Culligan, VP of sales strategy for Peterson Machinery, received an email from the equipment director of Baker Rock Resources, Brian Young. They had decided to spend the extra million dollars and buy from Peterson instead of Volvo or Komatsu. "The sale was made long before we spoke," read the email. "It was made by the parts people who identify and pull the right parts; the service group who dispatches quality mechanics who work efficiently and accurately; and the sales staff that understands our business needs." That sale was an eight-machine package worth \$4.5 million. And Peterson got it because Peterson people were doing their job, day-in and day-out, with excellence, accuracy, and teamwork.



# CORE VALUE: FUN

## CREATING ON-THE-JOB FUN

Fun is in the eye of the beholder. Whether it's attending a big weekend bash or climbing on the back of a machine stuck halfway down a mountain, it all comes down to perspective. Most people typically don't equate work with fun. But that's what Peterson's Core Value of Fun is all about. "We spend eight, ten, fourteen hours a day at work—some even six or seven days a week. It's a waste of time if you don't like what you're doing," says CEO Duane Doyle Sr. "It's about looking forward to going to work. It's about enthusiasm for your job, being friendly, and finding humor in your day. I don't know of any other company with the core value of Fun, but we believe it's really important." The following collection of stories illustrates how Peterson employees choose to put fun in their workday.



Peterson Power management team in the mid-2000s: (L-R) Eric Martin, Vern Booth, Matt George, Roger Wood, Ken Ehni, and Tom Bagwell

## INNOVATION AND DEEP SATISFACTION: JOE FRATI, SPECIAL SERVICES, PORTLAND

In 2014–15, Joe Frati (project manager and product designer at the time) was in the thick of one of the coolest projects Peterson has ever done. And he loved every minute—for the most part. Frati was part of the Peterson team that customized nine MT-865C Challengers for the South Pole Traverse operation on the Antarctic.<sup>2</sup> And everyone on the team was thrilled to be a part of it.

"We had a lot of fun building those machines. Finishing that project was one of the happiest and saddest days of my life. I was so glad the project was finally done because it was so much work. But at the same time,

<sup>2</sup> For the full story, see CH21 The Antarctic Challenge, on pg 331.



We enjoy what we do

it was sad to see the project end because it was so much fun. One incident that stands out for me was getting the second Challenger—Northwind—ready for the Salem Ag show in 2014. Five of us—Mike Stubb, Bill Roberson, John Hainley, Taylor Koch, and myself—were at the shop until 2:00 a.m. the night before, trying to get it ready for the show. It was super intense, but we absolutely loved it. We had the music blasting, and everybody was focused on finishing their particular part of the build. We were like bees swarming all over that tractor. When we finally finished and started it up for the final test, everything worked. And we all started hooting and hollering because we'd done it. And it was flawless. There's a personal satisfaction you get from being part of something new and exciting and bigger than yourself. We were all involved in a piece of Peterson history and proudly put our names to it. We each had a specific tractor that we liked the most—that we had a special bond with. That was an experience that none of us will ever forget.”

### CREATIVITY ADDS FUN: TERESA DIAS, PETERSON-IDEALEASE



(L-R) Michael Cancelliere/VP of Navistar, Mike Waller/Reliance Steel, operations mgr, and Teresa Dias

“Now he’s our go-to guy if we have a problem with any United Rentals locations, since he’s the regional service manager,” says Dias. “He thought that Twinkie box was the coolest thing ever. He’s still got it on his desk.”

Four months after Teresa Dias joined Peterson in 2013, she was asked to lead a Jump-Start meeting where the company owner and the COO were in attendance. In her typical fun, sassy style, Dias started off the warm-up exercises by flapping her arms like a chicken. Someone asked her what that exercise was good for. She responded: “it’s how you get the owner to do the funky chicken. How many company presidents can you say that about?”

As lease sales manager for Idealease, she was also able to turn around a disgruntled customer after several visits listening to his concerns. During one meeting at the customer’s office, she overheard someone tease him about his love of Twinkies. On her next visit, Dias brought him a customized Peterson Trucks survival kit, complete with several Twinkies and a carton of



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## CHALLENGING YOUR SKILL SET: GENE HAMILTON, PETERSON POWER/TURBINES

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In 2007, Gene Hamilton flew to Dubai for a sales meeting, and had the time of his life in the process. “It was a real mind-stretching experience,” recalls Hamilton, now Peterson Power’s general sales manager. “You stepped off the plane into 100°F heat with 90 percent humidity. The sky over the city had a dirty brown cast from the blowing sand but the airport, the ports, and the streets were new and gorgeous. A lot of people were in Middle Eastern dress. And everywhere—everywhere—there was money. I was with Joe Figueiredo from Cat Rental Power. We visited the Cat dealer—Al-bahar—in Dubai. It’s the largest Cat dealer in the Middle East, dollar-volume wise. Then we drove up to Abba Dubai in the middle of an industrial area to meet our customer—a sheik. He was a chain-smoker dressed in a gorgeous, long, white robe. His partner—whom I’d dealt with before—was in western dress and spoke excellent English. The sheik wanted to do a joint venture in Yemen, he explained. He kept talking about how we were going to structure the deal. And every time he’d bring up the joint venture, I’d think: *Sure . . . joint venture, no problem.* But when I asked how much money he was going to put into it, he’d say that he would handle this-and-that, but that we would provide the ten turbines.

‘No no,’ I said. ‘How much money are you going to put into this deal? A joint venture means you have to bring something to the table.’

“So we went around and around like that until it became clear that this guy was like a Texas good-ol’-boy, wheeler-dealer. I’ve never had so much fun negotiating before in my life because we were getting absolutely nowhere. And we both knew it. He was dead serious though. He wanted to be the broker, but I just couldn’t see it because he wouldn’t put any money in.

“Finally, he excused himself to go to another meeting while his assistant took us out to lunch at a huge, lavish hotel. It looked more like the capitol building of a wealthy country than a hotel. It took us fifteen minutes just to walk to the restaurant. The cuisine was amazing. All through the meal our host kept pushing the Yemen joint venture. After lunch, he took us back for another meeting with the sheik, who worked me over for three more hours.

“Before I left town the next day, I went to see the commercial attaché at the US Embassy. He explained that my meeting with the sheik was quite typical. ‘They bring in ten guys just like you and one will bite. They’ll get you to do a joint venture where you put in all the money so you’re carrying all the risk. That way if it fails, they just walk away. They figure it’s their country, and if you’re dumb enough to bite, that’s on you.’ But I loved that guy. He was a very good negotiator. Even though we didn’t get a deal, it was still a lot of fun. And I ended up selling two 10 MW units to a Chevron compound in the oil fields of Cabinda, Angola at my next stop.”

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## OUT-MARKETING THE REST: JOHN KRUMMEN, PETERSON POWER

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Back in 2000, then CCE manager Eric Martin came up with a creative marketing idea to promote Cat’s line of mini machines.<sup>3</sup> It involved posting signs on buses and inside sports arenas all over the San Francisco Bay Area. But when he moved on to head Peterson’s Heavy Rents, he forgot to tell his successor. “One day, I went to a Raiders game with my family,” says John Kruppen, now executive VP and GM of Peterson Power Systems.

<sup>3</sup> CCE stands for Compact Construction Equipment



“And in the bathroom, I saw an ad above one of the urinals that read: *Win a free Harley. With the purchase of a Cat skid steer, you can enter a drawing to win a free Harley Davidson.* And below that was my name and my phone number! It was just Eric’s way of having fun with me because my phone started ringing off the hook with people asking about that free Harley. Those urinal ads also had the North America Cat dealers laughing in hysterics. But it was because, once again, Peterson has more creativity than any other company out there.”



(L-R) John Krummen in 2002 as BCP/CCE sales manager in San Leandro; Eric Martin as BCP/CCE sales manager in 2000.

### SATISFACTION BUILDS RELATIONSHIP: JUSTIN MOOTE, PETERSON FIELD SERVICE

Back in March 2017, Justin Moote (Albany field tech, 2013–19), got a call to check out a customer’s new RoGator sprayer. “He’d bought it from us the year before, but he didn’t winterize it, so it froze up when he went to use it. The valves were cracked, the manifold was broken, and there was a bunch of rubber stuck down in the pump. So I tore the pump apart, cleaned it out, and it worked for about three hours. Then it plugged up again. You can imagine the guy’s frustration. I went back and tore the pump apart again, found more rubber, and got it running again, and it’s been working ever since.



“A couple days later, the customer called me on my direct line about some issues he was having with the auto-guidance system on that same sprayer. So I went up there after work and rode around with him for a couple hours until we got that dialed-in right. To me, fun is seeing the satisfaction on a customer’s face when you get his equipment running again. Because it means I’ve succeeded in my job. The way I look at it, if it’s not fun, it’s not worth doing. I wake up and go to work and I enjoy my job. I look forward to it every day.”

Back in the mid-1990s, Peterson sent many of its employees to a Cat-recommended training course called the Successful Life, put on by motivational coach Ed Foreman. His three-day program—dubbed Happy Camp by the employees—inspired people to reevaluate their thinking patterns, learn something new every day, and make the impossible happen by believing you can. One of Foreman’s favorite sayings was: *Your altitude equals 10 percent aptitude plus 90 percent attitude.* That’s Peterson’s Core Value of Fun in a nutshell.





*Emma & Liam Zalesky speak for all Peterson kids and families.*





## SAFETY

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### EVERYONE GOES HOME SAFE

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**T**oday, Peterson employs over 1,500 people across three states.<sup>1</sup> And every single one is backed by a family—a spouse, sons, daughters, parents, grandparents, aunts and uncles. And friends. No one stands alone. So when someone gets hurt on the job, it reverberates throughout their entire network of relationships: first the immediate family, then the work group family, and finally the company as a whole. “As we’ve grown larger, we’ve tried to continue our focus on being a family company,” says Erin Sorgel, Peterson’s CFO. “That means we want everyone to go home safely to their family, every night.” Safety has become the foundation upon which the entire company strategy is built upon. Because without people, there is no company.

Safety practices have changed a lot since the early 1970s when CEO Duane Doyle Sr. first started working at Peterson. Back then, safety meetings consisted mainly of watching gory movies like *Shake Hands with Danger*, followed by a discussion and a quick roll call. Back then wearing safety glasses or gloves wasn’t mandatory and near-misses were brushed off in relief, and forgotten. One near-miss comes to mind for Senior as a high school kid working in the San Leandro main shop.

“I was working with another mechanic on an Allis-Chalmers scraper that belonged to Independent Construction. We were putting a new king pin in the hitch. We didn’t wear gloves back then, but gloves wouldn’t have helped in this case. The other mechanic was on a forklift, moving the front part of the scraper up and down to line up the two holes so I could put the pin in. One bore was fixed; the other one was tied to the forklift. I had my hand down in the hole, probably putting some grease in there, when the forklift moved unexpectedly. I got my hand out of there just in time. Those two bores pulling apart would have acted like a guillotine if my hand

<sup>1</sup> Includes Peterson-Cat, Peterson Machinery, Peterson Power, Peterson Trucks, The Cat Rental Store, Cresco, SITECH and BuildingPt. Pacific.



had still been in there. We really shouldn't have been using a forklift because that's not a real safe piece of equipment. It could drop without the guy even doing anything. An overhead crane would have been better. What I learned was: never put yourself in the way of kinetic energy—or stored energy—because if it moves or drops, you get injured. I was young enough, I probably didn't think much about it. Years later, I'm thinking: Wow, I could have lost a bunch of fingers."

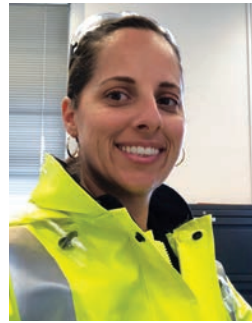
**“ We cannot be an excellent company if we're not excellent in safety. We pride ourselves on being a family business and truly caring for people. That's why we are committed to safety now more than ever. It's a never-ending journey to always get better, which is part of our DNA.**

– Duane Doyle Jr., president of Peterson Tractor, Peterson-Cat

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Senior learned another valuable lesson on the Warm Springs Dam project in the late 70s. “One story Vern Renwick [veteran field mechanic] drilled into us on the dam was about 657 scrapers. In the early days of the 657s and large scrapers, the wheels would crack due to fatigue or bad metallurgy. Those big wheels were held together with a huge row of bolts holding the planetary final drive in place. If someone was working on it and didn't know the wheel was cracked, once they loosened the last bolt, the air pressure in the tire would blow that whole wheel assembly off. And, the mechanic with it because they weighed several tons. We saw pictures of one blown 100 yards away. Thankfully it never happened to us on the dam. We learned from other people's experiences and mistakes. There's all kinds of ways to get hurt in this industry.”

Peterson's safety journey has come a long way since then. When Tyler Dougall and Malerie Carr came



Malerie Carr

to Peterson in 2003, they began building on the foundation their predecessor and mentor, Mike Gillen, had established. Building relationships was key. “I needed people. I needed their help to be successful,” says Carr, “because then I

could pull from their experiences and make it more engaging. When I started to see how much more powerful that was, and got others to speak about their experiences more than I was talking, that's when the training became effective.”

From there, safety meetings evolved to include more interactive, hands-on activities. By injecting some fun into the meetings, Malerie was able to gain their attention and their respect. Take forklift certification. “Instead of sitting in a classroom and talking about how to operate a forklift, we had timed forklift obstacle courses. The guys got to drive the forklift a little bit faster than normal and mix in a little camaraderie. I'm a believer in letting them push the limits a bit in training because it helps them understand and appreciate the equipment. And fun helps training stick better. You could tell who was comfortable on a forklift, and who was not. Many of them were amazing operators.”

When she first started, Carr and her counterparts took on much of the safety related issues themselves—safety training, shop inspections and accident investigations. Since then, a lot of the training and shop inspections have returned to the service managers and parts managers themselves. “To have a healthy safety culture, the employees should be the ones driving it, not us,” says Carr. “But their managers are the ones that have to enforce it. They set the tone. They do the accountability. And their word is going to carry a lot more weight than what the safety person says.”





S.T.A.R.T. safety training in San Leandro in December 2019

“ S.T.A.R.T. teaches the importance of safety at the most fundamental level—the human element. It addresses the fact that we’re dealing with people’s lives.

– Stephan Zalesky, corporate services operations manager, Peterson-Cat



One thing Carr is adamant about: “I tell all the new hires to stop anytime they’re unsure of something, or if someone asks them to do something they’re not 100% sure how to do, because there is no guessing. This stuff can kill you. The guys that have been around know that and have respect for the equipment. They’re scared of it still. But many of the young kids coming in don’t know to be scared of it.” One of the warnings Carr uses all the time with new hires, comes from Jim Keating, San Leandro main shop foreman: *All this yellow stuff out there is trying to kill you. And you will not win.*

## PETERSON’S SAFETY REBOOT

One of the things that led to Peterson’s rekindled focus on safety came via Caterpillar. Cat doubled-down on safety in 2007-08 when they bought a safety consulting firm in Portland, now called Cat Safety Services. A few years later, they began recommending that their dealers attend their classes. For Stephan Zalesky, Peterson’s director of product support operations in charge of Safety, their S.T.A.R.T. course was the turning point.<sup>2</sup> In December 2019, he and the entire leadership



Stephan Zalesky

team took the course. “S.T.A.R.T. teaches the importance of safety at the most fundamental level—the human element. It addresses the fact that we’re dealing with people’s lives and, first and foremost, we want them to be able to go home to their families, and be able to do the hobbies and things they love. That’s why we do all this.”

Peterson’s renewed emphasis on safety really kicked off in May 2018 with an executive leadership meeting. Out of that meeting, Duane Sr. appointed three action groups to focus on safety awareness, accountability and policy. Each team was charged with coming up with initiatives to further Peterson along on its safety journey. “Not only did we need to figure out what we were going to do,” explains Duane Sr., “but we needed everyone to be involved and committed to it. The best way to do that is to get people involved in the solution. Then you’ve got a much better chance of success and accelerating the adoption of those new ideas.”

<sup>2</sup> S.T.A.R.T. stands for Safety Training Accountability and Recognition Techniques



## PETERSON'S GOAL

Peterson's GOAL initiative began in 2014 requiring drivers of all Peterson service vehicles to *Get Out And Look* before driving away. Once parked, the driver must place an orange safety cone at the front right bumper and another at the rear left bumper. Upon leaving, the driver has to collect the cones, which causes him/her to look around for any changes since parking or pedestrians that might otherwise be blocked by blind spots.



*Vehicle cameras are one of Peterson's safety initiatives.*

Over the next year, the teams created and refined their ideas into concise workable procedures. Some of the larger ones include: Vehicle Cameras, Near-Miss reporting, TRACK forms, the Glove Policy, Safety Centers and the Serious Incident Review Committee (SIRC). Since then Peterson has invested hundreds of thousands of dollars into these initiatives to make it a safer environment for all.

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## VEHICLE CAMERAS

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The vehicle camera idea came out of the Awareness Team. Today Peterson has a fleet of three hundred service trucks, parts delivery trucks, and pickups companywide. And with all those vehicles and all that mileage, comes accidents.<sup>3</sup> “Our trucks are involved in accidents and, unfortunately, we get blamed for most of them because we’re usually the biggest vehicle,” explains Erin Sorgel, who was on the Awareness Team. “These cameras are proven to reduce accidents, protect our people, and also protect ourselves against other people.”

In December 2020, Peterson installed one hundred cameras, and completed the other two hundred in 2021. Vehicles without backup cameras received those as well. The cameras have already validated, in certain cases, that Peterson employees were not at fault whereas before we only had their word as proof. While that word may be good enough for Peterson, insurance companies don’t always agree. “There were a handful of technicians who already had dash cams in their trucks,” says Zalesky. “They purchased them on their own dime for vindication, so if something happened, they knew it would be documented. Because they know that most of the time, the finger is going to point at the larger vehicle.”

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## NEAR-MISS REPORTING

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One of the key takeaways from the S.T.A.R.T. course is near-miss reporting. “Before 2018, we had zero near-misses reported,” says Zalesky. “Over the past three years, we’ve averaged one

<sup>3</sup> One of the key lessons from the S.T.A.R.T. training focuses on incidents vs. accidents. The word ‘accident’ implies that there is no cause, when in reality everything has a root cause. However, for the sake of general understanding, ‘accidents’ is used here.



hundred reported per year.<sup>4</sup> And out of one hundred near-misses, we take significant action on five to ten of them. That may not sound like a lot but it's five to ten more than in 2017 when we didn't do anything because we didn't even know they were happening.”

According to Jeff Goggin, president of PT&SG<sup>5</sup> who was on the Accountability Team, “in S.T.A.R.T. we learned that there's a ten to one ratio when it comes to reportable incidents. For every lost-time incident that occurs, there's been at least ten near-misses.” So, what constitutes a near-miss? They can be large or seemingly insignificant, but the commonality is that an employee just missed injury. It can be a ballpoint pen on the floor that could make someone slip. It could be a barrel full of oil up on a forklift pallet that wobbles but doesn't quite fall off. It could be a blocking issue where the hydraulics fail, and the block doesn't hold. It could be an extension cord stretched across an aisle-way, or a rollup shop door partially opened that could fall on someone's head. Thirty or forty years ago, people would just tell you to get a life.

But things have changed since then. Society has changed. Our culture has changed. Peterson now views every potential incident as a lesson on how we can improve and keep people safe.

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## TRACK FORMS

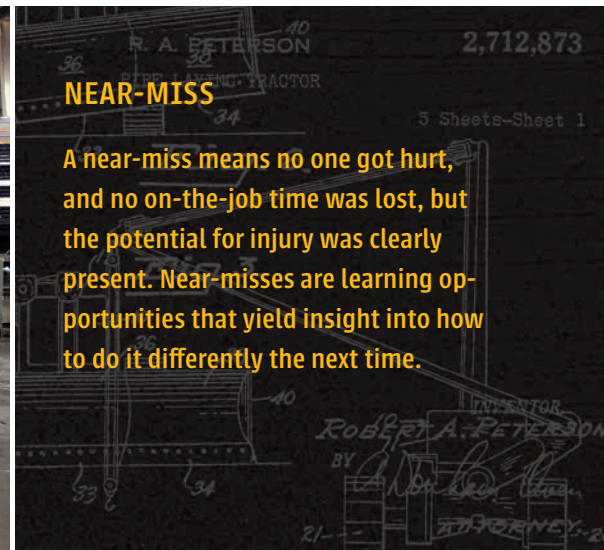
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One of the most impactful accountability initiatives hit the shops in January 2020—the TRACK form, or job hazard analysis sheet (JHA). “We've done different versions in the past but we finally got what we think is a great template,” says Carr. “It's a documented version of thinking through what you're going to do before you do it. You have to write down your task, what the potential hazards are, and what you're going to do to make sure you don't get hurt.” The form takes five or ten minutes to complete and gets attached to the machine in plain sight.

“As we started introducing the newer, younger group of people into our shops, we realized that we needed a way to help them think through the



*Power Systems truck shop team in November 2004*



4 Figure includes data for 2018, 2019 and 2020.

5 Peterson's Technology Service Group (PT&SG) includes SITECH and BuildingPt. Pacific. Goggin took on its leadership as president in July 2020.





## PETERSON'S JOB HAZARD ANALYSIS TRACK FORM

Every repair done by Peterson now requires a TRACK form to be filled out before any work can begin. It prompts the technician to think through the potential hazards and what precautions they will take.

**T**HINK about your position in relationship to the task—how to avoid the line of fire, personal protective equipment (PPE), hearing, safety glasses, face shield, fall protection, arc flash, respirator.

**R**ECOGNIZE the hazards—visibility, noise, air quality, falling objects, hydraulic pressure, arc flash, pinch points, fire, mechanical.

**A**SSESS the risk—how likely or severe could it be? Not likely—possible—probable & consequences; first aid, medical treatment, serious injury or death; avoid risky behaviors—rushing, complacency, frustration or fatigue.

**C**ONTROL all hazards by eliminating or reducing the risk; indicate how you plan to control each hazard; confirm adequacy of controls in place to prevent unexpected startup or unwanted movement; have another qualified person review and sign off on lockout—tagout, blocking, cribbing, bracing.

**K**EEP Safety First becomes a way of thinking the more TRACK forms are used.

job, write it down, then have a supervisor review it before they proceeded,” explains Carr. “We wanted to make sure a competent person had seen any of the major safety controls before the work began. Things like blocking and cribbing, and lockout-tagout were some of the critical elements that needed a second set of eyes from an experienced person to make sure it was safe to start work.”

In 2020, a serious injury happened in one of Peterson’s shops that shocked everyone. It was a fresh reminder that our industry can be very dangerous. “The TRACK form had already been out there but that incident helped us refine the process and require an additional supervisor sign-off prior to the work beginning,” says Carr. The addition garnered a lot less negative feedback when it came directly from Duane Jr, who said, “from now on, I want supervisor sign-offs on all JHAs before any work can begin.”

## SEE SOMETHING, SAY SOMETHING

Although policies focus on rules, Peterson’s safety journey is much more than that. One of the newest policy initiatives is called *If you see something, say something*. “We wanted to make a statement by making a policy that if you see something unsafe, Peterson wants you to say something,” explains Zalesky, as part of the Policy Team. “Whether it’s speaking to your immediate peer, or your foreman, or supervisor, or someone else in the workplace. If you see something unsafe, we are giving you the responsibility—and the permission—to say something and do something about it.” To that end, Zalesky adopted a Cat Safety Services course called *Speak Up! Listen Up!* for technicians, parts personnel and rental team members. The four-hour class focuses on the role each plays in safety, and how important it is to speak up when you see something unsafe. Another class objective is to teach that when someone approaches you with a safety concern, know that their heart is in the right place even if the delivery may not be perfect. When people





Safety Centers are at every Peterson location.

start speaking up, with tact and professionalism, and not shying away from an uncomfortable situation, that's when safety starts becoming a way of life.

## FROM THE TOP DOWN

In 2018, Peterson was holding a two-day Brand Ambassador class at the new headquarters facility in Hillsboro, Oregon. The class got an impromptu lesson on safety via COO Jeff Goggin, one of the teacher-participants.

“We were down in one of the shop bays where we do JumpStart meetings and it was hot,” recalls Goggin. “Duane [Sr.] was taking everyone on a tour of the facility during our break so I decided to raise up the shop door just a couple feet to get some air in there. While I was doing that, I noticed a D5 outside with the blade up in the air and no blocking underneath. And I thought, *That’s bad. That is just wrong. I need to be proactive and put that blade down.* So I did.

“ TRACK forms really get employees to think things through first and forces them to ask for help when they don’t understand something. ”

– Malerie Carr, safety coordinator/California, Peterson-Cat (2003-2021)



TRACK forms are placed on every machine being repaired.





Well, there was a red tag on the tractor that I hadn't seen. It was hanging off the key in the ignition, and all I saw was the key and didn't think anything about it. But that machine had been red tagged for a reason, and to this day, I don't know what it was. I could have done some serious damage to that engine. Thankfully, that didn't happen.

"As I was walking back into the shop, a young technician from the Brand Ambassador class said, 'Hey, that's a violation. The door's only part way up. We have a policy on roll-up doors now, if you didn't know. They have to be either all the way up, or all the way down. We can't stop them halfway because they can fail and fall.'

"I got to thinking about all that, and the next morning during our JumpStart meeting, I got up there and addressed it. "I have to apologize to the group because I violated one of our policies," and I was looking right at that tech, and then I acknowledged and thanked, and appreciated him as we do in JumpStart. "And I'm going to have to report myself. But I also have to report another incident."

“ By holding each other accountable and responsible for our safety, it helps enforce our overall safety culture, which all boils down to this: Safety begins with me. ”

– Jeff Goggin, chief operating officer, Peterson-Cat



Top to bottom: Roll-up door partially raised, a violation of company safety policy; Machine with lockout tag

And then I told them about the D5 outside with the blade up and no blocking to support it. "You'll know I actually did report it because your managers will see the violation in their weekly report."

"I remember seeing Vicki's [Taylor, vice president of HR] jaw drop and some people laughed and might have thought I was joking, but it was the right thing to do. Everyone has to take responsibility



for their actions. That technician was doing his job, because we've empowered employees to speak up, in a professional and respectful way, when they see something unsafe. By holding each other accountable and responsible for our safety, it helps enforce our overall safety culture. And that all boils down to this: Safety begins with me."

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### SERIOUS INCIDENT REVIEW COMMITTEE (SIRC)

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At the end of 2018, Peterson established a post-incident review process to investigate what happened and how we could learn from it. According to Malerie Carr, it has made a big difference. "The committee is made up of the safety team, Stephan [Zalesky] and the upper management group in charge of the person involved in a serious incident, even if nobody got hurt. We have the employee explain what happened and then the manager is responsible to explain what they've come up with as a recommendation for improving the process, or corrective actions. It's not about disciplining the employee. It's about what happened and what are we going to do as a company to make sure it doesn't happen again. The best part of the process is that the employees are directly involved with creating the process changes."

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### STATISTICS BUILD SAFETY

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Peterson's safety journey has evolved quite a bit over the past five years. From 2016 until year-end 2019, Peterson ranked 37<sup>th</sup> in Safety, out of the 44 North American Cat dealers. "We had 56 recordable injuries in 2019," says Zalesky concerning the RIF's (recordable incident frequency) that Cat measures its dealers on. "In 2020, we had 27 recordables, which was a 50 percent reduction. And that's because of all the safety protocols we've put in place, but most of all, everyone is being much more safety-minded."

A software program called EHS has enabled the company to track the numbers and types of injuries and put that data to good use quickly. For instance, 40 percent of all injuries were hand injuries, with lacerations being the largest category. After doing some research and analysis, they came up with the Glove Policy. "We actually already had a glove policy in place, but after digging into the figures, we added to it," says Zalesky. "Now if you're in a safety-sensitive role, which would be parts and service and rental, you need to wear at least Cut Level 2 resistance gloves. That means if you

“ Safety isn't about stats and savings anymore. It's about people's lives. We care about our people. We want them to be safe. And we want them to go home to their families every night and enjoy their lives.

– Erin Sorgel, CFO, Peterson-Cat

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*Above: Images from a video the Safety team put together to encourage safety-awareness*



“ Safety is non-negotiable.  
 – John Krumpfen, executive vice president & GM,  
 Peterson Power Systems ”



take box cutters to them, they won't cut through the gloves, yet they're thin enough for dexterity.” Today, those gloves are dispensed through vending machines at San Leandro, Santa Rosa, Eugene and Hillsboro. And they're available through the purchasing system at all other stores. It's just one way of turning raw data into actionable processes and tools to keep people safe.

The Safety team has established many other procedures in recent years to keep employees safe.

- Chocks, cribbing and blocking to keep machines immobile during repair
- Orange safety cones for driver awareness
- Lockout-Tagout on repairs in process



*Glove vending machines have been placed in San Leandro, Santa Rosa, Eugene, and Hillsboro locations.*

- Safety Centers at every location
- Ergonomics and Repetitive Motion issues
- Lifting limits
- Warm up stretches before work and throughout the day
- Masks, social distancing and sanitization during COVID-19

### THE NEVER-ENDING JOURNEY

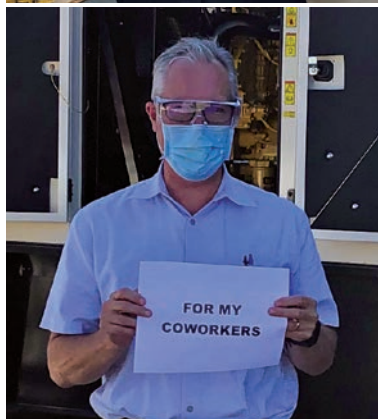
“We call it a safety journey because it never ends,” says Duane Doyle Sr. “It's not like you complete a project and then you're done. We can't ever stop, because all it takes is one person not paying attention and you can have a serious problem. That's why we call it a journey.”



In 2020, Zalesky and his team made a video highlighting the importance of our safety journey. It tugged at the heart strings and made people keenly aware of what’s at risk. It all comes down to family—Peterson’s family of employees. And the family we want to go home to every night. “We’re very proud to be a family-oriented company”, says Zalesky. “We care about each other at Peterson just like family, because family takes care of one another. And to do that, we have to be safe.”



Left to right: Peterson's original Strategy Pyramid in 2012; Strategy Pyramid in 2019 with safety now as the foundation





## CORE VALUE: CUSTOMER FIRST

R. A. PETERSON

Filed June 22, 1960

ADJUSTABLE CABLE HOPPER DOOR ACTUATING MECHANISM

3 Sheets-Sheet 3

CONTROLS FOR TANDEM OPERATED EARTHMOVING SCRAPERS

### RUBY PIPELINE

It was the day after Thanksgiving 2009, somewhere east of Klamath Falls, Oregon. Peterson field tech Jason Dolan was strapped to the deck of a Cat 345, hanging off the side of a mountain. He'd arrived on-site an hour earlier for instructions.

"Where's the machine you want me to fix?"



Jason Dolan

The job boss, Beau Cartwright, walked him up to the top of a hill and pointed down. The crippled excavator sat two thousand feet below on a sharp incline—a yellow speck in the distance.

*You're kidding.*

"Load your tools into this excavator bucket here," said Cartwright. "Then hop on and we'll give you a ride down."

"Thanks, but I think I'll walk," said Dolan. Nobody had mentioned anything about hanging off the side of a mountain at such a steep grade. What the heck had he gotten himself into? After loading up his tools, Dolan hoofed it downhill, sidestepping and sliding the length of seven football fields. Fortunately, they had turned the machine upright before they'd left for Thanksgiving two days ago. It was tied down with guidelines so it wouldn't tip over again or slide down the hill. Climbing up onto the machine's deck, Dolan strapped himself into a safety harness and reached for the engine cover. It was time to get the thing running again.

The crippled 345 was part of a fleet of machines clearing land for the Ruby Pipeline project—a \$3 billion,





680-mile natural gas pipeline stretching from Merrill, Wyoming to Malin, Oregon. Rockford Corp. had the 126-mile portion Peterson was involved with—Spreads 6 and 7. Dolan was one of a handful of Peterson field technicians assigned to the project, along with Case Shively. Both were responsible for helping repair and maintain three hundred pieces of equipment for Rockford. They lived and breathed the job 24/7 from early November 2009 to July 2011.

Dolan ended up spending six hours on the back of that 345 excavator. The problem was straight-forward enough. Two days earlier, the operator had gotten off-balance and tipped the machine onto its side. By the time they could get enough equipment down there to tip it upright again, all the oil had drained past the piston rings, which locked up the engine. It was Dolan's task to pull the injectors, drain all the oil from the cylinders, and get it running again. "The machine was on such an extreme grade that I had to tie myself off to pull the engine apart," says Dolan. "They also sent down several laborers to help me. They would hand up tools as I needed them. And I would hand them rocker shafts and injectors and hardware because there was nowhere to set anything down. It would have just slipped off and rolled down the hill."

The terrain on Spreads 6 and 7 was rugged, yet fairly normal for pipe-laying contractors used to covering a lot of virgin territory. "To get the equipment down there to work, they would daisy-chain eight to ten D8s together by winch and cable," says Dolan. "It was very choreographed. There were always a couple of D8Ts at the top as anchors for the ones going down. It was impressive to watch. I've never seen anything like it before."

Rockford's portion of the Ruby Pipeline, alone, required a huge amount of iron. No one outfit could meet



Peterson had 300 Cat rental machines on the job, between Spreads 6 & 7





Case Shively

the demand. “Rockford had their own pipelayers and support equipment, but they didn’t have enough to do a job of that size,” says Case Shively, Peterson lead on Spread 6. “They rented equipment from NC Machinery, from Pipeline Machinery, Cashman, Peterson, Cresco, Western States, and a few others I’ve never heard of. We had three hundred machines total between Spreads 6 and 7, and we worked on all of it.” Peterson and Cresco had thirty haul trucks, twenty excavators, and twenty D8T rentals on the job, plus a number of re-rents to Cashman before the job moved into Oregon. “In terms of rental volume, our Klamath Falls store has always been the smallest,” says Rich Bolen, GM of Peterson’s rental operations. “But in 2011, it was our number one rental revenue-producing store. That’s because, at that time, the Ruby Pipeline was one of the largest construction jobs in North America.”

Weather didn’t shut it down either since it was a seven-days-a-week, fast-track project. “When conditions were bad, D8s towed our service trucks to wherever the broken-down machines were,” says Shively. “And they were spread out all over. There was no one spot they brought the equipment to; you went to it. So we got dragged around in the mud a lot.” Initially, Rockford built a sled to haul the service trucks around, but after an incident where a Cashman truck got its fuel tank ripped out, they aborted the idea and reverted back to D8 tows.



*The weather was often miserable but Dolan & Shively worked through it anyway.*

Since half the pipeline sits in Nevada, Cat’s Nevada dealer, Cashman Equipment, already had a significant portion of the product support business, including rentals. They even had an air-conditioned parts trailer parked on Spread 6 at Lakeview, Oregon. However, Rockford discovered a whole new level of customer service once they entered Peterson territory. “I was there about two weeks when their master mechanic [Beau Cartwright] pulled me aside one day and asked if I’d just show up every day,” says Dolan, Peterson’s lead on Spread 7. “He wanted me to work the same schedule as his own guys. Cashman techs had to get dispatched for each job. But since I was assigned to the project, I didn’t have to wait for approval. I just showed up every day.”



Six months later, Cartwright chose Dolan for the hillside 345 rescue even though he had plenty of his own technicians. “When we were on the pipeline, we were pretty much resident pipeline mechanics,” says Dolan. “We’d call our service manager from Peterson every once in a while, just to say we were alive. But we worked for Rockford for those two years straight. Within three weeks, the boss could see that we would be there every morning. Seven days a week. No wait time. No questions asked.” The end result was a happy customer who decided they could get everything they needed from Peterson.

Over on Spread 6, Shively was experiencing a similar situation. “They were having a lot of duo-cone seal failures on final drives because of all the mud and debris. So they asked me to go check out a machine to see what parts I needed and get it taken care of. I ended up staying late into the night to get it done. The next morning, they asked me to go out and finish the job, but it was already done. After you’ve done three or four of these in a row, you start figuring out what parts to keep on your truck to make things more convenient. It’s all about the customer’s uptime.”



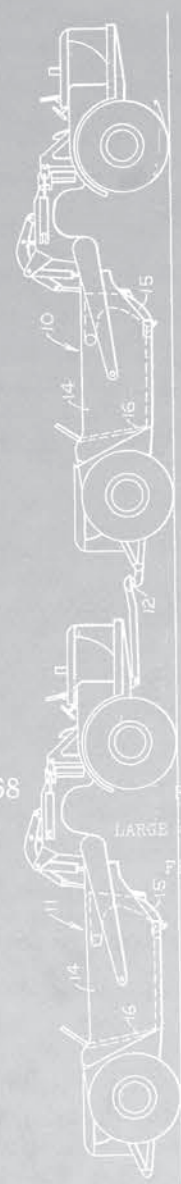
After that, Cartwright started asking him to bring in a couple more Peterson techs to help out. “It got to where they started asking us to give their mechanics a hand. In the beginning, it was basically: What do you want me to do? Where do you want me to go? By the middle of the job, I was telling him where I was going, what parts I had ordered, and where I’d be next. Eventually, he realized he could delegate that section of the spread to the Peterson guy and know it was going to get taken care of.”

During those two years, Dolan and Shively lived in the small, nearby town of Lakeview for stretches at a time. “Spread 6 was very difficult to access,” recalls Shively. “So when we got back to town, it would already be shut down for the night. We’d call in our dinner orders to-go and pick them up on the way to the hotel because the restaurants would already be closed by then.” Often on weekends, their young families would come to town for a visit, swimming in the hotel pool and hanging out with dad. It was a very big commitment for all the techs and their families.

Dolan and Shively and their teams represented Peterson well on the project, so much so that after a while, there were no other service trucks on the job except Peterson’s and the contractor’s. “The balance Peterson had between trusting us to do our jobs and still maintaining control over daily operations was amazing,” says Dolan. “Peterson is second to none when it comes to customer service and being able to make things happen for the customer. It almost seems like magic. I’ve worked for another equipment dealer so I’ve seen the difference. I’m very proud that even though we had another dealer in our territory, we represented Peterson to the point that halfway through, there were no other dealer trucks in Klamath Falls,” says Dolan. “You can accomplish anything when you’ve got a team behind you that’s got your back.”



FIG. 1--



Feb. 20, 1968

R. A. PETERSON  
 LARGE CAPACITY LOADER BUCKETS  
 Filed July 18, 1968

FIG. 2--

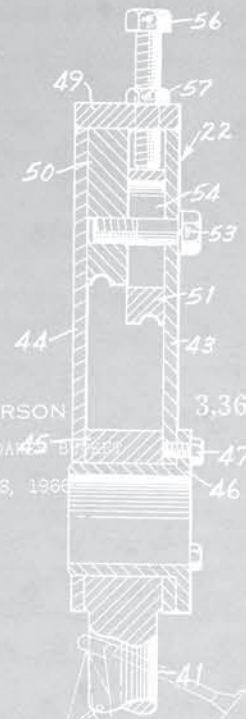
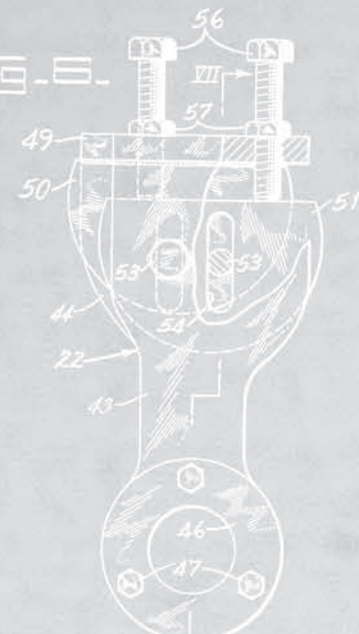


FIG. 3--



INVENTOR  
 Robert A. Peterson  
 Patented April 13, 1971  
 By *Tracy and Ginnell*  
 ATTORNEYS

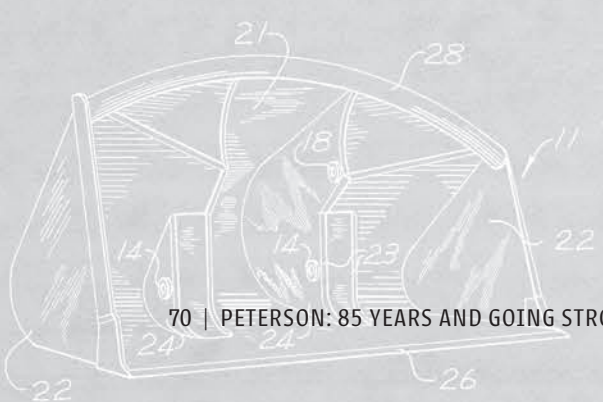


FIG. 6--

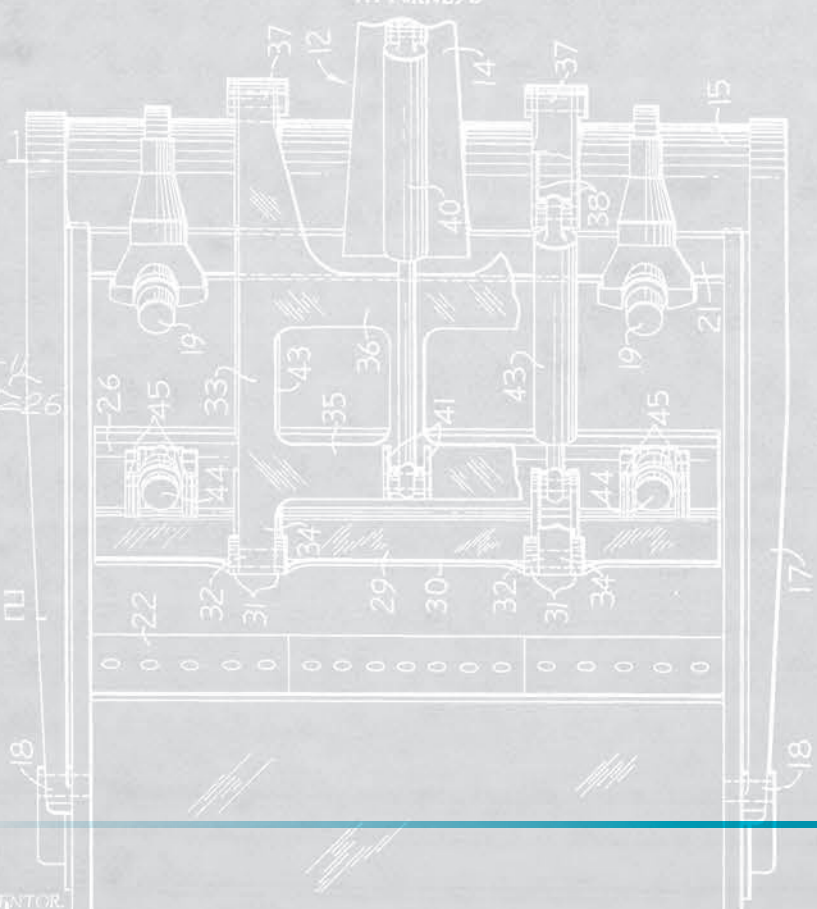


FIG. 7--



INVENTOR



Section III

# GROWTH & DIVERSITY







*Peterson rental on San Francisco-Oakland Bay Bridge job over Labor Day weekend 2007*





## RENTAL: EARTHMOVING

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### WHY OWN WHEN YOU CAN RENT?

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Over Labor Day 2007, CC Myers had a \$40 million contract on the San Francisco-Oakland Bay bridge to remove and replace a 350-foot section of the upper deck, east of the Yerba Buena Tunnel. It was the first time the bridge had been completely shut down since the Loma Prieta earthquake in 1989. But first, demolition subcontractor Silverado Construction had fifty hours to break up the 6,500-ton steel-and-concrete slab and haul it off-site. They already had a number of their own excavators out on the bridge as part of ongoing demolition work. But they needed more. “We started discussing what they would need for the project months in advance,” says Tom Lum, Peterson rental representative at the time. “The rental business is a pretty bottom-line business, but these guys know we back up everything we say. They know we’ll take care of them.” Silverado ended up renting nine machines from Peterson for the three-day weekend, including several large Cat excavators with hammers or shears, four Cat wheel loaders, and a Cat track loader. They also had Peterson techs on-site for round-the-clock support. Just in case. “This job was so time-critical they could not afford to not have somebody there. Any downtime would have impacted the job.”

While Silverado was busy ripping, crushing, and hauling away big chunks of roadbed, CC Myers crews were antsy on the sidelines, gearing up for their own job. They had started construction of the new road section months earlier, over on a platform just south of the bridge. That night just before midnight, as Silverado finished up, CC Myers began inching the 350-foot slab into place on special tracks. The football-field-size piece fit into the gap like a drawer sliding home. It took two hours, instead of the expected fifteen, and the job ultimately finished eleven hours ahead of schedule, surprising everyone. “All Peterson’s rental equipment worked great, which was no surprise to us,” says Lum. “That’s why Silverado rents from Peterson. They know we maintain our equipment. And, they know there won’t be any surprises.”





*The Cat Rental Store offers a wide range of equipment to rent.*

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## PETERSON GOES RENTAL

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These types of time-sensitive construction projects cannot tolerate downtime. That's one of the reasons Peterson's rental business is booming. "Becoming a rental company is the single largest transition Peterson has gone through in the past fifteen years." That was Jeff Goggin, back in 2007, as president of Peterson Machinery in Oregon. And it still holds true today after more than a decade of change and further expansion. "Peterson isn't the company that Howard Peterson founded back in 1936. It isn't a mom-and-pop company anymore. If you define a company strictly by its largest pool of assets, then

we're a rental company that just happens to be a Caterpillar dealer," says Goggin. "We have more assets in capitalized rental equipment than anything else."

Of course, Peterson is still very much a sales and service organization with a constantly growing footprint. But demand drives focus. And today's customers are demanding more rentals. The rental market is on a huge upswing in metropolitan areas all across the nation. From do-it-yourselfers and landscapers to contractors who want less risk or



can't own everything they'll ever need, rental is the answer. That's where Peterson comes in. "Nobody owns more Cat equipment in California than Peterson," says Goggin. "It's a big risk, but it's also highly profitable if managed properly." From scrapers and generators to skid steers and light towers, Peterson rental companies collectively offer the largest variety of rental equipment in its tri-state territory of California, Oregon, and Washington.

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## PETERSON'S RENTAL PAST

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Before 1990, Peterson's rental efforts in the traditional earthmoving market were hit-and-miss. "We had a book that listed all the customers who would rent," recalls Dave Sinclair, retired Peterson salesman (1965–2001). "Most of the machines came back from long-term rent that we had hoped would turn into a sale. Instead, we'd park them out back and called it our rental fleet. It was just a handful of machines. Nothing like today." That changed significantly with Peterson RENTS, a concept Duane Sr. instigated in 1992 as Peterson's general manager. "That's when we bought specific machines to put into our fleet," says Sinclair,

"so we could offer our customers new, low-hour, high-quality, heavy-duty Cat iron." The result was a clean, well-maintained fleet of Caterpillar equipment, known for their iconic blue tops.

Since then, Peterson's rental business has developed even more. "Today, if you look at the scope of what we own and how we rent, it's evolved and become quite impressive," says Goggin. "We are now a major, major rental house. Rental represents 20 percent of our total revenue."

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## CCE: THE NEW ERA OF SMALL

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One of the things that drove Peterson's rental growth was the launch of Cat's new Compact Construction Equipment (CCE) line at the turn of the millennium. CCE was a direct response to the market's shift toward tightly quartered urban projects, which were fast overtaking large traditional dirt contracts. Cat's new skid steers, mini excavators, and mini wheel loaders were a big departure from the mammoth machines of the past. And it took some getting used to. For one thing, profit was a huge concern. Not only could a couple



*Move over big brother—Cat 305E mini excavator versus Cat 538 log loader*





*Current Cresco facility in Livermore, California in 2020*

## THE MANY FACES OF CRESCO

**Cresco Equipment Rentals (est. 1997)**  
Tools & equipment for contractors for commercial & residential projects

**Cresco Production Express (est. 2000)**  
Entertainment industry equipment rentals

**Cresco Xpress (est. 2002)**  
Homeowner retail tools & equipment rentals

**Cresco Facility Services (est. 2003)**  
Equipment for facilities maintenance & repair

**Cresco Heavy Rents (est. 2010)**  
Large Cat equipment rentals (formerly Peterson Heavy Rents)

dozen skid steers fit in the shadow of a 657 scraper, but you'd have to sell at least thirty to equal the price of the one giant earthmover. "This was revolutionary to our traditional business model in terms of how to make a profit," says Goggin. Today, CCE and BCP make up 80 percent of the industry.<sup>1</sup> That's one of the biggest challenges of the past couple of decades because Peterson's business model was built for big equipment. Caterpillar's solution came packaged in a new marketing approach, the Cat Rental Store. The retail outlet model added small, allied equipment like pressure washers, portable compressors, scissor lifts, and pavement breakers to its traditional Caterpillar product mix, bringing a new level of availability to its customers. The caveat? Cat wanted full buy-in from all of its dealers.

## GOING RETAIL WITH CRESCO

By the time Caterpillar issued its directive in 2000, Peterson's rental business was already flourishing. "One of the first things Duane Sr. did as the new dealer principal was to buy Cresco," says Goggin. "It was a brilliant move." At the time, Cresco was a small rental company with excellent brand recognition<sup>2</sup>, focused on home improvement, landscapers, and small contractors. In 1997, they had two stores—one in Martinez and one in Richmond.



*Grand Opening of the first SF Cresco, in 1997. Tom Sparacino 2nd from left; Chris Smith at far right.*

1 Building Construction Products (BCP) are backhoes and small equipment of 100 hp or less, including pavers

2 CRESCO stands for Cushing Rental Equipment Services Company. Chet Cushing founded the company in 1984 in Martinez, California





“Duane Sr. and Jerry Lopus [VP of Sales, at the time] hired me to start a retail rental business because they knew Cat was moving in that direction,” recalls Chris Smith, president of Cresco. “It was fun and exciting because we had to start from scratch. The first thing we did was found the Nor-Cal Rental Group. It was just me and a post office box, in the beginning.” Smith spent four months searching for the perfect company to buy. In May 1997, he found it. “Cresco Equipment Rentals had been a great Peterson customer and a big Cat user for years. When we bought it, they were on a down cycle and didn’t have any Cat equipment left.” Cresco was the first of many small rental outfits Smith purchased under the NorCal banner. And it continued to grow, adopting the Cresco name because of its high recognition.

“Duane Sr. was ahead of the curve when it came to rental stores,” says Gary LeVar, Cat’s western district manager from 2000–04. “The Cresco situation was going on before the Cat Rental Store concept really took hold. Duane’s acquisition of Cresco was controversial with some of the Cat people who weren’t living and breathing it like I was. He had a very successful business model that worked incredibly well for the Bay Area. And until Caterpillar could prove why he should change, he had every right to stand his ground.” Over time, Caterpillar went the same route in high metropolitan areas with the Cat Rental Store brand. LeVar was able to convince his superiors to let the Cresco name stand with the proviso that any new branches

“ One of the first things Duane Sr. did as the new dealer principal was to buy Cresco. It was a brilliant move.

– Jeff Goggin, chief operating officer, Peterson-Cat

”



*Left to right: Robert LeVar, Duane Doyle Sr., Duane Jr., and Cat SF district manager Gary LeVar*

Peterson opened would carry the Cat Rental Store name.

In 2007, Peterson Holding Co. bought Cresco, bringing it under the Peterson umbrella while still retaining its separate identity. Today, Cresco has nineteen locations throughout Northern California. “Our service is why we get the business,” says Smith. “You can get what we have at a lot of different places. But if we do our job really well and make it fun and interesting and problem-free for the customer, they’ll come back.” And they do.

## CRESCO BRANCHES OUT

Cresco has grown many times over since NorCal Rental purchased it back in 1997. Much of that has come by listening to its customers. “If we’re really risk-takers and entrepreneurs interested in getting their business, then we’ll listen and try new things,” says Smith. “Some ideas have been duds. Others have been huge home runs.” Ten days into



the business, with two stores, two backhoes, and a smattering of small equipment, Smith called DeSilva-Gates to see what the market was short on. “If you can get skip loaders, we’ll rent them from you,” they told him. A week later, Cresco had ten skip loaders out on rent to DeSilva-Gates. Within three years, Cresco was the largest owner of Massey-Ferguson skip loaders in North America. “There was a demand that nobody else was meeting, so we stepped up and filled the need,” says Smith. “Skip loaders became a hot market and a big part of our business. It got us onto a lot of jobsites. And the only reason I bought them was because of DeSilva-Gates.”

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## CRESCO GROWS ITS BRAND

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Cresco continues to grow by pursuing both traditional and non-traditional markets. In 2000, they



launched Cresco Production Express, an entertainment-based outlet in South San Francisco. In 2002, they acquired their first two Cresco Xpress homeowner retail outlets in South San Francisco and Burlingame. And in 2003, they launched Cresco Facility Services to provide specialty equipment for ongoing maintenance and repairs of facilities and campuses. “Customer demand has led to 90 percent of the decisions we make as a company,” says Smith, “decisions on whether to take a risk or not.” The goal for each expansion is to bring Cresco’s level of service to a broader range of markets, with specific assets to match those needs.

One of the more exciting moves was the launch of Cresco Production Express in 2000, geared toward concerts, movies, festivals, and special events. “We landed the second *Matrix* movie our first year, which really put us on the map,” says Smith. “We were already known in the construction market, but doing *The Matrix* was a whole new venture.”

One day, Smith was out on a roadway set built at an abandoned airstrip at the Alameda Naval Air Station. During filming, bullets pumped through the air, spewing spent shell casings out onto the pavement like liquid metal. “They couldn’t figure out how to clean up all the casings every night and be ready for the next day’s shoot. We suggested buying a Tenant 66-inch sweeper for them to rent



Top, counter-clockwise: Peterson’s first stand-alone, Cat-branded rental store in Oregon (Springfield/Eugene area) in 2006; Springfield crew 2006; Duane Doyle Jr. & Rich Bolen



for the duration of the shoot. They liked the idea. We put it out on the movie set right away, and it swept up bullet shells for three months. When the filming was done, we put it in our fleet. And that's how we got into the sweeper business—because a customer had a specific request that we were able to fill quickly.”

Production Express also provided all the support equipment for the third *Matrix* movie, *The Hulk*, and several others. But landing that initial opportunity took a lot of networking and persistence. “We want to be the recognized leader in our industry, the top-of-the-mind, number one choice for tool and equipment rental for anyone from a movie producer to a homeowner to a concert organizer to a construction boss,” says Smith. “To do that we have to chase every single opportunity in every market we can find.” Then it comes down to listening to the customer and being willing to take the risk.

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### THE CAT RENTAL STORE: RENTAL CAT'S WAY

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True to his promise, Duane Sr. opened Peterson's first Cat-branded rental store in Oregon in 2003, at its Eugene headquarters. Three years later, the Cat Rental Store moved to its own location in Springfield just ten minutes away. “Traditionally, Cat Rental Stores did not include Heavy Rents [heavy equipment rent-to-rent], but it works well for us because of the size of our territory,” explains Rich Bolen, GM of Peterson's Oregon/Washington rental operations. “And it's more convenient for our customers because they can rent a D8, a light tower, and a three-inch trash pump all from the same place. We're both rental services *and* rent-to-rent—the A to Z model.” Peterson's Cat Rental Store combines heavy equipment rentals with the large-inventory, high-transaction, one-stop-shop mentality of the retail rental business. The Oregon market took to it like a duck to water.



#### TYPES OF RENTAL OPTIONS

**Rent-to-Rent**—Strictly on a daily, weekly, or monthly basis only.

**Rent-to-Sell**—Rented out to eventually be sold at a lower price.

**Lease RPO**—Rental Purchase Option for customers who want to expense rent charges over several months; rental payments go toward the purchase.

**Rental Services**—Retail-type business that includes anything from mid-sized tractors to lawnmowers; comprised of a high percentage of allied, non-Caterpillar equipment.

**Heavy Rents**—Traditional heavy equipment rentals. Includes scrapers, large excavators, wheel loaders, dozers, and motor graders (all Cat models); assets are owned by Peterson's Sales Department.

**Power Rentals**—Rental of power generation equipment through Peterson Power Systems, Inc.

**PTI Rent-to-Rent**—Truck fleet rentals from Peterson Trucks Inc.

**Idealease**—Fully maintained truck lease for customers who want to focus solely on their own delivery business.

**Rent-to-ReRent**—Rentals to other Caterpillar dealers or rental houses when they don't have what they need, or vice versa.





*The Cat Rental Store, Hillsboro, Oregon in 2018*

Peterson went into the business full tilt. “Cat mandated that we use the Cat Rental Store model in Oregon,” says Goggin, “but we took their idea and ran with it the Peterson Way. We didn’t come in with a few pieces and wait for the demand to dictate our inventory. We came in with hundreds.” Backed by fifteen years in the local rental market, Bolen knew exactly what Peterson’s inventory lacked. “We built up our non-Cat inventory to over six hundred items with aerial equipment, trucks, reach forklifts, traffic control equipment, light towers, forestry mowers, and much more. We had to park some of it out along the fence line by the freeway because we were running out of room,” says Bolen.

Since then, Peterson has grown its rental presence throughout Oregon and Washington. It also uses the Cat Rental Store branding at many of its California rental locations. Today, Peterson’s Rental Services group operates out of thirty stores throughout Northern California, Oregon, and southern Washington.

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## OREGON’S THREE-IN-ONE RENTAL BUSINESS

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Peterson’s Oregon rental business was a hybrid from the start, built upon Cresco’s success and the Cat Rental Store template. “In order for a rental business to be viable, you need to have all the other allied products because customers aren’t going to come to a place that only rents backhoes,” says Duane Sr. “People want a store that rents whatever they need. In California, we fully embraced that. We bought Cresco because we didn’t want to start from scratch. And the Cat Rental Store model hadn’t come out yet.” In Oregon, Peterson took the lessons learned with Cresco, fused it with Cat’s business model, and added heavy equipment rentals and power generation up to 100kW. (Large commercial power is still under Peterson Power Systems in Oregon.) What emerged was a three-in-one anomaly that has proven quite successful in the Oregon market.





*Heavy Rents carries traditional large dozers, scrapers, excavators, wheel loaders and motor graders.*

With the acquisition of Halton in July 2010, the Cat Rental Store moved one hundred miles north to Portland, where two-thirds of the state's population resides. Today, Cresco and Oregon's Cat Rental Stores remain distinct entities based on their local demographics, with synergy and success as their common goal. "In order to drive business, we need to have the inventory, trailers, and personnel to be able to get customers in and out of here in ten minutes," says Bolen. "Time is money and if we can save our customers time, we've saved them money. True success will come the day a line of cars is waiting to get into our yard at 7:00 in the morning when we open, just like Cresco in California."

In August 2009, Cresco also took over Peterson's Heavy Rents fleet, comprised mainly of large dozers, scrapers, wheel loaders, blades, and excavators. An internal group within Peterson's Earthmoving Division had been handling the fleet since the

mid-1990s. "Rental is what we do so it just made sense," says Smith, whose team was already calling on many of the same customers. "Now Cresco handles all the day-to-day operations for Heavy Rents—the logistics and marketing and distribution and billing.<sup>3</sup> It fits us really well and makes for one uniform operation."

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### ONE PHONE CALL AWAY

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Peterson's entire rental enterprise continues to push the limits, constantly chasing down the next new market opportunity. The goal is to provide customers with a seamless experience, beginning with one phone call. Peterson's rental team does the rest. "We do everything we can to provide amazing customer service," says Smith. "That's our business: coordinating the logistics to get a piece of equipment for a customer, when and where they need it. That's the kind of customer service we thrive on."

<sup>3</sup> The Heavy Rents inventory still belongs to Peterson's earthmoving sales group, yet customers deal only with Cresco and the Cat Rental Stores for their rental needs.



## CORE VALUE: FUN

### ROUTINE FUN ON THE JOB

When it comes to enthusiasm, drive, and having fun on the job, few can match Cresco's President, Chris Smith. "My fondest memories at work are when Cresco accomplishes something together for a customer, and in the process, it becomes really fun because we're doing it together." One of Smith's favorite recollections happened not long after the launch of Cresco's Production Express business in 2000. One day, he got a call from Bill Graham Presents, the famous concert-production company based in San Francisco.

"For months, we had been begging these people for their business. One day they call up and say, 'You want our business? Here it is. The Rolling Stones are coming to town in August and you guys got the deal.'"

It would ultimately help put Cresco's Production Express on the map. Smith was elated.

As the date drew near, the team assembled the vast amount of equipment needed—boom lifts, scissor lifts, generators, wheelchair lifts, golf carts—and got it all prepped for delivery. "The production crew was going to show up that morning ready to go, so we had to have everything delivered by Sunday night. When our staff started delivering equipment to their laydown yard at PacBell stadium [now Oracle], they realized it was going to be a push to get it all there on time. We had thirty-some-odd golf carts to deliver, and you can only load four or five on a truck at a time. And by then we didn't even have time for trucks."

Since the Cresco store was only two miles from PacBell Park, they decided to drive the carts over themselves. They just needed a lot of people to do it. "I knew some college kids that were looking for work and I grabbed my wife and kids and we all met over at Cresco in San Francisco," recalls Smith. "We had about twenty employees there on a Sunday afternoon ready to deliver golf carts. So we all took off—mechanics, sales guys, the store manager—everybody in their golf cart driving down Indiana Street, then Third, caravanning in a row all the way to the stadium.

"People were waving at us and honking because it was a pretty unusual sight. We had guys racing and pulling up next to each other and laughing. Everybody was smiling and laughing because we were part of something new and exciting. And it was freezing cold. We had no jackets because it was hot in Alamo when we left for the city. But it was classic foggy, wet, cold San Francisco weather downtown. So we're driving down the street and my wife is in the cart next to mine and she looks over and yells: 'You know, I must love you to do this on a Sunday,' and then she just took off down the street. I'll never forget it.



We enjoy what we do



Top left, clockwise: Challenge to rent 3000 units in year coming out of the recession in 2010; Elvis (aka Chris Smith) giving presentation at Cresco Christmas party in 2002; Cresco team-building event on the USS Hornet in Alameda in 2001



“It was a blast. If you can’t have fun doing that, then you need to go work somewhere else because that was hilarious. We did what no other company could have done that day,” says Smith. “We showed up with all those golf carts and equipment and helped kick off the Rolling Stones concert.”

Smith’s attitude epitomizes Peterson’s philosophy on fun. “At Cresco, we rent Tonka toys and trucks to people all over Northern California. How can that not be fun? We basically rent fun and tools and equipment to people every day. Now it’s not called fun; it’s called work. But the reality of fun as a core value means that we can find ways to have fun doing our day-to-day activity—which is rent equipment to customers—and make it fun in the process. That’s the true embodiment of it—making work fun whenever you have the opportunity.”





*Peterson Power modules ready to deploy.*





## RENTAL: POWER GENERATION

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### POWER WHEN THE LIGHTS GO OUT

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**W**ithout energy, industry cannot exist. That's the whole reason behind Peterson Power's Rental Division, which rents backup power for emergencies, repair contingencies, and standby power. Backup power isn't a luxury anymore. It takes less than a second of interruption to shut down an entire manufacturing plant for hours, with millions of dollars in lost revenue. Ten years' worth of research in the Biotech industry can be lost in minutes because of temperature variance caused by a power failure. Big dot-coms and data centers store the world's data in their facilities so we can rest easy knowing our information is secure. "Our customers are selling security and reliability to their customers," says Jeff Goggin, Peterson's COO. "And we are *their* backup."

Peterson Power's current rental fleet includes generators, air compressors, temperature control systems, and ancillary equipment. It covers the entire Peterson territory of Northern California up through southern Washington. But it started out small—very small. In 1988, Peterson Power's rental fleet was just an assortment of generators, cables, and switchgear for the EPG (Electric Power Generation) market. "Our rental fleet was stuff that our engineers had made a specifications mistake on or a job had gotten canceled," says Roger Wood, former Power Rental manager. "Back in 1991 when I took it over, it wasn't a designated fleet. Basically, anything we didn't sell we put into our rental fleet and tried to rent it down so we could sell it. My biggest goal, at that point, was to hit a million dollars in rental."

By 1996, Power's rental business was really kicking. "We were growing like gangbusters by the mid-to-late '90s," recalls Wood. "We were doubling every three or four months, from two million dollars to four, to eight. And then came 2001. We hit thirty million that year because of Y2K and the California energy crisis. It was a huge year for us. In 2002, we dropped back down to seventeen million but that was just back to normal."





## EPG: GENERATORS

On December 31, 1999, every rental generator in the country was out on loan. The Y2K (year 2000) panic had everyone on edge, waiting for a computer glitch to take down the entire power grid. “Y2K was a big scare that nobody could confirm or deny,” says George Schalk, current Power Rental general manager, who was working for Aggreko at the time. “Every generator was gone during that period. Aggreko was out. Cummins was out. Peterson was out. There wasn’t a single rental generator available.” Peterson field techs were also out, working around the clock that New Year’s Eve to monitor the situation. In the end, Y2K turned out to be a non-event, but nobody could afford not to have backup power... just in case. “We had half a million dollars’ worth of rental generators directly attributable to the Y2K crisis,” says Jeff Goggin, then-president of Peterson Power Systems.

Over the past twenty-five years, the Silicon Valley has been a defining part of Peterson’s Bay Area personality. Emerging businesses and giants in the technology sector have all fueled Peterson’s electric power generation (EPG) business. “These big companies can’t afford to have a power outage,” says Schalk. “They all have backup generators on-

*Rental generator lineup & power modules onsite*



site in case of a power failure. And all those generators need to be serviced and maintained. Every time we go out to do a service or take a customer's piece of equipment off-line for repair, a rental generator goes along to back it up. We support our service department on basically every project they do to eliminate any risk to the customer."

Peterson's Rental Power group functions in two modes: known events during regular business hours and middle-of-the-night emergencies. Sixty percent of the time, rental generators go out on a standby basis as backup for scheduled maintenance or repairs. And sometimes they're providing prime power during planned events for customers who run their entire building project with Peterson mobile power modules. The other 40 percent are emergencies—like when a transformer blows, half the city is out, and the local public utility calls. "Those middle-of-the-night calls are when we have to be ready to act on a moment's notice," says Schalk. "We usually have equipment rolling out of the yard within the hour. It's a team effort that takes a lot of coordination. And we're good at it."

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## AIR COMPRESSORS

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In the early years, Peterson Power's rental group branched out into air compressors to meet the growing needs of its customers. Today's portable air compressor market has evolved into much more than just powering jackhammers. "We provide process and instrument air for the local refineries," says Schalk. "They use air to move product through their facilities, power their instrument controls, and even run pneumatic conveyor belts for coke [coal dust] and other by-products." Compressed air helps make snow up in Tahoe and drills deep holes for water wells and building foundations. And it still runs smaller pneumatic equipment out on the construction site.

Rental Power has also gone after some very specific applications. "Blowing pigs" in the pipeline

“ Those middle-of-the-night calls are when we have to be ready to act on a moment's notice. We usually have equipment rolling out of the yard within the hour.

– George Schalk, rental general manager,  
Peterson Power Systems



*Rental air compressor unit*

industry is one. "During construction, they'll weld the seams and bury the pipeline underground, which causes residue to build up on the inside," explains Schalk. "So they stuff a giant sponge—or plug wrapped in material—into the pipeline, seal it off, and fill the line with compressed air. That air shoots the plug—or pig—all the way through the line, wicking up all the moisture. They'll do that several times until it's clean." Blowing fiber optics is another application, which is widely used in the telecommunications industry. "When they're running fiber optic lines through a conduit underground, they use high-pressure air to push the fiber optics from one side of the street to the other. Instead of pulling it through, they're blowing the lines through with compressed air."

And then there's The Crush. Since Peterson's territory is home to the world-famous Napa Valley wine region, it's a perfect match. It's also an ideal venue for Peterson's Rental Power group because it requires two product lines for one application. "Most wineries today use compressed air to crush





*Rental air compressor onsite during the seasonal Crush.*

their grapes with a bag, or bladder,” explains Goggin. “They also need to chill the juice during the fermentation process, which utilizes our temperature control equipment. We started in 2002 with Fetzer and Sutter Homes, and now we’re in Chateau St. John, Wente, Chateau St. Michelle, R. H. Phillips, and many others.”

“All those grapes ripen within a ten- to twelve-week period, which means every grape in the state has to be crushed in that timeframe,” says Roger Wood, who spearheaded the effort back in 2003. “It’s a perfect rental opportunity for us because



*Roger Wood, Power rental manager in 1999*

we can rent that same compressor for a hundred different things during the rest of the year, from factory air to drill rigs to ski resorts to golf courses and refineries.”

“The Crush uses oil-free air compressors that run a bladder press,” explains Schalk. “They put a bladder in the center of a large tank and dump all the grapes around it. Then they fill the bladder with compressed air, which crushes the grapes against the sides of the tank and squeezes the juice out the bottom, leaving the cake—or pulp—behind.” When the harvest is larger than expected or more than their equipment can handle, wineries take a portable bladder press out into the field to process the overflow. That’s the kind of outside-the-box collaborative solution that differentiates Peterson from its competitors.

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## TEMPERATURE CONTROL (TC)

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Peterson’s Rental Power group was still young when they entered the temperature control market back in 1996. It was a decision that developed into a significant portion of their annual revenue for over a decade. And it all started with a call from Stanford University, who needed chillers to support their building expansion program. The next job was two 500-ton water-cooled systems for Microsoft in Redmond, Washington to run their data center for a year. “And then the weird and wonderful contracts started coming in,” says Matt George, Peterson Power’s temperature control specialist from 1996 to 2005. Today, Peterson’s TC group serves all of California, Oregon and Washington and is a major resource center for Cat dealers in the western half of the United States. The scope of applications Peterson serves as HVAC specialists is both broad and fascinating.

In those first years, the TC Dept. consisted of one dedicated soul: Matt George—a talented, somewhat unorthodox HVAC guru. He built a mix-and-match inventory of quick connectors and





Chiller applications

common parts that were interchangeable from system to system. “A customer would call with a hot spot in their process,” explains George. “I’d analyze it, figure out what they were trying to accomplish and what the surrounding environment was like.” From there, he knew what pieces he would need to resolve the issue. “To me, everything is a Lego—a chiller, a pump, a hose, the interconnection points and cables—they’re all Legos that we keep in our ‘bag’ to solve customer problems.

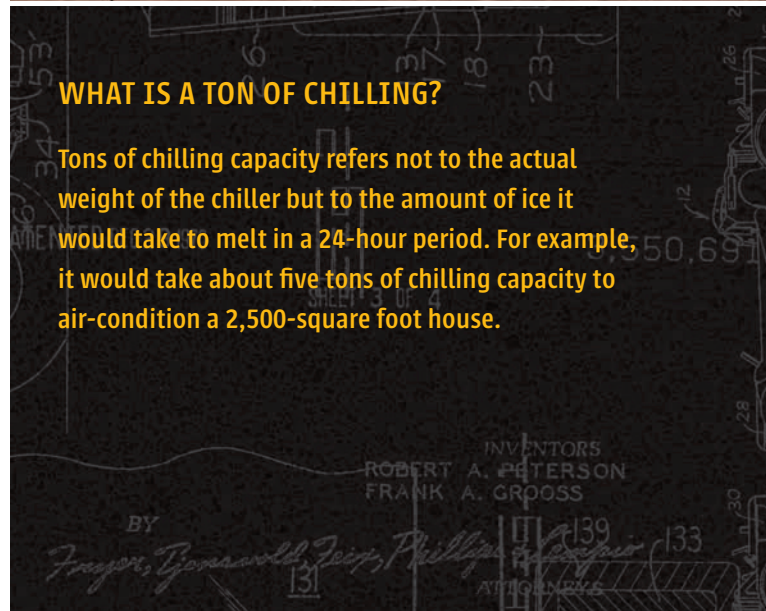
“From the beginning, Caterpillar wanted a design and functionality that set it apart as uniquely Cat. They didn’t just want a piece of equipment sitting on a trailer. They wanted a look.” When George worked for York, he studied Aggreko’s warranty issues for flaws in their systems. And when he hired on with Peterson, he was able to produce a stable, hard-working platform based on that knowledge. The industry took notice. So did Caterpillar.

As a one-man show, George engineered the projects and used technicians from local Cat dealers to do installs and hands-on support. In 2001, Randy Young hired on as a temperature control rental specialist to enhance and broaden local coverage. “I would bring the meat back to the cave and Matt would just devour it,” says Young, who had a background working for Carrier and Baltimore Aircoil. They made a great team, growing their market share both locally and nationwide. In 2003, George set



## WHAT IS A TON OF CHILLING?

Tons of chilling capacity refers not to the actual weight of the chiller but to the amount of ice it would take to melt in a 24-hour period. For example, it would take about five tons of chilling capacity to air-condition a 2,500-square foot house.







*Top to bottom: S&R welder works on packaging unit; Matt George on a job at the San Jose airport*

up an alliance with two local HVAC contractors to form a TC service department. S&R Mechanical and Sno Valley Process Solutions moved into Peterson's Benicia facility and started packaging temperature control projects. "They gave us turnkey capability, which nobody else in the market was offering at the time," says Young. "With them, we could provide complete beginning-to-end services better than anybody out there. All customers had to do was flip the switch. That's why people came to us."

In June 2016, Sno Valley decided to consolidate their operations and now handles Peterson's TC installations and repairs for the Pacific Northwest

from their headquarters just outside of Seattle. S&R still resides in the same Benicia facility—now known as MSR—and continues to provide installation and repairs for Peterson's TC group.

Peterson equipment serves a wide spectrum of temperature-driven industries. Some are routine like the aging state capitol in Sacramento that needs a shot in the arm every summer when temperatures hit triple digits. Some are one-off situations that stretch the imagination and tickle the soul. And others are so secretive the customer can't even talk about them beyond the job specs. Yet all require specific expertise and are often time-sensitive, which Peterson's TC crew thrives on. Following is a sampling from the past twenty years.

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### AGRICULTURE INDUSTRY: CHERRY HARVEST

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All along the West Coast, cherry growers use temperature control to minimize damage during harvest. "Farmers harvest tons of cherries a day and need a way of cooling them down to keep them from being crushed in transit," says George. "During harvest, they dip the cherries into a big vat of water—or hydro-cooling tank—fed straight out of the irrigation lines in the field. During drought years, they reduce water use, increase the volume of cherries, and decrease the time in the bath. Using our PY [Peterson-York] air-cooled models, the water chills down into the thirties, tightening the skin around the cherry 'must' and protecting it from being crushed." The process has been credited with saving up to 20 percent of the harvest. "In the early years, I would go home, get a bag of cherries, throw them into some ice water, and time them to see how long it would take them to get firm," says George, who also consulted engineering fundamental manuals in his calculations. "It's really just a big jigsaw puzzle. It doesn't matter what the product is that you're working with, the fundamentals are the same."



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## BIOCHEMICAL INDUSTRY: PHARMACEUTICALS

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“There are several large Bay Area R&D facilities where they have ten, twenty, even thirty years’ worth of research living in petri dishes,” says Schalk. “If all of a sudden Genentech or Bayer loses power, all that work goes down the drain. So they have N+1 backups at each of their facilities, which is an extra backup generator to their backup. We always make sure there’s a backup plan in place in case there’s a power failure. I don’t want to be the guy responsible for losing \$10 billion worth of research because the generator threw a belt and we couldn’t get another one out there in time.”

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## COMMERCIAL BUILDINGS: TRANSAMERICA BUILDING

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In 2005, the owners of San Francisco’s Transamerica building contacted Peterson Power about providing temporary cooling for a 48-hour maintenance shutdown. At 48 floors and 853 feet tall, the Transamerica Pyramid was the tallest building on the SF skyline at the time. During the proposed shut-

down, all but one of the floors would be fine. “Bank of America’s main data center occupied the fifth floor, where literally billions of dollars of transactions flowed through per minute,” recalls Randy Young. “At the time, it was their worldwide server. And it was tied into the building’s central plant cooling loop, which would be shut down during those 48 hours. Those servers couldn’t afford to be down even for five minutes.”

Young and his crew parked a 200-ton-capacity chiller and generator out in front of the building on Montgomery Street and ran hose up five flights of stairs to the server room’s air handler. “The cross-over was the tricky part since even a slight glitch could expose our equipment to 48 floors worth of pressure, which could rupture the hoses, drain out all the chilled water from the loop, and take those servers off-line for the rest of the weekend.” It was a risk they carefully calculated for and monitored throughout the weekend. “We were their lifeline during that shutdown. Our total function was to keep that server room alive.” Peterson’s TC group completed the job successfully and got called back for the next three years until the owners came up with a permanent solution.



*Cooling the San Francisco Transamerica building in 2005*



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## DEFENSE INDUSTRY: RESEARCH & DEVELOPMENT

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The San Francisco Bay Area has a defense industry that everybody knows about but few have actually seen. Peterson's TC equipment often goes out to such jobsites, which are hidden behind layers of security and red tape. "A lot of the stuff we do is very tight-lipped," says Young. "Our job is to get in there, do our thing, and get out. No questions asked." In 2015, Peterson installed a low-temperature chiller for AMPAC Fine Chemicals, located at the Aerojet site in Rancho Cordova. The system was designed to deliver a negative 40°F brine solution for their manufacturing process. "I don't know exactly what they do there," says Young. "Something to do with chemicals and explosives. All I know is that when I drive through the front gate, there are guards with guns."

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## HEAVY CONSTRUCTION: L.A. HARBOR TUNNEL

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In early 2000, the Los Angeles Port Authority let a bid to bore a ten-mile horizontal tunnel beneath the L.A. harbor for utilities. Seattle-based RKK Soil Freeze bored a 150-foot deep vertical shaft at each end of the proposed tunnel for access during tunnel construction. Instead of using conventional shafts shored up by rebar and concrete, they chose to freeze the ground, creating thick permafrost walls that needed no further stabilization. The 14-foot diameter shafts were used to convey the large drilling equipment down to bore the tunnel.

“ Our customers are selling security and reliability to their customers. And we are their backup.

– Jeff Goggin, chief operating officer,  
Peterson-Cat

”

Matt George designed the chiller system to keep the ground frozen solid during construction. "They came up with the concept to drive into the ground 150-foot long, 4-inch diameter pipes, which looked like long pieces of picket fence. Each of those was like a capped wellhead—a pipe within a pipe—where they'd pump calcium chloride down into the center pipe at negative 20°F. The closed-loop system would absorb the energy [heat] and bring that back to the surface. Eventually, they created an eight-foot-thick wall of permafrost as solid as concrete."

From there, the contractor dug out the center, leaving a hard-as-rock shaft that required no further shoring. Then they could bore the actual tunnel underneath the harbor. After twenty months of construction, they shut down the chilling system, pulled up all the equipment and piping, then back-filled the holes. "It was a pretty clever method but relatively expensive, so they had to be very specific where they used it," says George. "But it was a very fun project to be on."

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## TELECOMMUNICATIONS INDUSTRY: DOT-COMS

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The growth of the Silicon Valley has had a tremendous impact on Peterson Power Systems as a whole, and its TC group in particular. Dot-coms and data centers generate huge amounts of heat that need to be managed and mitigated. "Heat is a natural byproduct of computers. Every data center needs cooling and maximum ventilation to keep its computers and hard drives running," says Schalk. "Without the proper ventilation, all that equipment will overheat and shut down." When the dot-com boom first hit in the early 1990s, a lot of the buildings going up were pre-fab tilt-ups. Vast amounts of money were waiting to be made so they built quickly, using huge cranes to put up four walls and a roof, often in one day. Some of those dot-coms were ready to move in and get started before they had the HVAC systems set up.



“We would bring in temporary power and cool air so they could get started making money until the stationary equipment was installed,” says Schalk, “because at a million dollars a day, they wanted to open for business ASAP. All that temporary equipment came out of our TC rental fleet.”

And the list goes on: cooling fish hatcheries in Shasta and Oroville dams during the drought; building high-temp thermal heaters for the Tar Sands fields of Alberta, Canada; cooling components for wing segments in Boeing’s Raptor prototype project in Seattle; cooling seawater wave tanks to test how to collect oil spills in the Arctic; and cooling down actors on movie sets like *Bicentennial Man*, *Cat Woman*, and *The Fantastic Four*.

Today, Peterson’s temperature control group covers most of California on up into Canada, including whatever the local Cat dealers aren’t interested in pursuing. “We’ve got agreements with several Cat dealers to supply and re-rent equipment to them, utilizing their own generators,” says Schalk. “L.A. is like grabbing the tail of a dinosaur. It’s four times the size of our Northern California market. And it’s a startup operation for us so it’s very competitive.”

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### RENTAL TURBINES: PARKING LOTS OF POWER (2000–2018)

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In 2000, Peterson Power Systems jumped into a brand-new market to address the growing need for clean temporary power. The turbine rental market was created to meet customer demand for “parking lots of power,” as the district manager for Solar Turbines, Jack Plescia, called it. Gene Hamilton, Peterson’s gas turbine sales rep at the time, developed a close working relationship with Plescia over the years, building Peterson’s presence in the turbine business all across the world. “The largest portable diesel engine we rent in a single package is two megawatts,” said Hamilton, back in 2009. “These turbines are five megawatts. The difference

is, they’re clean energy. You can leave them running for six months straight and never take them off-line and they will do five megawatts the entire time. These Solar turbines are as tough as nails. They’re bulletproof.”



*Top to bottom: Gene Hamilton with Bruce Baxter of Toromont at Markham site in 2003; Markham mobile turbine power plant in Toronto.*





*Top to bottom: Jay Pleus at installation in oil fields of Hereford, Colorado; Milne Point installation on the North slope along the Arctic Ocean*

In 2000, Peterson took delivery on its first two Solar T60 turbines. Caterpillar bought two of their own. At the time, California's energy crisis was battering the entire West Coast. Peterson and Caterpillar placed those first four turbines at a

Shell refinery in Anacortes, Washington to help offset their skyrocketing utility costs. For nearly two decades, Peterson was Caterpillar's resource for mobile turbine power across the globe in Australia, Canada, Colombia, Costa Rica, Venezuela, Africa, and the Middle East. Most of the installations were gas and oil-related.

In July 2018, management decided to sell its turbine fleet and invest in other opportunities. However, Peterson Power still maintains the capacity and the expertise to place turbines anywhere in the world and will continue to do so upon customer request.<sup>1</sup>

<sup>1</sup> For the full story, see CH7 Turbines, on pg 101.



# CORE VALUE: *CUSTOMER FIRST*

## STANFORD ON ICE (1996-2011)

R. A. PETERSON  
BULLDOZER

2,485,407

Filed April 8, 1947

4 Sheets-Sheet 3

One of the best “gets” in Peterson Power’s rental history came in 1996 with Stanford University. It was a nail-biting, half-a-million-dollar decision that catapulted Peterson into a new market called Temperature Control. “I remember the day Roger [Wood] came into my office,” says Jeff Goggin, then general manager for Peterson Power Systems. “I’d already discussed his proposal with Duane [Doyle Sr.] about buying three chillers, and he supported the idea. When I told Roger the news, he started freaking out because now he had to make it happen. There was a lot riding on his shoulders.”



That first Stanford job was a landmark decision with many different moving parts and players. Matt George, Peterson’s first temperature control expert, was working for York International at the time. “I was attending a class for York when they marched a Cat guy through, talking about rental chillers and how Cat was getting into the business.” Upon returning home, someone at Stanford contacted George about a quote for temporary chilling. And after reviewing the project, he dug out the Cat guy’s business card and gave him a call, who then put George in touch with Peterson.



Left to right: Chiller installation at Stanford University; Roger Wood receives the “Best of the Best” award from Duane Doyle Sr. in 1999



Caterpillar was, indeed, busy building a strategic alliance with York International. They'd been watching the worldwide rental market—big contenders like Aggreko, G.E., Allston, and Sunbelt. All were full-service rental enterprises who offered generators, compressors, and temperature control. Cat realized that to compete they had to rent more than just generators.

“At the time, I didn’t know much about chillers,” says Roger Wood, then PPSI’s rental manager. “I knew what they were and what they did, but that was it. Stanford needed an additional four thousand tons of cooling capacity for six months. I discussed it several times with Matt George, York’s service manager. He found some units and we put together a bid package and got the job.” Wood hired Matt George as a contractor to configure, install, and maintain the three York chillers.

Stanford was in the middle of a building frenzy and needed to increase their load capacity to accommodate the additional growth. “I knew those chillers would be there longer than six months because of all the other work York was doing there,” says George. “But the university said it would take six months. That’s why Roger’s nerves were on edge.” A half-million dollars was a lot of money to lay out for six months’ rent. In the end, those chillers stayed at Stanford for two years. Peterson was able to recoup its initial investment and then some.

Feb. 20, 1968 “Large campuses like Stanford, with loads of ten thousand tons or more, generally utilize a central cooling plant,” explains George, who hired on with Peterson a year later to lead its new temperature control efforts. “A central plant is the hub where all the water goes through to get chilled and then flows back out to cool off the buildings and server farms within a campus cooling loop. Our job was to add more capacity inside that plant to support their campus expansions. It was a big balancing act.”



*Roger Wood & Matt George*

That initial contract grew into several more jobs for Peterson over the next few years. In 1998–99, Stanford built an ice farm to augment its chilled water facility. Peterson rented ten more units for that project. It was part of a continuing effort to keep up with growth and elevate their central energy facility to the latest technology. When completed in early 2000, it was the third-largest ice plant in the world.

In 2003, the EPA declared refrigerants bad for the ozone and initiated a schedule of phase-outs. Stanford’s Energy Services group had foreseen the issue and sought out innovative technologies to comply with the impending mandate. They decided on an ice bank strategy using ice-on-pipe technology. “Steel coils were nothing new to the industry, but the concept of growing ice on pipe was,” says Randy Young, Peterson’s TC specialist (2001–16), who worked for Baltimore Air-

coil on an earlier Stanford ice project before coming to Peterson. “Stanford’s ice farm is an off-peak thermal storage unit buried beneath one of their campus parking lots. It’s basically a four million-gallon water tank the size of half a football field, with 360 miles of tubing—formed into school bus-size banks or coils—stacked inside, thirty feet high. At night when electricity rates are cheapest, they pump a freezing glycol solution





Peterson chillers at Stanford University in Palo Alto, just south of San Francisco.

through those coils. At 32°F, that liquid produces a thick crust of ice on the outside of the pipes. During the day, the warm water returning from the buildings on the loop melts the ice and cools the water, which gets pumped back out to the various buildings for air-conditioning and process cooling.”

The new system not only met the EPA’s stringent requirements but also netted five hundred thousand dollars in annual savings in their utility bill. “Those chillers used to run 24/7 before the new coil and ice technology was implemented,” explains Young. “With the new system, they only use the chillers at night, during off-peak hours, to build up the ice. During the day, all they need is a pump to circulate the water throughout the campus, which saves energy by not running electric chillers during the peak electrical period of the day.”

## 2006 HEAT WAVE

Much of Stanford’s construction over the past thirty years has been driven by seismic retrofits and energy-efficiency, funded by the alumni. In 2005–06, Stanford was in yet another expansion phase. August 2006 was a time of record temperatures and humidity for the entire West Coast. “It was so hot it was just miserable,” recalls Young, whose daughter attended Stanford at the time. “Stanford did not have enough chilling capacity for the five new buildings going online plus all its servers. The extreme heat degraded the capacity of their existing equipment by about 20 percent. And all our equipment was out because of the heat wave.” It was the makings of a first-class emergency.

Young was told by several people—on the down-low—that they were getting close to evacuating Stanford Medical Center and shutting down all their servers. “They were worried that word would leak out to the news





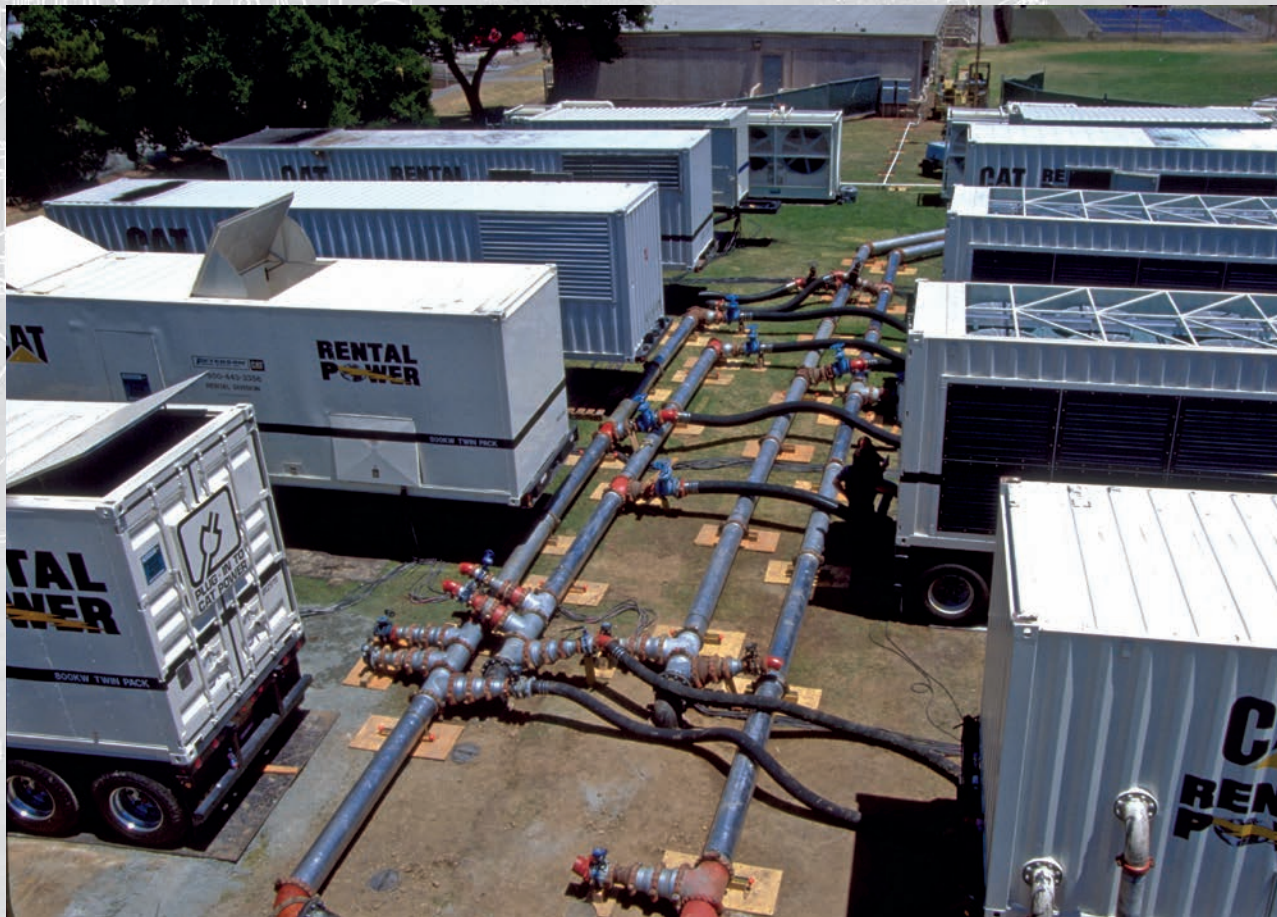
media. Imagine the uproar that would have caused.” Ultimately, they did not evacuate the medical center, but it came very close. “They’ve got the pharmaceuticals. They’ve got the patients. They’ve got open-heart surgeries and transplants going on that require very precise temperatures. And the university has all its research processes and thousands of square feet of servers that are a major hub of the internet for the West Coast. The heat wave just about brought them to their knees. There were some very excited, wound-up people trying to deal with it all.”

That August, Randy Young got several calls for temporary chilling for the university. “The Director of Thermal Energy met us out at the site, which was the soccer field, about a quarter-mile from the central plant. He pointed out where he thought the 24-inch pipeline was buried and the general footprint for the proposed equipment. We were to provide all the distribution electrical panels, temporary hose, power cables, pumps, and eight chillers with three thousand tons of chilling capacity.” The job was quoted that afternoon and awarded the next day. Stanford needed it yesterday.

That first weekend, Peterson’s crew installed fifteen hundred tons of chilling capacity. “It was exhausting and extremely hot. But we had it online and running by Sunday night,” says Young. “That Monday, they said: ‘Fantastic job. We need another fifteen hundred tons by next weekend.’” Peterson didn’t own that much equipment, so Young started calling every Cat dealer who might have chillers and got it trucked directly to Stanford. That next weekend, they were back doing the second install. “By Sunday night, we had a total of three thousand tons of temporary chillers online delivering 40°F water to Stanford’s central plant,” says Young. “It just about killed us, but we got it done.”

After the emergency was over, Peterson’s chillers and support equipment returned to the TC yard in Benicia. The next spring, Stanford requested three thousand tons on the same soccer field for six months. When they repeated the request again the next year, Young suggested they keep it on-site to avoid the wear-and-tear on the equipment and crew. “The Stanford job





Stanford University installation

INVENTORS  
ROBERT A. PETERSON  
FRANK A. GROSS

stretched our capabilities, not in terms of raw engineering—that was pretty straightforward—but because it required the specialized capabilities of our partners S&R Mechanical and Sno Valley Process Solutions. It was a real eye-opener to see what they could do and what it took to pull that job together. There was no specific engineering to do. It was all seat-of-the-pants. I managed the heck out of it as sales engineer but the experts—S&R and Sno Valley—made it work. It was a real team effort.”

In November 2011, Stanford bought the Peterson chillers as permanent standby units. Today, that central ice plant is gone. In its place is a geothermal plant, the latest and greatest technology for an institution that takes pride in being on the leading edge. “The game plan is always for us to work ourselves out of a job,” says Young. “Nobody ever wants to have rental power or chillers permanently. We’re just a stopgap. We’re here to help our customers. And then get out.” And move on to the next customer in crisis.





Markham installation with Toromont-Cat in 2003





## TURBINES

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### PETERSON'S CLEAN POWER

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**T**he power went out at exactly 4:12 in the afternoon.

“I knew something was wrong because all the traffic lights were out and people’s cellphones started ringing all at once,” says Jeff Goggin, Peterson Power’s president in 2003. At the time, he was on a bus filled with utility managers visiting Toronto’s power plants. “At that point, we thought it was just a local outage.” Turns out, it wasn’t.

Goggin was in Toronto with Gene Hamilton—Peterson’s gas turbine sales rep at the time—and a group of other industry officials to celebrate the commissioning of the new Markham 98 MW mobile turbine power plant. Peterson had nineteen Solar turbines there to offset an anticipated power shortfall that had been forecast for the summer and fall of 2003. When the news hit the public the next morning, everyone was stunned. Fifty-five million people were without power in the Northeast and Canada. It would turn out to be one of the largest blackouts in U.S. history.

Hamilton skipped the celebratory dinner that night to work with the technicians and engineers to override the systems’ safeguards and allow the turbine utility breakers to close. By five o’clock the next morning, Peterson’s turbines were able to fire up and start feeding power back into the grid, aiding the recovery. They ran 24/7 for six days straight until the crisis was over. “This was truly an unprecedented failure,” says Goggin. “Initially, I didn’t know how big it was. Several of the people at the walk-through were grid managers, so they knew. The irony is that those turbines were there to prevent exactly what happened. By being in the right place at the right time, they were part of the solution to the Northeast Blackout of 2003.”





## CREATING A NICHE

Four years earlier, in 1999, Gene Hamilton was busy studying the utility market just before California’s energy crisis hit. “It’s not like the power crisis was a surprise. All you had to do was read the right newspapers.” Hamilton attended dozens of regulatory meetings with the Energy Commission, Air Quality Management District, California Public Utilities, PG&E, and the Cal ISO trying to determine how Peterson could provide temporary power to help them with the anticipated power shortfall. He saw proposal requests for phenomenal amounts of power in California with fast turnarounds. Knowing the state expected a clean solution, he got in touch with Solar Turbines in San Diego and invited Caterpillar to join in. Peterson and Cat Rental Power bought the first four Solar T60 mobile natural gas turbines<sup>1</sup>—at 5.2 megawatts and \$2.5 million each—and launched into the rental turbine market, a market that didn’t even exist yet. Caterpillar’s only caveat was that Peterson handle the marketing and logistics, effectively making Peterson Power Systems *the* source for mobile turbine rentals, with a global territory.

1 Cat Rental Power, part of Cat’s engine division, helped develop the power rental market in the late 1990s by building a fleet of chillers and turbines and making them available to Cat dealers for re-rent. They depended upon dealers to rent, store, and maintain the equipment.



*Top to bottom: Markham turbine installation in Toronto in 2003; Jeff Goggin/R with Larry Moffat/Toromont-Cat, at the Markham site; Commissioning team led by Brian Kennedy/L in 2003*



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## ANACORTES, WASHINGTON

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Peterson's first rental was in 2001 for the Equilon Refinery in Anacortes, Washington. By then California's power crisis was drubbing the entire West Coast. Energy costs had skyrocketed from forty dollars per megawatt-hour to four hundred, prompting the Equilon plant's desire to generate its own power on-site. "We had very little experience with turbines at that point. I wasn't technically proficient enough to stand up to engineers' questions yet so I took a couple of high-level Solar people with me," says Hamilton. "They were a tremendous help in those early rentals, and they didn't have a clue about the rental market."

The Anacortes job was a one-year contract to power their refinery with four Solar T60 turbines. They ran for six months nonstop. Then the power crisis ended. Overnight. "That's when I realized we were in trouble," recalls Hamilton. "We had three more turbines on order and Cat Rental Power had ordered another ten when the whole thing started to unravel." So Hamilton hit the road looking for leads. "I was the cold-call king. I thought I had tanked my career. I turned over every rock—sometimes twice—searching for opportunities. I went to the East Coast, Canada, Europe, Asia, and Africa going door-to-door. I looked at bid lists for projects and anything that had to do with power. Jeff [Goggin] and Duane [Sr.] asked questions but they hung in there—patiently."

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## CUSIANA, COLOMBIA

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In 2002, Hamilton got a call for a turbine down in Colombia. "BP had three large G.E. turbines at a plant out in the middle of nowhere. One had failed and they needed a stand-in until they could get theirs repaired and back online. They'd already lost a month's worth of oil production." Hamilton made several trips to the site at Cusiana, Colombia. "The security is entirely different down there, even

### WHAT IS A TURBINE, ANYWAY?

A Caterpillar Solar Turbine is basically a small jet engine connected to a generator housed in two trailers. The concept is similar to Peterson's diesel-powered mobile Cat generators. The big difference is that turbines can run on a wide variety of fuels—from diesel to natural gas to biofuels—with very low emissions. They also take up less space than an equivalent-sized reciprocating engine.



Anacortes, Washington—Peterson's first rental turbine installation

at a Caterpillar dealership like Gecolsa [Bogotá, Colombia]. You don't just walk into their facility. You sign in, they look inside your briefcase, they check your laptop, then they wand you. And the security guard in the front lobby isn't some overweight guy with a flashlight either. He's a twenty-one-year-old marine-type with a big revolver and a serious attitude."

From Bogotá, Hamilton flew to a small regional airport on the other side of the Andes, about thirty miles east of the BP facility. He helicoptered the rest of the way to the compound. Kidnappings-for-ransom were still a big risk, especially out in the drug lords' backyard. Andres





*Top to bottom: Turbine at BP plant in Cusiana, Colombia; Brian Kennedy/L & Gene Hamilton at installation in Cusiana, Colombia*

Molano, Peterson's contact at Energy International—the local Cat dealer and general contractor for the project—knows the political terrain well. “Back then the security situation was very unstable. The guerilla group FARC [Revolutionary Armed Forces of Colombia], has been in power for the past fifty years, but today, the government puts much more effort into dealing with their violence,” explains Molano. Still, BP's Cusiana plant was out in the middle of a large savannah with dense eight-foot-tall grass filled with drug traffickers and who knows what.

“We were still babies at this thing,” states Hamilton, who took Peterson technician Brian Kennedy with him to help supervise the initial turbine

set up. “We had no clue. I spent a lot of time developing procedures on how to install and commission our new mobile turbines and how to do safety checks and develop customer relations. The customer had no idea what they were doing either, so it was a painful process compared to where we're at today.” At night Hamilton could hear gunshots outside, beyond the compound's double fencing and barbed wire barrier. The Colombians told him not to worry: “It's just the troops out practicing their marksmanship.” The job introduced a whole new set of international logistics and legal issues since it was Peterson's first overseas turbine venture. Still, having even one turbine out on rent beat a yard full of inventory sitting idle.

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## MARKHAM, ONTARIO

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All along, Peterson's strategy was to rent its way to profitability versus selling the turbines at a loss. It was that third turbine rental—in Markham, Ontario in conjunction with Toromont, the local Cat dealer—that ultimately kicked everything into high gear. The Ontario Electric Corporation had anticipated a power shortfall in the summer of 2003 and put out a request for proposals for 300 MW of temporary power. Toromont-Cat won 98 MW's of the 300 MW to be sited in an open field in Markham. The Markham project was a phenomenal success, going from green field to 98 MW of power in just six weeks. For Peterson, it was the very thing that ignited their mobile turbine market and got the phones ringing again.

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## BECOMING SUSTAINABLE

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Peterson has still not done any turbine business in California—Hamilton's initial target market. “California was never the right fit for our business model,” says Hamilton. “They wanted huge 50 MW turbines and our niche is 5 to 20 MW. And they wanted to buy electric power for permanent installations. They took a very different approach





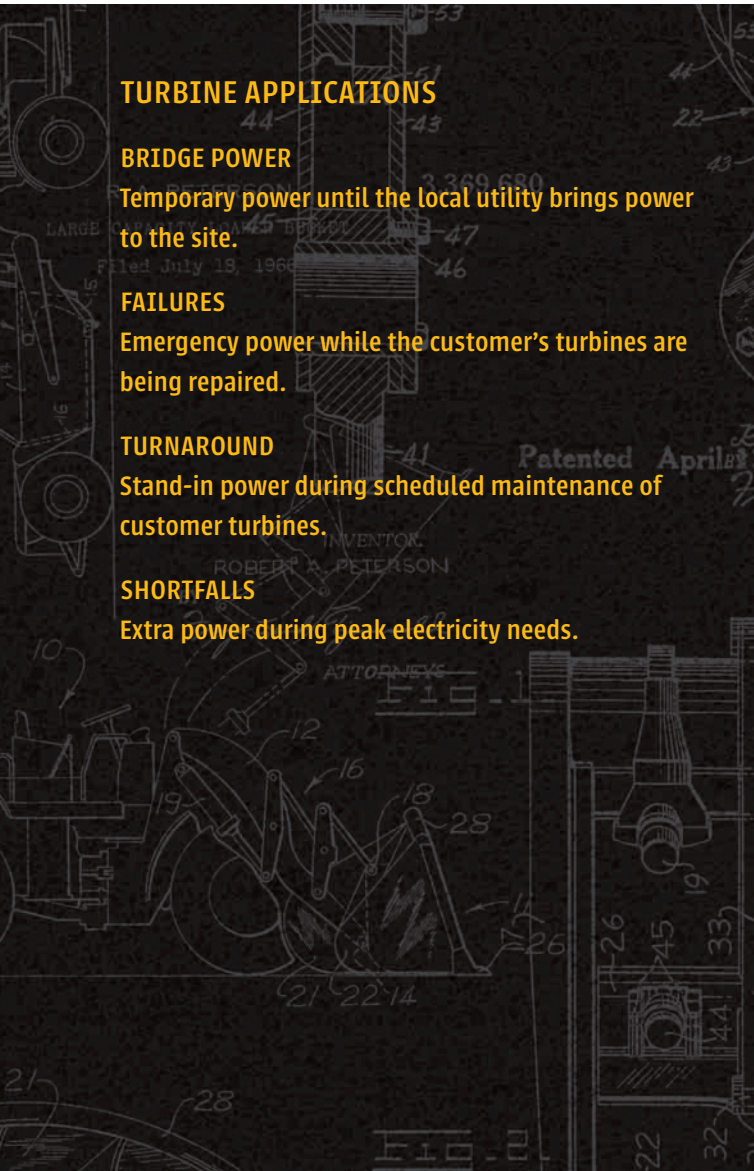
*Top, clockwise: Heading for the North Slope of Alaska; Peterson field tech, Mosese Sitauti, in control room; Turbine for BP oil fields at the top of Alaska*

that didn't match our rental model. So, we ended up in other places." That next summer—2004—the city of Tallahassee, Florida experienced an unplanned turbine failure. Peterson Power was able to provide them with twelve turbines. In 2005, BP needed three turbines at their facility in Deadhorse, Alaska—on the North Slope—to pro-

vide power due to an unplanned turbine failure. Peterson had what they needed.

During those years, Hamilton traveled around the globe, developing business overseas. "Altogether, we made sales calls in thirty-seven countries, with projects on every continent except Europe. "We





## TURBINE APPLICATIONS

### BRIDGE POWER

Temporary power until the local utility brings power to the site.

### FAILURES

Emergency power while the customer's turbines are being repaired.

### TURNAROUND

Stand-in power during scheduled maintenance of customer turbines.

### SHORTFALLS

Extra power during peak electricity needs.

always knew we would have to go international because these turbines serve a niche market," says Hamilton. "Jeff [Goggin] wanted everyone at Power with the potential to be involved in international business to have a passport. It was a realization that the world was changing and we needed to be prepared."

## SAN JOSÉ, COSTA RICA

One of Peterson's largest and longest-running projects was in Costa Rica for its national utilities authority (ICE) from 2007 to mid-2010. Demand for power was outpacing the country's ability to produce enough energy for its growing economy. And on January 8, 2009, a 6.1 magnitude earthquake damaged some of the country's hydroelectric dams. "Costa Rica depends largely on hydroelectric power as do most countries in this region,"



Top left to bottom: Costa Rica turbine installation; Close up of installation; Gene Hamilton at the Costa Rica site





*Turbine installation in Algeria*

explains Andres Molano, president of Energy International—now SoEnergy. “If it doesn’t rain for weeks, then they have additional problems with energy production. So, we become a temporary utility for them. We sell them energy until they can build enough permanent capacity for themselves.” The fifteen turbines at the San José site ran eight to ten hours a day during high-demand periods. Peterson provided support for all fifteen turbines during the contract.

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## GABON, AFRICA

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In 2008, Jay Pleus (Peterson project manager) spent three weeks working on a generator at the Shell oil fields in Gamba, Gabon at a French-speaking compound in the middle of a national wildlife refuge. “I was there to disassemble a turbine and change out a 38,000-pound generator end,” explains Pleus. “The local technicians were good, so we did fine communicating with hand signals.” At one point a bull elephant ripped through the chain-link fence that surrounded the compound and came in to sniff around. Since elephants are a protected species, no one could touch or go near him, so they just had to wait for him to leave on his own.

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## IN AMENAS, ALGERIA

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Perhaps the most dramatic project was in 2012 at the Tigantourine gas plant near In Amenas, Algeria. The site was thirty miles from the Libyan border, in the Sahara Desert. “Solar was having delay issues with the eight turbines they’d sold to the facility, so they called us for temporary power until they could get theirs delivered.” Jay Pleus handled all the logistics from his office in Eugene, Oregon, coordinating details for the Algerian port, the import-export facility in Houston, the freight company in Riazzino, Switzerland, and the Cat systems packager, also in Switzerland. It was truly an international coalition effort.

In January 2013, a nearby BP gas plant came under attack by an al-Qaeda affiliate known as *Katibat al-Mulathameen*—or *The Masked Brigade*. “Their intent was to hold the site hostage and force the Algerian government to pay ransom for its release. That’s how they fund their terrorist organizations,” says Pleus. “Once they learned that the government was not going to pay, they started shooting hostages.” After a tense four-day standoff, Algerian Special Forces stormed the compound. Altogether, thirty-nine foreign contractors from around the world were killed, including three Americans.





*Turbine installation in Cabinda, Angola*

Twenty-nine jihadi militants were killed and three were taken captive. Luckily none of the agents working for Solar or Peterson were hurt.<sup>2</sup> The site was shut down for three months until they could regroup. And Peterson never sent anyone back to those sites after the attack. “Working in these hot-bed areas is not for the week-kneed,” says Pleus. “Every one of these jobs has a challenge. Not one of them has ever gone textbook. But we’re not in this business to fail. Whatever challenges come up will be conquered. That’s our bottom line.”

## FRACKING: NEW FRONTIER

Over the last decade, new methods of hydraulic fracturing—called fracking—have helped transform the US energy market from an economic drag to an unexpected boon. In September 2014, Houston-based U.S. Well Services (USWS) debuted its Clean Fleet well-stimulation technology at sites in West Virginia. Crude oil prices fell by half, to \$48 per barrel, over the next four months, grabbing the world’s attention.

Although fracking has been around since the 1930s, these new methods are allowing companies to reach previously inaccessible pockets of natural gas and oil trapped deep within shale formations two-and-a-half miles below the earth’s surface. “For years, they’ve known that shale contained tons of oil, but they couldn’t figure out how to extract it because it’s embedded in the rock,” explains Hamilton, now Peterson Power’s general sales manager. In the 1980s, someone in Austin, Texas started developing the technology, which has finally become cost-effective. “Today, they can actually steer the drill bit. Once the drill head is down ten thousand feet, they can turn and bore another mile horizontally—in any direction—yielding 360° coverage.”



*Fracking site with four Solar Turbines*

<sup>2</sup> No Peterson employees were ever onsite in Algeria. Peterson hired third-party contractors for these jobs, and none of them were hurt.



When the drilling is finished, a well-stimulation system shoots high-pressure liquid down the well-bore to crack up the shale further. That liquid slurry contains sand and chemicals that are forced at high pressure into the rocks, which holds them open so the trapped oil and gas can be released.

The Clean Fleet system replaced fourteen Cat 3516 diesel engines with electric pumps powered by three to four natural gas Solar T60 turbines. For Peterson, the job started back in June 2014. Solar only had two of the three required turbines in stock. Since it would take a year to build another one, they opted to rent the third unit from Peterson. “Our turbines were being used in a brand-new technology,” says Pleus, who spent time on site back in 2015, watching them monitor progress on large computer screens. “That Clean Fleet system working in West Virginia is Serial No. 1. And they’re busy building a second one. This is one of the most exciting prospects in the mobile turbine business today.”

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## BIG RISKS, BIG REWARDS

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“I always believed that this thing could get really big—even when the whole industry was on its tail,” says Gene Hamilton, who has developed on-the-job friendships around the world. That’s the entrepreneurial spirit that has built Peterson into what it is today. Diving into the mobile turbine business back in 2000 was a huge risk—at \$2.5 million a pop—in an unproven market. “Nobody else was offering rental turbines in that size class. Without the full support of Peterson’s top brass, it would have never gotten off the ground,” says Hamilton. But taking risks is a corporate trait that has propelled Peterson into many new opportunities as solution providers.

In July 2018, Peterson Power sold its turbine fleet to Energy Rental Services in Texas where the oil and gas industry is booming. “The benefits we derived from our experience with turbines still continues,”



*Gene Hamilton at a cogeneration site in San Jose, California in 2019*

says Hamilton. “Many of the skills we learned are still serving us well. The innovative ideas and lessons we learned in international contracts and taxes, risk management, selling to a global market, and maintenance and operations around the globe are helping us sell Cat gas engines into cogeneration and utility markets both locally and outside our territory. All that experience has grown our reputation of excellence with customers both here and thousands of miles from home.”

Peterson still furnishes turbine power upon customer request. But the focus has changed with the market demands. Indeed, Peterson was the largest power systems distributor in North America in 2019. “We have twelve sales reps and forty engineers and project managers around the country,” says Hamilton. “Forty to sixty percent of the content for our projects is Cat equipment; the rest comes from other suppliers. We have employees in North Carolina, Alabama, Texas, Nevada, and Idaho because 60-70 percent of our sales are outside our traditional territory.” That’s the power of flexibility and listening to the customer.



# CORE VALUE: TEAMWORK

1966

R. A. PETERSON

3,290,806

Filed June 22, 1960

ADJUSTABLE CABLE HOPPER DOOR ACTUATING MECHANISM

3 Sheets-Sheet 3

CONTROLS FOR TANDM OPERATED EARTHMOVING SCRAPERS

1964



Rental generators onsite in Oroville, California to support Utilities in September 2020

FIG. 1

Feb. 20, 1968

R. A. PETERSON

3,509,000

## TEAMWORK KEEPS THE LIGHTS ON

LARGE CAPACITY LOCKS

Filed July 18, 1966

Imagine the night sky is pitch black outside. Inside, everyone is fast asleep. Even the dog. Suddenly the phone rings, shattering the silence. Upstairs a hand shoots out, patting the nightstand for the cellphone that was there three hours ago. The man struggles to his elbow, squinting at the alarm clock. 2:00 a.m. glares back at him in large red numbers.

“...lo?”

“Is this Peterson Power Rentals? Sorry to wake you up, but we’ve got a crisis developing.”

The man slides to the edge of the bed, shakes off the night’s sleep and reaches for a pen and notepad.

“Yes, this is George with the Power Rental Division of Peterson. How can I help you?”

Patented April 3, 1971

Robert A. Peterson

Proyer and Emerald

ATTORNEYS

3,574,960

INVENTOR  
ROBERT A. PETERSON

Proyer and Emerald



George Schalk, Peterson Power's rental manager, has spent years waking up to early morning calls like that. He and his crew understand the urgency their customers face in a crisis. They understand that time is money—sometimes even lives. “When we get that call, I’m pulling my team together. I’ll call our service department and our inside rental people. I call James Gray, our rental operations manager, at all hours of the night. It doesn’t matter. We answer the phone for each other because we rely on each other. This is a 24-hours-a-day, weekends and holidays kind of job. We’re a team. We make it happen for our customers.”

If they didn't, someone else would be getting those middle-of-the-night calls.

Much of Peterson Power Rental's workload centers around emergency response—getting a generator onsite within hours of the initial call and the customer back up and running. But in 2019, a whole new avenue opened up for Peterson from one of its largest customers. Northern California's utility company decided to use a proactive strategy to combat the devastating, large scale fires that were sweeping the state. But they needed help to make it happen.

## ENTER PUBLIC SAFETY OUTAGES

After weeks of analysis and consideration, the utility decided to use a new risk mitigation plan they called Public Safety Power Shutoffs (PSPS). They routinely did planned shutdowns for equipment maintenance, but this was something entirely different. The PSPS strategy was announced to the public in early June 2019 as a pre-emptive safety measure that would cut power to high-risk areas ahead of extreme weather events. “They decided that when a high wind warning comes through—or other extreme weather that could create disturbance in the lines—it’s better to cut power and eliminate the risk of failure,” explains Schalk.

“When the utility kills power to those at-risk lines, that shuts off power to all the towns downstream. So now, rather than bringing in multiple 2 MW units to act as a substation, they bring in multiple smaller generators to build a patchwork of hubs throughout the community. One unit will go to the grocery store; another might go to the library or the high school; another to the gas station. It’s designed to keep the basic needs of the community running until the PSPS is over and the grid is fully restored.”

## THE KICKOFF: PSPS-1

The first significant pre-emptive PSPS happened June 8th–9th, 2019. It affected roughly 22,000 customers across five counties of the North Bay Area and Sierra Nevada Foothills. “The public was stunned, because that sort of thing just doesn’t happen here in California,” says Schalk. “After all, we’re the fifth largest economy in



the world. But it did happen and it caught many people off guard. The utility also warned that there could be more, so we had to wrap our heads around it and get prepared.”

That first official Public Safety Power Shutoff was the smallest and, in hindsight, the weakest of the PSPS events. Each subsequent response has gotten stronger and more efficient. “PSPS-1 was kind of hands off for us,” recalls Skip Ray, rental sales/project manager. “It was a phone call and an inventory list. That was it. Someone from their rental operations office called asking for a list of everything we had available. By the end of the day, they emailed back that they wanted it all—100kW, 150s, 200s and 300kW generators—all thirteen we had available at the time. Some of those units never even left our yard but all were on contract, waiting to be used. I don’t know what they actually took out and installed,” says Ray. “Our technicians didn’t do anything on PSPS-1. We didn’t deliver them; we didn’t install them; we didn’t fuel them. But all of those units were under the care and control of the utility company for two weeks.”

Public reaction to the power shutoff ranged from irritation to hysteria. “You would walk into a supermarket and find people clearing shelves into their carts with their arm,” says Schalk, “because they didn’t know when the power would be restored. It was a strange thing to see, almost like walking into a movie. People were buying small generators to power up their homes and businesses. Every single one of our 300 small generators was out on rent.” PSPS-1 finally ended when the utility restored power to all North Bay customers by 8pm on June 8 and all Sierra Nevada Foothill customers by 6pm on June 9.

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### UPPING THE ANTE: PSPS-2

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By the time the second event hit on September 23, the utility had a much better grasp of the situation. “This one was handled by the engineers in the field who actually run the jobs,” says Ray. “They wanted our large 2 MW power modules for several big primary jobs besides all the smaller units. And this time, they were very specific about what they needed.” Peterson’s rental team worked non-stop to pull it all together, from the time the call came in at 6pm Friday until three the next morning. “We were on conference calls with Quinn-Cat (Central Valley) and Hawthorne-Cat (San Diego), grabbing everything they had available to support what we didn’t have enough of at the time—power modules, transformers, load banks, and high voltage equipment. And the customer wanted everything delivered by Saturday morning and live by Saturday afternoon.”

For that second event, the utility powered four substations in the Sierra Nevada Foothills with rental generators—6 MW in Placerville, 9 MW in Grass Valley, and 8 MW between two pumping stations in Auburn. They also deployed 27 smaller single generators from Placerville north to Redding. “In Auburn, we actually had units down on the American River about 1500 feet below town,” says Ray. “And there were six 1500 hp pumps going up over the hill to Grass Valley. The drive motors on those pumps were the size of a pickup truck. When you heard them fire up and saw how much power there was, it was just insane. Without that power, Grass Valley would have run out of water in 24 hours and backed up their entire sewer system.”

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### ROUND THE CLOCK SUPPORT

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The other part of the job was monitoring the load to ensure everything went well for the duration of the project. “We provide 24/7 product support on our rental equipment when these big substations go off line and our



equipment picks up the load,” says Ray. “In Grass Valley, we had four 2 MWs and one 1 MW tied together at their substation, acting like one big generator. Those five generators were paralleled together, communicating with each other through their control panels. Our techs were onsite monitoring the load so if it dropped down too low in the middle of the night, they could adjust the load to keep it from crashing. And if it started peaking during the day, they were there to drop the load back off. They also managed the fuel because each of these generators uses 70–80 gallons of fuel an hour and needs refueling every twelve hours. So our technicians were there 24/7.”



Peterson had 38 MW of prime power in Oroville, CA for the North Complex fire in September 2020

## OPTICS VERSUS SAFETY

From the public’s standpoint, the utility still had a lot of refining to do. One USA Today article described the approach as “more sledgehammer than scalpel.”<sup>3</sup> And while that may be true in those early PSPS events, the complexities of the challenge were staggering. What the public needed to consider was the gravity of the choice—public inconvenience for a few days or more death and devastation like in the Paradise fire. It all comes down to optics versus public safety.



Peterson power modules on rent for utility power

The utility’s calculus for launching a PSPS event involves the red flag conditions of low humidity, high temperatures, and high winds. Whenever any of these factors appears in the forecast, the utility will cut off power to vulnerable sections of the grid. And that, in turn, affects everything downstream of the shutoff point. Often the cause is not visible to those in the affected area. “In some cases, you’ll have

a PSPS event and everyone in that neighborhood is upset because the wind is not blowing and the conditions don’t look hazardous,” explains Schalk. “What they don’t understand is that the transmission lines from the substation to their neighborhood may be on the other side of the hill where it’s extremely windy, so they don’t see the lines slapping around and the potential danger.” That’s exactly what happened for the first two PSPS events. There was no fire anywhere near the outage areas. Instead, high winds and high temperatures were the red flags that prompted those shutoffs.

3 Della Cava, Weise, Paluch, “California power outage”, USA TODAY online, October 9, 2019



### DIALING IT IN: PSPS-3

California's utilities were on high alert all during the month of October, the height of the fire season. In Northern California, PSPS-3 kicked off October 9 and didn't conclude until well into November. It was, by far, the best run public safety power outage of the 2019 season. By then, the utility had gained enough experience to run their third Public Safety Power Shutoff with much more efficiency. Dry conditions and severe wind warnings prompted the event, which covered thirty-four counties and impacted nearly 800,000 customers. Much of the coverage and equipment employed mirrored that used in PSPS-2. The big difference was the utility's proactive, real-time responsiveness.

PSPS-3 utilized significantly more single units in the shutoff zone because they were getting better at anticipating and targeting needs. "Their engineers on the ground were evaluating multiple locations and communicating with us," says Ray, who received numerous heads-up calls to ready equipment. "I thought they did a great job on PSPS-2, but PSPS-3 was even better because they were constantly evaluating potential sites for temporary power." They also set up over two dozen community resource centers throughout the affected area with air-conditioning, bathrooms, bottled water, electronics recharging and internet use. Those strategically placed facilities helped their customers weather the inconvenience and eventually developed into a more standardized solution.

### THE NEXT LEVEL: HOT SPOT HUBS

In early 2020, George Schalk got a call from the utility. They wanted to know what it would take to pre-wire a facility for faster hook-up times. In essence, how could they create a plug-n-play solution in anticipation of at least five years of PSPS events. From there, they hired two electrical contractors—Cupertino Electric and Vince Sigal, both staunch Peterson customers—to do the installation work. It took a year-and-a-half to install all the hubs at 30 facilities and another 225 hubs on power poles throughout Northern California. "It's all part of the utility's temporary power generation program called the Community Microgrid Enablement Program. These switches, or pre-installed interconnection hubs (PIHs), were placed so we can hook up our generators in half the time it would normally take," explains Schalk. "The goal is to have a pocket of businesses that can support life in a community during these planned safety outages. And to be able to hook them up quickly."



Rental generators from several other Cat dealers waiting in anticipation of the PSPS season in 2020

### POPULATING THE MICROGRID

The utility's microgrid system was designed to streamline the PSPS process to make it as smooth and efficient as possible. It's proactive versus reactive. These hot spots, called Resiliency Zones, form a microgrid system of plug-n-play hubs throughout Northern California. In early 2020, the utility put out a bid for 300 megawatts of generation to temporarily power those sites. "No single vendor could provide all 300 megawatts of



R. A. PETERSON

3,296,885

power because of the CARB situation in California,” says Schalk. “Plus, we all have other customers who need equipment. We had a lot of business before this PSPS situation happened, so we decided to utilize the Cat network and bring in additional equipment to be able to meet everyone’s needs and commitments.

In March 2020, Peterson won that bid along with Aggreko and United Rentals. “The utility will now have fifty of our 2 MW power modules on retainer, plus another 25 MW of smaller power units, so that when a PSPS event happens, they can dispatch them out quickly to one of these sites,” says Schalk. “The vendor of choice will be whoever has the right equipment and can respond the quickest. We plan to be the preferred vendor because we respond quickly. That’s our specialty.”

### WHAT IS A MICROGRID?

A microgrid is a small network of electricity users with a local power source usually attached to a centralized national grid but is also able to function independently.



George Schalk with a yard full of generators ready to go when needed in 2020

### PUBLIC SAFETY POWER SHUTOFF—2019 SEASON

#### PSPS-1:

On June 8–9, 2019, the local utility company proactively shut down vulnerable portions of its service territory for public safety. It was their first Public Safety Power Shutoff, or PSPS, of 2019.

#### PSPS-2:

On September 23, 2019, the local utility company shut off power to 48,000 customers in Butte, Napa, Nevada, Placer, Plumas, Sonoma, and Yuba counties due to high winds and the risk of wildfires. Power was restored by 6pm, September 24.

#### PSPS-3:

On October 9, 2019, the utility began shutting off power to 800,000 customers across 34 counties of Northern and Central California due to high winds and the risk of wildfire. A week later, a second threat of extreme weather prompted a second phase to PSPS-3. When it was over, the utility inspected roughly 25,000 miles of transmission and feeder lines before re-energizing the system.





*Peterson generator systems getting ready for delivery to data center customer*





## DATA CENTERS

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### PETERSON DELIVERS RELIABILITY

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**I**t was just another day on the road hauling equipment across state lines. At 0900 on May 14, 2015, a low-bed with a 55-ton load pulled into a small rural town in South Carolina. A couple minutes later, it was stuck at the railroad crossing along Highway 121. The trucker jumped out to get a better look. *Damn it!* He was high-centered across the tracks, right in the middle of town. Reaching for his cellphone, he punched in an emergency number.

“I’m stuck on some railroad tracks in Johnston, South Carolina and I don’t know when the next train is coming.”

A pause ensued, then: “I’d get out of there now, man! As far away as you can. That train is less than a mile from you and we don’t slow down so our cars won’t derail.”

Just then bells started clanging and red lights flashed as the RR crossing barrier descended onto the back of his truck. Right on cue, the Norfolk Southern train from Chattanooga came barreling down the tracks at 60 miles per hour, its horn blaring. From his vantage point, now 50 yards up the street, the trucker watched in morbid disbelief as the train t-boned his truck at full speed. The impact shook the ground like an earthquake. The screech of metal on metal ripped through the streets as he watched the ruins of his truck get dragged another 40 yards down the tracks. The shattered 18-wheeler snagged four parked cars on the way, slamming them into the side of the library several blocks down. Seconds later, a cloud of dust and debris showered down on the area and those watching the rare spectacle.

Later, the trucker heard that the big Cat generator he’d been carrying had split in half. They found the engine 100 yards away from its enclosure—itsself torn to shreds. Pieces from the wreckage were scattered half a mile





Truck with generator onboard before train wreck

in both directions. Luckily no one was hurt, but somebody's insurance sure was going to take a big hit.

That generator had been headed for one of Peterson's largest data center customers on the east coast. It was part of a 32-unit installation that had taken seven months to source, build and ship. Now with the client's looming deadline, Peterson had to do it again. Luckily, it was just for the one generator. "The typical timeline to build and deliver a single C175 engine with its enclosure is anywhere

from 16 to 30 weeks, depending on Cat's availability," says Don Whitehead, sales engineering manager and thirteen year Peterson veteran. "We did this one in eight weeks. It involved a lot of people pulling a lot of strings, including Cat who helped get an engine ready to go. We'd never had that kind of disaster before, where it required so much from so many people. It was all-hands-on-deck—people putting in the time and energy, and going the extra mile."

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## HISTORY AND THE RULE OF FIVE 9S

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Peterson has been involved in the dot-com industry since it took root in the Silicon Valley back in the 1990s. And even before that. As the mechanical switching gear of the Baby Bells morphed into server farms of computers, the data center was born.<sup>1</sup> "There was a tremendous amount of irrational exuberance and cash flying into these businesses, but none of them were making any money," says Armen Kludjian, Peterson Power engine salesman who sold hundreds of generators to the burgeoning industry. "The data center business was in its nascency. Back then they said a business didn't need to make a profit. It just needed to have revenue." But then it overbuilt. And that model died with the dot-com bust in 2001.

The second boom hit in 2005-06 when some of those early players reinvented themselves and started quietly buying up those distressed properties under new names.<sup>2</sup> Then social media took off (2006), the iPhone came out (2007), streaming video expanded, and the need for reliable bandwidth soared. All of that information is housed, today, in data centers around the world in The Cloud. If one of them goes down, even for a few seconds, it can mean millions of dollars of lost revenue. And a diminished reputation within the

### RELIABILITY AND THE RULE OF FIVE 9'S

**The Rule of Five 9s—or 99.999% reliability—works out to 5.26 minutes of downtime a year, which is an acceptable number in the data center business. Over the years, the reliability factor has tightened into Seven 9s and even Nine 9s, which computes to 3.16 seconds and 31.56 milliseconds a year, respectively. The higher the percentage goes, the more backup generators are required—along with additional fuel tanks, batteries, starter batteries and support equipment—for a seamless transfer between the electrical grid and the backups ... and back again.**

1 The telecom industry was a huge Peterson Power customer, even before it evolved into the dot-com industry we know today. AT&T, Pacific Bell, Sprint and others all bought hundreds of backup generators from Peterson Power.

2 These companies cannot be named because of the protections granted in non-disclosure agreements (NDAs) with Peterson.





Left to right: Typical backup generator system housed inside special enclosure; Close up of Cat 3516 generator inside enclosure with (L-R) Bob Tanzer & Gene Hamilton

industry. That simply cannot happen. Reliability, therefore, is crucial.



Armen Kludjian

For years now, data centers have been designed around *The Rule of Five 9s* or a reliability factor of 99.999%. “They’re building in reliability to an extent we’ve never seen before,” says Kludjian. “And they’re willing to spend the money

because now they can quantify downtime in dollars lost quickly. Contracts for co-location facilities actually specify the amount of backup power that’s available in an emergency. Any outage at all is going to move that number down to 99.998.” Which is a big deal and something they cannot afford.

That’s where Peterson comes in. Peterson Power Systems provides backup power to these big data centers in case their primary power cuts out. “Peterson’s Mission Critical Team is a part of the Five 9s of Reliability.<sup>3</sup> We don’t provide it,” says Kludjian, “but we’re a link in the chain. When customers look at our ‘link’ versus that of our competitors,

we’re still the best. Caterpillar parts and service is still the King of the Hill.”

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## THE HYPERSCALE DATA CENTER MARKET

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For years, Peterson’s traditional commercial engine business focused on the one and two unit sales for hospitals and commercial buildings, marine, OEMs, and cogeneration and bio-fuel applications. “The big advantage there is that they’re local so we get the product support, which is the lifeblood of a dealership,” explains Gene Hamilton, Power’s general sales manager. However, in recent years, the data center segment has simply exploded, fueled by the Internet, social media, the telecom business and, more recently, Covid-19. Today it’s called the Hyperscale Data Center industry. And for good reason. “We’ll sell a generator to a local hospital, for instance, and we won’t sell them anything for another ten or fifteen years. There’s a relationship there, but not a lot of transactions,” says Hamilton. “But a data center customer can build ten to fifteen projects a year. And it’s a six-month turnaround, not a three-year project, so it’s on a much larger scale, with very tight deadlines. It’s huge.”

<sup>3</sup> Peterson Power’s Mission Critical Team is a group dedicated solely to the data center market.



“ These data centers are massive facilities. The volume that we’re doing is unbelievable at the scale we’re working at right now.

– Gene Hamilton, general sales manager,  
Peterson Power Systems

”



## THE BIG BOYS

Peterson Power’s largest data center customer came through a relationship with one of its longtime customers, Rosendin Electric. In 2013, Rosendin contacted Peterson salesman, Bob Tanzer, about getting some generators delivered quickly for a client up in Oregon. Tanzer came through and a year later, Peterson was selling engines directly to that data center. Today, that customer is Peterson Power’s largest account, and consistently in Peterson’s Top 5, company-wide, every year. They are one of the largest Internet-based companies in the world and the largest purchaser of gen sets in the world. In 2020 alone, they took delivery on 125 engines for installations all across the country. Peterson Power has indeed earned their trust.

## CAT’S NATURAL CHANNELS PROGRAM

The Hyperscale business affords Peterson a reach far beyond its regular borders. Traditionally, Cat requires its dealers to stay within their territories to maintain equilibrium within the dealership network. However, back in the late 1990s, Caterpillar developed a special program to capture the burgeoning cellular business. “There were cell towers every 20 miles or so,” recalls Kludjian, who was in on it from the beginning. “Much of it was out in

places where no reliable power existed. Cat’s major accounts program (*Natural Channels*) allowed a dealer to sell multiple small generators for cell towers to a company outside its territory.” The program stipulated that a dealer could sell a contract if (1) the jobsite was located in its territory; or (2) the customer’s headquarters was located in its territory; or (3) the dealer was hired by a consultant to help write the job specs.

Cat also put a million-dollar minimum on the business, designed to confine it to just a few dealers.<sup>4</sup> Peterson had one local customer who was building data centers all across the country. For them, a million dollars was a low threshold. “At first, dealers didn’t like it and pushed back,” recalls Kludjian. “But we’d be standing there with a purchase order for five million dollars, asking Cat: “Do you really want us to give the P.O. back and have it go out to bid again in another dealer’s territory? Maybe they’ll get it. Maybe they won’t. Maybe Cummins or Detroit will get it. Or, should we just proceed as planned?”

According to Tim Treat, project manager on many of those early jobs, “we did 80 sites for Sprint back in the late 90s. It was actually another dealer’s customer but all the work went through us since we were the PSD (parts & service distributor) for the region. Most of the installations were out of our

<sup>4</sup> Cat’s five main data center dealers are: Peterson, Carter, H.O. Penn, NC Power, and Holt of Texas. Most serve one or two customers. Peterson serves four.





territory but Sprint wanted one dealer, one engineer, and one bill.” And that became the standard. “That first nationwide project with a contractor based in Minnesota gave us the confidence to jump at the dot-com opportunity a year later,” says Treat. “If the customer was in our territory, or the purchase order was written in our territory, then we could deliver generators anywhere,” says Kludjian. “And we did—in Ashburn, Virginia, Washington DC, New York, Chicago, Los Angeles and all across the country.”

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### ONE SIZE DOES NOT FIT ALL

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As the Internet grew, so did the demand for more bandwidth. Streaming video, social media, online shopping and telecommuting all contributed to the need for more transmission capacity. Some of the hyperscale customers Peterson delivered to became known simply as FAANG. These enterprise hyperscale data centers are owned by massive public companies who used the entire data center for their own operations. That is until they started building such large infrastructures that they could offer bandwidth space to outsiders. Other smaller enterprise data centers like Kaiser Permanente and Visa built solely for their own use. Still others, known as co-location centers (co-lo’s), provide

“ The key to the data center, from the beginning, was reliability.

– Tim Treat, senior engineer,  
Peterson Power Systems

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*Mission Critical Team outside Peterson Power facility in San Leandro, California*

data storage for individuals and small businesses who want off-site redundant capacity. These server farms are similar to rental storage facilities. Back in the 1990s, customers could rent 10-foot square chain-link cages, bring in their own computer equipment and maintain it themselves. “They literally looked like outdoor dog cages,” Treat recalls, now senior engineer for Peterson Power. “Guys would sit on chairs banging away on their equipment in their little cages. They had zip-tied tags on each cage, stating who it belonged to. And then all of a sudden, those tags disappeared. Later, I found out it was because some guys would walk around with a broomstick handle and push the ‘off’ button of their competitor’s equipment through the chain link fence. That was back when it was the Wild West. Today you don’t put your own equipment in there. You can rent five terabytes of space, but you’re just renting a number. The rest of it is none of your business.”

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## **PETERSON’S MISSION CRITICAL TEAM**

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Peterson has been able to grow with the industry because of a large specialized team of sixty employees—some in-territory, others at remote sites. “From the beginning, we’ve had support from the top to hire highly skilled engineers and project managers even before the concept was proven,” says Hamilton. “We took those risks and it’s worked out really well for us for Big Data and all our market segments.” Today, Peterson’s Mission Critical Team is comprised of 24 project managers and engineers, 3 sales reps, management and support staff, plus a traveling team of technicians for commissioning, testing and certification. “Back in the old days, we had one project manager for every sales rep,” says Hamilton. “Now we have a four-to-one ratio because these projects are so large and complex with very tight deadlines.”



## PETERSON'S ROAD WARRIORS

Data centers are located all across the country, which means getting the local Cat dealers involved for installation and start up. “We always use the local dealer for service because it makes sense and it makes for good relationships,” says Hamilton. “But we also send our own technicians to manage the work. They set the tone and provide consistency because they do these jobs over and over again and they’re good at it. The local dealer may see a job like this once every three or four years. These are very big, complex jobs that can take two, three, even four months to do the start up on dozens of gen sets.”



*Gene Hamilton at a data center installation in San Jose, California*

Many of Peterson’s Mission Critical Team are road warriors who live in places like Idaho, Nevada, Texas, and North Carolina to be closer to the job. Others travel back and forth, two weeks—or more—at a time. All are dedicated to the hyper-scale data business. Peterson’s flying team is made up of ten technicians, at various skill levels, all willing to be away from home for weeks and months at a time. “These are tremendous learning opportunities,” says Hamilton. “In three months, they can learn what would take a year or two working in-territory because this is such intense and complex work. Surprisingly, there’s a lot of younger guys who are excited to go out and learn.”

“As this business has evolved, we’ve actually done recruiting, internally,” says Whitehead, who over-

sees all of Peterson’s project management and engineering teams including the Mission Critical operations. “It provides training that technicians would never come across, otherwise, just working in our territory. We do have large installations like hospitals but this is very different. Without the support of their local parts department and 20-30 other techs at their disposal, they must learn to be

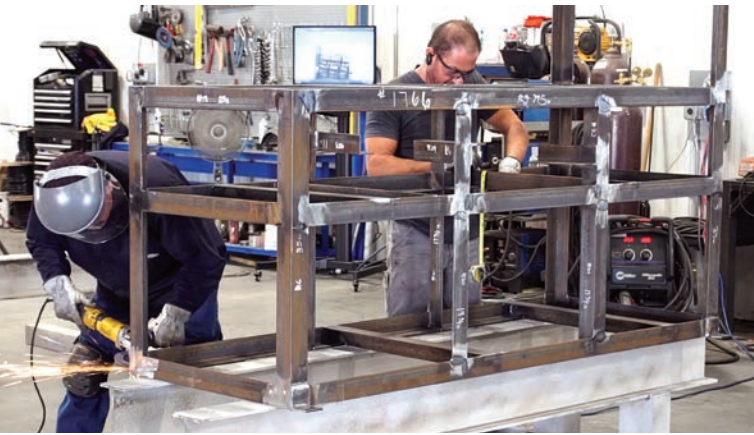
“ We work more like a contractor on these jobs because there’s so much integration involved, far beyond just the engine generator.

– Don Whitehead, sales engineering manager,  
Peterson Power Systems

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“ We have a complete generation leading the world now, that has not lived in a world without an iPhone. ”

– John Krummen, executive vice president & general manager, Peterson Power Systems

more resourceful. They have to develop some real skills in taking the initiative and making decisions. There’s also a lot of mentoring going on from the older techs as well as our project managers on the job. This is just very different from anything else Peterson has done. And it has afforded us the opportunity to really hone some skills for these guys.”

## SUPPLY CHAIN PARTNERS

Building strategic partnerships with reliable vendors and manufacturers has been a real strength for Peterson’s team. “This is an integration-based business,” says Hamilton. “We buy things from other suppliers and integrate them into a complex power system for our customers.” That means establishing relationships with dependable vendors who have the same standards and values as



Top, clockwise: Packager Johnson Thermal Systems building enclosures; Cat generator inside enclosure; Plenum (tower) of exhaust system external & internal view



## IMPACTS ON DOT-COM INDUSTRY ...supported by data centers with backup generators

EVENT	YEAR DEBUT	DETAILS
AOL	1989	Launches Instant Messenger chat with You've Got Mail
Amazon	1994	Launch of America's largest on-line retailer
Streaming Video	1995	First live stream broadcast: ESPN Mariners vs NY Yankees on Sept 5
Yahoo	1995	Internet search engine—launched Mar 1, 1995
Netscape	1995	Web browser founded Aug 8, 1995
Internet Explorer	1995	Microsoft releases Windows 95 including first version of Explorer
1st dot-com bubble	1995-2000	Caused by excessive speculation of Internet-based companies
Google	1998	Search engine, email, social networking—founded Sept 4, 1998
eBay	1995	Online auction/shopping site—founded Sept 3, 1995
Netflix	1997	Streaming media provider—founded Aug 29, 1997
Wifi	1997	Wireless network technology debuts
dot-com bust	2001-2002	Data Centers overbuild, many went bankrupt, stock market crashed
3G	2002	Verizon releases 3rd gen wireless mobile telecom technology in U.S.
Skype	2003	Telecommunications app specializing in video chat debuts
MySpace	2003	Largest social networking site in the world (2005-08)
LinkedIn	2003	Social media—launched May 5, 2003
Gmail	2004	Google's free email service with 1.5 billion users
FaceBook	2004	Social media—launched Feb 4, 2004
YouTube	2005	Streaming video—launched Dec 15, 2005
2nd dot-com boom	2006-present	Internet-based companies come back and thrive
Twitter	2006	Social media—launched July 15, 2006
iPhone	2007	Apple's smartphone—introduced June 2007
Android	2008	Google's smartphone—introduced Sept 2008
Instagram	2010	Social media—launched in U.S. Oct 6, 2010
4G	2011	Verizon releases 4th gen wireless mobile telecom technology in U.S.
5G	2019	Verizon releases 5th gen projected to have 1.7 billion users by 2025
Covid-19	2020	Internet explodes w/ e-commerce, telecommuting, online education

Peterson. And that synergy has helped make Peterson's team a leader in the hyperscale business from coast to coast. "We're under very strict timelines and quality standards," explains Hamilton. "It's not just important that we deliver on time. We *have* to or we face financial penalty. So we've gotten very good at this."

A key part of Peterson's backup generator system is the enclosure it resides in. Each enclosure typically contains one Cat 3516 generator along with

the switchgear, electronics, cooling system, emissions package, a noise reduction silencer, and the exhaust system. "These are massive units that put out 4,000-5,000 amps, weigh 60 tons, and fit into a box 12 feet wide and 50-60 feet long," says Treat. "When they're disassembled for transport, some of the larger units take four trucks to deliver."

The enclosures are built by a group of six carefully vetted packagers located around the country. "It takes 28 weeks for Cat to build and ship an engine





*Generator package ready for delivery*

to one of our packagers,” says Treat. “And another four weeks, on average, to build the enclosure. We use all six of our packagers because we need so many generators and no one can handle it all. We have a site in Henderson near Las Vegas, for instance, with 62 engine packages. We trucked 17 units from Florida and the rest came from Cat Solutions, in Atlanta.<sup>5</sup> So we use everyone because no one can keep up.”

The largest concentration of data centers in the United States is in Northern Virginia and Maryland where much of the federal government stores its data. It’s also in the heart of Carter-Cat territory. “These customers can use whichever dealer they want,” says Treat. “We have a channel to the East Coast data centers because they’re headquartered in the Silicon Valley and Seattle. Carter has a relationship with them too. We don’t step on each other but it can get very tricky. You can’t rest on your laurels. You have to perform every single time because the customer has other options.”

“The data center market is huge and we get a nice piece of a very large pie,” says Hamilton, who maintains good relations with his counterparts at Carter-Cat. “But it’s a global market being served by many, many people through many different distribution paths. We’re just one of the big ones. Between Peterson and Carter, we’re either the number one or number two Cat dealer in North America, depending on the year.”

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## THE MAGIC OF COLLABORATION

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The success of Peterson’s Mission Critical Team stands firmly on the shoulders of past generations of Peterson Power employees. “To say that the data center boom is all about the last twelve or even six years is not really accurate” says Hamilton. “What we’re reaping now is based on the contribution of past employees like Don Stroot, Steve Cushman, Bob Bangs, Vern Booth and hundreds of others who built up the power business over the last several decades. There is an incredible amount

<sup>5</sup> Cat Solutions is the packaging arm of Caterpillar, based in Atlanta, Georgia.



of innovation and uniqueness in our approach to the power business, especially the data center business,” says Hamilton. “The market and our stewardship has been good, but it’s the magic of the people working together that has brought us to the point where we are now.”

Today the Hyperscale business makes up 20 percent of Peterson’s total income across the entire enterprise. “Some people think we’re just lucky because the Silicon Valley is in our territory, and

the demand has skyrocketed,” says Hamilton. “We *are* fortunate for our location. And the demand *has* grown. But we’ve been very strategic in positioning ourselves to take advantage of this market. It’s definitely not luck. We’ve planned this out. We’ve worked very hard building partnerships with key vendors to provide seamless delivery. We’ve focused on solving our customers’ problems, not just selling them a service. That’s what we do. And we’ve gotten really good at it over the years.”



“ The pandemic drove people to work from home, which drove them online. And all those technologies like Teams and Zoom have driven the demand for data centers, which drives the demand for our gensets.

– Gene Hamilton, general sales manager,  
Peterson Power Systems

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## CORE VALUE: INTEGRITY

### PULLING OFF THE IMPOSSIBLE (JULY 2018)

There shouldn't have been a problem. Everything was going just fine. Until it wasn't. Peterson's Mission Critical Team had already delivered six out of fourteen generators promised to its customer in northern Oregon—their largest data center customer, arguably the largest in the world. They had another three weeks to start delivery on the rest. But then came the phone call.



John Krummen in 2020 at a cogeneration plant in Santa Clara, California

"You've got to be kidding!" John Krummen scrubbed a hand over his face, trying to absorb the news. One of their generator packages was ready to ship but was locked up, instead, behind a gate with an armed guard. According to his project manager on the call, the guard's exact words were: "No way are you getting any of your units out!" The bankruptcy sign on the fence behind him was the final word.

"I don't care if we have to take down the whole damn gate," Krummen said into the phone. "It's our unit. Just go pick it up."

Krummen hung up and sat there trying to decide what to do next. He'd been the executive vice president and general manager of Peterson Power Systems since 2012. This was a first.

A couple days later, he was on a plane headed for Houston along with an attorney. "It happened so fast my wife had to meet me at the airport with a change of clothes," recalls Krummen. They landed at one a.m. and arrived at the courthouse early the next morning at eight o'clock sharp. "I spoke to a couple of other attorneys there about our chances of getting a release to pick up our units. They said zero. That's just not how it works."

Krummen ended up with a pro-industry judge who started off by asking what outcome he was looking for.

"Your Honor, we have a data center for Tigris<sup>6</sup> ...," began Krummen.

<sup>6</sup> Tigris is a made-up name for one of Peterson's largest data center customers who cannot be named because of strict non-disclosure agreement protections.



“Oh, that’s why there’s twenty people on this phone call from Tigris,” the judge interrupted. “Well that’s starting to make sense now.”

“Yes, Tigris is the end user, sir. We have their engines locked up in this bankruptcy. Some of them need to be packaged. Some are ready to go. We’re on a very tight deadline. If we don’t get them delivered on time, we’re facing significant penalty fees.”

“And how do you plan to pull this off?” the judge asked.

“We have trucks all lined up there with a crane ready to go. We just need permission to go in.”

From there, Krummen proceeded to lay out his plan.

“We propose that Peterson pays the court the full amount we owe Koontz-Wagner<sup>7</sup>,” said Krummen, which was roughly \$3 million. “In exchange, you let us pull out all our engines and in-progress work so we can meet our deadline.”

The judge nodded, listening.

“When you’re done with your investigation and you go through my report and see the pictures and have someone come inspect the work, and you deem that what I’m telling you is true, then I hope you’ll give us back two-thirds of that money. I’m going to have to pay some other company to finish the job and that always costs more than starting from scratch.”

“I like it,” the judge said with a growing smile. “I’m trying to figure out why we don’t have everyone else in here do the same thing. In fact, I don’t want to see anyone here today unless you’re prepared to do what Peterson is doing.”

<sup>7</sup> Koontz-Wagner is the packager Peterson used who went bankrupt, located in Caldwell, Idaho.

“ If you would have asked me what the possibility percentage of pulling this off, at any point in this process, I would have told you it’s not possible, but we’re going to give it our best shot.

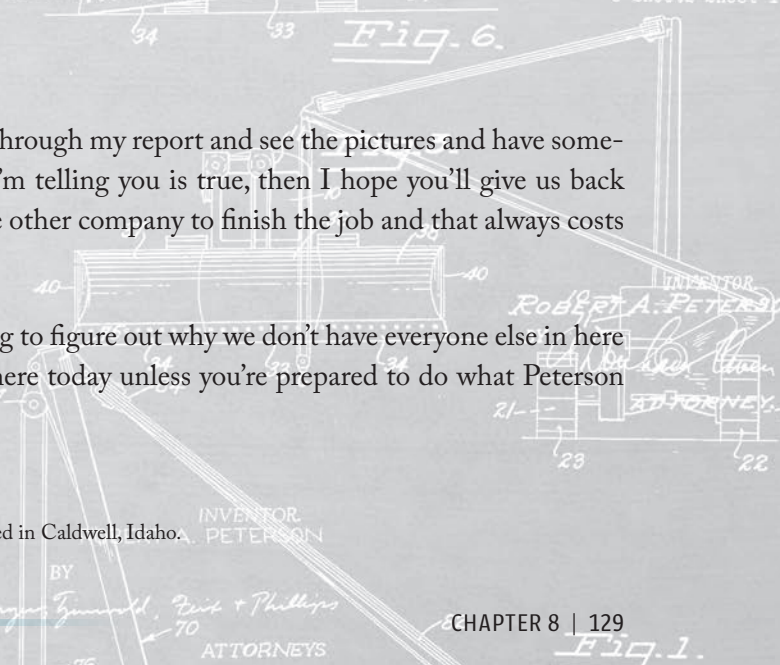
– John Krummen, executive vice president & general manager, Peterson Power Systems

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Trucks waiting to pull Peterson equipment out of bankrupt packaging facility

July 12, 1955 R. A. PETERSON 2,712,873  
Filed Nov. 22, 1948  
5 Sheets-Sheet 1





Two other petitioners were present on the conference phone call along with Tigris. Cummins was one of them. Each had equipment locked up in the bankruptcy. Each wanted their money and equipment back. Now.

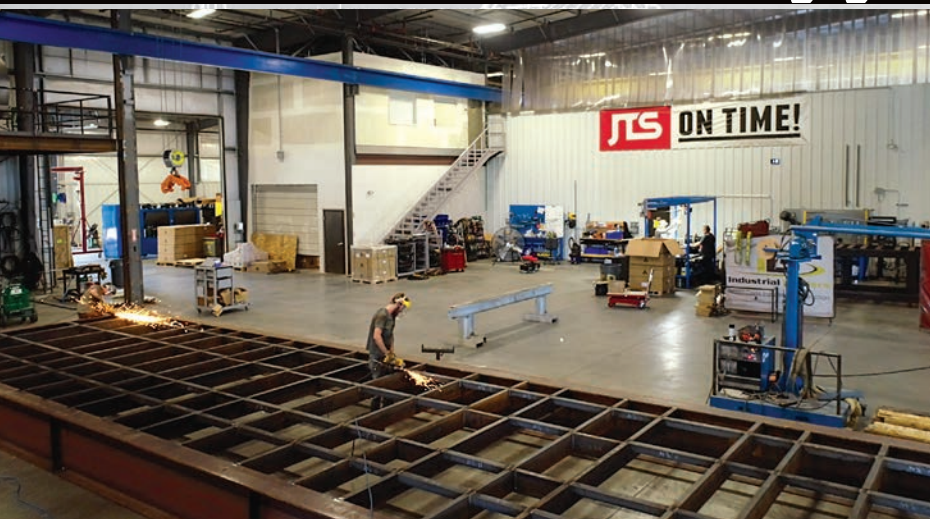
According to Gene Hamilton, Peterson Power's general sales manager, "John's finest hour is in a crisis. That's when he kicks into high gear. When everyone else was demanding their money back, John took a different tactic that was very innovative. And since we hadn't paid Koontz-Wagner any money yet, we weren't giving up anything."

While Krummen and his attorney were in court, a team from Peterson and Johnson Thermal Systems (JTS)<sup>8</sup> was lined up outside the gate of the bankrupt facility. "Ten minutes after the court documents were signed, the gate opened and we went in with our trucks and started loading up," says Hamilton. "With the assistance of Johnson Thermal, we took everything out and moved it across town to their facility."

**“ Had we waited for a settlement or the judge to review all the documents of the bankruptcy, our units would have been locked up for six months.**

**– John Krummen, executive vice president & general manager, Peterson Power Systems**

**”**



*Enclosures under construction at JTS facility*

K-W went bankrupt. JTS had already built shop facilities across town and hired people in preparation to start up again. "We brought in Peterson techs from Oregon and worked in collaboration with Johnson Thermal's small workforce," says Hamilton, "along with some of the people they hired from the bankrupt company. We had three weeks left to get the first unit out the door."

Krummen wasn't done yet either. Since Johnson Thermal Systems wasn't on Tigris' approved vendor list, there was some real skepticism to overcome. "I was on a call with ten people—including six lawyers—three times a day, for at least six weeks," says Krummen. "They wanted a progress report basically every four hours. They didn't know JTS and weren't convinced that they could come through on time." Instead, Tigris chose another company from their approved list—a packager in Florida—and wanted Peterson to ship the units there.

<sup>8</sup> Johnson Thermal Systems is one of Peterson's main packagers, also located in Caldwell, Idaho.



Krummen responded with his own plan. “I told them we’d use their packager in Florida if we could submit a change order for the additional trucking and expand the time-frame for the liquidated damages. They said No.” Krummen counteracted by reiterating that Peterson would take full responsibility for the liquidated damages if the generators weren’t delivered on time as promised. “Liquidated damages are one percent of the total purchase order for every day you’re late. And that was simply unacceptable.”

By September 2018, Peterson’s Mission Critical Team delivered all ten backup generator systems on time without missing a beat. Each was delivered on time as originally scheduled. “I don’t think John slept at all during those first three weeks,” says Hamilton. “This was a case where we went above and beyond for a customer to fix a problem and deliver on time. And we’ve been reaping the benefits ever since. We are now viewed as their preferred gen set supplier and we’re now selling to them on the East Coast with great success. This event was a defining moment for our team, but there have been many, many other success stories.”

Cummins finally got their equipment back six months later. “At the time, I remember telling John, ‘God really loves the Doyles because it’s amazing how fast we got our equipment back,’” recalls Hamilton. Roughly nine months after his court appearance, John Krummen received a cheque written to Peterson Power Systems for \$2 million. The judge from Houston had come through, too.



“ Johnson Thermal continues to be one of our best partners. Talk about a partner that matches our values of Customer First, and doing what you say.

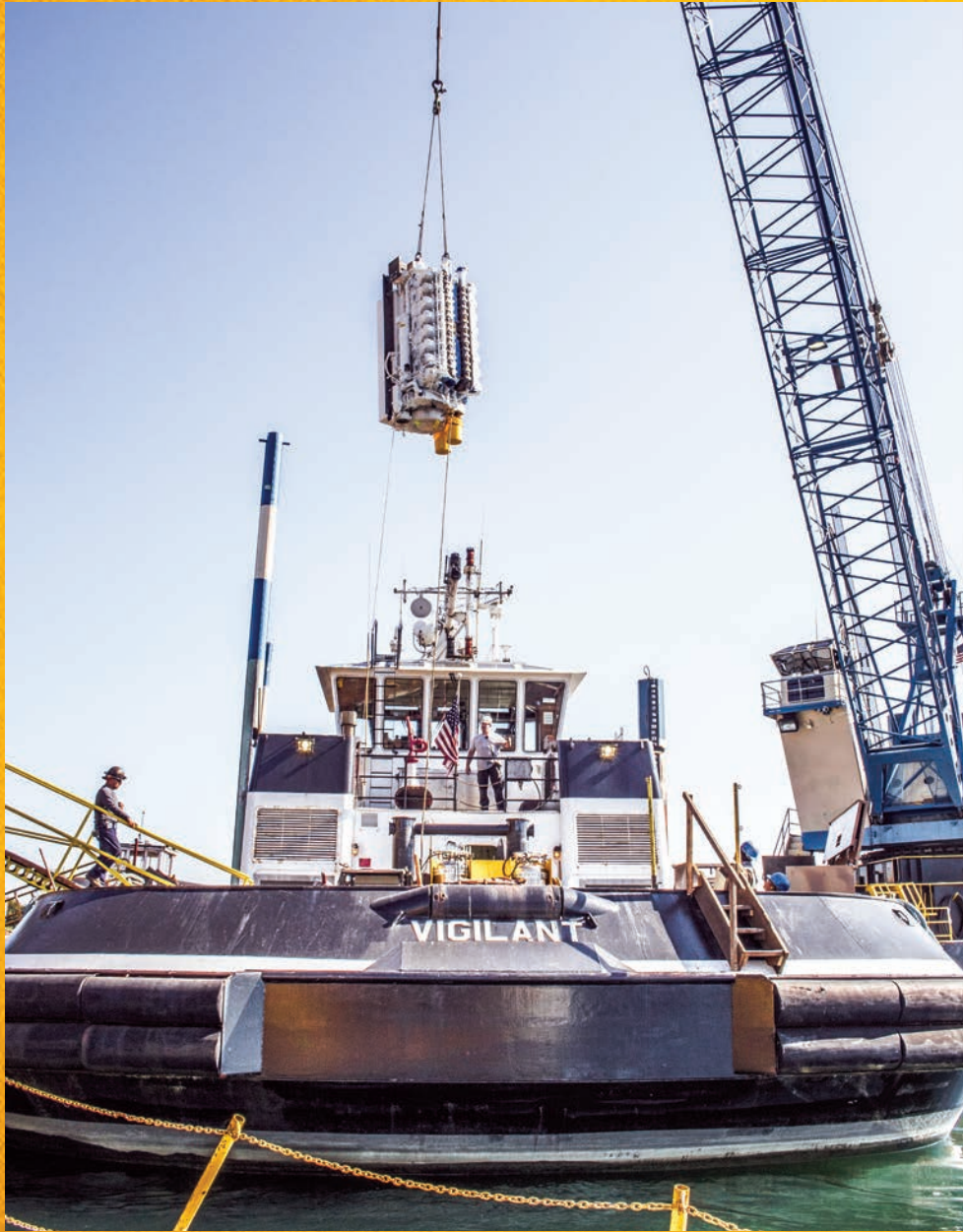
– John Krummen, executive vice president & general manager, Peterson Power Systems

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Top to bottom: Welders working on long steel structure; Ten backup generator systems ready to ship from JTS facility in Caldwell, Idaho





*New Cat 3516 Tier 4 engine being lowered into Baydelta's tractor tug Vigilant in October 2020*





## MARINE

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### PETERSON ON THE BAY (2013)

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Peter Zwart knew boats probably better than anyone else on the San Francisco Bay. As Baydelta Maritime’s vice president of operations, Zwart drove the local tugboat business in ways only an old sea captain could. Many of the tugs on the West Coast draw their designs from innovations and advancements he and his team implemented through the years—like adopting Z-drive thrusters that give 360° maneuverability. Or using special 4-inch-thick soft lines of high-tensile fiber to guide tankers through the bay. Or the new hybrid, electric drive-assist system that minimizes fuel consumption during standby. Without a doubt, Baydelta Maritime is a trendsetter. “We may be small,” said Zwart back in 2016, “but we have a big reputation in the business.” Baydelta currently operates three tugs on the San Francisco Bay and one in Los Angeles.

In 2009, Zwart met Peterson salesman Rich Floyd—another old seadog with a foreign accent. Both men grew up on the water in opposite hemispheres: Zwart on the fishing boats and locks of Amsterdam, Floyd on the beaches and yachts clubs of Australia. By the time they met, each had already accrued a career’s worth of experience in the marine industry repairing, building, and selling boats, and sailing the world’s oceans. Floyd tried to persuade Zwart to switch to Peterson for his marine engines. At the time, Baydelta was building all their tugs outside of Peterson’s territory, which meant they bought all their engines from another dealer. On the *Delta Lindsey* build, all Floyd won were the two harbor sets (50kW generators). It was a test.

Zwart decided to give Peterson a try with the next build—the *Delta Audrey*. “When you’re buying two engines worth over a million dollars apiece, it helps when someone is willing to work with you,” explained Zwart. “Rich was helpful, fair, and really wanted our business. That’s why we switched to Peterson.” Since then, Baydelta has built three tractor tugs, using Peterson Power Systems both for their new engines and their product support. The relationship has been good for both parties.



In 2014, Peterson did a top-end overhaul on a pair of Cat 3516 engines for the tug *Delta Billy*. It was historic—not for the work done but rather the location where it was performed: on the water at Point Richmond. For sixty years Peterson had been conducting its marine repair business from field trucks dispatched all over the SF Bay Area. Techs would park as close as possible to the ailing boat, flip open their tool bins, and get to work. In April 2013, Peterson launched its new dockside service facility, which changed all that. Customers now have another option. “Our boat dock was a brilliant move,” says Floyd. “We are the only Caterpillar dealer on the West Coast to have a shore-side facility for marine repair. It’s been tremendous for our customers.”

The dock affords Peterson customers several advantages. Chief among them is the savings on travel time. “Our regular labor rate includes portal-to-portal travel time,” explains Floyd. “But when a customer brings his vessel to our dock in Richmond, there is no travel time. In effect, they’re getting a discount for using our dock. So all the dollars Baydelta spent on those 3516 overhauls in 2014 went straight to the repairs themselves.”

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### THE INVITATION (2013)

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Peterson landed the dock deal at the invitation of Keefe Kaplan Maritime Inc. (KKMI), a boat works facility owned by two local world-class sailors. Keefe and Kaplan set up their operation in 1996



### PETER ZWART'S LAST TUG

The last tug Zwart built, the *Delta Teresa*, was completed in 2019, a few months after he passed away suddenly in January. It was the second hybrid-powered tugboat built and operated on the West Coast—and named after Zwart's wife. Peterson supplied two 3516C main engines as well as three C9.3 and one C7.1 gen-sets for the electric-hybrid propulsion system. Zwart's ashes were spread on the San Francisco Bay from a Baydelta tug in his memory. His passing is a huge loss to the industry and to the people who knew him best.



Top left, clockwise: Peterson service truck at the docks; The Delta Teresa docked in San Francisco; Peter Zwart, Baydelta's operations manager





Left to right: Ron Cawley manned Peterson's dock facility as technician and partsman from 2013-18; Peterson marine service dock in Richmond, CA

to provide maintenance and renovation repairs for boat owners on the San Francisco Bay. They offered superb craftsmanship along with a number of other maritime vendors, all located on KKMI's property near the end of the Santa Fe Channel at Point Richmond. Since 2013, Peterson Power has been one of them, with 110 feet of dock space and a shop just steps away.

Randy Richter, Peterson's marine product support rep from 2009-2017, recalls several jobs at Point Richmond back in the late 1990s, while he was a field service dispatcher. "One day I was at Foss Maritime, out at the end of Pier 3, where we had a repower job. And I remember thinking: *There's a lot of potential out here in the repower business. We could really make some money.* We had the manpower and the know-how; we just didn't have a dock facility. So I got this idea to start looking for something to fill that hole." In 2005 Richter transferred up to Oregon as the Power parts and service sales rep (PSSR) and the dream got put on hold. But when he came back in 2009, the search resumed. "Pier 3 wasn't available at the time, and the boatyards didn't want us doing work for them. But I kept looking."

Then in 2012, Richter got a phone call. "Paul Kaplan with KKMI said they didn't want to do engine work anymore. They wanted the experts, and for them that meant Peterson." It took about a year to get the idea sold up the chain of command. On April 1, 2013, Peterson opened for business on the water right next to KKMI. "It isn't a division yet," says Ron Cawley, the 25-year Peterson veteran who manned the facility as technician and partsman from 2013 to 2018. "We're still considered part of Power's field service. I like to call it *Peterson at KKMI.*" Cawley's first job at the dock was a 100-foot sailboat named *Adele* with a 3412 Cat engine.

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### PETERSON'S DOCKSIDE SERVICE

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The dock is an L-shaped 50x60-foot floating barge anchored to the land near the end of the Santa Fe Channel—a calm deep-water channel with a big past. "We rarely see any wave action in here," said Cawley back in March 2016. "But it has an enormous amount of history. Rockefeller developed the Standard Oil Refinery down here for his oil tankers to unload. Ford built the largest





Most of Peterson's dockside customers are commercial fishing boats

assembly plant on the West Coast right here during World War II. And Kaiser Shipyards built *Victory* and *Liberty* ships here for the war. Before all that, Jack London sailed up this little estuary all the way to San Pablo Bay." The historic channel measures 22-feet deep at Peterson's dock, accommodating large commercial vessels like tugs up to 110-foot long, or four smaller vessels at one time.

## Boat Owners

Meet your **NEW**

### CATERPILLAR MARINE ENGINE DEALER




Front of Peterson Tractor & Equipment Co. main building

## PETERSON

TRACTOR & EQUIPMENT CO.

**955 First Ave., San Leandro, California**

This fine Caterpillar Marine Engine sales, service and parts headquarters is ready to serve you. You are cordially invited to come in and get acquainted. Meet the courteous staff and inspect the modern facilities.

The engine business is not new to Peterson's. For more than 21 years as a Caterpillar dealer they have served industrial engine users with Caterpillar Diesel Engines. Several years ago the sales activities for industrial engines prompted the formation of a special Engine Sales Department. This includes a

capable engineering staff for prompt solution of special installation problems.

The engine service shop is the finest, largest and best equipped in the West. Factory-trained servicemen are kept informed on all new Caterpillar practices by Caterpillar service bulletins and regular service meetings. Many specialized tools are used to do your repair jobs quickly.

You will find Peterson's stock of marine engine parts is the largest to be found anywhere in California. This means you can al-

ways expect to get the part you need at Peterson's with little or no waiting.

This well established and experienced organization brings to the marine field those and other services currently enjoyed by industrial customers.

Plan to come in and say "Hello." You can be sure of a warm welcome and prompt attention here. Or, if you need service or parts, don't hesitate to call SF 927-0200/ 8-5500 for fast, efficient response to your call.

Engine Division, Caterpillar Tractor Co., Peoria, Illinois.  
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Caterpillar Diesel Marine Engine

## ENGINE POWER

Peterson Marine ad from 1957

Cawley has handled all the repairs (until he retired in 2021), with help from Peterson Power's shop when things get crazy. His biggest customers have been commercial fishing boats. "We work on anything, but mostly 3208, 3116, 3126, C7, and C9 engines—the same ones I used to work on back in Peterson's truck shop." Back in the 1960s, truck engines were the proving ground for marine engines. Caterpillar then developed them further with marine-specific attachments. "There's still a ton of 3208s out here on the bay. They would be completely unacceptable as truck engines now because of emissions, but out on the water, it's different. A lot of these boats put eight hundred to a thousand hours on them over the course of twenty-five years. In a truck, they'll easily run up a thousand hours in one year. That's the difference."

Cawley's reputation on the dock wooed much of the fishing fleet back to Caterpillar. "They were angry with Cat for all the issues they had with their C7s and C9s," says Richter, "but Ron has been able to gain their respect and loyalty. They're coming to our dock because of his skill and his personality and his willingness to take care of them. He's created a real atmosphere of customer service. In fact, one of the customers started calling him Captain Ron and the name stuck."

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### LOCAL BIG BUSINESS: COAST GUARD, TUGS AND BAR PILOTS

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Peterson's history within the marine market goes back to 1957 when Peterson acquired the SF Bay Area Caterpillar marine engine franchise formerly held by the Thomas A. Short Company (TASCO). Since then the marine market has changed dramatically. "We're working on Coast Guard cutters and tugs that guide billions of dollars' worth of crude oil through the bay to the refineries," says Matt George, Peterson Power's general service manager from 2006 to 2017. "It's not just fishing boats anymore. In 2015, we did an overhaul on a Navy vessel—something we would never have dreamed of



five years ago.” Some of the work is performed at Peterson’s dockside facility. Some of it is still done by field techs out at the customer’s site. It all boils down to options and meeting the customer’s need in the most timely and cost-efficient manner possible. “We were very fortunate that KKMI did not want to do their own mechanical work anymore,” says Floyd. “Their offer made it very attractive for us to get in there. It has been a win-win situation for everyone.”

“We are committed to serving the marine market from our own dock facility or wherever our customers and the market demand leads,” says Barry Kreuzer, Peterson Power’s GM of product support. “Our marine team continues to build relationships, follow up on commitments, and provide top-notch product support. We’re all in.”

In recent years, the US Coast Guard has become a big Peterson customer. Three Homeland Security vessels are stationed at Coast Guard Island in Alameda—the *Bertholf*, the *Waesche*, and the *Stratton*. Peterson marine techs have worked on all of them. According to Richter, “the *Stratton* and the *Waesche* were involved in two of the biggest cocaine busts in US history, down in the Gulf in 2015.” Each vessel uses three 3512 Cat gen-sets, along with Baylor generators to run its communications and utilities. Peterson does all the maintenance and repairs on both.

Tugboats and bar pilot vessels are still the mainstays in the local large commercial engine market. They use the larger Cat marine engines like the 3508, 3512, 3516, and 3600s. “In 2015, I sold three sets of engines to Baydelta for three of their tugs,” says Rich Floyd. “Those guys take great care of their boats. Their engine rooms are superb. You could eat off those engines they’re so clean.” Baydelta’s number one client is the oil industry. They also charter out tugs for the container market, but the big money is in oil. “We are really focused on escorting tankers,” said Zwart. “If one of our boats goes out of service, we don’t make any money.



“ We are the only Caterpillar dealer on the West Coast that has a shore-side facility for marine repair.

– Rich Floyd, marine engine sales, Peterson Power Systems, retired 2018



Top to bottom: Coast Guard Cutter *Bertholf* returns to homeport in Alameda, California after a counter-drug operation in April 2012; Peterson marine techs help maintain three local US Coast Guard vessels used for Homeland Security surveillance.





“ I have Peterson’s dispatcher on speed dial.  
 – Peter Zwart, VP of operations, Baydelta Maritime, 2016 ”



### ZWART AND FLOYD TEAM UP

With the looming tough emissions requirements, even large marine companies like Crowley and Foss were staggering under the capital outlay required, given that new harbor tugs cost in the \$25 million range. We put our expertise together to design a package because we knew that 80 percent of a harbor tug’s running time is spent either maneuvering or standing by.

Our hybrid design utilized electric motors plugged into the rear of the azimuth drives, which were driven by the vessel’s Cat marine generator sets. When the high horsepower wasn’t needed, they could run the vessel on electrical power, using the smaller engines driving the gen-sets. When the tug hooked up to a cargo vessel and needed 100 percent of its nearly 7000 hp, they brought the Cat 3516s back online. The new design was both fuel-efficient and reduced emissions.

—Rich Floyd, marine engine sales, Peterson Power Systems



Top left, clockwise: Installing one of two Cat 3516 marine engines in the Delta Audrey in April 2014; Rich Floyd inside the Delta Audrey in April 2014; Bar Pilot tugs on San Francisco Bay





Left to right: Peterson's Marine team on the *Abbra Franco* (L-R) Randy Richter, Patrick Higgins, Matt George, Rich Floyd; Starlight Marine's *Abbra Franco* in 2013

Instead, we have to sub-out the work to another company, which nets out to a big loss of revenue for us.” That’s where Peterson comes in. “Over the years, I’ve had situations come up, especially on Friday afternoons or long weekends. And there was always somebody on-call at Peterson. I knew that all I had to do was pick up the phone,” said Zwart. “I had Peterson’s dispatcher on speed dial. I was up in the Whidbey Islands on a long weekend one time and got a call from one of my captains about a problem with an engine. So I speed-dialed Peterson’s dispatch and within twenty-four hours, that boat was back in service. That’s the kind of service we have to have. That’s why I appreciate Peterson and its people.”

Bar pilot vessels are the other half of the work-boat equation on the San Francisco Bay. California requires that every incoming ship use a bar pilot for navigating the bay. These boats are one hundred feet long and powered by a pair of Cat 3508 engines. They act as water taxis and small floating hotels for the pilots specially licensed to bring all large ships into the San Francisco Bay. Once a ship arrives outside the Golden Gate, the vessel delivers

its passenger to the side of the giant ship—often on rough seas—and waits while the man boards the ship using a rope ladder. The bar pilot’s job is to guide tankers, container ships, and cruise ships under the area’s bridges, maneuver the Bay’s underwater topography, and get them safely to berth.

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### STARLIGHT MARINE ON SF BAY

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Peterson customer Starlight Marine, based in Alameda, California, is a subsidiary of Harley Marine, which is headquartered in Seattle. However, Harley builds their tugboats in Portland (Peterson territory), not Seattle, and runs them at every port along the West Coast. In 2012, Starlight Marine decided to retrofit three of its Z-boat tugs, each powered by a pair of 3516s.<sup>1</sup> When Richter found out his quote was high, he took the issue to upper management, who told him to land the deal no matter what. Ultimately, Peterson got the six-engine deal because of a determined commitment to earn the customer’s trust. “We are now selling engines to Harley Marine,” says Richter, who facilitated the \$1.5 million job.

1 See the full story on pg 248, *Starlight Marine Repowers*.

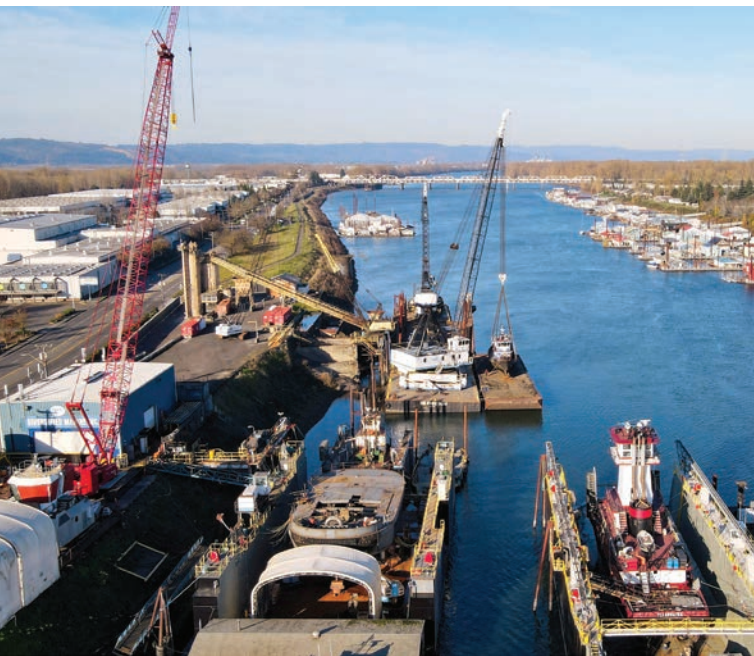


## MARINE IN THE PACIFIC NORTHWEST

The Pacific Northwest hosts two of the largest ports in the United States, which makes Peterson's Oregon/Washington territory a core part of its marine business. The region is rich in vessel operators and shipyards, with a lineage going back more than a half century. The greater Portland area has several major shipyards that do both vessel repair and new construction. "Arguably Peterson's most loyal marine customer is Tidewater Barge Lines,"

says Barrett Carpenter, Peterson marine sales rep since 2014. Located in Vancouver, Washington, they operate sixteen push tugs and seventy-eight barges on the Columbia and Snake River system between Longview, Washington and Lewiston, Idaho. Almost all their vessels are powered with Caterpillar propulsion engines and gen-sets.

In 2013 Tidewater purchased three ship sets of main engines, generator sets, and marine gearboxes for their new Point Class push tugs. "Each vessel is



*Top left, clockwise: Diversified Marine along the Columbia River in Portland, OR; Peterson marine techs work on the USNS Mercy hospital ship at Vigor Shipyards in December 2020; Vigor Shipyards on Swan Island in the heart of Portland in 2020*





*Tidewater's Point Class tugs: Crown Point, Granite Point and Ryan Point*

powered by twin Cat 3516C main engines and two Cat C7.1 generators,” says Carpenter. “And each is named after a prominent Pacific Northwest landmark—the *Crown Point*, the *Granite Point*, and the *Ryan Point*.”

Peterson marine sales rep Marty Wiemann (1998–2017) worked closely with Tidewater to select equipment models and ratings that would be both reliable and efficient. “The Point Class tugs were great projects for us,” says Carpenter, who worked with Wiemann until Wiemann left in 2017 to become Tidewater’s port engineer. “Tidewater operates dozens of Cat engines year-round which requires lots of overhauls and repowers from Peterson. It’s a mutually beneficial relationship.”

Diversified Marine Inc. (DMI) has been another important partner with Peterson over the past decade. The small shipyard is located on the Columbia River near the I-5 bridge in Portland. What it lacks in acreage, it makes up for with experience and efficiency. Since 1985, DMI has built a reputation as one of the premier tug builders on the West Coast. “Peterson has supplied over twenty

Cat 3500 marine propulsion engines to DMI since 2012, making them one of our most important marine customers,” says Carpenter. “They really helped put Peterson’s marine team on the map over the past ten years by trusting us to do the first Tier 4 engines in the world. And the first Cat Propulsion tugs in the United States. DMI is continually trying new things and is definitely at the forefront of vessel design and equipment.”

Another key player is the Vigor shipyard, situated on Swan Island in the heart of Portland. Vigor was originally one of the Kaiser shipyards—known then as Cascade General—specifically designed to build T2 tankers during WWII. It produced over 150 T2’s and could build a complete ship in seventy days. Today, they do everything from basic ship repair and maintenance to complete vessel refits. In 2014, they took delivery of the largest floating drydock in North America, measuring 960 feet and capable of floating 80,000 tons. The *Vigorous* arrived in three pieces aboard one of the largest heavy-lift ships in the world. Peterson’s technicians are on-board ships at Vigor on a daily basis.



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## BLAZING THE TRAIL FOR CAT PROPULSION

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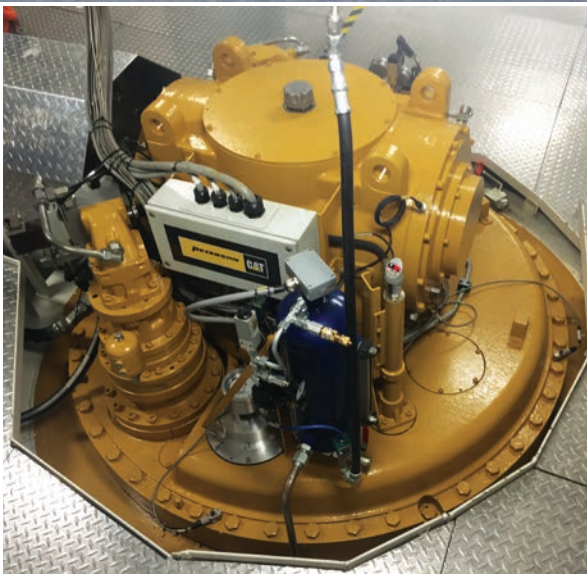
In 2013, Caterpillar purchased Swedish-based Berg Propulsion and rebranded the product line as Cat Propulsion. Today, they manufacture propellers and propeller shafts, azimuth thrusters, tunnel thrusters, marine clutches, and propulsion control systems. In 2016, Wiemann sold Harley Marine the very first Cat Propulsion azimuth thrusters sold for Cat globally. They went into two new tugs being built—the *Rich Padden* and the *Dr. Hank Kaplan*. The package also included two Tier 3, Cat 3516 engines. Peterson completed the Cat thruster installation on the new tugs in 2018, and the vessels have been operating successfully on the West Coast. “We learned a lot from those first two installations,” says Carpenter, a 2008 graduate of the California Maritime Academy in Vallejo, CA. “We passed along a lot of recommendations to the Cat Propulsion factory in Singapore. Since then, most of them have been integrated into a new version of the thrusters. Peterson can now supply complete integrated packages for vessels, including main engines, propulsion systems, and gen-sets. It’s a game changer that has vastly expanded our marine sales and product support opportunity.”

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## GREEN DIESEL ELECTRIC RESEARCH VESSELS

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Back in early 2017, Wiemann teamed up with Cat engineers for their first Tier 4 C32 engine, which was going into a scientific research vessel being built by the National Science Foundation. At that time, that engine hadn’t even been released yet, but they still wanted a quote. “These were variable speed generators with Siemens’s Blue Drive package, so it was a pretty complicated job,” explains Wiemann. “They were building a research vessel for Oregon State University (OSU), with the possibility of two more. No matter where they’re built—either the Gulf Coast or the West Coast—Siemens will buy the Cat package through Peterson.”



Top to bottom: One of the first Cat Propulsion azimuth thruster systems went into the *Dr. Hank Kaplan* tug in 2016; Inside vessel; Exterior





(L-R) Barrett Carpenter and Tyler Raymond/project manager in front of one of the Cat L32 gen-sets for OSU research vessel in 2019

In 2019, OSU was awarded the construction management contract for three of those new research vessels. In return, OSU will get the first vessel in the series, which they have named *TAANI*, meaning “offshore” to the local Siletz tribe of Siletz, OR. Peterson won all three contracts for the Cat C32 diesel-electric propulsion gen-sets, which are under construction in Louisiana. Government funding for the vessels comes from the National Science Foundation, to modernize their fleet known as UNOLS —or University National Oceanographic Laboratory System. The three vessels will be delivered between 2021 and 2024.

“The OSU projects have been some of the most complicated marine contracts Peterson has ever taken on,” says Carpenter. “These projects are pushing the capabilities of our marine team to new levels.” In 2019, Peterson was awarded two more diesel-electric propulsion repowers for the famous research vessels *Roger Revelle* and *Atlantis*, plus

“ The OSU projects are pushing the capabilities of our marine team to new levels.

– Barrett Carpenter,  
Peterson marine sales rep.

”

two 3516 and two C32 custom gen-sets for each ship, capable of six megawatts of electrical power per vessel. The two research vessels are owned by the US Navy and operated by the SCRIPPS and Woods Hole oceanographic institutes. The *Atlantis* is home to the famous Alvin submersible human-occupied vehicle, well known for its exploration of the Titanic in 1986. “Our marine group is proud to be working on these vessels,” says Carpenter. “It’s really pushed us to actively pursue more of these types of contracts.”



## CORE VALUE: TEAMWORK

### FINDING NEW WAYS TO DO BUSINESS

Every business venture has a profit-to-risk balance point. Good leaders are adept at finding that sweet spot. “Opportunity can come at any time, from any direction,” says Duane Doyle Jr., Peterson’s executive VP and general manager of Earthmoving from 2016-19. “You have to keep your eyes open and be willing to listen.”

A trip to North Carolina and another to China planted the seeds that ultimately yielded one of Peterson’s most unusual business ventures in the forestry industry. In May 2011, both Duane Sr. and Duane Jr. were at a Caterpillar leadership conference in North Carolina. While there, they spent a lot of time sharing ideas and concerns with the Finning executive group, based in Vancouver, British Columbia. “Finning had several challenges going on all at the same time,” recalls Duane Jr. “Mining was going crazy, but they were on strike so they couldn’t get all their pre-deliveries done. And their new dealer-wide computer system wasn’t working at all. It literally brought their company to a standstill, so they had to rely on other dealers to help them take care of their customers.”



Finning 568 log loader with first rear entry cab in Nov 2011

At the same time, Duane Jr., then product support sales manager in Oregon, had been working hard to find business for his empty shop in Portland. During Peterson’s entire first year in the former Halton-Cat territory (2010), one of their largest shops remained completely empty. COO Jeff Goggin kept asking Duane Jr. what he was going to do about it. “I told him we were going to have to look somewhere else because I didn’t think we had the business here locally,” says Duane Jr. But after getting to know the Finning crew and their immediate challenges, the lightbulb blinked on. Finning, the largest Caterpillar dealer in the world, and Peterson had the exact opposite problem. The last night of the conference, Duane Jr. put his idea on the table over a beer. “You have a lack of capacity; we have extra. I think we could really help each other out.”



Together we do what we couldn't do alone



Left to right: Empty Portland forestry shop; Same shop filled with Finning machines

Two weeks later, Duane Jr. got a call. Finning wanted to talk. “They were so focused on mining machines and rebuilding equipment that they couldn’t get their new deliveries out the door,” explains Duane Jr. He and Chris Harbeson, regional product support manager for Peterson at the time, put together a presentation. Their concept was simple: Cat would ship all Finning’s new machines directly to Peterson’s Portland location. Peterson would do all the pre-delivery and customization and ship the machines to Finning for final delivery. Finning liked the proposal and gave it a green light.

## PHASE ONE: PETERSON-FINNING CONNECTION TURNS TO FORESTRY (2011–2016)

The first round of machines showed up in September 2011. By year-end, Peterson had pumped out over one hundred machines. “We helped them deliver 20 percent more machines that year, and they were pretty happy,” says Duane Jr. “At first, it was everything under the sun except mining equipment. And all they wanted was regular new machine prep. Just vanilla prep.” But in 2012, after seeing how the partnership was going, Finning decided to focus their Peterson connection on forestry machines alone, given Peterson’s expertise in the forestry market. “Finning does a lot of custom stuff on their forestry machines,” says Duane Jr. “Like fifty-thousand-dollar custom cabs, the guarding, special brackets, and catwalks. It’s not vanilla at all.”



Rear-entry cab installation in shop





Log Loader rear-entry cabs waiting for installation

As the service supervisor for Peterson's Forestry shop in Portland, Shawn Cornwall-Brady was tasked with leading the project. "Finning has a very high standard for their new equipment, and that requires a lot of fabrication. Most of their excavators come without catwalks or cabs, so we fabricate and install those on their log loaders. And we heavily modify their hydraulics. It's amazing what they do to their machines." Finning orders their log loaders without cabs because Canada requires a rear-entry cab and Caterpillar didn't offer them.<sup>2</sup> "Cat and Finning have a deal," explains Cornwall-Brady. "The machine comes directly to us from

Cat's factory in LaGrange, Georgia. The cab ships separately from a Canadian company Finning uses. The factory also sends us a huge box of Cat parts with the machine—everything you need to assemble the cab. So when it gets here, we load it all up with the wiring and air-conditioning and everything."



Above: Peterson & Finning forestry equipment inventory in Portland; Right: Completed Cat 568 LL beaded back to Finning in 2015.

Between 2011–16, Peterson prepped and customized 592 forestry machines plus another 124 construction machines for Finning. And Finning was thrilled with the output. It was the perfect symbiotic relationship. "We had the facility, a ton of room, and a huge lot outside to store machines," says Cornwall-Brady. "We can turn their machines around faster than they can because we have ten guys dedicated only to Finning. That's a cost-benefit to them, besides the cheaper labor rate." Even with the expense of shipping machines between the two dealerships, it still nets out to big savings.



In October 2013, Peterson started feeding its own machines into the forestry shop to leverage the dedicated technicians and their forestry expertise. "When this first started, we promised Finning that we'd treat them just like one of our traditional customers," says Cornwall-Brady. "We were not going to just use their machines as fill-in work. We'd focus on whatever they needed, 24/7. And we've been able to put out over 170 machines a year. That's extremely high. These guys have really stepped up in order to make this thing work. They're a team."

<sup>2</sup> Caterpillar started offering rear-entry cabs on their log loaders in 2017.





Cat 568 log loaders being worked on in Portland shop

## PHASE TWO: FINISH-TO-ORDER (2013–2018)

As the Peterson-Finching deal evolved, new ideas surfaced that would further benefit the relationship. One was a freight cost-savings idea floated by Duane Jr. “All Cat forestry machines (FM) are made in Georgia, but the majority of their business is done out here in the Northwest. So they’re making stuff on the other side of the continent for consumption here.” Duane Jr. started analyzing the costs and zeroed in on the largest variable: the freight charge. “Our biggest cost for forestry products, and key disadvantage, is that our biggest competition—John Deere—is just five hours away in British Columbia. It takes five or six weeks to ship one Cat machine by rail from Georgia to Portland at a cost of twenty-five thousand dollars. Our competition can deliver a machine in one day for two thousand.” The frustration Duane Jr. felt led to some creative brainstorming. *What if Peterson became a Cat factory? What if we could convince Cat to leave the sticks and booms off their log loaders and fit two machines on a railcar and halve the cost? Then we could have the booms and sticks shipped directly to us from their supplier in Wisconsin. And we could do the final assembly here.*

When Duane Jr. explained his reasoning to Caterpillar, they liked it. One of those people was Kevin Thienemen, president of Caterpillar’s Forestry Group. Duane Sr. and Duane Jr. had met Thienemen on a business trip to China in October 2012

## FTO AND TEAMWORK



The FTO process really boils down to teamwork, on several levels—between Cat and its dealers, between dealers, between shop crew and foreman, and between employer and employee. Shawn Cornwall-Brady

played a pivotal role as both the shop supervisor and member of the logistics team that went back to the factory. “That hardly ever happens,” says Cornwall-Brady. “To have the owner of a company take a shop supervisor back to the factory with him and listen to his ideas. That just doesn’t happen everywhere.” But as a key member and implementer of the project, Cornwall-Brady’s ideas and opinions were valued. “When Duane Sr. comes through here, he has a million questions on what we’re doing with these machines. He will sit down and talk with you; he’ll ask questions and listen to what you have to say. He takes it to heart. You can tell by his questions that he used to do this and really loves it.” It takes a team to make these pioneering projects work. No one person, no matter how high up the ladder, can do it alone. “I’m lucky enough to be the one out in front,” says Cornwall-Brady. “But it takes every single person to make it work because this has a lot of moving parts—whether it’s getting the deal set up with the right people or getting these machines assembled in a timely matter and out the door. It takes a lot of people. It takes teamwork.”



while checking out the Chinese equipment market and the challenges Peterson faces from the Pacific Rim. At the time, Thienemen was president of Cat-China. “We met Kevin literally a month before he was scheduled to transfer to Georgia as the new president of Cat Forestry,” says Duane Jr. “We had dinner with him and talked about our concerns with the forestry market, among other things. It was a great way to start our relationship.” When Duane Jr. presented his cost-savings proposal to Cat in early 2013, it was Thienemen who helped make it happen. “Kevin is all about performance. His attitude is ‘If this is the best way to do it and we can meet our goals, then I’m all for it.’”



Although Duane Jr. spearheaded the project, there was a whole team working out the numbers and logistics: Shawn Cornwall-Brady, Chris Harbeson, Mike Coiner (forestry specialist), and both Duane Sr. and Jr. “We all went back to the factory in Georgia to present our plan to Cat,” explains Cornwall-Brady. “We started talking about FTO

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Top to bottom: Sticks & Booms; Duane Jr with Chris Harbeson at logging site in Alabama; Cat 568 minus stick & boom.

(Finish-To-Order), which means shipping the machines to Peterson—without the front ends—for final assembly. They liked the idea because it would save everyone money. And not just on freight—it would also increase the capacity at their factory by 15 percent.” Cat would then be able to invest those three or four days of assembly time back into making more machines. And the machines would be closer to their destination point in the Pacific Northwest when completed. It was a winning solution all the way around.





In July 2013, the test machines arrived in Portland from LaGrange, Georgia. The pair of Cat 568 log loaders came minus their booms and sticks. After the initial prototypes were complete, the team headed back to Peoria. “We reported our results and laid out our plan for Cat. Then over the next year, they ran the numbers to make sure it would work for them. It was a long, long process, but in October 2014 we finally started our FTO project. And now we are the only Caterpillar dealer with a factory-designation code (12P),” says Cornwall-Brady. “This is the first time Caterpillar has ever done anything like this.” The FTO project took over a year to achieve from concept to implementation. Peterson now orders all its forestry “swing” machines without the front end. Cornwall-Brady’s team then assembles them in a corner of the forestry shop, right next to Finning’s pre-deliveries.

Everything was going according to plan. And then, in 2015, politics and economics collided with the US energy market, causing a major upheaval for Caterpillar. Coal, tar sands, oil, and fracking were all severely hobbled in the name of climate change. “Mining is one of Caterpillar’s largest business segments,” explains Bill Doyle, Peterson’s owner and CEO from 1977–95. “If oil costs are down, then oil and tar sands production is down, which affects the sale of Cat trucks. In some states, coal is virtually shut down, so mining equipment sales are way down.” That ripple effect took its toll on Caterpillar. They lost billions of dollars, which sent their stock tumbling. Cat’s answer was to reorganize and consolidate some of its factories. And that threw the proverbial wrench into Peterson’s FTO project. “Cat decided to move production of our forestry machines to Texas,” says Duane Jr. “And that meant we had to start all over again with a new group of people.”

Unfortunately, it took the new factory in Texas over a year to get forestry machines online, and by September 2018, Caterpillar announced they were selling part of their purpose-built forestry line to Weiler. This brought on another reorganization for Cat’s forestry machines, which would now fall under Cat’s Excavation team, managed out of Japan. Subsequently, Peterson’s FTO concept is on-hold. Indefinitely.



Top to bottom: Pair of Cat 568 LL arrive from Finning by rail in August 2012; Cat 568 Log Loader proving its worth





*C15 engine repair in Portland truck shop in 2017*





## TRUCKS

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### CAT TRUCK ENGINES: END OF AN ERA (2008)

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One of the most significant changes in Peterson’s portfolio over the past twenty-five years is the evolution of its truck business. Caterpillar entered the truck engine market back in 1960. Its first offering was the Cat 1673, a six-cylinder, 207 hp diesel engine. In 2008, the last Cat truck engine, a C15, rolled off the assembly line in Mossville, Illinois. Progress and the escalating demands of the EPA had shrunk Cat’s market share to an unsustainable sliver. It was time to pull the plug.

The decision came as two factors coalesced into a perfect storm. Traditionally, the truck industry gave brand options for engines at the quoting table. In 2006, Daimler decided to put its own Detroit engines—exclusively—into its Freightliner trucks. Following the auto industry’s model, Daimler’s vertical integration with the Freightliner brand made sense as a cost-control measure. But it took a third of the engine business off the table. A few years later, PACCAR did the same thing with its Peterbilt and Kenworth trucks and European-built DAF engine. And since PACCAR was Caterpillar’s largest engine customer, the verdict was devastating.

The final blow came as the EPA ratcheted up its emissions standards. In 2007, Cat engines were well within compliance, but by 2010 Cat knew they would not meet the new requirements. Coupled with the severely curtailed market, Caterpillar decided to pull out of the truck engine business altogether and focus elsewhere. The announcement came on June 10, 2008. “That’s when everybody started to panic,” recalls Ken Ehni, truck engine business manager (retired 2018), who had to explain all this to his customers. “*What do you mean you’re getting out of the business? You’re leaving us no other choice but to buy somebody else’s product.*’ I got that a lot.”

Longtime customers were devastated. Of the Big Three engine manufacturers—Cat, Cummins, and Detroit—Cummins was the only option left. For Toby Giacomini, Jr. (Toby’s Trucking), that was not an option he was





Left to right: Ken Ehni; Toby Giacomini Jr. of Toby's Trucking, along with business partners, Heidi and Kevin Noonan.

happy with. “It was very depressing that Cat engines weren’t going into Peterbilts or Freightliners anymore. We were kind of up in the air,” said Giacomini, back in 2009. “We knew there was something in the make, but at that point, nobody knew what. The problem was that we were being forced into something with this CARB [emissions] deal, and if we waited two or three years for Cat to come out with something, we were going to be so far behind the eight-ball that it was going to cost us a lot of money to catch up. I had a big investment in Caterpillar engines, and Peterson was guaranteeing me that they would honor their warranties. But it’s always hard when you start changing over and looking at other products. We’re just hoping for the best.”

For Biagi Trucking, the announcement was equally disturbing. “The Peterbilt truck with the Cat engine was our bread and butter. It broke my heart when that combination went away,” says Gregg Stumbaugh, Biagi’s corporate equipment director, who manages a fleet of 275 trucks for the Napa-based company. “I can tell you, our owner was not happy that Cat was getting out of the on-the-road business. But Ken Ehni assured me that Peterson would take care of us.”

Caterpillar’s announcement put many of its loyal customers on edge. It also left truck dealers and its

own Cat dealers equally at a loss. It left a gaping hole. And then something happened.

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### GOING INTERNATIONAL (2010)

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“In June 2010, I got a call from Tom Eberlin in Peoria, who headed up Cat’s on-highway product support group,” Eric Martin, then president of Peterson Power Systems, explained in February 2011. “He told me that Navistar was not happy with their Bay Area International Truck dealer who was



Eric Martin, president of Peterson Power (2007-2011) spearheaded the effort for Peterson becoming the Bay Area International Truck dealer as Peterson Trucks, Inc. in 2011.



in deep financial crisis. ‘We think Peterson would be a good fit,’ Eberlin said, ‘so be expecting a call.’”

Nothing could have been more enticing to Martin, who had started out as a truck mechanic and was now at the top of his game. The timing couldn’t have been more perfect either. For those willing to take a glance in the rearview mirror, the handprint of Providence was all over it. But there was also a lot of pushback. The economy was still in the dumpster. Peterson was just wrapping up its Halton acquisition and preparing to open up for business in Portland. Peterson’s resources were stretched thin. So when International came calling that June, there were a lot of skeptics sitting around Peterson’s conference table. “If it had been put to a majority vote in the executive committee, it would have been shut down,” recalls Tom Bagwell, then director of marketing for Peterson, now executive VP of Trucks. “If it had been left up to the finance guys, it would have gotten a thumbs-down. In fact, it did—several times. If it was up to Caterpillar, you could have heard *no* from Peoria to here and back because they did not want us getting distracted from our core business.”

For a few, however, the potential of a truck dealership far outstripped the risk. “This was Eric’s dream, his vision,” says Jeff Goggin, Peterson’s COO, and past president of Peterson Power (1993–2005). “He and Tom knew we needed to figure out how to replace our TEPS business [Truck Engine Parts &

Service] once Cat quit making truck engines. We’d been supplying parts to these truck dealers for decades—millions and millions of dollars’ worth. We had truck shops throughout our territory, and now we’re not selling truck engines anymore. What the heck were we going to do with those shops and all the people who worked there?”



*International trucks in front of the first home of Peterson Trucks Inc, next-door to Peterson Power Systems in San Leandro, in 2011.*



“ Eric’s vision and Duane’s leadership found a way to grow this company in the midst of the worst economy Peterson has seen since World War II, using very little capital.

– John Krummen, executive vice president and general manager, Peterson Power Systems ”



(L-R) Jeff Goggin, Duane Doyle Sr, and Eric Martin at Dry Creek Landfill cogeneration plant near Medford, Oregon in 2007

The turning point came by way of a key relationship. Eric Martin was a people-person by nature and a superb communicator. He was able to build a great rapport with Dave Gerard, Navistar’s VP of dealer development. “Dave came to bat for us,” says Bagwell. “He put his name on the line for us with a commitment backed by Navistar that Peterson would meet its goals.” Martin was able to engage Gerard in the larger vision by mapping out his goals of where Peterson was, where it was headed, and how he planned to get it there. “From there, Eric convinced Duane [Sr.] that we could pull this thing off without spending any money,” says Bagwell. “We could, in fact, pull this off and *make* money.”

In August 2010, Navistar officials flew out from Chicago for a feasibility study. Six months later, Peterson Power’s back building on Teagarden Street in San Leandro was being remodeled and outfitted for the trucking business. Peterson’s truck operations were morphing from a wholesale business model to a retail dealer. “The International

dealer that we’re in the middle of becoming will be a full-service International parts, sales, and service dealer, selling hundreds of trucks a year,” said Martin back in February 2011, two months after Navistar gave the thumbs-up. “We’ve got to diversify. The truck market has not been affected nearly as much by the recession as our Earthmoving Division. We need something in our portfolio that helps the company get through these downturns.”

In June 2011, Peterson Trucks Inc. (PTI) officially opened for business as an International Truck dealer, with a territory from Gilroy up to Humboldt County, California. Today, PTI operates as an International sales and repair dealer in California at its San Martin, San Leandro, Santa Rosa, and Fortuna locations. In addition, twelve Peterson locations provide bumper-to-bumper parts and service for all makes and models of trucks. In November 2018, Peterson added another piece to its International coverage with the acquisition of Brattain International in northern Oregon. Peterson now offers sales and product support coverage for International Trucks across its three-state footprint—including rentals, lease trucks, and buses.

“Eric’s vision and Duane’s leadership found a way to grow this company in the midst of the worst economy Peterson has seen since World War II, using very little capital,” says John Krummen, then VP (now executive vice president) of Peterson Power Systems. “Within six months we grew it to one hundred employees and had a business plan to reach \$100 million in the first five years.” PTI reached that goal in 2017 and hit \$110 million in 2018. In 2019, PTI grew to \$164 million.<sup>1</sup>

In the spring of 2011, John Krummen stepped in to lead the Peterson Trucks launch in Martin’s absence. Six months earlier in December 2010, Eric Martin had gone in for colon cancer surgery. “Eric was determined to make this truck business happen,” says Krummen. “He was a big part of it right

1 This figure includes the acquisition of Brattain International in November 2018.





*Gary Ghilotti bought Peterson's first International Truck on June 14, 2011, along with a new Cat 336 excavator. (L-R) Dave Angotti/PTI lease & sales manager; Joe Rossi/PTI salesman; John Krummen/PPSI vice president; Gary Ghilotti/owner, Maggiora & Ghilotti; Duane Doyle Sr./Peterson owner/CEO; Jerry Lopus/president, Peterson Tractor, retired; Bob Jung/VP tractor sales, retired; and Nathan Ebni/tractor salesman, Peterson*

up through June 2011 when we finally opened. Even in his last breaths." Eric Martin passed away on November 26, 2011, at the age of fifty. Peterson Trucks Inc. is his legacy.

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### PTI SELLS ITS FIRST INTERNATIONAL TRUCK (2011)

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Four days after its launch, PTI sold its first International truck to long-time earthmoving customer Gary Ghilotti of Maggiora & Ghilotti. Ghilotti's loyalty to the International brand goes back years. "My first pickup truck out of high school was an International. I've been buying International trucks for a long time. They're known for being on the road, not in the shop." Maggiora & Ghilotti has also been a Peterson earthmoving customer since 1964, with roots going back to the Ghilotti Bros. fame of his grandfather and uncles.

"Gary wanted to be the first to buy one of our new trucks," says Krummen, who had dealt with

“ Peterson's service is far superior to the competition. The other providers don't even come close.

– Fred Biagi, owner, Biagi Bros. Trucking

Ghilotti for years on the earthmoving side. "More importantly, he wanted to buy a truck from *us*. If Peterson was selling trucks, then that's where Gary was going to buy his trucks." He also bought the first Cat 336 excavator in Peterson territory and only the second off the assembly line. The historic double sale highlights the cross-over nature of Peterson's business divisions. "Chances are, if you own a tractor, you have a truck," says Krummen. "Every one of our earthmoving customers has the potential to be a truck customer. And, with the relationships we've built through the years, we're hoping it's only a matter of time before we earn their trust in the truck market as well." That's exactly what Caterpillar was banking on when they



decided to build their own Cat vocational work truck. Rumors had been flying through the industry for a year but nothing had been formally announced. Customers loyal to the Caterpillar brand were left to wait and wonder.

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## THE TRANSITION: WHEN RELATIONSHIPS LAST

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Peterson is about relationships every bit as much as it is about products. Nobody knows that better than Ken Ehni. And his customers. Ehni has worn several hats during his thirty years with Peterson but is happiest out on the road talking trucks with customers. So when Caterpillar quit building truck engines in 2008, things started getting gloomy. While his customers were in mourning, Ehni was

out reassuring them that he would not leave them dangling. He was also trying to figure out a workable solution for the big gap that Cat's departure posed. "I was a bit nervous at first," says Gregg Stumbaugh, Biagi's corporate equipment director. "But when I heard about the new Cat truck, I got re-energized. And then when the specs for their new model came out, I took a step back because it was way too heavy for our application."

Ehni got a call a few weeks later from the owner of Biagi Trucking himself, Fred Biagi. "He was holding back to buy the new Caterpillar truck he'd been hearing about," says Ehni. "I told him it was too heavy for his application. 'Yeah, I know,' he said, 'but we're all Peterbilt here, and you've worked with us all these years. We just want to buy something from you.' So I told him to buy Internationals." When Ehni reported the impending sale to his boss, Krummen was incredulous. "Five new trucks just like that? Unbelievable!"

At a time when Peterson was trying to get traction in a new business, having a customer buy five new trucks, just like that, was amazing. "It's a relationship thing," Ehni told Krummen. Thirty years of relationship, to be exact. Thirty years of being there before and after hours, partnering on deals, splitting the difference on disagreements, going the extra mile, and selling equipment with the right specs, not just the one in stock. Loyalty and relationship go both ways.

"For four years, we didn't buy any new trucks because of the economy," says Stumbaugh. "None. And that's unusual because we generally buy thirty new trucks every year. But the first ones we bought after that stint were five new Internationals from Peterson. The reason we went with International is partially the service. But mostly, in our eyes, International got instant credibility when Peterson bought them. Peterson has partnered with us for years and helped us be successful. It's the integrity of guys like Ken Ehni. You can't question it. It's just there."



“ In our eyes, International got instant credibility when Peterson bought them. Peterson has partnered with us for years and helped us be successful.

– Gregg Stumbaugh, corporate equipment director, Biagi Bros. Trucking

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While truck customers were adjusting to the loss of the Cat truck engine, Peterson was anxiously awaiting a new product to sell. The hurry-up-and-wait Cat truck was taking its sweet time. Finally on March 22, 2011, it showed up.

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### CAT'S NEW TRUCK: THE BIG REVEAL (2011)

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As debuts go, it was a big one. Caterpillar chose ConExpo-Con/Agg 2011 in Las Vegas for the grand unveiling. The launch was one of the most significant product debuts in Caterpillar history. As the curtain dropped, clouds from dry ice billowed out over a crowd eager to see the promised truck. The Cat CT660 was finally here.

For Cat customers, it had been a long time coming. For Peterson, it had been an exercise in patience, handholding, and interim solutions. The new truck was the product of a fifty-fifty joint venture between Navistar and Caterpillar called North American Severe Service (NASS). Back in 2009, the two industry giants had joined forces to build a truck that would fill a weak spot within International's product line. Cat would design the truck and sell it exclusively through its dealership network. Navistar would build the Cat-branded, Class 8 truck at its International facility in Texas.



*Top to bottom: New Cat vocational truck introduction; Jack Drew (Willits salesman) sold first Cat truck into logging to Anderson Logging*

The entry-level model came with a Navistar engine (11-liter or 13-liter), a choice of colors including Cat-yellow and, of course, the distinctive Cat look. The reincarnation of Caterpillar's commitment to the truck industry now sat in Las Vegas wowing customers in all its chrome-grilled glory.

Back in February 2011, Eric Martin had laid out Cat's vision: "Caterpillar's first model is a heavy-duty, three-axle, workmen's truck—strong and rigid and durable. The initial model will be a big dump truck, a transport hauler, a logging





Traffic along I-580 near Livermore, California in 2020

truck. They'll follow that up with a lighter design for fuel-haulers and garbage trucks and payload haulers." Caterpillar's rationale for choosing a vocational truck was customer-driven. "Sixty percent of the customers who buy machines today also buy trucks," said George Taylor, director of Cat's on-highway truck group, at the debut in Las Vegas. It seemed the most logical place to start since Caterpillar dealers already had an established construction customer base.

During the three-year wait, many customers had declared their willingness to try the new Cat truck just because it was a Cat. Peterson even had a waiting list. Once the oohs and ahhs of ConExpo died down, those first CT660s went to work. San Francisco-based Baumann Landscape & Construction bought the first one from Peterson in December 2011. Other early adopters were Anderson Logging (Fort Bragg, CA), JJ Albanese (San Jose, CA), Ford Logging (Fortuna, CA), and Duckworth Trucking (Napa, CA). Salem-based K&E Excavating bought the first Cat truck in Oregon, powered by the new 15-liter engine—another NASS joint effort.

"This is the first time in thirty years that a new truck manufacturer has come onto the North American market," said Greg Plattner, Peterson's Cat Truck salesman, back in 2015. "The dealers just want Cat to get it right. If it takes time . . . well, just get it right and we'll take it from there. Because Peterson can support it like nobody else's business."

However, the 15-liter C15 engine was only on the market for six months when Navistar decided to pull the plug in 2012. The engine had been a NASS joint venture. Cat had provided the core engine block. Navistar re-engineered it to meet emissions standards using their EGR (non-urea) system. When that engine failed compliance, Navistar decided to scrap the program. The move put a decisive wedge in the relationship. In February 2016, Navistar and Caterpillar ended their five-year joint venture and stopped building the Cat truck.<sup>2</sup> Navistar continued to build its International truck at its International facility in Texas using a 15-liter, emissions-compliant Cummins engine. Caterpillar took a different route.

<sup>2</sup> Navistar built its International Truck concurrently with the Cat Truck. The models looked different but used the same engines. When the EGR emissions system failed, Navistar decided to use Cummins engines. Cat opted out.



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## ROUND TWO: CAT GOES SOLO (2015)

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In June 2015, Caterpillar announced it would build its own truck—an all-Cat version—at a state-of-the-art facility in Texas. “That’s how we’re going to get our customers back,” said Ken Ehni in April 2015, as Power’s parts general manager. The official announcement came with a delivery commitment of the second quarter of 2016. That left just one question. Would there be a Cat truck engine under the hood in the future?

Less than six months later, the answer came back with a resounding *no*. On February 26, 2016, Caterpillar announced they were pulling out of the truck industry altogether—engines, trucks, the works. The EPA’s stringent and costly measures had struck the final blow. “Remaining a viable competitor in the market would require significant additional investment to develop and launch a complete portfolio of trucks,” said Ramin Younesi, VP of Cat’s Industrial Power Systems Division. Upon further review, they decided there just wasn’t a sufficient market opportunity to justify further investment. They would, however, continue to offer customer support for the trucks already on the road. That meant Cat dealers would continue offering the same product support as before to their on-highway truck customers for the Cat trucks that had been sold. But the CT660, CT680, and CT681 would cease production immediately. Customer hopes for an all-Cat truck were put to bed for good.

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### SUPPORTING CAT ENGINES: PAST PRIME TIME

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Peterson was selling 1,500 Cat truck engines a year when Caterpillar shut down its Mossville engine factory in 2008. And with 52 percent of the market, that left only 48 percent to split between the rest of the equipment manufacturers—Cummins, Detroit Diesel, International, MACK, and Volvo.



*Tom Bagwell/president of Peterson Trucks*

Today, there are still 1.6 million Cat truck engines out on the road even with Cat’s flat-lined “new” market share. “There is still significant opportunity with the old Cat truck engine because you sell the most parts when trucks get old,” said Bagwell back in 2015. “We had our very best years in 2013 and 2014 for truck engine parts. That was remarkable.” In 2000–08, when the fuel economy gains and weight savings dried up with the emissions mandates, people started keeping their trucks longer. Instead of selling in three to five years, customers held on to them for seven or eight. And that’s when the parts and service kicks in—at 400,000 to 600,000 miles. That’s why Peterson could have a record year six years after they sold their last truck engine. Those older Cat engines will go another dozen years before the last one hits the scrapyards. Until then, Peterson is committed to supporting every one that comes through its territory. Ironically, that very commitment created a brand-new wrinkle.

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### TEPS: SHIFTING THE PARADIGM

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Back in 1968, Cat set up a wholesale marketing program called TEPS, or Truck Engine Parts and Service, to sell its new truck engines. TEPS dealers





Coast Counties Trucks—Peterson’s #1 TEPS dealer for 1998: (L-R) Eric Martin/truck engine business manager, Peterson Power; Craig Archer & Bob Archer/Coast Counties; Jeff Goggin/VP & GM of Peterson Power; Duane Doyle Sr./owner & CEO of Peterson

were local truck dealers like Coast Counties Truck (Peterbilt) and Bay Area Kenworth who bought their engines factory-direct from Caterpillar and then sold to the end-user. Peterson’s job was to influence TEPS dealers to sell Cat engines over Cummins or Detroit and to provide after-sales product support to both the TEPS dealer (wholesale) and the end-user (retail). Peterson never went head-to-head with its TEPS dealers. The symbiotic relationship worked extremely well in the truck industry, building strong ties between Peterson and its TEPS dealers.

But when Peterson Trucks became the new International Truck dealer in 2011, it also became a TEPS dealer. “I thought it would be a lot harder

than it actually was,” says Ken Ehni, PTT’s product support manager at the time. “At first I thought it would be: *It’s been great knowing ya. Now get the hell out of here!*” But none of that happened. It went very smoothly. I think it’s because of the integrity and relationships and loyalty we’ve built through the years with the TEPS dealer principals and parts managers. It all comes down to relationship.”

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## IDEALEASE: ANOTHER CHOICE

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On July 5, 2012, Peterson officially became one of over 400 Idealease franchises around the country. As the lease and rental arm of Peterson Trucks, Peterson’s Idealease delivers worry-free truck fleets to its commercial truck customers on a contract basis. “Our core business is customers whose core business is not trucking,” says Dave Angotti, Idealease general manager. “All they want is to get their widgets from Point A to Point B. We partner with them to run the trucking side of their business, from the initial asset purchase to maintaining the unit and taking it back at the end of the term. That allows them to be an operator without all the headaches of ownership. We give them uninterrupted service at a budget-able cost.” And it’s working well. Business is booming.



Peterson Idealease has over 1,200 trucks out on the road ... and growing





Dave Angotti/Idealease general manager

Today, Peterson Idealease has over 1,200 trucks out on the road. Commuters in the SF Bay Area drive past them every day without realizing it. That's because they're detailed with the corporate branding of each customer—like Kraft Foods, Schwan Commercial, Arctic Glacier Ice, Goodwill Industries, Stericycle—even United Rentals, a stiff competitor of Peterson's rental company, Cresco. Kraft Foods trucks might have Ritz Crackers or DiGiorno pizzas painted on their sideboards. Arctic Glacier Ice trucks sport the little blue guy with the “*I only have ICE for you*” slogan. But underneath each coat of paint is a new International truck, purchased by Peterson Trucks at the start of that lease term. The only nod to Idealease is a little sticker on the hood. And you have to look pretty hard to find it.

Idealease offers heavy-duty tractors, medium-duty dry vans, stake trucks, rail trucks, and refrigerated units for long-term lease or short-term rental. They also offer contract maintenance for national and local truck customers and roadside service. “People want to drive something that's new and well-maintained. That's what we provide,” says Angotti. “We excel above our competition because we care about each customer whether he's got one truck or fifty. They all get the same level of commitment. It's all about keeping the customer happy.”



## MANUFACTURERS

### Engines

- Caterpillar (1960–2008)
- Cummins
- Detroit (Daimler)
- DAF (PACCAR)
- International (Navistar)
- Volvo

### Trucks

- Cat Truck (NASS)
- Freightliner (Daimler)
- International (Navistar)
- Kenworth (PACCAR)
- Mack (Volvo)
- Peterbilt (PACCAR)
- Volvo
- Western Star (Daimler)





“ Nine times out of ten, other dealers don’t stand behind their product like Caterpillar does. And they never fight for us like Peterson does.

– Brad Renn, owner, Renn Transportation

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*Left to right: Brad Renn’s son, Peter, owns this 2011 Peterbilt with the last Cat C15 engine installed at the Peterbilt factory; PTI moved into the former Brattain facility in Portland as the new International Trucks dealer for PTI’s northern territory in 2018*

## PRODUCT SUPPORT THE PETERSON WAY

All of Peterson’s businesses share a commitment to unparalleled product support. The products in their shops may vary, but the priority is always the same. “Our product is our service,” says Ehni. “Yes, we sell parts and products, but what we offer is our service, what we do for our customers. And how we do it.” That’s the big dividing line. Peterson customers recognize that.

“Service is what distinguishes Cat from the rest of the providers out there,” says Fred Biagi of Biagi Bros. Trucking. “Peterson’s service is far superior to the competition. The other providers don’t even come close.” Gregg Stumbaugh agrees. “At Biagi Bros., we go above and beyond what our customers think their level of service should be. And that’s

what Peterson does. From the Central Valley all the way up into Oregon, there’s no question who takes care of us. We know who our partners are. We know we can pull into Peterson and we’ll get taken care of.”

“Time is a big deal for us,” says Brad Renn, owner of Renn Transportation out of Gilroy, California. “Our trucks are running around the clock, seven days a week, so uptime is the number one priority. Get it fixed. Get it out! Nine times out of ten, other dealers don’t stand behind their product like Caterpillar does. And they never fight for us like Peterson does.”

Toby’s Trucking out of Petaluma, California, brokers and hauls woodchips, hay, grains, landscape materials, and gravel—often straight from the





field. “We do 99 percent of our repair work with Peterson,” says Toby Giacomini, Jr. “When we have a problem, whether it’s in Oregon or Nevada, we’ll send up a truck behind a tow truck, switch it out, and bring it back down here to Peterson. We found it’s cheaper to do it that way because we’ve gotten a lot of comebacks using other people.”

According to Stumbaugh, “When you get used to the level of service that Peterson provides, everyone else has a hard time measuring up. It’s all that extra effort that Peterson puts in. And it starts with the people.” Top-notch product support comes down to people. People with heart. People who go the extra mile. People willing to pass their knowledge on to the next generation. Ken Ehni is a great example. He has mentored many on both sides of the fence. “I’ve learned a lot from Ken Ehni. He’s the best,” says Stumbaugh. “He takes the time to educate his customers. Whatever it takes, he will



*RJ Stephens Trucking bought the first International logging truck sold in Oregon out of the Albany store on August 20, 2019*

do it. Back when I was the general manager of Pac Lease, he told me, ‘Kid, we’ll teach you; you’ll see.’ And he did. When I started digging into it, our fleet went from 100 percent Cummings to 100 percent Cat. It was a complete one-eighty.”





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## PETERSON TRUCKS: NORTHERN DIVISION (2018)

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Since its launch, Peterson Trucks has put an enormous amount of energy into dialing in its different segments and locations. As an evolving entity, PTI is rebuilding what was lost when Caterpillar pulled out of the truck engine business. “The vision for PTI is growth. We want to see Peterson Trucks grow to the same footprint that the rest of Peterson has,” said Paul Mattson, PTI’s general parts manager, back in April 2015. “Navistar gave us an AOR (area of responsibility), which is the territory Peterson Trucks now covers in California. Oregon and Washington’s AOR belong to different dealers. We’re hoping that PTI grows to the same footprint that Peterson Tractor and Peterson Machinery occupy.”

In 2018, that hope came a step closer to reality. The owner of Oregon’s International dealer—Brattain, a family-owned company going back to 1970—approached Duane Doyle Sr. about buying his business. On November 2, 2018, Brattain officially became part of Peterson Trucks, adding five new stores to the mix—Portland, Salem, Albany, Bend, and Eugene.<sup>3</sup> It was an excellent, and unexpected, growth spurt. The Brattain acquisition also brought with it new products, making PTI the official source for International, Trailmax, and IC Bus sales and product support—plus Idealease truck leasing—for most of Oregon and southwest Washington. Today, PTI covers the SF Bay Area, the Northern California coast, Willamette Valley, central Oregon, and the Portland metro region. And it’s now that much closer to mirroring Peterson’s corporate 100,000 square mile territory.

### PETERSON’S TRUCK DIVISION

**Peterson Trucks Inc. (PTI)**—International truck sales, parts, and service in San Leandro, San Martin, Santa Rosa, Fortuna, Portland, Eugene, Salem, Albany, and Redmond. Also services Cat trucks

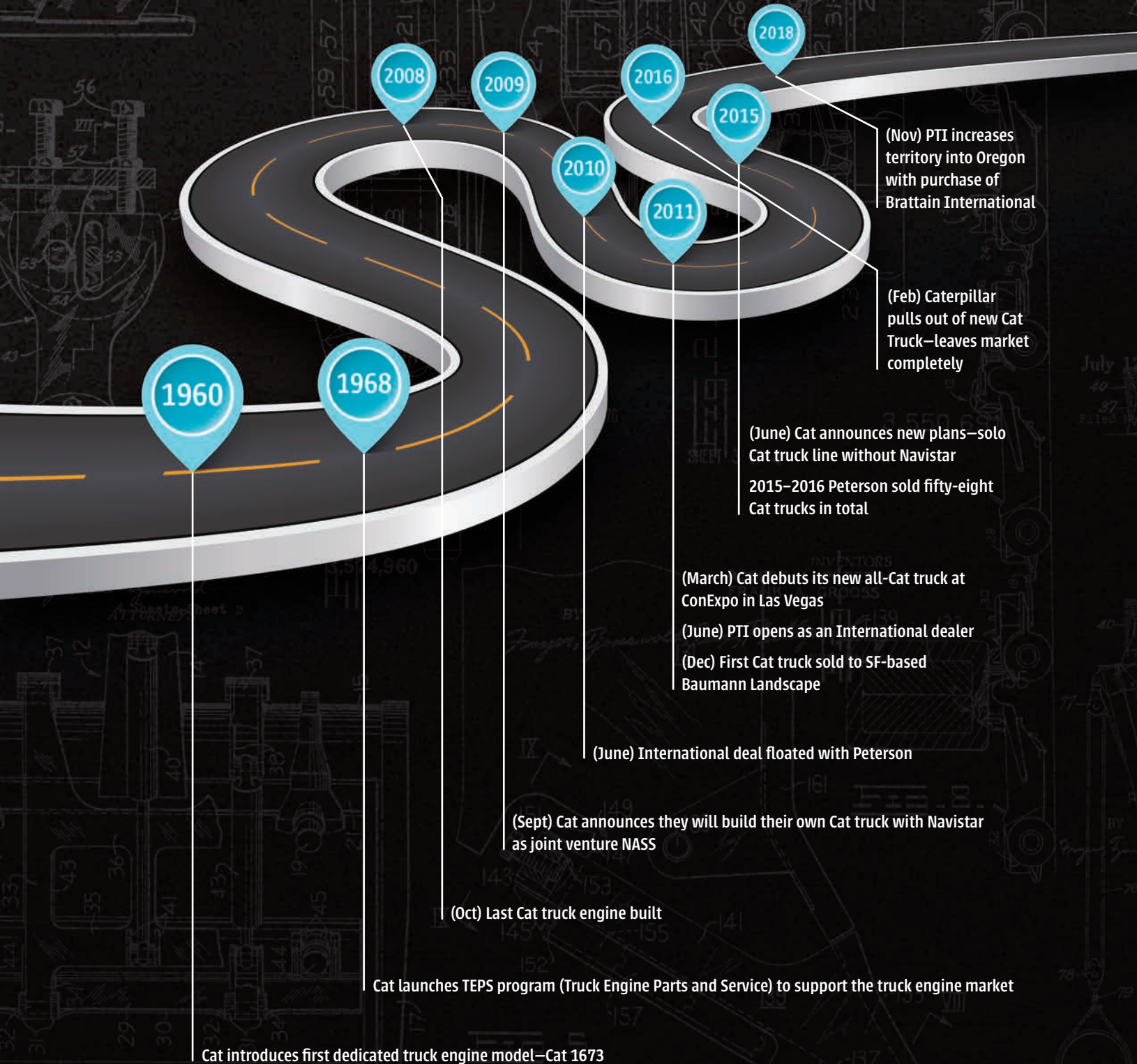
**Peterson Power**—Sells Cat engine parts to TEPS dealers in California, Oregon, and Washington

**Peterson Idealease**—Leases International trucks in California, Oregon and Washington

<sup>3</sup> Peterson moved the Bend truck operation over to its Redmond facility in 2019.



## TIMELINE: THE EVOLUTION OF CAT'S TRUCK BUSINESS





## CORE VALUE: FUN

### ENTHUSIASM BUILDS A FOLLOWING

Peterson Trucks in San Leandro is a bastion of enthusiasm. And a lot of it comes from Teresa Dias. As a forty-year veteran of the truck leasing industry, she knows how to find answers when they seem elusive. Many customers have followed her throughout her career and are now Peterson-Idealease customers. Perhaps that's why she has won top sales awards with Idealease every year since coming to Peterson in 2013.<sup>4</sup> "If you look at the lease history of her customers, you can almost track her career," says Dave Angotti, Idealease general manager. "She becomes almost giddy when it gets rough around here. She thrives on trying to figure out how to turn things around."

In 2015, one of her old-time customers tracked her down. "I knew Ed Olivera Sr. back in the 1980s when I worked for Rollins Leasing right out of high school," says Dias. "I'd been with Peterson Idealease for two years, and one day I get this call."



Teresa Dias receives her 5 year service award: (L-R) Jeff Goggin, Teresa Dias, her boss, Dave Angotti, and Duane Doyle Sr. in September 2018

"Hey, Teresa. It's Eddie Olivera from Olivera Egg Ranch in San Jose. Do you remember me?"

Of course, she did.

He went on to explain that he'd been trying to find her, but that Rollins Leasing had gone out of business. Then he asked if she still leased trucks. And after some discussion, he decided to buy rather than lease from her. As the national and strategic lease account manager for Idealease, Dias could do both. But he was insistent on one thing. It had to be a cab-over.

<sup>4</sup> In 2014, 2018, and 2020, Dias earned Idealease's highest award, the President's Club Elite award, which is given to the top two Idealease salespeople in North America, across all sales categories.





In 2019, Olivera replaced his last two competitive models with Internationals from Peterson. Teresa Dias was there to see it through.

“The last conventional trucks you leased me took a city block to turn around. I don’t think the guys are going to like them.”

“But that was way back in the eighties. We’ve made some big improvements since then, Eddie. What if I give you a truck for a few days for free? Have your guys drive it, do some deliveries, and see what they think. Then report back to me.”

Eddie called back at the end of the week.

“I can’t believe it. Every one of my drivers loves that truck. They said it was a lot more comfortable to get in and out of and ride in. It’s even comfortable for an old guy like me.”

That year Olivera bought two new International trucks. And two more the following year. Dias was able to find him a 2.99 percent finance program for that second round.

“Dammit,” said Eddie. “I have a third truck I was thinking of getting rid of. Now I’m going to have to do that one too.”

That third truck was a Kenworth and only two-and-a-half-years old—certainly not the time to sell.

“I had no idea he’d want to get out of that truck so early,” says Dias. “You’re upside down for the first several years. It isn’t until the depreciation really kicks in, in the fourth or fifth year, that you’d try to get out of a truck. So one day I was talking to Eddie about an issue he was having with his Kenworth. Fifteen minutes later, he calls back and says: ‘Nobody at Kenworth cares for me the way you do. They don’t deserve my business. I don’t care if I have to take a loss. I want to get out of this Kenworth and be an all International fleet. What can you do to help me?’”

Dias contacted PTI’s used truck department and another out-of-state used sales vendor and ultimately got the best deal for him. “For me, the fun part is finding out exactly what a customer wants, their dream fleet mix, and then help them get there. I love being able to help my customers with whatever they need—not just what’s best for Peterson and Idealease. I’ve never worked for a company before where I could ask questions to see what the customer really needed. And then figure out different options to get them there. At Peterson, that’s exactly what I get to do. If they want to lease, great. If they want to buy a new truck or a used truck, we can do that too. Or I can lease them a used one out of our rental fleet for a couple of years until they decide what they really want. It’s all about finding them the best solution. To me, that’s exciting. That’s fun.”





*San Francisco-Oakland Bay Bridge midsection collapsed during the Loma Prieta earthquake on October 17, 1989*





## PAVING

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### PAVING THE ROADS THAT CARRY AMERICA

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**I**t was October 17, 1989 and Game 3 of the World Series between the Oakland A's and the SF Giants was just about to start. Minutes before the first pitch, the ground at Candlestick Park began to shake. Twenty seconds felt like a lifetime. People stood wide-eyed and trembling, wondering if this was the Big One.

The 6.9 Loma Prieta earthquake was the largest to hit the San Andreas Fault since the devastating San Francisco quake of 1906 and created havoc all around the Bay Area. Anyone living here at the time remembers the image of a car hanging on a collapsed section of the upper deck of the Bay Bridge. And the desperate face of the one survivor trapped inside his car, pancaked between a double-decker portion of I-880 in Oakland. Forty-two motorists died in that concrete nightmare, including, a month later, that lone survivor seen peering out of his crushed car on that fateful day. It was a big wake-up call for Californians, especially the half-million commuters who cross the Bay Bridge every day. And while the San Francisco side of the bridge fared better because of its suspension design, the damage to the Oakland side grabbed everyone's attention immediately.

Since then, Caltrans and private enterprise have completed numerous retrofit projects on high-rises, hospitals, freeways, and bridges all around the San Francisco Bay Area. Yet nothing epitomizes living in an earthquake zone quite like the seismic project of the San Francisco-Oakland Bay Bridge. Contractors spent eleven years completely rebuilding the two-mile eastern portion of the bridge. The price tag came in just under \$6.5 billion.

O.C. Jones & Sons (OCJ) paved the last section of the bridge over Labor Day weekend 2013. They had already paved the new suspension portion on the Oakland side that July, using a special epoxy asphalt concrete (EAC). The steel deck of the new self-anchored suspension bridge required something beyond the usual hot-mix asphalt used on the rest of the structure. "This was a very unique project for us," recalls Kelly Kolander, president/CEO of OCJ at the time. "We used the epoxy asphalt on top of the steel plates because it holds





*Left to right: Car caught in a collapsed section of the SF-Oakland Bay Bridge in 1989; Loma Prieta earthquake 'pancaked' the Cypress Structure on I-880 in Oakland, California in 1989*

up well and has to last a long time. It's also something that would flex yet be nearly bulletproof. The material actually creates a chemical reaction that increases its heat for a period of time, which is why placement is done in an extremely tight window." OCJ had used the epoxy mix on the same bridge back in 1976. Some three billion car crossings later, it had proven its value.

Even before the paving began, the team had to apply a unique bond coat to help the material adhere to the steel. "Normally trucks can drive right onto the mat to deliver the asphalt, but because of the sensitivity of the bond coat, we couldn't do that," explains Kolander. "Instead, we used an MTV to run alongside our paver, which fed an uninterrupted flow of material into the hopper."<sup>1</sup> It was a perfect match.

During the twelve-day contract, OCJ used a Cat AP1055E paver to lay down two one-inch lifts of epoxy asphalt, followed by three Cat rollers. The job used 4,900 tons of EAC, and while that wasn't a record amount, the temperamental material and tight logistics made it a significant project for OCJ. "We planned out the sequence of every paving pass to allow enough time for the bond coat to be applied, the joints to be cut, and still main-

tain a through-lane for the haul trucks to reach the MTV," explains Bill Jensen, OCJ's lead engineer on the job. Accessibility to the site was only possible through two other contracts on either side of OCJ. Each had its own spread of equipment, trucks, and tradesmen to coordinate, which made planning and execution of the OCJ contract both vital and intense.

For OCJ's equipment manager, Mel Frisk, it was imperative that all the equipment run smoothly to meet the deadline. The stickiness of the epoxy material was an ongoing issue. "We tried to use our ground contact skis on the Cat paver to keep the mat smooth, but the epoxy kept sticking to them and dragging along the ground, so we switched to our non-contact skis. Other than that, we had very few problems. We had people standing by in case of any problems. And we had good operators who knew what they were doing. It all went pretty well."

Kolander was pleased with the outcome and the product support OCJ got from Peterson. "Since it was such a complicated and high-profile project, we required high-production, quality equipment with 100 percent uptime. We've always looked at Peterson as a partner. Their support and knowledge of the Cat product are unsurpassed. They are

<sup>1</sup> MTV stands for material transfer vehicle.



the go-to guys when we have questions or concerns. And we always end up with a competitive advantage because our equipment is better than the competition.”

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## SWITCHING TO CAT

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Today, OC Jones’ paving fleet is all Cat. But it wasn’t always so. For over fifty years, they were loyal Blaw-Knox users. “We started having issues with the track system on our Blaw-Knox pavers,”



says Frisk. “Their tracks were kind of an exotic system. They had rubber bands all hooked together, and sometimes they’d snap, and the track would break right in the middle of a freeway job. That was a big problem and very expensive. About that same time, Caterpillar was coming in with their pavers, so we started looking at them. They worked well. They had the support we needed. Plus, they had laser controls and Blaw-Knox didn’t. So we ended up switching to Cat.”

Al Hodson, Peterson’s paving salesman, worked hard to get OCJ to switch. It finally happened in June 2001 on an overlay job along I-880 in Hayward. “They were using a front extension screed on their Cat paver. As the job progressed, the screed plates were wearing quicker than normal. So, to eliminate downtime, Peterson supplied a second screed with new plates they could trade out as needed. When theirs wore out, we’d have one ready to go. We’d fix theirs while they were using ours. Eventually, they turned over their whole paving fleet to Caterpillar.”



*O.C. Jones paved the last section of the SF-Oakland Bay Bridge over Labor Day weekend 2013*





*Al Hodson (L) with Derek Pasut at Peterson Demo Days in 2015*

According to Kolander, “Having a paver break down in the middle of a shift is the worst possible nightmare in a paving operation. Tens of thousands of dollars are at stake every night when you’re out on a freeway. We’d had our eye on the Cat paver for quite some time, and when things started coming together, we switched. It was the right product with the right modifications at the right time. Blaw-Knox was having struggles with their paver. Caterpillar wasn’t. We had watched the different generations of [Cat] pavers come out. And we had a big highway overlay coming up on I-880 where it made sense to give Cat a try because the crew would have three or four months to get used to it, not just four or five days.

“ We’ve always looked at Peterson as a partner. Their support and knowledge of the Cat product are unsurpassed. They are the go-to guys when we have questions or concerns.

– Kelly Kolander, past owner & CEO, O.C. Jones Inc.

“It really comes down to the paving crew,” says Kolander. “They get accustomed to certain brands and they like what they like. To change brands is a big deal, so we were very deliberate and intentional as we watched what was happening in the industry.

When Caterpillar gets involved in a product, they may not be the best right at the start, but eventually, they get it right. And they finally did. That’s when we switched.”

## CAT’S HISTORY IN THE PAVING MARKET

Peterson’s history in paving goes back to the mid-1980s when Caterpillar first took on CMI. In June 1984, Caterpillar signed an agreement with the Oklahoma-based manufacturer to market their products through Cat’s own dealership network. In 1985, Caterpillar bought out CMI and rebranded their paving products with the Cat logo. The buy-out was part of Caterpillar’s efforts to rebuild and diversify after the devastating recession of 1982. After a few lackluster years, Caterpillar dropped the concrete pavers and asphalt plants, retaining only the grinders and asphalt pavers. In 1988, Cat bought Raygo to expand into the roller market. And in 1992, they purchased Barber-Greene—one of the Big Three in the paving industry—and hit the paving market full-force.

Initially, Cat rebranded the existing Barber-Greene machines and painted them yellow or green according to customer preference. Those early pavers were a combination of Barber-Greene and Cat componentry. But in 1996, Cat came out with their new AP1055 paver—completely re-engineered from the ground up using all-Cat parts and components and painted Caterpillar-yellow. “Those first pavers didn’t meet expectations,” explains Kevin Culligan, GM of Peterson Machinery (retired 2019), who was with Halton-Cat at the time. “There were some growing pains with those early 1055s as Caterpillar worked through the problems. But when both the dealer and Caterpillar showed up, the customers’ response was, ‘Holy moly. These guys are really going to stand behind this thing.’ Caterpillar was very proactive about improving its product and did it over a relatively short period of time. And they did a heck of a job. It’s a hell of a machine.”





### SF-OAKLAND BAY BRIDGE PROJECT (2002–2013)

Beginning in January 2002, the eastern portion of the Bay Bridge was completely rebuilt. Over eleven years, a total of eight thousand tradespeople worked on the project, which consisted of:

- a new 1.3-mile Skyway viaduct
- a self-anchored suspension bridge with a 525-foot supporting tower to Yerba Buena Island (YBI)
- a transition structure on YBI
- the Oakland Touchdown
- the new Oakland-side toll plaza.

The complex rebuild was designed to withstand an 8.5 magnitude earthquake. The last of the four contracts was completed on September 2, 2013, when O.C. Jones finished the toll plaza portion and Caltrans officially reopened the new bridge to the public. Complicating the retrofit process was the requirement to keep traffic flowing throughout the duration of the project. To do that, contractors built temporary structures to shift the traffic off the existing bridge and keep commuters going in and out of the city. The complexity of the project, with its political and financial issues and planning woes, prolonged the process from its initial completion target of \$250 million in 1995 to a final price tag of nearly \$6.5 billion and a September 2013 delivery.

INVENTOR:  
ROBERT A. PETERSON





*Top Grade Construction paving crew at work.*

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## ZERO TO SEVENTY-FIVE IN MARKET SHARE

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It took three years, but in 2001, Cat finally became the paver of choice. And by 2006, it was the number one paver in the industry. Today, Peterson enjoys over 75 percent PINS (Percentage of Industry New Sales) or market share in the paving market within its tri-state territory. But back in 1992, it was a big fat zero. Those early machine woes put a glitch in Caterpillar's and Peterson's efforts to win over the market. But many customers with fleets of traditional Cat equipment stuck it out, despite the rocky start. "Everybody that bought a paver in the early years played a part in its evolution," says Hodson. Customers like O'Grady Paving, Top Grade, Ghilotti Construction, Ghilotti Bros., and Interstate Grading & Paving were all first adopters and helped Peterson gain traction in the market. "They put their faith in us when things weren't so good, knowing that we would recover and help with their product and never walk away from them. Which is exactly what happened. But we went through a lot of growing pains in those early years," says Hodson. "We put out a lot of loaners

to customers who were having problems with their machine. And it cost us a lot of money. I'm sure there were some people around here who thought paving wasn't such a good idea at the time because we spent a lot of money early on to get this to go."

Marty Johnson, Peterson's BCP shop foreman in San Leandro, was on the front lines as a paving field tech back then. "In the early days, we went after Barber-Greene customers to try to get them to convert over. We did lots of equipment demos and jumped through a lot of hoops because the machine had a lot of problems from the start. But Cat was really good about taking care of the machines that were already sold, bringing them in over the next couple of winters for retrofits and updates. That really impressed the customers because they saw that Peterson would stick with them and wouldn't just walk away. They were real happy to see Cat come to the table and admit that, 'Yep, we've got problems and here's our fix.' That made a big splash in the industry and changed a lot of minds of customers still sitting on the sidelines watching this whole thing unfold."



DeSilva-Gates was the last of the big contractors to switch over. They were loyal Cedarapids users for years. But when BOMAG bought out Cedarapids in 2013 and started making changes, things began going downhill fast. “We were out in Tracy with two brand-new [Cedarapids] pavers—at \$600,000 apiece—and they kept breaking down,” says Rich Poppoff, DeSilva’s equipment superintendent. “I was the guy out there every night telling them we’re going to run these pavers because they’re brand new. Normally we could get them back up and running again, but these were catastrophic failures, pull-them-off-the-freeway, four-nights-in-a-row failures. We probably lost \$150,000 over those four nights because when a paver goes down the clock starts ticking. You’ve got about half an hour before Caltrans rejects that load of asphalt. And you’ve got other trucks lined up waiting. So it’s thousands of dollars a minute if a paver goes down.”



“ When a paver goes down, the clock starts ticking.  
– Rich Poppoff, equipment superintendent, DeSilva-Gates ”



Top to bottom: Rich Poppoff/L. during paver training; DeSilva’s Cat AP1055F paver; DeSilva’s Cat paver with Weiler MTV machine



That Tracy job was the turning point for Poppoff. “The next day, I discussed it with my boss and then went down to Peterson to meet with Derek [Pasut, Peterson salesman at the time]. We sat down and ordered a paver and got delivery from the factory three weeks later. That Cat paver paved everything on I-580 from Vernalis all the way to the Altamont in the summer of 2016. That was a \$100-million job and it performed flawlessly. It never broke down and it’s still out there.”

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## PAVING BENCHMARKS

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The biggest change in paving equipment over the last twenty years came with the rubber track concept. That’s when paving really took off, according to Marty Johnson, who has worked on every type of paver out there, over his three-decade career. “Cat was the first to use the rubber track design. Before that, there were two kinds of pavers. One had a steel undercarriage and rubber pads so you could run on the street. Their advantage was tractive effort, better flotation, and it could push trucks easier. The other was the rubber-tired paver that had less wear and tear, ran cheaper, and had bet-

ter maneuverability and higher speed. When the rubber-belted paver came along, it merged the two worlds. You got your tractive effort but also high-speed roadability and maneuverability around job-sites.” Cat introduced the first rubber track paver in 1996—the AP1055B—with two onboard computers. The other manufacturers soon followed.

Since then, Cat has made numerous improvements over several generations. By the end of the B models, 95 percent of the initial problems were gone. And today’s F model (2017) comes Tier 4 final-compliant and incorporates a Mobil-Trac System undercarriage with oscillating bogies and a rubber belt, a totally redesigned screed, and fourteen computers. “Everything on it is new,” says Johnson. “It’s a clean sheet of paper.”

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## THE NEW MTV

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Another benchmark product debuted back in 1987 with the MTV and RTV trucks, or material transfer and remix transfer vehicles. These on-highway trucks provide a continuous feed of material into the paver, which translates to smoothness on the mat. Today, these vehicles are becoming more and more expected, even required, in the bid process.

In 2012, Caterpillar signed an agreement with Weiler Equipment to market their paving line exclusively through the Caterpillar dealership network. Peterson was happy to take on Weiler’s MTVs and RTVs, pickup machines, road wideners, and small pavers to further augment its own paving offerings. “Weiler is an incredible supplier based out of Knoxville, Iowa,” says Culligan. “They fit right in with us because they are Customer-First focused. They take extremely good care of the customer.”

In 2015, for example, Peterson sold a small Weiler P385 paver to 7 Peaks Paving based in Bend, Oregon. But things did not go as expected. “It had electrical problems and kept throwing breakers



*(L-R) Field tech Mike Harreld discusses Cat paver’s computer system with Marty Johnson*





*On their Bay Bridge contract in 2013, O.C. Jones ran a Weiler 1250 MTV next to their Cat paver to feed a continuous flow of material into the hopper*

that would shut down the machine so the customer could not depend on it,” recalls Culligan. “Weiler’s leadership flew out to consult with the customer. 7 Peaks had lost all confidence in the paver and told Weiler they wanted a new one. A couple of weeks later, Weiler delivered a brand-new P385 paver and took back the old one. It was kind of stunning. It certainly exceeded the customer’s expectations. The availability on those pavers was six months out, but they pulled the next one off the assembly line and brought it out to the customer. Now that’s Customer First!”

In the last several years, Weiler products have become increasingly important to Peterson customers. Some Caltrans and ODOT (Oregon Dept. of Transportation) contracts even specify MTVs in their bids. In 2015, Caltrans mandated that certain asphalt mixes must run through an MTV before it could be laid down. “MTVs are a lot more than just haul trucks,” says Johnson. “They also mix the asphalt and keep it warm. Each truck has a hopper, an auger, and three conveyors onboard to deliver the mix out the back.”

“ We’re pretty self-sufficient in most areas, but we really rely on Peterson for all the training we require... and to help us keep up with the changing times.

– Mel Frisk, equipment manager, O.C. Jones Inc.

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In 2015, Bay Cities Grading & Paving was required to use an MTV on their I-5 and Altamont contracts. DeSilva-Gates had one on the Altamont in 2016, as did O.C. Jones on the San Francisco-Oakland Bay Bridge in 2013. “MTVs are huge,” says Johnson, “and they’re mostly used on big highway jobs. The one DeSilva had on I-5 north of Sacramento in 2016 was heavy enough that they weren’t allowed to drive it over the bridge deck. Instead, they had to pave right up to the deck, then haul it to the other side on an eighteen-wheeler with better weight distribution. Caltrans was worried the MTV’s weight would damage the bridge deck. But they still had to have one on the job. It was built into the bid specs.”





## WEILER ALLIES WITH CAT

In 1990, Caterpillar bought out Barber-Greene to re-establish itself in the paving market. In 2005, Cat sold some of the Barber-Greene products to an Iowa-based group of engineers to avoid emissions compliance issues. The group started to develop and Caterpillar-ize those road wideners and windrow elevators with time-proven Cat components. As the Weiler brand grew, it gained respect and a reputation for top-notch customer service within the industry. In 2012, Caterpillar and Weiler entered into an agreement to market Weiler products exclusively through the Caterpillar dealership network. To date, the brand is offered at all US Cat dealers and many others around the globe. Weiler products complement the Caterpillar line and include remixing and material transfer vehicles, small pavers, rollers, and screeds for Cat pavers. Weiler continues to listen to its customers and work with the Cat Global Paving group to develop new products for its line. Today, Weiler products retain their own branding but are warranted as if they belonged to Caterpillar.

## PAVING THE PACIFIC NORTHWEST

Peterson's northern territory of Oregon and southern Washington was involved in paving long before Peterson arrived. "We've been with Weiler products since the beginning," recalls Kevin Culligan. "Even before Peterson, we were selling some of these remix vehicles and pickup machines and road wideners as Halton-Cat. Back in the early 1990s, when Cat bought Barber-Greene, we were selling the ten-foot pavers to customers like Lakeside Industries and Baker Rock, who still has one of the original AP1055s. We knew these guys on the strength of the wheel loaders and graders and excavators we sold them. They knew our ability to do product support and after-sales support, which was a great differentiator for us. It still is today." Peterson's Oregon/Washington paving team has a firm grip on 75 percent of the market share today. In California, with three times the population and physical footprint, Peterson's paving market share is 80 percent.

## INTELLIGENT COMPACTION

The latest technology to hit the paving market is called Intelligent Compaction. It's a new quality-control process Caltrans requires that gives them a window into the details of a paving operation under contract. Onboard computers record data, like how many times an area has been covered, what the mat temperature is, and if any spots were missed. In 2017, O.C. Jones spent \$100,000 to upgrade three of their Cat rollers with the Trimble CCS900 Intelligent Compaction system to comply with the new Caltrans spec. "We're pretty self-sufficient in most areas, but we really rely on Peterson for all the training we require," says Mel Frisk, equipment manager for OCJ. "This new intelligent compaction gear on our rollers makes it more complicated. And it's hard to find personnel who can run this stuff. But it does make a better product for us. It's just part of the growth



of the industry. You've got to keep up. So we rely on Peterson to help us keep up with the changing times."

Today, with fourteen computers onboard a new Cat paver and three operators to run it, training is essential. "Whenever we sell a paver, we always include mechanic training as a part of the package," says Hodson. "We don't look at it as taking business away from us. If we're training a customer's mechanics, it helps them better diagnose what's wrong to help us help them. We still get called in but more for our knowledge. Since their guys can identify part numbers and other details, we only have to make one trip instead of two or three."

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## TEAMWORK

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"Pavers are different than any other Cat machine because it makes an end product," says Johnson. "With an asphalt paver, you're feeding material into the front and a roadway is coming out the back. There's a lot of things that have to go right and a lot to pay attention to. That's why you have two operators on the back, each with his own computer, making sure that the process is going smoothly. The tolerances are very tight. The thickness has to be right. The widths have to be right. They can't be putting any bumps in the mat. So there's a lot going on. It's a full team effort."

Kolander agrees. "In paving, you're laying down a permanent product. If you miss something, you can't go back and regrade it the next day like you can with grading work. It's more permanent. It doesn't matter to the traveling public how great the sub-grade is, or how fast you completed the contract. Or that you saved the state a bucketful of money or did a fantastic job. All that matters is the finished product. So if the road is bumpy, everybody notices. And everyone's a critic. Your wife and kids. Everyone. But when you drive on a freeway you paved and your family says, 'Hey, this ride is nice,' there's a great sense of pride and sat-

isfaction in that, which goes beyond the industry awards and accolades we've earned over the years."

**“ In paving it has to be a partnership.  
That's why we do business with Peterson.**

**– Rich Poppoff, equipment superintendent,  
DeSilva-Gates**

**”**



# CORE VALUE: CUSTOMER FIRST

966

R. A. PETERSON

3,290,806

ADJUSTABLE CABLE HOPPER DOOR ACTUATING MECHANISM

3 Sheets-Sheet 3

CONTROLS FOR

1964



FIG. 1

Feb. 20, 1966

## FERMA: THE DEMOLITION OF DOYLE DRIVE (APRIL 2012)

Patented April 3, 1971

Robert H. Peterson

Fryer and Emerald

ATTORNEYS

3,574,960

“Gentlemen. Start your engines.”

Forty engines roared to life, vibrating the pavement and the feet of dozens of spectators standing by to watch. Flashing lights from a dozen highway patrol cars kept the public at bay. Anticipation pulsed through the air. But this was no NASCAR race. And these were not high-powered customized V8 engines. This was a race against time.



At 8 p.m. on Friday, April 27, 2012, a fleet of Caterpillar excavators rumbled out to their starting positions along the elevated deck of Doyle Drive. They had just twenty-four hours to demolish over five thousand feet of pavement so a temporary bypass could be built before Monday morning's five o'clock commute. The countdown was on.

San Francisco's \$1.1 billion Presidio Parkway Project was designed to bring the southern approach of the Golden Gate Bridge up to current seismic standards. The 1.6-mile stretch of US-101 was originally commissioned back in 1936 along with the Golden Gate Bridge. The old roadway had sustained only superficial damage during the 1989 Loma Prieta earthquake, but it awoke Caltrans and city officials to its increasing vulnerability to future seismic events. The current project had been fifteen years in the making, all funded by federal stimulus money.

Long-time Peterson customer Ferma Corp. had the demolition portion of the contract. Due to the tight schedule, they couldn't afford any downtime so they rented everything they could get their hands on to beef up their own fleet. Much of it came from Peterson. "Lots of people said it couldn't be done but we made sure that we had every possible excavator available to them during that job," says John Krummen, executive VP and general manager of Peterson Power Systems. "The only way Ferma could win that contract in the first place was to beat out the competition on *time* because they weren't going to come in the lowest bid. So they planned to take that bridge down in record time."





And that's exactly what they did. Uptime was crucial for the tight deadline. "We spent quite a bit of time planning out this project," explains Rob Verga, Ferma's equipment manager. "We broke everything down into fifteen-minute increments. And we relied on Peterson because we didn't have time to experiment around. We know their reputation because we've been dealing with them for fifty years. They have never failed us yet."

Ferma's fleet of excavators, outfitted with cutters, hammers, and concrete crunchers, moved with the speed of urgency. They had to. Otherwise, a hefty fine was sitting on the other side of Monday morning. Their fleet included Cat 330s, 345s, 365s, 375s, 385s, and a massive 140-ton Cat 5110 excavator. Six machines worked on each stretch of roadway at a time, clipping, crunching, and pulverizing the concrete into blocks of debris. Ferma crews then loaded them into dump trucks and hauled it all offsite for recycling later. They were able to recycle 100 percent of the material, which netted sixty-five thousand tons of concrete and five million pounds of steel rebar.

In the wash of the high-powered tower lights, two rotating teams of technicians worked through the night to keep all the excavators and support machines in top running condition over the weekend. Peterson's Ashley Harden and Billy Hinds each led a crew of three technicians in twelve- to sixteen-hour shifts for around-the-clock coverage. "It was like Beirut out there," recalls Harden, Ferma's resident Peterson tech at the time. "I've never been in a war zone before, but it was a night of pure chaos. Organized chaos. We were driving our service trucks around, and there were chunks of freeway coming down. Debris was flying everywhere." The technicians had to work wherever the machines broke down; there was no roped-off repair area out of the way. And they worked with one eye on their surroundings because things moved so quickly. "We'd be working on a machine and then all of a sudden they'd be right on top of us," says Harden. "You'd constantly be looking around. It wasn't like they stayed in one place for an hour. Within minutes they'd be coming toward you. And you'd have to hurry up because they were coming. Fast."

INVENTOR.  
Robert A. Peterson  
Patented April 3, 1971



*A team of excavators works side by side to demolish Doyle Drive near the San Francisco Presidio in April 2012*



Ferma's Cat 5110 excavator was the star of the show. They had built the mammoth excavator as an ultra-high reach machine, capable of 186 feet at full extension. And Harden had worked for a year getting it ready for its big debut. "They wanted to test it out on this jobsite. It was so massive and strong it would grab the side of the freeway and rip it to shreds." But after fifteen minutes on the job, the 5110 broke down. Harden worked on it right where it sat, which happened to be where all the TV cameras were set up. "It was pitch black and we were right along the fence where all the news crews were. It was nerve-wracking because everybody was watching. And the Ferraris [Ferma's owners] really wanted this thing to work." The problem ended up being an electronic failure, which Harden fixed within minutes. "Personally, I thought it was too big for the job, but the Ferraris really wanted to test it on the Doyle Drive project. And once I got it running again, it worked fine the rest of the job. It was amazing."

The skill and availability of Peterson's field techs were baked right into the contract. "Their knowledge and the tools they needed to get the job done were right there in their trucks," says Verga. "We didn't need to call in for parts or service support because they had all that with them. We consider Peterson part of our team. We couldn't have done this without them."

Throughout the weekend, the barrage of equipment and people asking, "Where's my machine?" was a constant for the three-man crews, each made up of two Peterson techs and one from Ferma. "There was so much equipment running we would have four or five pieces broken down at once," recalls Harden. "You'd have to prioritize. *This one first because it's the fastest one I can get up. We don't have parts for that one. That one's going to take six hours.* Then you'd go on to the next one. And the next one. And at the same time, you'd get two more coming in."

Harden and his crew worked nonstop, tag-teaming the next crew in for complete round-the-clock coverage. They touched most of the sixty tractors on the job, some multiple times. "It's all a big blur now," says Harden,



Top to bottom: Peterson's ace field technician, Ashley Harden; Peterson field truck at Doyle Drive demolition site in 2012



who worked sixteen hours straight the first night. “We didn’t keep track of how many we worked on because we didn’t have time to write anything down. It was just blow and go.”

Visibility at night was tough even with construction lights stationed at regular intervals. “They blew out a lot of hydraulics because the operators kept banging into stuff,” recalls Harden. “They couldn’t see very well because of all the glare and dust. Ferma had as many light towers as they could get their hands on, but it was still dark. And dust was flying everywhere.” Giant fans shot water out over the crumbling roadway to help manage the dust generated by 285,000 square feet of falling concrete. It felt like a continual downpour to Harden and his teammates. “We got pretty wet out there. We were running and things were falling. They were cutting those decks of freeway that fell thirty, forty feet to the ground. And they were hammering concrete to break it all up. And then shooting that heavy spray of water out to help settle the dust. It was chaos. That was a night.”

To watch the process was to witness a carefully choreographed affair with seven teams of six excavators each, spread out across the old highway, their long necks reaching out for another bite. “When it was done,

you could see section after section of freeway slabs fallen onto each other,” recalls Harden. “It was like watching dominoes fall.” To Ferma’s credit, no one got hurt, thanks to all their careful planning. Not even a cut thumb. According to Caltrans District 4 Director Bijan Sartipi, “The demolition was an amazing feat of engineering. A fleet of forty excavators demolished 151 bridge spans and 307 columns to the cheers of those watching. It was a rare opportunity to be a part of history.”<sup>2</sup>

During the entire weekend, Peterson’s field techs did shifts around the clock, one team working while the other slept a few miles away.

“Peterson took very good care of us while we were there,” says Harden. “You couldn’t park your service truck at the hotel so they brought us a pickup so we could rotate back and forth to the hotel while our service trucks stayed on-site. It was hard to sleep though because we were so amped up. We were all like zombies.”

In the end, Ferma’s strategy worked so well they finished ahead of schedule, enabling the general contractor to pave the temporary bypass and complete the job eight hours early. When the weekend was over, Harden and his teammates were still not finished. They spent several days breaking down all the equipment and loading it onto trucks to be hauled back home. “That deadline wasn’t nearly as stressful as getting the commuters back on the road, but by then we were just so tired and so done. Mentally and physically,” says Harden.



*Ferma had 60 excavators on the Doyle Drive contract to beat the clock on the time-sensitive job.*

<sup>2</sup> “Gate Keepers.” *Construction & Demolition Recycling*, Aug. 31, 2012.



After a day off to rest, the Peterson techs were back at it. "To work in the field, you really have to love the job," says Harden. "You have to love being around customers. You have to believe in the company you work for—their goals and values and history. And Peterson's history is phenomenal. When they first asked me to come work here, I was very impressed because of their reputation. Working for Peterson was the best thing possible for my career. I was challenged every day, right from the beginning. And, after all these years, I still am."



Top to bottom: Hosing down the dust on the job was key to visibility; A cascade of fallen road sections on Doyle Drive; Ferma's excavators work within view of San Francisco's Palace of Fine Arts.





*Tony Leonardo—logging the redwoods since 1972*





## FORESTRY

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### THE FOREST INDUSTRY

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**T**ony Leonardo started logging right out of high school. “I fell in love with it the first day. And I’ve been doing it ever since.” He started out setting chokers in the redwoods of Humboldt County and worked his way up through the company. Then the 1990s hit, and the Northern Spotted Owl was listed as an Endangered Species, putting a serious dent in the forest industry. In April 1993, President Clinton held his timber summit in Portland, Eugene and Redding trying to find a compromise between the environmentalists and the logging industry.

Four months later, Leonardo decided to strike out on his own. “A lot of the old guard were pretty scared and just couldn’t work under the new regulations. I figured it was a good time to get started. So I found a company that was done with logging and took over the payments on a Thunderbird 255 swing yarder and an old D8H. Then I took out a mortgage on my house and bought his old Lorain loader and two pickups you had to push down a hill to get started.”

A year later, the old beat up Lorain loader was done. Leonardo called Paul Guyot, Peterson salesman in Eureka (retired 1998), someone he’d known for years. “I told him I needed a loader but no banks would touch me. Nobody would finance me even though I’d been making regular payments on that loader. Paul said he’d see what he could do. A few days later, he called me up and told me to meet him at the airport the next morning.”

Early the next day three men stepped off of a plane at the airfield in Fortuna: Paul Guyot, Duane Doyle Sr., and a guy who turned out to be from Cat Financial. “This is the kid I was telling you about,” Guyot said after making the introductions. “He’s just starting out and he needs a loader. And he needs financing. I’ll vouch for him.” Duane turned to the Cat finance guy: “If Paul will vouch for him, then we need to finance him.”



“That’s how I got my loader,” says Leonardo, who today, runs a fleet of seven Cat loaders, five Cat dozers, one Peterson TSK, five Cat excavators, two Cat 525 skidders, two Thunderbird yarders and sixteen trucks. “I’ve been with Peterson ever since.”



*Siegmund 558 LL doing a demonstration at the Pacific Logging Conference in September 2018*

Forestry has given Peterson a unique spot among U.S. Caterpillar dealers. With the acquisition of the Oregon territory in the 2000s, Peterson became a leading forestry dealer in the nation, and second only to Finning in North America for industry size. “Oregon is the number one timber producing region in the country, so that’s where our customers are,” says Duane Doyle Jr. “And that’s where one of our biggest opportunities to grow is. Forestry is also a product support intensive business, which lends well to our strength of customer support, and differentiates us from our competition.”

Today, purpose-built forestry equipment makes up only 5-7 percent of unit deliveries for Peterson’s earthmoving division but 20 percent of the total dollar volume sold. “These are very expensive pieces of equipment,” says Duane Jr. “A normal construction excavator, like a 36-metric ton 336, costs a little less than \$350,000. The log loader

equivalent, which is built on that same 336 platform but heavily customized, costs over 50 percent more. And it runs significantly more hours in a very harsh application, so they consume a lot more product support.” Forestry is so significant that two-thirds of Peterson salesmen sell forestry machines and all but five Peterson locations serve the timber industry.

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## LANDMARK MACHINES IN THE WOODS

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For Peterson, it all began back in 1958 with the Trinity Dam project and Peterson’s acquisition of Sierra Tractor. The new territory introduced Peterson to the thousands and thousands of acres of forestland in Shasta, Trinity, Tehama and Butte counties and the customers who worked it. A few years after Peterson’s expansion further into Northern California, Buster Peterson started developing equipment to improve productivity in the woods. At the time, loggers could choose from forestry-focused brands like Timberjack, TreeFarmer, Skagit and others, but Cat only offered its traditional wheel loaders and bull-dozers. Many customers modified their own equipment to adapt to their contract requirements. In the mid-1960s, Buster Peterson came up with a rubber-tired skidder using a Cat 950 wheel loader as a platform. In May 1968, he filed for a patent for what he called the 905 Loader-Skidder. US Patent 3508676 was granted in April 1970 and named R.A. “Buster” Peterson as the inventor with Caterpillar Tractor Co. as the assignee, with all the legal rights. A year later, Cat debuted its first purpose-built skidder, the 518. The articulated, oscillating rubber tired machine was a big hit. No one else had one quite like it.

“I distinctly remember the 950 that Buster converted into a skidder,” recalls Jerry Evans, who retired from Peterson in 2008. “At that time, Caterpillar didn’t have a skidder or anything close. There were other manufacturers who built skidders but nobody had a Cat skidder or a modified version



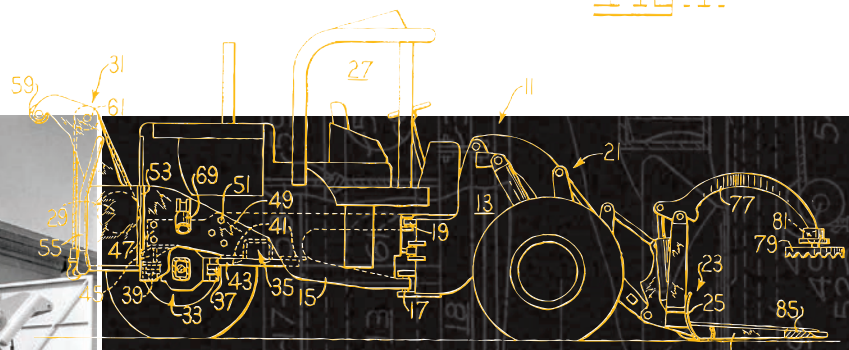


Buster's experimental 905 wheel skidder made from a 950 wheel loader in 1968

so Buster's design really made a difference. I think it woke Cat up to the fact that there was a market for it."

Buster's second design—a tracked log skidder—was another collaborative effort between Buster and Cat engineers in Peoria. It earned US Patent 37625584 in October 1973. That same year, Cat came out with the larger, higher horse-powered 528 rubber tired skidder. It would be another decade before Cat offered a D4H and D5H custom high-track skidder from the factory. And, another 23 years before they debuted a purpose-built track skidder—the Cat 527.

In the meantime, loggers and Cat dealers were modifying equipment to fit the diverse needs of the industry. "Forestry equipment has always been about innovation," says Kevin Culligan, who split his career between Halton and Peterson, and retired in 2019. "All the guys who use these machines are innovators. They log on flat land, steep land, wet land, dry land, big woods and small woods, so the products they need are constantly changing and being modified. As dealers, we modified skidders out of D7s and D8s. We added extra counterweight and forks to wheel loaders for sawmills. We made log loaders out of excavators. It's all about innovation and meeting the customer's need."



**LOGGING MACHINE TIMELINE**

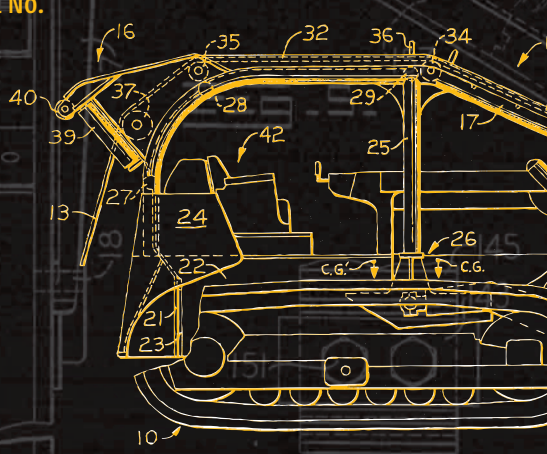
- 1970 905 Loader-Skidder (rubber tired) made on 950 loader – Buster Peterson US Patent 3508676
- 1971 Cat 518 rubber tired skidder
- 1973 Log Skidder (track-type)—Buster Peterson US Patent 3762584
- 1983 First Feller Buncher was a Cat 227

**CAT SKIDDERS**

Debut Model No.	S/N prefix
1971 518	50S rubber-tired
1973 528	51S rubber-tired
1985 D4H	9DB custom high track
1985 D5H	8RC custom high track
1986 508	2HD rubber-tired, grapple
1990 D4H TSK Ser II	8ZF special track
1992 D5H TSK Ser II	7EG special track
1994 525	1DN rubber-tired
1996 515	4RL rubber-tired
1996 527	3DS track (purpose-built)
1998 517	5WW track (purpose-built)
2000 545	2FZ rubber-tired
2014 555D	PGV Cat's largest skidder

**CAT LOG LOADERS**

Debut Model No.
1986 228LL
1986 231LL
1992 325LL
1993 320LL
1993 322LL
1993 330LL
2011 568LL
2016 538LL
2016 558LL







*Left to right: Cat wheel loader at Weyerhaeuser millyard in Longview, WA in 2020; Mike Coiner, Peterson's forest products expert*

The traditional Cat wheel loader was another landmark machine. “When I first got involved, if it was a Cat, it was a front-end wheel loader, or even a track loader, for years,” states Evans, who has been heavily involved in California’s Sierra-Cascade Logging Conference for nearly 50 years. “Back then, 90 percent of logs loaded onto trucks was done by wheel loaders. The 966 was real common but, for the most part, it could only load one log at a time.<sup>1</sup> When the 988s and 992s came out for use in the mills, they could pick up the whole load at once. We demoed our first 988 with forks in the early 1980s in Redding. They were still construction-based 988s but they’d been adapted with large forks and heavier counterweights for unloading a full truckload.”

Mike Coiner, Peterson’s forest products development manager, remembers the early front-end loaders. “We used to modify our own 988s when I was an apprentice at Papé in the early 1980s. At the time, Cat only had a bucket machine.” Coiner ran his first 988 at the age of 13, up in southeastern Alaska, pulling log rafts out of the Chilkat River, tearing them apart, then hauling the logs to

the mill his father managed. His experience in the field as a journeyman mechanic, and the woods as a logger in his own right, built a vast knowledge base that has aided Cat’s efforts in improving its forest products.

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### **CAT’S WATERSHED MOMENT: THE CAT LOG LOADER**

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“Logging equipment has gotten much better through the years,” states Coiner. “It’s more efficient. And it’s grown in terms of durability and customer satisfaction. The Cat 568 Log Loader stands out on its own. I started working on the 568 Tier 4 interim years ago and have been involved the entire time. It’s the cream of the crop.” However, back in the late 1970s and early 80s, Peterson, Papé and Halton were all making their own log loaders out of basic hydraulic excavators (HEX). Caterpillar’s first forestry-specific machines, the 228 LL and 231 LL, didn’t come out until 1986. “When I got to Halton in 1979, they were modifying 225s,” recalls Culligan. “We would take a construction-based excavator and modify it heavily

<sup>1</sup> There was also a lot of sorting to get the proper logs onto the truck. Eventually, most of these front-end loaders were replaced by the more efficient log loader, which is built on a hydraulic excavator platform.



for our customers. We used Pierce Pacific undercarriages, and made sticks and booms and cab risers and cab guards. That's what dealers did for decades. When Caterpillar finally made their own forestry-specific log loader, it was a very big deal. Halton was very involved in the product validation of the first ones before they came out on the market ...the first 320s, 325s and 330s."

When Mike Coiner came to Peterson after the Papé acquisition, he spent a lot of time in the woods talking to customers. "The big complaint back in 2004 was that Cat's 330C didn't have enough swing torque. So I worked with Peterson's engineer out of San Leandro and we came up with a high swing torque fix<sup>2</sup>. We did a half-dozen of them, and then magically, Cat came out with their own system." When Peterson acquired the Halton territory in 2010, Halton was in the middle of validating the first Cat 568 Log Loader, which was based off the 330D LL. The 568 debuted at the Oregon Logging Conference in Eugene in 2011 and was a big hit. It was Cat's answer to the sluggish swing torque of the 330C, including smoother hydraulics and better fuel economy. With its dual swing torque circuits, the 568 was capable of swinging huge logs uphill to the landing without losing speed.

In late 2020, Peterson worked with customer D&S Logging to field test Cat's new 538 NGH, powered by a Tier 4 final engine.<sup>3,4</sup> "Before Cat, we had a 3754 John Deere shovel but I wasn't happy with it," says Don Arndt, owner of the Sweet Home, Oregon-based company. "It didn't have the swing torque we needed and the hydraulics ran hot. By the time word was out that the Cat 568 was king, we already had a good relationship with Caterpillar. And I had heard from other loggers that nobody was disappointed in the 568. So we bought

## PACIFIC LOGGING CONGRESS

The Pacific Logging Congress is focused on education and sustainability. It is not a static trade show at a fairground. Every four years, members from the Pacific Northwest put on a live logging show out in the woods. Over the three-day event, they bus in thousands of kids and walk them through the forest and teach them all about forestry. The other three years, members hold smaller conferences focused on education. Duane Doyle Jr. joined the group back in 2014 and has worked his way through the rotation of responsibilities necessary to the organization. In 2025, he will be president of the group—making him one of the youngest members to lead the organization. The PLC is the oldest such association in North America, dating back to 1909. Their purpose is to educate politicians, teachers, students and the general public on the need for sound, responsible forestry to supply global demand for wood fiber.



568 log loader at work in the woods

2 Peterson's high swing torque machine was a single drive that produced as much swing torque as the dual swing system Caterpillar developed for their late model 330D LL. The early 330D's still had the single swing circuits of the 330C.

3 NGH stands for Next Generation HEX (hydraulic excavator).

4 D&S Logging field test of the 538 NGH log loader is targeted for completion by year-end 2021.





*Top right, counter-clockwise: 330C working at Roseburg mill yard; Headrick's 320C building log deck; Peterson got two 568 field follow machines in July 2011 with 330D stickers to guard their secrecy; D & S testing out the 538 LL field follow machine*



one.” After 5000 hours, Arndt replaced his first 568 with another one in October 2019, and a year later added a 558. “For a big production logging shovel, I don’t think there’s anything out there like the 568. We noticed a 25% to 30% increase in production immediately, over the John Deere. It’s fair to say that in the woods we work in, out to about 400 feet, a 568 can swing 40 truck loads a day of tree lengths. That’s big production. And on steep ground, that additional tenth roller in the track frame added stability and changed the personality of the machine. It’s just a great machine.”

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### **THE CAT 527: THE LOGGER’S SWISS ARMY KNIFE**

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Back in 1996, Cat finally came out with a purpose-built 527 skidder, a tracked machine perfect for the steep terrain of the Pacific Northwest. “The 527 was a landmark machine,” recalls Culligan. “Everyone had one. But they took quite a beating out in the woods.” It was built on a D5H platform and, over time, came to include a special tri-track D6 undercarriage and a highly modified main





frame, with its center of gravity moved forward for better balance. By the time Cat quit building them, they were on an obsolete platform but still quite popular in the woods. In fact, 527s are considered so priceless and indispensable by some, that one customer still keeps his going by sheer will and bungee cords.

In 2010, Caterpillar stopped importing 527 skidders into North America due to the EPA's new emissions requirements. A number of other Cat models had already been discontinued for the same reason: too much R&D for too little return. Since North American dealers only sold about 24 units a year, the 527 didn't make the cut. However, Cat continued to build the 527 at its factory in Indonesia for an international market that wasn't regulated by the EPA.

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## THE PETERSON TSK

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After three or four years of customer frustration, Duane Jr. finally convinced Cat to let Peterson build a Tier 4 final compliant prototype (S/N JSR00309) as an experiment. The TSK project began in June 2014 and field tested in May 2015. Ten customers demoed it over the next year and loved it. Peterson's TSK prototype debuted in February 2016 to a larger crowd at the Oregon Logging Conference in Eugene where it garnered much attention from curious attendees. In November 2016, a Peterson team in Portland began building the first production machine, S/N TS500101.

Back in September 2016, however, Caterpillar had announced they would stop making the 527 altogether in 2017. "We never planned to build an entire tractor," says Duane Jr, "just modify Cat's 527. So they sent us the rest of the tractors from Indonesia in pieces in shipping containers. Then we assembled them and did all our modifications to make them legal in the U.S. It was a very expensive process." Peterson took delivery on the rest of the tractors between December 2016 and May

“ **Loggers are data-driven environmentalists. We are the true environmentalists.**

– Larsen Arndt, D & S Logging



*Don Arndt with son, Marshall Arndt*

## LOGGERS—TRUE ENVIRONMENTALISTS

“I had an aunt who was really into the Audubon Society and worked for the federal government as a lobbyist back in Washington DC. We had a good relationship but she was very disappointed that I turned out to be a logger. On one of her trips out to the West Coast, I took her out to the woods. She kept saying: ‘Is this real? This just doesn’t look like what I’d expected’. Everywhere we went, east of Sweet Home where we log, it was all green. There were two-year-old and five-year-old trees; there were 25-year-old trees; there were 50-year old trees ready for harvest. I told her I could take her anywhere around Oregon and that’s what she would see. It showed me that she didn’t know what she was lobbying against. She had no idea that our industry aggressively replants. But harvesting timber is a lot more than simply logging trees. It’s managing the land so that timber resources can be renewed year after year. My oldest son, Larsen, likes to say: “Loggers are data-driven environmentalists. We are the true environmentalists.”

–Don Arndt, co-founder & owner, D & S Logging





*Top to bottom: D5 dozer vs 517 skidder; Cat 527 working in the woods; Duane Jr. with Chris Harbeson & the TSK at Family Fun Day in Hillsboro, 2018*

2017. And in October 2019, the last of the TSKs—TS500119—rolled out of Peterson’s Portland East Campus shop. Altogether, there were twenty, including the prototype.

## BUILDING A PROTOTYPE

The purpose behind the TSK project was to make a very popular machine Tier 4 compliant, and therefore useable in the United States. “We decided on the C7.1 Tier 4 final engine,” explains Grant Stickney, Peterson’s emissions control specialist, who was heavily involved in the project. “In the beginning, we used the latest 3D modeling technology available and old-school cardboard templates to determine if certain things could be done. We used everything available to us.”

Ultimately, the TSK team would:

- lengthen the mainframe and c-frame for the dozer by 6.5-inches
- expand the engine enclosure to accommodate the new, much larger engine and cooling package
- install an emissions package
- relocate the batteries in a custom enclosure
- add an electronic display in the cab to monitor the engine

“ Oregon is the number one timber producing state in the country. That’s why forestry is so important to us.

– Duane Doyle Jr., president of Peterson’s Earthmoving Division (February 2020)

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- design and build a new electrical harness
- fabricate 1500 pieces to make everything fit properly.

“The whole project was a huge undertaking,” says Stickney, who has spent half his 33-year career as an ace field tech. “We had some minor changes along the way, but for the most part, we ended up with what we had originally planned. We put a lot of thought into it and hashed out a lot of details beforehand. What we came up with was a really good platform.”

Building the prototype was all about finding, or making, the right parts and fitting them into a huge jigsaw puzzle that would ultimately look like it came out of the factory. “We had that engine in and out many times before we got it right,” says Carl Clarke, the project lead on the shop floor for the prototype and first two production machines. “I found different Cat parts I could get to fit off of other machines. It could be any machine running a C7 engine. I pulled parts off a 525 skidder—hoses for the radiator, turbo hoses, and all the different clamps, electrical relays, A/C configurations, and accumulators—so we wouldn’t have to use after-market parts. We wanted to minimize what we fabricated to make parts ordering easier.” Clarke worked extensively with Stickney, who has been doing repowers and upgrades since the early 2000s. “At one point, Cat had their reps there watching us, surprised at what we were doing. I really wanted to see this succeed because the 527 is my all-time favorite machine. It’s something I grew up with. It’s the most beat up machine in the woods. It’s a mean-looking, bad-ass machine.”

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### TRACTOR IN A BOX

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The prototype took eight months to complete. Once it was finished, welder Pat Good joined the team. “Carl built the first one, then tore it apart to document everything so we could make patterns



*Top to bottom: Techs worked on 3 TSKs at a time in the Portland shop; Completed Peterson TSK*

for the rest of the machines. I did all the fabrication on parts and extended the frame.” One of the more challenging aspects was getting all the measurements right so everything matched up. Even though all the machines came from the same



factory, there were small discrepancies that could snowball into big headaches. “People have a tendency to think these were all the same but they’re not,” says Good. “If you cut a frame in one spot and then go to the next frame and use the same measurement to cut, it would be different. And I don’t mean by three inches—more like an eighth or three-sixteenths. They were all a little bit different and when you’re fabricating, that makes a big difference because you’ve got to have parts that match up.”

Everything Pat Good and the weld shop did was

customized to fit. “It wasn’t like you put a piece of plate in a stamping machine and make all the panels exactly the same. Each one was handcrafted and adjusted to fit. When you customize things, you make it work. That’s what we do.”

In 2017, Ben Garner took over as lead. “We chose Ben because he’s organized, he has great attention to detail, and we needed a self-starter,” explains Dave Messier, Hillsboro service manager. “He and Pat made a great team. Our common goal was to send these out as if Caterpillar had built them. That was what made the group click.”



*Top left, clockwise: Key techs on the TSK project (L-R) Rodney Tappan, Carl Clarke and Pat Good (Ben Garner not pictured); TSK in the Portland shop; Inventory lineup of completed TSKs*





Ben Garner, Pat Good and the Portland weld shop built the rest of the machines between June 2017 and October 2019. “Carl knew everything about the project, and all we had were his notes—the playbook,” says Garner, a 2016 ThinkBIG graduate. “When I took over, serial number 103, 104, and 106 were sitting in the shop waiting for cabs. The first three had Cat cabs from the factory. When Cat quit making them, we went to Pierce Pacific cabs. The first one didn’t fit so we had to send it back. The second one didn’t fit either but we made it work. It took months, in-between, for them to redesign it. And when we got them, they were just an empty shell that we had to wire and put in all the linkages. The cab part was a pain.”

It took Garner about five machines before everything settled into a routine. By then, all the machines and parts had arrived and were stored on racks or in shop bays according to machine serial number, awaiting their turn. Each unit took roughly six weeks to complete. All together there were 87 segments to each TSK build. The cab assembly took one hundred hours each; cutting and fitting the frame took another twenty-six hours. It was an intense project that required focus, flexibility and the drive to get it right.

*Top to bottom: Peterson TSK in the woods; Customer Mike Pabl (R) was part of the Ax Men reality TV series, pictured here with his Peterson TSK.*





*Weiler Feller Buncher*

## WEILER TAKES ON CAT FORESTRY PRODUCTS (2019)

In April 2019, Cat officially sold its purpose-built forestry product line of wheel skidders, track feller bunchers, wheel feller bunchers and knuckle-boom loaders—minus its log loaders—to Weiler Forestry, Inc. The Cat facilities in LaGrange, Georgia; Auburn, Alabama; and Smithfield, North Carolina were also part of the agreement. Nothing would change, according to both Weiler and Caterpillar, except the name on the machines. “They will continue to be built in the same factory, by the same people, and designed and supported by the same engineers and service reps.” Parts for all Cat-produced machines remains available through the Cat parts system. Weiler was founded in 2000—based out of Knoxville, Iowa—to manufacture asphalt paving equipment. In 2019, they formed Weiler Forestry to purchase the purpose-built forestry division of Caterpillar.

The 527 was customized so much that it needed its own parts book. Joe Frati (Special Services project manager) spent eight months compiling one, fully rendered with 3D drawings. “The TSK supplemental parts book contains all of Peterson’s custom fabricated parts and pieces,” explains Frati. “Nuts, bolts, washers, O-ring seals, hydraulic fittings—everything that we used to modify these machines.” In the end, Peterson’s Portland weld shop made over 1500 individual pieces for each TSK build, roughly sixty percent of the machine.

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## IN THE WOODS

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In 2017, Tony Leonardo bought Peterson’s second production machine, basically off the floor of the Redwood Region Logging Conference. “I had a 558 log loader and a skidder there in the show.<sup>5</sup> That Cat (TSK) was parked right next to them. I loved the way it looked, the way it sat on the ground. I just had to have that Cat.”

About a week later, Leonardo had the TSK on demo, out in the woods. “It stayed on the ground. It got around really good. I loved the way it handled, everything about it. So I bought it.” He already had two D6R grapple machines and two D5G skidders, but, according to Leonardo, “that TSK could outperform any one of them.”

“I’d never had a 527 because they’d walk up on their finals when you were skidding with them. They just didn’t have the weight in the front to hold them down on the ground. And they were underpowered. But Peterson engineered the TSK with a bunch of weight in the front so it’s not walking up on its finals. And they extended the track frame and put the weight up front underneath the radiator. It’s a hell of a machine.”

<sup>5</sup> Peterson displayed Leonardo’s new 558LL and 525 skidder at the Redwood Region Logging Conference along with a Peterson TSK, which he bought a few weeks later.





After owning the TSK for a while, Leonardo ran into a few glitches that needed to be resolved. “We had some wear issues on the fan and some heating problems because of all the compliance stuff crammed in there for CARB,” says Leonardo. “And the boom was a bit light so we had some cracking. But Peterson took it in and plated it all, and built it up for us. They’ve been good about dealing with our issues. Back when Duane [Sr.] helped me buy that log loader when I first started out, I became a dedicated Peterson man. I’m still all in with Peterson Tractor.”

Duane Jr’s initial vision for the TSK program was to build Cat forestry machines specific to the Pacific Northwest, in the Pacific Northwest. The 527 TSK was to be the first, with other possibilities to follow, all as an OEM dealer for Caterpillar. Unfortunately, when Cat shut down its factory in Indonesia, that particular dream stalled. But there are others on the horizon. “This was a really challenging project that took a lot of determination, and we’re really proud of what we accomplished,” says Duane Jr. “It was a huge team effort. We learned a lot in the process. And we will continue to do whatever our customers need to help them succeed. We just have to keep our eyes open for the next opportunity.”



*Clockwise from top/left: Leonardo’s Cat 558 loading a truck; Tony Leonardo with his Peterson TSK*



## CORE VALUE: INTEGRITY

### GROWING THROUGH THE LEARNING CURVE (2004)

For some people, Monday mornings just aren't worth a damn until after a couple of cups of coffee. For Mike Coiner, no amount of coffee was going to fix this problem. The voice mail he'd just picked up was pretty brutal: "If this is as good as it gets, then bring a *blankety-blank* low-boy and get this thing out of here. I'm done!" The call was time-stamped two o'clock that morning. And here he'd thought everything was finally going fairly well.



Left to right: The Timberking; Peterson's Forestry expert, Mike Coiner

It had been a rough couple of years trying to support Caterpillar's new feller buncher—the Timberking. But Coiner, Peterson's technical communicator in Eugene at the time, was doing his best. Caterpillar had acquired the Blount-built machine a few years earlier to fill in a gap in its own forest products line. Coiner had been there when the first ones arrived in 2004. The fact that they couldn't get one off the truck without a lift should have been a warning of things to come. Still, if Caterpillar offered it, then Peterson

would stand by it. Coiner's commitment to his customer had taken him down a long and rutted road to prove that he stood by what he sold—come hell or high water. Still, it hadn't been pretty.

Back in 1999, he'd helped sell Tony Meline his first feller buncher, a Timbco T445C from Papé Bros. At the time, it was the hottest thing in the timber industry. Meline, owner of TRM Cutting out of Coos Bay, Oregon, had bought his father's logging business back in the late 1980s and had finally decided to make the leap into the twenty-first century with mechanized felling. In 2004, when talk of the newest computerized feller buncher started circulating, he was intrigued. At that point, he had two Timbcos working at full output for Weyerhaeuser. But Meline, by nature, was not one to sit back and watch others take the lead.



Looking back, he sometimes wonders why he bought that Timberking given all the issues that surfaced on the initial two-week demo. Or why he'd stuck it out for the long haul. "For me, it all boils down to Mike Coiner, our support guy. And Deon Meyers who sold us that first Timberking. When I bought it, Mike told me they'd do everything they possibly could to support me. And they did. They bent over backwards to help us out. They never left us hanging. They were there when we needed them."

In those early weeks and months, several issues floated to the surface. Some were easy to fix. Others were not. Out of the six customers that demo-ed the machine, only TRM bought one. For increasingly painful reasons, Peterson decided to park their other Timberkings out back until things changed. By summer 2006, things had come to a head. In August, top Peterson management called a meeting with key Cat personnel to discuss the Timberking. It was a frank and vocal meeting, posing the basic question: "Why are you still making these machines with all these known problems?"

That first Timberking—the TK700 series—came with a Caterpillar engine, plumbed with Parker hydraulics and electronics. Therein lay much of the problem. The engine's computer couldn't talk to Parker's hydraulics software. And vice-versa. Instead, they impeded each other, severely restricting the output. "We could still get the same production out of the Timberking that we did with both our older Timbcos combined, but that was about it," explains Chuck Laird, Meline's cousin and operator. "There was still a whole lot more potential that wasn't being used." And making payments on a brand new \$430,000 machine that only worked at 50 percent capability just wasn't acceptable. To anyone.

What emerged from that meeting was a focus group called TFB-13, short for Track Feller Buncher with thirteen issues. It combined key Cat and Parker engineers and Peterson point man Mike Coiner, among others. The next two and a half years were some of the longest in Coiner's career. "It got to where my kids knew who it was when they answered the phone at home. They'd say, 'It's Chuck on the phone from TRM, Dad; must be broken down again.'"

One by one, the group tackled the feller buncher issues head-on. Some of the thirteen included: cab-leveling for better stability, straight travel in all three speeds, A/C failures, saw sensor problems, tool tilt-force issues,

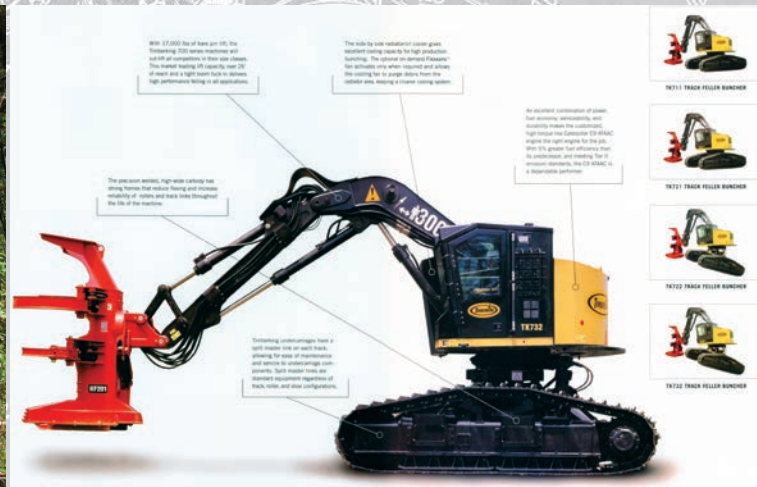


“ Most places, if you tell an engineer what you want, you're not going to get it. But not with Cat. They didn't just sweep our suggestions under the rug. They made the changes.

– Chuck Laird, operator,  
TRM Cutting

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“ If it wasn't for Coiner, we wouldn't be in Caterpillar machines. I've had access to him and our Cat rep almost 24/7 during this process. And that's a big reason we stuck it out.  
 – Tony Meline, owner, TRM Cutting ”



Top left, clockwise: TRM's 552 Feller Buncher excavator; Spec sheet version of the Timberking; TRM's Quadco saw head

and the lack of troubleshooting resource materials. Another biggie for Laird was the lack of power-down on the boom. “We use the saw head to maneuver from stump to stump on steep hills and on gravel roads. On the old machines, you only had gravity to work with.” The Timberking was supposed to be different. But with its power-down woes, it was pretty much back to gravity again. Perhaps the most egregious problem was the Parker joysticks. “Even after most of the problems were fixed, Parker still had these two-piece joysticks that would literally fall apart in your hands,” states Laird. “We never paid for any of them because they were always warrantied. All twenty-two pairs. Still, it was a big problem.”

With the inception of TFB-13, things began to change. Caterpillar and Parker both sent engineers out to Meline's operation in Coos Bay, Oregon several times to see the problems in the field. Theoretically, they knew what the machine was supposed to do, they just didn't know what it had to do in order to make that possible, according to Laird. “After riding in the cab with me for a day, I was able to show them what worked and what didn't.” Laird was pleased with the visits and the chance to voice his concerns directly to the factory. “Most places, if you tell an engineer what you want, you're not going to get it. But not with Cat. They didn't just sweep our suggestions under the rug. They made the changes.”

“After that visit, they went back to the drawing board and made lots of changes to the hydraulic system,” says Meline, who also co-owns Riverside Logging. “Then they came back out and put it in one of Peterson's machines and brought that out for us to try. It was like night and day.” For the next six weeks, the cousins ran both machines—TRM's and the Peterson upgraded loaner. “That second machine was kicking tail and making me money because I wasn't paying for it,” says Meline. “We were flat-out putting a lot of wood on the ground,



averaging fifty-four loads per machine—per day! When that trial period ended, Peterson took our machine into their shop to add all the new updates and left us with their upgraded model. We ran that for another three months. All at no charge. That was a very good month for us because we were working an exceptional piece of land, making product with two machines and only paying for one.”

Hiccups still happened, but it was getting noticeably better due to the persistence of the TFB-13 team.

The fact that Laird could call up Coiner or the Cat factory reps and get an answer in short order helped tremendously. So, too, was a pivotal decision by Peterson. “We decided, early on, that we would do everything we could to *not* let them down,” says Coiner, regarding a meeting with Jeff Goggin, then president of Peterson Machinery. “TRM was going to be our poster child for the feller buncher, and we would not let them down. No matter what. We were determined to keep running right alongside them.” That determination and perseverance were finally paying off.

Then came that 2:00 a.m. phone call. “It was getting dark, and we had just finished installing another joystick after another failure,” explains Meline. “We were running behind, so I planned to go out and start bunching around one o’clock that morning until Chuck got there. But after working for only about forty-five minutes, that new joystick just fell apart in my hands. I was not a happy camper! The ironic thing was that the box those Parker joysticks came in had written on it in big bold letters: *This is as good as it gets*. Mike knew all about that because he’d delivered it to us the day before. By that afternoon, Mike had come out and got everything fixed, but you can bet that voice message made it all the way back to the factory in Georgia that same day. As I recall, it wasn’t long after that that Caterpillar quit using Parker joysticks. And we haven’t had a failure since.” Although he was madder than a hornet, Meline now laughs about it. “I’d be broke if we’d had to pay for everything that went wrong on that machine.” To their credit, Caterpillar picked up most of the tab, rounded out by Peterson. By the time it was all over, Cat had easily invested enough to have bought back that first Timberking . . . and then some.

In 2008, Meline traded in his old TK732 for a newer model—the Cat 532 feller buncher. By then it was dialed in much better and Caterpillar finally branded the machine a Cat. In 2012, Meline bought the much larger capacity 552 Series 1, which he says has been awesome. And in 2016, he bought a Cat 522.

Word of Meline’s success spread throughout the industry. Representatives from Finning—Cat’s largest dealer, headquartered in Vancouver, British Columbia—heard about Meline at the 2013 Oregon Logging Conference and came out for a visit. They wanted to see TRM’s feller bunchers at work in the woods using Quadco saw heads. True to form, Meline was using a 28-inch Quadco head—the first of its kind—on his Cat 552 Series 1 and making a bit more history. “Tony is *the* guy when it comes to Cat feller bunchers,” says Coiner. “He’s had them the longest—and stayed with it. People come from all over the Pacific Northwest and Canada to see his machines in action before they buy. He’s the Cat feller buncher poster child.” Today (2019), Tony Meline owns three feller bunchers: two 552s and one 522. And fifteen years after that first demo, he’s really happy he stuck with them.

“ We decided early on that we would do everything we could to not let them down. No matter what. We were determined to keep running right alongside them.

– Mike Coiner, Forest Products development manager, Peterson Machinery, Eugene





*Challenger tractor baling hay*





## AGRICULTURE

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### TRACING PETERSON'S HISTORY IN AG

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Peterson's history in the agriculture market has been a bit bumpy. One thing we've learned through the years is that farmers are a distinct breed of customer with their own set of challenges, rules, and demands. And they won't play second fiddle to anyone. "Ag customers will not tolerate a construction equipment company that's only halfway in the ag business because they know where the priority will go," said Randy Grimes, general manager of Peterson's Ag Division, back in 2015. "Farmers have a window of harvest, and when that product is ready, it has to be harvested *now*. There is no room for downtime. They need the same sense of urgency that the construction market gets. They want an ag business to serve the ag industry. And they can smell the difference a mile away."

Peterson's history within the ag market goes back to its founding days in the mid-1930s when Howard Peterson sold far more farm tractors than construction equipment. At the time, his five-county territory hugged the San Francisco bay, carpeted in farmland. Peterson Tractor & Equipment Co. had two stores, Brentwood and Half Moon Bay, dedicated solely to agriculture, with a full line of John Deere and allied farm products. Even the headquarters showroom in Hayward displayed mostly farm equipment. But then World War II came and went, and everything changed. The SF Bay Area started hopping with energy and new ideas, and that brought a tremendous surge of industrial growth to Northern California. Howard Peterson took notice. His own background was steeped in construction, having spent his youth working for R.G. LeTourneau, the grandfather of the modern-day scraper. So when construction fever hit San Francisco, Howard was quick to adapt his company to the new demands. That decision cemented Peterson as the go-to Caterpillar dealer for all the large infrastructure projects in Northern California during the 1940s, '50s, and '60s. And it made perfect sense, since most of the big contractors were based in the Bay Area—right in Peterson's front yard.





*Top left, clockwise: Peterson's Hayward store on Watkins Street from 1937-41; Asparagus chopper for working in Stockton Delta area in the 1950s; Brentwood branch from 1936-late 1950s*

Then John Deere started building construction equipment, which put Cat dealers in a bind. In 1957, Caterpillar made it simple with a mandated choice—us or them. Like most dealers, Peterson chose Cat, which shrank its ag product offerings even as they continued to provide Caterpillar Ag solutions. In 1982, an ag revival hit Peterson with the acquisition of Zumwalt—the Caterpillar Ag dealer for Glenn and Colusa counties.<sup>1</sup> Peterson built a brand-new store in Willows to serve the local farm community. It offered traditional Cat ag equipment, the Steiger line of giant articulated 4WD tractors, and other allied farm implements. In 1987, Caterpillar reaffirmed its commitment to the ag market with the introduction of the Challenger tillage tractors. And ten years later, it further strengthened its position in a joint venture with Claas—a German manufacturer of combine harvesters. The move sent a clear message to California farmers: “We’re here for you.”



When Cat sold the Challenger line to AGCO in 2002, Peterson signed on as an AGCO dealer, continuing to offer Challengers along with a growing range of ag products. However, when Caterpillar sold the Challenger line to AGCO, they also sold their shares of the Claas combine back to Claas, signaling another message: Cat was getting out. When Peterson couldn’t sell a single Claas combine after a year of concerted effort, the line was handed over to Holt-Cat in the heart of the Sacramento Valley—California’s breadbasket.

## OREGON’S AG MARKET

Oregon has its own story to tell. In 2003, Randy Grimes came on board to kick-start Peterson’s ag presence in Oregon. By the time he became

<sup>1</sup> Zumwalt’s territory was split between Peterson (Glenn County) and Tenco (Colusa County) in 1982.





*Top left, clockwise: Willows store announcement in March 1983; Aerial view of Peterson's Willows store; Duane Doyle Jr & Matt Scarella with strawberry growers Rocha Farms in 2008—in front of tractor & below; Randy Grimes/GM for Peterson Ag at Oregon Ag Show in 2018; Peterson Ag tech in the field*

general manager of the Ag Division in 2012, it had grown tenfold. Right man. Right time. Right place. And with a long-term vision. But in 2003—when Peterson first moved into Oregon—it was quickly evident that the ag community was not being served. “Papé [the former southern Oregon Cat dealer] had toyed with it for five years, then pulled out,” says Grimes. “The customers were not happy. I know because I was working for John Deere at the time and took in on trade just about every ag tractor that had a Cat logo on it. Nobody wanted them anymore because there was no dealer support.”

At Peterson, Grimes worked hard to woo back those customers. “We walked away from a lot of customers in that era,” says Grimes, of both Oregon and California. “This generation knows because they heard it from their parents. So now we’re trying to heal and re-establish those relationships.”

Since then, Grimes and his team have been busy building relationships, one farmer at a time. It’s about more than a sale or a piece of equipment.





It's about living the Golden Rule—treating others like you want to be treated. “When Duane [Sr.] hired me in 2003, I told him that I would entrench my life into this business to make it successful,” says Grimes. “And I’m instilling that culture into our sales group. I want every one of them to feel that same sense of ownership and responsibility to their customer, as if it was their dad or brother.” That means going to a lot of weddings and birthday parties. It means dropping everything to drive a part out to the farm on Saturday. And sometimes getting up in the middle of the night to head off a crisis. That’s Customer First in action.

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### RELATIONSHIPS THAT LAST: PHELAN ENTERPRISES (2005)

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As a thirty-year veteran, Grimes knows the ag market and its challenges very well. He’s worked for Case, New Holland, John Deere, and Peterson. He understands people’s frustration at being overshadowed by the demands of the construction market. Oregon farmers were aloof and disinterested after being ignored for years. So Grimes had to start from scratch. “Our customers didn’t need us, and our competitors didn’t want us here. We basically came in and put our shoulder pads on and started plowing our way into this business.” Within two years, Peterson’s ag team had pushed the competition to the side and was making believers out of their customers. Custom hay producer Rod Phelan was a key catalyst in that transformation.

“Rod was extremely instrumental in helping Peterson engage back into the ag business,” says Grimes, “because no one was ready to jump on the Peterson bandwagon when we started.”

Phelan goes around the country organizing harvest operations for other people. He’s an innovator, just like his father. “My dad started harvesting alfalfa in Dixon, California with my grandfather in the 1960s and offered his services to the local farmers. In 1970, he moved us to southern Idaho with the same business plan. He told the farmers that he could sell their crops into California and make them more money than they’d ever made,” says Phelan, “which he did.” Twenty years later, they moved to Oregon’s Willamette Valley. “When the burn restrictions hit in the early 1980s, farmers saw that they weren’t going to have that tool to use in their farming practices anymore. My dad saw that as an opportunity. He was one of the pioneers in the valley to harvest grass straw residue and export it to Japan and South Korea.”

When his dad died in 1996, Phelan took over the business and has grown it a hundredfold since. “We’re always looking for different uses for ag residues that have never been tried before,” says Phelan. Today, he operates two businesses—Phelan Enterprises (Tangent, Oregon) and PacificAg Solutions, which goes nationwide. “We look for opportunities to work with farmers and growers to help them get added value out of their crops.”

“ Peterson has helped us a lot in our business by being an excellent partner.

— Rod Phelan, owner, Phelan Enterprises, and co-owner, PacificAg Solutions

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“ For years, we were green as green could be. But things have changed. Now I’m on my ninth Claas combine. They just work better in grass seed.

– Mark Parker, owner, Parker Farms

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In 2013, Phelan’s two businesses combined were the single largest purchaser of Massey-Ferguson (AGCO) 3x4 balers in the United States. Both operations typically run in excess of one hundred pieces of equipment, not counting transport trucks. “Peterson has helped us a lot by being an excellent partner. I’ve rented, leased, and bought machinery from them since 2005. They help us understand what option is best based on what we want to do with that equipment.”

“When I first met Rod, he was buying and leasing sixty to a hundred machines a year. And I had sold him some of that equipment,” says Grimes of his years with New Holland and John Deere. When Grimes came to Peterson, Phelan followed, based on all those years of trust. In 2005, Phelan rented fifty machines from Grimes, which brought Peterson immediate credibility. “I trusted Randy. I knew him well enough to know that he wasn’t going to ask me to use a product if he didn’t believe in it. And the price point was fair.”

Other customers noticed. If Rod Phelan trusted Peterson, then they could too. “Rod gave us an opportunity to quote and sell him basically everything he has. Peterson’s exposure went from virtually nothing to hundreds of machines in the market in three years,” says Grimes. “Rod is a very significant part of our success. He was the main catalyst that got us back into the ag market in Oregon. His reputation and regard within the industry

got us exposure that would have taken a lot longer for us to do on our own.”

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### FROM GREEN TO YELLOW: PARKER FARMS (2014)

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Parker Farms is another customer who embraced Peterson early on. Mark Parker was the first farmer in Oregon to switch from all green to all yellow equipment—in just twelve months. It simply came down to relationship. “If you don’t like the person you’re dealing with, you’re probably going to quit dealing with them,” says Parker, who runs a three-business operation out of Halsey, Oregon. “The local dealer did some things that irritated me, and I never really got over it. Once Peterson moved in and I got to know Randy [Grimes] and Spencer Whitlow, I really liked those guys. And things just took off from there.”

Parker and his son, Tyler, run a 6,000-acre farming operation in the Willamette Valley, near Albany. And they do just about everything themselves—cultivate, plant, harvest, process, clean, bag, distribute. And they repair their own equipment. “It’s never a forty-hour workweek. During harvest, we work seven days a week, from daylight till dark.” That work ethic has earned a lot of respect from their older neighbors. “Many of the farmers in the area see you working hard and when they retire, they want you to take over their property.” That’s



precisely how Parker acquired half of the land he farms today, all within a twenty-mile radius.

Diversification has also been a critical factor to the Parkers' success. "You have to diversify to make it," says Parker. "The weather is a huge part of the grass seed business. Last year [2015] it didn't rain from April until harvest, so we got a poor crop. It just all dried up. That's why you plant different varieties of grass." Today, the Parkers vary their crops between annual ryegrass, wheat, clover, and different types of fescue grass seed. "We clean ten to twelve million pounds of grass seed a year. We do everything but plant the seed for the buyer." Their grass seed is used across the US and overseas in China and Australia. They also bale off the grass straw for export to Japan and South Korea. Nothing is wasted.

The Parkers use a lot of big equipment to do all that. "Before Peterson moved in, we were green as green could be. But things have changed. Nowadays you see a lot of AGCO tractors around. Before it was John Deere, but they just got too expensive." Today, Parker runs combines, swathers, and Challenger tractors—all Claas and AGCO products sold by Peterson. "I'm on my seventh, eighth, and ninth Claas combines now," says Parker. "They just work better in grass seed. I was running four Claas 670 walker machines, but this year [2015] I went to three new rotary 760 Claas combines. They're bigger, they're faster, and we get the same amount done with one less machine."

His rotary 760 was also the first in the Willamette Valley. "Spencer [Whitlow, Peterson ag salesman] spent a lot of time out here babysitting that combine because there's so many different settings to deal with. And if it didn't work right, well . . . word-of-mouth spreads fast in the valley." Fortunately, it worked great. Since then, Parker has been the poster child for the rotary combine in the South Valley. Several others have followed his lead.

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### CALIFORNIA RICE: A & R FARMS (2015)

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Rice is king in the Sacramento Valley and the Parisios are one of the oldest rice families in the valley. Their patriarch, Ted Parisio, bought 640 acres near Willows in 1946, but it wasn't until 1982 that they became Peterson customers. "I remember going into Zumwalt picking up parts as a kid," says Alex Parisio, who now farms with his dad, Ron, as A & R Farms. "They had a popcorn machine and soda machine in the lobby. That's why I went." Alex and his dad still have the two D6Ds they bought in the early 1980s, one with a Zumwalt sticker on it, the other with a Peterson sticker—perfect bookends of the transition.

Three generations of Parisios have witnessed the evolution of the rice industry, from horse-drawn combines to the Challengers and Lexion harvesters of today. "Back in the 1940s, my grandpa used a horse-drawn harvester that took a crew of twenty



*A&R Farm's Alex & Ron Parisio with their Challenger tractors in Willows, California in 2019*



to run. As the bags filled with rice, he'd sit on the back and sew the sacks right there in the field." The elder Parisio bought his first Cat in 1946, an army surplus D6 painted in camo. A few years later, he bought an old Cat D7. When he and his two sons formed Parisio Bros. in 1966, they used Hardy Harvesters—a locally manufactured combine built on a Cat D4 undercarriage with a Cat 3208 engine—and they farmed that way for the next twenty-five years.

Things have changed a lot since then for the Parisios. "Machines are bigger and faster and more efficient now. There's still long hours, but now you can do more with less," says Alex. "You used to sit in a D6 for twelve hours and be tired from clanking around all day. And your ears would be ringing. Now, you sit in an air-rise seat with air-conditioning, a CD player, and AutoSteer. After ten to twelve hours, you've done twice the work, your shoulders aren't sore, and your head isn't ringing. It's made a huge difference."

The Parisio's first big step into high-tech equipment came in 1998 with the purchase of a Challenger 55. Five years later they traded up for a new Challenger MT755A. "We demo-ed it against a John Deere 8410, and went with the Cat because we liked it better." When Peterson got its first Lexion combine at the Willows store in 2001, Parisio was one of the first to demo it. "That combine walked away from all our other harvesters." They've bought three since from Holt-Cat, who is the Northern California Claas-Lexion dealer.

"I've tried the other stuff, and that's why I truly believe the yellow-belted machine is better. It worked better and cost less. The other one didn't even come close. There's guys that are John Deere through and through, but I'd put my yellow stuff up against them any day of the week."

"Parisio gives us an opportunity to sell him a machine first," says Grimes. "And we take care of him like his name is on the building. The reason we



### MAJOR AG MANUFACTURERS PETERSON SELLS AND SUPPORTS (2000–2019)

**AGCO** formed in 1990 by acquiring equipment companies in financial trouble and turning them around. They own Massey-Ferguson, Challenger, Hesston, Fendt, GSI, and Valtra. AGCO offers a full line of tractors, combine harvesters, hay and forage equipment, seeding and tillage implements, grain storage and protein production systems. In 2002, AGCO acquired the assets of Caterpillar's Challenger tractor.

**CATERPILLAR** provides traditional track-type tractors used in the agriculture industry. Many farmers also buy mini wheel loaders and excavators, skid steers, backhoes, telehandlers, and motor graders as support equipment on their farms and auxiliary businesses.

**CLAAS** is a German-based manufacturer of Lexion combines for seed crops, rice, wheat, corn, and beans. Peterson is a Claas dealer for Oregon and Washington only. Peterson's California customers buy Claas combines from Holt of California.



“ I’ll put my yellow stuff up against their green stuff any day of the week.

– Alex Parisio, third-generation owner, A & R Farms

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(L-R) Alex Parisio with Peterson Ag salesman, Eric Peters in 2019

had such a tough time in California is because it required a 100 percent ag-focused person to run things. That happened in 2008 when Eric Peters came on as the ag salesman for California at the Willows store. The attention we’ve been able to give California’s ag business now has allowed it to grow. Even thrive.”

Eric Peters is a big reason for Parisio’s loyalty to Peterson. He helped solidify Peterson’s standing in the local ag community. He brought in new product, often at a customer’s request. He solicits feedback and listens to it. And he understands the importance of a group of customers standing around the shop, drinking coffee and discussing crop yields, water rations, and the next 4-H event. “Eric has earned trust around here because he was born and raised here,” says Parisio. “He knows what this town needs. And to be honest, if Eric hadn’t been

here all these years, I might not have stayed,” admits Parisio. That’s the power of relationship.

## TRADITIONAL CATS ON THE FARM: BONANZA VIEW DAIRY AND WINDY RIDGE (2015)

The DeJongs of Bonanza View Dairy and Windy Ridge Organic Dairy are related to one of the biggest dairy families in the world. Arie and Jenneka DeJong run their operation on four thousand acres near Klamath Falls, Oregon, and farm a total of ten thousand acres in the area. They milk 3,500 cows three times a day, feed them six times daily, and clean up cow poo constantly. “Manure is a problem for a lot of people,” says Jenneka (pronounced *Yen-nicka*), who has been working alongside her husband for the past thirty years. “But it’s actually an asset to our business. We grow our own feed, so we recycle all the cow manure either in liquid form for our fields or dried compost as cow bedding. Some people use straw for bedding, some use sand—some even use waterbeds. But at Bonanza View Dairy and Windy Ridge, the cows sleep on composted manure. When it’s dry, it’s just like dirt,” says Jenneka. And it doesn’t stink to the DeJongs, whose beautiful stone homestead house is one minute from the barn. To Jenneka, it’s the smell of money.

The DeJongs happened upon the solution to their manure surplus several years ago by accident. A visiting OSU extension agent wondered why they were putting all their manure on just one field, and suggested they utilize it better. That winter, some of the manure water seeped out into a wheat field, causing it to grow twice as high as the rest. The accidental occurrence convinced them to change their plan. “We spent \$200,000 to install underground pipes to bring the manure from one end of the dairy to the other and then out to all our different fields,” says Jenneka. “We need to be willing to take advantage of opportunities when they make sense.” And they have. Repeatedly.



For years, the DeJongs have used skid steers in their manure management program. “I sold them a 259D track skid steer in 2013,” says Phillip Gosch, Peterson’s Klamath Falls general line salesman. “Back then they were using several Cat skid steers to scrape manure in the cow barns. Those machines have to travel over a mile and their top speed is 8.5 mph.” When Arie wanted to add another one to his fleet, Gosch suggested he consider a 906H-2 compact wheel loader with a travel speed of 22 mph. “It was a perfect fit for what they were doing. They understand that I’m not just selling them stuff. I’m making a conscious decision to make sure it works for them.”

And the DeJongs appreciate his efforts. “We incorporate Cat machinery in everything we do on the dairy. Peterson helps us by coming out and looking over our business,” says Jenneka. “They see the application of a machine we’re looking for and help us brainstorm the best solution for that job. And we go from there.”

In 2014, the DeJongs bought three new Kirby feed trucks, but their existing Cat loaders didn’t have the lift height for them. So they asked Gosch to come out and brainstorm the problem. “What they needed was a bigger bucket with a higher lift capacity. They use these feed wagons all day long, so



*Phillip Gosch/Peterson salesman out of Klamath Falls, Oregon*

a bigger bucket would give them faster load times. I suggested a Cat High Dump 6.5 rollout bucket, which would also give them an extra two to three feet height to dump. That’s what they went with.”



“ We incorporate Cat machinery in everything we do on the dairy. – Jenneka DeJong, co-owner, Bonanza View Dairy and Windy Ridge Dairy ”

*The DeJongs are related to one of the biggest dairy families in the world*

“It’s my job to provide customers with what they think they need,” says Gosch, “but also to open their eyes to other possibilities. I might suggest trying something a little different to save them money long-term that will fit their program better. But it’s all driven by trust. Our business is based on relationships. I treat each customer the best I can. All the time.”

### PRODUCT SUPPORT, PETERSON STYLE

Before Peterson moved into Oregon, the former Cat dealer dabbled in ag for a time but ultimately pulled out. That turned a lot of customers away. Justin Moote was the equipment manager for a large farm in the Willamette Valley (2000–13) where everything that moved was green. “For us, money wasn’t the issue. It was all about who could fix something if it broke. John Deere was pretty much the only thing people wanted to buy or run because of the reputation Deere had with parts



and service. But once Peterson-Cat came along, people started seeing it as real competition to John Deere.” In 2013, Moote hired on at Peterson’s Albany branch, which made him an eyewitness to the changes in the area from both sides of the fence. “What I’ve experienced since coming to Peterson is that the farmer has been looking for a reliable source of machinery other than John Deere because of cost, which is outrageous. But also because of the bigger corporate feel the Deere dealer has these days. People want a small, family-owned operation, and that’s what our Albany store offers. People like that.”

Moote provides the kind of service he always wanted as a customer. “Customers don’t want to call a dozen people to get an answer. That just wastes their time. Here, the customer calls the tech directly.” And each field tech at the Albany store has his specialty—someone for combines, someone for balers, somebody else for traditional tractors. Annual training also gives them each the ability to cover whatever comes up. “The customers all have our phone numbers,” said Moote back in 2016. “It’s a very tight-knit community here, where everybody knows everybody. So whoever they call, we either answer their question or direct them to the tech that has the most knowledge on that piece of machinery.”

Peterson’s ag techs are on-call 24/7 three specific times a year: during harvest, planting, and spraying seasons. That’s when time is money. “As long as harvest goes, I’ve got keys to a truck and that truck moves at whatever hour they call,” says Moote. “In the summertime, these combines are how these guys make their living. If it’s not running, they’re not getting paid. They base their whole income off a two-and-a-half-month window.” Currently, there are sixty-one combines in the valley owned by thirty customers. And each year—from June to September—Moote is focused on them. “I give each of these guys a call on my way home every night to make sure everything is running fine. If they have any questions or concerns or some-

thing’s acting funny, I’ll go out there and see what the problem is.” That’s all based on the relationship he has built with these customers over the years—something he’s really proud of. And during that time, Moote has watched the valley shift from green to yellow.

The product support required to regain and retain ag customers in Peterson’s territory fell largely to Paul Grove, Peterson’s ag product support operations manager, who had spent twenty-two years with Holt of California. “Many of our customers had John Deere combines in the beginning, and they’ve slowly converted to Claas. Many were skeptical whether Peterson would be able to support them during harvest season.” He points to Parker Farms, who took the first plunge. “We were there for him twenty-four hours a day, seven days a week during harvest season. If Parker had any problems, he could call our on-call mechanic who would go out and fix it, no matter what time it was. That happened several times.”

Smith Brothers Farms also depends on Peterson during harvest. According to Moote, they were one of the early adopters of Claas combines. Today, they own six. “One night in late fall 2014, I’d just gotten home and taken off my boots, ready for dinner, when I got a call from Seth Smith,” says Moote. “The pump on his chemical sprayer had broken. So I pulled my boots back on, logged into DBS [Peterson’s database] and found the part in stock, then headed for the shop to pick it up. He didn’t want me to because I was home. But the thing about our industry is if it’s going to rain, you really don’t have a choice. We live in Oregon, and if it starts raining in the fall, it might not quit for a week or two. If you’ve got a dry day, it’s time to go.” Moote got the part and went out to the Smith farm to do the repair. He was home by nine o’clock that night; the customer was back on track and happy. “Now that we can support these customers, the green guys are getting scared. We’re actually stealing customers from them. The Claas combine here in the Valley is taking over.”





*Justin Moote/Albany ag tech from 2013–19*

In California, Peterson's single largest ag customer is Knight Ranches. They deal in walnuts, crop seed, corn, and wheat. During planting and harvest season, Peterson mechanics are on-call 24/7. "If they have a machine down, and we don't have the part at our Willows store, somebody will go down to the parts depot in Stockton and bring it back to the mechanic who's waiting to get the machine up and going," says Grove. "That's happened several times. Not only for Knight but for several other customers in the Willows area. We go out of our way to make sure that we get the customer's machine fixed in a timely fashion." That story can be repeated up and down Peterson's territory.

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### LIVING THE FUTURE WITH SMART TECHNOLOGY

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Peterson's ag business has more than tripled since its recommitment to the industry back in 2003. In 2009, Peterson stepped into the high-tech arena with SITECH and Trimble technology geared for the agriculture and construction industries. Farm-

“ As long as harvest goes, I've got keys to a truck, and that truck moves at whatever hour they call.

– Justin Moote, field technician, Peterson Machinery, Albany store (2013–19)

ers can now increase their efficiency and yields with technology their grandfathers never would have dreamed of in a million years. Today, the ag industry is living the future with GPS machine-guidance systems. Farmers can now predict their crop yields five years out based on historical harvest data gleaned from factors like chemical application and water retention in the soil. "Manufacturers started driving this technology back in 2010 when machines started coming out with GPS-type controls and mapping software that tied them directly to the piece of ground they were operating on," says Grimes. "It's not really the hardware or even the software that gives customers the edge because everybody has it now. It's the support and training that SITECH gives these customers that really makes the difference."





*Left to right: Eric Wavra/SITECH Ag Technology sales manager; Peterson's Albany store in 2018*

Peterson's products and timing in the ag business cycle have been focused primarily on what Grimes calls the corporate-sized family farm. "Our customer is the thousands-of-acres, big iron, big harvest operations. We don't get the small guys with fifty acres of hay, or the homeowner and hobby farmers. They go to Kubota and John Deere and New Holland. We're not built for that business model." However, in 2016, Caterpillar launched its Retail Presence concept for its small line of BCP and CCE products. Grimes saw that as a perfect fit for ag customers, many of whom buy skid steers and backhoes for their operations. "Retail Presence is a point-of-sale program geared toward the walk-in customer who wants to buy a piece of equipment right now," says Grimes. "That's how we can position ourselves to get the mom-and-pop-sized customer. By the end of my career, there will be successful freestanding ag stores throughout our territory, independent of earthmoving. That's the goal. That's the vision."

Grimes' vision came true much sooner than he expected but in a completely different manner. On December 16, 2019, Peterson sold its ag business to Sacramento-based Holt Ag Solutions. The move stunned everyone. But after the dust settled, people could see the merit and advantages for themselves. "This is a big win for our ag customers," says Grimes, now general manager for Holt Ag Solutions in Oregon. "Now they've got a deal-

er focused specifically on their industry. There's a sense of urgency and no more distractions because all the resources are focused on ag." That's because Holt-Cat split off its ag business in 2002 as a stand-alone business and officially named it Holt Ag Solutions in 2014. Ag is their only focus.

While Peterson will continue to sell and support Cat ag products and Trimble ag technology, Holt Ag Solutions is now the hub for all other ag products in Peterson's tri-state territory. "Peterson couldn't dedicate the resources necessary to grow their ag business like they wanted to and still do all the other things to grow the Cat business, so they made the decision," says Grimes. "Peterson's former ag customers are now getting exactly what they needed, just under a different banner. The customers win because they don't have to compete for attention anymore. Holt is winning. And Peterson can have better performance where they want to focus."



## PETERSON'S AG TIMELINE (1936-2019)



- **1936** Peterson Tractor & Equipment Co. founded with ag-focused stores in Brentwood and Half Moon Bay; sells John Deere and Killefer farm equipment along with Caterpillar equipment.
- **1940s** Peterson veers towards construction industry based on growing demands of territory after WWII. Howard's brother, Buster Peterson, hires on in 1943 and starts SEQ custom fabrication shop geared largely, but not exclusively, towards construction.
- **1957** Caterpillar requires its dealers to choose between Cat and Deere. Peterson quits selling John Deere.
- **1957** Peterson wins product support contract for Trinity Dam, the first of many state water projects.
- **1958** Peterson acquires Shasta, Trinity, Tehama & Butte counties to support dams. Butte County is an ag-based territory.
- **1963** Peterson acquires ag-focused Santa Cruz County.
- **1982** Peterson acquires Zumwalt and opens ag-based Willows store; sells Steiger line of 4WD tractors along with other allied farm implements.
- **1987** Cat builds Challenger ag tractors; Peterson adds the new Challenger to its ag product offerings.
- **2002** Cat sells Challenger to AGCO.
- **2002** New San Martin store replaces Peterson's old San Jose store to better cover its southern territory, with a large ag-base.
- **2002** Peterson takes on Claas combines, but lets Claas go in 2003 due to lack of sales
- **2003** Peterson acquires Papé; moves into Oregon and begins to build ag presence; Randy Grimes spearheads ag business.
- **2007** Peterson takes on Claas combines in Oregon and begins to penetrate loyal John Deere and Case customer base.
- **2008** Eric Peters is hired as ag salesman to focus on California ag-market. Peterson Machinery assumes responsibility for ag machine sales in California.
- **2010** Peterson acquires Halton and moves into southern Washington; Peterson's Ag Division grows with addition of Salem, The Dalles, and Longview stores and an extremely dense ag customer population.
- **2012** Randy Grimes becomes general manager of Ag Division. Paul Grove becomes product support operations manager; increased sales and service coverage brings recognition by AGCO as top 20 North America dealer
- **2016** Ag Division grows and spins off from earthmoving designation. Ag sales captured separately from earthmoving identifying ag customers by industry.
- **2019** Peterson sells its agriculture business to Holt Ag Solutions, a division of Holt of California.



## CORE VALUE: EXCELLENCE

966

R. A. PETERSON

3,290,806

Filed June 22, 1960

ADJUSTABLE CABLE HOPPER DOOR ACTUATING MECHANISM

3 Sheets-Sheet 3

CONTROLS FOR TANDEM OPERATED EARTHMOVING SCRAPPERS

1964

### BOYLE FAMILY FARMS GOES HIGH-TECH

**B**efore Precision Ag was even a term, Eric Wavra was out pulling soil samples as an agronomist for Wilco Farmers Co-op in the Willamette Valley. Grid sampling was the very beginning of what would become known as Precision Ag.<sup>2</sup> “We would go out and pull samples and develop variability across the field,” says Wavra, SITECH’s Ag Technology sales manager (2019). “Then we’d input our findings into pieces of equipment to spray fertilizer on a field at, say two hundred pounds per acre. And we’d vary the rate from zero to five hundred pounds based on what the soil already had in it. That way we were using our fertilizer more efficiently.”

Today, Precision Ag encompasses anything using technology to increase the efficiency of the farming process. If you put auto steer on a tractor, that’s Precision Ag. If you use a drone to take pictures of your field, that’s Precision Ag. If you irrigate with smart technology, that’s Precision Ag. It’s high-tech farming. Since the late 1990s, technology has changed the face of agriculture more than all the other innovations of all the previous millennia combined. Back to the beginnings of civilization.



*Challenger tractor with Precision Ag working in the field, in 2010*

<sup>2</sup> Precision Ag is part of Peterson’s high-tech company known as SITECH. See the full story in CH16 SITECH, pg 257.



The very first auto-steer ag system Wavra ever sold was to 4B Farms in Silverton, Oregon, where his father worked. “I think it’s the only computer my dad ever turned on. Funny thing is, his co-worker would call him if there were any problems with it. Dad would say, ‘I don’t know why they call me. I can’t fix it.’ Of course, they knew he would just call me,” says Wavra. “There’s a lot of people who are playing in the Precision Ag world today, and if they’re not, they’re thinking about it. It’s something everybody is working toward implementing into their farms.”

Wavra was SITECH’s first Oregon hire, back in March 2010. Today, he heads up the Precision Ag side of the business with a team of thirteen, based out of stores in Hillsboro and Salem in Oregon, and Chico and San Leandro in California. They sell, train, and support a variety of hardware and software technologies, from auto steer and sprayer controls to water management systems. “We’ll go out and install all the products on their machines,” says Wavra. “Then we train them on the software—how to transfer all the data, how to build data sets for the field, and how to train their employees. And eventually they become their own expert.”



Boyle's Challenger 1050

## INNOVATION ON THE FARM: BOYLE FAMILY FARMS (2009)

Boyle Family Farms is one of the earliest adopters of Precision Ag technology in SITECH’s Oregon territory. The Boyles are innovators at heart. They’ve passed down their visionary mindset from generation to generation. And it clearly shows on their farm. From self-built planters, sprayers, and corrugators to GPS navigation and new ways of irrigation, the Boyles are always trying to out-do themselves. “In the farming industry, there are the people that look over the fence at what their neighbors are doing. And then there’s the people out looking for new ideas,” says Ryan Boyle, third-generation owner. “We tend to be the people always out looking for new ideas. Ninety percent of people are just back there waiting to see what you do. Because we are willing to take some risks, sometimes we get bit.” But that’s what makes the Boyles so successful.





Boyle Family Farms, one of the early adopters of Precision Ag technology in Central Oregon, with their Lexion 570 in 2009

Today, they farm three-thousand acres around Madras, Oregon; co-own a seed company, a compost facility, and a spraying service; and run their own trucking company. “My father-in-law started farming here back in 1948 when the water came in,” says Don Boyle, second-generation owner. “There was no such thing as sprinklers back then. The fields were all furrowed for flood irrigation. The only way you could farm was to make small fields out of everything. So the Bureau came in and leveled it and chopped it up into small fifteen-acre pieces. When I started farming with my father-in-law in 1969, I moved forward with a lot of ideas,” says Don. “He was very standoffish because ‘that’s the way we’ve always done it.’ We farmed together for twenty-five years and went round and round on several issues. But eventually, he’d come around.”

Don started re-leveling and combining their fields, installing pump-back systems and wastewater recovery systems, and upgrading their equipment. In the 1970s, they were one of the first in the area to plant garlic and carrot seed. In 1979, he formed Central Oregon Seed Inc. (COSI) with six partners, all local farmers. “We had to do a lot of talking to get that sold, especially with my father-in-law,” says Don. “But then he didn’t want to be left out either.”

For the past forty years, COSI has operated a cleaning facility and seed plant out of Madras, distributing to big seed companies all over the world. Today, carrot seed is the Boyles’s biggest crop, although they still farm wheat, alfalfa, timothy hay, flower seed, dill seed, and turfgrass. “Carrot seed is one of the hardest crops to grow, with the biggest inputs—\$3,500 to \$4,000 per acre,” says Ryan. “It takes the most passes across the field, and it’s a lot of work. But the seeds can be worth twenty-five dollars per pound, so it’s our biggest return. I’ve got a lot of different innovative ways of growing carrots. There’s a lot of things you can think about while sitting on a tractor.”



When Ryan came into the business in 1997, he started pushing for new technology. Don recognized the signs. “You get to a point where you think, *I’ve done enough for now. I’m going to back off.* But then the next generation comes along and starts pushing for change. And that’s what keeps you in business. Because if you’re not willing to move forward, you get left behind. That’s what happened to a lot of farms around here.”

When it was time to buy a new tractor in 2005, Ryan did his research. He got quotes from several equipment dealers and went in search of the laser-leveling technology he’d been reading about. “I wanted to see it working firsthand, so I went down to Laser Man in California and drove around on their equipment.” What grabbed his attention was the Trimble guidance systems. “I came back and lobbied for GPS,” says Ryan. “It was \$28,000 for a new system. But that’s what we needed.”

Don wasn’t so sure. “He was trying to sell me on a \$28,000 piece of equipment to guide this tractor down the field when I was used to buying a brand-new tractor with everything for \$14,000. And this was just for the guidance system.” Ryan’s astute research landed them a new Challenger 585B with a Trimble navigation system for the price of a new Case tractor alone. “To me, that was a real benefit,” says Ryan. “It was our first piece of GPS. And it was the first GPS in this area, even before the fertilizer companies.” Since then, they’ve gone all in with Trimble products. “At first we bought it just for the auto steer. But we’ve slowly taken it into our spraying with Field IQ because it gives us rate control.”

According to Wavra, “The unique thing about agriculture is that farmers work the same fields year-in and year-out, whereas in construction, no job is ever the same. The farmer knows exactly how much fertilizer he uses from year to year. Now put a GPS system on his tractor, and he doesn’t have to do overlap on his rows anymore because the system controls it according to the prescription map he made of his field. And if he needs more in one area and less in another, it will automatically administer the fertilizer at variable rate sprays. So that farmer can see his return on investment right there in the field because he knows exactly how much fertilizer he bought.”

Today, the Boyles do all their own spraying and fertilizing because it gives them more control. “It costs around \$1,000 per acre to farm in this area,” says Ryan. “So we have to do everything we can to be efficient and cost-effective to get the kind of return we want.” They also bought Trimble’s Farm Works software, a record-keeping and mapping program. And in 2014, they hired a full-time employee to manage all their GPS-based software and write the prescription maps for their fields. “All this technology makes us more efficient and productive,” says Ryan. “Now we are integrated into precision farming with grid samples and prescription rates so we get exact amounts of fertilizer and sprays across our fields with no overlap. It gives us a yield advantage because I know exactly what’s being applied. And I can do it exactly when and how I want to.”



Boyle's RoGator Sprayer





Top to bottom: Boyles 760 Lexion Combine Harvester; Don & Ryan Boyle in 2020

The Boyles also run yield monitors on their combines, which gives them harvest stats in real time. And weekly fly-overs deliver real-time, near-infrared images of their fields. “We get four different images of our fields once a week. Then our software guy analyzes the data so we can see the problem areas and improve them. I’m not satisfied with just going out and getting a good crop,” says Ryan. “I want to see how I can improve on that crop, year-in and year-out.”



Today, the Boyles own a variety of Cat and AGCO machines equipped with Trimble navigation. But before that—going back to 1969—they were Case-IH through and through. “There was no [AGCO/Cat] presence in this area until Peterson came along,” says Ryan. “We were all Case-IH for a long, long time.” But in 2005, the father-son team brought the first modern track machine into the Madras area with the purchase of a Challenger 765B and introduced the valley to GPS technology. “Nobody around here had a clue about guidance systems,” states Don. Ryan adds, “One of the reasons we went with the Challenger 765B track machine is because I had rented one before from Peterson. We needed to get the grass planted, but the field was too wet. And the only way to dry it out was to go in there and till the field. It was September, when the nights are cold and things don’t dry out very fast. So we took that track tractor in there, and it went through the mud—no problem. With a wheel tractor, we’d have been at least another week behind.”



Before their GPS-guided Challenger, they did everything manually, which netted out to about five acres planted a day. “We thought we were doing really good,” says Ryan. “Now we can plant sixty to seventy acres a day. And it runs twenty-four hours, for night work. All you really have to do is make the turn at the end of each pass. It’s all programmed so anyone can do it.” That has freed up both Don and Ryan to get off the tractor and onto other things. That first rental turned into others, which morphed into a growing relationship between Peterson and Boyle Family Farms. Today, they own a good-sized fleet of AGCO and Cat equipment—all backed by Peterson and SITECH support.

Precision Irrigation (or Prescriptive Irrigation) is the next big step for the Boyles. “We only get about seven or eight inches of annual rain here. And you can’t grow anything without water, so water is a huge issue. It’s one of the biggest challenges in agriculture today.” In 2001 to 2016, farmers across Peterson’s territory were cut back to 75 percent of their water rations because of the continuing drought. And it could get worse, which has ramped up irrigation technology in the industry. “Trimble now has Irrigate IQ to help manage water better,” says Wavra. “We can make water usage smarter by using pivot irrigation and a prescription map of a farmer’s field. The technology pulses the sprinkler on a pivot line to turn it down or off completely, depending on the soil type and texture and the crop requirement. You can put a system on each sprinkler that will vary the rate of application, just like we’re doing with fertilizer. And you can monitor it from your phone. It’s pretty high-tech stuff.”

Smart water technology isn’t necessarily drought-driven, according to Wavra. But it’s become more prevalent because of the droughts that often plague the West. “There’s not necessarily a technology yet that’s marketable for a lot of industries in California like vineyards and orchards,” says Wavra. “We need drip-irrigation technology. That’s what we’re pushing for.”



(L-R) Eric Wavra/SITECH Precision Ag salesman with Ryan Boyle in December 2020





*Repowering Independent Construction scraper in Peterson's San Leandro main shop in 2020*





## EMISSIONS: EARTHMOVING

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### TACKLING THE EMISSIONS ISSUE

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**I**t was late on a Tuesday afternoon in June 1985. Most people had left work for the day. Marketing assistant Eileen Grafton was sitting in her office in San Leandro finishing up an article for the company newspaper when a familiar face popped around the corner.

“Torey? Torey Baker, is that you? What are you doing here?” She hadn’t seen Torey since high school.

“I’m looking for someone to speak with,” she said a bit formally, standing there in her US Coast Guard uniform. “We’ve been looking for the source of an oil leak out into the bay and today we traced it back to here.”

*Uh-oh.*

That was Peterson’s entrance into the world of environmental regulations and proactivity. Over the next few days, Peterson officials traced it back to a wash-rack pond. “In the old days, every heavy equipment yard had a sump pond. Customers would bring in their equipment for repair, and the first thing we would do is wash their machine,” says Bill Doyle, Peterson’s second-generation owner (1977–95). “The wash rack and collection pond were part of the normal routine of doing business in our industry.” But not anymore.

Since then, every heavy equipment owner in the state has had to change the way they maintain their equipment and adapt to a laundry list of EPA regulations. Field techs now carry cleanup kits to ensure they leave no drop behind. Every service truck has an oil reservoir to haul away the old oil. Shops now use non-chlorinated and low volatile organic compounds or water-based detergents instead of solvents to clean parts and equipment and swab up shop spills. And customers pay a hazardous waste surcharge on every repair job for the disposal of oil and oil-contaminated consumables like filters. Long gone are Peterson’s old wash racks



and sump ponds. In their place are state-of-the-art water treatment systems that pre-treat the water before discharge into the sewer or treat it for recycled use later. Underground storage tanks have all been removed and replaced with above-ground tanks or containers at every Peterson location. And all Peterson equipment yards are monitored every year to stay within current EPA standards. Along the way, Peterson has won a number of awards for leadership in pollution prevention, environmental management, and waste reduction.

The Federal EPA isn't the only government agency looking over our shoulders either. California has its own set of rules laid down by CARB—the California Air Resources Board—that even tops the Feds. They've made doing business in California a lot more complicated and expensive. Today's emissions regulations are rooted in the Clean Air Act of 1970, which gave the federal government jurisdiction over the nation's air quality. That same year, the Environmental Protection Agency (EPA) was

formed to regulate and enforce those mandates. Each decade has brought new laws to counter the effects of industrial living on our environment. And each time, those regulations become tighter and tighter, creating a paradox for businesses trying to balance growth and sustainability with the environment and political correctness. "The regulations we're facing today stem from California's Diesel Risk Reduction Plan of 1998, which identified diesel particulate matter as a carcinogen," explains Grant Stickney, Peterson's Emissions Solutions manager. "California is the only state in the nation that can regulate above and beyond the federal EPA. So everyone is watching us."



“ California is the only state in the nation that can regulate above and beyond the federal EPA. It's home to the toughest clean-air standards in the world.

– Grant Stickney, Emissions Solutions manager, Peterson-Cat



### CARB'S OFF-ROAD TIER SYSTEM

In 1996, the EPA established tier-designations for diesel engines that would pave a path toward smoke-free engines by 2020. Eleven years later, on July 26, 2007, CARB adopted a regulation to reduce diesel particulate matter (PM) and nitrogen oxide (NOx) emissions from off-road diesel vehicles in California. The Drayage Truck Rule hit the same year. "California took it one step further by requiring people to turn over their engines sooner," says Stickney. "CARB assigns a lifespan based on your engine by year [trucks] or by tier [off-road]. The tier system is broken down into eight horsepower groups, all with different deadlines." And that's just for starters. Once the diesel particulate matter was reduced 96 percent (Tier 4 interim) they started regulating NOx as well (Tier







*Typical commute along I-880 in SF East Bay Area in 2020*

4 final). “The biggest R&D project engine manufacturers have had to face was meeting those Tier 4 emissions standards,” explains Stickney, “because reducing the particulate matter (PM) actually increases NOx.”

## ENTER CARL MOYER

To help with the toughest EPA laws in the land, California created a special tax-funded incentive program for early compliance. The Carl Moyer Fund provides monies for emissions reduction projects that comply ahead of the mandated deadline. Many of Peterson’s customers have taken advantage of the program.

One day in 2002, Ernie Fierro (VP of product support) called Mace Gjerman (Peterson’s training manager) into his office. “Clear your desk, Mace. I just got a call from Dan Merrigan who wants us to look into this Carl Moyer Program. And I want you to lead it.” Gjerman spent the next couple years attending meetings with CARB and the Bay Area Air Quality Management District (BAAQMD) to learn about the regulations and funding process and write grant applications for customers.

R. A. PETERSON 3,296,885

SYSTEM FOR MULTIPLE ENGINE CONTROL

**SO WHO IS CARL MOYER?**

Carl Moyer was a philanthropist from Berkeley who left his entire estate to the State of California. In 1998, the State set up the Carl Moyer Fund as a grant program to help clean up California’s air quality in each of its nine air districts. The State provides those funds for early compliance with CARB’s emissions mandates. Parties have to apply for a grant and, if awarded, they are required to keep the funded machine in the air district that issued the funds for three to ten years, depending on the project.

Fig. 4.



*Left to right: Independent Construction’s Dan Merrigan/eqt superintendent, and Brian McCosker/owner with Duane Doyle Sr/Peterson owner, and Jerry Lopus/Peterson president in 2004*



## REPOWERING A MONSTER (JUNE 2016)

The largest off-road job Peterson has tackled so far is Sukut's 5110B mass excavator used out at Calaveras Dam in Sunol, California. By late 2013 it had already been on the job for two years and was getting tired. And in the realm of emissions regulations, its Tier 1 engine was a dinosaur. Peterson Parts and Service rep Bob D'Amore quoted Sukut two repair options: a \$150,000 engine rebuild and a \$650,000 repower. "The engine had almost 14,000 hours on it and needed a complete rebuild," explains D'Amore. "Or they could put in a brand-new Tier 4 final, be emissions-compliant, and get a three-year, 5,000 hour guarantee from us." Mike Ortiz, president of Sukut Equipment<sup>1</sup>, chose the long-term solution, the Tier 4 final repower.

The San Bernardino-based, heavy equipment rental firm has done over two hundred repowers since the off-road emissions mandate came down in 2007. "We've actually repowered our equipment twice," says Ortiz. "First on a number of Tier 0s to Tier 1, and then again from Tier 1 to Tier 3."

Sukut Construction is one of the largest heavy civil general contractors in the Western region. They began work on the Calaveras Dam Replacement project in 2011 in a joint venture with Dragados USA and Flatiron West. Sukut utilized 100 percent Cat equipment on the extensive project. The three companies had 50-60 pieces of iron on-site, depending on the phase. Each brought their own equipment and expertise to the party. "The Cat 5110 was something we already had in our fleet," says Ortiz. "It was the perfect tool for what we needed there." It also played a key role on the job. According to D'Amore, the giant excavator was the best match for their fleet of Cat 773 and 775 off-highway trucks. "It's the machine of choice for these trucks because it's got the right size bucket. It can load out a 775 in three passes."



*Top to bottom: Peterson's Doug Brecheisen working on Sukut's 5110B onsite; 800 hp C27 engine at the San Leandro shop yard*

The 5110 repower was a big deal from start to finish. The 145-ton machine was disassembled, and only the car-body was hauled into Peterson's San Leandro shop. Just getting the 50-ton housing off the truck and situated inside the shop drew a crowd. The job required a new cooling system and radiator, which they adapted from a 775 off-highway truck. "The new engine is an 800 horsepower C27. It's a monster," says Stickney, Peterson's Emissions Solutions manager. "We used the cooling system out of a brand new 775G off-highway truck because that's the machine that has a C27."

<sup>1</sup> a subsidiary and rental arm of Sukut Construction

“ When you do a one-off of anything, there's always issues afterward. But not the 5110. I was really impressed. I flew up to Peterson one day and told them so.

– Mike Ortiz, president of Sukut Equipment

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We also made a hub to run the engine's fan because the space in a '775 truck is different than a 5110. Since Cat didn't have anything available that would fit, our machine shop made one." All in all, it took a tremendous amount of cutting, fitting, and fabrication to make it all work.

Replacing the old 3412E HEUI engine with the latest computer technology posed another challenge. The old machine didn't have an ECM (Electronic Control Module) to communicate between the engine and hydraulic system because the 5110 was built as an all-mechanical machine. "They rewired the whole system and built a new harness for the two ECMs and software," explains D'Amore. "This was a one-off deal. It's the first time it's been done on a 5110. Sukut knew of earlier issues with third-party software engineers, so they specifically requested that Cat provide the software and build it into the deal."

Fortunately, Sukut had a lull in their schedule and was able to substitute in two smaller Cat excavators during the six-month repower process. "When they were finished with that machine, it hit the ground running and never stopped," says Ortiz. "We've done many repowers ourselves, and when you do a one-off of anything, there's always issues afterward. But not this machine. I was really impressed. I flew up to Peterson one day and told them so. It was incredible.



*Sukut's 5110 car-body in San Leandro shop for repower in 2016*

It was a pretty steep learning curve for everyone. Out of that came Peterson's first successful Carl Moyer application. It was for Independent Construction.

"Peterson was instrumental in submitting all of our applications, all the way through," says Dan Merrihan, Independent's equipment superintendent, who retired in 2015. "Our first machine was a Cat 825C. We paid \$18,000 for a \$180,000 upgrade. And every one since has been a home run." In 2006, Peterson punched out four new larger garage doors in its San Leandro main shop to expedite Independent's twenty-five repowers by their year-end deadline. By 2007, Independent had re-powered fifty-five machines, all in Peterson's shop, becoming the largest user of the program at the time.

Back in 2004–05, Caterpillar had teamed up with Peterson and several other Cat dealers on pilot

programs to create repower kits for specific machines. "Caterpillar anticipated the need and created a special task force of engineers and product specialists—the Cat Emissions Solutions Group. CES didn't have a way to do the repowers themselves, so they did it through their dealers," explains Stickney. "The demand was so great that each dealer started doing them on their own to keep up." Peterson created a number of repower kits with customers willing to participate in the pilot program. The customer would pay for the cost of a regular engine rebuild, and Cat would cover the rest using Peterson as their shop and engineering arm. Peterson's first repowers included a D10N, D9L, and 825C for Independent; a 769C truck for Schnitzer Steel; and a D8L for NorCal Waste. "These customized repowers were monster garage projects," says Stickney, the overseeing service manager at the time. "You don't just pull an old standard engine out and replace it with a new one.





*Left to right: Tier 2 Repower in San Leandro shop (L-R) Dave Dickinson and Dave Williams; Entire team (L-R) Rick Ackerman, Dave Dickinson, Ron Spencer, Rick Licon, Dave Williams, Howard Borgeson*

It requires extensive modification and customizing to make it all work. Cat supplied the Tier 2 engine and all the related parts; we did the engineering and put it all together.”

“These are massive three-hundred-hour jobs,” explained Gjerman back then.<sup>1</sup> “Much of it is made up as we go. We’re not only converting a machine from a mechanical to an electronically-controlled engine. We also have to adapt the intake system to an air-to-air after-cooling system. On one of the early pilot machines, we put in an engine and

took it back out ten times to figure out what it needed and get all the parts to fit right,” says Gjerman. “We provided each [shop] bay with a digital camera so they could document the whole process. When it was finished, we supplied Caterpillar with a packet of pictures, notes, and drawings of the parts we fabricated or modified, plus a parts list. Then they put it all into a special instruction format.” Today, Caterpillar acts as a clearinghouse for repower information between the California dealers and anyone else who wants to upgrade to a new-tiered Caterpillar engine.



*Some of Peterson's 335 service vehicles that must comply with EPA regulations*

<sup>1</sup> Some twin-engine scraper repowers took over 1,000 hours to complete.



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## HITTING HOME

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In 2006, Peterson hired a specialist to address the emissions-reduction question a year before the regulations were to hit. “In the beginning, everybody had to report all their machine information, so we helped our customers do that,” says Stickney, who stepped into the position in 2008. “It was a huge undertaking. We also helped them with calculations to see what shape their fleet was in and help them map out their future. There was a lot of education at the beginning just to understand all the new regulations.”

After all the education and reporting and paperwork is done, it all boils down to one of four solutions—retrofits, repowers, replacement, or rental. Peterson works with each customer to determine which option is most cost-effective for them. “We provide solutions for our customers to clean up their diesel engines,” says Stickney, “whether that involves new equipment, rental equipment, repowering with a newer cleaner engine, or retrofitting an existing engine with an emissions-control strategy.” And some customers opt to bypass the whole compliance ordeal and rent what they need.

Carl Moyer has another program for small equipment like skid steers and backhoes. The Equipment Replacement Program (ERP) provides an emissions upgrade solution when repowering is not a cost-effective option. “Carl Moyer will actually pay 80 percent of a machine’s replacement,” says Stickney. “The customer only needs to come up with 20 percent of the price. Then they destroy the old machine, which takes it out of the equation. And for retrofits, they fund 100 percent of the cost. It’s a good deal.”

Today, Carl Moyer funding is harder to get since so many deadlines have already passed. When it is granted, the contract obligates the end-user to operate that equipment for a pre-determined number of hours in the air district where the funds were obtained. “Carl Moyer is not just for repowers,” says Stickney. “It’s for engine upgrades and retrofits with after-market technologies. It’s for machine replacement and electrification projects. And it covers more than just trucks and tractors. Monies can be used on portable engines, stationary engines, off-road and on-road vehicles, heavy-duty trucks, and marine and harbor craft. It’s for anything that replaces old diesel technology and reduces particulate matter and NO<sub>x</sub>.”





## RETROFITS VS. REPOWERS

**RETROFITS** apply after-market, diesel emissions-control strategies to existing engines. The most common is a DPF, or Diesel Particulate Filter, a giant filter that attaches to the exhaust pipe. In the beginning, DPFs were used extensively since the newer-tiered engine technology hadn't been developed yet. When it was, DPFs were still the cheaper alternative so people installed them on everything. It turned out DPFs were not the silver bullet everyone had hoped for. There were no one-size-fits-all solutions. And a competitive after-market field created a whole new layer of complications.

**REPOWERS** switch out older, dirty engines for newer, cleaner engines. The new emissions-friendly engines come in tier designations—Tier 1, Tier 2, Tier 3, Tier 4 interim, and Tier 4 final. Each repower requires custom fabrication since the newer engines have larger cooling packages, which take up more space.

## TIERS VS. YEARS

### TRACTORS (Off-road vehicles)

- Tier 0 (pre-1996)
- Tier 1 (1996–2003)
- Tier 2 (2004–2007)
- Tier 3 (2006–2011)
- Tier 4 interim (2008–2012)
- Tier 4 final (2013–2020)

### TRUCKS (Drayage)

- Level 1 (2000 model standard)
- Level 2 (2004)
- Level 3 (2007)
- Level 3 Plus (2010)



*Repower in San Leandro shop*

## PETERSON'S OWN FLEET COMPLIANCE

Besides helping customers, Peterson has had its own fleet to contend with—a large inventory of new and used off-road equipment, a fleet of Ide-alease trucks, a large-equipment rental fleet, the Cresco rental fleet, and 335 parts and service vehicles. “We have to keep a close eye on all our fleets and make sure we’re turning over our vehicles and meeting the required emissions targets,” says Stickney. “So we’re up against the gun too.”

In the early days, some suggested Peterson was in cahoots with CARB to make money off our





Left to right: Peterson Cat repower decal; DPF filter installation in shop



customers' pain. Nothing could be further from the truth. "From the beginning, we shared our concerns. We helped the industry identify problem areas. We attended a lot of meetings with CARB and industry associations. We've hosted CARB workshops to inform customers and listen to their concerns. And we've been honest and upfront with what we think will work and what won't. We've invested a lot of time and money into these solutions. In our industry, everything we do has something to do with emissions," says Stickney. "This is just one more service we offer our customers."

## CARB'S COURSE CORRECTION

At the end of 2007, the economy was starting to decline and head for a tailspin. Nobody wanted to deal with costly regulations that weren't even clearly defined yet. Stickney and several Peterson and Cat officials attended numerous meetings, acting as mediators between the industry and CARB members. "When CARB did their original estimates of California's emissions and forecasts for the future, they overestimated based on what was occurring at that time (2004–05)," says Stickney. "Then the economy took a dump in late 2007. That caused a vast reduction in emissions because machines were just sitting around. Jobs had dried up. People weren't working."

Yet CARB's aggressive targets were still in place.

In October 2010, they finally admitted that their estimates had been overly exaggerated—to the tune of 340 percent—based on miscalculated pollution levels, faulty health statistics, and scientific analysis. CARB agreed to adjust their numbers, push out the dates, and modify their requirements. Everybody breathed a sigh of relief. The economy had changed the rules by attrition.

“ Everything that we do has something to do with emissions. Everything. ”  
– Grant Stickney, Emissions Solutions manager, Peterson-Cat



Grant Stickney became Peterson's emissions solutions manager in 2008





Feb. 20, 1968

R. A. PETERSON

3,369,680

### CALAVERAS DAM REBUILD (2011–2019)

The Calaveras Dam Replacement project began in late 2011 as a four-year, \$300 million contract. It is the cornerstone of San Francisco's \$4.8 billion improvement program on the Hetch Hetchy Regional Water System.

The Calaveras Reservoir is the Bay Area's largest drinking-water supply, but it had been reduced to 40 percent capacity in 2001 due to seismic concerns. Officials worried that the structure might fail since it is situated within 1,500 feet of the active Calaveras Fault line. The joint-venture team of Dragados USA, Flatiron West, and Sukut Construction began work on it in August 2011.

The mammoth project required:

- excavating 7 million cubic yards of rock and soil
- embanking 4 million cubic yards of material
- constructing a 41,000-cubic-yard concrete spillway
- laying 6,000 linear feet of 78-inch steel pipe
- tunneling and constructing a 250-foot deep by 30-foot wide intake tower



*Calaveras Dam Rebuild during (top) and after (above)*

The dam was finally completed on May 28, 2019, with an \$823 million price tag. Today, the 210-foot high pyramid-shaped earthen structure is located just downriver and butts up against its ninety-four-year-old predecessor. The reservoir now provides 31 billion gallons of drinking water to 2.5 million residents in Alameda, Santa Clara, San Mateo, and San Francisco counties.



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## CAT'S INVOLVEMENT

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Caterpillar has been deeply entrenched in the emissions issue from the very beginning. Part of their strategy has involved dropping any product that doesn't meet a certain profitability threshold. "It's all about PINS, or market share," says Stickney. "It takes a huge amount of time and money to build a machine that meets the new emissions standards. So they dropped some models, like the Cat 527 skidder. There's only about a hundred of them sold a year. Twenty-five go to California, the Pacific Northwest and Canada. The rest are sold in Indonesia where they're built. The demand is too low for Cat to allocate resources to develop a Tier 4 solution." Both the 613 and 615 scrapers have also been cut from Caterpillar's product line. Any machine in the future that doesn't meet Cat's production volume litmus test will be vulnerable.

Electrification is another technology Cat continues to pursue to help reduce emissions. The electric-drive D7E is a great example. It debuted in 2008 and won the EPA's Clean Air Excellence Award that same year for innovative reduction in greenhouse gas emissions. "The D7E was designed to capture some of its own energy and reuse it to further propel the machine," says Stickney. "It's a much more efficient machine than its predecessor. And it receives hybrid credits similar to electric cars." At Bauma 2019, the construction industry's largest trade fair in the world, Cat introduced its D6 EX dozer, which replaces the D7E. They also debuted their new 988K EX wheel loader, the 300.9D VPS mini excavator, and the 906 compact wheel loader—all electric-drive models—during the week-long tradeshow in Germany.

Caterpillar also has a number of electric-drive mining trucks, plus the hybrid 336E H excavator, introduced in 2012. "The 336E H isn't electric, but it has a hydraulic system with high-pressure accumulators that store energy," says Stickney. "No matter what the technology is, if you're recycling

energy to do further work, you're reducing emissions and improving efficiency."

The final target stops in 2023. From there, things level off. Customers will have to meet that standard or continue to turn over 10 percent of their fleet each year until they do. "The regulations have not changed from the beginning in 2010. It just keeps getting harder and harder to attain the further down the road you get," says Stickney. "There are still millions of dollars left in the Carl Moyer Fund. You just have to qualify."

After 2019, for instance, large fleets of 5000 horsepower or more can no longer apply for diesel-to-diesel grants. "That means they can no longer replace an old diesel engine with a newer, cleaner one. But they can apply for replacing a diesel with an electric. The problem is Caterpillar and other engine manufacturers haven't come up with an electric engine, like a Tesla-style electric D7. We just don't have that yet."

“ There are still millions of dollars left in the Carl Moyer Fund. You just have to qualify.

– Grant Stickney, Emissions Solutions manager, Peterson-Cat

For now, Stickney focuses on what he can do for his customers. "Somebody will call me up with a bid, wanting to know what options he has. After I study the specifics of the bid, I'll tell him, for example, that his job can't produce more than sixty tons of NO<sub>x</sub> per day. Their usual response? 'How the hell am I supposed to do that?' That's my job—to figure it out."



## CORE VALUE: TEAMWORK

### FIRST IN LINE WITH CARL MOYER

Even before Peterson jumped into the emissions situation with both feet, its service departments were working with customers on the emerging edge of the regulations. One of the first to test the waters was Independent Construction, based in Concord, California. By then, Indy was well into the Windemere project in San Ramon's Dougherty Valley—a thirty-year, \$4 billion housing development at the height of California's housing boom.

At the time, Indy's third-generation owner, Brian McCosker, was busy building his reputation with a fleet of prudently bought used Cat 641, 651, and 657 scrapers. His philosophy: buy used, maintain it well, and hold onto it as long as possible. When the Dougherty Valley project came up for bid in 1993, it was Independent who won the first contract based on their older fleet. It was an ingenious strategy. Over the next two decades, Independent did an epic job reshaping hills and filling in valleys on the multi-phase, 6,000-acre development, averaging 100,000 cubic yards of dirt a day—and 5 million by project's end. It was the largest dirt project in the state during a time when they couldn't build houses fast enough.<sup>2</sup>

But in 2002 the fleet's age started bumping up against CARB's new regulations timetable. "Brian got wind that there was going to be funding available and wanted to be first in line," recalls Dan Merrigan, Independent's equipment superintendent at the time, now retired. "So we were. It was before repowers were mandatory." That funding—the Carl Moyer incentive program—was based on compliance with the new regulations ahead of schedule. By the time they were mandatory it would be too late.



Independent's Dan Merrigan with Bob D'Amore, Peterson parts & service rep.

Merrigan called up Peterson to find out more about Carl Moyer and get the ball rolling. "We agreed that it would be a great deal for both of us. Independent could upgrade using state funds, and Peterson would get the business." Bob D'Amore, Peterson's parts and service sales rep for Independent, was instrumental in the process. He'd known Merrigan for twelve years. He and Mace Gjerman (Peterson's training manager) worked hard to help create the boxfuls of

<sup>2</sup> Johnston, Jamie, "Economy Takes a Turn for the Better: Operators move 5 million yards of dirt for subdivision", *Operating Engineers Local Union No. 3 News* 67, no. 7, July 2011, p15.



Together we do what we couldn't do alone



From 1995 to 2006, Independent reshaped San Ramon's Dougherty Valley into a 6,000-acre suburban entity. They had 150 pieces of equipment on one phase east of Dougherty. They'd park them at lunchtime for fueling and lubrication, in two lines, each a quarter-mile long.

applications and paperwork to get Indy's first machines into the program. "I was sitting in a restaurant with Dan one day when he got the call from the Moyer people saying they had approved funding for \$10 million. It was for re-powering twenty-five machines."

In the beginning, Merrigan was apprehensive. "It called for replacing a large D346 engine with a much smaller engine in our 651s," says Merrigan. "Even though it was a much more efficient engine, we just weren't sure if it could do the job. We wanted to see how one came out before we went ahead with the rest. But each one we did was an absolute hit."

"We went from Tier 0 to Tier 1 in 2002. And then the engines started upgrading rapidly," recalls Merrigan. "The rules stated that you had to use the best available technology. So you'd have a machine in contract



2,712,873

Sheets-Sheet 1



that was a Tier 1, but then here comes Tier 2 and Tier 3. Ultimately, you'd have to get rid of some of your equipment to stay compliant because every year the guidelines became harder and harder to meet. Those first repowers, though, were a big shot in the arm. Doing that gave us more time to adjust to the new standards.”

In the 2004–05 season, Independent cycled sixteen machines through the Carl Moyer program. And for the next five years, Peterson's San Leandro shop was full of Independent repowers. “It was huge for Independent,” recalls D'Amore. “And it was huge for Peterson.”

As the years passed, Tier 1s and Tier 2s were replaced by Tier 3 in 2006 and Tier 4 in 2011. “You can't hang onto machines any longer, no matter how good of shape they're in,” says Merrigan. “There are people who can't afford to stay compliant and use all rental equipment or go out of business. But Independent worked hard to stay ahead of the curve. We were in the program from the very beginning and we just kept going.”

In 2015, Merrigan retired and Darren Caperole stepped into the equipment superintendent position. Since then, he has worked hard at keeping the fleet clean and current with EPA regulations. “We're buying a lot of used equipment that is Tier 4 compliant. We don't buy anything—new or used—unless it's Tier 4 or better,” says Caperole. “We do a lot of work in Southern California, and you can't even bid a lot of those jobs unless you're Tier 4 compliant. The competition in Southern California is fierce, and Northern California is getting there.”

Since Independent works throughout California, they have to deal with several different air districts, all of which supersede the state's requirements. “You have to pay attention to each air district's rules and regulations because they

ROBERT A. PETERSON



Early Indy repowers—D9 in Peterson's San Leandro shop





“ At its height, you could stand on a hill and watch seventy scrapers moving dirt. The hill in front of you would virtually disappear, if you stood there for an hour. It was just incredible.

– Bob D’Amore, parts & service rep, Peterson-Cat regarding Independent’s Windemere project (1995-2006)

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all have their own, based on the attainment areas,” states Ron Nootboom, Indy’s director of operations. “The rules are tightening all the time, and it’s tough to keep up. We’re on a job right now in So. California where the EIR (Environmental Impact Report) requires everything to be Tier 3 or Tier 4. So whenever a machine comes on the job, it has to be inspected by the biologist or consultant, and those numbers are kept track of every week. It’s all part of the cost of doing business.”

Today, Indy’s fleet includes 125 scrapers and 300 other machines, totaling about 130,000 horsepower. And fourteen of those scrapers have been retrofitted to Tier 4 standards. “We probably have the largest retrofitted 657 fleet in California right now,” says Nootboom. “As long as we can get funding, we’ll keep retrofitting.”





*Wind power on the Altamont Pass along I-580 near Livermore, California.*





## EMISSIONS: POWER DIVISION

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### CALIFORNIA TRUCKS—AIR FILTERS OF THE WORLD

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Perhaps the hardest hit of all the industries caught in CARB’s regulatory web is the trucking industry. They’ve had at least a half dozen regulations to contend with. Peterson Truck’s product support manager, Gary Galindo (2002-19/retired), attended the very first EPA hearing back in 2003 and has followed it closely ever since. “CARB came out with the Diesel Risk Reduction Program in 1999, which identified diesel particulate matter as carcinogenic. In 2003, they started putting regulations together for on-highway diesel engines. It hit the school buses first because they carry our precious cargo. Then it moved to the garbage collection companies because those are in our neighborhoods. Then came the municipalities, or Public Fleet Rule, for utilities like water and PG&E service vehicles. Then the Port Rule and finally, the California-only Private Truck Fleet Rule,” explains Galindo. “Typically, CARB comes up with a program, and the other states follow suit. But not this time. So if you stay out of California, you can drive a 1980 truck that smokes like a chimney and you’ll be fine. California has become the air filter of the world.”

Bill Bryan of PJ’s Rebar Inc. first encountered the new rules at the Port of Oakland in 2005. “We deliver a million pounds of steel every day. The port is five percent of our business, which is a lot of steel. All those trucks had to have cleaner air to get into the port. So we ended up leasing trucks to be able to go in there.” It wasn’t until a couple of years later, in 2007, that the truck-specific Drayage Truck Regulation was adopted. As PJ’s fleet manager, it was Bryan’s headache to solve.

At first, PJ’s did what most companies did with the regulations—put it off because it wasn’t going to happen for two more years. “It was a struggle for me because we didn’t jump as fast as I wanted to,” says Bryan. “They didn’t realize just how fast two years goes by. We had twenty-two trucks at the time, all pushing twenty years.” But once Bryan convinced upper management of the need to be proactive, he dove in. “These new regulations were going to hurt all of our trucks because they were all older models, so I did everything I could. I asked



a lot of questions. I went to classes and got educated. And then I started filling out applications for the Carl Moyer Program grant. Gary Galindo from Peterson walked me through the whole application process. He's the one that reached out to us and let us know what was coming. He shared what he was hearing from everyone else's ordeals and downfalls, and that made things easier."

What Bryan hadn't counted on was having to redo the application process for all his trucks. Multiple times. "I spent two weeks of twelve-hour days getting all the paperwork done. Then I'd find out that the filter CARB had approved was no longer valid and I'd have to start all over again." In the end, PJ's was awarded \$285,000 in Carl Moyer funds to retrofit seven trucks with DPF filters and repower an eighth. But the sixty-forty split would still take a big bite out of the company's pocket. "Adding those filters wasn't going to fix the problem. It was just going to buy us some time so we

could strategize and put together a plan for buying new equipment. So we turned it down." Instead, they opted to lease emissions-compliant trucks for their port business and save their money for new trucks down the line.

In the meantime, Bryan had to deal with PJ's fleet of older trucks. Like most people at the forefront of the emissions craze, he'd hoped that Diesel Particulate Filters (DPFs) would be the magic bullet. Turns out they weren't. Today, the after-treatment market is big business. And CARB's escalating requirements are the driving force. "The first DPF filters reduced particulate matter by 25 percent. That was in 2000. When CARB started talking about newer, stricter goals, the DPF manufacturers knew they could make a lot of money on all these trucks. Somebody came out with a 50 percent reduction particulate matter filter, which made the other products obsolete. It became a race to out-engineer each other," explains Galindo. "It started at 25 percent in 2000, then 50 percent in 2004, and 85 percent in 2007. And then somebody came along with an 85 percent filter that could also lower the NOx levels." Add to that the many different brands, types, and sizes of DPFs—plus the fifty-four pages of regulations of the Private Fleet Rule—and the confusion was palpable.

For Bill Bryan and PJ's Rebar, the whole DPF issue has been a big challenge. "If you're not out on the freeway opening it up and blowing it out, these filters are going to clog more often. That's the biggest problem right now," said Bryan back in October 2016. "I've gotten past the compliance stuff because I'm getting pretty good at all that and I stay one step ahead of it. But the cost of maintaining our equipment has gone up by 15 to 20 percent over the past several years. I'm taking trucks into the shop more often now because of the CARB situation. Every time a truck gets a check-engine light and has to go in to get the DPF boiled out, that's another cost. And that hurts because if it's not out on the road, we're losing money."

“ If it's not out on the road, we're losing money. ”  
—Bill Bryan, fleet manager, PJ's Rebar Inc.



Bay Area traffic congestion



According to Galindo, there are really two options for truck customers today: install a DPF or buy a brand-new truck. “Repowering a truck is a totally different animal from the off-road market. It involves a lot more than just the engine. These new engines are physically larger, so the radiators are larger because they need more cooling capacity; they need air-to-air chargers and diesel particulate filters. Today’s trucks are very wide in the front because there’s a lot more in there than just the radiator. There’s also air piping and larger fan drives. So our general recommendation is to just buy new. And with Carl Moyer funding, you can get up to \$50,000 to help.”



*Today's trucks have wider grills to accommodate larger radiators and more complicated engines.*

There is, however, a third option. Leasing has been popular for the past fifteen to twenty years in the San Francisco Bay Area, but the emissions issue has turned up the volume even more. “All of a sudden, leasing doesn’t seem like such a bad idea to people who would have never leased trucks before,” says Galindo. “Since the new trucks have a lot more bells and whistles, a lot more can go wrong. So some people choose to lease instead because they don’t want all the hassles that the new engines can have. It becomes somebody else’s problem. If the check engine light comes on, they can just bring it back to Idealease, for example, and get a different truck and keep on driving.”<sup>1</sup>

<sup>1</sup> See the full story on pg 160, *Idealease: Another Choice*.



*Bill Bryan/fleet manager of PJ's Rebar*

### **PJ'S REBAR ADAPTS TO CARB MANDATES**

**PJ's Rebar, Inc. is a specialty rebar manufacturer based in Fremont, California, geared toward new construction and the earthquake-retrofit market. The 35-year-old company grew out of a need for earthquake-resistant substructure support for bridges, sports stadiums, parking complexes, high rises, electric towers, windmills, and anything that requires the heavy reinforcement of 2.25-inch steel rebar. PJ's delivers one million pounds of steel rebar every day to customers in California and the other eleven western states. The trucking portion of their business is huge—both as a delivery system and an expense, given CARB's emissions-control mandates. Their fleet consists of fifteen trucks and fifty-five trailers, including eight 80-foot stretch trailers and a number of bobtails.**



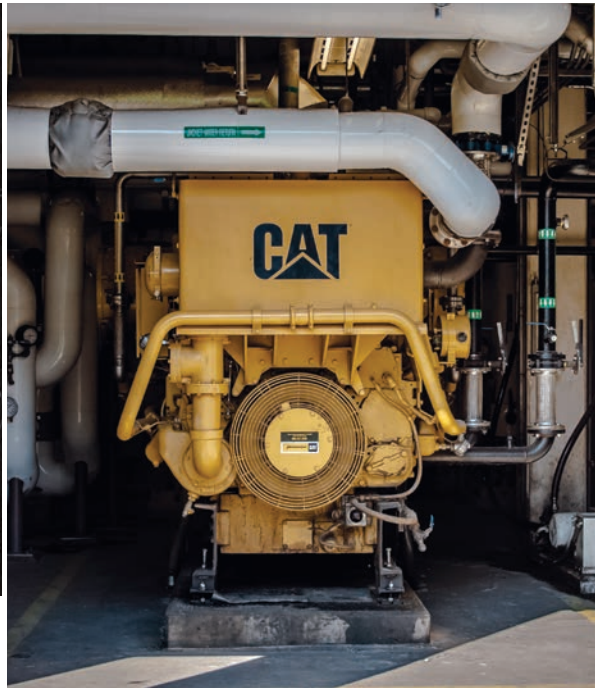
## THE LAST STRAW FOR CATERPILLAR

CARB's 2010 ruling of an 85 percent carbon emissions reduction plus a lower NOx level finally pushed Caterpillar over the edge. "When they reached 85 percent reduction, the next thing CARB wanted to address was NOx levels," explains Galindo. "Ironically, reducing particulate matter actually boosts NOx levels. So the next goal from the EPA was to lower the NOx levels while keeping PM at 85 percent." That's where Caterpillar drew the line—choosing to not build a 2010 emissions-compliant product. That's when they exited the on-highway engine business altogether.

## EMISSIONS REGULATIONS AND COMMERCIAL ENGINES

Providing power is a core service that goes back to Peterson's founding in 1936. But sixty years later, the EPA's diesel emissions mandates changed the rules for the entire industry. From EPG and industrial engines to trucking and marine, Peterson customers have all felt the bite of CARB's mandates. The emissions regulations have affected every combustion engine in California.

On the industrial side of the house, commercial engines like standby generators, ag pumps, air compressors, and chippers all require annual permits, much like DMV registration for automobiles. Thousands of standby generators in Peterson's territory cost roughly \$1,400 per unit per year for a use permit, paid to their local air-quality district. But with the changing emissions landscape, commercial engine owners were staring at major changes. California developed the Carl Moyer program to incentivize owners to make those changes. However, for the Electric Power Generation (EPG) standby market—which comprises the vast majority of Peterson's commercial engine business—the incentive programs haven't been much help. "It just doesn't make sense to



Top to bottom: Cogeneration application at Gresham Wastewater Plant, Oregon in 2015; Standby generator at Good Samaritan Hospital, San Jose, California in 2018



install a new engine on a standby generator that only runs twenty hours a year,” says Matt George, Power’s general service manager from 2006-2017. In 2016, George’s team worked on several standby generator after-treatment projects. “In some cases, the cost of the after-treatment for the exhaust system was more than buying a brand-new compliant generator package,” says George. “Sometimes it just doesn’t pencil out.”

## ALTERNATIVE SOLUTIONS: BIOFUELS

In 1997, the City of Sunnyvale installed two large 16-cylinder Cat G3516 natural gas engines at their wastewater treatment plant to capture the

energy of their methane by-product. Another customer, Dry Creek Landfill near Medford, Oregon, plumbed their entire landfill to collect methane gas in 2006 for the same purpose. And in 2009, Stahlbush Island Farms in Corvallis, Oregon upgraded their facility with an anaerobic digester powered by a 20-cylinder Cat G3520C generator to turn their crop by-products into biofuel.

“These biogas projects were at the forefront of the Green Energy boom,” states Marty Hopkins, commercial engines sales rep for Peterson Power out of Oregon. “The utilities were looking for reliable sources of renewable energy. By capturing methane before it dissipates into the atmosphere, these customers created enough electricity to run their facilities and then sell the surplus back to the utilities.” As solar power and wind projects have become more popular, the lucrative power-purchase contracts and government incentives have dried up for landfill projects. However, the digester market continues to grow—both for private and municipal customers. Hopkins and the Peterson Power gas team continue to look for more opportunities in the biogas, natural gas, and cogeneration markets. Whereas the Stahlbush system can produce 1.6 megawatts of electricity, Hopkins’ team is now selling packages to wastewater treatment plants



Top, counter-clockwise: Dry Creek Landfill’s landfill-gas-to-energy project, near Medford, Oregon, is powered by two Cat 3520 engines in 2009; (L-R) Duane Doyle Sr./Peterson CEO, Marty Hopkins/Peterson commercial engine sales, Eric Martin/Peterson Power GM in 2007





that provide 14 megawatts of power—with a typical carbon-footprint reduction of 95 percent over earlier efforts.

Many large companies like Waste Management have their own in-house environmental staff, who know the rules intimately and can strategize the smartest usage of their assets. At their Altamont Pass landfill near Livermore, California, Waste Management switched out two 3116 diesel engines in 2012 for new natural-gas Cat G3306s. Peterson Power teamed up with Tractor's fab shop manager, Jack Ravazza, to work out the details. "The new engines were larger because you can't get the same amount of horsepower out of a gaseous-fueled engine," explains George. "Ravazza's team had to make a lot of modifications to make it all fit."

The landfill's truck tippers are now powered by Cat gaseous-fueled engines that run on the site's own methane. "By re-engineering their tippers for a couple hundred thousand dollars to handle these new engines, Waste Management was able to lower their fleet average and site tonnage, and run their D10 for three additional years." That netted out to a half-million-dollar savings. It all boils down to staying educated on the state's latest emissions regulations and being a good chess player.

## WHAT IS COGENERATION?

Cogeneration is the use of an engine to generate useful electricity and thermal energy at the same time. The by-product of thermal energy—either hot water or steam—is captured and either used directly or can also be used for various secondary functions like absorption chillers. The marker of a cogeneration engine—natural gas or biogas—is total efficiency. "Our top-of-the-line engines are around 43 to 44 percent electrically efficient," says Marty Hopkins, Peterson Power commercial engines sales rep for Oregon/Washington who is spearheading the effort. "So if we do nothing else, we're only using 43 percent of that fuel's energy. But by capturing the exhaust and the jacket water, we can achieve over 80 percent total efficiency. So it's all about efficiency."

## EMISSIONS CONTROL WITHIN THE MARINE INDUSTRY

Strategizing the marine market comes with a different set of challenges. "CARB's Harbor Craft Rule [2007] requires that all engines of a certain age and size be switched out with new emissions compliant units," explains Marty Wiemann, Peterson's marine product support and engine salesman for OR/WA (1998–2017). "If your engine is over ten years old, you can't operate it in California anymore. But older engines in Oregon and Washington are grandfathered in so we're not forced to get rid of them. Customers don't have to do anything unless they're going to replace them. Then they





*Barrett Carpenter with a C280 engine at Cat's Large Engine Center (LEC) in Lafayette, Indiana*



“ Peterson is leading the way for Caterpillar in the new Tier 4 marine-engine market.

– Marty Wiemann, marine engine sales and product support, Peterson Power, Portland, 1998–2017

”

have to repower with a new Tier 3 model. That’s the big difference. Otherwise, our emissions levels are the same as California’s.”

“Most of Peterson’s commercial marine customers have repowered their fleets to meet the current CARB standards,” says Barrett Carpenter, marine engineer and sales rep (2014–present). “Tier 1 commercial engines can only operate in California until the end of 2021, but Tier 2 commercial engines can operate in California indefinitely. In early 2018, we learned that CARB had been working on changes to the Harbor Craft Rule, which would entail repowering commercial vessels to Tier 3 standards in the next few years. California, however, really wants everything at Tier 4 now—like yesterday. So we expect the rule will probably require that at some point in the near future. When our customers heard about the Harbor Craft Rule changes, they all decided to wait to buy new



*Peterson marine techs work in tight quarters*





## STARLIGHT MARINE REPOWERS

Back in 2012, Starlight Marine's three Z-boats were each run by a pair of 3516B engines that weren't even Tier 0.<sup>2</sup> CARB required that they be repowered or upgraded to Tier 2 compliance by 2015. Starlight chose to upgrade with an EUG retrofit kit since it was half the price and half the trouble. The Carl Moyer program approved the six-engine deal with 60 percent funding, and in September 2012 the work commenced. The tugs were brought into Bay Ship & Yacht's dry dock in Alameda where Peterson techs did the work. By the end of December, all six were completed and ready for testing.

"It was like doing a major, major overhaul," explains Randy Richter, Peterson marine product support rep from 2008–17. "We changed everything out on those engines except the block and the crankshaft. CARB only requires the emissions upgrade, but there were other parts on those engines with a lot of hours on them, so it didn't make sense to put old components on an engine with brand-new parts. That would be like taking a shower with your socks on." Instead, Caterpillar recommended doing the whole package—the emissions upgrade and the engine overhaul—so everything would work together. Then Cat would back it up with a warranty.

Starlight management was extremely happy with the outcome. "The captains took those vessels out on their first jobs and were ecstatic," says Richter. Since then, those same Z-boats have logged enough hours to warrant a top-end overhaul. But that initial emissions upgrade job was the turning point in the Starlight-Harley-Peterson relationship. They have been working with Peterson—in California, Oregon, and Washington—ever since for repairs and new marine engine sales. Starlight has also approached Peterson for future complete repowers of the Z-tugs to meet the ever-changing emissions rules.<sup>3</sup>

<sup>2</sup> Peterson customer Starlight Marine, based in Alameda, CA, is a subsidiary of Harley Marine, headquartered in Seattle. However, Harley Marine builds their tugboats in Portland (Peterson territory).

<sup>3</sup> By 2020, Starlight's Z1 and Z2 were gone, Z3 was repowered with a brand-new Tier 3 engine, and Z4 & Z5 were being considered for new Tier 3 upgrades.



engines. Once the new rule is officially released, we'll probably start seeing a lot more Tier 3 and Tier 4 engine orders."

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## EMISSIONS UPGRADE KITS

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Under the initial wave of upgrades, Caterpillar developed retrofit kits for their large 3512 and 3516 commercial engines. "The engines in tugs are built so deep inside the boat that it's almost impossible to do a repower," explains Barry Kreuzer, Peterson Power's product support GM. "You have to either cut the side of the boat open or remove part of the deck to gain access. Repowers just weren't practical." Instead, Caterpillar came up with emissions retrofit kits (EUG) to overhaul large engines with components from a newer, tier-compliant engine, using the old engine block. No other Cat product has an emissions kit—nor does any other marine engine manufacturer offer one.

To get ahead of the next round of regulations, Peterson Power hosted a joint CARB / Bay Area Air Quality Management District (BAAQMD) event in April 2019. It was held at KKMI's conference room adjacent to Peterson's dock at Point Richmond. "Both CARB and the BAAQMD presented their ideas and wanted industry feedback on the revisions they were considering. They're raising the bar again—going from Tier 2 to Tier 3," says Kreuzer. "All the big boat owners were there—Starlight, AmNav, Foss, Baydelta. People flew down from Seattle and from all over California to be a part of this event. It was a heads-up meeting where they could influence the new rule and update their fleets with Carl Moyer funds, ahead of the new mandate."

In the months to follow, one of the large tugboat companies in attendance, AmNav, worked with Peterson and Caterpillar to design a new EUG kit for Tier 2 to Tier 3 upgrades. And in June 2020, their Carl Moyer-approved \$1.2 million job began. Peterson technicians worked out at the KKMI



*AmNav repower converted two 3516 Tier 2 engines to Tier 3 in 2020*





*AmNav's Patricia Ann*

dock facility, retrofitting two of AmNav's Cat 3512 engines from Tier 2 to Tier 3 on the *Patricia Ann*."

In the late 2000s, during the initial round of retrofits using EUG kits, Kreuzer had been working for the competition. "Caterpillar was the only manufacturer who developed an emissions retrofit kit.

“ The Earl Redd is the first Tier 4 final boat for Caterpillar in the world.

– Marty Wiemann, marine engine sales and product support, Peterson Power, Portland, 1998–2017

”

I didn't believe it at first. Cat didn't just tell their customers to go buy a new engine or build a new boat, like everyone else. They made the investment to help out their customer base. That was amazing to me. No other manufacturer did that.”

## LEADING THE WAY

Back in 2016, Peterson worked with Harley Marine to build a boat identical to the *Abbra-Franco*, a tug they operate out of San Francisco Bay. But the *Abbra-Franco* was powered by a pair of Cat C175 engines, which were not tiered engines. “The best solution was the new Tier 4, Cat 3516E,” explains Wiemann. “They ended up purchasing the first two Cat-built field follow [pre-production] models that went into the *Earl Redd*. The 120-foot-long line-haul tug was built in Portland, Oregon by Diversified Marine Inc. (DMI) and named after the owner's father, Kurt Redd. “Watching the construction of the *Earl* was historic and exciting,” recalls Jim Calloway, Peterson marine sales manager. “Knowing that the very first Caterpillar Tier 4 vessel in the world was built locally, and that we



The *Earl Redd* is a 120-foot-long line-haul boat with two Rolls Royce Z drives for increased maneuverability. It traveled 7-9 knots on its first trip to the Gulf Coast and back. The boat carries 140,000 gallons of diesel fuel and 8,000 gallons of DEF, the solution injected into the SCR (selective catalyst reduction) which reduces NOx down to Tier 4 requirement levels.

*The Earl Redd, the first Caterpillar Tier 4 vessel in the world.*



were the selling dealer, has given Peterson high visibility within Caterpillar’s global marine market.”

A year later, the *Earl Redd* departed on its first tow, from Seattle through the Panama Canal to the Gulf and back. “We installed Cat Connect remote-monitoring equipment that sends data from the engines and the SCR [selective catalyst reduction after-treatment equipment] back to Caterpillar via satellite so they could monitor them live,” explains Wiemann. “They wanted to keep a close eye on how all the equipment performed so they could make changes if they needed to.” In March 2016, Peterson’s California marine salesman, Rich Floyd, landed the first two production 3516Es for Baydelta’s *Caden Foss*—being built in Vancouver,

Washington by JT Marine. That made Peterson the selling dealer for two of the first Tier 4 vessels in the world.

Being on the cutting edge of such projects shows that Peterson is leading the way for Caterpillar in the new Tier 4 marine engine market. It also points to Peterson’s lifelong determination to carve out opportunities whenever and wherever they arise. Today, across the diesel-powered spectrum, engines are as clean as they can feasibly get. With the new urea-injection systems on Tier 4 finals, there’s nothing left to give. That is, until somebody comes up with a flux capacitor that can create horsepower, or an all-electric engine.



*The Earl Redd was built at Diversified Marine in Portland in 2017*



## CORE VALUE: INTEGRITY

### DOING WHAT WE SAY, EVEN WHEN IT HURTS

It was a crisp spring morning in 1994 and Peterson Power Systems (PPSI) had a problem. President Jeff Goggin had just gotten off the phone with a customer who was clearly unhappy. Several months earlier, Physics International (PI) had purchased two Caterpillar engines—a 3406 and a 3412. It was just another half-million-dollar generator sale for Peterson. But as Goggin would soon discover, the job was anything but ordinary. “The customer said that our engines were not performing up to standard, which made us liable for millions of dollars in damages if they missed their deadline,” explains Goggin. “Going in, we knew this was a one-shot deal. We knew that once the engines left here, we would never see them again since they were going overseas. We knew they had to meet very stringent tests.” What Goggin didn’t know was that those Cat engines were part of a high-power microwave test facility—basically a high-tech weapons program. And without the power those generators provided, nothing would work.

“ I found out later that we were just one part of the project, but without the Cat power, the whole thing couldn’t work.

– Jeff Goggin, chief operating officer, Peterson-Cat



Jeff Goggin

That omission by the customer was based on a need-to-know consideration since it was state-of-the-art technology and not publically known at the time. Not surprising since Physics International was a commercial defense contractor. However, it did create an undercurrent of wariness between the two companies. “About seven months in, we discovered they were building a pulse-power military test system—a James Bond-style ray gun of sorts,” explains Goggin. “It was designed to knock out electronics in remote, targeted areas with an intense, high-power microwave pulse. But we didn’t know that initially.”

In the end, it took an entire year to iron out the problem. After several months of troubleshooting and meetings, they finally isolated the culprit. And it wasn’t the Cat engines. It was, however, Peterson’s mess to clean up since Peterson had signed on as the systems integrator, or general contractor, in the initial negotiations, at PI’s insistence. And since Caterpillar didn’t make the capacitor load system required to convert electricity into pinpoint-pulse, high-power microwaves, Peterson had gone with PI’s vendor recommendation. Big mistake.

From the onset, the vendor was remote and non-responsive. It was months before Peterson even saw the capacitor. And when it did arrive, it didn’t work properly. More valuable time was lost trying to track down



We do what we say



2,485,407

Sheets-Sheet 3

*Integrity is one of the five Peterson Core Values reinforced in Brand Ambassador.*

the one-man vendor, who by then had gone bankrupt and off-grid. As general contractor, the one-throat-to-choke concept was never more applicable or painful.

All during this time, the smaller of the two engines, the Cat 3406, was working and racking up billable hours, which were going unpaid due to the lack of performance of the larger Cat 3412. “As a distributor, I was getting more and more concerned,” recalls Goggin. “I just wanted to get those engines back and forget the whole deal ever happened. That’s when I decided to seek legal counsel and check out our options.” They weren’t good. Neither were there any forthcoming solutions. The stalemate persisted, as did the tension brought on by the looming multimillion-dollar damage threat.

At around the six-month mark, the two companies held a high-level meeting. Peterson owner and CEO— Duane Doyle Sr.—listened to the situation from both sides, reviewed the contract, and asked a number of questions. His bottom line was simple: *What did we say we were going to do?* followed by the charge to his own people to make it happen—whatever it took. He also entreated Physics International to help since they were the experts in the field. “Once they knew we weren’t trying to shirk our responsibilities, things changed,” says Goggin. “They’d been half expecting us to walk out, but we didn’t. We were committed to doing whatever it took because that’s

“ We have never worked with a supplier who has taken the commitment to supply a product more seriously than Peterson. We would recommend you to anyone.

– Dr. James Benford, director of HPM Division, Physics International

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2,712,873

5 Sheets-Sheet 1



## WHO IS PHYSICS INTERNATIONAL?

The Orion test facility was built to assess the potential effects of high-power microwave radiation (HPM) on military systems should a hostile country build such a weapon. There are several major military ranges in the US that test military equipment against a wide range of threats including HPM. The White Sands Missile Range in New Mexico tests include HPM, intense X-rays, shock, and blast. Physics International builds a variety of large-scale test simulators—like Orion—for such facilities in the US as well as the UK, which has been a defense partner since World War II.

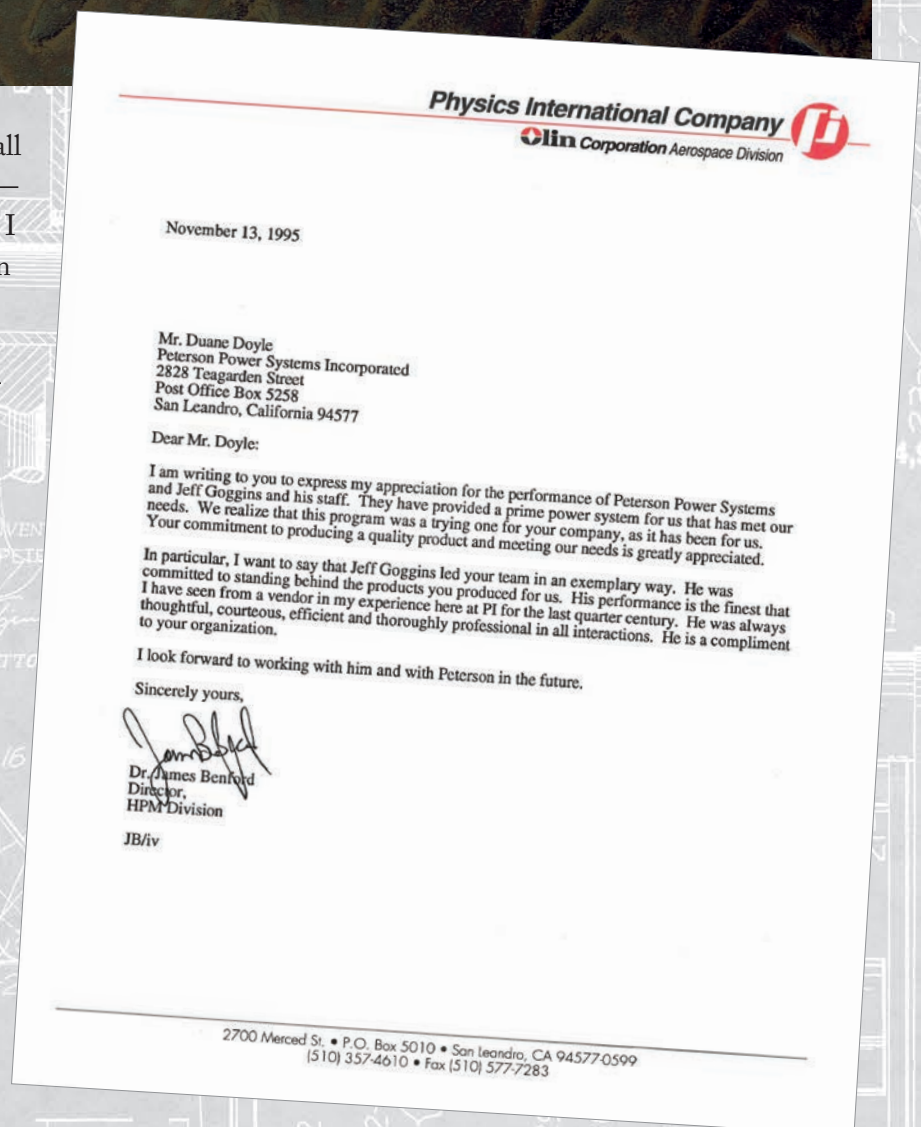
Physics International has changed names several times over its forty-year history. Today, they are Applied Technologies Inc. Division—a wholly-owned subsidiary of L3Harris—the sixth-largest defense contractor in the US. They continue to build high-power radiation simulators, from X-ray simulators to HPM and other radio wave simulators.

Feb. 20, 1968

what Peterson does. It cost us all the profit on that \$500,000 sale—and then some. In that meeting, I learned that there is no price tag on integrity. It's who we are."

When Physics International realized that Peterson was there for the long haul, they recommended another expert—an MIT-level specialist—who turned out to be golden. He located the problem with the vendor's capacitor and a number of other issues—all unrelated to the Cat engines. With the help of Peterson technicians, he was able to reconfigure the capacitor and get it to work. "In the end, we built our own test bench and tested the capacitor, which finally worked exactly as the customer wanted," says Goggin.

Years later, Peterson finally discovered who the project's end-user was: Britain's Ministry of Defense. In the ensuing fifteen years, the Orion Project garnered "a sound reputation in the testing community," according to Peter Sincerny, director of engineering for Applied Technologies Inc.—the same Physics International company now owned by large defense contractor L3Harris.





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The Orion project operated for many years in the UK to assess the threat of high-power microwave radiation (HPM).

– Peter Sincerny, director of engineering, Applied Technologies Inc., Physics International, 2004–present

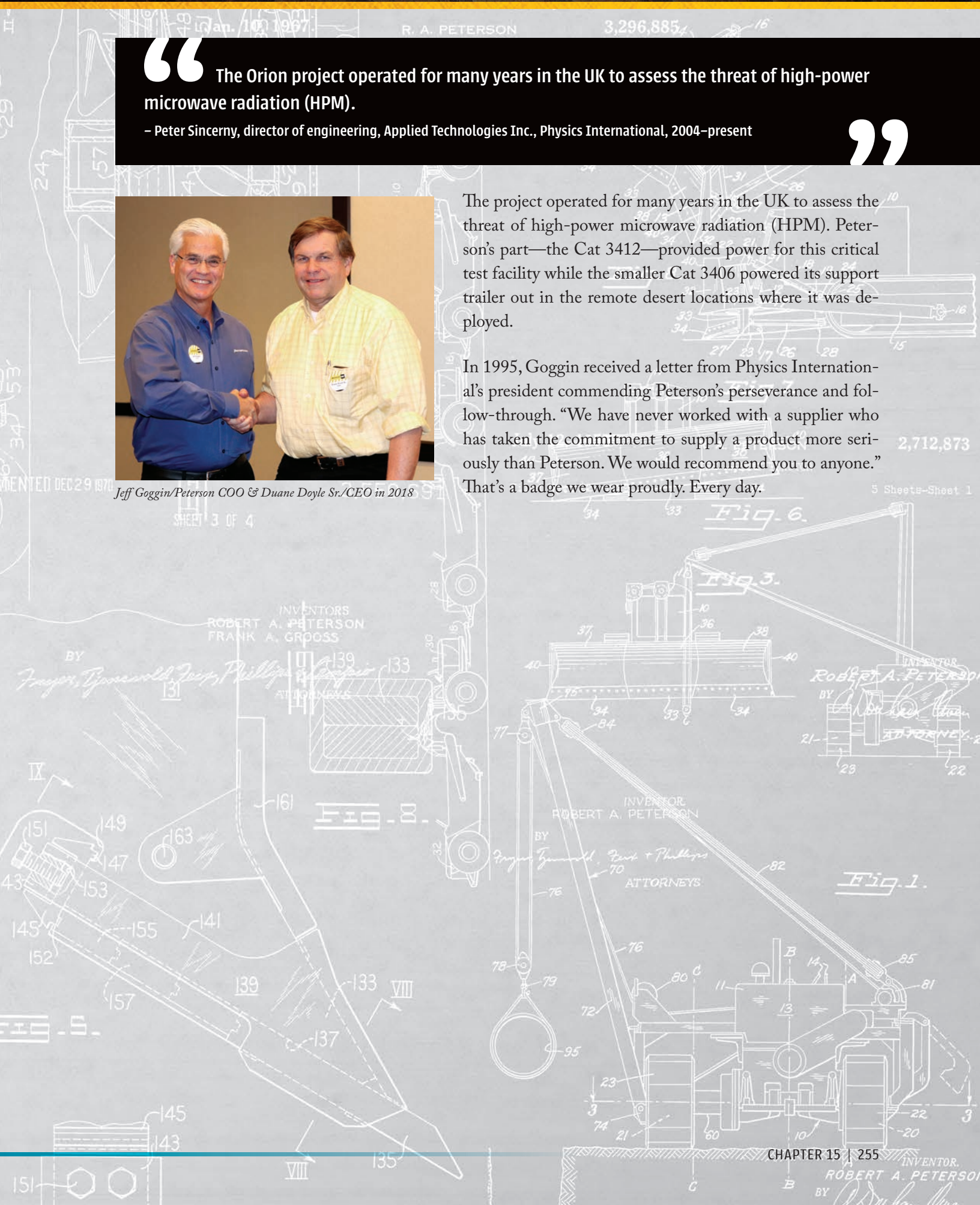
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Jeff Goggin/Peterson COO & Duane Doyle Sr./CEO in 2018

The project operated for many years in the UK to assess the threat of high-power microwave radiation (HPM). Peterson’s part—the Cat 3412—provided power for this critical test facility while the smaller Cat 3406 powered its support trailer out in the remote desert locations where it was deployed.

In 1995, Goggin received a letter from Physics International’s president commending Peterson’s perseverance and follow-through. “We have never worked with a supplier who has taken the commitment to supply a product more seriously than Peterson. We would recommend you to anyone.” That’s a badge we wear proudly. Every day.







*K & E Excavating at Portland International Airport in August 2012*





## SITECH

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### MACHINE CONTROL TECHNOLOGY (2010)

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It was summer 2010. Peterson had just moved into northern Oregon, and top management was out meeting their new customers. One of the first stops was K & E Excavating in Salem. After the initial introductions and handshakes, everyone settled around a beautiful oak conference table. The atmosphere was a bit tense. Not uncomfortable exactly. Professional. Cordial. But rather stiff. A lot was on the line.

Peterson owner and CEO Duane Doyle Sr. was there along with Jeff Goggin (COO), Kevin Culligan (general sales manager/Oregon) and Duane Doyle Jr. (product support sales manager/Oregon). Across the table sat Kerry and Eric Kuenzi, cousins and co-owners of the then twelve-year-old general contracting firm known simply as K & E. Once the small talk died down, Kerry jumped in.

“We’ve got a lot committed here, and we want to know who you are. Because we were pretty happy with the last guys.”

“I can appreciate that,” said Duane Sr. “First off, we wanted to come and introduce ourselves. And then find out if there is anything we can do to help you in your business.”

A lively discussion ensued, each sizing up the other, wondering how this relationship was going to go. Peterson hoped to pave a smooth transition and earn the trust of a valued customer. The cousins were cautiously optimistic but a bit wary of a big-city dealer coming in to take over and what that might mean to their operation. With a fleet of fifty Cat machines, they had a lot of skin in the game. One of the topics on the table was the guidance control system on their Cat 140 motor grader. It was giving them fits.

“We’ve been having a lot of problems with that machine’s GPS controls,” said Kerry, K & E’s president.



“When it works, it’s great. But the technology support sucks.”

With that, Duane Sr. and Goggin knew they’d just been handed a golden opportunity. Six months earlier, Peterson had acquired the Trimble franchise—Spectra 3D—from the Larsson family, now branded as SITECH. Duane Sr. picked up the phone and called the general manager, Johan Larsson. He was their ace in the hole. The next day Larsson called Kerry to discuss the problem. They had it resolved in a matter of minutes. “I remember thinking, *Wow, these guys are serious,*” says Kerry. “Once he started in, the machine control just took off. And from that point, it started paying off. Before that, it was a pain in the neck.”

Since then, the SITECH team has played a significant role in supporting K & E’s GPS technology. “SITECH has been a huge benefit to us. We thought Halton took good care of us, but honestly, it’s nothing compared to Peterson,” says Kerry. “It’s a whole step up. We’re extremely happy with them taking over. There’s a real partnership between us and Peterson.”

Today, the heavy equipment industry is living the future with machine control technology and smart tractors. It’s becoming increasingly clear: if you don’t have it, you’re going to be left in the dust sooner than later. Early adopters like K & E are reaping the benefits of smarter practices, tighter bids, larger profits, and more work, for being on

“ We thought Halton took good care of us but it’s nothing compared to Peterson. It’s a whole step up. There’s a real partnership between us.

– Kerry Kuenzi, co-owner & president, K & E Excavating ”



Top left, clockwise: Kerry Kuenzi/K & E president; K & E equipment on the job at PDX; SITECH service truck out on a repair job





*Top to bottom: K & E's new D10T with machine control technology in May 2019; K & E took delivery on Cat's very first 336E hybrid excavator, here on the job in Woodburn, Oregon in June 2013*

the leading edge of a winning technology. For Peterson, buying a Trimble navigation franchise was one of the best strategic decisions of the last thirty years. Eighty percent of SITECH's business is putting GPS and technology on yellow iron. That's made it a perfect fit because 80 percent of SITECH's customers are already Peterson customers.

Peterson launched SITECH in January 2010 to provide its customers with the latest in construction and Precision Ag technologies.<sup>1</sup> In construction, it yields higher productivity, with accuracy down to millimeters in real-time kinetics (RTK). It also gives estimators more site data to inform their next bid and earn more jobs. In farming, Precision Ag helps maximize inputs (fuel, fertilizer, water), decrease labor, and forecast yields, for a smarter, streamlined operation. In 2015, SITECH expanded into the vertical-build market with Building-



Point Pacific. That technology enables companies to plan, track, and manage projects from pre-bid to post-build maintenance. These three business sectors provide a full spectrum of equipment technology solutions, with the most current software, high-tech products, and training in Peterson's territory (plus Southern California and Hawaii for

<sup>1</sup> Peterson bought Spectra 3D in late December 2009 and launched it as SITECH in January 2010.





*SITECH products on the job—top left, clockwise: Robotic Total Station; Trimble machine guidance gear; In-cab monitor; Trimble Tablet*

BuildingPoint Pacific). The Trimble dealership offers laser levels, construction lasers, optical instruments, machine control systems, surveying and engineering software, GPS systems, and accessories.

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## MOVING DIRT SMARTER

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Within the next decade, contractors won't be able to compete without machine control technology. Developers already request it in the bid process. "It's changed the way we move dirt," said David Larsson back in 2015—now general manager of BuildingPoint Pacific. "In the old days, you moved dirt twice: once from the cut to a stockpile, then to the fill. With 3D machine control, you can control the cut and the fill at the same time. Now dirt gets moved once." The results? Heightened efficiency, faster cycle times, and less wear and tear on the machine and the operator.

But it's a lot more than just the hardware. SITECH sells a process. The SITECH team spends half their resources training customers on their new systems. Trimble software maps a jobsite and broadcasts that information out through the Cloud so everyone on the job is working from the same view in real-time. Gone are the old blueprints spread out across the hood of a contractor's truck. Trimble Business Center (TBC) software takes a CAD file and turns it into a 3D rendering on a screen right inside the cab. The operator knows exactly where he's at because he can see his machine on the screen. He knows what his elevation is and where the edge is. He knows how to adjust his moldboard for the cut. Or he can flip a switch, and the blade will drive to grade automatically. "Today, we can make a machine like a motor grader thirty to fifty percent more productive," says David Larsson. "It's not about horsepower anymore. It's about





David Larsson/general manager of BuildingPoint Pacific

the end results, measured in productivity and efficiency. It's about moving dirt smarter.”

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### K & E EXCAVATING: HIGH-TECH PIONEERS

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Today, K & E owns over 190 pieces of Cat equipment and 75 percent of that is outfitted with GPS machine control. By running an integrated fleet, they have earned a reputation for excellence and raised the bar several notches in the process. “I

knew Kerry and Eric back when they were working for other people,” says Peterson salesman Don Chandler. “They started K & E with a D4 and a dump truck, doing small residential dig-outs back in 1998. They’ve grown it by being adventurous and not afraid to be the first one to jump into something new first, like the GPS technology.”

During the economic downturn of 2008–09, the cousins realized they needed to take on bigger jobs to survive—jobs outside their element. “We made 15 percent on our first big state job—a \$10 million site job,” says Kerry. “And we didn’t even really know what we were doing.” From there they moved into giant civil jobs, bridges and highway contracts, blasting solid rock and widening roads on mountainsides. In the last several years, Chandler has helped K & E upsize their fleet to keep up with these mammoth projects. In 2015, they bought a fully loaded Cat D8T to replace the D7Es they were tearing apart on their Bly Mountain job. “They were breaking their machines because they weren’t in dirt anymore. It wasn’t a Cat quality issue. They just needed the right machine and the right bucket for the job,” says Chandler. Since then, K & E has gone big with a fleet of



K & E's 374D excavator with 3D GPS machine control near Eddyville, Oregon in 2013

### CAT AND TRIMBLE TEAM UP

In April 2002, Caterpillar and Trimble formed a joint venture, Caterpillar Trimble Controls Technologies LLC, to develop the next generation of machine-control products for heavy equipment. Together the two giants build systems that use site-design data and accurate positioning technology to automatically control the way machines reshape the landscape. The historic alliance gave Peterson an additional nudge toward buying the Trimble dealership in December 2009.



large excavators, articulated trucks, dozers, and blades. All Cat. All equipped with Trimble navigation gear. All taken care of like a newborn.

“When anything new comes out, we want to be at the forefront. I don’t want to look back ten years from now and see that all these guys passed us up and now we’re back here in old-school,” says Kerry. “We’re very progressive with machine control. I don’t think people really know what it can do for them, or they would already have it. One day they’re going to wake up and realize they can’t live without it. That’s exactly where we are right now. We seriously can’t live without it.”

All their high-tech equipment has added a new layer of precision to K & E’s production capacity. “We had a creek job the summer of 2012 up by Turner [Oregon],” says Eric, vice president and oftentimes job superintendent. “We were digging out a swale [drainage ditch] about six feet deep and fifteen feet across. There was a three-foot-wide canal at the bottom with a tiny fish passage running through the middle of it. Our operator did it all with a Cat 345. When the engineer came back out to see it, he was really surprised. He said it looked like we’d dug it with a spoon.” With accuracies

up to 0.1 of a foot, they can finesse right down to the smallest detail. “It’s rare to see excavators with GPS on them,” says Duane Jr., now president of Peterson’s Earthmoving Division. “That’s pretty forward-thinking. Most people, if they have GPS, will put it on a blade. To put it on a large excavator is really unique.”

In 2006, Kerry and Eric hired a machine control manager to oversee all their GPS gear. Alex Culbertson now leads a team of four GPS techs who troubleshoot and maintain all K & E’s navigation systems and manage how they interface with the earthmoving equipment. Culbertson also builds all the computer models they use to run their jobsites. “We can take 80 percent of the survey quote right out of our bids because we do it all in-house now,” says Eric. “This whole SITECH thing has just exploded our margins. Everywhere. It’s a whole team effort.”

K & E’s pioneering instincts don’t stop there. In 2013, the cousins invested in a new technology that builds a scale model out of Styrofoam. They found the large drafting machine in Canada. “They can take an engineer’s drawing and create a 3D model with that machine,” explains Eric Wavra, SITECH’s Precision Products sales rep back in 2015, who worked with K & E. “They cut the design into foam before they cut it into the earth so they can see if there are any problems with the engineer’s design before any major money is spent.” In 2015, for instance, K & E’s Bly Mountain job entailed straightening a fifteen-mile section of OR-140 between Klamath Falls and Bly, Oregon. They had to carve big chunks out of the mountainside by drilling and blasting solid rock and then clear it away for commuter traffic. At its height, there were thirty-five Cat machines on the job—primarily dozers, excavators, and articulated trucks—most outfitted with GPS technology. But before a single tractor was hauled to the site, they created a detailed Styrofoam model of the job. “They take all the information the county engineers give them and feed it into their high-tech machine to see

“ This whole SITECH thing has just exploded our margins. Everywhere. It’s a whole team effort.

– Eric Kuenzi, co-owner & vice president, K & E Excavating

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what it's going to take to do the job," says Chandler. "What slopes they have to cut, what machines they're going to need, what challenges they're going to be facing. They've found several errors on different jobs using that table because computers are only as good as the data you feed them. That technology has saved everybody a lot of headaches and a boatload of money."

There is, however, one downside to technology. When it's not working, it can shut down a job. That's why product support is so critical. And that's where the Peterson-SITECH alliance proves its value. "When GPS doesn't work on these machines, they're screwed. That's the double-edged sword," says Chandler. "Because when it's down, there's no [computer] model to follow, so the machine doesn't know what to do. Of course, you can go old-school and run it manually, but then the operator is just guessing." In 2015, K & E had a big highway job on I-5 in Salem. The GPS on one of their Cat 349 excavators was down. They didn't run that job for two days because it would have just been wasting time. "That's how much they depend on this equipment," says Chandler. "They have great operators. They know what to do. But it just wouldn't be up to their standard of work."

Solid product support is an essential component to the success of this GPS-based technology. Because when it's down—especially at a fully integrated jobsite—nothing is going to happen. "We're so committed we're lost without it," says Eric. "You're either all in or you're not. There is no in-between."

When it comes to service, nobody knows K & E's Trimble equipment better than SITECH field technician, David Deeter (2001–18), who did most of their initial installs. "We set up many, many machines for them in the beginning. They'd rip off the gear from the older equipment they were selling, and we'd install it on a new machine with a new wiring kit. Now, anything new they buy with Trimble, we set them up. Basically, they call; we go. That's pretty much K & E in a nutshell."



*Top to bottom: K & E's Bly Mountain job; Peterson hosted K & E at Bauma Egypt Show in Munich in April 2018. (L-R) John Kuenzi, Eric Kuenzi (back), Kerry Kuenzi, Scott Kuenzi, Duane Doyle Sr, Duane Doyle Jr.*

In 2018, K & E Excavating celebrated their twentieth anniversary. And in January 2019, they bought a brand new D10T-2 fully loaded with GPS technology and automatic blade control. Since then, it has been working on a huge pioneering road project near Sitka, Alaska. That's a far cry from where they started, doing business with a D4 and a dump truck.

Other early adopters of construction-based technology include DeSilva-Gates, Top Grade/Goodfellow Bros., Granite Construction, Ghilotti Construction, and several others. All have streamlined





*K & E group at Cat testing grounds—Tinaja Hills. Kerry Kuenzi (center), his brother, Scott Kuenzi (3rd from left), and Duane Jr. (far left) in 2018*

their jobsites with increased efficiencies, beat deadlines, earned early bonuses, and bigger profits. Consistently.

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### **BUILDINGPOINT PACIFIC: FROM THE GROUND UP (2015)**

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In June 2015, Peterson formally launched a new business called BuildingPoint Pacific (BPP). It provides Design-Build-Operate (DBO) solutions to general contractors, engineers, architects, and asset owners for the vertical-build market. “There’s been a real shift in technology over the past dozen years,” says David Larsson, president and GM of the new company. “We’ve been selling these products on the hardware side for years, under SITECH, to general contractors like Devcon, DPR, and Whiting-Turner. But now with BuildingPoint, we have a much larger portfolio from Trimble on the software side.”

It kicked off late in 2014 when Trimble approached Peterson with the idea of taking on the BuildingPoint franchise for California and Hawaii. They

already had California covered with two dealerships—one north, one south—but they wanted to consolidate. “We’re a distributor for Trimble just like Peterson is for Caterpillar,” explains Larsson. “And just like Cat, Trimble wants the strongest, most stable dealers to represent them and push their products out into the market. So they looked at who was doing the best job and who had the most resources and could continue to grow. And they came to us.” SITECH immediately started selling BuildingPoint products while still in negotiations to buy out the San Diego-based company Rotech Consulting.

BuildingPoint Pacific became an official Peterson company on June 15, 2015, with headquarters in San Leandro and a second location in San Diego. “BuildingPoint allows us to broaden our reach—to serve customers before and after the traditional earthmoving phase,” says Duane Doyle Sr. “It covers all the bases, from site prep to post-build management. Howard and Buster Peterson probably never dreamed of getting their arms around the entire process. If they were alive today, you can bet they’d be right in the middle of it.” The final



piece came in 2016 when BuildingPoint Pacific was awarded the Oregon and Washington territory, filling out the entire Peterson footprint<sup>2</sup>. Today, there are ten BuildingPoint franchises in North America and counting.

Although SITECH and BuildingPoint draw from the same technology, the similarities end there. BuildingPoint begins at the beginning, when the project is still a concept. Before any tractors are brought in. Before the subcontractors are chosen. Even before the bid is awarded. The shift toward these new technologies started gaining traction in 2009 with the rise of BIM (Building Information Modeling). Projects were getting more complicated than a set of blueprints could handle. “Twenty to thirty years ago, buildings had four corners. They were basically square boxes,” says David Larsson, a twenty-year veteran of construction technology. “Today, they have arcs and overhangs and roof gardens. Architects are designing complex buildings that are extremely difficult to construct in real life.” And they can because of 3D modeling CAD programs and BIM software. “Fifteen years ago, BIM was just another acronym. Now it’s a full-blown process that every general contractor uses. It’s a way of life. Before, contractors used tape measures and string lines to figure out where the walls went and where the staircase or elevator shaft should be. Now it’s all done with lasers and electronic measurement devices—Robotic Total Solutions—that give you accuracies down to 1/32 of an inch.”



*Mithun Dalal/BPP processes BIM files into a 5D model with Vico Office, which provides construction progress & related costs.*

BuildingPoint spans the Design-Build-Operate lifecycle with software programs for estimating, scheduling, design and modeling, project management, and post-build owner management. “Today, buildings are constructed in 3D even before they break ground, so they know exactly what it’s going to look like and all the different components involved,” explains Larsson. “Right down to the number of bolts and rebar lengths and steel I-beams. Everything is specified.”

And since almost everything is prefabricated off-site and shipped in for placement, scheduling is critical. 3D technology makes that possible because all the data resides in a software program, so all parties know exactly where everything is, when it’s supposed to arrive, who is scheduled to install it, and hundreds of other pieces of pertinent information. Essentially, it puts everyone on the same page.



*SITECH NorCal team covers California*

<sup>2</sup> BuildingPoint Pacific opened a third location in Portland in 2016, which relocated to Hillsboro in 2018, and Aurora, Oregon in Nov 2019



“ Today buildings are constructed in 3D even before they break ground, so they know exactly what it’s going to look like, right down to the number of bolts and rebar lengths and steel I-beams.

– David Larsson, president and general manager, BuildingPoint Pacific

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“The scheduling software is a living document,” explains Larsson. “Things change on every project, change orders happen, things are late. This software allows them to update the schedule and keep everyone in the loop. In real-time.” No more whiteboards. No more conflicting schedules. No more searching through files for historic details. It’s all detailed in the software and shared through the Cloud.

After the building is complete, asset-management software provides facility owners the means to monitor their real estate. “Big clients like Bank of America, Disney, Apple, and Yahoo all need to understand their facilities and how well they’re being utilized,” explains Larsson. “They can see what is being used well, what needs repairs, how many times a conference room is booked, or when a particular permit needs to be renewed. It’s all in the software. It’s getting to the point where contractors are so used to these tools, they can’t do their job without them,” says Larsson. “Today, they want all the information they can get. They want all their subs to work off the same coordinates and grid system. They are the ones driving the technology.



*BuildingPoint’s Trimble 3D laser scanner on the job*

We are simply supplying the products to feed that demand.”

## KEEPING UP WITH TECHNOLOGY

Over the past decade, SITECH has continued to grow to keep pace with the speed of technological advancements within our industry. In January 2017, Peterson formed the Peterson Technology & Services Group (PT&SG) to better serve the opportunities and challenges of its growing market segments. As the Trimble distributor for California and the Pacific Coast, PT&SG serves four distinct markets: heavy equipment-based construction;



*SITECH Oregon team covers Oregon & southern Washington*



agriculture; vertical construction; and on-highway trucks. “The rapidly growing sophistication of product capabilities has created a new reality for our customers, which must be met in order for the contractor of the future to be successful,” explains Jeff Goggin, who heads up the new group. “We’ve learned that we have to move fast to keep up with all the changes and opportunities this market represents. And in the tradition of doing whatever it takes to partner with our customers to help them be successful, we intend to do just that.”



*SITECH field tech, David Deeter, now works as a sales engineer for Trimble and often collaborates with Peterson's SITECH groups.*

### DEETER CAMPS OUT (2013)

Long before SITECH's Oregon boundaries were officially settled, Peterson field tech David Deeter was troubleshooting Trimble gear for customers in the area. Peterson's SITECH group was asked to cover western Washington until NC Machinery could launch its own group. In the interim, David Deeter fielded any service jobs that came up for the Pacific Northwest territory. In late 2013, he was dispatched to Neah Bay, a tiny town on the Makah Indian Reservation in remote northwest Washington. Quigg Brothers was building a jetty for the Army Corps of Engineers, using a Trimble-equipped Hitachi excavator to place the giant boulders. Each rock was numbered and had to be placed within six inches of its intended position. In order to calibrate the Trimble system, Deeter needed to determine elevations for the bucket, boom, and stick, plus whatever else the Hitachi required to sync it to the GPS gear. It was a two-day job.

To save on travel time back and forth to a hotel, Deeter set up a tent right there on the beach and spent a windy night in the lee of some large boulders. The next day, when an engineer checked rock placements, they were within one inch of the target. The customer was highly impressed, which translated into further work. When NC Machinery launched SITECH Northwest, Deeter passed the baton to his new counterparts, who now service the customers in that area. “Quigg Brothers continues to use technology to improve their business,” says Deeter. “They can see the value of SITECH and Trimble. I’m happy to have been part of the process.” By putting the customer first over his own comfort, Deeter's campout was just one more way he lives out his priorities, job after job.

Today, David Deeter works for Trimble as a sales application engineer for its dealers all across the United States. Being based in Oregon, he continues to work closely with Peterson's SITECH groups, training and keeping them updated on the latest technology offerings from Trimble.



## CORE VALUE: *CUSTOMER FIRST*

### ON THE JOB WITH FRED AND WILMA (2019)

Meeting a tough challenge with creativity, determination, and a sense of humor often wins the day. And the customer. That's exactly what happened with the SITECH team in Paradise, CA, with Cat's new payload scale technology. The November 2018 Camp Fire devastated the town and Argonaut was one of the contractors working on the cleanup. They bought fifteen new Cat Next Gen excavators for the Camp Fire cleanup, each equipped with the Cat® PayLoad system. Within the first month, design glitches started to show. "New technology always has kinks to work out, on top of a learning curve for operators," says Chris Mata, SITECH salesman, who worked closely with Argonaut. "Customers expect the scales to be within 1–3 percent accuracy, and the Cat scales just fell short, initially."

Argonaut also had eight Cat 325 excavators wired with Trimble's after-market LOADRITE system, each working within the 1–3 percent accuracy window. "We compared every single truck going to the CHP scales loaded with the Trimble gear. They all came back between 15.7 and 16 tons. Right on the money," says Mata.

Since Argonaut had both Cat and Trimble systems working in the same vicinity, they had front row seats to a side-by-side comparison. "They could see the pros and cons of each," says Mata. "And the inefficiencies. Due to the scope of the project, if the scale is off even 5 percent, and you're loading an extra fifteen trucks a day, that's a lot of underweight or overweight loads running to the landfill. The inefficiencies add up. It was a real eye-opener."



Left to right: Argonaut crew on fire clean up in Paradise, California; SITECH's Chris Mata with the original Fred





SITECH supporting the clean up effort in Paradise

After a month, Argonaut's owner, Mike Smith Jr., was ready to scrap the Cat scales and replace them with Trimble. They were costing too much in overweight fines. "Mike called me one day to discuss switching to Trimble. I really hated to see him do that," explains Mata. "I told him I'd much rather make it right with the systems he'd already invested in. That's when we put our quick response team together." Within two days, a five-man team from Peterson and SITECH assembled at Paradise to figure out the problem. "We spent four days testing and working with the customer to bring their excavator scales into 3 percent tolerance. As a dealer, we jumped through hoops, trying to get things to work the best we could and get the scales within an acceptable range."

The team started off by loading up a truck, recording the weight from the machine's onboard scale, then waiting for the truck to return with the tag from the landfill's scale house to compare. Waiting three to six hours for the three-hundred-mile round trip to the landfill got old fast. After the first day, the team came up with a better plan.

## ENTER FRED

"We picked up a lava rock from the worker's camp Argonaut was building in Paradise and hauled it down the road to Knife River Quarry," says Mata. "We weighed it on their scale and painted that number on it. And with the customer's help, we trailered that rock to over twenty sites in three days. By the end of the week, our rocky friend had a name: Fred." Once they got Fred, they no longer had to wait for the return trip from the landfill. They could pick up and drop Fred as many times as they needed, and if the numbers added up, then the scale was deemed accurate. "We tested every machine scale, Cat and Trimble, to reassure the customer. Once we ran Fred through each machine scale, we conducted firmware updates to the ECMs [computer], calibrations, and testing." The giant rock was the one constant throughout our testing process to establish a zero baseline for



The original Fred loaded and ready to go to work



“ Using the Flintstones was just a small way to inject humor into an otherwise frustrating situation. At the end of the day, you have to remember to have fun in what you’re doing—otherwise all you’re doing is work.

– Chris Mata, sales engineer, SITECH

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each payload scale. “You can guess and get close to a ton for each bucket load, but it’s not very accurate when you’re guessing on a variable material like burnt ash and debris,” says Mata. “But no matter what position the bucket was in or what machine we were testing, we knew exactly how much Fred weighed—0.871 tons.” That is, until he started losing weight.

“We didn’t have an easy way to set Fred down, so he started losing a little bit of weight from being dropped,” explains Mata. “Nothing too dramatic, maybe twenty pounds. But it affected our accuracy. Fred is a petrified rock, and even petrified rocks crack and



Top to bottom: Fred’s new and improved partner, Wilma, weighs exactly one ton; Daniel DeSimone, here with Wilma, was part of the SITECH team helping Argonaut with their payload scale systems





Argonaut's equipment superintendent, Chris Hendricks with Wilma

break a bit." Argonaut's equipment superintendent, Chris Hendricks, built a newer, improved version out of steel plates for a much more accurate control test weight. "Wilma is exactly a ton. She's got a little hook on top so they can hook her up with a chain and load her on and off a trailer without dropping her—like Fred," explains Mata. "With Wilma, we can set her down and she's not going to break. Bringing Wilma on board doubled our productivity."

In late May 2019, Peterson built its own test rock—Fred II—out of steel blocks. "Dino Barsotti built him in the San Leandro weld shop so we could have our own test weight," says Mata. Fred II now resides at Peterson's Chico store, where the local field tech can haul him to a jobsite and go through the whole re-calibration and verification process in a timely fashion, when needed.

In June 2019, Caterpillar engineers came out to Paradise to see the onboard scale problem for themselves and come up with a more permanent solution. In September, Cat issued version 7 of the Cat PayLoad software and deployed it in all Argonaut's Next Gen excavators.

"During that time, we built some really strong bonds between our customer and the different branches and departments of Peterson," says Mata. "Managing a brand-new technology and making it work was a challenge. Using the Flintstones was just a small way to inject humor into an otherwise frustrating situation. At the end of the day, you have to remember to have fun in what you're doing—otherwise all you're doing is work."

Despite all the obstacles the Peterson-SITECH team encountered with the Cat PayLoad systems, they were still able to help bring the customer over the finish line. The job finished in October 2019, four months ahead of schedule.





*Original Hi-Clearance Twin D8 in San Leandro yard in 1951*





## CUSTOM FABRICATION

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### INNOVATION—PETERSON'S FIRST LOVE

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**I**nnovation has always been at the heart of Peterson. Founder Howard Peterson grew up in a dirt-poor family with big ideas. His oldest sister, Evelyn, married R.G. LeTourneau, who became one of the great heavy-equipment innovators of the twentieth century. Each of the Peterson boys started off working for R.G. before going on to make his own mark on the industry. Ray, the oldest, stayed with R.G. his entire career, working as an engineer and coming up with several of his own designs. George Howard, the middle son, was a welder, fabricator, and construction boss for R.G. before launching his own company, Peterson Tractor & Equipment Co., in 1936. The youngest, Robert (Buster), was an engineer for R.G., then Peterson Tractor starting in 1943. Buster pioneered and later patented many innovative earthmoving ideas, which Caterpillar then bought and incorporated into their own product line. Together, Howard and Buster took machine design to a whole new level, distinguishing Peterson Tractor Co. among the Cat dealerships as the de-facto West Coast engineering department for Caterpillar during the 1950s and 60s.

Buster's team became known simply as SEQ, for Special Equipment Services. He outfitted his shop with special machinery like the Giddings & Lewis horizontal boring mill and five-hundred-ton press brake for forming steel. Buster would come up with the ideas, and Howard would fund them. Some of the more notable designs include the Quad D9s, Twin D8s, D7 SnoCats, Triple 657s, U dozer, and off-set D9 Pipelayer. Each customized machine grew out of a need for something that didn't exist before. They were, in effect, pioneering.

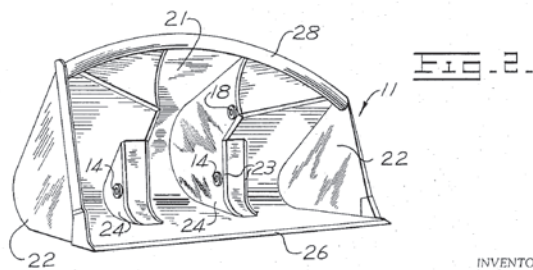
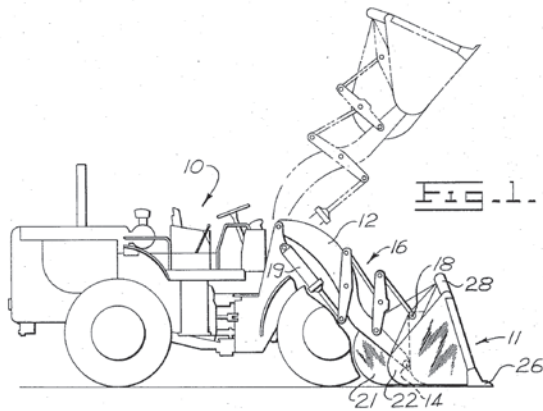
Fast-forward to Peterson's fourth generation. "When I got here after college, I noticed we were losing our momentum in custom fabrication," says Duane Doyle Jr., Howard's great-grandson. "In 2011, I asked to take over Special Services to get it back on track. It had slipped a lot over the years because of liability concerns, the poor economy, and other focuses. It was no longer a priority. And we didn't have a continuity plan in place for our engineers." To infuse it with new direction he brought back Jack Ravazza, then San Leandro's general



Feb. 20, 1968

R. A. PETERSON  
LARGE CAPACITY LOADER BUCKET  
Filed July 18, 1966

3,369,680



INVENTOR  
ROBERT A. PETERSON

BY  
*Wagner, Fennell, West & Phillips*  
ATTORNEYS



*Top left, clockwise: Buster's Large Capacity Loader Bucket patent from 1966 aka the Bonus Bucket (machine shown on opposite page); Buster & Howard Peterson in the 1960s; Buster Peterson(L) working for R. G. LeTourneau as an engineer in the early 1940s; Pioneering electric over hydraulic machine controls in the 1960s*

service manager, to focus solely on custom fabrication. Ravazza was tasked with bringing both the San Leandro and Portland fab shops together as a team. Each group had its own market focus, yet they both had a common purpose: meeting customer needs where there wasn't a current solution. "San Leandro does more on the construction side; we're more geared toward forestry," says Shawn Hegerberg, Peterson's Special Services manager in Hillsboro. "But whether we're building a bucket, doing modifications, or coming up with something new for a special application, we still run under the same philosophy of helping our customers with whatever they need."

Teamwork is key to running a cohesive, three-state operation. Knocking down the silos of "us and them" was crucial. It started coming together in 2015 when San Leandro was slammed with work. "They were too busy to get their workload done, and we were slow, so we took on a bunch of their

work," says Jerry Boon, Peterson engineer in Hillsboro. "In the interim, we got really busy ourselves, but we still got it all done. I can see how the collaboration between our two shops benefits the whole company. We may have different customers, but we can still assist each other by sharing our knowledge and workload."



In 2014, Ravazza and Duane Jr. also brought in Dale Smith as the new lead engineer in San Leandro. With twenty-five years of experience wrenching, running several shops, and working as a TC (troubleshooter) and trainer, Smith has accrued a huge cache of knowledge to pour into the next generation of designs. “Many of the projects we take on require more than just structural engineering. They often require a combination of hydraulics, electronics, and power train along with structural design,” says Smith. That’s where his background becomes invaluable. “Engineering is a group effort. If you leave one person’s input out, you may miss the key piece you need to make that project a success. I take input from any source I can, plus the people I’ve learned from in the past, and put it all together to come up with a solution to solve our customer’s challenges. It’s a collaboration.”

Since he joined the team, Smith has worked on several projects that have helped his customers gain a competitive edge in their respective markets. “We’ve got our focus back,” says Duane Jr. “Getting a new engineer on board was a top priority because without engineering, you can’t have Special Services. Jack is back and excited to be doing what



*Patent for large capacity bucket (facing page) turned into iron (above)*

he’s really good at. And we’re investing again in people and tooling. We’re back and our customers can see that.”

Today, the big dream machines of the past have given way to more practical designs. Each project is a collaboration between Peterson’s fabrication shop and the customer with a need. Each undertaking is a highly focused, customized solution where a machine or process was often non-existent before. And each helps the customer save money both



*Dale Smith/L & Jack Ravazza viewing drawings for Buster’s Twin D8*

“ We work with our customers to get the most potential out of their machinery for their special application. That’s customer service—providing the customer with what they need.

– Jack Ravazza, general manager of Special Services, Peterson-Cat, San Leandro

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in time and efficiency. “What it boils down to is customer service—providing the customer with what they want,” says Ravazza, who began his career at Peterson in 1978. “We work with our customers to get the most potential out of their machinery for their special applications.”

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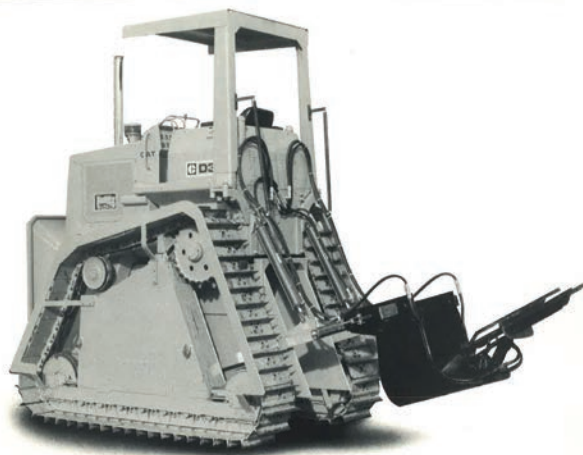
## CUSTOM FABRICATION IN THE NORTH

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The Portland weld shop was doing custom design and production long before Peterson arrived in Oregon. Under the previous dealership—Halton—they had a crew of thirty-five welders and machinists (at its peak) known simply as Shop T5. One prototype earned its own Cat spec sheet—the Cat D3 tree digger used for harvesting nursery trees, dated July 1979. The machine had a tall rectangular cutout, from stem to stern, underneath the cab and engine housing, and rode on quadrangular tracks. The fab shop also did a number of modifications for a pineapple and sugar operation called Hawaiian Commercial back in the early 1990s. “They actually shipped over two of their D8s from Hawaii,” recalls Jerry Boon, who welded for Halton at the time. “We built a D8 planter and a D8 rototiller for them. We added another engine on the front of the rototiller to power the hydraulics for the six-foot drum. We fabricated the ripper bar, the rototiller, the motor mounts. Everything.”

### HALTON D3 TREE DIGGER

Modification of the Cat D3 Tractor for nursery tree harvesting



In 2000, the weld shop started lengthening excavator booms and sticks for a contractor who dug windmill foundations in the Gorge. Every year millions of watts of power are produced in the Columbia River Gorge of southern Washington, making it an interesting niche market. “A customer needed to dig down thirty feet for windmill footings,” says Boon. “To do that you’d normally need a 345 or 375 excavator, which can’t be hauled around on windmill roads.” The Portland crew added four feet to the boom and eight feet to the stick to give it the depth they needed with their 330s. “Our modifications allowed them to dig a foundation a day while their competition was doing one a week. I’m really proud of the long list of people we’ve helped in a pinch to get back up and running and help maximize their profits,” says Boon.

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## NOT JUST A TRACTOR BUSINESS ANYMORE

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Many of the projects that come through Peterson’s Special Services are difficult to classify and look less and less like traditional tractors. “If you look at custom fab today, it’s not just a tractor business anymore. It’s marine, it’s landfill, it’s quarries and plant facilities and everything else we’re into,” says Ravazza. “We can do all that because we have the shops and tooling, the expertise and years of experience. The tricky part is making people aware of all that we can do for them.”

Peterson’s custom fab workload averages roughly 45 percent bucket production, 40 percent repair work and 15 percent custom projects. “Out of all the custom projects we quote, only about 10 percent actually get built,” says Ravazza. “We get a lot of people with ideas they want us to quote on, which takes a lot of research time to get the numbers right. I don’t know how many projects we’ve gone through only to have the customer scrap it in the end because of cost.” Several come to mind, like the fish-bubble curtain and the cable “tendon” puller for the local bridge retrofits, or the traveling





*Top to bottom: Armored bomb scraper testing in Pleasanton, California; Virtual cab gives operator control from one mile away.*

pipe machine that builds 800-foot-long sections for the tar sands industry. Still, those 10 percent have turned out some pretty big results for the customers who decided to invest. And, some amazing innovations for Peterson's portfolio.

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## BOMB SCRAPER

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In 2005, Peterson's Special Services group in San Leandro helped build a machine for the unexploded ordnance (UXO) remediation market. It was called the Range Master. Terry Northcutt of Timberland Environmental Services brought his idea to Peterson. The fab shop outfitted a Cat 633

scraper with body armor and telemetry gear for real-time munitions clearing, controlled from one mile away. They nicknamed it the Bomb Buster or Bomb Scraper. It was armored to withstand unintentional detonations up to a 105 mm projectile. It could also be operated manually in low-risk situations. Remote operations were housed in a special trailer with three large monitors, a computer system, a panel of switches, and joysticks for navigation. The "virtual cab", built with the help of a special radio-video vendor, is the ultimate video game. From the control seat, the operator has a panoramic view via five onboard video cameras, which give multiple views of its orientation and how various parts of the machine are functioning. Fail-safe overrides were built into the system in case something went wrong. Peterson Power supplied the generator that powered the support trailer. It was an impressive system.

The Range Master could clear one acre an hour at roughly \$4,100—about 70 percent less than traditional excavation. It was designed to penetrate up to twelve inches below ground, to collect, then segregate and transport UXO to a prepared site for disposal and remediation. The Range Master has worked at multiple sites including Fort Ord





*Tomato Harvester with custom-built undercarriage*

(Salinas, CA), Benicia Arsenal (Benicia, CA), Lowry Bombing Range (Denver, CO), Triumph Explosive Manufacturing (Elkton, MD), and Eglin Bombing Range (Eglin Air Force Base, FL).

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## THE TOMATO HARVESTER

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In August 2005, the San Leandro fab shop teamed up with Peterson Power Systems to repower and design a custom undercarriage for a German-made tomato harvester. Lucero Farms in Hollister was having trouble with the machine's turning radius. "In the field, they need to be able to spin the machine around in a tight radius at the end of each row," explains Ravazza. "But their machine had to make a wide arc to make the turn. If they turned it too tight, it would throw the tracks off the machine. They weren't designed right for the machine and the application." The fab shop designed a custom solution that met the customer's requirements for an 8-mph travel speed, a 70,000-pound capac-

ity, and a quick deadline. "We designed a new undercarriage using Cat parts for a stronger application, which solved their problem. Now it can turn on a dime."

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## THE TURD TURNER

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The City of San Jose had a machine at their wastewater treatment plant that was constantly breaking down. The manufacturer eventually went out of business, so they couldn't get parts or support anymore. Instead, they turned to Peterson. "We designed and built two aerator heads to mount on Cat 963 track loaders," says Ravazza, who dubbed it the Turd Turner. "They have to mix the wastewater and keep it turning all summer to dry it out. And they're on a very tight schedule since they only have the summer season to do that." During the process, the sludge turns into a slushy clay that gums up their augers. So, Peterson built them a new auger attachment using Cat parts and paired



## PULL-THROUGH BUSINESS

The tenacity and commitment of Peterson's SEQ shop on the Turd Turner project yielded big results a few years later. In 2014, the City of San Jose invited Peterson Power to bid on a cogeneration design-build project for their wastewater treatment plant. The \$16 million project involved four Cat CG260 engines for a total plant electric output of 14 MW. Peterson designed and built the skid for the co-gen pumps, heat exchangers and valves, and the upper deck for the SCR (emissions control system), plus the stairs and platforms for the engines, themselves.

"This was a huge deal for Peterson," says Marty Hopkins, Peterson Power commercial engine sales rep since 2004. "It was our first large wastewater cogeneration plant and is currently the largest wastewater electric power project in North America—as well as one of the largest in the world—using Cat engines. It has really put us on the map as a high-end cogeneration dealer." It also goes to prove that while Peterson's custom fab projects don't always make a lot of profit, they do provide innovative solutions for customers that keep them coming back.



Left, clockwise: City of San Jose cogeneration project; Each of the four CG260-16 engines are 26-ft long, 11-ft high and weighs nearly 60 tons; Marty Hopkins/R with customer at the Cat factory in Mannheim, Germany in 2018



it with their Cat 963 track loader. And it worked great—until it got gummed up too. There just wasn't enough horsepower and oil flow from the loader to keep the aerator head spinning. It took several variations to find the perfect solution, but Peterson's crew stuck with it. "It was a four-year project from start to finish, and rather painful. But once we found the right combination, it worked great," says Ravazza. Since then, Ravazza's Turd Turner has opened the door to other wastewater treatment plants with similar issues.

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### THE TELESCOPING SEVEN-WAY DOZER BLADE

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In 2016, Peterson's San Leandro fab shop built a telescoping seven-way dozer blade for a customer's D6K. The joint venture team of Dragados, Flatiron, and Sukut needed a variable-width blade to construct three different size chimney drains on their Calaveras Dam project. They bought a Cat D6K2 outfitted with AccuGrade™ from the factory but needed a seventh function to do the job right. "Since each of the chimney drains was a different width (eight feet, ten feet, and fifteen feet), they needed a telescoping blade that could adjust widths all day long," says Ravazza, who helped design the system. "AccuGrade uses GPS to ensure that the blade self-adjusts to give a flat, even surface, level to the earth." The chimneys bookend the quarter-mile-long earthen dam wall to help control horizontal seepage and add stability. The dozer blade worked flawlessly. The concept was already in use in farming, but this was the first time it was employed in dam construction.

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### REACHING AROUND THE GLOBE: THE 552 FELLER BUNCHER

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Caterpillar still comes to Peterson with ideas for the same reason they turned to Buster Peterson in the 1950s and '60s: quick solutions. As a growing forestry center with a reputation for customization,



*Engineer Dale Smith built the telescoping 7-way blade with AutoCAD software before it was built in the San Leandro fab shop.*





*Top left, clockwise: Shawn Hegerberg, Peterson's Special Services manager in Hillsboro; Welding in San Leandro fab shop; Machining on G&L Mill in San Leandro fab shop; Welding in Hillsboro; Machine shop in Hillsboro*

Peterson was tasked with modifying a 552 Feller Buncher for a new logging technique. Tether- or winch-assisted logging is a growing trend in New Zealand, Chile, and the Pacific Northwest, where slopes can reach up to a 45 percent grade. According to Hegerberg, Peterson's Special Services manager in Hillsboro, it started in New Zealand. "They had a problem with their laborers getting injured while working on the steep hills. To mitigate that they decided to tie cables to the machines, secured at the top of the slope, and dangle them over the side to do the harvesting. It's a lot easier, uses less manpower, and is much safer than having men working up and down those steep slopes."

In 2015, Caterpillar approached Peterson's Portland store with the project. "They gave us the first

machine to do as a prototype. We took the rails off, cut off the sprocket ends, added two more rollers per rail, and welded everything back up," says Hegerberg. "Making the tracks longer gives them a better grip on the steep hills." Currently, there's nothing else out there like these 552 Feller Bunchers—at least on a Cat machine. The Peterson crew has modified seven Feller Bunchers since then, some for Caterpillar and some for local customers. Both groups are happy with the results.

Through the years, Peterson has been at the forefront of many product improvements within the industry. "As new models come out, we customize them to better fit our customers' needs," states Ravazza. "Initially, the design might only be used by a handful of our customers, but then word gets out.



Pretty soon Caterpillar becomes aware of it, recognizes the viability of the potential market, and decides to manufacture the design themselves.” Throughout his forty years at Peterson, Ravazza has witnessed that cycle repeat itself over and over again. “We were designing and installing guarding packages on landfill machines back in the 1970s, long before Caterpillar considered it. Somewhere along the line, they recognized the demand and created an after-market package they sold under Custom Products.” The waste-handling machines Caterpillar offers today still incorporate Peterson’s original idea as a standard package.

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## PRODUCTION: BUCKETS AND ATTACHMENTS

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Although Peterson’s custom fab shops build a lot of unique designs, they still do all the routine repairs and production work that customers require.

“You have to be able to do the day-to-day stuff of building buckets and wear packages and repairs because that’s what pays the bills,” says Duane Doyle Jr. “The custom stuff is fun, and you hope you’ll make some money on it, but it’s the day-to-day fabrication and machining that keeps us moving forward.” Both Peterson fab shops (in San Leandro and Hillsboro) have been building buckets and attachments for years. They are craftsmen with the imagination, experience, and backing to build whatever customers need. Peterson’s Portland shop was heavily into bucket production in the 1990s under Halton. “Buckets were what really got our fab shop going,” says Jerry Boon. “We made every attachment for every excavator Halton sold. We also made a lot of 988 rock buckets for DeAtley, who shipped them to their locations all across the nation. But in 2000, Cat turned off the faucet with a special factory-incentive program. That along with the dot-com bust and poor economy is what shut us down.”





## PETERSON'S SPECIALIZED CUSTOM BUCKETS

### THE CALIFORNIA BUCKET:

California's earthmoving market uses trucks and trailers with narrower tops than the rest of the country. In the 1960s, Cat's standard buckets (134–145-inch) were too wide for California use and caused spillage. Instead, Peterson designed a 112-inch bucket that matches up beautifully with a truck. As customer demand grew, Caterpillar recognized the emerging market potential. In 2007, Cat came out with their own 112-inch top-loading bucket, marketed as the "California Loading Bucket." Today, Peterson continues to customize these buckets to specific customer needs.



### THE V-DITCH BUCKET:

In 2007, Peterson built a 9-cubic-yard V-ditch bucket for a customer's Cat 385 excavator with a 58-ft reach. It measured 12-ft wide by 9-ft high, weighed six tons and was 40% larger than any other bucket on the market. The specialty bucket measured 143-inch at the top and narrowed to 24-inch at the bottom, with a 34° angle, and was connected to the excavator stick by a quick-coupler. The V-shape concept was a safety design to create a sloped ditch so workers wouldn't get buried if the ditch collapsed.

### THE ROCK BUCKET:

In 2008, Peterson built a custom 8.5-cubic-yard bucket for a customer's 385B excavator. They had gone through two standard rock buckets within three months and were looking for something more substantial. The Peterson bucket went a year and a half before needing any reconditioning.

### THE DEMOLITION BUCKET:

Peterson sold its first demolition bucket—built for a Cat 955 Traxcavator—to Bayshore Excavating back in 1958. In 1969, Buster patented his design and continued to build them as customers saw their versatility and merit. Since then, Peterson's fab shops have built over two thousand custom attachments, per customer request. The majority have been buckets, many of which are based on Buster's demolition bucket prototype.





Today, Peterson's Hillsboro shop still makes a lot of buckets and attachments for customers upon request. "Both shops build buckets," explains Ravazza. "We just build different kinds because we have different markets." Hillsboro builds special logging attachments and chip buckets for wood plants, whereas the San Leandro shop is more construction-based. However, they have each other as a resource for customers who want something that shop doesn't traditionally offer. "We'll either build it for them or send them our drawings if we're busy," says Ravazza. "That's how we do teamwork, by sharing our information and collaborating. The gene pool is the same."

**“ If you look at custom fab today, it's not just a tractor business anymore...The tricky part is making people aware of all that we can do for them.**

– Jack Ravazza, general manager of Special Services, Peterson-Cat, San Leandro

”

Peterson's San Leandro fab shop has been building custom buckets and attachments as far back as Buster's U-dozer in 1943. Buster and his engineers patented five buckets—among a slew of other designs: the multi-directional Clam Bucket (1963), the 988 Bonus Bucket (1968), the Demolition Bucket (1969), the Swinging Bucket for loaders (1970), and the Multipurpose Bucket (1973). Every generation since has come up with their own designs based on customer need. "Now we specialize in large loader buckets, demo buckets, and excavator buckets and thumbs," says Ravazza. "Our custom heavy-duty buckets are built with high-quality materials and wear packages that increase their service life. And we build them all per customer request. Buckets and attachments are what keep us going in-between special projects. It's our bread and butter."

## COLLABORATING WITH POWER: EMISSIONS SOLUTIONS

In 2003, the California Air Resources Board (CARB) adopted the Stationary Engine Rule requiring adherence to its mandated emissions reductions by 2011. Since every hospital and medical facility in the state is required to have a standby generator—not to mention all those in commercial buildings—there was a lot of work to do. Diesel particulate filters (DPF) had been a simple solution for the truck industry. But it was a bit trickier for gen-sets. For instance, if a customer had fifty stationary engines that weren't tier compliant, should he replace all those engines or outfit them with DPFs? At roughly \$20,000–\$25,000 a pop, finances usually made the decision. The only problem was where to put the giant DPF mufflers that weighed between 450 to 5,600 pounds each.

Peterson Power teamed up with San Leandro's fab shop to create a solution. "We build frames to hold the DPFs suspended over the generator itself," explains Ravazza. "They can't go directly on the engines because they're so heavy they'd damage the housing. Instead, we build a tubular frame that straddles the engine and sits on the floor." If the generator is inside a building, the DPF goes up on the roof where the exhaust comes out. If it's in a container, like a big refrigerated shipping container, it needs a separate frame solution.

In 2011, the fab shop built a prototype and a total of eight DPF frames for Genentech. In 2012, Peterson Power won the Verizon contract for nineteen. "We also had to galvanize the outdoor frames for Verizon to protect against rust and get some of them seismically certified for earthquake safety. It took us a year to do all nineteen units. This is becoming more and more common because the EPA is making it a requirement now," says Ravazza. "We've always done one-off jobs for Power, but now we're working together more and more as partners. It's a real team effort."



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## REPAIR WORK: MACHINING AND WELDING

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Peterson founder Howard Peterson was a skilled welder back in his late teens and 20s who took great pride in his craft. “Arc welding was still in its infancy when Howard started working for LeTourneau,” says Duane Sr., Howard’s grandson. “Riveting and braising were the common prac-

tices of the day. LeTourneau had a lot to do with the early development of arc welding.” One story tells of Howard and R.G. LeTourneau building a scraper together and running out of brass, the base material in braising. Undaunted, they went into R.G.’s house in Stockton and took all the brass curtain rods so they could meet their deadline . . . with a promise to Mrs. LeTourneau to replace the curtain rods when they were done.



*Top, clockwise: SF-Oakland Bay Bridge repair job in 2009; Fieldmen Karl Sieber/L and John Kaszer work 100 feet above the water*





*Fieldman/welder, John Kaszer is now the Special Services foreman in San Leandro.*

Another old-timer story tells of Howard going out into the shop in a suit and tie and jumping in to help weld. His clothes got all messed up, but he didn't care because he loved welding and knew what he was doing. Perhaps the best story is how Howard impressed Henry J. Kaiser back in the late 1920s, during an eight-month stint in Cuba as Kaiser's welding boss. Their giant Koehring paver had stripped out several gear teeth, which completely shut down the job. Howard figured out a way to weld and reconstruct the six-inch teeth onto the giant cast iron hopper and get it working again.<sup>1</sup> "Early arc welding didn't have flux, so it took a lot of artistry and skill to weld back in those days," says Duane Sr. "You had to be really good. It was a true craft."

Today, Peterson's fab shops carry on the same tradition of craftsmanship and pride of work. Welding and custom repair play key roles, both in-house and out on the jobsite. Often techs get called out on emergencies when time is ticking and a penalty

fee is waiting in the wings. In 2009, Peterson got an emergency call for repairs on the San Francisco Bay Bridge. The bridge was fifteen inches too high to meet the shear key—the portion that rests on land. Fieldmen John Kaszer (now Special Services foreman in San Leandro) and Karl Sieber (retired 2018) spent a week suspended one hundred feet above the water on a narrow catwalk, line-boring and machining new holes for several crossbeams that didn't match up. "We do cool stuff like that all the time," says Ravazza, "but we usually take it for granted because it's just what we do."

More and more, Peterson Power is using Tractor's fab shop as a collaborative partner. In 2017, the Coast Guard had an emergency situation on one of their boats. Their usual vendor wasn't available, and they had to be out on the water in a day and a half. Peterson got the call. "Anytime you take an engine out, it never goes back in exactly where it was before because things shift on a boat," says Ravazza. "So we went out there and helped them realign it and re-dowel it into place using our portable boring bar."

Welding repairs are becoming commonplace in new construction, where more and more materials are pre-fabricated off-site, then hauled in for placement. When alignment is off, Peterson's



*Portable boring bar in place for re-aligning miss-matched holes in crossbeams*

<sup>1</sup> Read the full story in *Peterson: The First Sixty Years*, page 8.





*(L-R) Jack Ravazza with Duane Doyle Jr. in San Leandro main shop in 2020*

“ Custom fabrication and Special Services keeps us from becoming a commodity. It’s what sets us apart from everybody else—even other Caterpillar dealers.

– Duane Doyle Jr., president of Earthmoving Division, Peterson-Cat

”

weld shop often gets the call. In 2011, Queen of the Valley Hospital in Napa was building a new four-story wing when they ran into trouble. “They were placing 150 diagonal steel braces on multiple floors, moving and matching them like pieces in a puzzle until they had 16 left with holes that wouldn’t match up. They hadn’t been bored to spec,” explains Ravazza. “So they called us.” The contractor was ready to pour concrete in two days and they were in a bit of a panic. “We came out the first day and built fixtures to hold our boring bars in place,” says Ravazza. “The next morning John [Kaszer] and Karl [Sieber] got everything lined up and bored everything correctly, which kept them on schedule. The customer also had to make new steel plates, and when they found out we could do that, they were surprised because we’re a ‘tractor place.’ We’re getting a lot more emergency work because we can stop what we’re doing a lot of times and get out there and dig them out of their hole. Word is getting out.”

Innovation has always been the lifeblood of Peterson—looking at things in a new way, taking risks, and stepping up to the plate first. Today, Peterson will continue to push the envelope as long as its doors are open. “Custom fab is really important to

me,” says Duane Jr. “It keeps us from becoming a commodity. You can’t just be the same as everybody else. You have to set yourself apart—even from the other Caterpillar dealers. Our custom fabrication and Special Services makes us different from the rest.”



## CORE VALUE: TEAMWORK

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CONTROLS FOR TANDEM OPERATED EARTHMOVING SCRAPERS 3 Sheets-Sheet 3

### THE HALL OF FLAME (2016)



In the spirit of forming a cohesive team out of Peterson's two custom fab and welding shops, Special Services manager, Jack Ravazza held a barbeque style cook-off in 2016. The two competing teams—Team Grill Sergeants and Team Blazers—were comprised of a mix of the San Leandro and Portland shop crews. They all had ample time during prep time and grilling to get to know each other better. Each team had one hour to prep and present an appetizer, another hour to prep and present their main dish, and a great time consuming all the proceeds.

The teambuilding event was held in San Leandro with specific rules of engagement and judging criteria. Each team was given an identical box of ingredients and the use of a shared pantry. The boxes contained bacon, cooked shrimp, Italian sausage, chicken breasts, tri-tip, fresh corn, mushrooms, asparagus, garlic, french bread, shredded cheese, butter and lemon. The shared pantry provided olive oil, BBQ sauce, soy sauce and bottled wine.

#### COMPETITION RULES

1. Each team chooses a head chef.
2. Each team gets 30 minutes to create their menu, assign duties and select a presenter.
3. Each team must make an appetizer, a vegetable side dish and a main entrée.
4. Teams get one hour to prepare and present their appetizer, and one hour to prepare and present their main entrée.
5. Each team must cook enough for ten people.
6. Each team had six sq. ft. of grill space to cook on.

John Wells (Peterson's southern region general manager at the time) was the official judge for the competition. A total of 50 points could be awarded, broken down by:

- Taste (20 points)
- Presentation (15 points)
- Creativity (15 points)

(L & R) Lou Little & Jack Ravazza with custom Peterson grill

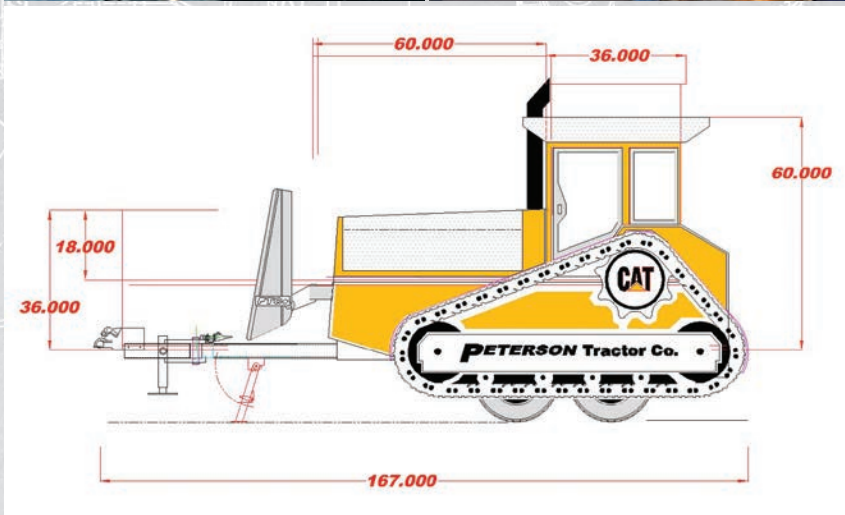


Together we do what we couldn't do alone



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Sheets-Sheet 3



Top to bottom: Hall of Flame meal prep; Schematic of Ravazza's custom dozer BBQ

Team Grill Sergeants won the day with special praise for their cheese, mushroom and sausage grilled pizza bread. Everyone left full and happy.

“Since coming under one department head, our fabrication and machine shops are now working smoothly as one,” says Ravazza. “We’ve worked hard to

2,712,873

Sheets-Sheet 1

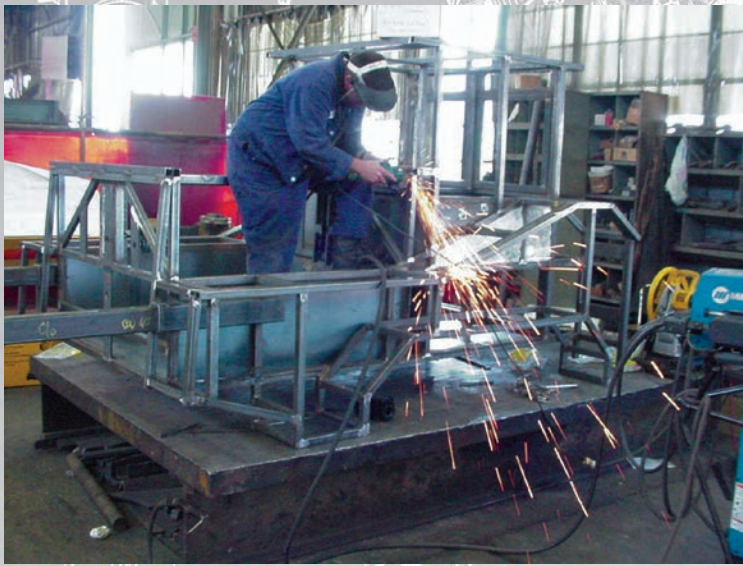
standardize our procedures and share best practices. All the guys in both fab shops, our field welders and machinists and engineering division, are onboard with our team approach. If either shop can't meet their deadlines, we help each other out. Or if we have maintenance to do on some piece of equipment, like the burning machine, I can rely on them [Portland] to burn our pieces and get them down to me. Or vice versa. That's one way we help each other out. I've definitely been impressed with the teamwork I see every day in both shops.”

ROBERT A. PETERSON  
FRANK A. GROSS

### PETERSON'S CUSTOMIZED SMOKE 'N GO (2003)

Barbequing is a great way to bring any group of people together. Jack Ravazza knows that from experience. Over his forty-plus year career at Peterson, he has built several large-scale barbeques for use at various employee and customer functions. His most famous grill—JR's Smoke 'n Go—came about after he and a number of Peterson employees attended a Granite Construction event back in December 2002. “They were using





*Building Peterson's custom BBQ in the San Leandro Fab Shop in 2003*

a really cool-looking barbeque they'd custom-built, all chromed with their name on it," says Ravazza. "Jerry Lopus really liked the idea and asked us to look into it." Ravazza started with a design based on the traditional oval track D8K concept. What he ended up with was an elevated sprocket version—at Lopus' request—with features that would make any grill master envious. The Smoke n' Go boasts a 12.5-cubic foot smoker oven, a 7.5-cubic foot smoker fire box, a 13-cubic foot warming oven, a 7-cubic foot tool box, 12 square feet of grill space and a large extending fold-down dozer table for work space and condiments.

Several members of the San Leandro fab shop worked on the project including Jim Stone, Todd Stinn, Dave Dickinson, Art Wheeler, Bud Collins and Jack Ravazza. After three months of construction, JR's Smoke 'n Go rolled out of the shop, literally, just in time for Peterson's Hot August Nights employee car show that afternoon. Everybody loved it. Today, Peterson has two customized Smoke 'n Go grills to cover its three-state territory. Their novel look and output continue to delight Peterson employees and customers year after year.



## Section IV

# PURSuing EXCELLENCE







*Danny Fong receives his Six Sigma Black Belt in 2004*





## SIX SIGMA

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### PETERSON'S QUEST FOR SUCCESS

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**I**f you could save hundreds—even thousands—of household dollars using a time-tested program, wouldn't you give it a try? Most people would. You'd be crazy not to. What if you owned a business and could do the same thing, only in the hundreds of thousands—even millions—of dollars?

That's exactly what Caterpillar asked its dealers to do back in 2004. Peterson was among a half-dozen dealers invited to Peoria to learn about the new Six Sigma program they were rolling out to all their dealers and suppliers. "The idea is to get full supply-chain integration with this new process improvement tool to make everything as efficient as possible from beginning to end," explains Erin Sorgel, CFO, who, from 2007—2017, was everything from QFS black belt to deployment champion. Cat's goal is to involve everything from individual parts and components all the way through to the finish-line with delivery of the machine to the customer's jobsite.

In July 2004, Peterson launched a new program called Quest For Success (QFS) using the Six Sigma process as its backbone. "QFS has created a framework where we constantly look at our operations and strive to do things as effectively and efficiently as possible," explains Mark Ehni, vice president of Parts Operations and Peterson's original deployment champion (DC)—retired 2020. "Efficiency translates directly to how well we take care of our customers, who are the ultimate judge in how successful we are going to be."



## QFS MISSION STATEMENT:

The Peterson Quest for Success Team was formed as a catalyst for continuous improvement and aims to cultivate an environment for change, growth and profitability. Relying on facts and data helps drive sustainable solutions as the Quest for Success Team strives for a better Peterson. Projects harness the unique skills, strong work ethic and constructive attitude of Peterson employees thereby improving core processes and the quality of our customer service. Our target is to strengthen Peterson from the inside in order to grow and maintain success in the future.

Quest for Success Team  
- March 2009



Mark Ehni, Peterson's original Six Sigma deployment champion



## “Quest for Success” **PETERSON**

### WHAT IS SIX SIGMA?

Six Sigma is a process improvement tool used to evaluate and refine current business practices. In effect, it ensures that the way things are currently being done is, in fact, the best way possible and not just *because we've always done it that way*. Each of the five phases—Define, Measure, Analyze, Improve, and Control—are carried out by a team of green belts and subject matter experts (SMEs), led by a Caterpillar-certified Six Sigma black belt. The team meets two to three times a week to discuss their project and push it forward. At the end of

each phase, the group presents its project before the leadership team to ensure that they're on track and that the results will be strong enough to justify the resources being dedicated.

### BECOMING A SIX SIGMA BLACK BELT

Training to become a Six Sigma black belt is both intense and rewarding. It involves four months of immersion training both at Caterpillar's training facility and at the dealership. “Participants go through a week-long class on each phase,” explains Ehni, “where you learn the philosophy and logic behind it all—the academics. Then you go back to your dealership and apply what you learned to a live project for three weeks.” At the end of the four months, participants graduate as Caterpillar-certified black belts.

“This is a very cool job,” says Sorgel. “Black belts get exposed to a lot of things that most people don't get to see. They get a good overall view of the company—how it works and how everything fits together. We try to make every project they work





Early Six Sigma Black Belts: (L-R) Bill Bean, Tim Treat, Jeff Hoyle

on be in a different area so they get a broad understanding of the whole company. We look at this group as a management training ground because we want our future managers to think this way in terms of using data to make better-informed decisions.”

## LAUNCHING QUEST FOR SUCCESS

Peterson launched its Six Sigma program back in the spring of 2004 with two events. After a week-long executive download at Caterpillar, Duane Doyle Sr. and Mark Ehni presented the concept to Peterson’s leadership team. “Our theme was Hit the Target with Six Sigma,” says Ehni, “because the logo for Six Sigma is a bull’s-eye.” The event was held in March 2004 at a shooting range in Vacaville, California. Once top management bought into the idea, a second kickoff was held aboard the *USS Hornet* in June 2004 for the rest of Peterson’s management. They rolled it out as Quest for Success (QFS) rather than Six Sigma, to allow room for growth in the future using other tools. “Six Sigma is just one of the tools in our toolbox,” explains Ehni. “In the beginning, it was the only tool. Now we have others like Pre-Define, Quick Sigma, and COPAR. In hindsight, giving it a different name was a pretty long-sighted view. I’m really glad we did that.”



Peterson’s executive committee launches Six Sigma at shooting range in March 2004: (L-R, front to back rows) Chris Smith, Ernie Fierro, Keith Davidge, Mark Ehni; Tom Bagwell, Gary LeVar (Cat), Jerry Lopus, Jeff Goggin, Rich Hasper; Duane Doyle Sr.

## GAINING TRACTION

Today, Peterson is one of the top Six Sigma users in the Caterpillar dealership network. “We don’t do this just to check off a box,” says Sorgel. “We take this very, very seriously because we know that it can help Peterson grow and continue to improve. So far, the program has been very successful for us. We have saved, and made, a lot of money using these projects.” In its first ten years alone, QFS saved the company over \$15 million, freeing that up to invest in tooling, territory growth, and facility upgrades. That’s a pretty phenomenal track record.

But it hasn’t come without its challenges. By nature, most people resist change and fall back on what’s comfortable and what has worked in the past. After all, if it’s not broken, why fix it? But just because it’s not broken doesn’t mean that there isn’t a better way. Getting there, though, can be a tug-of-war. “We’ve found that the best way to sell people on the Six Sigma process is to get them actively involved in a real live project,” says Ehni.





Left to right: QFS Team (L-R) Duane Doyle Jr., Erin Sorgel, Jim Strom (front), Milt Jones (back), Mark Ehni, Kristin Gault in 2007; Dojo meeting (clockwise from front) Alex Vazquez, Milt Jones, Erin Sorgel, Jim Strom, Bill Dion-Watson in 2008

“That way they can touch and feel the process for themselves. And the more people we can get to be green belts and SMEs, the more traction Six Sigma will get within the company.” And the more it will migrate out into the whole organization.

“One thing Six Sigma and QFS have done is make us much more numbers-oriented in our thinking,” says Ehni. “We’ve now got a much healthier and more effective balance of experience-based knowledge mixed with data and solid analysis. And the big driver of that analysis is the Quest for Success journey and the influence it has had on the entire organization.”

Sorgel agrees. “We’ve had a great deal of success over the last eighty-five years or we wouldn’t be where we are today. But we’re not going to continue to be successful if we keep doing things the way we’ve always done them. Before Six Sigma, Peterson was a bit more ‘Wild West’. Back then, we rarely talked about process. Now that’s what people talk about. How can we make the process better? How can we make it more standardized? More efficient? More cost-effective? Where’s the data to support that decision? In that respect, the shift in culture has been huge. Now we just have to continually keep on top of things so that we can be the best at customer service and stick around for another eighty-five years.”

## SIX SIGMA PROJECTS

Peterson black belts have worked on over one-hundred projects in virtually every aspect of the organization. Following are a few of the standouts.

### Parts Emergency Service Fees—Tim Treat (2004)



Tim Treat

One of Peterson’s first Six Sigma projects was Tim Treat’s Parts emergency service fees. “At the time, we were one of the worst dealers in North America in terms of the amount of money we paid to Caterpillar in Parts emergency fees,”

says Ehni, who was Parts general manager before taking on the leadership of QFS. “We weren’t focusing on it as an organization. Nobody talked about it. It just fell through the cracks.” Starting with Treat’s project in 2004, and a few improvements since, that metric has improved, with a 42 percent reduction in emergency service fees. “If we were still at the old figure, we’d be paying hundreds of thousands of dollars over what we pay today,” asserts Ehni. “That’s a huge reduction.” Tim left in 2007 to start up his own companies, Winters Electric and South Shore Gutters. In 2017, he sold both and retired. And in June 2019, he returned to



Peterson, back to his roots as a project manager at Power, working on the global account data center team.

### Shop Supplies and Small Tools: Bill Bean (2004)



Bill Bean

Bill Bean's 2004 project focused on streamlining the purchase of shop supplies and small tools to a list of vendors that could actually fit on one page. "Back then, the cost to generate one vendor P.O. was \$41.81 because of all the manpower



involved. We centralized a lot of those purchases to Caterpillar and got that figure down to \$7.43," explains Bean, current VP and GM of Peterson Machinery. "We were doing a P.O. for everything. We might have an auto parts store deliver a four-dollar filter, but because of the cost of generating a P.O., our actual cost was forty-one dollars on top of the cost of the filter. That was part of what led us to buy almost everything from Cat." Bean's team came up with a primary vendor list (Caterpillar), and a secondary list of discounted alternatives. In the end, they were able to cut the transaction cost by 82 percent, which has saved Peterson a boatload of money every year since. "Six Sigma taught me to keep digging," says Bean. "And if something doesn't look right, I can't let it go until I check it out, which has worked well for me in a lot of different situations."

### Reman Cores: Danny Fong (2005)



Danny Fong

Danny Fong's 2005 reman core project is still one of Peterson's most successful projects to date. One of the metrics under scrutiny was the turnaround time between when Peterson first issued a core credit to a cus-

<p><i>Project Goal:</i> <b>Reduce Small Tools &amp; Supplies Expenses</b></p> <p><i>Project Launch:</i> June 2004</p> <p><i>Project End:</i> May 2005</p>	 <p><i>"Quest for Success"</i> <b>PETERSON</b></p> <p>Thank you to the Green Belts, Black Belt, and Project Sponsor for making this project a success!</p> <hr/> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Bill Bean</td> <td style="width: 50%;">Ted Fleming</td> </tr> <tr> <td>Mark Duncan</td> <td>Lynn Murray</td> </tr> <tr> <td>Ernie Fierro</td> <td>Dale Smith</td> </tr> </table>	Bill Bean	Ted Fleming	Mark Duncan	Lynn Murray	Ernie Fierro	Dale Smith
Bill Bean	Ted Fleming						
Mark Duncan	Lynn Murray						
Ernie Fierro	Dale Smith						
<p><i>Project Goal:</i> <b>Improve Core Returns</b></p> <p><i>Project Launch:</i> January 2005</p> <p><i>Project End:</i> January 2006</p>	 <p><i>"Quest for Success"</i> <b>PETERSON</b></p> <p>Thank you to the Green Belts, Black Belt, and Project Sponsor for making this project a success!</p> <hr/> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Sean Cottriel</td> <td style="width: 50%;">John Krummen</td> </tr> <tr> <td>Judy Falk</td> <td>Ron Pietrok</td> </tr> <tr> <td>Danny Fong</td> <td>Eric Vale</td> </tr> </table>	Sean Cottriel	John Krummen	Judy Falk	Ron Pietrok	Danny Fong	Eric Vale
Sean Cottriel	John Krummen						
Judy Falk	Ron Pietrok						
Danny Fong	Eric Vale						

Six Sigma commendations for group projects

tommer, and when Peterson got reimbursed for it from Cat. The interest expense during that interim period was their target concern. It went from a 92-day turnaround down to 25. That's a 73 percent decrease and a giant improvement. "Before this project, there were three or four people processing reman cores in California, but never one consistent person," explains Fong. "There's a lot of steps to it, and many of the processes fell through the cracks. Up north they had one person in Portland, and then every other location did their own when they had time." The solution was to centralize the inspection points to San Leandro and Portland, with two full-time people dedicated to the process. "Before we focused on this, nobody really knew how much money we were losing on core credits. Now we've jumped from being at the bottom of the pile to the second-best Caterpillar dealership in North America.

"A lot of the processes I use today came from Six Sigma," says Fong, now the Standard Jobs and



Product Link administrator. “The skills you acquire in that training and the experience of Six Sigma itself follows you for the rest of your life. The concept of cause-and-effect is one of the things that really stuck. I think more about what I’m going to do now and who it’s going to affect further down the line because everything I do affects other people.”

“ Our motto for QFS is Solving Business Problems. And that’s what we do. ”  
– Erin Sorgel, black belt and deployment champion (2007-17); current CFO, Peterson-Cat



*Erin Sorgel as QFS deployment champion in June 2010*

### **Contract Service Agreements: Erin Sorgel (2008)**

Erin Sorgel’s first project on Contract Service Agreements (CSA) has delivered significant financial results across the company since 2008. It centered on additional repairs that show up during routine, preventive maintenance inspections. “Those additional opportunities were just sitting around waiting for attention, which was revenue we weren’t capitalizing on,” says Sorgel. “So we put together a team of inside sales reps (ISR) responsible for quoting and follow-through on all that extra work. The CSA project generated a lot of

process efficiencies plus a number of new software programs to help manage the process.” In 2019 alone, CSAs yielded 540 quotes for just under \$2 million companywide, with another \$2.1 million waiting for approval.

“Six Sigma is about being open-minded and looking at things from a fresh perspective in an unbiased way,” says Sorgel. “Our team used data to validate the need for an ISR. We looked at how long it took to quote the work, how much work the current parts and service sales reps (PSSRs) had, what the average revenue would be per work order, and how many we thought we could win versus how many we quoted. All that data proved that we could cover the cost of an ISR and make money if we set up a solid quoting and follow-up process. Our motto for QFS is Solving Business Problems. And that’s what we do.”



## TOOLS OF THE TRADE—POSITIONS AND PROCESSES

### QFS:

Quest for Success.

### SIX SIGMA:

Process improvement methodology.

### SME:

Subject matter experts who attend meetings when their expertise is relevant to the discussion.

### GREEN BELT (GB):

Full-time member of a Six Sigma team who attends two to three meetings per week, with additional homework assignments.

### BLACK BELT (BB):

Full-time position that leads a Six Sigma team through the entire Six Sigma process.

### MASTER BLACK BELT (MBB):

Full-time position who leads projects and heads the entire QFS team.

### DEPLOYMENT CHAMPION (DC):

Member of the Leadership Team who provides direction and leadership for the MBB and QFS team.

### PROJECT SPONSOR:

Peterson manager who sponsors a given QFS project.

### PROCESS OWNER:

Person responsible for making sure the project maintains success after implementation.

### DMAIC:

Define, Measure, Analyze, Improve, Control.

### DMEDI:

Define, Measure, Explore, Develop, Implement.

### PRE-DEFINE:

Additional step to pre-qualify projects for the full Six Sigma process to ensure they are viable and not a waste of company time and resources; also ensures a project is not too large.

### DEFINE:

Specifies the scope of a problem that will be the focus of a QFS project.

### MEASURE:

Researches and gathers all statistical and process data pertinent to a given QFS project.

### ANALYZE:

Analyzes and compares all the data gathered to identify the root cause of the problem.

### IMPROVE:

Develops a solution.

### CONTROL:

Follows the project for one year for accountability and any additional necessary improvements.

### COPAR:

Complete and On-Hold Projects Annual Review. Every completed project is presented before entire company management for review and accountability.

### QUICK SIGMA:

One-week intensive Six Sigma project.



# CORE VALUE: EXCELLENCE

## WINNING WITH THE GREAT GAME OF BUSINESS



Toward the end of 2017, Navistar offered a sizeable rebate to dealers who placed bulk parts orders, to help Navistar reach their year-end goal. Once management gave the go-ahead, the project fell squarely on the Peterson Trucks parts department. “My team was tasked to make this happen from an operational standpoint,” says Kevin Sinclair, PTI parts operation manager in San Leandro. “Our challenge was how quickly, and safely, we could off-load these trucks, get the inventory checked in, and move on to the next truck. And then where were we going to store it all?”

Tom Bagwell introduced the Great Game of Business back in 2014 when he became VP of Peterson Trucks.<sup>1</sup> “We do a lot of games at Peterson Trucks to help us with operational challenges like lowering expenses or selling more product.” The concept is based on open-book management and transparency, using motivational games to increase efficiency and profitability. And every year since, PTI has been using the Great Game of Business to top the previous year’s sales volume and profitability.



Sinclair decided to turn the Navistar challenge into a game called Operation Organize & Simplify. For five days in November 2017, he and his crew pushed their limits by unloading and checking into inventory \$6 million dollars’ worth of parts, bringing their total inventory to an unprecedented \$10 million worth. To handle all that, they had to think outside the box. “Normally the truck driver and one of my guys unloads a truck, which takes about an hour. For this, I kept two guys to cover the regular parts duties, and the other nine were out unloading trucks

Top to bottom: Alex Vazquez & Tom Bagwell—Peterson Trucks in 2015; The Great Game of Business scoreboard

<sup>1</sup> The Great Game of Business is a book describing how author Jack Stack turned around a company by using the concept of open-book management—and games—to inspire his employees. It is widely taught in business schools across America.





Kevin Sinclair, parts operations manager for PTI in San Leandro, in May 2015

as they came in. By doing that, we were able to cut the time in half." Sinclair rented an additional forklift from Cresco to help expedite the process. He bought extra racking for the warehouse. And he rented thirty containers to store the overflow, housed at Peterson Power in San Leandro, San Martin, and Portland.

The Great Game of Business attaches rewards to each phase of a project, which are pre-determined by the participants themselves. Past rewards have included a visit from the ice cream truck, tacos, going to an A's game, or getting a twenty-minute break instead of the usual ten. Stage One of Operation Organize & Simplify rewarded each team member with \$25 to spend at the Cat Emporium. Stage Two was a much bigger effort with a much bigger pay-off. "The second phase was getting everything staged, getting the containers dropped and set, and the warehouse organized so that there weren't 350 pallets' worth of stuff everywhere," says Sinclair. "Once that was completed, we had a big lunch catered by a local Mexican restaurant. And because we did so well for the year, we extended it to the entire dealership."

Stage Two also had a Part B with an additional reward. "I challenged my guys to step it into high gear and get all that inventory put away by a certain date, and if they did, I'd do something extra for them. Because the faster we got it all inventoried into the system, shelved, and selling, the faster we'd start hitting our departmental goals. And they did it. So for their reward, they decided on a cool, custom-designed hoodie for the eleven of them only. What makes that prize





Left to right: PTI parts warehouse; (L-R) Tyler Ahlborn, Branden Carpenter, Dustin Murphy, Indy Montoya and Kevin Sinclair in May 2015

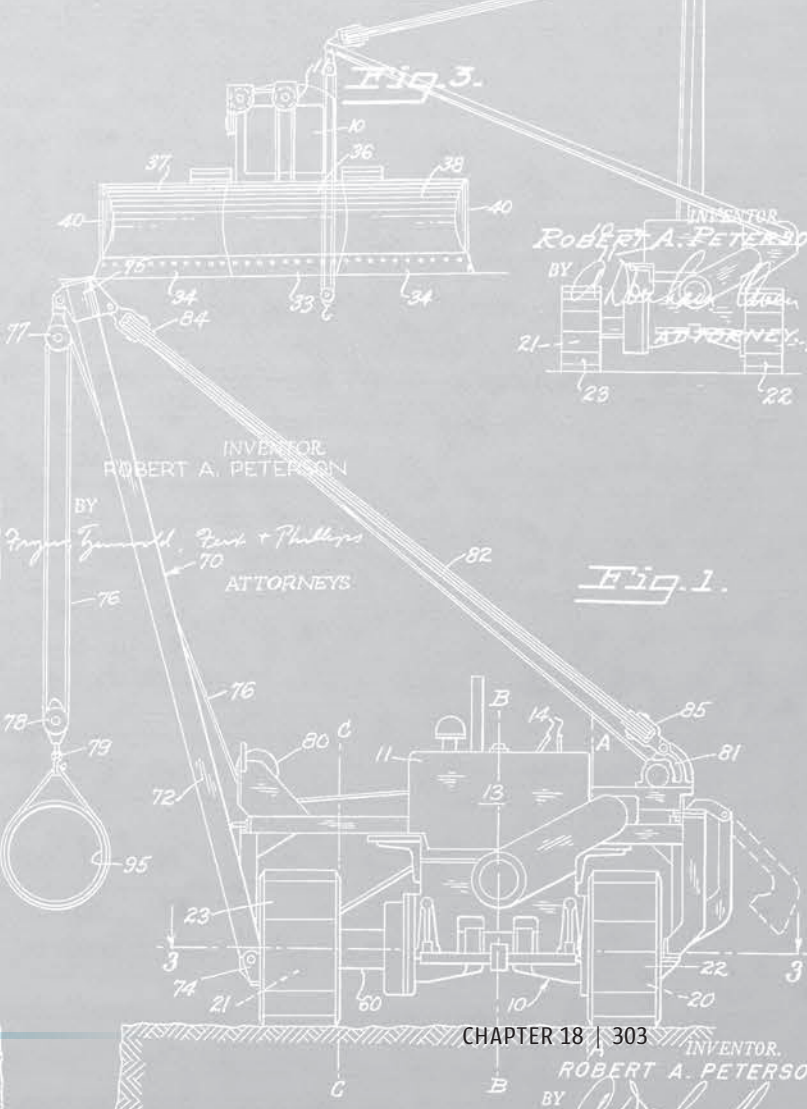
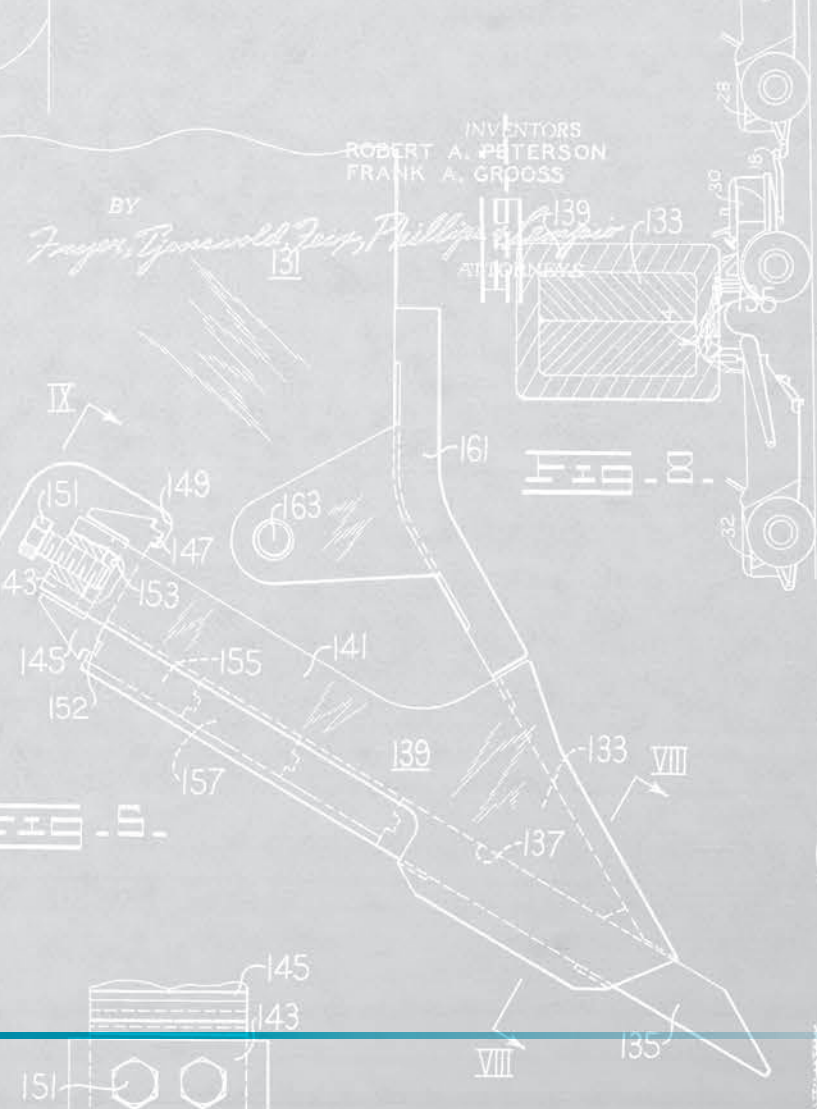
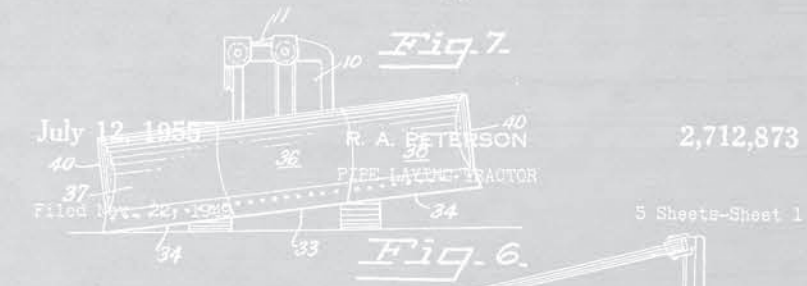
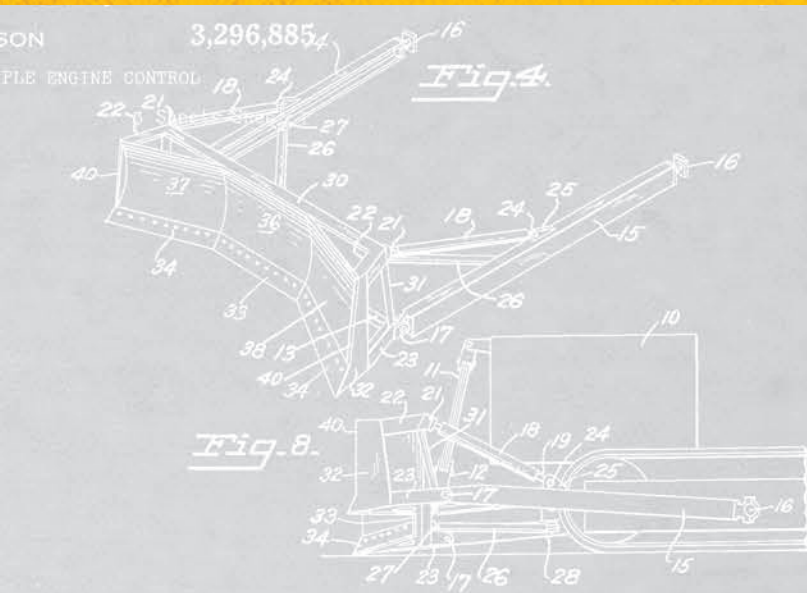
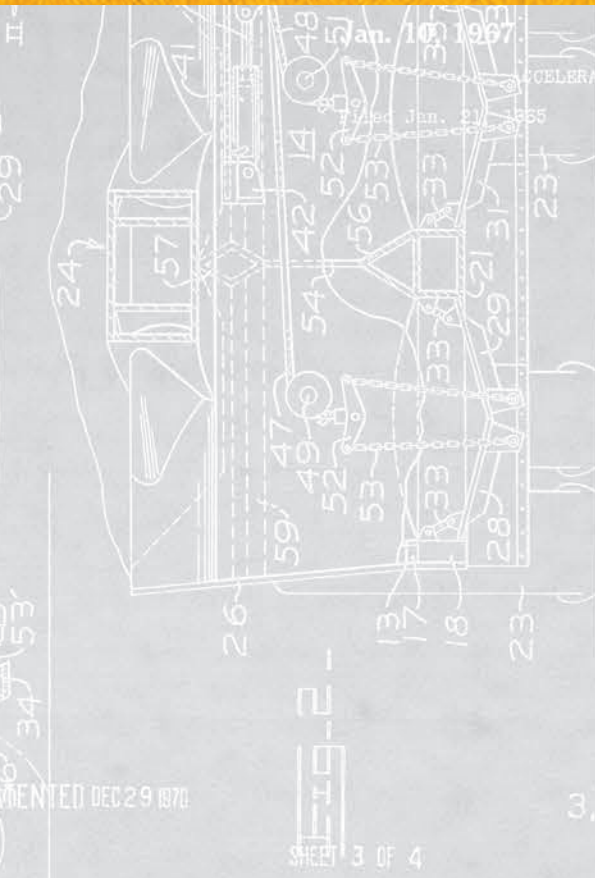
Feb. 20, 1968

so valuable is that they walk around with their chests puffed out like, 'Don't you wish you had one of these? We worked so hard to earn this.' They like the fact that nobody else can get one, and they will always remember the specific task that earned them that hoodie.

"A huge part of the switch in attitude here at Trucks happened when Tom Bagwell took over," says Sinclair. "He's a machine. We don't know how he does everything he does. But one thing he does is empower us. The whole reason he brought the Great Game of Business over here is to fight against the old, stereotypical way of doing business, which is: *Just do it because that's what I pay you for.* Of course, we're in business to make money, but the end goal here is to also have fun doing it. This is fun that we have *at work*, not *after work*. It's fun because we reached a common goal that's brought profitability to our bottom line."

And it's certainly working. According to Peterson's CFO, Erin Sorgel, "Peterson Trucks parts department PAD [profit-after-direct expense] for 2017 was four percentage points over 2016. That's a pretty impressive figure. Even one percentage point growth is a big deal." For Sinclair, that's all part of the fun—setting goals and watching his crew outshoot them.





R. A. PETERSON

3,296,885

ACCELERATOR SYSTEM FOR MULTIPLE ENGINE CONTROL

Fig. 4.

Fig. 8.

Fig. 7.

July 12 1955

R. A. PETERSON

2,712,873

PIPE LAYING TRACTOR

Filed Nov. 22, 1954

5 Sheets-Sheet 1

Fig. 6.

Fig. 3.

INVENTOR  
ROBERT A. PETERSON

BY  
Froyer, Eymann, Park & Phillips  
ATTORNEYS

INVENTOR  
ROBERT A. PETERSON  
BY  
Froyer, Eymann, Park & Phillips  
ATTORNEYS

Fig. 1.

INVENTOR  
ROBERT A. PETERSON

BY  
Froyer, Eymann, Park & Phillips  
ATTORNEYS

INVENTOR  
ROBERT A. PETERSON  
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Froyer, Eymann, Park & Phillips  
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INVENTOR  
ROBERT A. PETERSON  
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Froyer, Eymann, Park & Phillips  
ATTORNEYS









## PETERSON UNIVERSITY

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### BUILDING THE BENCH

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**I**n 1919, Howard Peterson quit school to work for his brother-in-law, industrialist R.G. LeTourneau. He went on to form his own company and enjoy great success, but he always regretted his lack of formal education. “My grandfather was always self-conscious about only having an eighth-grade education,” says Duane Doyle Sr., “but he was exceptionally smart in certain areas—especially math. They would grade papers off his homework. And because of that self-consciousness, when it came time to name our new corporate training facility, we decided on Peterson University in his honor. It was a fitting tribute.”

Despite quitting school early, Howard embraced change and innovation his entire life—both at work and at play. In his forties, he hired a tutor to help him with his grammar and writing skills. He constantly pushed the limits, which meant continuous learning, both for himself and his employees. “In the company’s early years, Howard sent employees back to the factory in Peoria to learn about the new products because that’s where they had the training aids and instructors,” explains Bill Doyle, Peterson’s second-generation owner. “Cat wanted to teach us how to teach our own employees. So selected employees would go to the factory to learn and then come back here and teach our own people.”

Peterson’s early training efforts were a combination of on-the-job mentoring, factory training, and technical training through the local union. As an eleven-year-old kid, Duane Sr. was able to witness some of it out at his grandfather’s ranch in Dublin, California. “Peterson held hands-on sales training out at the Triple J in the ’60s. While the salesmen were in the hay barn learning about new equipment, I was out driving machines with Hugh Dolly [Peterson’s equipment demonstrator]. Then they’d come out and operate the equipment themselves. I specifically remember running a No.12 motor grader by myself.”





Caterpillar training classroom in San Leandro, California in 1942

Through the years, training has come in many forms, including the following:

- factory training in Peoria and at the original Davis Street plant in San Leandro
- operator training for customers
- classes taught by Peterson's first trainer, Joe Bloom, a former Cat trainer (1970–90)
- machine-specific training by Peterson's Training Dept., led by Mace Gjerman (1999– present)
- hands-on product familiarization classes for non-technical employees (1980s–present)
- mentoring between the old guard mechanics and the next generation
- sales pitch presentation training through *Peterson Edge*
- Peterson's *S.T.E.P. program (Service Technician Enrichment Program)*

Training was quite often piecemeal, based on individual department needs. This was especially true between 2003 and 2011 when Peterson split into three separate entities—Tractor, Power, and Machinery—all under the banner of Peterson Holding Co. Each division had its own president with its own agenda, budget, and ideas on training. “We had a very fragmented approach back then because each company was doing their own thing,” says

Duane Sr., “which isn’t a bad thing, but we weren’t helping each other. Sometimes there were duplications, and there were definitely gaps in our training. It just wasn’t a coordinated effort. We needed to bring it all together under one roof and manage it as a single organization.”

That’s when the concept of Peterson University started to take shape. The timing, however, was less than ideal. In 2008, the whole country was in the throes of the worst recession in recent memory. Budgets were tight. Manpower was stretched thin. Uncertainty ruled the day. And then Caterpillar came knocking on the door. “Caterpillar wanted a regional training center on the West Coast for electric power generation, and they wanted Peterson to do it,” explains Mace Gjerman, Peterson’s training manager. “Since we are one of the largest EPG dealers in the world, we were the logical choice.” It was also one of those offers you don’t turn down. The potential benefits were just too huge.



Behind the scenes, however, a different narrative was playing out. Eric Martin and Tom Bagwell (then PPSI president and PPSI marketing manager, respectively) had both had their eyes on the building next door for quite some time. “We were bursting at the seams,” recalls Bagwell. “Power was still growing through the recession, so we converted our conference room into cubicles. And we still didn’t have enough room.” At the time, Bagwell





*Top, clockwise: Mace Gjerman, Eric Martin, and Tom Bagwell all had a hand in the launch of Peterson University; Entrance to Peterson University in San Leandro*

was bringing in people for soft-skills training—speech and presentation skills from Speech Skills, time management from FranklinCovey, management and coaching skills from UC Berkeley, and Microsoft Office training from outside vendors. “We had all kinds of stuff going on, but we kept losing our space to hold these meetings. And officially, Peterson still only had a technical training department.”

In the course of trying to solve the shrinking space dilemma, Bagwell discussed the problem with Peterson’s Cat district rep for EPG. “Bill Guinta is the one who suggested becoming a Cat Regional Training Center. I didn’t even know what that meant. I was just the marketing guy. So I brought it up with Matt George [Power’s service manager at the time] and he loved it.” From there, Bagwell put together a strategy with financials and options for the new space and proposed it to Duane—who promptly said *no*. Several times.



Then on May 12, 2008, the Great Sichuan Earthquake hit southwestern China, devastating much of the country and leaving nearly 88,000 dead. It was the twentieth deadliest earthquake in recorded history. It also took out the China-based supplier of the stained-glass distributor next door to Peterson Power on Teagarden Street, the same place Eric Martin and Tom Bagwell had had their



eyes on. And then the tenant moved out, leaving a big space with even bigger possibilities. After a few more iterations of plans and tactful, persuasive nudging, Duane's *no* finally changed to *yes*. It was August 2008.

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## GROWING A UNIVERSITY

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The concept of a corporate training center had been floating around for years before that. "We already had the traditional Technical Training Dept. over at Tractor," explains Duane Sr. "What we needed was an umbrella organization we could put that into because technical training is absolutely critical to our business. But we also wanted to offer other types of training like computer skills, communication skills, selling and presentation skills, organizational skills, and leadership skills in general. So the concept of a dedicated university was actually born before we moved into its current location on Teagarden. That's just where it really took off because we finally had the space and autonomy to make it into something bigger."



*Top to bottom: Engine lab in San Leandro; Matt Torrence/Peterson engine and International Truck trainer in San Leandro*



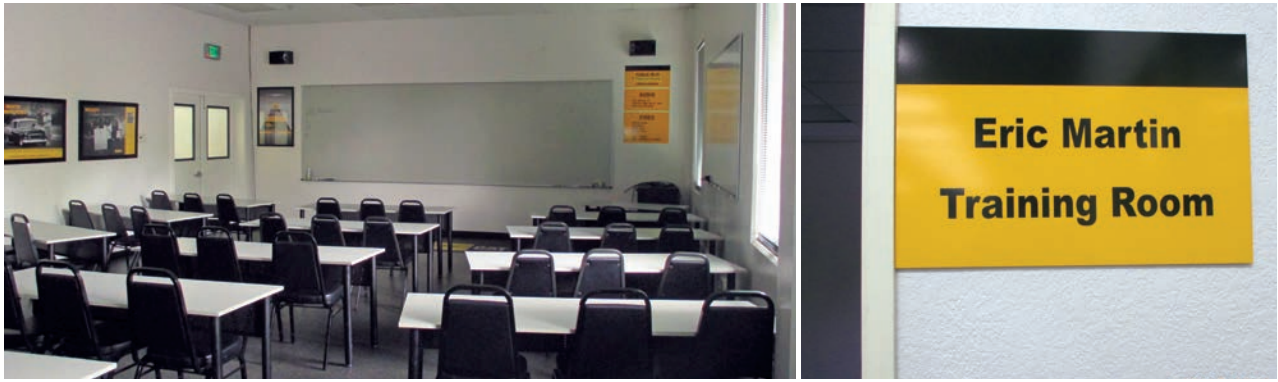
*Randy Mayeda (C) was Peterson's first EPG trainer*

Peterson University held its first class on January 1, 2009. Randy Mayeda taught the Power Technician Skills class to a group of three students<sup>1</sup>: Andy Stevens, Don Sellers Jr., and Todd Kroeck, all Peterson Power techs at the time. "When we first opened the University, we had two classrooms and a big open lab space," says Gjerman, who spearheaded the building project. "The Cat Emporium, Peterson's novelty merchandise center, also moved over into the corner of the University." Duane's goal was for the Emporium to help offset costs for running the University. With higher visibility and customer traffic at its new location, that plan started paying off.

Today, Peterson University's campus in San Leandro has grown to six classrooms and two large lab

<sup>1</sup> Randy Mayeda was Peterson's first Power EPG trainer. He passed away unexpectedly in March 2018, after a 33-year career at Peterson Power.





*Eric Martin training room in San Leandro*

spaces with an array of training aids provided by Caterpillar:

- Tier 4 interim and Tier 4 final engines
- Cat on-highway truck engines
- International truck engines, power trains, and chassis components
- Cat EPG equipment including D80, G40, and LTA generators
- automatic transfer switches and EMCP control panel simulators

In June 2018, the Oregon training group moved into their new facility in Hillsboro, a beautiful, modern space with two classrooms and adjoining labs. Each facility now has three trainers.

In California:

Gene Mendes—EPG

Matt Torrence—Engines & International trucks

Steve Davies—Earthmoving

In Oregon:

Galen Smith—EPG

Joe Rinas—Engines & Earthmoving

Ryan Shearer—Engines & Earthmoving

Their main purpose is to train all Peterson employees so they can better themselves, grow in their



*(L-R) top to bottom: California instructors based in San Leandro: Gene Mendes, Matt Torrence, Steve Davies; Oregon instructors based in Hillsboro: Galen Smith, Joe Rinas, Ryan Shearer*

career, and offer the best customer service available. Classes include soft-skills training as well as traditional technical training.

The University is also part of the overall strategy to help meet Peterson’s continuity plan. In essence, to build a bench of potentials. “Our objective is to have a career plan for our people,” says Duane Sr. “But it’s not cast in stone; it’s just a snapshot of where those individuals are currently, and where we think they’re going. And that will dictate the training they need for that particular career path. It doesn’t mean, however, that a mechanic can’t become a vice president.<sup>2</sup> It just means that on the current career path, a mechanic requires a certain type of training.”

<sup>2</sup> John Krummen, executive vice president and general manager of Peterson Power Systems, started out as an apprentice mechanic at Peterson’s Martinez location in March 1989, after graduating from WyoTech trade school.



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## REGIONAL TRAINING CENTERS

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Peterson University's original mission statement reads, in part: *Our training will be recognized as the best in Caterpillar, and we will become the regional training center for each of our major product lines.* That began happening even before Peterson University officially opened its doors. "Caterpillar authorized us to be a regional training center for power generation even before Eric [Martin] had secured the building," says Steve Davies, Peterson's earthmoving trainer in San Leandro. "Right away they brought over Randy Mayeda [Peterson EPG field tech] to be the new power generation trainer. By then, I'd already been training over at the Trac-



*Top to bottom: EPG class led by Randy Mayeda in the Matt George Lab in San Leandro in September 2012; Steve Davies teaching Tier 4 class in 2011*

tor facility on Marina for eight years. And in 2011, I became the regional training instructor for the Tier 4 emissions engines."

As department head, Mace Gjerman was part of the team that petitioned for Tier 4 training status. "We proactively approached Caterpillar about taking on the Tier 4 training as a regional training center in 2010. The fact that we're in California, ground zero for emissions control in the nation, made us a good choice because there would be more Tier 4 product here than anywhere else."

As Peterson's official Tier 4 instructor, Steve Davies spent two years doing nothing but emissions training. "Tier 4 has driven our industry and our training for the past five years. I went back to Peoria in November 2010 for Tier 4 training at the Caterpillar Learning Center. Then from 2011 to 2013, that's all we did here, Tier 4 and the prerequisite Electronic Diagnostics, because of the very sophisticated, complex software and the huge amount of additional hardware involved. I've gotten a lot of positive feedback on the class because without it, you'd have a hard time out there."

In January 2017, Peterson became the first regional training center in the world for Cat Paving Products. "We're a significant player in the paving world for Caterpillar," says Gjerman. "All the training Cat did previously was either at their paving group center in Minneapolis or the Tinaja Hills Proving Grounds in Arizona. But they recognized that they weren't even close to meeting the demand for dealer and customer technicians so they reached out to us." In early 2017, Peterson University held four, week-long paving classes for dealer and customer technicians from all across the country, including our own.

In mid-2018, Peterson University became the first Navistar Regional Training Center in the world. Gjerman had secured authorization, back in October 2017, to train Peterson technicians on the Navistar products in-house, to keep them current.





*Instructor Joe Rinas teaches class on 988 wheel loaders in Oregon*

The first class was held on October 31, 2017. “It was on the Navistar Diamond Logic Builder software for programming their trucks,” says Gjerman. “Then in early summer 2018, they approached us about being a factory training center for other dealers’ technicians as well. They were introducing their new A26 engine and wanted to train a lot of technicians quickly. We held our first class on the A26 engine on July 23, 2018, taught by Mike Lasater.”



*Navistar Regional Training Center in San Leandro with trainer Matt Torrence*

Peterson also holds customized classes, upon request, for customers and manufacturer field training. In 2015, the University provided special train-



ing for Caltrans and Amtrak on their new Tier 4 final, C15 engines. “Between 2009 and 2012, Peterson Power repowered the engines that run all the electricity onboard their F-59 locomotive,” says Gjerman. “They had previously bought training for some 3412s back in 2001 but had never used it. So with these new C15 engines, of course, we were happy to put together a class for them that fit their current need.”

In June 2016, June 2017, and July 2018, Peterson University held special AGCO classes in Oregon for the Polar Services technicians who maintain the National Science Foundation’s Antarctic Challenger MT865s, the same Challengers Peterson custom-built for them back in 2014–15.<sup>3</sup> “Customer training is really important to us,” explains Gjerman. “On the surface, selling customer training appears to take away from training our

<sup>3</sup> See the full story in CH21 The Antarctic Challenge, on pg 331.





Left to right: Polar Services technician class on Challenger tractors; Jimmy Hunt/Santa Rosa field technician

own employees. But what it really does is help financially support the University so we can grow. If it wasn't for that additional revenue, we wouldn't have all six trainers that we have today. We wouldn't have all six classrooms in San Leandro or the three in Hillsboro, or the training labs with all the tooling and training aids we have today.

"It's also critical to customer satisfaction. No other competitor out there has the kind of training support that Peterson offers. And it helps offset the cost of sending our own techs to classes. In the beginning, we had to be extremely careful with every dollar we spent. It was critical that we found additional revenue opportunities. But when you can sell training to a customer and they actually thank you for it because they can't get it anywhere else, that's a win-win."

## VOICES FROM THE CLASSROOM

For Jimmy Hunt, Peterson field tech out of Santa Rosa, the Tier 4 classes have been very beneficial. Over his twenty years at Peterson, he's been to at least fifty classes. "What I really like about these classes is that you meet guys from different stores who have a lot of different knowledge and experience. It really helps having these guys in class because they bring up different things they've dealt with. You end up talking about problems you've had out in the field and learn from each other. You

gain connections you can later contact. I call Steve Davies probably once a month about something."

Mark Vanier started out as a lube tech in 1998. Since then, he's been in the field and through just about every shop in San Leandro. In 2000, he won Peterson's coveted Best of the Best Award as Employee of the Year. Through his career, Vanier has been to over twenty-five training classes at Peterson. "Everything I've learned, I've learned on the job at Peterson. Steve [Davies] is an excellent teacher. He's worked for a lot of different contractors and dealers, so he really knows his stuff. He's got a lot of stories he shares in class. He also encourages people to speak up if he's talking about a problem on a machine and somebody has something to add. I really like that."



Mark Vanier (C) receives Employee of the Year for 2000 from John Kruppen (L) and Duane Doyle Sr.





*Left to right: Paving class at Peterson University; DeSilva's paving crew, many of whom have attended paving classes at Peterson University*

The courses are structured so students are in the classroom about a quarter of the time, then out in the lab the rest. “There are always machines in the lab to run tests on and find the bugs,” says Vanier. “The stuff Steve thinks up for tests is pretty amazing. He’ll plug up a fitting or pull one of the pins out of a Deutsch connector so it won’t make contact but it will still look all right. Just one little pin like that can cause havoc. And it happens. They all look legit, but from vibration and corrosion, the pins actually shrink in the sockets, and then they won’t make contact. So Steve is testing to see if you’ll catch it. He’s really good.”

In January 2017, Peterson University held its first week-long course as Caterpillar’s official Paving Regional Training Center. Rich Poppoff, equipment superintendent for DeSilva-Gates, was there with twelve of his men. The previous season, DeSilva-Gates had purchased their first Cat paver, an AP1055F. And by year-end 2019, they had five. “The Cat paver is way more advanced than what we’ve ever run in the past. We decided to put all our mechanics through the training so that when we’re out on a jobsite, we can troubleshoot and repair our own equipment. And that’s exactly what we achieved by sending all of our guys to Peterson University.

“The training taught you how to troubleshoot the machine—what you’re looking at, what you’re looking for, how things are supposed to work, what’s right, and what’s wrong. There was a little bit of class time and then a lot of hands-on time where you put it into practice. They had machines for us to work on which made me even more comfortable because you actually apply it right when you were learning it.”

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## SOFT SKILLS TRAINING

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While technical training is a big part of the University’s focus, the long-term goal is to provide training for every Peterson employee. Currently soft skills training—like sales, leadership, and communications skills—comprise about one-third of the course offerings, but that profile is growing. The endgame is to help employees grow in their careers, as well as provide our customers with the best-trained technicians, and support staff in our territory—bar none.



## CORE VALUE: EXCELLENCE

966

R. A. PETERSON

3,290,806

Filed June 22, 1960

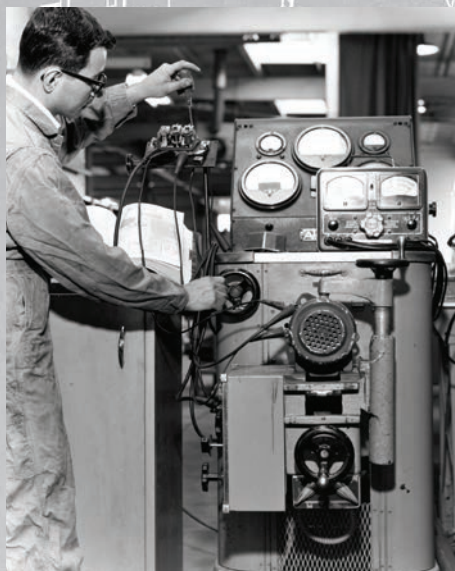
ADJUSTABLE CABLE HOPPER DOOR ACTUATING MECHANISM

3 Sheets-Sheet 3

CONTROLS FOR TANDEM OPERATED EARTHMOVING SCRAPERS

1964

### TRAIN EARLY, TRAIN OFTEN



In May 1964, a young mechanic named Ernie Fierro took his first Caterpillar service training course. It was held at Cat's Davis Street facility in San Leandro, just six blocks from Peterson headquarters. Fierro had only been a mechanic for Peterson for two weeks. "Peterson's in-house training was very limited in those days. There wasn't any real structured, formalized training then. Fortunately, we did have Bill Richardson who did the best he could with after-hours training. It was on a voluntary basis and very informal. He would hold classes in the auditorium off the showroom. It was primarily movies and lectures on different topics like fuel systems and transmissions. But for the formal training, they would send us over to the Caterpillar plant on Davis Street."

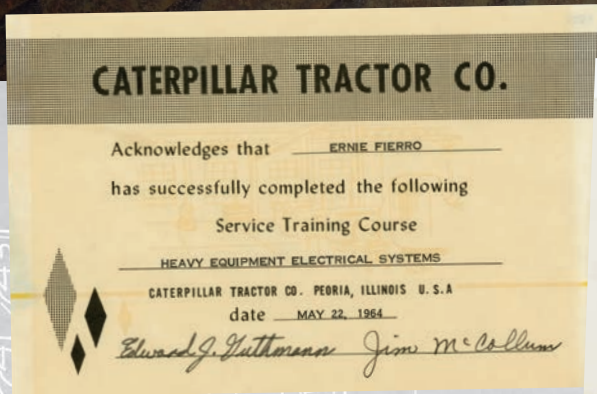


After a thirty-seven-year career at Peterson, the now-retired president of Peterson Machinery has racked up many accolades, but one of his proudest is hanging on the wall of his home office. "It's a diploma for a Caterpillar training course on Heavy Equipment Electrical Systems from May 1964," says Fierro. "That was my first class. And it's one of my favorites because it meant that Peterson had the confidence in me to send me to school when I'd only been with them a couple of weeks. I went to several other schools the following years for hydraulics, truck engines, power generation, and transmissions. I was really excited about learning, and that's why they kept sending me back. And I took advantage of all that training with a whole lot of gratitude and happiness."

Top to bottom: Ernie Fierro in the SL component shop in 1964; Ernie Fierro as VP of Product Support in March 2003

Before coming to Peterson, Fierro spent three years in the Army Corps of Engineers. "We were in Guam and Okinawa upgrading airfields from WWII. And in Korea, we built missile sites right near the DMZ. It was a great experience." But qualifying for the heavy construction battalion wasn't easy. He'd enlisted for three years in order to attend a heavy equipment repairman school in Virginia. And he passed all the entry tests except one. "I failed the color-blind test, so they wouldn't let me in because I would have difficulty reading the color-coded electrical and hydraulic schematics. And since I had placed first in rifle marksmanship in the training battalion, the Army's solution was to send me to sniper school." Long story short: Fierro fast-talked his way out of sniper school—his idea of a good way to die—and back into the heavy equipment repair school.





A few years later when Peterson enrolled him in Cat's Electrical Systems class, he knew he was in for the same problem. "So I did what I'd done in the army. I memorized the color-coded charts and schematics. Instead of going out at night drinking beer with the guys, I stayed home and memorized all the circuits." He did the same thing for each Cat class he attended to compensate for his color-blindness. "I didn't want to screw up because in those days if you failed a course, they kicked you out and wouldn't send you to any more classes. So I had to be an A student to prove to Peterson that their investment in me was justified. And I kept my color-blindness secret so I could keep on attending classes."

The training center at 800 Davis Street where Fierro took his classes originally housed Caterpillar's executive offices (1926 to late 1950s) and their diesel fuel systems assembly plant. "It was the old factory from the 1920s," says Fierro. It was the same property Daniel Best bought in 1888 to build his steam traction harvesters and combines, and where his son C.L. Best later built his gas-driven track-layers. "When I was there, it still had the old, wooden-block floors, the old-fashioned cranes, and the machinery was powered by mechanical drive belts. Two Cat instructors ran the training center—Joe Bloom and Jim McCollum." When Cat shut down their San Leandro training center in 1970, they offered to relocate Bloom back to Peoria. He wasn't interested. Instead, he took up Howard Peterson's offer and became Peterson's first official trainer.

In 1985, Cat's original facility<sup>4</sup> at 800 Davis Street was demolished. Today, the property houses F.H. Dailey Chevrolet's main offices and showroom. Caterpillar's second San Leandro facility was located at 1933 Davis Street about a mile west of the original plant. Caterpillar bought the former International Truck plant at 1933 Davis Street sometime in the 1970s and moved its fuel systems production there. And in the mid-80s, that facility was sold and turned into the current Westgate Shopping Center.

<sup>4</sup> The original front entrance archway still stands today, with a commemorative plaque, but you have to look hard to find it.

PERSON 2,485,407  
ZER  
4 Sheets-Sheet 3

7,712,873  
ets-Sheet 1





*Ryan Shearer—from ThinkBIG student to Peterson trainer.*





## THINK BIG

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### GROWING OUR OWN

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**T**he spring of 2008 wasn't exactly the best time to be looking for a job. Banks were on edge. Housing starts were on the slide. Businesses were laying off. But then Ryan Shearer was just a high school senior looking at career possibilities. "I was pretty sure I wanted to go to WyoTech, but then I attended a job fair at Portland Community College. That's where I found out about Caterpillar's ThinkBIG program. Caterpillar was the biggest name in diesel that I knew of, and being a Cat technician would be a real feather in my hat no matter where my career path took me. Plus, they had a program an hour and a half from my hometown and a dealer less than a half hour away. All that helped me decide."

Shearer entered the ThinkBIG program in the fall of 2008 as a Halton apprentice. His potential was apparent from the start. "At my branch store, The Dalles, we had six or seven technicians at the time, and at least five of them had over twenty years of experience with Caterpillar equipment," says Shearer. "So from the beginning, I had a great group of people to draw from, and that was a huge advantage for me. Since our store was so small, you worked on everything. Nobody specialized. I rebuilt cylinders, transmissions, and drive-train components. I worked on engines for older machines with pony motors and newer machines with ECMs. We did a bit of everything."

Toward the end of the two-year program, Shearer was assigned a field truck.<sup>1</sup> "One of our older technicians had surgery and he couldn't drive a truck or do anything. So sometimes I'd end up driving *Miss Daisy* around. I would drive him to jobs, and he would point out what things to do and how to do it." Shearer stayed in the field for another five or six years, then moved inside as the service manager/scheduler/dispatcher. Then he transferred over to Power as a commercial engine technician.

<sup>1</sup> By then, Shearer was a Peterson employee since Peterson had acquired Halton in 2010.





In 2018, the student became the teacher when Shearer stepped into technical training as an engine and earthmoving trainer in Hillsboro. “I love working with my hands and working on machines,” says Shearer, “and I also love teaching. It’s something I saw myself doing at some point in my career. I wasn’t sure I was ready to give up the tools when I applied for the job. But I still get to do that, just not on a daily basis. I advocate for ThinkBIG whenever I can. It’s a fantastic program. I try to

encourage people in my classes and ask them what their experiences have been because I can learn from them as much as they can learn from me. Sharing experiences between technicians helps everyone out in the learning process.”

For nearly two decades now, ThinkBIG has been delivering big results for students looking for a career in diesel technology. And for Cat dealers looking for new talent. ThinkBIG is an intense, two-year



program that alternates between the college classroom environment and on-the-job training at a Cat dealership in eight-week increments. The Cat-specific program incorporates general diesel technology, basic equipment systems, and current technology with some course work in mathematics and technical writing. And, unlike other programs that try to help you find a job, ThinkBIG students already have one<sup>2</sup>. Once they graduate, they step up to fulltime.

“ThinkBIG is a major avenue for bringing technical talent into our organization,” says Duane Doyle Sr., Peterson owner/CEO. “For us, it’s not just about skills and ability. We pay close attention to attitude and values. We’d much rather train someone with a good attitude than hire a top-notch mechanic with a bad attitude. The key is to front-load the pipeline with the right kids and keep it as full as possible. It’s a great program—a solid program. And we’re very happy with it.” The students are too. Since its inception in 2002, Peterson’s ThinkBIG program has enjoyed a completion rate of 80 percent and retention rate of 66 percent, which is much higher than the 30 percent of traditional technical schools. And with 241 students (year-end 2020), and 34 graduating classes, that spells S-U-C-C-E-S-S.

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## SKILLED TRADES VERSUS COLLEGE

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Caterpillar came up with the ThinkBIG concept in the 1990s after state funding for high school vocational education started drying up in favor of the college-prep track. That shift left a whole demographic of mechanical, hands-on types with nowhere to go. Caterpillar saw the looming need and decided to jump in before it became catastrophic. They took special note of Ford’s Asset apprenticeship program from the 1970s and started developing their own. In May 1998, Cat debuted its ThinkBIG pilot program at Illinois Central

College in Peoria and then began rolling it out nationwide. Currently, there are eleven regional programs inside the US and ten more around the world including Mexico, Panama, South America, Canada, England, South Africa, and China. After twenty years, it’s beginning to make a dent in the global skills deficit.

But there’s still a long way to go. “It’s a shame kids are not afforded the choice to go into the trades at the high school level anymore,” says Duane Sr., who took full advantage of shop class during the 1970s. “Schools, administrators, and parents have discouraged their kids from blue collar jobs. They want them to go to college and pursue the white-collar workforce, which traditionally pays better. And once they let these vocational programs go, it’s hard to bring them back because of the millions it would cost to retool.”

“ ThinkBIG is a major avenue for bringing technical talent into our organization. We pay close attention to attitude and values. We’d much rather train someone with a good attitude than hire a top-notch mechanic with a bad attitude.

– Duane Doyle Sr., owner and CEO, Peterson-Cat



*Duane Sr. at Warm Springs Dam in Healdsburg, California in 1979*

2 Peterson’s ThinkBIG students are employees that get paid during their rotations at the dealership during the program.





*(L-R) ThinkBIG grads Mike Harreld & Brad Giordanella receive their certificates, officially making them journeymen Cat techs, in 2006*

While white collar jobs may have paid better in the past, that's not necessarily true anymore. "Some of these trade jobs pay a lot more than the jobs they went into debt for at a university," says Duane Sr. Today, there is an entire unemployed—or under-employed—sector of twenty- and thirty-some- things who spent thousands and thousands of dollars to get a college degree but don't have a job to pay off those loans. And they're not qualified to do blue-collar work either because they don't have those skills.

Opportunity still exists at the junior college level and at trade schools like UTI and WyoTech. But those are a much longer route to the proficiencies Peterson Tractor's GM, John Wells. "It takes a lot longer to become proficient today than it did back in the late 1970s when I was just getting started. Back then, Caterpillar had about thirty different models. And a lot of the repair processes were similar from model to model. Today, Cat has over three hundred models. And, where it used to take four years to gain competence, now it's double that, at least, because of the complexity and the sheer number of models." Even so, trade schools are still a good path forward. In more recent years, they have expanded their programs beyond automotive to include welding, fabrication, and select diesel manufacturer-specific training. Just not Cat. That's where ThinkBIG comes in.



*Randy Shelton recruiting students from Nestucca High School for ThinkBIG in 2019*

As a recruiter for Peterson (2013-2018), Ted Fleming spent a lot of time talking with high school students and their parents while they were still in the decision-making process. "My biggest challenge is trying to convince parents that their son or daughter can have a very satisfying and lucrative career as a technician with us. I have to overcome the stigma that blue-collar jobs are hard, dirty work that pay way less than the white-collar world. I've had parents say how great our program sounds, with all its benefits and potential, but still want their child to get a four-year bachelor's degree."



Peterson recruiters still draw from a number of college diesel programs, including:

- Shasta Junior College (CA)
- Santa Rosa Junior College (CA)
- College of Alameda (CA)
- Lane Community College (CA)
- Linn-Benton Community College (OR)
- Centralia Community College (WA)
- Walla Walla Washington Community College (WA)
- Idaho State University
- Montana State University
- Utah State University
- Trade schools like UTI and WyoTech

But by far the biggest results have come from the ThinkBIG program.



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## THINKING BIGGER

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ThinkBIG California began back in 2002 as a partnership between San Joaquin-Delta College in Stockton and the six California Cat dealers at the time—Peterson, Holt of California, Quinn, Johnson, Shepherd, and Hawthorne. It was a long-term solution to a growing deficit of qualified technicians within the heavy equipment industry. “Our program at Delta College is maxed out, and has been since 2012,” says Mace Gjerman, one of the founding members of ThinkBIG California. “We



*The first year of ThinkBIG Northwest program at Portland Community College in 2006*





*Peterson's ThinkBIG Northwest graduating class of 2018*

would like to send more students, but there aren't any more seats available. We just can't fit any more students into the facility. It's that successful."

In 2006, Peterson launched ThinkBIG Northwest at Portland Community College along with Halton, NC Machinery, Tractor & Equipment (T&E), and Western States. Since then, the program has grown both in reputation and content. In 2018, the Cat dealership group added an electric power generation track. "Our goal is to give students a really strong, foundational understanding of EPG components," explains Gjerman. "We focus 100 percent on Cat equipment, but what they learn on Cat switchgear translates to non-Cat switchgear and most other non-Cat components."

For the first year, earthmoving and EPG students go through the same classes together, since the information is pertinent to both. Beginning with

the third semester, they branch off into their specialty—earthmoving or EPG—for the remaining three semesters. Because of the smaller power generation market, ThinkBIG's EPG track is only offered at the Portland campus. "There just isn't enough demand to offer EPG in California because the four dealers can't absorb twenty-four new entry-level EPG techs every year," explains Gjerman.<sup>3</sup> "And the college is not going to host a program unless there's a guaranteed twenty-four students a year. Otherwise, it becomes a financial drain for them." Together, the two programs provide a platform for Peterson and its allied Cat dealers to grow their own technicians and meet the industry needs in the future.

Year after year, Peterson fills ten seats at both of its campuses, plus another five for its new EPG track and any extra slots that the other Cat dealers don't use. "Twenty-three students started the

<sup>3</sup> As of 2020, there are four California Caterpillar dealers—Peterson, Quinn, Holt of California, and Hawthorne. All are involved in the California ThinkBIG program.



program in 2019, which is the largest class we've ever had for Peterson," says Randy Shelton, Peterson's recruiting manager. Since 2002, Peterson has put 241 students through the ThinkBIG program, and 159 are still employed throughout the organization. Each year, Peterson forecasts how many technicians it will need to reach its annual budgetary goals. In 2015, Peterson hired 88 technicians to keep up with demand; in 2016—87 techs, in 2017—96, in 2018—104, in 2019—90, and in 2020—34, due to Covid. That makes ThinkBIG grads roughly a quarter of Peterson's annual new hires. Currently, there are about 600 technicians companywide.

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## THE VOICE OF THINKBIG

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The typical ThinkBIG kid is either fresh out of high school or somewhere in their twenties. But then, Eddie Thoits is anything but typical. "I was exposed to cars from a very early age because my dad had an auto repair shop. He was also a hot-rodder, so every day after school I was down there wrenching with him." Then Eddie went off to college to earn a degree in Ag Economics and ended up on Wall Street. "I thought wrenching was just going to be a hobby, but after spending half my adult life as a stockbroker and getting totally disillusioned, I decided to go find something I'd actually love to do."

In 2012, Thoits found the ThinkBIG program. He was forty-one years old at the time. "ThinkBIG is an outstanding program. It's very hands-on with an excellent ratio between class time and labs. For every two hours of classroom time, you get eight hours hands-on in the shop. When I first started at Delta College, we were crammed into two small shops. By my last two semesters, we'd moved into a brand-new shop facility with lots of Cat engines up on stands—mostly 3406As, Bs, Cs, even some E models. And then the different Cat dealers would alternate bringing in Tier 4 equipment for us to work on. It's just an outstanding curriculum."



### KEEP THE TOOLS

Peterson provides a set of tools and a toolbox to each of its ThinkBIG students to use during their internship.

Tuition for internships in Oregon and Washington is covered by company-provided scholarships, which allow students to save their money for school expenses. After completion of the program, Peterson provides a tuition reimbursement program to cover any remaining tuition costs.

For California ThinkBIG students, their education is tuition-free thanks to a partnership between Peterson and the California Department of Apprenticeship Standards. Graduating students of both schools get to keep their toolsets after six months of full-time employment and a B average.



During his on-the-job training rotations, Thoits spent most of his time in Peterson’s main shop in San Leandro. “One of the most exciting jobs I had was working on LeHigh’s four new 777G trucks.



“ ThinkBIG is an outstanding program. It’s very hands-on with an excellent ratio between class time and labs.

– Eddie Thoits, parts and service sales, San Martin, Peterson-Cat and ThinkBIG graduate, Class of 2014

”



Top to bottom: Eddie Thoits (L) graduating from ThinkBIG in 2014; Thoits helped assemble new Cat 777G trucks at LeHigh’s Cupertino quarry during his ThinkBIG apprenticeship

At the time, I was still in the ThinkBIG program. I got to help assemble them in the shop, then disassemble and reassemble them at their quarry in Cupertino. We worked with a crane company to put the huge beds on, suspended way up in the air. It was an incredible experience.”

Today, Thoits works out of the San Martin store as a parts and service sales rep (PSSR), a launching pad for positions higher up the ladder. As such, he gets to see those same off-highway trucks operating up on the bench at LeHigh’s Cupertino quarry. “I was the guy off the streets,” says Thoits. “ThinkBIG changed my life. It’s been one enjoyable ride ever since.”



Jake Hughes/Santa Rosa field tech—ThinkBig graduate Class of 2016

Santa Rosa’s Jake Hughes, on the other hand, is the classic ThinkBIG kid who grew up tinkering with lawnmowers and building things out of Legos. In high school, he moved on to go-carts and anything with a small engine. “I’ve always been interested in how things work. I just like to learn,” says Hughes, who graduated ThinkBIG in 2016. “I’m a hands-on kind of person, so I really like the hands-on factor of ThinkBIG. The classroom part is basically out of a book, but then you go out into the shop and apply what you talked about in class. That’s the really cool part. I also like that while you’re in school, you focus on school, and when you come back to work [in the dealership rotation], you focus



on work. You're not trying to balance both aspects at the same time like at a normal college. And each semester you come back [to Peterson], you get a little more advanced and roll into heavier jobs."

Nate King is also a big proponent of the ThinkBIG program. He was Jake Hughes' boss, a few rungs up, as product support manager in Santa Rosa from 2015 to 2019. "I can't think of a better way to hire or recruit talent. I like ThinkBIG because you get to hire people and try them out over a period of time." King hired six ThinkBIG graduates in the four years he was at the Santa Rosa store. Half his shop staff came out of the program. "I'm actually interviewing ThinkBIG candidates today," said King back in July 2017. "I only have one slot open and I don't exactly have enough work here, but I've also got five field techs retiring over the next few years, and I can't wait around for them to leave before I start hiring." That's exactly the kind of proactive, visionary mindset that finds and fills Peterson's shops with top-notch talent.

King's philosophy does not include the job-shadowing approach many others use at Peterson, yet he gets consistent results. "I treat ThinkBIG techs the same way I would anyone who's been here fifteen years. I just give them simpler tasks. I don't give them engine rebuilds or overly complicated troubleshooting to do by themselves. I give them cutting edge jobs or changing out parts that are obviously broken. Or undercarriage repairs and cylinder jobs. As they start to get more comfortable and confident—and more educated—we start branching them out into more complex repairs. To me, if the goal is to get a technician to be able to complete a job by himself, as is expected of any journeyman, then that's what we're going to do. Not half a job, assisted by another journeyman. If it takes him a bit longer to complete a job, I just write it off to training because that's exactly what it is. The point is to let them trip a little bit but not fall on their face. Let them figure it out. That's the best way to learn."

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## REPLACING THE BABY BOOMERS

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Cat dealers are still in a battle against natural attrition, a shrinking talent pool, and a stereotypical bias against the skilled trades. "Our biggest challenge to the skills gap is demand versus available talent," says Fleming. "Student numbers are still going down. Demand for skilled labor is going up. And attrition of the older labor force is on a steady rise with the baby-boomer generation.

Yet there is hope. Randy Shelton, Peterson's current talent acquisition manager, visits high schools and colleges regularly and is starting to see a shift in attitude. "There are teachers and administrators who wholeheartedly understand the value of creating or adding to their school's career and technical education programs. Schools without trade programs are starting to implement them, and those that already have them are looking to expand. Today, there are four high schools in Salem, Oregon that are adding diesel to their automotive programs due to industry demand and student interest. Teachers and counselors are even starting to talk up programs like ThinkBIG to their students instead of automatically pushing all kids onto the four-year college path. Attitudes are definitely beginning to change." That's a big win for students who just don't fit the college mold. And a big relief for Peterson and the rest of the industry.



*Teaching kids about Trimble technology at a career day*



## CORE VALUE: EXCELLENCE

### MENTORS MAKE A DIFFERENCE

Everyone has to start somewhere. The wise ones find a mentor to show them the way. For Tom Bagwell, executive VP and GM of Peterson Trucks, that beacon was Peterson's truck engine salesman, Ken Ehni. It began on Bagwell's first day as a salesman for Coast Counties Truck—one of Peterson's TEPS dealers—back in January 1986. At the time, he was a diehard Cummins man, but Ken Ehni turned him around. "Ken really wasn't an expert on Peterbilt, but he was on Cat. He would pick me up when he was out driving around visiting his customers, and he'd make me a deal. 'I'll buy you lunch for every Cat truck engine you sell,' he would say. So that's how I gained fifty pounds—selling a lot of Peterbilts with Cat engines."



Ken Ehni

As Bagwell's career progressed at Coast Counties, he continued to rely on Ehni's expertise. When a customer called one day complaining about his new trucks being sluggish, Bagwell phoned Ehni.

"He's probably used to 2100 rpms," said Ehni, "which has more throttle response than the 1850s. It's a simple fix you can change electronically."

"How do I tell him to fix it?" asked Bagwell.

"Find out where his trucks are, and I'll show you how to take care of your customers. We're not going to ask the customer to go out of his way. If he wants something better and he has Cat, we're going to go fix them right where they're at."

Twenty minutes later, Bagwell and Ehni were on the road looking for the first truck. They found it in Hayward in the middle of dumping its load.

"It's going to take about five minutes to reprogram this engine," Ehni said, then jumped up into the cab and typed in some commands. A few minutes later, he was back in the car. "Okay. Where's truck number two?"

"It was due into the customer's Fremont yard in twenty minutes. So we head down there and have a great conversation on the way," recalls Bagwell, "and I'm learning that *this* is how you take care of your customers."

At the Fremont yard, it took another five minutes to reprogram that engine. Done.



“Where’s the third truck?” asked Ehni.

“Discovery Bay.”

An hour and a half later, they find a rock quarry out in the middle of nowhere at Discovery Bay. They wait.

“The driver shows up ten minutes later and Ken reprograms his computer. And I’m like, *Wow! This is how you do customer service.*”

The two finally headed back to the Bay Area in the late afternoon. Ehni still had his nightly commute to Santa Rosa—another hour, at least. Fifteen years later, Bagwell hired on at Peterson Power Systems as marketing manager, bringing with him all those lessons learned, which he continues to pass on to the next generation.



Tom Bagwell encourages employee at Brand Ambassador session

Putting the customer first is a commitment that takes time. Those willing to invest are the standouts, like Ken Ehni and Tom Bagwell, and a host of others at Peterson. They are the difference-makers. They know what it takes, and still find time to mentor the next generation. Because everyone has to start somewhere.

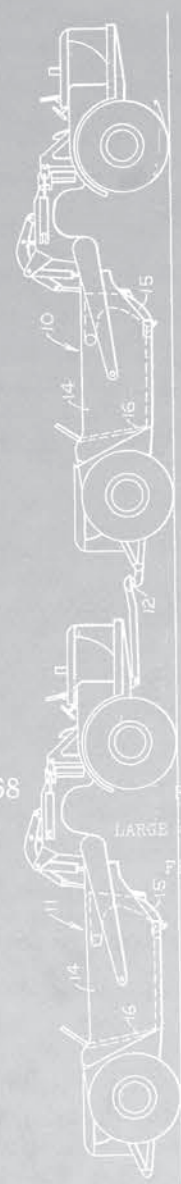


Left to right: Thomas Arnold/L mentors second year ThinkBIG student, Kendal McLaughlin in Hillsboro hydraulic shop in 2019; SL field tech trainee Garrett Smith/R with mentor Ashley Harden, San Leandro field tech in 2020





FIG. 1--



Feb. 20, 1968

R. A. PETERSON 3,369,680

LARGE CAPACITY LOADER BUCKETS

Filed July 18, 1966

INVENTOR  
ROBERT A. PETERSON

BY  
*Frederick E. Ginnell*  
ATTORNEYS

FIG. 2--

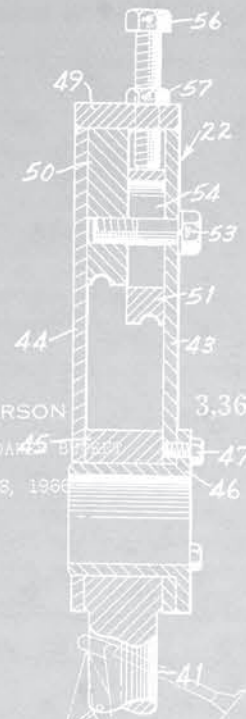
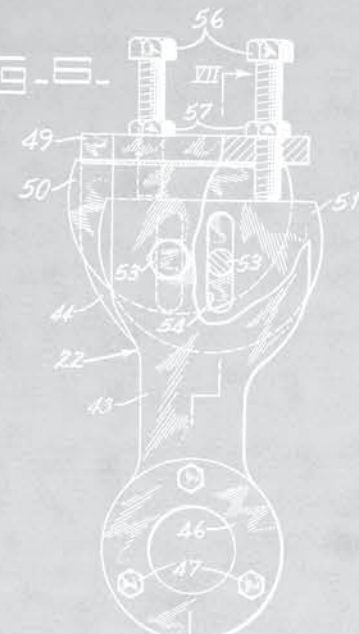


FIG. 3--

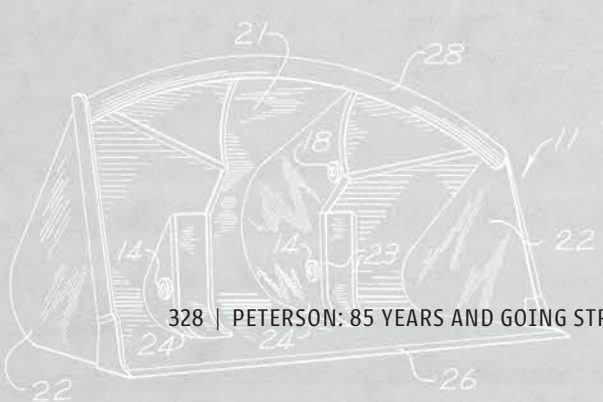


INVENTOR  
*Robert A. Peterson*

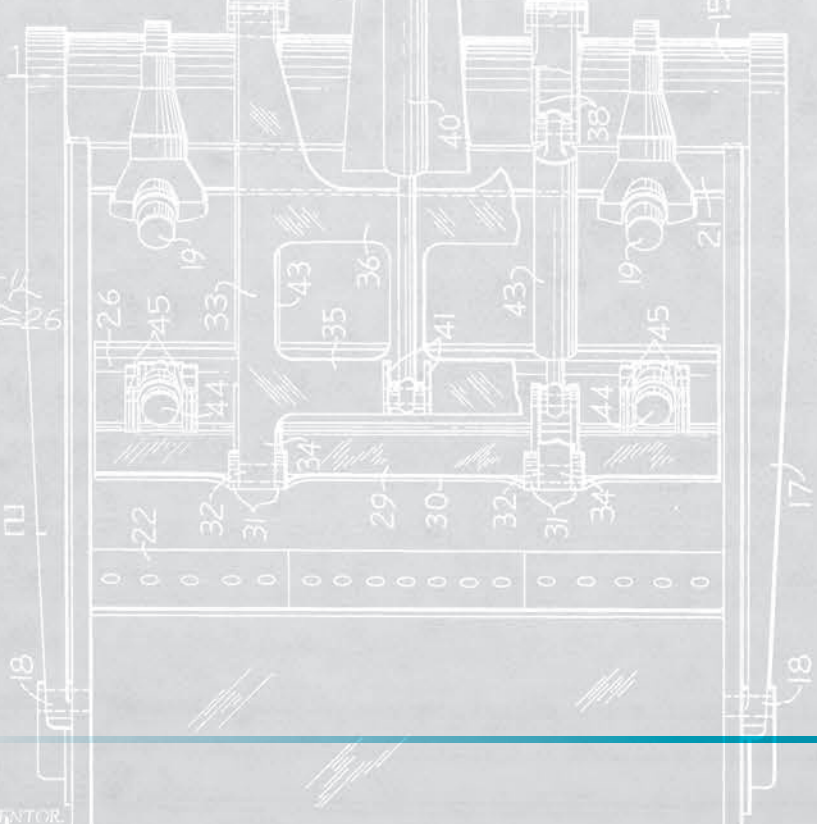
Patented April 13, 1971

*Frederick E. Ginnell*  
ATTORNEYS

Sheet 3



3,574,960



INVENTOR

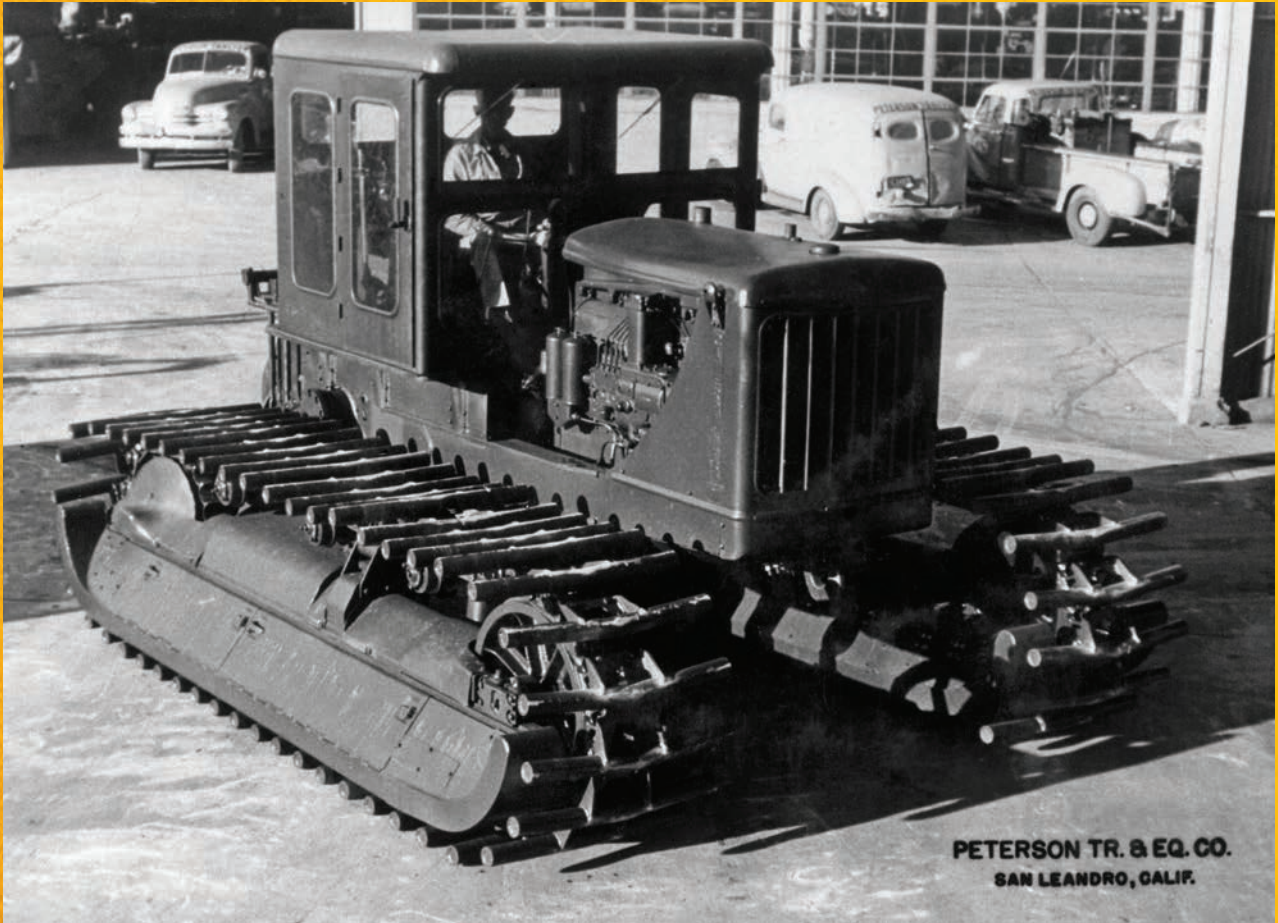


Section V

# SPECIAL PROJECTS







**PETERSON TR. & EQ. CO.**  
**SAN LEANDRO, CALIF.**

*Peterson SnoCat in San Leandro, California in 1953*





## ANTARCTIC CHALLENGERS

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### THE ANTARCTIC CHALLENGE (2014 – 2015)

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**I**magine driving down an icy highway in a big Dodge dually. All of a sudden, a tire rolls past on your left, picking up speed. The chassis starts to shimmy and then—Wait! That looks like *your* rims! What the heck?! Now picture being at the bottom of the world at 50 degrees below zero, out in the middle of an ice field with no discernable difference between land and sky. Just white. Everywhere. A rogue wheel passes you by on your left. Only it's not a tire. And it's not a Dodge pickup. And it's most definitely not a paved highway. That's exactly what Peterson's Craig Bolton witnessed several times during his stint on the South Pole Traverse in 2012-2013. He was the guy that had to get out and fix them.

If ever there was a story that encapsulates all of Peterson's Core Values, it's the Antarctic Challenger project. In 2014, Peterson won the bid to customize nine Challenger tractors for the South Pole Traverse. The project was significant both for its contribution to scientific research, and its historic parallel to the extreme weather machines Buster Peterson built back in the 1950s.

At the beginning of the Cold War, the US Army Corps of Engineers contacted Caterpillar about building low ground pressure machines for helping to build the Distant Early Warning system, or DEW Line, at Thule Air Force Base in Greenland. Because of the accelerated deadline, Cat pushed the project to Buster Peterson who could get them into iron much faster. In 1953, Peterson shipped the first D7 SnoCat to Greenland to use as a supply mule. The Corps of Engineers was pleased. When Caterpillar saw a viable market developing, they took the design on themselves. Over the next several decades, SnoCats found their way to US bases around the world including McMurdo Station in Antarctica, which at that time was operated by the US Navy. Sixty years after that first D7 SnoCat delivered, Peterson got an opportunity to build extreme weather machines once again, this time for the Antarctic.





*The Traverse departs McMurdo Station on the month-long journey to the South Pole. One tractor can pull 24,000 gallons of fuel in bladders on top of sheets of HMW plastic.*

“ It’s quite an accomplishment to be able to literally build a tractor for the toughest environment on the planet.

– Duane Doyle Jr., president of Earthmoving Operations, Peterson-Cat

”

In the fall of 2011, Peterson field tech Craig Bolton (Redmond store) had one item left on his bucket list. He’d set a goal of stepping foot on all seven continents by the time he turned 30. He’d spent the last two years in Afghanistan as a civilian contractor, working on C7 engines for the Department of Defense. That September, he had eight months and one continent left to go. “The first time I went to Antarctica, I had absolutely no intention of ever going back. I was going once, to say I’d done it and get that checkmark. I had no idea what I was getting myself into. But once I got there and worked a season, I absolutely loved it.”

Bolton worked his first season as a mechanic at the National Science Foundation’s Amundsen-Scott South Pole Station repairing Cat dozers. He spent his second season as an operator and mechanic on the South Pole Traverse, a 2,060-mile roundtrip supply route between NSF’s McMurdo Station and the South Pole. “The only things I worked on were the Case Quadtracs because that’s the only thing that broke. It was a common occurrence to be driving down the trail and an idler or bogie wheel would pass up your machine. They’d come off at speed and once they hit the snow, they just took off because they had no load. At the time, it wasn’t funny. Now it’s hilarious.”



*Top left, clockwise: Buster Peterson visited Greenland and his SnoCats in the mid-1950s; Craig Bolton with penguin friends; Peterson SnoCat at Thule AFB in Greenland in the 1950s*





*Craig Bolton at McMurdo Station, the last piece of solid ground on the journey to the Amundsen-Scott South Pole Station*

By the end of the 2012-2013 season, Bolton was ready for some normal. When he got back home, he checked in at Peterson's Redmond store where he'd worked before the economy took a nose-dive. Within a week, Bolton was back in a field truck. Several months later, Duane Doyle Jr. ran into Bolton during his rounds through Oregon as the product support sales manager. "I'd heard he was back from the Antarctic and I wanted to hear his story." The two went out for a beer. Junior had no agenda. Bolton did. He'd spent plenty of cab-time on the Traverse thinking about product improvements and what ifs. "I told Duane of some contracts coming up that Peterson would be very well suited for. Then I gave him the phone number of the guy in charge." Duane Jr. made the call. It was January 2014.

What the contractor wanted were large rubber-tracked Challengers capable of pulling 100-tons of diesel fuel and supply sleds over long distances in the frigid cold. They'd already put their first-generation machines out on the ice. Based on that experience they had a whole laundry list of improvements they wanted to make. But first they needed to find the right partner. "When I took that call from Duane I was very interested in his willingness to try new things," says Tim Thomas, the Traverse operations manager at the time. "The dealer that had done the earlier machines didn't want to make any changes. They thought the original design was just fine. But they hadn't

“ I've worked for a lot of different programs and places in the world. Peterson definitely stands alone. It's the amount of effort they're willing to put out to go the extra mile for the customer.

– Craig Bolton, Traverse operator, 2012-13;  
current product support supervisor,  
Peterson Trucks, Redmond

”



## THE US ANTARCTIC PROGRAM

The National Science Foundation manages the US Antarctic Program, which includes managing facilities, infrastructure, and a contractor charged with operating three Antarctic research stations, two research vessels, and many seasonal field camps. The three US Antarctic research facilities include McMurdo Station, located on Ross Island; Amundsen-Scott South Pole Station, located at 90 degrees South; and Palmer Station, located on Anvers Island west of the Antarctic Peninsula. Each station is located in a unique environment, allowing a broad range of scientific research to be conducted across the US Antarctic Program. The South Pole Traverse is the primary means of providing fuel to the South Pole for operational needs. Three round trips from McMurdo Station are made each austral summer season, between October and February.

—from [www.usap.gov](http://www.usap.gov)



Filed April 8, 1947

R. A. PETERSON

3,296,885

ACCELERATOR SYSTEM FOR MULTIPLE ENGINE CONTROL

Fig 4.

## THE MCMURDO—SOUTH POLE TRAVERSE

The purpose of the Traverse is to transport fuel as efficiently as possible to the South Pole Station because they require diesel fuel to generate electricity. The current operation is the culmination of years of developing and refining the South Pole supply line, a 2,060-mile round trip between McMurdo and the South Pole Station.



*Top to bottom: The Traverse takes one month, covering over 1,000 miles at 7 mph. Fassi cranes allow repairs in the field; More than 300,000 gallons of fuel is delivered to the South Pole station every austral summer.*

Before the Traverse, they flew diesel fuel in by DC-3s, and later LC-130s—both very expensive delivery systems. In 2000, someone floated the idea of a traverse route. It took four years to build a proof-of-concept and pioneer a viable course to prove it could be done. A Cat D8R, a Challenger 95E and a Case Quadtrac were all part of the fleet that finally succeeded. In 2006, the first round-trip operational Traverse was completed using steel tanks on skis. Today, the Traverse has evolved to heavy-duty plastic bladders pulled behind customized rubber-tracked Challengers. With the addition of the Peterson 9, there are now two teams who make the trek in five-to-six weeks.

Working out on the ice brings its own hazards besides the extreme temperatures. “You’re driving across a couple miles deep of snow and ice,” explains Craig Bolton, Traverse operator on the 2012-13 season. “Everything is moving so crevasses open

up and then bridge, or freeze, over where you can’t see them.” That’s why each operator is equipped with climbing gear, harnesses, and special crevasse rescue training. The lead machine is outfitted with ground penetrating radar (GPR) to survey for crevasses, which can be 20 to 30 feet wide and several hundred feet deep. “Before GPR, they lost some machines but thankfully no people,” says Bolton. “The bridge [of ice] wasn’t thick enough so the tractors just fell through.” And the risk never goes away. There are two five-mile sections on the trail where everyone is required to wear their climbing harness inside the cab.

Each Traverse team is self-sustaining. Essentially, they tow their own camp. One tractor pulls a 40-foot living module and generator module. A second tractor pulls a toolshed—a 20-foot container of repair parts for the tractors—some fuel and additional supplies. The rest of the tractors pull fuel, loaded into big rubber bladders that sit on top of high molecular weight (HMW) plastic. Those big sheets of plastic are hooked to a tow bar, which is hooked to a tractor. They travel in a caravan no more than a mile or two apart in good weather, closer in low visibility. The new Peterson Challengers doubled the fleet to nineteen, giving them a two-team capability with more supply capacity, which was one of Tim Thomas’ goals as Traverse operations manager.



experienced what we had out on the ice.” In February 2014, a bid proposal went out for nine new Challenger tractors customized for the extreme cold. They wanted the first one ready to fly out of McChord AFB (Tacoma, WA) in September so they could test it alongside the original machines on the 2014–2015 Traverse season. The other eight were due by mid-December for shipment from Port Hueneme, near Los Angeles, in mid-January for the once-a-year voyage to Antarctica.

Peterson and three other Caterpillar dealers were invited to bid. “We were up against the Australia-Tasmanian dealer who had done the first set of Challengers,” says Duane Jr. “We didn’t have any blueprints to work off of, just some pictures and verbal descriptions.” What Peterson did have was Craig Bolton. He knew from experience what the Traverse tractors looked like and where their deficiencies were. He’d also worked on the Traverse with Tim Thomas and knew him well. “No one at Peterson knew what a Traverse tractor was or what it had to do,” says Bolton. “They knew absolutely nothing about it. But everyone involved was 110 percent open to my ideas and suggestions. They needed someone to tell them what needed to be done. So all those times out on the trail when I’d thought *This needs to be different* and *Why wasn’t it done this way*—I was able to put all those ideas down on paper and we just ran with it.”

Peterson won the bid in March 2014 and started gearing up. It stipulated nine rubber-tracked MT 865C Challengers with 525-hp Cat engines. At the time, AGCO-Challenger was just switching over to the Swedish-built Tier 4 SISU engine, which uses urea (DEF) to meet emissions compliance. Ironically, emissions issues are the exact opposite in the polar regions because urea freezes. Randy Grimes, Peterson’s Ag GM, was quick to snag the last nine Challengers off the assembly line with Cat C18 engines in them. “We didn’t have a P.O. yet, but they were slated for us,” says Joe Frati, the project manager who converted Portland’s old

weld shop into a new dedicated Challenger Shop. “By the time we had the shop organized and ordered the parts we thought we’d need, the tractors were starting to show up.” It was finally go time.

The first machine arrived at the end of April. “*Hero* was our prototype—the one we learned on,” says Mike Stubb, lead mechanic on the project. “Later on, we were still making refinements but by then it was a little more like production work. *Hero* was my favorite because we spent so much time on it, trying to work out all the bugs. It was the first-born.” By the time the Peterson 9 were commissioned and out on the ice, Thomas reported only three minor problems—all AGCO factory warranty issues—from the thousands of man-hours put into the project.

“ Hero was a homerun. It did everything better than we thought it would. It out-pulled and outperformed our other tractors because of the modifications we made. For us, that was huge.

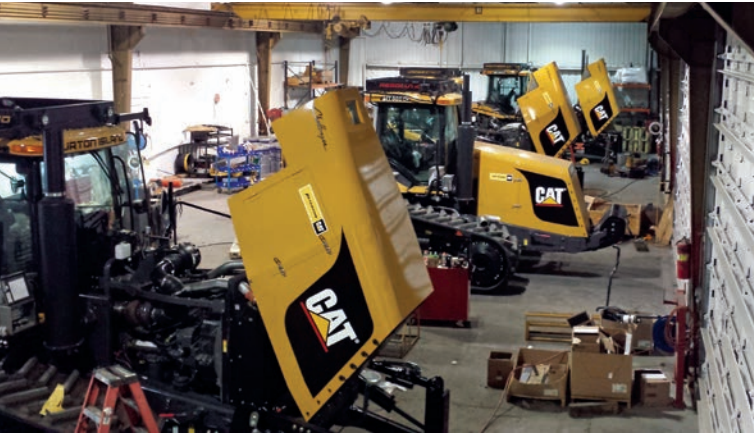
– Tim Thomas, South Pole Traverse operations manager; current project manager, Peterson Power



*Hero—the prototype*

The team of technicians fluctuated based on need, but Mike Stubb and Bill Roberson were the mainstays along with ThinkBIG apprentice Taylor





*Top to bottom: Challengers in process in Portland shop; 3 of the main team members (R-L) Bill Roberson, Joe Frati and Mike Stubb (in back)*

Koch.<sup>1</sup> Portland's fab shop built custom parts as needed since the very idea of a prototype requires pioneering solutions. The contract called for several equipment changes—some major redesigns, others more basic. “Everything we did had to be rated to 40 degrees below zero. That was our target,” says Frati. The Challengers were built in two configurations: three had Fassi knuckleboom cranes on the back; the other six had large 16-ft-wide Grouser blades on the front. Each machine took six weeks to complete and cost just under half a million dollars. In the end, they replaced the Case Quadtracs and doubled the traverse fleet to nineteen machines. The new generation of machines are tough, customized power walkers capable of pulling 100-ton loads at 7–13 miles per hour.

The most significant change to the machine was the engine hood. “On the previous generation, you had to remove twelve bolts, take off the grill, and remove six more bolts down each side of the hood before you could hydraulically lift it up,” explains Bolton, who'd tangled with his share during the 2012-13 Traverse season. “All that takes a tremendous amount of time and when it's thirty or forty below, the last thing you want to be doing is trying to get out a bunch of M-10 bolts so you can get the hood up to even begin to figure out what's wrong.” With the old-style hoods, it took a half hour to get to the engine. Now it's a matter of undoing a few buckles and powering up the hood. One minute, tops.

The standard factory hood was a vented fiberglass piece, which didn't work in sub-zero conditions. “If there's even a tiny crack, the engine compartment will fill up with snow when parked because of the driving winds,” says Frati who designed the new aluminum hoods to completely enclose the engine. “Eventually that snow will turn into ice that's pretty hard to thaw out when you're in the middle of the Antarctic at twenty degrees below outside.” The custom-designed hoods have a hydraulic lift

<sup>1</sup> ThinkBIG is a 2-year Cat-specific program, which earns an Associate's Degree in Applied Science. See CH20 ThinkBIG, on p317.





*Top to bottom: Northwind front view; Northwind with Fassi Knuckleboom*

system that operates three different ways. “Because what happens if they don’t have any power? How are they going to lift the hood?” says Bill Roberson (retired 2018), who did all the hood modifications. “We addressed that. All the trial-and-error it took us to get there was pretty phenomenal. I’m really proud of that hood lift system.”

Accessibility was a primary focus for the team throughout the project. “We were constantly thinking of the other guys who would have to work on these machines a thousand miles from nowhere, in eight feet of snow,” says Stubb. The knuckleboom cranes are a great example. The contractor specified Italian-made Fassi cranes because they wanted to standardize their fleet. The ones that came in, however, were built for the back of a truck like a roofing contractor might use. “I had a tough time getting the hydraulics on the crane to play nice with the hydraulics on the machine,” says

Stubb. “They were two different systems. Definitely not plug-n-play.” The quick, obvious place to install the control valve would have been a big inconvenience for anyone working on the machine later. He ended up installing it in a place “the other guy” could access easily. “We wanted to make sure we got it right,” says Stubb, “because that’s a heckuva time to find out the seal isn’t right or something didn’t get tightened down enough, out there in the freezing cold.” Once the cranes were synchronized to the machine, the operator could lift loads from inside the cab, making life much easier out on the ice.

Many of the modifications came through group brainstorming sessions. The louvered belly pan vent system was one. Its purpose was to retain heat in the engine compartment during the night and ventilation for airflow during the day. To do that it had to be completely enclosed and sealed up. “Those trapdoors helped retain the heat so the engines would stay as warm as possible through the night,” says Frati. “In the morning, they let

## NOT YOUR TYPICAL AG TRACTOR

The Challenger project was a big win for Peterson. “We sold nine Challenger tractors, which has had huge implications on Peterson’s ag market share,” says Duane Jr. “It has been a very high-profile project at AGCO.” It has also shown ag customers the lengths Peterson will go to help a customer. In November 2014, the Northwind went on display at the annual Linn County Ag Show. “It’s been quite an accomplishment to be able to say we literally built a tractor for the toughest environment on the planet,” says Duane Jr. “We had thousands of people coming into our booth saying, ‘What is this thing? It’s cool!’ And then next door, all the John Deere guys were saying, ‘What is that thing? That’s cool you guys can do that.’ ”





the heat build up with the louvers closed and then open them to let the engines breathe when they're ready to roll." The trapdoors look a lot like louvered slats on a window, an ingenious design drawn up by Jerry Boon, Peterson's engineer in Portland. "I was amazed at how smooth they worked," says Roberson who did much of the work on those trapdoors. "It's so smooth and easy to operate a three-year-old could do it."

The heating system on each tractor was another significant change. At the end of each day, the operators would circle their machines around whoever was pulling the generator. "Each tractor has two different extension cords that go from a power box on the side of the machine to the generator, which runs on 120 volts," explains Roberson. The heaters are located both inside the cab and inside the engine compartment. "They plug in all the machines, shut the louvered belly pans, and turn on the heaters so everything stays nice and toasty inside." The year Bolton worked the Traverse, one of the operators set up a radio station inside his cab. "He actually broadcast out what he wanted to play and anybody who wanted to could listen in. Other guys would watch movies or read since all they had to do was make sure the machine stayed on course and everything was kosher."



Top to bottom: Peterson's Challenger crew in Portland with the Challenger 'Wyatt Earp'; Line up of Antarctic Challengers in Portland yard; Challenger 'City of New York'; Challenger 'Floyd Bennett'





The Peterson team executed several other designs from Bolton’s wish list. “We did a lot of things differently than the original design tractors because we had a different vision,” says Frati. Like the new roof racks designed for storage. Each operator is outfitted with mandatory survival gear in case of a whiteout or if a machine falls into a crevasse. On the first-generation machines, all that gear was stored inside the cab or on the back. Now it goes on top in a special heavy-duty storage rack with attached headlights. The name of each machine is proudly stamped into a metal plate on the front of the rack—another addition that pleased the customer. *Hero*, *Southern Cross*, *Floyd Bennett*, *Wyatt Earp*, *Northwind*, *Resolution*, *Burton Island*, *James Caird* and *City of New York* are all names of ships that sailed to Antarctica as part of its exploration. Each has a story, further imbuing their modern namesakes with the significance these current machines have to the Traverse mission.

For everyone working on the project there was a deep sense of satisfaction and pride—even fun—during the long hours and mad rush to the finish. “We tested the crap out of each machine before it left,” says Frati. “We actually tried to overheat *Hero* out here in the yard. The maintenance guy came running out, yelling at us because of all the dust we were kicking up. It was pretty funny. But we just wanted to make sure everything was dialed in right.”



“ When you look at these machines, they look like they rolled off an assembly line and that’s the way they were always meant to look.

– Tim Thomas, South Pole Traverse operations manager; current project manager, Peterson Power

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*Top to bottom: Twin Otter ski plane brings doctor to traverse crew somewhere on the Antarctic plateau, with Challengers parked around traverse living quarters; Hero’s travels to the South Pole*



“ Teamwork is what made this whole process successful. Hero did everything better than we anticipated.

– Tim Thomas, South Pole Traverse operations manager; current project manager, Peterson Power

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Perhaps the biggest compliment the Peterson team received came from Tim Thomas. “When you look at these machines, they look like they rolled off an assembly line and that’s the way they were always meant to look. People who see them for the first time are surprised when they hear they’re modified; they just think they’re a new model Challenger because they look like a finished product.”

In the end, everybody was very excited to see the final result. Dozens of people came out to the airfield to see the first machine arrive. “When that first tractor rolled off the C-17 at McMurdo, there were so many people out taking pictures. It was a very big deal,” says Thomas, regarding the tight-knit polar community. “A lot of people didn’t think we’d make the deadline. It was a huge challenge. But the guys at Peterson really went the extra mile to make it successful for us.” Having spent time

on both sides of the project, Bolton has a unique perspective: “I’ve worked for a lot of different programs and places in the world. Peterson definitely stands alone. It’s the amount of effort they’re willing to put out to go the extra mile for the customer. It doesn’t seem to matter what the cost or the time involved. They are always willing to make sure things are done right.”

## BUILDING A TEAM

Teamwork was the lifeblood of the project—both at Peterson and with the customer. When Thomas took over as Traverse operations manager, the first thing he noticed was the dire need to streamline the procurement process. “Growing up in a construction family in Raleigh, North Carolina, I knew what it was like to work with a Cat dealer and this wasn’t it. There was no connection, no one to call. When I got here, there were large parts orders over \$50,000 each that had never been filled. That was something I really struggled with. They didn’t understand the difference between a Cat part and ordering something from a Napa Auto Store. For me, that was a big problem.” Over the course of the project, Thomas brought several key people to Peterson so they were able to put faces to names and build relationships.

“Once we started working with Joe [Fрати] and Duane Jr. and Randy [Grimes], it all jelled,” says Thomas. “It became a team effort. Going in, we had a basic outline of what we wanted done but then it became more of a collaboration.” According to Frati, there were a lot of ideas going back and forth. He would do conceptual drawings on his computer for Thomas, who would then give his feedback. “In the end, teamwork is what made this whole process successful,” says Thomas. “*Hero* did everything better than we anticipated. It out-pulled and out-performed all our other tractors because of the modifications we made. For us, that was huge. It was a definite homerun.”



*The Antarctic Challenger Team*



Every member of the Peterson team was proud to be part of the historic project. Their many innovations showed a deep sense of pride, craftsmanship, and moments of brilliance. It was a way of putting their stamp on a piece of history. “This is the best team I’ve ever worked on,” says Roberson. “Joe Frati was the brains of the operation.”

Mike Stubb concurs. “Usually someone wants to be in charge and be the hero and tell everyone else what to do. But there was none of that. Joe would grab a pair of coveralls and come out and start welding or doing whatever he could to help.

The worst part of this project was that it came to an end. We really had a good time. There were definitely times where we were beating our heads up against the wall trying to figure things out, but it was a lot of fun. I’m looking forward to doing more.”

The last day was bittersweet. “That was one of the happiest and saddest days of my career,” says Frati. “I was glad it was finally coming to a close because it was a lot of work. But it was sad to see the project end because it was so much fun. It was an epic project. A project of a lifetime.”

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#### POSTSCRIPT:

In 2014, long-time Peterson customer Glen Ghilotti bought one of McMurdo Station’s old Stretch D8s, *Mary Ann*, from a federal auction site. At one time McMurdo had a fleet of SnoCats and other Cat machines used to build and maintain the research station. According to Tim Thomas, the last group of Stretch 8s was produced in the 1950s and operated up until 2014 when they were all sent back to the States to be sold. “Those Stretch 8s were built by Cat in Peoria, which goes back to the SnoCat design from Peterson. With all the history between Peterson and Caterpillar, you can definitely see how a lot of things from the Peterson side blended back in.”



*Glen Ghilotti bought SnoCat, Mary Ann, in 2014. He purchased Mary Ann’s sister, Rebecca, a few months before he died unexpectedly in March 2018. Unfortunately, he wasn’t there to take delivery. Glen’s historical fleet—along with Mary Ann and Rebecca—now belong to his children, Kevin and Jennifer Ghilotti. Glen with his son, Kevin Ghilotti at bottom right.*





*McMurdo crew with new Cat 160M2 motor graders*

## **MORE EXTREME WEATHER MACHINES**

The Antarctic Challenger project opened the door for Peterson to other extreme weather machines in the polar regions.

In September 2014, Duane Jr. received a phone call from the US Antarctic Program's prime contractor to discuss new equipment. "We ended up with a contract for two D7Es and two 160M2 motor graders with Tier 3 engines," says Duane Jr. "Tier 4s wouldn't work in the environment down there—same as the Challengers."<sup>2</sup>

The modifications were significant. Each D7E took 900 hours to complete; the 160Ms took 325 hours a piece—plus all the Cat updates required. Portland shop tech, Desery Hayden did the D7Es. "We basically tore the machines down to the frame. Then we sent the components over to the component shop to get their up-fits and product improvements. And then we did all the cold weather requirements to make sure they would withstand the elements of Antarctica."

"We installed diesel-fired burners to keep the coolant warm while the machines weren't running," says Hayden. "And we put custom curtains on the radiator shrouds and tin-wear to keep the snow out. And each battery had its own heating pad system that wrapped around it and plugged into a heating element." Most of the specs were relayed verbally so "you basically had to be both a mechanic and an engineer on the fly."

At the same time, the Portland weld shop customized the D7E blades, widening and shaping them like a U dozer for a larger capacity. They also added bolt-on serrated edges to texture the ice on the runways, which would create friction to help the planes stop when landing.

All four machines delivered in time to make the once-a-year supply ship to the Antarctic. But it was crunch time all the way to the end. Today they are at McMurdo Station as part of the fleet that maintains the airfield and research station.

<sup>2</sup> Tier 4 engines come with DPF filters that use urea-based fuel called DEF, which not only freezes in the South Pole region but would also require another type of fuel to be brought in and stored at an additional expense.



## THE FOUR HISTORICAL SOUTH POLE STATIONS

### 1911 AMUNDSEN'S TENT

- First human presence at Pole
- Erected by Amundsen 12/1911 (Norwegian)
- Materials hauled by dogs
- Scott reached this tent 1/1912 (British)
- Scott and his men carried their gear without dogs

### 1956 NAVY STATION

- Built by US Navy in 1956 for International Geophysics Year
- First structure at Pole for scientific purposes
- Capacity: 20 people
- Materials flown in by DC-3 plane
- Never intended to be a permanent structure

### 1975 AMUNDSEN-SCOTT S. POLE STATION

- Built by the National Science Foundation (NSF) in 1975
- Iconic geodesic dome building
- Mid 90's brought communication through e-mail to the station
- Capacity: 30 people / 80 more in huts

### 2008 NEW AMUNDSEN-SCOTT S. POLE STATION

- Elevated station
- Construction by NSF began in 1997
- Dedicated in 2008 for 4th International Polar Year
- Capacity: 150 with a 65,000 sq. ft. footprint
- Has windows, greenhouse, and is networked

Credit: Zina Deretsky, National Science Foundation



Left to right: Geographic South Pole marker; 2012-13 Traverse crew arrives at the South Pole on January 2, 2013. Craig Bolton pictured second from left.





*Oroville Dam's main spillway on February 28, 2017 three weeks after the big deluge.*





## OROVILLE DAM

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### OROVILLE SPILLWAY EMERGENCY REPAIR PROJECT (2017–2020)

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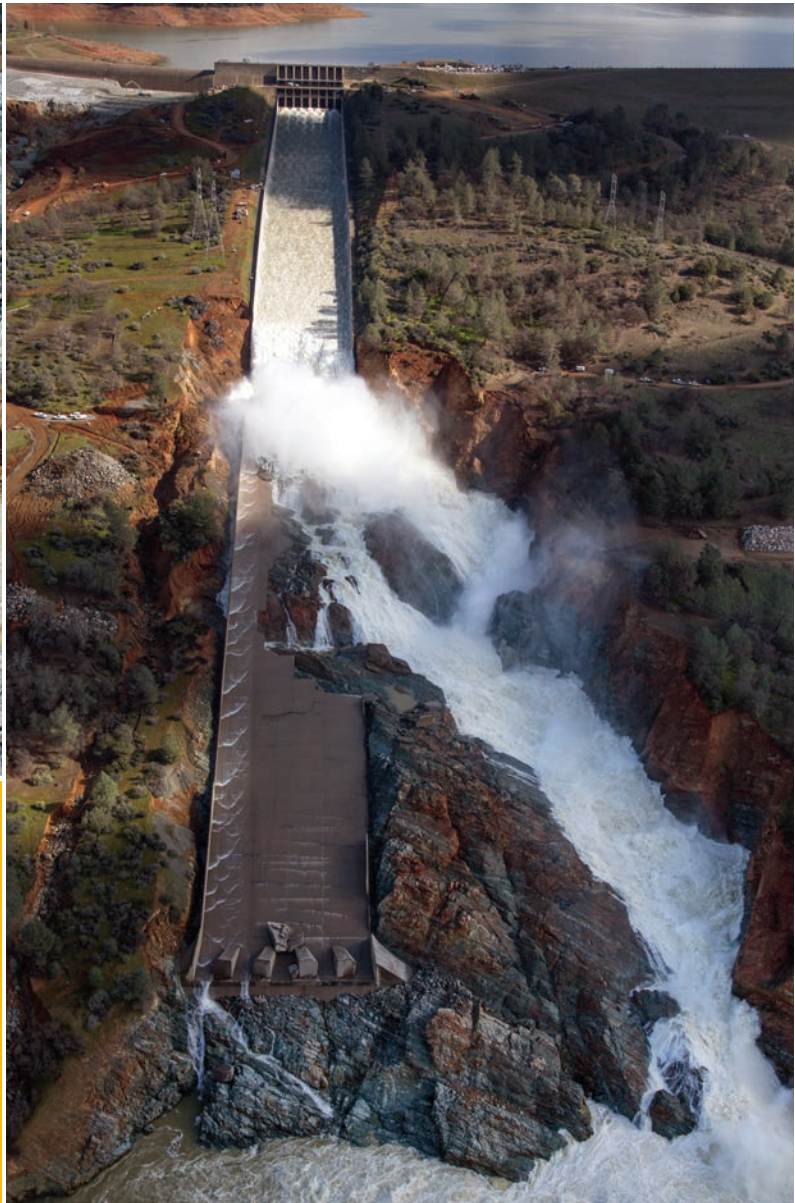
**I**n February 2017, Oroville Dam’s main spillway broke, shooting panic downriver. The event set off a series of cascading problems that took three years to clean up and restore. Today, with the spillway rebuilt and upgraded, it looks like nothing ever happened. But back then, the unprecedented crisis held the surrounding communities in fear and uncertainty for several weeks.

The Oroville Dam holds a very special place in Peterson’s history. The original dam, along with all the preliminary work, earned Peterson its first territory expansion back in 1958. It was, in fact, what took Peterson to the next level. Sixty years later, Peterson was back on the job, this time supporting those that would repair the spillway failure of 2017.

It happened on a wet Tuesday morning—February 7, 2017. Someone from the California Department of Water Resources (DWR) noticed an unusual pattern in the water flowing down the main spillway. That was cause for concern since Lake Oroville was near capacity and needed to release the extra water. And Plan B—the emergency spillway to the north—was just a long, narrow lip of concrete with a wooded hillside down to the Feather River below. And it had never been used before. Already, the 2017 season was shaping up to be the wettest on record in 35 years. And with three more big storms in the forecast, it was a crisis in the making.

Once the main spillway was shut off to investigate, DWR officials realized they were trapped in a catch-22. Either continue to use the main spillway, causing further damage, or use the emergency spillway and send tons more dirt and debris down into the Feather River. Ultimately, they opted to use the main chute. For most of Friday, February 10, the main spillway looked like a miniature version of Niagara Falls as water spewed down the damaged concrete chute. First responders came by the truckload—DWR, CAL FIRE, the Sheriff’s Dept., local news outlets, and others. It was so bad, in fact, that the governor declared a state of emergency.





“ Peterson supported us well. Whether it was robbing something off one of their own machines or doing whatever they could to get it out of the factory, they did whatever it took to get us the parts we needed.

– Joe Whelan, equipment supervisor,  
Kiewit Infrastructure West Co.

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*The aftermath of the Oroville spillway break in the spring of 2017*





*Dredging the Feather River for debris from the spillway break of February 2017*

On February 12, local officials evacuated 188,000 people in the downstream communities, just in case. By the time the situation was neutralized, a deep canyon split the top from the bottom of the 3,000-foot-long spillway.

Once the first responders left, Dutra and Lund Construction worked around the clock dredging a million cubic yards of debris out of the river and stockpiling it for reuse later. In early April, four contractors were invited to bid on the job. At \$275.4 million, Kiewit was the lowest bidder, but only by a little more than a million dollars. “We had never bid a job so quickly,” says Joe Whelan, Kiewit’s equipment supervisor. “They announced it on April 6. Ten days later we had the contract. The following Monday, we started moving in equipment.” According to Dave Nipar, Peterson’s local parts & service rep, “Kiewit was the only contractor who could deliver this contract because it has the global reach, the resources, the experience, and the manpower to mobilize that quickly.”

“When I got there, the old spillway was just a huge hole,” says Scott Shockman, Kiewit’s equipment manager, who arrived on May 21. “It was like looking down into a canyon, probably 150 feet deep. Some of the blown-out chunks of concrete at the bottom were the size of a semi-truck. It was amazing. I’ve never seen anything like it before.”

And the rain just kept coming, fueled by a series of atmospheric river storms off the coast—often called Pineapple Express storms. The DWR had no choice but to use the main spillway to siphon off the excess water out of Lake Oroville, to get them through the rainy season. By March, that initial pothole had grown to a gaping crevasse, in some places three hundred feet deep.

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## ENTER PETERSON

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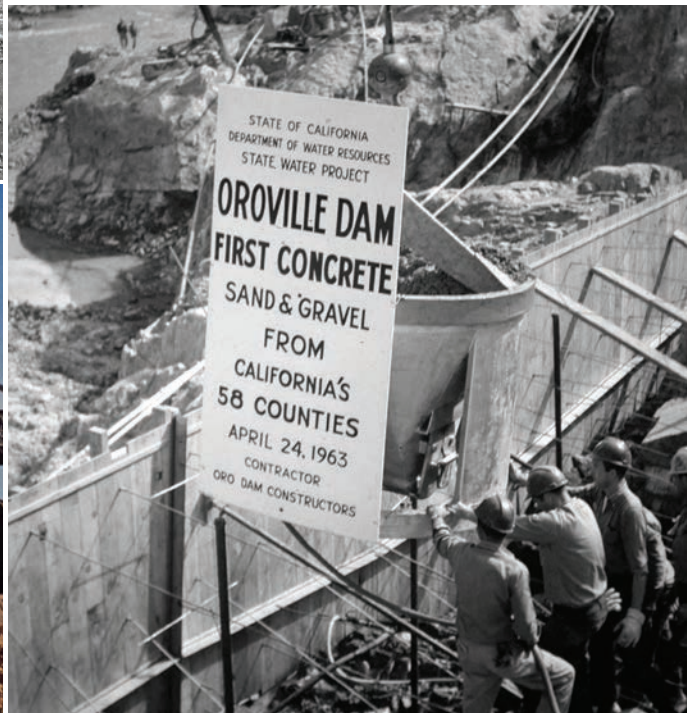
Severe weather and flooding have always been a problem in the northern reaches of the Central





Valley. The flood of 1950 sparked the idea of a collection and distribution system to divert water away from towns and deliver it to the thirsty south. The Christmas Flood of 1955 finally pushed the plan into action five years ahead of schedule. Oroville Dam was the first installation—and key-stone—of the new State Water Program.

Preliminary work began in 1957 with the relocation of Hwy 40 and the Western Pacific railway out of the future reservoir’s lakebed. “Contractors



Original construction of Oroville Dam in the 1960s. Buster-built Quad D9 pictured at top. (Center) Oman used a giant wheel excavator to harvest the old mine tailings for fill material on the dam.



on those preliminary contracts were all headquartered in the Bay Area,” says Bill Doyle, who had been manager of Peterson’s new Chico store at the time. “They already knew us because we had supported them multiple times on other jobs. And they were accustomed to our level of product support.” Sometime in 1957, Guy F. Atkinson, among others, went to Caterpillar to request that Peterson be given the territory—and Cat listened. In July 1958, Peterson was officially awarded the territory formerly held by Sierra Tractor & Equipment Co. out of Redding and Chico. Peterson’s new Chico store was built specifically to support the dam construction.

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### OMAN (1960S)

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Oroville Dam was a game changer for Peterson. It not only earned new territory for the young Caterpillar dealership, but it pushed the limits on how to support such mammoth earthmoving projects. Peterson made heavy use of its parts drop system, begun a few years earlier at Trinity Dam. Oroville was also the main reason for bringing the nightly shuttle truck up north, according to Fred Knowles, Peterson’s parts truck driver (1965-95). And for expediency in parts deliveries and technical support, Peterson built landing strips behind both of its new facilities in Chico and Redding. The dam also used a number of custom-built machines including Quad D9s, a special dual 631 compactor, and customized 100-ton Athey bottom dumps—all designed and patented by Buster Peterson.

Back then, the bid went to Oro Dam Constructors, a joint venture of six giants led by Oman Construction out of Nashville. The contractor chose to use a railroad system to transport material from borrow pit to dam site, a giant bucket-wheel excavator and transfer conveyors, plus scores of traditional earthmovers—including fourteen Cat D8s, eight Cat D9s, twenty Euclid end-dumps,

and twenty Cat 660 wheel tractors with Athey bottom-dump wagons. In the end, the main Oroville dam contract moved 14,767,000 cubic yards of material and used 77,520,000 cubic yards of earth fill and 320,000 cubic yards of concrete in the embankment wall.<sup>1</sup> At 770 feet high, Oroville continues to stand as the tallest earthen dam in the United States.



*The Oroville Dam—here on Jan 6, 1967—was completed on Oct 6, 1967*

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### KIEWIT MOBILIZES (2017)

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In May 2017, Kiewit was able to hit the ground running because of Oroville’s emergency status. And because Kiewit is, well, Kiewit. “There were a lot of things that were unique for Oroville,” says Whelan, who was on-site April 24. “Due to the emergency nature of the job, the governor gave us an emergency variance to bypass some of the permitting. We secured all the permits eventually, but we didn’t have to wait for them before getting started. That’s why we could mobilize and get the pads poured for our fuel farm, our shop, and the wash bay in three weeks. They pull out all the stops when life is on the line and personal property is endangered.”

1 Stats provided by Historical Construction Equipment Association (HCEA) archivist, Tom Berry.



The real eye-opener for Whelan happened even before he walked the site at Oroville. “We flew out to our Northern California office for an internal meeting to review what the job entailed, and then met with Peterson to notify them of some rough quantities of equipment we would need. When we showed up at the San Leandro dealership, there were twelve to fifteen guys sitting around the table waiting for us. That meeting was when I really started to get a feel for the monumental task ahead. From that meeting, it was basically ‘get ready for the long haul.’”

For Peterson, the mad dash was on to locate the machines Kiewit needed. “Rich Fregulia was instrumental in getting us the equipment we need-

ed,” says Whelan, of Peterson’s salesman. “I don’t know where he went to get stuff, but he pulled some rabbits out of his hat for us. He kept us in the know on when we’d be receiving things. Peterson also provided us with loaners while we were waiting for our new equipment, which you just don’t see very often.”

At its peak, Kiewit had over 1,000 pieces of equipment on the dam, including 150 pieces of heavy equipment, 100 pickups, 13 giant Liebherr cranes, plus light towers, generators, and chillers. “We brought equipment in from all over the nation and Canada,” says Whelan. “The equipment never quit rolling in all the way up through October of 2017. Every time there was a quantity increase or they wanted us to do something more, we would add more equipment.”

“ Rich Fregulia was instrumental in getting us the equipment we needed. He pulled some rabbits out of his hat for us.

– Joe Whelan, equipment supervisor, Kiewit Infrastructure West Co.

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(L-R) Duane Doyle Jr. with Kiewit’s Joe Whelan onsite in August 2017

## PHASE ONE (2017)

Going in, Kiewit knew that time would be its biggest challenge. It had just five months to get both spillways ready for the next rainy season. “Even before we started, we had a hundred people helping us gear up for the job,” says Jeff Petersen, Kiewit’s executive project director for the Oroville Spillway Emergency Repair Project. “From estimating to getting contracts reviewed to inspecting equipment nationwide and getting it all mobilized. And that was just getting started.” From there, Kiewit moved in and set up a support camp, complete with offices, conference rooms, parts stock, repair shop, parking lots—the works. And then began the real job of excavating the dirt and debris left over from the massive spill.

Kiewit had been on the job for a month when DWR called in the team to discuss some revised goals. The regulatory agencies wanted the main spillway operational by December 1 instead of December 30, the original deadline. That meant the concrete work had to be completed by November 1 to allow it to cure for potential operation on





*Top to bottom: Main Spillway with Liebherr cranes as transport system in September 2018; Pouring concrete on upper chute of main spillway at night in October 2018; Placing RCC on emergency spillway splash-pad in August 2018*

December 1. “We had to re-phase how much of the spillway would be permanently constructed—versus temporarily—to get through the rainy season,” said Whelan. “We also had to do a lot more excavation in the deep crevasse, which would require a significant amount more of roller-compacted concrete (RCC) to fill the hole. And that meant a lot more crushing. All that changed how we procured our materials and the concrete we’d be batching. It changed a lot of things.” Kiewit used RCC as a temporary fix for the main spillway and a permanent solution for the emergency spillway. All of it was batched right there at the site using on-site materials.

“Roller-compacted concrete is extremely durable, just like concrete,” explains Nipar. “It’s a quick placement you can load into off-road trucks, dump,







*(L-R) Duane Doyle Sr., Bill Doyle, and Duane Jr. visited Oroville Dam in August 2017 for Bill's 87th birthday. He passed away six months later. The original Oroville Dam construction was a key event in Bill's early career at Peterson.*

smooth out with a small dozer, compact, and you're done. It's thick like oatmeal, so you don't normally have to do any forming. And the dozers won't sink in it." Kiewit crushed over 2.5 million tons of reclaimed aggregate, primarily to make the one million cubic yards of RCC it used for both spillways.

"From the beginning, we knew it was going to be a two-season job to complete the spillway because of the amount of work," says Petersen. "We weren't

going to be able to get the final concrete done on that middle chute where all the big holes were, the first year. Instead, we filled that big hole with RCC and built sixteen-foot-high temporary sidewalls so they could use the spillway during the winter." That winter turned out to be much milder than the previous one, so the spillway never had to be used.

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## PHASE TWO (2018)

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At the start of Phase Two, Kiewit demolished the temporary walls and floor slabs on the middle chute and crushed them for RCC. Then it was all about getting the entire spillway fortified and poured in construction-grade concrete, and complete again by November 1. Kiewit installed thirteen 300-ton Liebherr cranes as an aerial transport system up and down the 3,000-foot-long spillway. "Crews built crane pads and set up the cranes strategically so they could all reach certain areas and get the spillway and side walls up quickly," says Nipar. "Those cranes moved everything—generators, excavators, light towers—whatever was needed to get the job done. The team also tied millions of pounds of rebar on the walls and slabs and moved them down the spillway by crane for placement."



*Left to right: Meticulous cleaning of bedrock to insure a clean bond between concrete and rock in September 2018; Breaking up the first season's temporary walls of roller-compacted concrete (RCC) in May 2018*





*Top to bottom: Oroville Dam's emergency spillway was finished with RCC in a stair-step formation, taken in June 2018; Removal of temporary road just below new main spillway, used during construction, taken in March 2019*





*Left to right: Two of Buster's original Quad D9s (No. 107 & 109) were used on the Oroville Dam project in 1964-65; Oman used a railroad system with automated railcar tippers to transport materials instead of a traditional fleet of scrapers and haul trucks.*

Once the foundation was cleaned to an immaculate finish, Kiewit crews started filling in the canyon's nooks and crannies with RCC. They also drilled and installed long steel tie rods deep into the bedrock as an additional down-anchor to hold the new concrete slabs in place. Layer by layer, they built up the main spillway in stages across its 250-foot width. The final layer was erosion-resistant, high-strength concrete, up to three feet thick, for a smooth and durable finish.

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## EMERGENCY SPILLWAY

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During the emergency spillway's first-ever use in February 2017, the hillside sustained large gouges which first-responders filled with bags of rock and riprap, glued in with slurry as a stopgap during the crisis. Once things settled down, Kiewit removed all those temporary fixes and dug down to bedrock. Kiewit's subcontractor, Drilltech, installed a new secant pile wall on the downstream perimeter for further protection. The underground wall consists of 600 individual 36-inch diameter piles built into bedrock up to 65 feet deep. It will prevent any erosion should use of the emergency spillway be required again.

<sup>2</sup> "Oroville Dam", Goodyear's BIG magazine, July 1967: Vol 23, No 3, p3

Once the wall was complete, the soil was excavated to rock and replaced with a minimum of ten feet of RCC to make it permanent. "Crews placed RCC on the emergency spillway in a stair-step formation to direct water flow," says Nipar. "They did not top it with construction grade concrete because it's just for emergency use." Instead they poured a 10-ft thick splash-pad, both above and below the underground stabilizing wall, which now looks like a giant concrete amphitheater.

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## TECHNOLOGIES OF THE DAY

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Like Kiewit in 2017, Oman Dam Constructors used progressive methods and equipment to get them over the finish line. According to Rodney Mims, Oman's project manager at Oroville in the 1960s, "This job was pre-planned, and carried out just as we originally planned it. Looking back, I don't see any better method that could have been employed."<sup>2</sup> They moved a total of 80 million cubic yards of material with a final price tag of \$439 million. The job was considered the most highly automated of its kind in the 1960s, involving an astounding volume and variety of equipment, much of it specially designed. "Such a project would



not have been feasible 20 years ago,” says Mims, “because the type of equipment necessary to perform the work was not available. Now because of Oroville Dam, the highly sophisticated construction equipment is on the market.”<sup>3</sup> BIG Magazine continued to cite ‘more than 1.5 million railroad cars made the trip from the tailing dump to the dam. The railroad handled more than 300 million gross tons of cobblestone’. At the time, Oroville Dam was considered one of the marvels of the heavy construction industry.

## TECHNOLOGY AT OROVILLE TODAY

Technology has come a long way since then and Kiewit’s jobsite reflects that. So does Peterson’s level of product support. Computers have changed the way the world works, and certainly how Peterson supports its customers. From parts ordering and equipment diagnostics to communications and smart tractors, computer technology has completely transformed how we do business.



*Machine control technology used on the Oroville Dam spillway project*

3 “Oroville Dam”, Goodyear’s BIG magazine, July 1967: Vol 23, No 3, p4



Machine control guidance systems and project management tools from Peterson gave Kiewit the dexterity needed to meet its tight deadlines. GPS technology yielded precision guidance within millimeter accuracy. Kiewit's hi-tech equipment included drones, base stations, rovers, robotic total stations, heavy equipment GPS guidance systems, and the software to run it all. Even its batch plant production and site security program were linked in.

In the planning stages, Kiewit used specialized software to digitize the old plans the DWR had on file from the 1960s and compared them to what its



“ I got calls from the customer any time of the day or night. When they're up, you're up. When they need something, you go.

– Dave Nipar, parts & service sales rep, Peterson-Cat, Chico

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drones were recording in the present. “A project of this magnitude would take three to four grade-setters multiple days to complete an ‘as-built’ topographic map of the surface,” explains Chris Mata, Peterson's machine control sales rep. “But Kiewit's drone allowed one person to do it in 30 minutes and provided real-time volume quantities and progress updates for managing the site.”

## PARTS ON-DEMAND

Peterson's parts support has changed drastically since the 1960s. Today, customers can use PartStore<sup>4</sup> to order all their parts themselves. Online. 24/7. “Kiewit had a group of people who did all their parts ordering on PartStore,” says Nipar. “Then we ran two to three parts trucks a day up to the spillways. Kiewit had a huge onsite facility for all their cutting edges, tips, wear plates and undercarriage parts. All they wanted from us was to deliver the parts. They inventoried it themselves onsite because our Chico store just wasn't large enough to handle it all.”

Caterpillar was recovering from a worldwide parts shortage at the beginning of the project, so inventories were low and parts were often hard to get. “Caterpillar's inventory was depleted because they weren't expecting the demand to be as great as it was,” states Milt Taylor, Peterson's Chico product support manager at the time, who retired in 2019. “All the contractors were getting busy at the same time. It wasn't just the dam. Everyone was trying to get parts and Cat's supply depots were just not stocked for it. Everybody was scrambling. We were flying in parts from the East Coast to keep the customer going.”

There was also a big learning curve on the parts side for both Kiewit and Peterson. Since it was a quick-start contract with a tight deadline, Kiewit

<sup>4</sup> Peterson customers can use PartStore or parts.cat.com (PCC) to order parts online 24/7. Cat hosts both, which are essentially the same, although PCC is newer.



had equipment coming in fast from all over the country. Plus, all the new pieces Kiewit bought from Peterson. “There was not really any time to beef up our [parts] inventory because we didn’t even know what equipment was going to be there when it first kicked off,” says Taylor. “When Kiewit started asking for inventory, we were amazed at all the new equipment showing up because it was extremely difficult for us, as a dealer, to get new equipment.” Once equipment began arriving at the dam, Peterson’s product support front man, Dave Nipar, was able to start doing inspections to see what parts they would need in the future. It was a massive initial effort to get all that measured and cataloged and set up for ease of parts ordering going forward. Nipar’s efforts smoothed the way. “The track parts flowed through there the entire time because they were going through undercarriages like crazy. Same with G.E.T. [ground engaging tools] because of the rocky conditions. But once we got it all sorted out and knew what they needed—after that first season—things settled down a bit.”

“Peterson was really a top-notch organization for us when it came to getting all the parts here,” says Shockman. “When something breaks, it needs to get fixed as soon as possible and they understood that. A lot of times I’d call at 8 p.m. to order parts and I needed them *now*. They would hire a courier service to pick up the parts and drive them up here in the middle of the night, straight to the job. That’s what stands out in my mind—getting us whatever we needed and being supportive in every way. I could call them 24 hours a day, 7 days a week and they were there to help.”

Whelan had a similar experience. “When Cat wasn’t able to supply parts on a normal order basis, we had to rely heavily on Milt [Taylor] and Dave [Nipar] to take backroad routes to get us the parts we needed. There were cutting edges on backorder. Duo-cone seals were on national hold, so we had to have other means of getting to the front of the line. Peterson supported us well. Whether it was



“ Peterson was really a top-notch organization for us when it came to getting all the parts here. I could call them 24 hours a day, 7 days a week and they were there to help.

– Scott Shockman, equipment manager,  
Kiewit Infrastructure West Co.

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*Peterson onsite service during Oroville Dam spillway project*

robbing something off one of their own machines or doing whatever they could to get it out of the factory, they did whatever it took to get us the parts we needed.” By the end of the contract in November 2019, Peterson’s parts department in Chico had processed over 30,000 line items for the project. The Oroville spillway project made 2017 and 2018 two of the Chico store’s busiest product support years on record.



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## SERVICE AROUND THE CLOCK

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The service side of Peterson's product support was key to Kiewit's up-time on the dam. With hundreds of pieces of heavy equipment on the job, and round-the-clock coverage, Peterson's Chico store had its hands full. For the first several months, Milt Taylor was Peterson's point man in Chico, fielding all Kiewit calls. "I had the phone stuck to my ear for the first six months until they started building relationships with the people in our store. Then they started calling them direct. And no matter what they asked, the answer was always, 'No problem. We'll take care of it.' Because *no* is not in our vocabulary." To be able to offer that kind of support, Chico got extra help from other stores in the Peterson network. "We still had all our regular customers to take care of. So it was Peterson as a whole, working as a unit that pulled this thing together," says Taylor.



*Peterson field tech, Don Roush, played a vital role on Kiewit's spillway project*

Kiewit had a crew of 21 technicians at the dam to do most of their maintenance and basic repairs. Much of it was done in a giant shop tent set up on containers near the top of the dam. However, service trucks often dispatched out to downed

machines all across the 210-acre jobsite. Peterson assigned two resident techs to Kiewit to help with warranty and proprietary issues and things Kiewit's temporary shop was not set up for. "Typically, we would do all the diagnostics and the difficult repairs," says Taylor. "We did engine overhauls, transmission overhauls, and component overhauls because their shop was not equipped for that. Our resident field technician, Don Roush, would do those onsite or send them to the Chico shop. It's all about up-time, getting the equipment running as quickly as possible and keeping it running."

Roush was onsite from the beginning, working six days a week for most of Kiewit's contract. Peterson field tech Sam Wheeler covered the night shift. Both men logged far more than 8- to 10-hour shifts. Together, they were Peterson's constant presence on the job—welcomed, revered, and relied upon. "We didn't look at them as Cat mechanics or outsiders," says Shockman, "even though they had Peterson written on the side of their trucks. They're just another one of the team. They did the exact same work as the Kiewit mechanics—everything from helping out on inspections to troubleshooting equipment to tearing stuff apart. But they did have different service materials than we did because Cat's not going to give dealer services to customers. That's understandable. So we leaned on them for their expertise and advise when we needed it. They're Cat."

The Oroville job was an eye-opener for everyone. It's still the tallest earth-filled dam in the United States. According to Nipar, "It was so big that it took half an hour just to drive from one side of the job to the other. I've never seen so many machines before in my life at one construction site. I got calls from the customer any time of the day or night. When they're up, you're up. When they need something, you go." During the immediate aftermath of the incident, Nipar was on-call with Dutra while they dredged out the river. "Their machines were on pontoons out on the river, so you got your tools and the field techs, and you hopped





*Cat rental generators and air compressors from Peterson helped power Kiewit's jobsite during the spillway project*

on a boat and headed upriver. It was pretty intense stuff there at the beginning. And all of it was 24 hours a day.”

By the time Kiewit was finished, Peterson’s service totaled 16,600 man hours. That’s basically eight technicians-worth of work for a year. “I have six guys in the Chico field crew, and sometimes all six would be out there on the dam at once. When you have multiple things going on, or you need two guys on a repair because the equipment is so large, that’s when the other Peterson stores would chip in and help out with our regular customers. It was definitely a whole team effort.”

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## CITY ON A HILL

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In addition to all the earthmoving equipment, Peterson had several generators on the job. They were the life blood of the entire operation. The site was like a small city—30 miles from Chico—so all their electricity had to be produced by generators. And they needed a lot of it. From office buildings and A/C and computers to light towers, batch plants and pneumatic hand tools, the project was huge and needed power to keep it running. The spillways also required a lot of generators to power lights, tools, and hydro-washers. And all those generators needed support.





*Kiewit's Oroville Dam spillway project near completion in June 2019*

Peterson's Chico EPG tech, Pete Melchiori, spent a lot of time out at the dam. He was onsite the day after the alarm sounded. "I was down at the main powerhouse, next to the main spillway. We put in a standby generator to back up their generator at the base of the dam that was having a fuel issue. It was critical to have backup power, just in case, because they couldn't be without it." Melchiori was there five days a week, up to sixteen hours a day to support their generators. "Kiewit had at least 20 generators onsite. And every one of them was running continuously because they didn't have any kind of utility power there. Even though there were power lines overhead on the dam itself, generators were powering that entire site."

According to Milt Taylor, "Pete was often there on Saturdays and Sundays too. Whatever it took. And if a generator went down and he couldn't fix it in an hour or so, he'd swap it out with a rental unit because they had to have power." When the demand was greater than one tech could handle, Peterson Power in San Leandro sent up additional EPG technicians to help out. Peterson also provided chillers for their batch plants in the curing process as well as A/C in their onsite offices for their personnel during the long hot summers. Product support efforts reached into just about every corner of Kiewit's contract.





*Kiewit orchestrated a massive amount of resources, manpower and logistics to rebuild both Oroville Dam spillways. Teamwork made it happen.*

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## TEAMWORK IS KEY

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The Oroville Spillway Emergency Recovery Project was a huge beast. And it never would have happened without teamwork from everyone involved. “What pulled it all together for us was Peterson working as a whole,” says Taylor. “There was a lot of coordination between stores—everyone working together to make this all work. No one store could have done it by themselves. It was definitely a team effort.”

Kiewit’s contract ended up with a final price tag of just over \$650 million. “It was the biggest, fastest paced job I’ve ever been on,” says Whelan, who headed up Kiewit’s mobilization and demobilization efforts. By the end of 2019, Kiewit was wrapping up the final details. New roads were paved, trees and grass planted, a new boat launch was in. Anyone standing on the observation deck at the

Lake Oroville Visitor Center would not be able to tell what had happened there back on that rainy day in February 2017.





*Peterson customers & equipment help clean up after devastation of the Tubbs Fire in Santa Rosa in 2017.*





## WILDFIRES

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### THE FIREFIGHT AND THE BIG CLEANUP

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Over the past several years, California's wildfire season has grown to six months or more. In 2020, the threat pushed up into Oregon and Washington as well. Everyone has their own opinion on why. And there are no easy solutions. But one thing is obvious—somebody has to fight these fires. And mop up after them. And help the survivors rebuild. There are hundreds, even thousands, involved in the years-long process. But it all begins with the first responders. On the morning of November 8, 2019, Peterson Chico field tech Pete Melchiori was one of those first responders. He was on the front line fighting the encroaching Camp Fire with two buddies, just down the hill from the town of Paradise.

The day had started out like any normal workday. Out the door by 5:30 a.m., pull into the shop by 6:20, clock-in, normal—until guys started noticing a plume of smoke in the hills to the east. They watched it grow to a huge towering cloud over Paradise. “When I got back up there, it was as black as midnight. There was so much smoke it was blocking out all the sunlight,” says Melchiori. After getting his family packed and out, Melchiori stayed to hose down his yard and roof, and then left. A mile and a half down the hill, he met up with his buddy Phil, who had three small tractors and some firefighting experience as a logger. Together, Melchiori, Phil, and Phil's brother hopped on the tractors and headed back up the hill. It was 9:00 a.m.

“Nobody was there but us,” recalls Melchiori, who was on a Cat skip loader. “When they started evacuating the town, it was already too late. It went from firefighting to rescue, so they were all up there helping people who were stuck. That's why we didn't see anybody. But once the adrenaline kicks in, you just start doing what you've got to do.”

Embers were flying way ahead of the fire, catching and backfilling. It was moving three hundred feet per second, they heard afterward. Together the three men knocked over trees, cut fire lines, and cleared a path





*Pete Melchiori/Peterson field tech on the Camp Fire in Paradise, CA*

for emergency vehicle access. “We were on the fire side of the houses so we could see it coming,” recalls Melchiori. “You could hear propane tanks and fuel tanks blowing up and the wind kept changing directions. We built about two miles of fire line before it was on us. I tried to go back the way we’d come in, but everything was fully engulfed. I turned around and saw the others going out a different way, so I followed them, running over fences and fields. We didn’t have to actually get out and run, but it was definitely chasing us. This fire was a beast.”

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## THE FIRE INDUSTRY

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There has been a marked increase in wildfires over the past decade in California. Many contractors in rural, fire-prone areas have built up their businesses accordingly. It has, in fact, become an industry. “I know forty customers in the Redding area alone who do this for a living,” says Jim Lanphear, Peterson’s Redding store manager, himself an evacuee of the 2018 Carr Fire. “One customer has three dozers, three transports, thirteen water trucks, and several shower wagons. Another customer nets \$100,000 a year off portable toilets. Others support CAL FIRE with dozers, generators, gray water, tires, food, and Gatorade. CDF<sup>1</sup> doesn’t have the resources to do this without vendors to support them. Somebody’s got to do it. If it’s not us, then you’re

going to have people coming in from out of state to do it, because it’s a necessity.”

Peterson has been supporting its customers against wildfires since the late 1950s, when it acquired the former Sierra Tractor territory of Shasta, Trinity, Tehama, and Butte counties. That support comes through repairs and maintenance on heavy equipment and truck engines, emergency power generation during crises, rentals to meet the demand, and humanitarian aid. Peterson is there for its customers and employees affected by fire in its territory.



*CAL FIRE dozer*

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## THE CARR FIRE (JULY 2018)

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The massive Carr Fire of 2018 came within a mile and a half of Peterson’s Redding store. “Once it hit Hwy 299 and jumped the river, we knew it was serious,” says Ken Waite, store manager of Cresco in Redding, which is right next door. “I knew a lot of people were going to need generators and light towers. Driving into work that day, all I could see were flames coming down the hills to the west. It was honestly one of the scariest moments of my life.”

The Carr Fire had started four days earlier on July 23 in the Whiskeytown National Recreation Area, and it would eventually burn completely around the lake. The initial cause was a flat tire, which

<sup>1</sup> CDF, aka California Dept. of Forestry & Protection, is now called CAL FIRE.





*Top to bottom: Peterson's Redding store in February 2018; The Carr Fire burned nearly 230,000 acres between July 23 – August 30, 2018. It is the seventh largest fire in California history.*

caused the steel rim to spark against the pavement and ignite nearby vegetation. It happened on Hwy 299 near the Carr Power station close to French Gulch—thus earning its name.

The power was out when Waite got to Cresco. His first stop, after loading up some generators, was next door to Peterson. Jim Lanphear and a couple other evacuated employees were living out of their RVs there in Peterson's yard. "We had everything all staged and ready to go, just hoping the fire wouldn't hit the store," says Waite. "I was back and forth on the phone with all my employees, and my family, making sure everybody was safe, and then helping evacuate people and farm animals. It was a long, sleepless, crazy night. Everybody was scared. But we all made it through."

Many of the generators Waite delivered were towables (25–70kW) and some smaller portable generators (3–12kW). Some employees came in to help load up Cresco's ten-wheeler, but many were still dealing with family. Waite delivered most of the generators, one at a time, with his pickup truck. "I towed a couple out to French Gulch where Peterson Power was working on one of PG&E's sub-stations. The CHP and Caltrans weren't letting anyone through, but when I told them who I was and what I was doing, the chief let me pass. I was literally the only one out on 299. It was really eerie seeing all the fire retardant across the road, knowing the fire had been there recently. Both







*Carr Fire damage in August 2018*

sides of the road were completely black, with houses burned down to their foundations. And here I was heading up into the hills, watching the active burn as I drove towards it.”

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## AROUND THE CLOCK SUPPORT

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When Lanphear finally got to Peterson’s yard that first night after outrunning the fire, he first had to get through the CHP roadblock. “They didn’t want me coming in, but I told them that they’d have to arrest me because I was going to run our business.” They finally relented.

By the next morning, the National Guard had taken over roadblock duty. “I went out there at 5 a.m. to tell them I needed them to let my people in,” recalls Lanphear, a thirty-two-year Peterson veteran.

“That’s not going to happen, sir,” the guard told him. “I have orders. This is a hard closure. Nobody passes this checkpoint.”

“Well, I have orders too,” Lanphear told him. “It’s to get this business opened. I’m also best friends with the Northern Regional Commander for CAL FIRE. I’m going to call Danny Sykes right now

and tell him that I won’t be servicing his fire trucks or his dozers today because you won’t let us in.”

“You’re killing me,” the guard said. “I’m just following orders.” Then he threw up his arms. “Fine!”

Peterson’s Redding shop repaired dozens of fire trucks and dozers during that initial phase and over the next several months. “I told my people that anybody involved in the fire had top priority,” says Lanphear. “I also advised our customers that if their repairs weren’t fire-related, they’d need to stand down so we could support the fire. That had to be priority number one.



*Jim Lanphear lived in a mobile home at the Redding store for a week while evacuated during the Carr Fire of 2018.*





Top to bottom: Firefighting effort on the Carr Fire in August 2018; CAL FIRE trucks parked in Peterson's Redding yard

“There were days when they had north of 150 dozers on the fire lines,” says Lanphear. “That set a very fast pace for us because when a private contractor on the fire has a breakdown, they have twenty-four hours to get their machine back out there. If they don’t, they lose their spot and get kicked off the fire and sacrifice thousands of dollars in wages. So we worked around the clock to make sure that didn’t happen.”

The Carr Fire was so intense and erratic, it sprouted *frenados* caused by intense heat rising rapidly into the atmosphere. “We had a dozer in our shop that got caught in a firenado,” recalls Lanphear. “A Redding firefighter got killed right next to it. The firestorm picked up his full-size pickup into the air and ejected him. When the truck finally landed, it looked like it had been in a car crusher.” The dozer

operator saw it all. “It literally blew the windows out of that dozer,” says Lanphear. “The operator panicked and kicked his seatbelt loose to get out, but the winds sucked him up to the top of the cab, then dropped him back in the seat, and he just held on for dear life. He was very, very lucky. He had some burns, but he was back to work in four days.”

The Carr Fire went on so long that Peterson saw lots of major breakdowns in the shop—engines, transmissions, and hydraulic failures. All the dust and smoke made it tough for operators to see, which caused broken windows, broken tracks and dozer blades, and lots of broken hoses. “The whole company really rallied around us,” says Lanphear. “They brought in generators and equipment every night. I told them to just knock on my door and we’d get them taken care of. It always seemed to



happen between 11:00 p.m. and 2:00 in the morning. Generators and tractors came in from all over the country. We were a 24-hour operation.”

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## SUPPORTING THE FRONT-LINE DEFENDERS

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Redding’s field crew worked around the clock too. Chris Clifton, Aaron Paoli, and Quinton Hurlburt were Peterson’s repair force out on the front lines. “We worked mainly on fire Cats—D6Ms and D5Ms,” says Hurlburt, a 2015 ThinkBIG<sup>2</sup> graduate out of the Redding store. “There were a lot of electrical issues because when they’re running from fires at high speed, wires break loose under the dashboard, and then machines won’t start. They had hydraulic leaks—main pump supply lines—so valves were leaking. People were running over stumps, which pushed the belly pan up, so they’d lose all their engine oil.”

“You couldn’t take your truck everywhere. Sometimes it was backpacks and five-gallon buckets full of tools and catching a ride in on another Cat.

I would be working on somebody’s equipment, and then three more dozers would show up needing help. And CAL FIRE would be telling you to hustle because the fire was coming. Or a customer would be in a hurry to catch up with his crew after waiting around for the mechanic. With all that happening around you, you’re sweating bullets. Everybody’s hollering. It’s an intense environment. But you just tune all that out and focus on the problem.”

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## THE SIX-HOUR ADVENTURE OUT

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During a fire, CAL FIRE’s policy is to send a fire truck to escort techs whenever they go out on field repairs. But the Carr Fire was so unpredictable that even then, techs sometimes ended up in harm’s way. On day two, Hurlburt was working on top of a ridge where CAL FIRE had cleared out a safe zone. “It looked like a huge football field, and I was parked right in the middle of it. A group of eight dozers was there to start cutting lines down the hill toward the fire. I had to move after I finished the repair because the fire was coming and



*Left to right: Cat D4H Hurlburt worked on during the fire for Sunrise Excavating; View from inside Hurlburt’s field truck, driving into the fire*

<sup>2</sup> ThinkBIG is a 2-year, Cat-specific training program, which earns an Associate’s Degree in Applied Science. See the full story in CH20 ThinkBIG, pg 317.



## AT HOME IN THE BACKWOODS—QUINTON HURLBURT

Peterson's Quinton Hurlburt grew up in the woods not far from the burn area in Trinity County, so he knows how to read tree markers and navigate backroads. "I was in places that most people wouldn't even think about taking their trucks. But you've got to get to the customer." One day on the Carr Fire, he was up at French Gulch outside the safe zone, heading in to work on a machine. Alone. "When you're driving in, your customer knows that you're coming, but he doesn't know what it looks like on the way there because he drove in on a Cat. I'm in my truck. And a lot can happen in the forty-five minutes it takes to drive back in there, especially with that wind."



*Quinton grew up in a fire family, so working around fires is normal. His grandfather was the fire chief in Hayfork, CA for years.*

Hurlburt was going out to meet Sunrise Excavating for a no-start on their D4H. "They were running from the fire, tracking out of there in third gear, and finally got to a safe stopping point. Everybody got out of their machine to figure out their next move. But when they stopped, they shut off their machines, and then couldn't get one to start back up."

Hurlburt had gotten the call at 1:30 that morning and was down at Peterson by 2:00 a.m. loading up his truck with the parts he'd need. "By the time I got out there, the fire had already passed through, but it was still burning pine needles underneath the machine while I was working on it." It turned out to be a broken wire on the back of the ignition, which had broken loose during their run from the fire.

"Driving back out, the fire had jumped the canyon I'd driven in on and that's when it started getting a little hair-ball. It had switched directions, so I was driving parallel to it. The dozer crew had taken off to cut contingency lines, so I was by myself at that point. And while I was driving, the fire started burning up the hill toward me. I didn't stop to look, but it was burning in the treetops above me."

they were getting ready to Borate bomb the area. Once the wind shifted and the fire switched directions, it was safe for us to leave."

The convoy had to make their own road out since the fire was burning over the one they'd come in on. They cut through locked gates and miles of wooded terrain out to a ranch in the middle of nowhere. "It took us six hours to get out. And it was pretty scary. Basically, from the time the phone rings until the time you get back home, your adrenalin is going absolutely insane. But we do whatever it takes because every dozer that isn't working, isn't out there saving people's lives or somebody's house."

The Carr Fire burned nearly 230,000 acres, claimed

eight lives, and destroyed over 1,600 structures. During the cleanup phase, crews hauled out five years-worth of hazardous dirt and debris in just a month and a half.

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## TUBBS FIRE (OCTOBER 2017)

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The Tubbs Fire ignited at 9:43 p.m. on October 8, 2017. It was the most devastating fire California had seen up to that point. By the time it was contained on October 31, it had destroyed 5,643 structures, killed 22 people, and burned 37,000 acres in Sonoma and Napa counties. The initial cause traced back to a faulty private electrical system on Tubbs Lane in rural northern Calistoga.





*Top, clockwise: Fire retardant drop; Destruction from Tubbs Fire in Santa Rosa in Oct 2017; Kincade Fire in same area two years later, in Oct 2019.*

From there, it blew down through Mark West Springs past Fountaingrove into Santa Rosa. By 2:00 a.m. it had jumped Hwy 101 and tore into a large subdivision called Coffey Park. Within an hour, Coffey Park was a raging inferno, most of which burned to the ground.

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### **SANTA ROSA STORE GETS INVOLVED**

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The fire blew up so fast that many people didn't even know about it until it was too late. Social media was alive with personal stories and shout-outs for loved ones. Five Peterson Santa Rosa employees lost their homes but thankfully got out themselves. "This was an epic event," says Paul Smith, a thirty-year Peterson veteran and salesman out of Santa Rosa. "I grew up on the east coast. I've been through hurricanes and tornadoes and

blizzards. But I've never been more scared than in this fire. There was no controlling it. There was no way you could predict where it was going next." Smith watched the fire come within three miles of his neighborhood in Windsor.

On the second full day, October 10, a handful of employees made it into the Peterson store in northern Santa Rosa. "We hooked up a generator from the backyard and got the store running so we'd be ready," says Nate King, then product support manager, who immediately began making calls to check on employees. "The shop was so smoky you couldn't see from one side to the other. We had all our fans going, all the doors closed. And we bought a lot of respirators. The truck shop already had some fire trucks in for repair, so we finished up those to get them out on the fire. I remember standing up on the roof that second day, watching



the hills burning on the other side of 101, about a mile to the east.”

The National Guard took up residence in Peterson’s backyard on the third day. “They had sixty to seventy personnel here, all armed with M16s,” recalls Smith. “They were stationed in our yard for about a week until they moved down to Ghilotti Construction’s yard—a much larger, more central space. But they had their trucks set up in our backyard initially, and cots and tents. We moved all our equipment off the concrete pad to make room for them.”

Peterson’s Santa Rosa shop was full for months after the Tubbs Fire. “Multiple machines either rolled over or broke down during the fire, so we were constantly out there,” recalls Smith. “Peterson gave more fire support than any other local dealer. There is no one else in our community, or even in the Bay Area, who could handle the amount of equipment and repairs that were needed. When somebody lost an engine, our shop worked overtime to get it done. Same with our truck shop.”

Once people had a day or two to react, companies like Ghilotti Construction and Team Ghilotti

started pulling their equipment and operators off jobsites and redirecting them to the fire. Ghilotti Construction spent a lot of time building fire lines near Sears Point on Hwy 37. Glen Ghilotti, of Team Ghilotti, was over in Rohnert Park building firebreaks.

“When the fire hit, we started sending water trucks out to subdivisions around Santa Rosa and letting employees take water buffalos home to protect their properties and neighborhoods,” says Kevin Ghilotti. “After that, we started gearing up for the cleanup. We tooled up fast, purchasing and leasing skid steers and excavators as fast as Peterson could get them to us. Dispatch was intense.”



*Top to bottom: Team Ghilotti geared up with skid steers and excavators for the cleanup effort; Peterson’s Santa Rosa shop was fully involved in the fire-fighting effort, with repairs to fire trucks and fire dozers.*





*Cleanup after the Tubbs Fire in Santa Rosa*

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## THE CLEANUP BEGINS

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Once the fire was contained, the massive cleanup effort began. Argonaut Construction was heavily involved, as were the Ghilotti's and several other local contractors. "One day I got a call from Mike Smith Jr. asking for help," says Nate King, of Argonaut's owner. "He wanted to line up as much equipment as possible in Coffey Park so the visiting general of the Army Corps of Engineers [responsible for the bid] could see that the local contractors had plenty of resources and were ready to work. We pulled pretty much every new machine in our yard for Argonaut to pick up." In the end, twenty-five excavators lined the side of the road into Coffey Park in an impressive show of force, to demonstrate that the locals could take care of their own. Out-of-towners landed numerous contracts, but locals got the lion's share of the work.

FEMA and the Corps of Engineers used three primary disaster contractors to oversee the work—ECC (Burlingame, CA), Ashbrite (Florida), and Ceres (Florida)—with multiple subcontractors under them. "There were trucks here from every state in the nation," says Smith. "It was crazy. Some contractors were taking too much dirt off the properties because they got paid by the ton. The local contractors didn't do that. They live and work here. They know the people who lost their homes, so they respected everything and did a



diligent job.” Collectively, 2.2 million tons of concrete, dirt, and toxic debris were removed from properties across Sonoma, Napa, and Lake counties totaling \$1.3 billion. At the time, the US Government Accountability Office cited it as the largest disaster cleanup in California since the San Francisco earthquake of 1906.

All that cleanup required massive amounts of equipment and manpower. At one point, Peterson had three dozen skid steers sold and lined up in the Santa Rosa yard, waiting to be picked up. Between fire equipment in for repairs and new machines for the cleanup, the store was incredibly busy. “I think we cleaned out the entire company on skid steers, and thumbs and multi-purpose buckets for skid steers,” says King. “We sold an insane amount of equipment for that fire.”

At the peak of the cleanup, there were ninety-five crews at Coffey Park alone—each consisting of five people, one large 320-size excavator, a 299-size skid steer, and a water truck. The first three months were pretty chaotic until they got into a routine. ECC was hiring all the trucking instead of each sub-contractor hiring their own. According to Smith, “it was like filling a five-gallon bucket with a five-thousand-gallon water truck. It was just crazy.” They generated one million dollars’ worth of dump fees a day at the Mecham Road County Landfill in Cotati. Trucks were lined up for miles just trying to get in. It took four hours to do the six-mile roundtrip to the landfill and back. The last truckload of debris headed for the landfill in June 2018.

### **COMMUNITY HOLIDAY OUTREACH (2017)**

A deep sense of community was evident during that time. The notion of competition was thrown out the window. “The lines of communication were opened between all parties,” recalls Kevin Ghilotti, a fourth-generation Ghilotti in the construction industry and son of Glen Ghilotti. “We were all



*Top to bottom: Thanksgiving meal for relief workers of Coffey Park; Team Ghilotti pulled out all the stops to make the Holidays special for the community in November–December 2017*

just trying to take care of the community.” The Ghilotti’s catered a turkey-and-the-works spread for 500 Coffey Park workers on Thanksgiving Day at ECC’s rented storage facility. “They sent crews over, blocks at a time, and fed people,” recalls Kevin Ghilotti. “Glen was a big part of that.”

Christmas at Coffey Park that year was another big show of solidarity. “I remember Glen calling me late one night to bring the drone down to Coffey Park,” says Kevin Ghilotti. “He wanted to make sure you could see the Christmas lights they were putting up all over. He got Christmas trees donated and somebody else to bring in snow. They had popcorn machines and hayrides in Glen’s antique truck. They had a toy drive and people caroling through the neighborhood. He planned this whole thing in two days. When Glen gets an idea in his mind, he doesn’t settle down until it’s done. That year, Christmas was definitely above and beyond.”



## TAKING A STAND ON THE TUBBS FIRE—LARRY BRODERICK

The first knock came at 1:30 a.m. A minute later, it turned into pounding. Somebody at the front door was pretty adamant. Larry Broderick, Peterson Idealease rep, stumbled out of bed to answer the door. His wife beat him to it.

“Hurry up! There’s a fire, and it’s headed our way,” his neighbor yelled. “You’ve got to get out. Now!” Then she was gone. A couple of minutes later she backed out of her driveway and disappeared down the street.

Over the next ten minutes, other friends started messaging him. Those were the only warnings he got. Some people didn’t even get that much. Broderick got his wife and kids packed into their Yukon and off to safety. Then he started making phone calls to see what was really going on.

“I called a friend who had an early morning delivery route for Clover-Stornetta Farms. He told me a fire was coming from Calistoga down through Mark West to Riebli Road. And right then, I knew the path it would take because it had happened before, back in 1964, with the Hanley Fire.” Broderick also had prior fire experience with CAL FIRE in the late 1980s, so he knew what was coming. Or thought he did.

By 2:30 a.m., Broderick was gearing up for a fight. There were no signs of fire yet. But it was coming. He could smell it. “Once I got my family out and made some calls, I did the math. The wind was blowing 50 mph and it was headed in my direction, so I started a plan. I got the right shoes on, got both my cell phones and a flashlight, strapped my car keys to my belt, and got a wet handkerchief for my face. It wasn’t smoky yet, but I had everything I needed to make a stand.”

By then, the main thrust of the fire had already blown over Hwy 101 into Coffey Park, four miles west of Broderick’s neighborhood. It shot down Mark West Springs Road and tore through Larkfield-Wikiup like a flame thrower. “It didn’t track over to my neighborhood until two or three hours later. That whole time I was in my yard fighting spot fires with my garden hoses—two hoses in the backyard, one in the front, one at my neighbors, and two more down the street. By 3:30 a.m. the embers started coming in. By 4:30 a.m. it was just a mass assault of them.”



*Neighborhood house on fire*

Everything was a tinderbox—high winds out of the northeast, low fuel moisture, and a drought two years standing. It was the perfect prescription for a firestorm. “I put out multiple spot fires at the six houses I was protecting. The main fire was still nowhere near yet, but the hills were glowing all around me. It was all from flying embers. That’s how the fire moved. Embers flew two, three, four miles ahead and started sub-fires. Then the back fire would fill in. If you could control the spotting from the embers, the fire didn’t progress until the back fire came.



*"All the while I was thinking, The sun is going to come up. I'm going to get a strike team of five engines rolling in here and all my work will have paid off. At 6:00 a.m. his neighborhood was still safe, but the fire was encroaching from the north, east, and west. Around 6:30, it hit Broderick's block and by 7:00, it was everywhere except the six houses he was protecting. "I had done everything I could, but all that work didn't do any good. By then the wind had died down. It wasn't blowing through like a firestorm. The fire just progressed slowly, house by house, in a meticulous fashion. Around 7:20, I saw the fire start to lick at the eaves of my house. And my escape route was starting to narrow." Broderick finally left at 7:30. Fire trucks showed up around 10:00 that morning, but it was too late. By then, most of the neighborhood was gone.*



*Top to bottom: Broderick's neighborhood was leveled in the Tubbs Fire of 2017; Broderick rebuilt in the same spot and moved back in during the Summer of 2020.*

CAL FIRE's first command and control center had burned down the first day of the fire. They had relocated to a small fire station down the street, but it was too small to handle the army of fire trucks coming in from all over the state. Strike teams were told to find the leading edge of the fire and attack it. And that was Coffey Park. "If that first command and control center hadn't burnt down, and there had been a clear directive to send engines where they needed to go, then they might have come to my neighborhood sooner," says Broderick. "Later, I heard from the Martinez-Berkeley-Richmond strike team that they were supposed to come to my neighborhood, but when the command center burnt down, their orders were unclear. So they went to the frontline in Coffey Park. And once that was contained, they came to my neighborhood."

In the end, the San Jose, Benicia, Martinez, and Berkeley fire departments had ignored their orders to leave because, by then, the wind had died down. They were able to stop the fire's progression at Sleepy Hollow Drive, a quarter mile south of Broderick's house and a quarter mile north of his parents—his childhood home.

The Broderick family was able to buy a 28-ft trailer with FEMA funds and live on his parent's property while their home was being rebuilt. In the summer of 2020, they were finally able to move into their new home, built on the same property in the same neighborhood.

**All photos on this spread by Larry Broderick.**



The Tubbs fire was just one of thirteen simultaneous fires in Northern California during October 2017. It was the most deadly, destructive fire in California history. Until November 8, 2018. In Paradise.

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### CAMP FIRE (NOVEMBER 2018)

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California's 2018 wildfire season was the worst fire season on record. Over 8,500 fires consumed 1.9 million acres across the state. But the worst of the worst was Butte County's Camp Fire. It burned the town of Paradise down to the ground. And that was only one percent of the fire's total foot-

print. The Camp Fire claimed 85 lives, over 18,000 structures, 153,336 acres and cost \$16.5 billion in damages. Today, it stands as the sixth deadliest fire in US history.<sup>3</sup>

It descended on the town of Paradise the morning of November 8, 2018, before most people were awake. While Peterson's Pete Melchiori was on the southern outskirts of Paradise building firebreaks, people were literally running for their lives in mass exodus. Cars clogged both Skyway and Neal roads, the two main arteries down the hill into Chico. Walls of flames lined the streets as people tried desperately to get out.



*The Camp Fire hit the town of Paradise on November 8, 2018. The entire population fled to escape the catastrophic devastation.*

3 Löw, Petra. "The natural disasters of 2018 in figures." Munich RE, January 8, 2019, <https://www.munichre.com/topics-online/en/climate-change-and-natural-disasters/natural-disasters/the-natural-disasters-of-2018-in-figures.html>



## CUSTOMER FIRST STANDARDS

We make your needs  
our priority

We keep you informed

We get it right the first time

We do what we say

We appreciate your business



Peterson's Chico crew and their signed commitment to putting their customers first.

### PETERSON'S CHICO STORE RESPONDS

Down in Chico, Peterson personnel cleared equipment out of their front yard to make room for whatever might be coming next. “The CHP blocked off Hwy 99 right in front of our store,” says Cory Ohlhausen, shop foreman at the time and one of the fire’s evacuees. “They were allowing people to turn around there, and many of them turned into our place. People were coming with everything they had grabbed—horses, trailers, campers, families, valuables—and they were all shaken up. We weren’t really set up for people to stay but it gave them a place to regroup.”

“At one point, CAL FIRE’s website listed six hundred fire engines and over one hundred dozers on the job,” says Ohlhausen. “It was crazy. During that period, we repaired fire dozers and equipment that the CHP let through their blockade. We mainly did repairs for fire contractors, and parts access. It was such a shock to the community that I don’t recall any local contractors being concerned about when they would get their own equipment back.”

The shop’s workload ramped up even more during

the cleanup phase. “We were extremely busy,” recalls Ohlhausen. “We haven’t had any slow periods since the Oroville Dam incident [Feb 2017]. We were taking care of all Kiewit’s machines off the dam. Then throw fire contractors into the mix, each with a minimum of twenty crews. So we definitely had to shuffle the jobs around and work late nights to get it all done. But we made it work.”

As a life-long resident of Oroville, Ohlhausen has seen plenty of fires. “I’ve definitely noticed a trend in the last several years. There have always been fires, but not life-threatening fires like this one. Paradise had the perfect conditions for a crazy big fire. In Pulga Canyon where it started, it was like a wind tunnel as it crested the ridge into Paradise. That first day was definitely a rescue mission versus firefighting. Sirens were going off all day long. Helicopters started dropping water on homes to help people escape from being trapped. When it was safe to fly, airplanes started dropping fire retardant. It took around three weeks to get this fire out. The smoke went all the way down into Sacramento and the Bay Area. For weeks afterward, if you walked into stores in downtown Chico, everybody had a story to tell about what happened to them.”





*Peterson rental generators supported the fire fight & cleanup effort in November 2018*

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## PETERSON GENERATORS POWER PARADISE

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In the aftermath, Melchiori delivered generators to PG&E and several agencies in the area for traffic control, communications, lights, and water. “As Peterson Power, we basically turn into first responders because we run in while everybody else is running out. We supply power for whatever the first responders need because they can’t do much without eyes or ears. It was so dark up there that they needed traffic lights for all the crews driving through the area. At one point, we had twenty-eight rental generators from Peterson up there. I had them all mapped out on my phone. They were all over town.”

Peterson generators also helped power the water districts and sanitation department so the sewers wouldn’t back up and overflow. Rental generators powered buildings and businesses that had survived. Grocery stores salvaged their cold stores with backup power. Gas stations pumped fuel with rental power to keep the emergency efforts moving. And two Verizon sites, one in Paradise and one in Magalia, went back online with Peterson generators.

“We rolled into one of the biggest churches in Paradise, the CMA church, with an XQ200 and helped power up the first building, which they used as their command center,” says Melchiori. “That’s where they started discussing the scope of the

disaster, getting their plans together, and talking logistics.” It’s also where they brought Governor Brown in to view the damage and assess for emergency status.

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## CRESCO RUSHES TO MEET DEMAND

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Once the fire was contained in town, PG&E established a laydown yard fifteen miles north of Oroville. They brought in over one hundred generators (25–800kW) from various rental companies, including Peterson. They also had fifty vacuum trucks that ran throughout Paradise, cleaning up the sewers and water lines, sucking up the sludge of debris. Within four days, PG&E took over Tuscan Ridge Golf Course, which had burnt through, and set up a huge camp there. “It was like a city,” recalls Shane Rains, Cresco’s Oroville store manager. “I’ve never seen anything like it before. They had food trucks and tents, barracks and campers. It was insane.”

In the coming days, Oroville hosted a number of work camps, housing up to 1,500 people each in FEMA trailers. “We were getting calls two or three times a day from guys from all over the United States coming in and needing a large track skid steer and a large excavator. All our hotels were full; no rental housing was available. In the evenings, there’d be a hundred contractor trucks parked out front of every hotel in town. Same with the camps. It’s just amazing where all these people came from.”



Initially, Cresco rented out generators, 4x4 utility carts, and light towers to the local utility while they were getting established. Once the cleanup phase began in late February 2019, the equipment mix changed. “We couldn’t handle every one of the hundred cleanup crews who all needed 325 excavators, small track loaders and water trucks,” says Rains. “There wasn’t enough equipment in this part of the country to take care of all their needs. So every rental company around, from Cresco and Peterson to United Rentals and Sunbelt, was up there supplementing contractors’ fleets with rentals.”

Cresco was tasked with getting three dozen Cat 259 track loaders with grapple buckets and smooth buckets ready to go within ten days—a pretty tall order for a small satellite store. Cresco’s



*Cresco’s Oroville store pulled in equipment from all across the state to support the fire fight and cleanup efforts.*



*(L-R) Deruk Pasut/Peterson with Pacific States’ Dave Vandegriff*

Redding branch sent down ten 325F excavators to help complete the rental package. “We didn’t have a lot of time, and my truck could only haul two units at a time, so Cresco trucks started coming in, from Gilroy to Redding,” says Rains. “We even had a truckload of 259s come down from Peterson in Oregon. Everybody just started hauling equipment in here. The entire Cresco team came together to help out. That’s what happens when we have a disaster like this.”

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## THE POWER OF RELATIONSHIP

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The cleanup contract was awarded shortly after the New Year in 2019 to SPSG—a joint venture between Sukut Construction, Pacific States Environmental, and Goodfellow Bros. of California (formerly Top Grade). “Dave Vandegriff [Pacific States] wanted pricing on what they were going to need,” explains Pat Puccinelli, who runs Cresco’s Central Ordering group. “They ended up choosing Cat 259 rubber track loaders with cab enclosures, for protection against flying ash and debris and summer heat.”

Cresco had the first rental machines on the ground in Paradise. In fact, 95 percent of the equipment on the Camp Fire was rental equipment. “We supplied the first round of gear because we could,” says Puccinelli. “Because we met the specs FEMA required. And because we’ve built long-term relationships with these contractors.”



**CAL FIRE**  
**CALIFORNIA STATEWIDE FIRE SUMMARY**  
**MONDAY, OCTOBER 5, 2020**

TODAY THERE ARE **16,600+** FIREFIGHTERS  
 BATTLING **23** WILDFIRES THAT IN TOTAL  
 HAVE BURNED OVER **3.7** MILLION ACRES

**RESOURCE BREAKDOWN:**  
 STATE, LOCAL, TRIBAL AND FEDERAL RESOURCES  
 ASSIGNED TO ACTIVE WILDFIRES

**1,770+** FIRE ENGINES  
**110** ASSIGNED AIRCRAFT  
**313** FIRE CREWS  
**216** BULLDOZERS  
**374** WATERTENDERS

Pacific States bought five Cat 325 excavators and five Cat 289Ds from Peterson specifically for the Camp Fire. “We rented the other ten sets from Cresco to make a total of fifteen crews,” says Vandegriff, equipment manager for Pacific States. “We’ve learned by experience that this is the ideal equipment to do the largest scope of work on these fires. Pat and Chris Smith [Cresco president] are our key guys at Cresco, and we wanted as much equipment going through them as we could for the partnership.”

The town of Paradise was split into two contracts, with a third for the unincorporated outlying area.



Top down: The 2020 fire season saw 4.3 million acres burn in CA, versus the second worst season total (2018) of 1.9 million acres; Argonaut did the clean up on the north side of Paradise; SPSS (Sukut–Pacific States–Goodfellow Bros.) did the south side of town.





## SUKUT TAKES THE LEAD

In January 2019, Sukut invited Pacific States Environmental and Goodfellow Bros. of California to form a partnership to pursue the \$800 million Camp Fire cleanup contract. “We do quite a few joint ventures,” says Steve Yurosek, president of Sukut Construction, which is based out of Santa Ana, California. “We wanted to partner with companies we knew we could work with and had expertise in the field as well.”

In 2005, Sukut Construction established an Environmental Market Division comprised of landfill construction and closures, brownfield site cleanups, and fire remediation. Today, fire remediation is roughly 60 percent of their work. Before 2015, it was less than 15 percent. “We’ve been doing fires since 2007,” says Eddie Juarez, vice president of Sukut’s Environmental Division, “but they were more one-offs. Since 2015, it has really jumped. We get fires in Southern California, but the bigger more destructive ones seem to be up north.”

As head of the Environmental Division, Juarez was tasked with determining the scope and logistics of the Camp Fire contract and was one of the first to visit Paradise after the Camp Fire. “The first time I drove through Paradise, I was in complete shock. I’d never seen anything like it before. Some of the other fires we’ve worked on like the Detwiler and the Thomas fires were massive, but they didn’t devastate an entire city. Paradise was completely wiped out. Businesses, homes, churches—everything. It was frightening. As a contractor, you look at that and the resources it’s going to take to clean all that up, and it’s not something that one contractor can handle on their own.”

That’s when Sukut decided to form a joint venture and pool their resources with Pacific States and Goodfellow Bros. And they definitely got it done faster. Their last load out was on October 23, 2019. The original target date was February 2020.

SPSG got the south side of town; ECC got the north side. And Florida-based Ceres got the unincorporated area. SPSG committed forty-five crews to the cleanup effort, fifteen crews per partner. As the project became more routine, that number grew to eighteen. Crews consisted of a 325 excavator, a

289D track loader (or 259D, 299D), a 500-gallon water buffalo, plus two operators and two laborers on the ground. And every site was under the constant scrutiny of an on-site FEMA inspector. “Our job is to mitigate anything on that lot that’s extra and hazardous,” explains Vandegriff. “We’re



very careful not to over-excavate. We want to get it right to the spec line and take as little out as we can to make each site 100 percent clean. Once they mark it certified, we move on to the next site.”

Work didn't progress as methodically as they'd hoped—house by house, street by street. “We bounced around like a shotgun,” says Vandegriff. “We were jumping all over the place as they assigned us lots that had been funded and cleared for cleanup. It was a logistical nightmare. When we finished one, the next one might be a mile away, so we'd have to haul all that equipment across town versus having five lots right next to each other, approved and ready to go. We would have loved to have jumped from pad to pad to pad, but most times that just didn't happen.”

Vandegriff and John Wells, general manager of Peterson Tractor, had driven through the town of Paradise in early February 2019 to assess the scope of the job. The snow was falling and formed a white blanket, a stark contrast to the burnt-out skeleton of the town. “It was the ultimate hill fire. Just mass destruction,” recalls Vandegriff. “The contrast between the black and burnt aspect of the fire against the lily-white snow was very, very eerie. It looked even darker because I knew the devastation it held for the families up there. It was heart-breaking. Apocalyptic.”



*Paradise destroyed*



*SITECH's Chris Mata helps Argonaut with their payload control systems*

“One of the first days of the cleanup, as we started to clean a house pad, I looked behind me and saw a family standing there, watching us work on their lot. You could see the heartache. Lots of hugging and holding hands. It was very sad. These people had lost everything. We saw kids lose their schools, their homes, and parents lose their place of employment. They got the Triple Crown of Crap. As Pacific States, remediation is our business. We couldn't control the circumstances that brought us into Paradise. We'd prefer to stick with demolishing old dilapidated buildings and working in urban areas and landfills. But we're good at what we do. And we wanted to get people back into their homes as soon as possible.”

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## TECHNOLOGY ON THE PILE

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Paradise was a beehive of activity all through the hot summer months of 2019 and into the fall. By the third week of October, the cleanup was finished. Contractors started pulling out and heading



home. The massive cleanup wrapped up four months ahead of schedule after removing over 2.5 million tons of debris and contaminated dirt. One reason was the payload scale technology several contractors employed at their sites. “This was brand new technology for us,” states Matt Williams, project manager for Sukut, who led the SPSG team. “It was something we came up with after the bid specs were already out. It’s relatively accurate—within a couple percent. We worked with Trimble [SITECH] to install scales on four of our excavators so we could better utilize the yields of the trucks.” Goodfellow Bros. had six Next Gen Cat excavators with Cat PayLoad systems, bringing the SPSG total to ten onboard scale machines on the Camp Fire project.

Across town, Argonaut was working for FEMA contractor ECC. All twenty-three of their excavators on the north side of town were equipped with onboard scales. “Argonaut had the most excavator payload systems in Paradise,” explains Chris Mata, SITECH salesman. “Eight excavators had Trimble LOADRITE scales and fifteen new Cat Next Gen excavators had Cat PayLoad systems.” Mata was part of the Peterson-SITECH team who spent several weeks on-site training operators on the new technology since most had never used it before. The team also re-calibrated all the Cat payload systems as well as troubleshoot any systems issues.<sup>4</sup>

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## TRUCKLOAD EFFICIENCY

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With 550 truckloads going to the landfill every day, onboard scale systems made a huge difference. Accurate payloads helped streamline the remediation process both in time and cost-efficiency. Once the machines were properly calibrated and the operators were trained, it was a big plus for the cleanup effort. “Load-control equipment allows operators to load precise tonnage so they know

when to stop,” explains Mata. “They can weigh each bucket-load separately and calculate tonnage, versus eyeballing it the old-fashioned way, which is less accurate for mixed loads of material like burnt ash, partially burnt debris, and concrete blocks.” Having the ability to zero out the scale when material clings to the bucket is another benefit. Without a payload system, efficiencies decline and costs escalate as overweight fines accrue and underweight loads mean more trips to the landfill. The combined efforts of the Peterson-SITECH team decreased lost tonnage by more than five hundred tons per day, which netted out to forty extra truckloads of debris every day. With a legion of trucks capable of carrying anywhere from thirteen to eighteen tons each, that’s a lot of material.

“ We supplied the first round of gear on the job because we met FEMA’s specs and because we’ve built long-term relationships with these contractors.

– Pat Puccinelli, central ordering manager, Cresco

“We just happened upon this niche market for load control,” explains Mata. “Trimble’s LOADRITE technology has been around since 1979. And Caterpillar has used their version successfully on wheel loaders at landfills and mining operations for years. But it’s new to fire remediation.” The increased efficiency benefitted both the contractors doing the work and the homeowners who planned to rebuild. “These types of government contracts demand fast turnarounds,” explains Mata, “because the insurance industry imposes a two-year funding window for rebuild starts. The onboard scales really helped operators work smarter to meet and beat the deadline.” The October 23 pull-out date was the real proof.

<sup>4</sup> See the full story on pg 268, *On the Job with Fred and Wilma*.





*Buster Peterson testing his Quad D9 prototype on the Briones Dam project near Orinda, California in 1963*





## QUAD D9S

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### RESURRECTING A PETERSON LEGACY

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In 2016, Peterson celebrated its 80th anniversary with the help of two very special guests—a Quad D9 and a Twin D8. The two hybrid giants made a huge impression on the crowds during their debut tour, which ended at the Best of the West Antique Equipment Show in Santa Margarita, California in May 2017. The machines were the culmination of a several-year search for Buster Peterson originals. Duane Doyle Sr. and his sister began looking in 2008, hoping something would still be out there. Shortly thereafter, Duane Jr. joined the hunt. After several dead ends, the only wisp of hope for an original was Fat Albert, the much more recent (1971–73) extra-wide D9 built for subsoil ripping in California’s Central Valley. Sometime in the early 2000s, that too ended up on the scrap pile of its final owner, Schnitzer Steel of Oakland. Any hope of existing originals was gone—hardly surprising after fifty and sixty years. The quest then turned to retro-rebuilds using old components and frames from the same vintage serial numbers.

Then in 2012, Granite Construction contacted Peterson about some old iron they had up in their yard in Palmer, Alaska. The beat-up pair of Cat D9Gs was just sitting there rusting. Tim Clements, Granite’s Northwest equipment manager, knew they had some historic significance. “The reality show *Gold Rush: Alaska* wanted to buy them, and I really didn’t want to see them end up trashed that way,” says Clements, a Peterson field tech (1989–99). “Instead, I called Peterson. I knew they had built some Quad D9s in the past and thought they might want it.” Turns out, Duane Sr. was interested. And the timing was perfect. In April 2012, Duane Sr. bought the pair and brought them home to San Leandro. And once again, they sat waiting.

“I was out in the backyard one day getting a machine ready when I saw these two old D9s and realized what they were,” says Ron Spencer, San Leandro main shop foreman, a 30-year Peterson veteran (1986–2016), now retired. “They were in pretty bad shape. The seats were completely trashed. One had a piece of plywood for a seat. They needed batteries and electrical work, a starting system, major brake repairs, and just a lot of work



overall. When Duane said he wanted them redone, my first thought was, *You're kidding! Boy, is this going to be a challenge.*"

At the time in 2014, Peterson's San Leandro shop was full. "Duane said he wasn't in a hurry, but then he threw out the date of Peterson's anniversary, which wasn't that far off." Spencer and a shop mechanic went out back to jumpstart the pair and assess the damage. "You could tell right off that one of the turbochargers was seized up because of the excessive amount of black smoke when we tried to rev up the engine above idle. The throttle pedal air valve was stuck from sitting for so long. And the front machine's brake control actuators were completely destroyed. The machines were operable, partially, but we had to jumpstart them every time we wanted to move them. They needed so much work that we didn't even try hooking them together for a while."



Granite's Quad No. 79 became Peterson's renovation project in 2012

From there, Spencer put field tech Mike Harrelld to work on them when he wasn't busy. But as the date drew closer, the need became more pressing. As foreman—with a budget to watch and customers to keep happy—it was a tricky balancing act. "It was really hard pulling guys off machines that were generating revenue and putting them to work on the Quads," recalls Spencer. "But we had to start focusing on it to meet the deadline."

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## PROOF POSITIVE

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Fast-forward to October 1, 2016, and a beautiful day for a company picnic. Peterson's 80th celebration in San Leandro was in full swing.<sup>1</sup> The main parking lot buzzed with people. Kids and balloons were everywhere. The smell of meat roasting on the big tractor-shaped barbeque hovered over the party like a large beckoning finger. In the center of it all sat the two featured giants being selfied, crawled on, and proudly examined. Randy Krieg, one of the Quad's former operators, was there taking it all in. "I knew that thing was an original Cat set because it had the right serial number plates," says Krieg, now a test operator at Caterpillar's Tucson Proving Ground. "You could tell they were



Art for t-shirts given away at Peterson's 80th celebration

<sup>1</sup> The Quad D9 and Twin D8 debuted at Peterson's 80<sup>th</sup> Celebration in Eugene (July 2016) followed by a celebration event at the Hillsboro property (August 2016) prior to its ground-breaking.





“ I spotted numerous details that told me this was my old ride.  
 – Randy Krieg, former Quad operator ”

Top left, clockwise: Peyton Sorgel and cousin, Declan Blevins, at Peterson's 80th celebration event in San Leandro, California in October 2016; Randy Krieg on Peterson's newly restored Quad D9 No. 79; Matt George (C) and family; Jeff Goggin (R) and family

original because those plates were in really rough shape. Without a doubt, it was the Quad I operated in Alaska back in the 1990s.”

As a young operator working for Wilder Construction, Krieg had been so fascinated by the custom machine that he had kept a detailed journal with lots of drawings and close-up pictures. “I spotted numerous details that told me this was my old ride,” said Krieg, elated at its reincarnation. “The very first thing I looked for was the reinforcement plate welded onto the front unit's right track frame after it had cracked back in the late 1980s. That fab-and-scab plate was still there. The dual cross braces welded on the front sweep ROPS were another sure clue, as was the rain guard for your left shoulder. And all those nose bracing plates on the



Top to bottom: Page from Kriegs' journal on the Quad D9 he once operated; Proof—the original serial number plate stamped 90J79, D9G



rear unit were added by Alaska Unlimited [second owner] because the hard nose had started to crack. You could also see the gauges that Wilder's [third owner] master mechanic put on the hardnose of the rear unit. Those were all still there."

Back home, Krieg did more research and confirmed that Peterson's restored Quads were the real deal, although not a Buster original. "When I took pictures of them at Peterson's picnic, I zoomed in on both serial numbers: 90J079 and 91J079. And those matched Caterpillar's records for Quad-Tracks built in 1969. That year they built eight sets with serial numbers #78 to #85."

Peter Kiewit & Sons bought Quad No.79 sometime in 1969 and shipped it to Alaska in 1970, along with a second set. Krieg suspects that the other set could be an original Buster Peterson Quad, but there is no proof positive, and the set was subsequently split up and parted-out. Peterson records do show that Peter Kiewit & Sons owned three Peterson-built Quads in the mid-1960s—

units No.102, No.103, and No.108. The log also indicates that No.103 was originally sold to Cat Research, then bought back and sold to Kiewit. In all, Peterson built ten Quad D9Gs, along with an unknown number of conversion kits for customers upon request.

## EVOLUTION OF THE PUSH-CAT

Even before Buster debuted his first Quad D9 in 1964, he was experimenting with ideas on how to increase load cycle times for scrapers. As a student of the industry, he would often go out to jobsites and sit in his car for hours studying the operation, looking for more efficient ways to speed up the process. Then he'd go back and try out different configurations in Peterson's backyard.

"There have been push-Cats around for as long as there's been scrapers," says Duane Sr., another life-long student of the earthmoving industry. "Scrapers don't have the power to load fast and efficiently



PETERSON TR. & EQ. CO. SAN LEANDRO, CALIF.

Left to right: Buster's pre-Quad experiments in the 1950s included a stiff-armed, outside armature linking two 14A D8s together, still requiring two operators; Buster's Quads were featured in multiple publications—here in the Caterpillar Folks newspaper January 8, 1965 issue

January 8, 1965

CATERPILLAR Folks

### D9 Quad-Track Provides Dual Pushing Power—Plus

(Editor's Note: Push-loading scrapers, with two D9s in tandem, has come to be the accepted standard practice of operation. This naturally calls for great skill on the part of two operators to accomplish the loading in the minimum of time and still apply full power and Tractor effort to the job. Here is the background story on a better way Caterpillar is offering customers to do the job.)

When doesn't ONE and ONE equal two?

According to Caterpillar Research, the possible answer is when ONE D9 plus ONE D9 equals a D9G Quad-Track arrangement.

For one and one, in this case, no longer equals only two, but two—plus.

And they have proved in the 700-hp D9G Quad-Track—the newly introduced unit that couples together two D9s and that is articulated for steering.

Staff Engineer John Page at Caterpillar Technical Center explains:

"When two individual D9s are synchronized and coordinated in a pushing operation as two individual pushers, there is always waste action—first with the front D9 before it makes initial contact with the scraper, and then with the second D9 until it contacts the first D9.

Simply coupling two tractors together so that they perform as one machine, under the control of a single operator immediately increases the machine power of two D9s to work in the short time it takes to contact the scraper with a single pusher tractor. The Quad-Track, of course, saves the time of maneuvering the second single tractor into position for tandem pushing.

The coupling and balance of the machine improves their performance on rough terrain and reduces the time previously consumed by two separate D9s negotiating rough ground.

Because the unit is compact, the Quad-Track cuts down the "straddle" on the job when operating as a pusher, for there is only one 42-foot line up instead of two individual 21-foot line D9s.

"Thus, in total, as a result of improvements in performance, the new Quad-Track actually provides both more push power throughout the traction due to better weight control and also quicker loading than two individual D9s." Page explained.

**Key to Profit**

Such characteristics as improved performance and loading

time are key factors in lowering costs for the contractor-customer.

With such facts in mind, R. A. Buster Peterson, executive vice president of Peterson Tractor Co., Caterpillar dealer in San Leandro, Calif., studied various possibilities of increasing the horsepower of the D9, he knew that larger and larger rubber-tired pushers were entering the market to challenge the individual D9, the previous alternative to arrange two D9s in tandem had proved awkward because they were hard to maneuver.

"Why not use a relatively simple air system for the control of steering, and of the powertrain transmission?"

This idea grew in a meeting between the dealer, the customer, and the Caterpillar engineer.

Cooperation

In a familiar display of dealer-company cooperation to develop new products, Caterpillar Research and Engineering followed the Peterson idea with best interest. Don Sandertin of Research, already an expert in multiple machine controls, helped Peterson develop the control system for the tandem unit.

When the first Quad-Track was shipped to Guy F. Ukerson, contractor for Brinson Dam in California, Peterson and representatives of Caterpillar Research, Engineering, and Sales Department, watched it work closely. In fact Peterson, a skilled vehicle operator in his own right, personally operated the tandem unit all the first day on the Brinson job.

Several months later, a second tandem arrangement was produced by Peterson, sent to work for Peter Kiewit and Sons, contractors for several of the major dam projects in California.

By June last year, a Quad-Track unit—containing the essential parts to marry two complete D9s—arrived in Florida, and the resulting Quad-Track set a new record for productivity and performance at the Proving Ground. Peterson, Sandertin, and others in Research and Sales Department observed directly as the Quad-Track proved itself.

"By fall, production of the Quad-Track was launched—and the compact 174,000-pound dual tractor now is being offered to customers around the world.

"Sequential Declutching"

The production model still incorporates Peterson's basic idea of "sequential declutching." This provides an arrangement of declutching operations between the two machines in a timed order to make the dual unit—no reduction to the problem of maneuverability of the Quad-Track.

R. A. (Buster) Peterson of Peterson Tractor Co., our dealer in San Leandro, Calif., helped spearhead field work to develop the D9G Quad-Track arrangement.

DESIGN ENGINEER Don Sandertin of Caterpillar's Technical Center shows components of the pneumatic controls of the D9 Quad-Track. Sandertin worked on the design of the controls with dealer and other company people.

TANDEM ARRANGEMENT of two Cat D9 Tractors couples together the machines mechanically by a 12-inch ball and socket joint. The unit is operated from the front tractor. The machines can be separated and hauled on separate trailers.

In the Quad-Track arrangement in use for pushing and dozing, the front D9 is the master or operational machine. From its seat, the operator controls the steering clutches of both machines with a single lever mounted to his left hand. A single brake pedal applies brakes to the disconnected tracks. The two machines are joined at a ball and socket joint

and they turn similarly to the articulated rubber-tired dozer. Control signals come through 10 quarter-inch pneumatic hoses and two hydraulic hoses.

**Other Uses Ahead?**

The D9 Quad-Track can be applied against the heaviest rubber-tired pushers, in the long run, the Quad-Track reserves the superior performance of track in all ground conditions.

The Quad-Track appears to have a versatile future too. Widely accepted as a dozer and pusher, its future seems bright, but Buster Peterson and our Research-Engineering team already are exploring other possible applications for four-track jobs where experience has proved that the tractor can't be topped!

**Johnson Relates Basic Purpose — "Keep Social Security Sound"**

(Continued from page 1)

These savings if the money weren't invested? That's what the government does.

Security. Any medical program is a foot in the door for full Medicare. Without vastly increasing



by themselves, so we've been using dozers to assist in loading even back to the first DW10 pull-scraper." As scrapers got bigger, the need for more pushing power became more critical. "Scrapers just kept getting bigger and bigger and bigger," says Krieg, a veteran operator of forty-five years who also helped develop Cat's H and M series motor graders. "The '51s and '57s and then the 660s and triple 6s—those scrapers were just too big for one D9 to push, so you had to use two.<sup>2</sup> And that took synchronization. If the two operators didn't work exactly the same way, the synchronization would get screwed up."

In 1961, Buster patented his cushion push block and push dozer concept. It was the same year Caterpillar debuted its 385 hp D9G. "Before that, people used an S dozer or U dozer blade on their push-Cat," explains Duane Sr. "Those blades articulated and could puncture an expensive tire or dig into the side of the scraper cut. Buster's cushion dozer design solved both those problems. It cushioned the impact of the two tractors and channeled all that power along the axis line, which reduced wear and tear on both machines."

Once Buster's Quads gained traction in the industry, Cat started building their own machines (designated MAO or machines as ordered) beginning in 1965, still using the 66A serial number prefix. The first set used serial numbers 66A2903 and 2904. Quads were found all across the United States, from Buster's original ten and Caterpillar's thirty-five early 66A sets<sup>3</sup> to the fifty-one DD9G and seven DD9H sets Cat produced from 1968 to 1980.

"The great thing about the Quad was that it was already hooked together," says Krieg, who saw his first one in 1970 while working on I-5 in Washington State just south of the Stanwood Cutoff.

“ The great thing about the Quad was that it was already hooked together. You didn't have to wait for the second unit to catch up. The second you made contact with the scraper, you had the full power of both units.

– Randy Krieg, former Quad operator



Caterpillar's 1965 spec sheet for the Quad D9 (or Quad-track Arrangement) from July 12, 1965

"The second you made contact with the scraper, you had the full power of both units. You didn't have to wait for the second unit to catch up." Another standout feature was the width of the tracks. "The D9Gs and 9Hs sat right in the slot, even if you had a little bit of repose falling back in behind the scraper. The tracks of the 9s still were not walking up on the berm. They sat right down in the nice hard ground the scraper was cutting, so they could get really good traction."

2 Krieg is referring to 651s—a 2-axle, single engine Cat scraper; 657s—a 2-axle, twin engine scraper; and 666s—a 3-axle, twin engine scraper.

3 Thirty-five sets are based on the 66A serial number list published in the Caterpillar Service Letter No. 31.1 entitled: *Main Frame Reinforcement for Dual D9G Tractors*, dated September 29, 1966.





### BUSTER'S QUAD D9S USED THREE PATENTS

#### Patent US 2,986,827

Bulldozer for Tandem Push Loading, filed April 10, 1958 / granted June 6, 1961.

Patent also covered the Cushion Push Dozer Blade, Inside Track Frame Push Arms, and Rear Cushion Pushing device.

#### Patent US 3,245,488

Control Arrangement and Steering of Tractors in Tandem, filed March 19, 1964 / granted April 12, 1966.

#### Patent US 3,266,816

Draft Assembly for Tandem Tractors, filed October 6, 1964 / granted Aug 16, 1966.

“The filing and granted dates on the Cushion Dozer patent are especially important,” explains Randy Krieg, Caterpillar test operator, who has done extensive research on the Quad D9s. “Some in the industry claim that Norman R. Hamm of Rockwell Manufacturing Co. invented it first. But Robert A. (Buster) Peterson’s patent precedes Hamm’s by three years. Buster used the Inside Push Arm mounting design, while Hamm’s design used the standard outside track frame trunnion mount. However, Buster’s Inside Push Arm design for cushion dozers is still the standard used today by 99 percent of all scraper contractors.”

Today, there are two known restored Quad D9Gs: the Cat-original set Peterson bought from Granite in 2012 and restored in 2014–16 (California); and the 2017 Quad restoration project by the Boston brothers of South Wales, UK, using an original Buster-built draft-assembly conversion kit with two vintage 66A D9Gs. And also a DD9H restored in 2001, owned by retired Kiewit executive vice president, Dick Colf.

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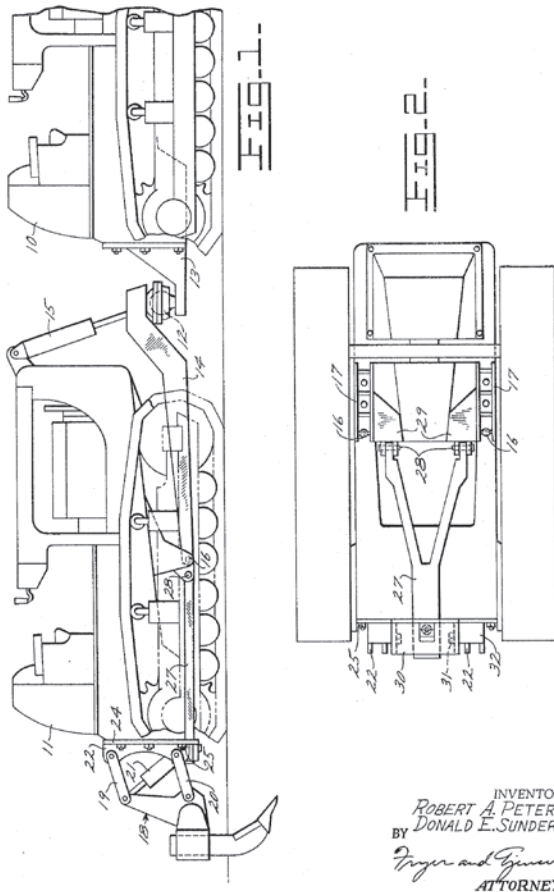
## BRIDGING THE GAP

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Buster Peterson sold thirty-four patents to Caterpillar over his career. The Quad D9, however, was his biggest design success. At a doubled capacity of 770 hp, the Quad filled a big gap in the industry until 1980, when Caterpillar introduced its D9L with 460 hp. Buster’s original design was known by various names: Quad-Trac, Quad-Track, Dual D9s, Quad 9s, and Quad-Track D9G. Caterpillar retained the 66A prefix on roughly thirty-five (known) machines they converted at the factory between 1965–67. However, when Cat bought the patents from Buster and began producing them in earnest in January 1968, they officially renamed the tandem-machine the DD9G (or Dual D9G). And they assigned the new model a brand-new serial number prefix—90J (front unit) and 91J (back unit)—for their distinctness, along with its own Cat spec sheet. “Cat produced fifty-one DD9Gs from 1968–74 with serial number prefixes 90J/91J,” says Eric Orlemann, author of nineteen industry books, many about Caterpillar. “Between 1974 and 1980, they built seven DD9Hs (97V/98V) until the introduction of the D9L that replaced it.”

Buster also designed a lesser-known dozer called the side-by-side D9 (SxSD9) with a twenty-four-foot blade for mine stripping and reclamation. Cat produced eleven SxSD9Gs between 1969 and 1974 and thirteen SxSD9Hs between 1974 and 1977. The SxSD9H was discontinued in 1977 when Cat debuted its new D10.





### EARLY QUADS ON THE JOB

In the summer of 1964, Buster had five of his quads out working on jobsites across the country, according to trade publication *Roads and Streets*.<sup>4</sup> No. 101 and No. 106 were with S.J. Groves on a pair of joint-venture contracts on I-64 near Huntington, West Virginia. Oman Constructors had the fifth original machine (No. 105) on their I-64 contract near Covington, Virginia, and No. 104 on another job in Gates, Tennessee. Peter Kiewit & Sons had No. 102 working in Byron, California on a portion of the Central Valley Water Project. An *Operating Engineers News* article<sup>5</sup> confirms Kiewit's use of the "experimental" quad on the San Luis Canal project.

<sup>4</sup> "Linked Pushers—Major Breakthrough?", *Roads and Streets*, November 1964, p39-41.

<sup>5</sup> "Experimental Cat to San Luis Dam Site", *Operating Engineers News* (Local 3), February 1964, p13.

## Int. 64 Job in Allegheny County Requires Gigantic Construction Rigs

By BILL LUMPKIN  
COVINGTON VIRGINIAN

COVINGTON, Va. (AP)—Robert H. Hawks of Fries, 27, an equipment operator on contract since 1957, has found himself driving one of the most unusual rigs yet used for highway construction in Virginia. His employer, Oman Construction Co. of Nashville, Tenn., is carving Interstate 64 out of rugged mountains west of Covington in Allegheny County.

**Rugged Terrain**  
Facing some of the most rugged terrain highway builders have yet contended with in Virginia, requiring deep cuts and extensive fills, Oman and others working on Interstate 64 in Allegheny County have reacted by bringing in some of the largest and most powerful pieces of construction machinery ever used in the state. Many are believed to be the first of their kind used in the state.

One of these machines, unusual for its size and the way it is operated, is a tandem pusher made by using a special 25,000-pound coupling apparatus to connect two D-9 "cats" end-to-

end. A single D-9 is the largest machine of its kind made by the manufacturer. This combination rig, with both sections driven by the same operator, from over yet and so far I haven't had any close calls. I like operating constructing machinery better than anything I've ever done."

He added that although operating construction equipment is always more difficult in mountainous terrain than in more level areas the task is made physically easier for the operator of the tandem-pusher by the fact that his machine is equipped with air brakes. The throttles and clutches also work on compressed air. He added that his special rig is actually easier to steer than a single D-9 although its turning radius is not as short.

Although the pusher is the largest machine Hawks has operated, he expects to be operating bigger ones in the future as additional interstate projects get underway.

Thursday, July 23, 1963



Photos taken June 17, 1964



**Even Bigger**  
Although the rig is impressive enough in bulk from close up, weighing over 60 tons and with feet above ground level, its primary duty is to push even bigger machines called "scrapers" from the rear.

The scraper's middle section, called the pan, lowers as it passes over a hill where a cut is being made, scoops up a load of earth and shale, then closes until the operator can take his load to the nearest fill and dump it. But the scraper alone can take only a shallow bite of earth compared to the load it can handle with the extra power of the tandem-pusher shoving it from the rear.

Hawks, a husky bachelor with a healthy tan from long hours of outdoor work and slightly curling light brown hair, admits that operating a tandem rig such as the one on the project is



Top to bottom: Article about I-64 job in Virginia; Oman Quads used on I-64 contract in Covington, VA in June 1964; S.J. Groves using one of Buster's original Quad D9s





## A FRONT ROW SEAT—TOMMY VANLANDINGHAM

“I saw my first Quad in 1966,” recalled Tommy VanLandingham, one of the early Quad D9 operators, before his passing in 2018. “The first time I actually operated one was May 1967. At the time, I was working for Kiewit doing interstate projects in New Mexico. I was just a punk kid of 22.” VanLandingham spent 50 years running heavy equipment and construction projects for Kiewit, Granite, and other big contractors, mostly up in Alaska. He was one of the few operators who ran a Quad in its early years. Having grown up on a farm, he was quite comfortable around machinery so picking up the new air-over-hydraulic controls was just one more challenge. “I just climbed up there and figured it out. There were hardly any operators who knew the Quad then, so I was in pretty high demand. The contractors would contact me, and I’d either go demonstrate a Quad for them or work for them for a couple of months until we could get somebody else trained.”

VanLandingham only got to see a Buster Peterson-built Quad in pictures, but he operated a number of Caterpillar’s early units, even before they were officially DD9Gs. “Buster and Caterpillar were in the developmental stages in New Mexico when I was there, and then over at the proving ground in Arizona. Caterpillar came out a lot when they were running tests; there’d be all kinds of factory reps standing on the banks taking notes.”

In those early years, VanLandingham spent a lot of time on the Quads. “It got to be where there was such teamwork between the scraper operators and the Quad, it was like a great basketball team where everybody works in sync. We moved three or four million yards of material on some of those jobs. Those were fun times.” What made the Quads stand out, besides their obvious power, was the finesse of the controls. Once you learned them, you could put those D9s in a tight turn and do donuts all day long with ease. “The big thing about the Quads was the controls. You had air and hydraulics. And you ran both your feet. It was just learning the patience to put the valves in the correct position to make it turn. That was so much different than a conventional piece of equipment. The conventional Cats and the other manufacturers all used levers. But the Quads came out with air-over-hydraulics. And that made everything so much easier to run.”

During the 1970s, VanLandingham operated Kiewit’s Quad No.79 up in Alaska—the same Quad Peterson bought in 2012. And later, as a job superintendent for Wilder Construction, he used No.79 on the Alaska Railroad Realignment project in 2001. “One time I pushed 600 loads in a ten-hour shift,” recalled VanLandingham. “There was always a big competition between operators to see who could push out the most loads in a shift. A quad would be 10-15 seconds faster getting hooked up to a scraper than two separate Cats because you only had one operator. From the time I touched them until I pushed them out, it was 15-18 seconds. With separate pushers, it was a minute, a minute thirty, a minute forty-five. It was unbelievable what that machine could do compared to what we’d used in the past. The production they were getting with those Quad 9s just went off the scales. It’s hard to put into words. Unbelievable.”

Tommy VanLandingham died in February 2018 while still employed as a job superintendent for Granite in Alaska. “Tommy was on the very first job Kiewit had that quad on [No.79],” says Randy Krieg, a friend and colleague for over 25 years. “He wasn’t running it at the time; he was running a scraper and being pushed by it. He’d been around that quad for years. Tommy loved dirt-moving, and that’s why he kept doing it well into his seventies.”





Top to bottom: Arborio Construction Quads on I-87 contract in Warren County, New York; Morrison-Knudsen's publication, *The Em-Kayan*, featured the Quad D9s multiple times... here in October 1966 issue

Yet another Quad was working on a 750-acre industrial development near Seattle, Washington for Morrison-Knudsen in 1966. M-K's company newsmagazine, the *Em-Kayan*, cites the machine working on a 243-acre section with 4.5 million cubic yards to move—and a sense of urgency to go with it.

By the time Buster's Quad design hit its stride in the mid-1960s, the Interstate Program was in full swing. Contractors made ready use of their increased pushing power to maximize load cycle-times and up their profits. Quads were used in a variety of big dirt applications including the Orville Dam, San Luis Canal, SeaTac airport, and countless miles of interstate highway.

## THE ANACONDA THIRTEEN

In late 1964, Caterpillar's Arizona dealer, Empire Tractor, received a large order from the Anaconda Company, which was removing overburden from the copper mine they were developing. It was called Twin Buttes Mine, just southwest of Tucson. By 1967, Anaconda's fleet numbered 154 Cat machines, including thirteen Quads. According to serial numbers on record, the Anaconda thirteen were all 66A machines built by Caterpillar. Jack Hasten was Cat's assistant sales manager then



(retired 1988) for the southern half of the Plains Division. “At the time, that was the largest single order, I believe, that Caterpillar had ever received. It delivered to Empire in March 1965 and included four Cat Dual D9Gs.” As the job grew, so did the fleet. By late 1967, the full thirteen were working on-site.

Excerpts from an article in Caterpillar WORLD magazine further explains: “The largest fleet of Caterpillar tractor-scraper and Dual D9G tractors ever assembled has been teamed with belt conveyors to dig the pit that will be the Twin Buttes Mine. Anaconda’s advanced technique for removing overburden begins at the bottom of the pit with a fleet of thirteen Dual D9Gs push-loading tractor-scrapers. . . . Before rock is reached, they will have moved more than twice the earth moved to build Oroville Dam, and before the mine has operated a decade, more than was taken from the Panama Canal. . . . They are hauling away millions of tons of overburden—sand, gravel, and

caliche—to expose the ore-bearing rock that lies 460 feet beneath the surface. Two hundred million tons must be removed before the first rock is reached.”<sup>6</sup> The Anaconda thirteen proves that Caterpillar was making 66A Quads concurrently with Peterson’s SEQ (Special Equipment Services) shop—before they officially bought the patent and renamed the machine the DD9G.

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## STILL AROUND

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Today, Scarsella Bros. of Kent, Washington owns four Quads. Their father bought the first one—a 1966 vintage set of 66A machines—from Central Machinery in Montana back in June 1970. “We had a pretty good-sized dirt project at SeaTac airport in 1970, and that’s where it first went to work; that’s also where I started getting familiar with it,” says Don Scarsella, one of five brothers who own the business. “The very last time we ran them was 1993–94 on two back-to-back jobs in eastern



Anaconda bought 13 Quad D9s for their copper mine operation at Twin Butte Mines in Arizona in 1964–67

6 Max Bass, “Anaconda’s Twin Buttes Mine”, *Caterpillar WORLD*, Oct/Nov 1967, p2-7.



Washington on Hwy 395. It was a ten-million-yard job, and we used them there quite a bit.

“Anybody who’s been around Quads knows that you could sink the can of a scraper down into the ground fourteen to sixteen inches—as far as you want to bury it—and if it’s loose material, the dirt just boils over. A single Cat—be it a D9L or a 10N or 10R or 10T—there’s just no comparison. The Quad has much more power. We still like them better, although we don’t use them anymore. If you’ve got a very big, long area, they’ll out-perform single machines. But nowadays, you just don’t see that large of a dirt project much.”

Dick Colf in Woodland, WA, owns the last DD9H set Caterpillar ever built, a vintage 1979 model—S/N 97V194 and 98V194. Colf’s career spans forty-seven years with Kiewit, from project engineer to executive vice president. “From 1979 to 1995, we put twelve thousand hours on that Quad. Its first job was on SR-520, extending the highway from Bellevue to Redmond. I bought it from Kiewit in 2000 and only did minor maintenance, and then painted it since it was in very good condition. Kiewit owned five Quads in the Northwest and I have the fifth set. The other four were all DD9Gs.”

Kiewit used Quads to push-load scrapers on a number of large earthmoving jobs in the late 1960s and ’70s. “The first job I was on was in 1967 pushing 651s outside Arlington, Oregon along the Columbia River,” says Colf. “Kiewit was relocating a portion of the Union Pacific railroad, and I was an engineer keeping track of how many loads we were getting per hour. We also used Quads to build a section of the highway upriver from John Day Dam. We were borrowing coarse gravel near the river and then building embankments up to one hundred feet high to raise the highway. Kiewit had quite a few of those jobs. And they used a double D9 on them. We were getting sixty loads an hour, which meant you were only pushing for twenty-five seconds.”

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**EXISTING QUADS**

The search continues for existing Buster-built Quads and Cat-built Quads. Current known data listed below:

**Peterson-Cat (California) owns one Quad D9G**

- 90J79 & 91J79: 1969 Cat-built, bought from Granite (AK) in 2012

**Kiewit (Nebraska) sold three Quad D9Gs in 1973**

- 66A2600 & 66A2621: 1964 Buster-built No.108, last known location: Oregon
- 90J64 & 91J64: 1968 Cat-built, current owner: Scarsella Bros. (Washington)
- 90J85 & 91J85: 1969 Cat-built, last known location: Wyoming

**Scarsella Bros. (Washington) owns four Quad D9Gs**

- 66A3806 & 66A3808: 1966 Cat-built, June 1, 1970
- 90J64 & 91J64: 1968 Cat-built, Feb 1, 1986
- 90J68 & 90J69: 1968 Cat-built, March 29, 1990
- 90J103 & 91J103: 1972 Cat-built, May 1, 1986

**Coppage Construction (Kentucky) owns one Quad D9G**

- 66A3907 & 66A3908: 1966 Cat-built, bought 1972, Possible first owner: SJ Groves

**Dick Colf—Retired Kiewit executive (Washington) owns one Quad D9H, bought from Kiewit in 2000**

- 97V194 & 98V194: 1979 Cat-built

**Anaconda 13 (Arizona) originally used at Twin Buttes Mine—66A D9Gs (5 of the 13 found at Empire-Cat)**

- 66A4686 & 66A4687: 1966, delivered Feb. 4, 1966
- 66A4001 & 66A4002: 1966, delivered March 9, 1966
- 66A4108 & 66A4109: 1966, delivered March 9, 1966
- 66A4671 & 66A4672: 1966, delivered Dec. 10, 1966
- 66A4691 & 66A4692: 1966, delivered Dec. 10, 1966

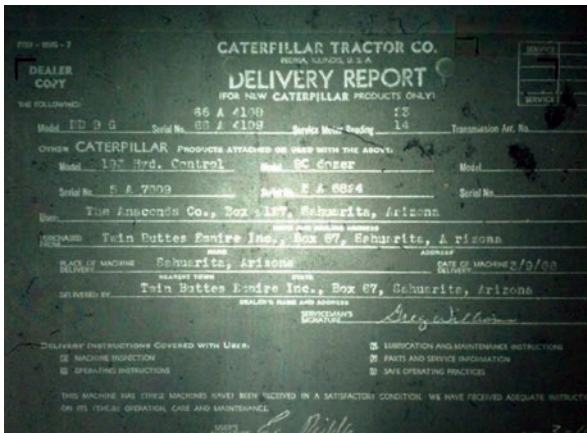
**Bostonpowercat.com (United Kingdom)**

**Retro-Rebuild 2017—Quad D9G**



*Wm. R. Coppage, founder of Coppage Construction (KY), bought this Quad D9 in 1972 for use in a coal mine in Bowling Green, NY*





Top to bottom: Delivery plate for 66A4108 & 66A4109, one of the Anaconda Quads, still in the possession of Empire Cat in April 2018; Tony Scarsella, co-founder of Scarsella Bros, watches progress with Quad D9s; Scarsella's first Quad D9 at SeaTac Airport in 1970

As a young engineer, Colf drew up schedules and kept track of production quantities, which gave him a good handle on just what the Quads could

do. “To get sixty loads an hour, you needed a thousand-foot-long borrow area. The Quad would push-load scrapers for one thousand feet in one direction and then turn around and load on the return trip. It’s called chain-loading. As soon as you got one scraper loaded, another one would be right there in front of the Quad, ready to go because the push-Cat never waits. Everybody loved the Quads because they could turn around in twenty-eight feet<sup>7</sup> at the end of a thousand-foot borrow area. They worked together practically like a team of horses.

“I remember another job where we got seventy loads an hour. We were working in eastern Oregon, cleaning up along the Columbia River with 631s. It was easy to push in the loose scabble; we had operators who knew what they were doing, and they were loading in ten seconds. For three days, we got seventy loads an hour. We were amazed at how efficient and productive this operation was. I was always impressed by how well the Quads performed.”

### FINAL JOB: FORT GREELY AIR BASE

The very last job Quad No.79 worked on was at Fort Greely, one hundred miles southeast of Fairbanks, Alaska (2002–07). “That was a huge project,” says Krieg, who by then was back working for Caterpillar in Arizona. “Fort Greely sat inactive for years, and then they decided it would be the perfect place to launch interceptor missiles at anything coming out of North Korea. But before they could do that, they had to completely rebuild the runways because they were in such bad shape. The Quad went up there to push load scrapers that were digging out several of the old aircraft aprons and importing all new gravel. Then the C17s could land with their payload of interceptor missiles. They’d pull a missile out of the back of the jet, take

7 “The entire assembly turns somewhat like an articulated rubber-tired unit. A 70-degree angle can be achieved, producing a turning radius of 28 ft. 3 in.” – Taken from “Two Tractor Combination by Caterpillar”, *Western Construction*, March 1965, p44.





*Top to bottom/clockwise: Dick Colf in 2019 with his restored Quad D9H, the last set Cat ever built; Boston brothers retro rebuilt Quad D9G; Karl(L) and Rupert Boston with their restored Cat 666 scraper in South Wales, UK in 2020.*

it over with a train, and load it into a silo. And every time they did, they'd clear the base for secrecy because they didn't want anyone taking pictures. That was Quad No.79's last job. After that, it just sat in Granite's yard in Palmer, Alaska." Until Peterson bought it in 2012.

## THE RESTORATION OF QUAD NO.79

Once the Quad project was finally underway, there was both a sense of pride and urgency in the San Leandro main shop. Ron Spencer led the team comprised of shop techs Anthony DeStefano and Mike DeBono, field tech Mike Harreld, several shop welders, and painter Agapito Andrade. "Keeping it all original wasn't the goal," explains Spencer. "Most machines have been modified over the years in numerous ways. But the vast majority of both these machines is still original: the



## THE BOSTON BROS. RETRO QUAD

The Boston brothers, Karl and Rupert, used two 66A D9G machines randomly sourced but with the same vintage serial number prefix as original Buster-builds. The quad draft assembly and power controls were originally built for Collin Co. (aka Agristruction, Selma, CA) in 1972 for subsoil work in the Central Valley. The brothers at Bostonpowercat.com bought the quad drawbar, operator's platform, nose cone / weight transfer cylinder, and power controls from Henry Collin around 2003. "Henry Collin told us that Peterson Tractor had been involved with the design and build of his one-off 'super ripper' set," explains Rupert Boston. "Unfortunately, the super ripper had been removed from the drawbar and hitch before we acquired it and had been scrapped out. We managed to save everything else, and the drawbar today still shows evidence of where the super ripper was mounted." Henry Collin is also cited on Patent No. 3815683 along with Peterson engineer, Don Stroot (1957-92), for the ripper assembly that helped him reclaim so much hardpan in California's Central Valley.







## IN THE OPERATOR'S SEAT—RANDY KRIEG

Randy Krieg operated Wilder's Quad No.79 on three different projects in Alaska between 1994 and 2000.

"Back in those days, that thing was a powerhouse. The D9 was the biggest dozer made. And now you've got two coupled together. It didn't take a rocket scientist to figure out that that thing was going to be excellent at pushing scrapers. It could push just as good around a corner as it could straight ahead. With other dozers, you had to manipulate the steering clutches, and as soon as you did, you started losing power to that one track and the scraper wouldn't get pushed smoothly. But with the Quad, once you had braked the tracks enough to get the hitch in position, you could let off the steering brakes and it would stay in that position."

Krieg's skill as a blade operator earned him the privilege of running scrapers and quads when finish work wasn't the priority. "I loved running the Quads. The best I ever did was 586 loads in a ten-hour shift, even though Quad No.79 was 25 years old by then. On a really aggressive scraper spread, if things are really clicking, you can get loaded in twenty seconds. Wilder used the same philosophy as Kiewit: 600 loads in a ten-hour shift—a load every minute. The night I did 586 loads was a perfect situation. It was a big sliver cut. We had a real short haul. And I had eight scrapers. They were just dropping down, crossing the highway, and dumping like a figure eight. We had about twenty minutes left when the front unit ran out of fuel. I wanted to cry. And I never got that close again."

According to Krieg, "a lot of people didn't understand how the Quad's steering worked. It was all air controlled. You had all these little slave pucks hooked onto the linkage that acted like miniature brake cans. As you moved the joystick around, you opened up the air passages to the different brake cans. You would put the lever into a certain position and then just tap on the brake pedal lightly to get those diaphragms to actuate. When you wanted to steer right, you pushed the lever to your right, and as you tapped on the brake pedal, it put on the steering brake to the right track on the front machine, and the left track on the back machine."

When you pushed the hitch to the left just a few degrees, you could let off the steering control and both tracks were under full power again on both machines. Once you got it turned, you could pretty much just keep it floored and push under full power with both units. That's what was so unique about the Quads. To this day, I still say there is nothing that can push a scraper around a curved cut like the Quads."





*Quad #79 worked on the Glen Hwy in Alaska—from Sutton to King's River—for Wilder Construction in 2000*

cooling systems, the track frames, the mainframe, the engine, transmission, final drive, and all the main structural parts of the machine. At least 90 percent is original.

“You can tell that, over the years, people had reinforced the mainframe, the track frames, and the hard nose because there’s a lot of stress in those areas. But the air-control system, the hydraulics, the blade, and the coupler device that hooks the two machines together, that’s pretty much all original. We didn’t completely rebuild them,” says Spencer. “But we did a lot of rewiring, even though there wasn’t a lot of wiring on them like there is nowadays. Duane wanted lights on both machines, so we installed new, updated lights but kept the old round style. So we had to wire the lights in, and we also did a lot of the rewiring on the starting system and the new gauges and indicators.

“ To this day, I still say there is nothing that can push a scraper around a curved cut like the Quads.

– Randy Krieg, Caterpillar test operator,  
Tucson Proving Ground

”  
“The way Buster designed the connection between the two machines made it relatively easy to connect and disconnect. But to get to the point where the two operated together, that was a tremendous amount of work because everything was air controlled. Everything on both machines had an air system on it—the steering, brakes, transmission controls, and throttle. So you had an air compressor, air tanks, and all the related valves and lines. And then linkages heavily modified to make the design work, which was always mechanical and hydraulic.



“The design is pretty amazing for back then,” continues Spencer. “I wasn’t familiar with it because I hadn’t been around it before. And then to really see it, was like, *Whoa*. That was pretty incredible. That was ingenious engineering for back in those days. There’s a hydraulic cylinder on the rear machine that raises the trunnion ball to be able to hook these machines together. Some pictures and information I’ve seen in the past don’t have that cylinder, and you have to manually raise it up and down with a forklift or crane. But this one had a hydraulic cylinder for that function. So you could disconnect and reconnect the machine relatively easily without making an oil mess. And then all the air hoses would connect the front machine to the rear from a manifold block. I think there were twelve to fourteen air hoses.

“ The vast majority of both these machines is still original. At least 90 percent. ”  
– Ron Spencer, foreman, San Leandro main shop / Peterson

“A lot of it you could figure out easily enough on your own. But when Caterpillar bought the patent and started producing their own model, they put out quite a bit of Cat information,” says Spencer. “The parts books and service manuals weren’t very informative, but there were some generic operation and service manuals that we did use. And we found them, believe it or not, in our Peterson library. I couldn’t believe we still had them.”

According to Jack Ravazza, special services manager in San Leandro, “it was cool to see the nostalgia, stuff that was built here in this building, being done again. We all knew we were doing these machines for Duane. He was recreating a little bit of history, and these guys were a part of it. That was cool.”



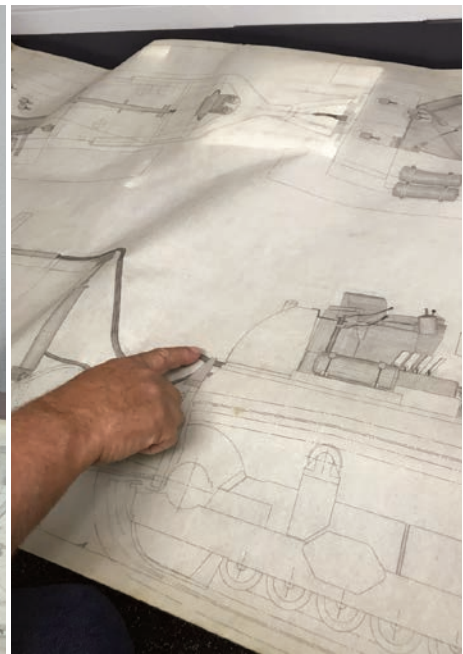
*Quad D9G in progress at San Leandro main shop in 2015–2016*





*Peterson's Quad restoration project began in the San Leandro shop in October 2015 and finished in August 2016.*





Buster's original Quad-Trac design impressed enough people in the industry to make it somewhat of a legend. Those who operated it and believed in it still have a soft spot for the tandem giant. "That Quad has had one hell of a life. I was so happy when I found out that Duane had bought it and was going to save it from the cutting torches," says Krieg. "It has a lot of history—and a lot of very personal history for me. I loved running it. I loved working around it. Buster Peterson was an absolute genius for some of the ideas he came up with."

*L-R, from top-down: Dale Smith/L & Jack Ravazza look over the original Quad D9 drawings; Close-up of Quad drawings; Gary Peterson of Classic Construction Models with both Duanes and special 1:48 rendition of the DD9Gs in 2020; Randy Krieg in the Quad D9 at Peterson's 80th celebration; Randy Krieg with DD9G model he built in 1990.*



## PROVENANCE OF PETERSON'S RESTORED DD9G NO.79

Peterson bought DD9G No.79 (90J00079 / 91J00079) from Granite in April 2012

- 1969 Built at Caterpillar's East Peoria factory
- 1969-70 Peter Kiewit & Sons<sup>1</sup> bought #79 and brought it to Alaska
- 1970-71 First job is section of Parks Hwy in Healy Canyon – 240 miles north of Anchorage
- 1972-73 PKS used on Glen Hwy alignment job near Nelchina, Alaska
- 1980 Alaska Unlimited<sup>2</sup> bought #79 from PKS and used on numerous projects in northern Alaska
- 1988-89 Alaska Unlimited & Wilder Construction joint-ventured on 20-mile realignment job of Alaska Hwy from Tok River Bridge to Midway Lake.
- 1989 Wilder Construction<sup>3</sup> bought Alaska Unlimited's equipment fleet including #79 and the back half of another Quad they believe is a Buster Peterson 66A original.
- 1990-91 Wilder Construction does Snohomish County Landfill project in Everett, Washington
- 1991 Wilder Construction does landfill project in Idaho
- 1992 Quad #79 is transported back to Alaska for Glen Hwy project but is in too poor a condition; goes to NC Machinery in Anchorage for repairs and sits out Glen Hwy job
- 1993 Spring/Summer: Quad #79 works on Parks Hwy 4-lane Expansion from Eklutna to Glenn Parks Interchange
- 1994 Spring/Summer: Quad #79 works on Seward Hwy realignment (milepost 50-53)
- 1994 Fall/Winter: Quad #79 works on exit of Glacier Hwy near Seward, Alaska
- 1995 Spring/Summer: Seward Hwy Reconstruction near Turn-again Pass
- 1999 Spring/Summer: Anchorage International Airport – reconstruction of Main Runway 7R
- 2000 Spring/Summer: Glen Hwy Reconstruction from Sutton to King's River (milepost 61-67)
- 2001 Spring/Summer: Alaska Railroad realignment at Fort Richardson
- 2002 Spring/Summer: Park Hwy Expansion near Wasilla, Alaska (buy out-transition: Wilder/Granite)
- 2003-07 Fort Greely Missile Base – Construction of new test track near Delta Junction, Alaska
- 2007 Granite Construction<sup>4</sup> completed a five-year buy-out of Wilder Construction
- 2012 Granite sold Quad #79 to Peterson-Cat<sup>5</sup>
- 2015-16 Peterson-Cat's main shop at San Leandro HQ does major restoration of Quad #79
- 2016 Summer: Newly restored Quad #79 goes on tour for Peterson's 80th year anniversary

Quad #79 has had 5 owners:

- 1 Peter Kiewit & Sons (1969-80)
- 2 Alaska Unlimited (1980-89)
- 3 Wilder Construction (1989-2007)
- 4 Granite Construction (2002-2012)
- 5 Peterson-Cat (2012-present)

All information on this page provided by Randy Krieg.





*The Retro Twin D8 and 1:24 scale model, built by Classic Construction Models, in 2019.*





## THE RETRO TWIN D8

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### RECREATING BUSTER'S TWINS

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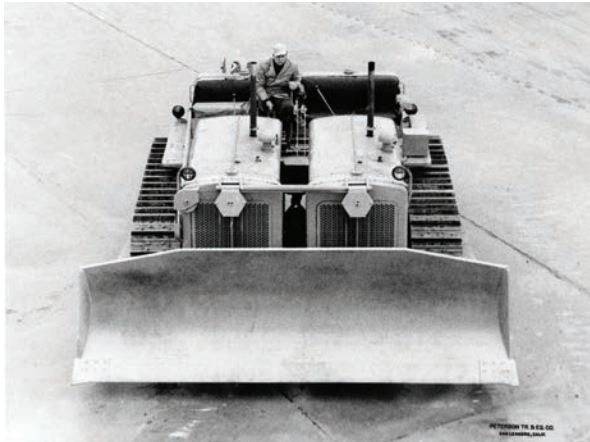
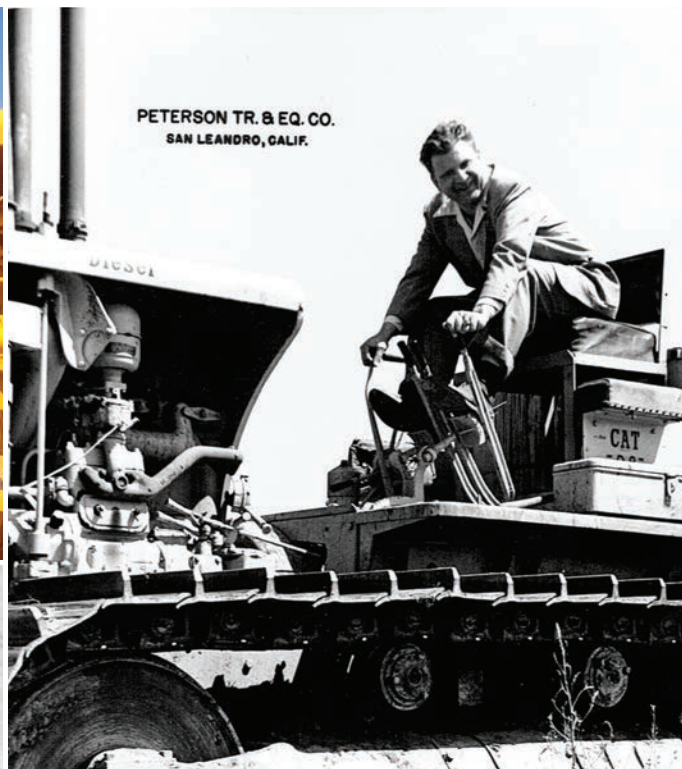
**T**he second hybrid at Peterson's 80th celebration, the Cat Twin D8, was built from the carcasses of five D8s of the same vintage serial number. Today, it is the only existing machine built from Buster Peterson's original drawings. The Twin D8 was a big win in the eyes of an industry hungry for more power than a single tractor could deliver. However, by the time Buster's patent came through in 1954, Caterpillar had introduced its higher horsepower D9, making the Twins obsolete. That's why Buster only produced three original Twins. Or so it had been widely believed, until recently.

Duane Sr.'s intent behind the retro Twin was to honor the men who built it—Buster Peterson, who conceived and designed it; Howard Peterson, who backed it financially; and the SEQ team, who built the originals. The retro-build was also a nod to the reputation of innovation ignited for Peterson within the Caterpillar dealership network. "Our goal was to re-create something that was unique to Peterson. And our 80th anniversary was the catalyst for that. There was certainly no financial justification for these machines," admits Duane Sr., "but they're a link to our past. And something we are very proud of."

It's hard to nail down exactly when the idea for the current Twin D8 hatched. But the man behind the idea was Ed Akin, a retired United Airlines pilot from Placerville, California. "I was intrigued when the Twin D8s were first built," says Akin. "I didn't see them, but I read about them. I was in high school at the time and I was tractor-crazy, having grown up on a ranch in Placerville. Then about ten, fifteen years ago, I came down to Peterson and started bugging them about getting the plans."

In the late 1990s, Akin joined the Antique Caterpillar Machine Owners Club (ACMOC) and served as director for six years. By then he had accrued an impressive collection of antique tractors from his side job hauling heavy equipment for contractors. One day he got a call from Glen Ghilotti, a fellow ACMOC member,





*Top left, clockwise: Bill Doyle & Duane Sr. on the Twin D8 at Peterson's 80th anniversary event in San Leandro in Oct 2016; Buster Peterson in the early 1950s; Buster Peterson on the Twin D8 prototype in San Leandro in 1950.*

asking if he could bring a group to Akin's ranch to see his collection. That was in 2012.

During the visit to his ranch, Akin pulled Ghilotti off to the side. "Come here for a minute. I want to show you something." Then Akin held up a part and said, "I had this specially made. Do you know what it is?"

"It looks like some sort of coupling to me."

"Yeah. It's a coupling to tie the steering clutches together on a Siamese Twin D8 because I'm going to build one," said Akin, half-joking.

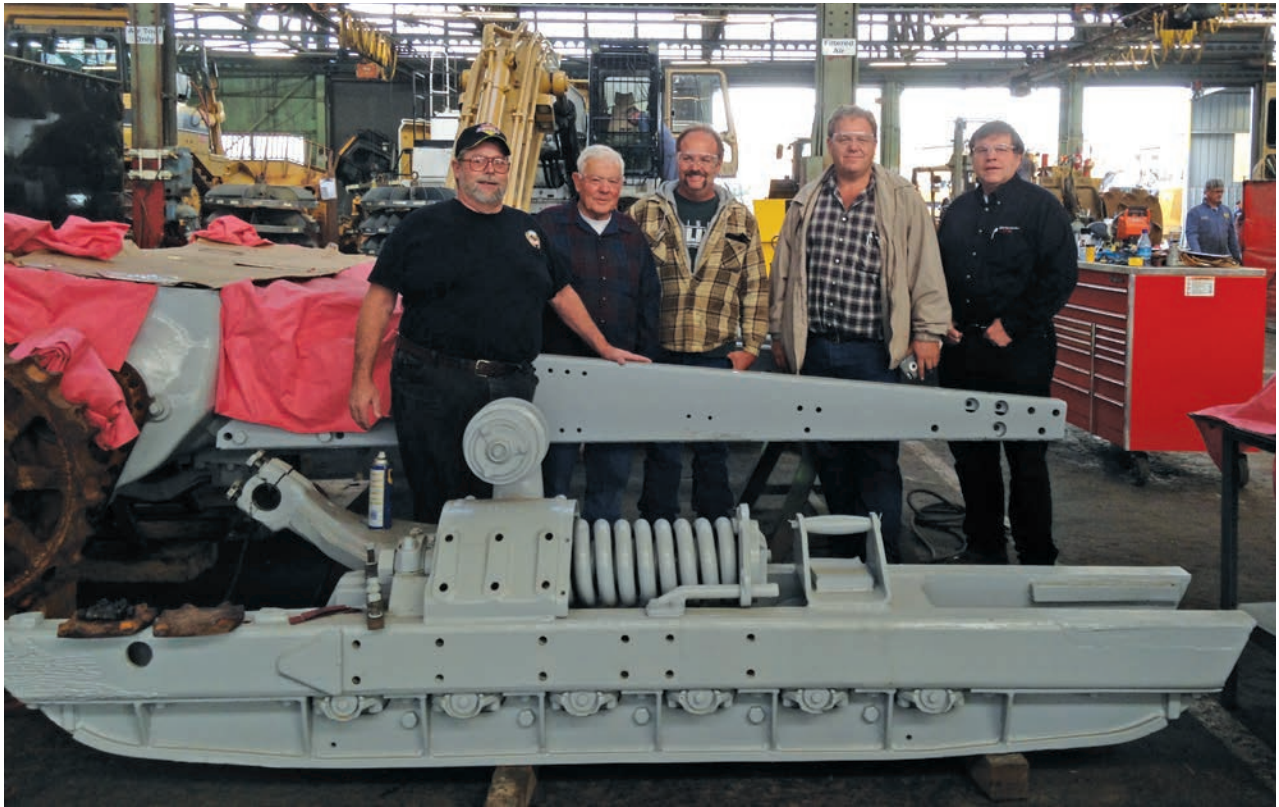
"Yeah," said Ghilotti, super excited. "Let's do it!"

"You're crazy. Do you know how much work it would be?"

For the next six months, Ghilotti continued to call Akin and encourage him to go ahead with the idea. Akin's answer was always the same. "You're crazy. Do you know how much that would cost? How much work it would be?"

One day he finally relented. "If you want to do it, we'd better contact Peterson and make sure it's okay with them because it's their patent and their idea. And we'll need their help if we're going to pull this off." Ghilotti called Duane Doyle Sr. right away, and a few weeks later the three of them met. That lunch led to a partnership backed with a gentlemen's handshake and a plan. Ed Akin would supply the correct vintage D8 tractors from his collection. Glen Ghilotti would rebuild the engines and supply all the transportation. And Peterson would rebuild the frame and track assemblies, and then merge the two tractors into one. The Retro Twin D8 project was finally on.





*The Twin's partners: (L-R) Glen Ghilotti, Ed Akin, Glen's two ACMOC buddies, and Duane Doyle Sr. in San Leandro main shop in 2015*

## PHASE ONE: PETERSON IN SAN LEANDRO

The Twin D8 was also the first of the two historical rebuilds at Peterson, along with the Quads. It came into the San Leandro shop in 2013 in pieces—literally pallet-loads of boxes of parts. As shop foreman, it was Ron Spencer's job to put the giant jigsaw puzzle together. "Initially, I thought it was an original Twin because of how everyone was talking about it. But once I started working on it, I was like, "Wait a minute. These things have never been together. There's no way!" Shortly after that, Duane Sr. came out into the shop, and I asked him about it. And he said, 'No, no, no. These were never assembled as a Twin D8. These are two separate D8s that we're going to make into a Twin D8.' And I thought, *Oh my gosh! That's even worse!*"

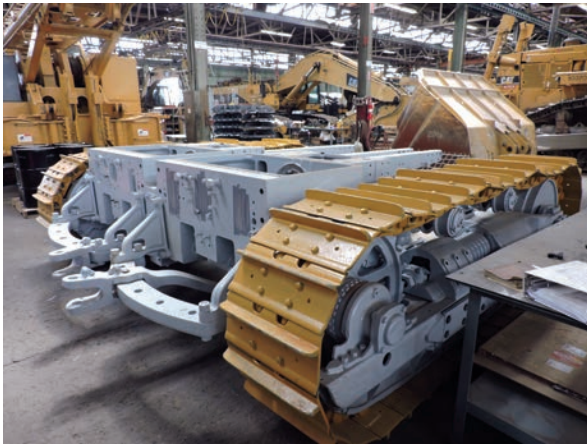
After stripping the two vintage D8s down to the bare frame, Spencer's crew sandblasted everything and got to work. They completely disassembled

both final drives, redid the bearings, and rebuilt them. "We had a real hard time on the final drives because the parts were so old. A lot of the housing pieces were missing, so we had to make some of those parts. Then one of the dead axles was badly damaged, so we got another one from Ed Akin, but it wasn't in real good shape either. Then getting that all back in the correct position and lined up



*(L-R) Ed Akin discusses progress with Ron Spencer and Duane Sr. in 2015*





*Twin D8 track assembly built in San Leandro shop*

and adjusted was pretty difficult. Everything you touched on those machines was just a nightmare. Nothing about the Twin build was easy.”

Take the track frame assemblies, for example. “The track adjusters on the track frame were the old, threaded style. Today, they’re grease adjusters. So we had to pull the track adjusters in and push them out a fraction at a time to get them freed up properly. Then there was a lock mechanism around it that was completely frozen up and disintegrated. We spent days just on the track adjusters, trying to loosen them and get them apart with heat. You can’t get them new anymore, so we had to repair those, modify them, and make some of our own pieces. Same thing for the idlers.”

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## TEAMWORK

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Both the Twin D8 and Quad projects were a team effort from start to finish. ACMOC members and antique tractor buffs got involved. One vendor even chipped in. The San Leandro team ended up building both radiator cooling system packages. “We took out the old radiators and the radiator guards (hard-nose), which were so bent up that nothing would line up right. We modified them and straightened those out the best we could and put in all new radiators and oil coolers.” When Spencer took the radiators down to Pankey’s Radiator Shop, the owner, Jim Burns asked what they



*(L-R) Duane Sr., Ed Akin, Bill Doyle and Ron Spencer discussing how the two drawbars are hooked together*

were for. “I told him they were for Duane Doyle’s Twin D8, and he said, ‘I remember those things! That’s how old I am.’ So he put two new radiator cores in that group, minus the hardnose—for free! I kept asking him if he needed a P.O. and he said, ‘No charge. It’s on us. Because it’s Duane’s project and I can be part of the history.’ I thought that was really cool.”

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## FINAL ASSEMBLY

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Putting the whole machine together was a bit like reassembling Humpty Dumpty. Nothing about it was easy. “We had to do some major modifications to connect those machines,” says Spencer. “The weld shop got involved, making different retainer plates and brackets to make it all fit. That was a tremendous amount of work.” San Leandro shop tech Mike DeBono was the man most of the time on the Twins. “Mike did a huge part of that project.





(L-R) Bill Doyle, Jack Ravazza, Ed Akin, Ron Spencer, Glen Ghilotti and Duane Doyle Sr. in the San Leandro main shop in April 2015

“ It brought back good memories of working on those old conventional dozers back in my younger days.

– Ron Spencer, main shop foreman, Peterson-Cat, San Leandro, now retired (1986–2016)

”

He was on it for months at a time. And he was going crazy, just like I was,” says Spencer. “He hadn’t really seen any of these old machines before, so I helped him a lot. It brought back good memories of working on those old conventional dozers back in my younger days.”

### ORIGINAL SHOP BAY

At the beginning of the project, Duane Sr. took Ghilotti out into the San Leandro shop to show him where the Twins would be built. “See that downpipe for the roof leader?” he said, pointing upward. “That was the outside of the original shop. And this end bay here is where they built the original Twin tractors.” Duane went on to point out telltale landmarks of the old shop, the differences in the walls and beams in the roof. “This section was all added after the original Siamese Twins were built, so this end bay is where the original tractor was built. And that’s where we’re going to build the new Twin. To be historical.”

### ORIGINAL CAT LOGO

Another salute to historical authenticity was a cosmetic fix on the Twin’s two hardnoses, which greatly

pleased Ghilotti. “Duane’s crew got the radiators sandblasted and all cleaned up, but the lettering on the hardnoses was all messed up,” said Ghilotti, back in September 2017. “The Caterpillar logos had been destroyed by previous owners working on them. Some letters were missing; some were all cut up. It just didn’t look clean. It was upsetting.”

Out in the shop, Duane saw Glen’s face fall and asked what was wrong.

“You can’t read the word Caterpillar,” Ghilotti said. “The letters are all messed up.”

“Okay,” said Duane. And that was it.

But the next time Ghilotti came down to San Leandro to see the progress, Duane showed him the hardnoses. “They were absolutely perfect. He’d had one of his guys weld up the Caterpillar logos and then grind them down. You couldn’t tell that they’d ever been damaged,” said Ghilotti. “I was just so excited about the quality of workmanship Peterson did. It was absolutely amazing.”

When the two D8s were finally joined together, a lift truck pulled them out of the shop and they were shipped up to Peterson’s Santa Rosa store. “I was never so happy as when we got our part done,”



says Spencer. “Near the end, Duane told me that he was going to send the next part of the job to Phil Robbins in Santa Rosa because the transmissions were an older, oddball design where you had to put the transmission gears into the frame itself. And you just don’t see that anymore. I told him, ‘Duane, you don’t know how happy I am to hear that,’ because originally, I thought we were going to complete the whole project in San Leandro. So when Duane said that, I was like, ‘Thank you! Seriously, I can’t thank you enough.’”

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## PHASE TWO: SANTA ROSA

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The challenge continued up in Santa Rosa. While Ghilotti was busy rebuilding the engines, Peterson shop tech Phil Robbins got to work on the two transmissions. Akin had dropped off six crates of

parts a month earlier. “When I started taking them apart, I could see we needed more pieces,” recalls Robbins, a thirty-year Peterson veteran (1988–2018) and a whiz with older machines. “You can’t really tell what ratio they are until you take them apart. Then I could see the problem. One had more teeth than the other one. Back in the late 1940s and most of the ’50s, Cat offered a bunch of different gear ratios for different applications, and these were two different ratio transmissions.” Ultimately, Robbins received three complete transmissions and took another trip back up to Akin’s place in Placerville for more gears. “I don’t know if Cat ever had the combination of ratios we’ve got. I just kept swapping them out until I got the gears to mesh in the right ratio for each gear in both trannies.”

Robbins was hand-picked to complete the Twin because of his extensive knowledge of older machines. “This was a very detailed project, and we couldn’t have done it without Phil,” says Duane Sr. “He had the knowledge and experience and passion for working on the older stuff because he worked out of Willits for years. He really took to this project just like we thought he would. And

“ I was just so excited about the quality of workmanship Peterson did. It was absolutely amazing.

– Glen Ghilotti, owner, Team Ghilotti, 2017

”



*Duane Doyle Sr. with Glen Ghilotti at Peterson’s main shop in San Leandro*





*Top left, clockwise: Phil Robbins works on Twins transmission cover in Santa Rosa shop, while Nate King observes; Twin D8 in Bay #3 of Santa Rosa Shop; Twin D8 control levers from the operator's seat; Twin's rebuilt engine*

I'm happy to say we couldn't have done it without him." Robbins did all the transmission and back-end work and then installed the engines and finished the project. He did all the linkages, bushings, and shafts to make everything work.

Finding the right hoods for the engines was another challenge. "The early 2U hoods were straight and the dashboard was wide, which actually blocked the view of the operator," explains Robbins. "Cat started narrowing them down with the 13A and then the 14A. But in between, Peterson was narrowing the dashes and making hoods for the 2Us. And we had one of them here—we had a Peterson dash. That goes way back into Peterson's history of customizing different things." Santa

Rosa's Rich Caro ended up fabricating both hoods and one dashboard.

Buster's original Twins were all 2U machines. The Retro Twin is more of a smorgasbord. Robbins likens it to Johnny Cash's Cadillac referred to in his song "One Piece at a Time"<sup>1</sup>—the hodgepodge car built over a twenty-five-year period using parts smuggled out of GM in a lunch box. "This [Twin] was built out of 2U and 13A D8s," explains Robbins. "The engines are 13As; the left case is a late 2U; the right case is a 13A. But we changed the appearance of the tinware to look like 2Us. Ninety-nine percent of it works on the same principle that it did back in the late 1940s when they were first built."

<sup>1</sup> "One Piece at a Time", by Johnny Cash and Wayne Kemp, March 1976, released as a single, Columbia Records



The transmissions were the ultimate test of skill and patience on the entire Twin project—certainly the most frustrating. Once the two transmissions were rebuilt and ready to install, Robbins found that one just wouldn't fit. "The midrange 2U transmissions were different than later models. Two of the shafts were a quarter-inch closer together than on later models. When it wouldn't go in, I pulled that one back out and started measuring. And the center line on two of the shafts was a quarter-inch different. The transmissions were identical, but the cases were wrong." Robbins ended up driving back up to Akin's boneyard and rummaging around until he found one that measured correctly.

They had considered line-boring the case to make it fit but finally opted for the less risky Plan B—starting all over again. "We disassembled a good

portion of the left side of the machine and replaced the transmission case. We had to step backward so we could start all over and move forward," explains Nate King, Santa Rosa's product support manager and store manager at the time. "When I heard that," says Spencer, "I was literally sick to my stomach. Not as sick as they were because they had to split that machine apart and get another frame. It was a complete main-frame assembly all over again."



(L-R) Ron Spencer, Ed Akin and Duane Sr. consulting drawings and specs of the Twin D8 in the San Leandro shop in 2105

“ This was a very detailed project and we couldn't have done it without Phil. He had the knowledge and experience and passion for working on the older stuff because he worked out of Willits for years.

– Duane Doyle Sr., owner & CEO, Peterson-Cat

”



Phil Robbins & a buddy with the Twin D8 in Santa Rosa

## THE SAME ONLY DIFFERENT

Although the current Twin was built off of Buster's original drawings, some improvements were added. The partners decided to incorporate some newer ideas that hadn't yet been introduced back in Buster's time. Given his constant pursuit of "better," they felt Buster would have done the same.

After studying the original drawings from 1949, Akin was still unclear about how Buster had tied the two machines together mechanically. He finally concluded that Buster hadn't. "I figured out that we could tie the two inside brake drums together very simply by making a short shaft that's normally



the drive pinion for the final drives.” He then ran his idea by Robbins. “Phil was really the key guy on this whole project because he knows the insides of all these tractors thoroughly. And he agreed.” They also added a total disconnect. The end result? With one lever, one engine can drive the whole machine or each engine can drive its own tractor. The right engine can also power the left tractor, and vice versa.

“It’s still basically the same,” says Jack Ravazza, general manager of Special Services. “Buster’s original Twins were bolted together at the two ham cases. So you take off the inside one, where the sprocket comes out of the back of the machine, where the final drives are. That’s where the frames were bolted together.”

Ed Akin also wanted to substitute an electric starter motor for one of the two pony motors of the original design, strictly for convenience. By having one electric motor and one pony motor, the Twin was much easier to start up.

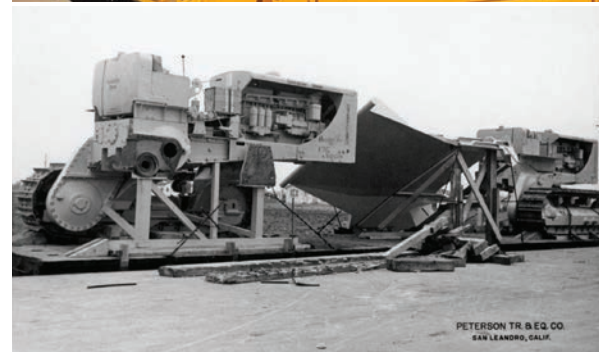
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### WHEN ONE PLUS ONE EQUALS ONE

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Transporting the 28-ton, 14-foot wide machine in the late 1940s and early '50s was another engineering feat. Back then, hauling anything that wide was just not possible—either by railcar or by truck. But today, that’s no problem. The Retro Twin was built to stay intact as one solid machine.

“Back then, they had no way to haul something 14-foot wide,” explains Robbins, “so they built it in two separate halves with couplings in all the shafts for the controls. All control levers were on the right tractor, except the left transmission. The left half had a rod sticking up from each of the control shafts, which you slipped a pipe over so you could run the clutch, the brake, and the governor. Buster really thought this stuff through.” There was also a specially designed skid that bolted onto each half to keep them upright during transport.



*Top to bottom: Glen Ghilotti was proud of the new Twin D8 and his part in making it come to life in 2016; Hi-Clearance Twin split in half for transport in 1951; Team Ghilotti provided all the transportation of the Twin D8 during the build process and afterward to various equipment events in 2016.*



Glen Ghilotti handled all the transportation during the build and to the different venues the Retro Twin was invited to. “The original Siamese Twins were designed to split in half for shipment. And when they arrived at their destination, you had to bolt them back together again. Today, you can get permits in California to transport up to 14-foot wide without much trouble,” says Ghilotti, “so we built our Twin so all you need to do is take the dozer blade off. Then you can ship it together all in one piece.”

## THE BIG UPGRADE: EQUALIZER BAR

The most notable improvement is the equalizer bar underneath and between the two track frames. “Duane suggested we design something to make it oscillate,” says Ravazza. “So we designed an equalizer bar so it would pivot a little bit. This lets the track frames pivot separately and follow the contour of the ground without rocking the whole machine.”

There was no give in Buster’s original design because it used a rigid bar between the track frames.

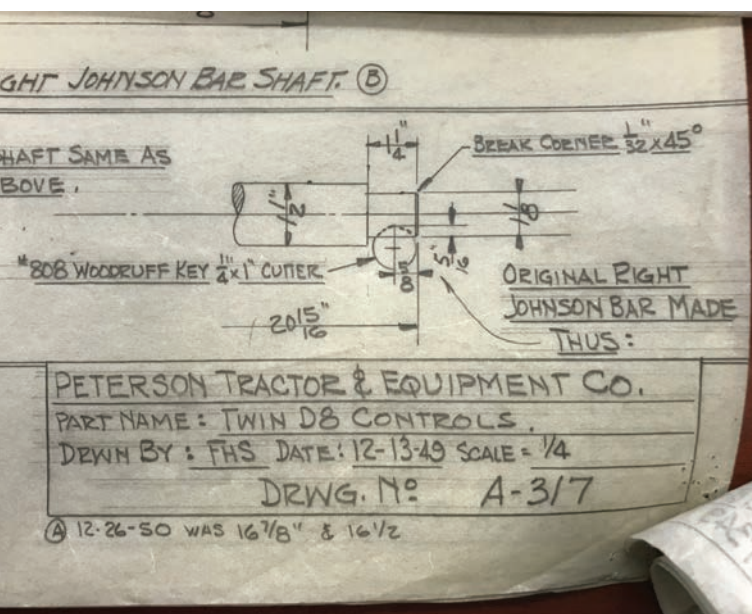
“As far as I know, no one up to that point had designed a true equalizer bar yet. Not even Cat,” says Spencer. “But this equalizer bar allows one frame to come up over a rock or hill, but not the whole machine. Just like any new dozer, the track frames move independently from each other. The track frame pivots, letting the machine stay more level and stable so you get more traction on the ground. And it’s way easier on the operator.”

## THE DRAWINGS

Using Buster’s drawings was a unique part of the Retro Twin project, and completed the circle with-in Peterson’s custom fabrication history.<sup>2</sup> “It was a thrill to find Buster’s drawings several years ago when Ed Akin requested copies to build his dream machine,” says Eileen Grafton, Peterson’s corporate historian. “For me, it was a treasure hunt down in the dim, dusty basement beneath San Leandro’s main service lunchroom. I spent hours culling through records, looking for the right drawings: A-321, A-348, A-459, A-499 . . . and so on. One by one, I found them, rolled up in 5x5-inch slots inside an old wooden cabinet—the repository of some of Peterson’s oldest and coolest history.”

“I didn’t know we had those blueprints at first,” says Spencer. “I was working on the Twin when our engineer said he had the drawings. We blew them up so we could see them better, and I was blown away! Those blueprints were amazing! I had never really looked at blueprints myself. In my job, I never had to. But these were *wow!* Although we didn’t go exactly off the blueprints, they really helped with a lot of things. To me, in their own way, they looked like very professional artwork.”

For Ravazza, who has spent his career around blueprints, these were exceptional. “Working with the original drawings was really cool because they

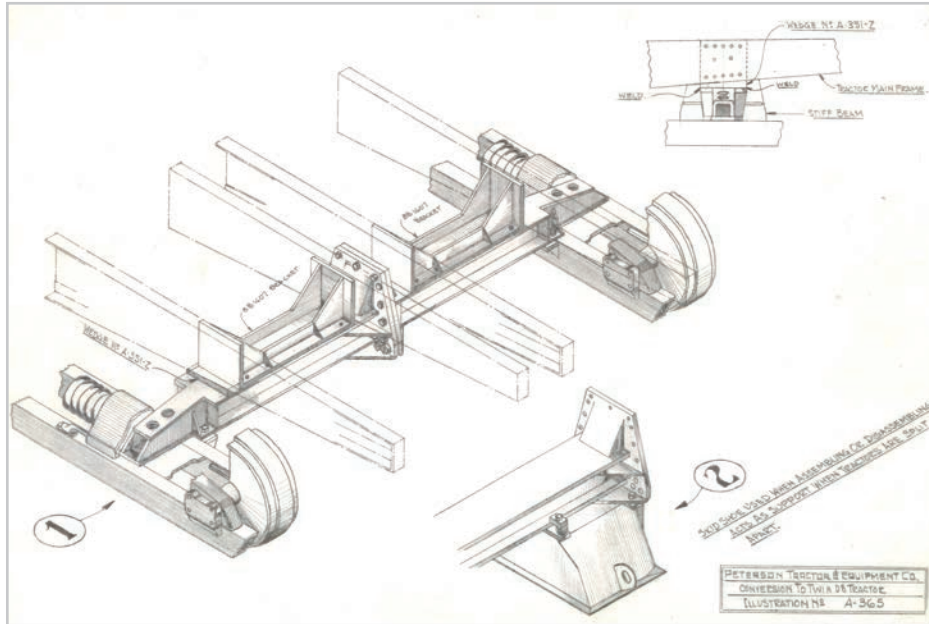


<sup>2</sup> Buster drew many of his own designs in the 1940s, but the finished drawings for the Twins were done by Fred Stevens, and the Quads were done by Bob Hickey. Other Peterson engineers who drew for Buster included Don Stroot, Ron DeMello, and Roy Barnes.



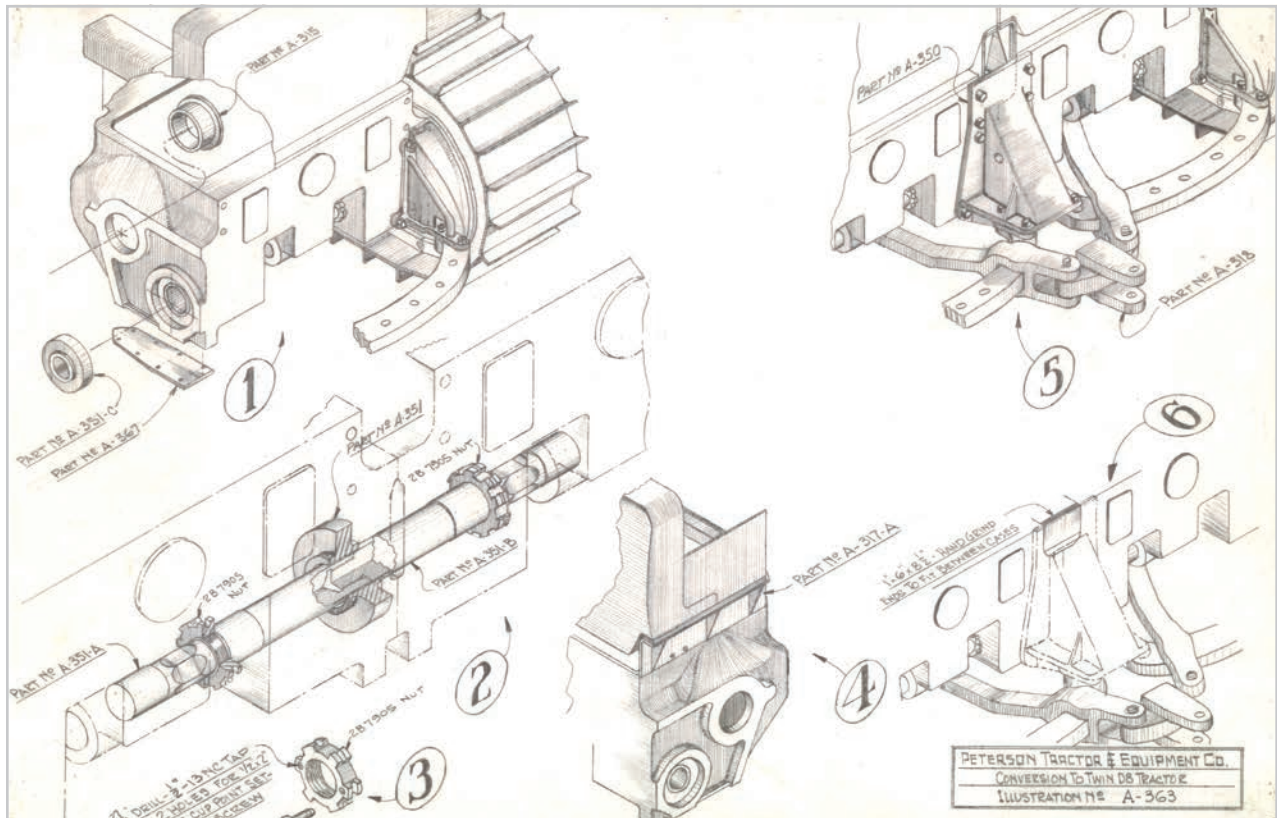
were original pencil drawings from our own archives. They were actually hand-drawn. The artistry, the hand-shaded areas, the penmanship—you just don't see that anymore. And the lettering is perfect. They are really unique.”

“It was really good to have the originals to see just how it was done,” says Akin. “There were almost certain changes and blueprints for each of the different Twins Buster built. Like the one that went to King Ranch in Texas. It had completely different final drives on it.” And those changes led to



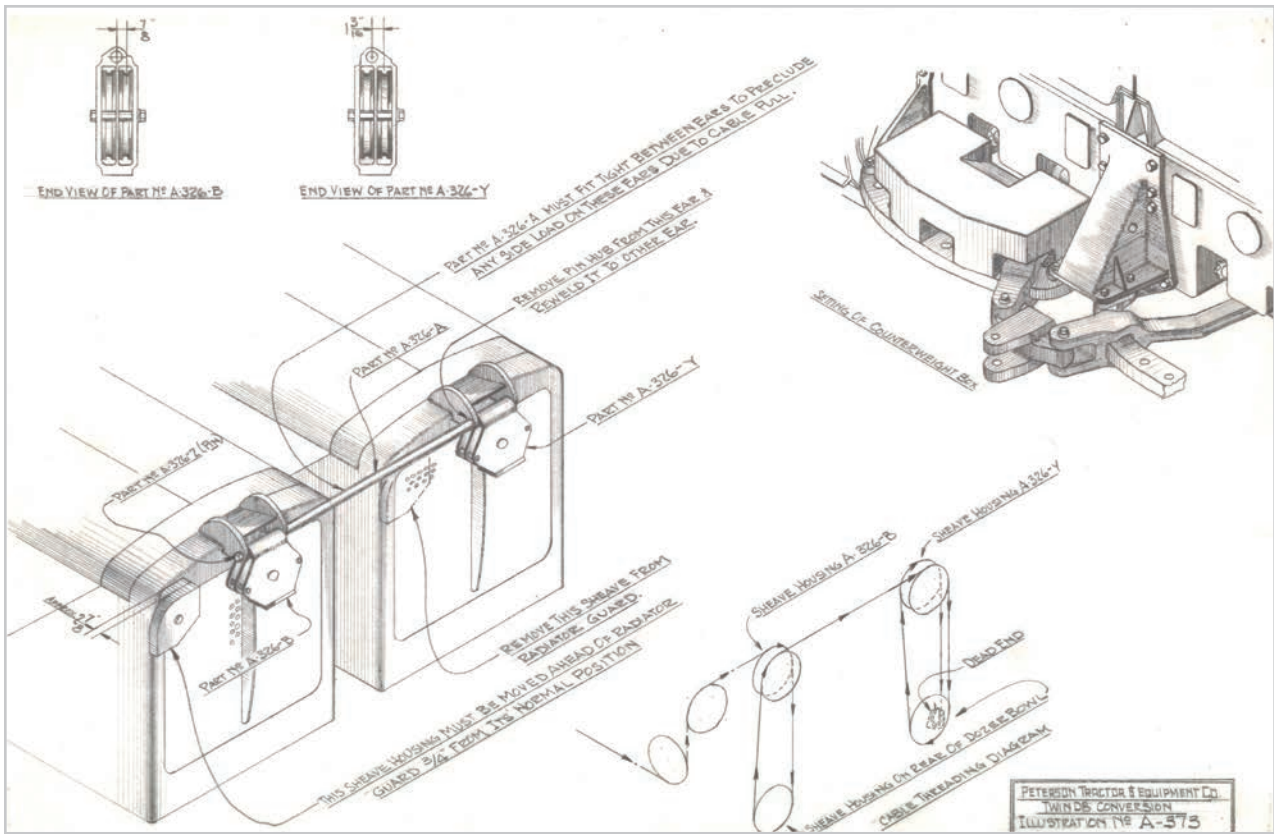
“ Working with the original drawings was really cool because they were original pencil drawings from our own archives. The artistry, the hand-shaded areas, the penmanship—you just don't see that anymore.

– Jack Ravazza, general manager of Special Services, Peterson-Cat, San Leandro



A few of the many original Twin D8 drawings dating back to 1949





Top to bottom: Original drawings used to re-create the Retro Twin in Peterson shops; The Retro Twin D8 took 26 months to complete—from June 2, 2014 until August 23, 2016—pictured here in the San Leandro main shop in 2016





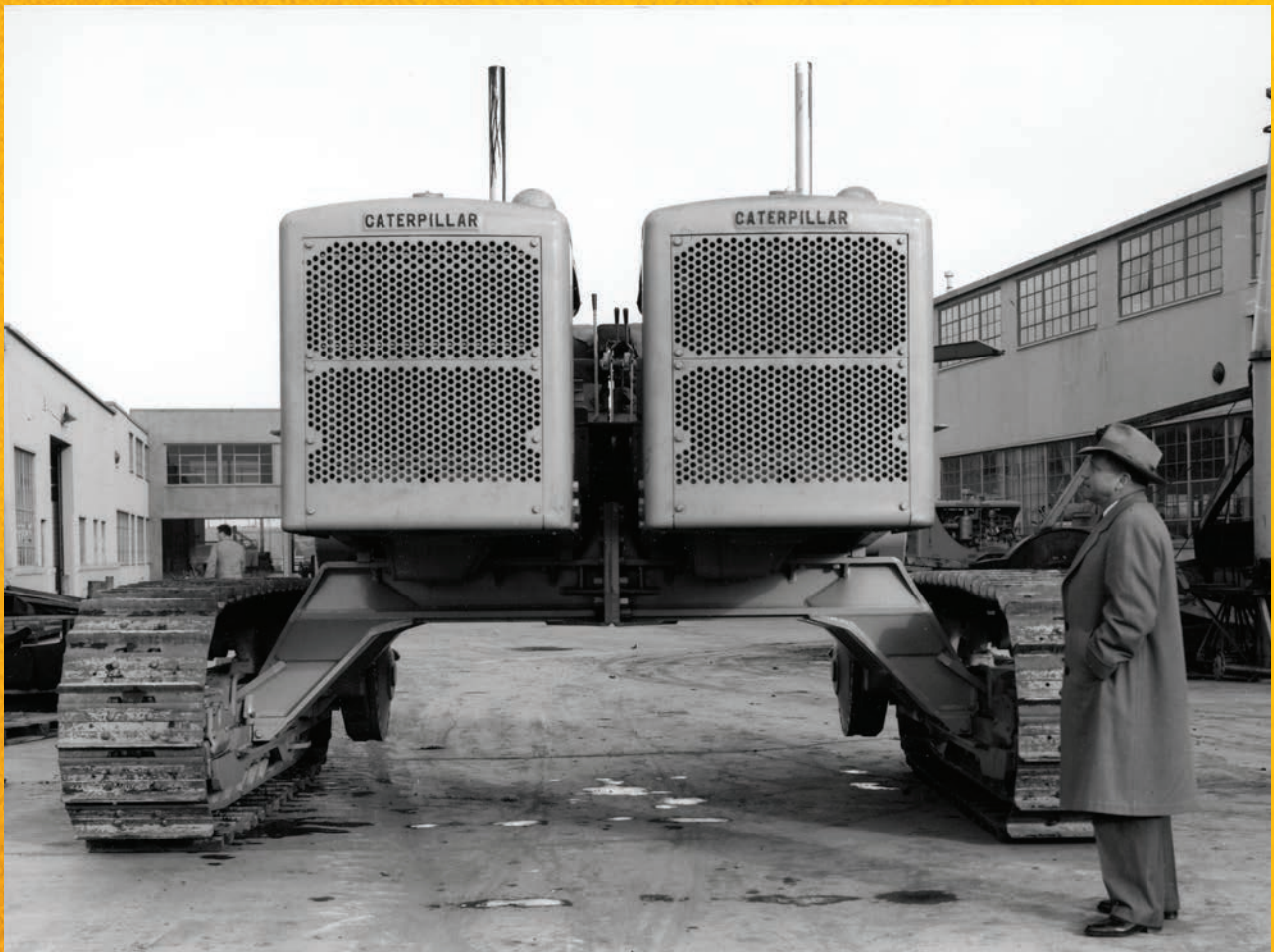
*Top to bottom: Retro-Twin on display at Peterson's 80th celebration in Hillsboro in Aug 2016; (L-R) Rich Caro/Santa Rosa welder, stands with Glen Ghilotti in front of completed Retro-Twin D8 in 2016.*

several additional drawings marked specifically Hi-Clearance Twins. In the end, Akin's original request for the drawings back in the early 2000s was the match that lit the fire under the Retro Twin project. His extensive study and boneyard of old Cats led to the current Twin D8 we have today.

Building a Twin D8 from scratch off the original drawings brought a deep sense of pride and satisfaction to everyone involved. "It was cool to see the nostalgia of recreating something that was done here years ago," says Ravazza, who did minor projects for Buster as an apprentice welder back in the 1970s. "Nobody was showing them what to do. It was just, *'Here are some pictures and drawings we've got to recreate. Go do it.'*" We all knew this wasn't going to a customer. It was for Duane [Sr.], and that was important. Duane was recreating history, and we all got to be a part of it."

At completion, the Retro Twin D8, modeled after the Hungry Horse Dam Twin, was given the serial number 4 to signify its place in the line-up of originals.





*Founder Howard Peterson with Hi-Clearance Twin D8 in San Leandro, California in 1950*





## BUSTER'S ORIGINAL TWIN D8S

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### HUNTING HISTORY

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**F**or years, it was widely believed that Buster and his SEQ team had built only three originals—the Hungry Horse Dam Twin, the Coal Twin, and the King Ranch Hi-Clearance Twin. Subsequent research, however, has proven otherwise.

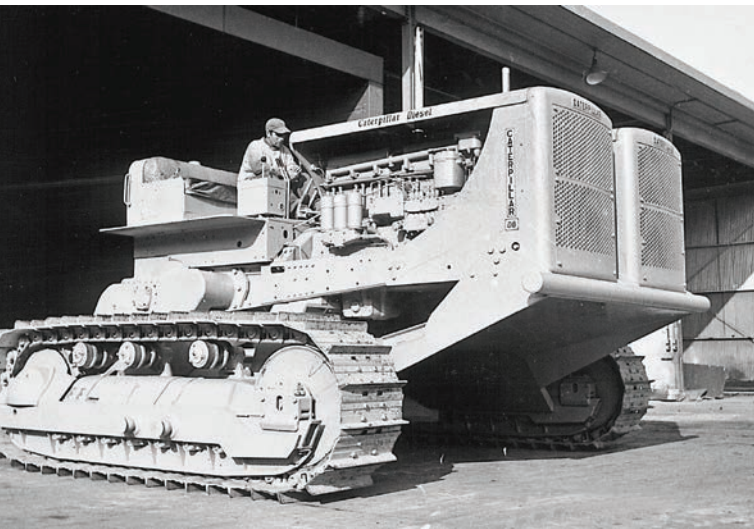
It is difficult to chronicle history when so many years have passed and much of the paper trail has grown cold. However, Peterson's Special Equipment Services (SEQ) logbook provides positive proof for two Buster-built Twin D8s. The first went to Morrison-Knudsen for their Farmington Dam contract near Stockton, California, in May 1950<sup>1</sup>. The second was the Hi-Clearance Twin built for the King Ranch—delivered to Cat dealer, Wm. K. Holt Co. of San Antonio, Texas, in March 1951<sup>2</sup>. Provenance for the rest is substantiated by various trade publications, newspaper articles, photographs, social media, oral history. And legend. A proof-of-concept known as the Siamese Twins was built first (circa 1948) using two Allis-Chalmers HD-19s, and proved quite successful during testing. However, it too is substantiated only by oral history and a few pictures—so far.

One of the earliest published articles on Buster's Twin design came out in the April 1950 issue of *Construction Equipment*. It details the specs and merits of Buster's newest innovation. "Teaming up two conventional D8 tractors into one giant unit, Peterson Tractor & Equipment Co., San Leandro, Calif., has developed a machine that should prove a time-and-money saver on all large earthworks projects. R.A. Peterson, vice president of the company, and Fred Stevens, chief engineer, have conducted extensive tests that show the Twin D8, testing at more than 270 drawbar hp, has over double the working power of a single D8 tractor. . . . In operation, one man is in complete control of both engines from the conventional driving position on the right-hand tractor.

1 Morrison-Knudsen Twin: S/N 2U9800 & 2U10438

2 King Ranch Twin: S/N 2U12911 & 2U12912





PETERSON TR. & EQ. CO.  
SAN LEANDRO, CALIF.

Separate engine control gives the operator several advantages of maneuverability not found in the conventional tractor. By reversing one side of the Twin, he can swing the machine around in its own tracks, saving long, backward runs and allowing use of the dozer blade on returns trips.”<sup>3</sup>

### HUNGRY HORSE TWIN: NUMBER ONE ... OR NOT (1950)

Although many believe the Hungry Horse Dam machine was the first official Twin D8 Buster built, the facts stack up against it. There is no mention of it in the SEQ logbook. And while it certainly existed, it is hard to pin down exactly where the Hungry Horse Twin falls in the line-up of origin. Multiple articles discuss this early model.

The front page of the *Kalispell Daily Inter-Lake* from May 4, 1950 announced a Super Cat being assembled for work at Hungry Horse Dam. “J.H. Trisdale, a Redding, California, clearing contractor,

### “Siamese-Twin” D8 Tractor Provides Double Horsepower Capacity



BY COMBINING two Caterpillar diesel D8 track-type tractors, Buster Peterson of Peterson Tractor & Equipment Co., San Leandro, Calif., has made available 269 hp for less than price of two Caterpillar D8s. Unique arrangement, shown here in front and rear view in use on grading project near San Francisco, was accomplished by removing one track and final drive assembly from each tractor. Special hard bar was then fashioned to permit bolting the two

tractors at the final drive housings with large through bolt. Plate was installed on the back of the housings and necessary connections made for controls, which consist of two gear-shift levers, two steering clutch levers, one master clutch lever, and two throttles mounted on left arm rest. Easy transportation is accomplished by bolting skids under each engine and unbolting hard bar and final drive housings.

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May 1950 • CIVIL ENGINEERING (Vol. p. 346)

Top to bottom: Original Hi-Clearance Twin D8 in San Leandro; Buster Peterson conferring over design issues with engineer Fred Stevens; May 1950 article in trade publication *Civil Engineering* on Peterson's new Twin D8

3 “Two-in-One Crawler Meets the Demands for Greater Earthmoving Capacity”, *Construction Equipment Magazine*, April 1950, p15.

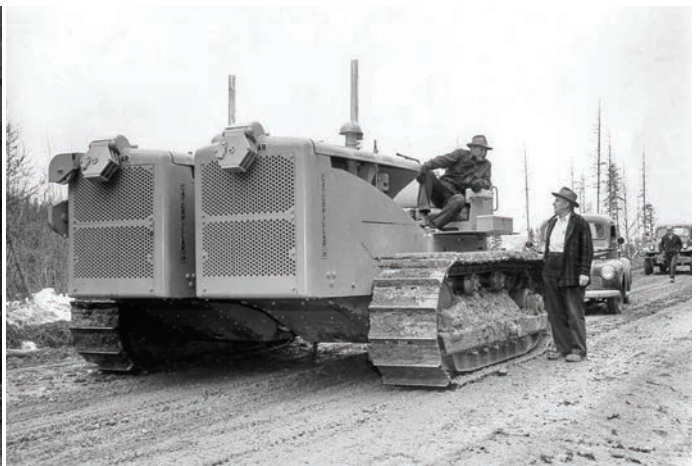
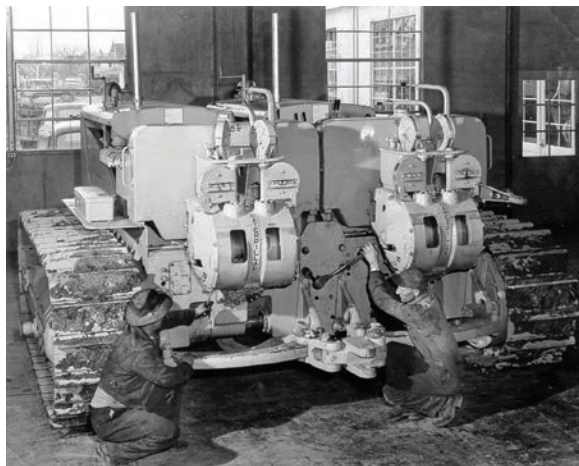


has hitched two D8 Caterpillar tractors side by side to create a gigantic new land clearing machine. The 270-horsepower ‘Super Cat’ will be used with a special 16-ft bulldozer blade to do speed clearing work on Trisdale’s \$2,484,360 contract for clearing approximately 7,855 acres in the Hungry Horse reservoir area. Mechanics Gerald McDonald and Frank Janicke are shown putting the finishing touches on the giant machine in the shop of the Westmont Tractor Company in Kalispell [Montana]. The original idea, which involves eliminating one track from each Cat, bolting the machines together with specially designed tie plates, and coordinating controls for one-man operation, was developed by the Peterson Tractor Co., San Leandro, Calif.”<sup>4</sup>

*Western Construction News*, a leading trade publication of the time, gives a clue to the birth order. “The Twin Cat is currently getting its first tough operating tests at Hungry Horse Dam in Montana. This biggest bulldozing tractor of them all is being used by J.H. Trisdale, Inc. of Redding, California, for clearing 7,800 acres in the Hungry Horse Reservoir area. At the present time, two Twin Cats are in existence: one at Peterson’s shop, which was the original test model, and the one now being used by Trisdale at Hungry Horse Dam. To

construct the Hungry Horse unit, conversion parts and blueprints were shipped to the local Caterpillar distributor at Kalispell, Montana—Westmont Tractor & Equipment Co. Two new D8 tractors were combined in the Westmont shop. A special blade 21 feet 8 inches wide was manufactured by Trisdale at his Project City, California, shop and shipped to Hungry Horse for attachment to the unit.”<sup>5</sup>

John Trisdale was one of two California contractors who wowed general contractor General-Shea-Morrison with his innovative clearing methods. Trisdale, along with F.L. “Red” Wixson—both of Redding, California—came up with a plan that ultimately netted them the entire clearing contract. First, they built five 8-foot diameter hollow steel balls, each weighing 4½ tons, attached to 200 feet of cable strung between two tractors. The steel ball was attached by swivel connectors for flexibility and kept the cable 4-feet above ground to avoid catching on tree stumps and slowing them down. The simple yet ingenious plan—dubbed Operation Highball—worked beautifully. After the land was properly logged of 80 million board-feet of timber, they mowed down the leftover small trees, snags, and brush in teams of two. By the end of one season, they’d been able to power through

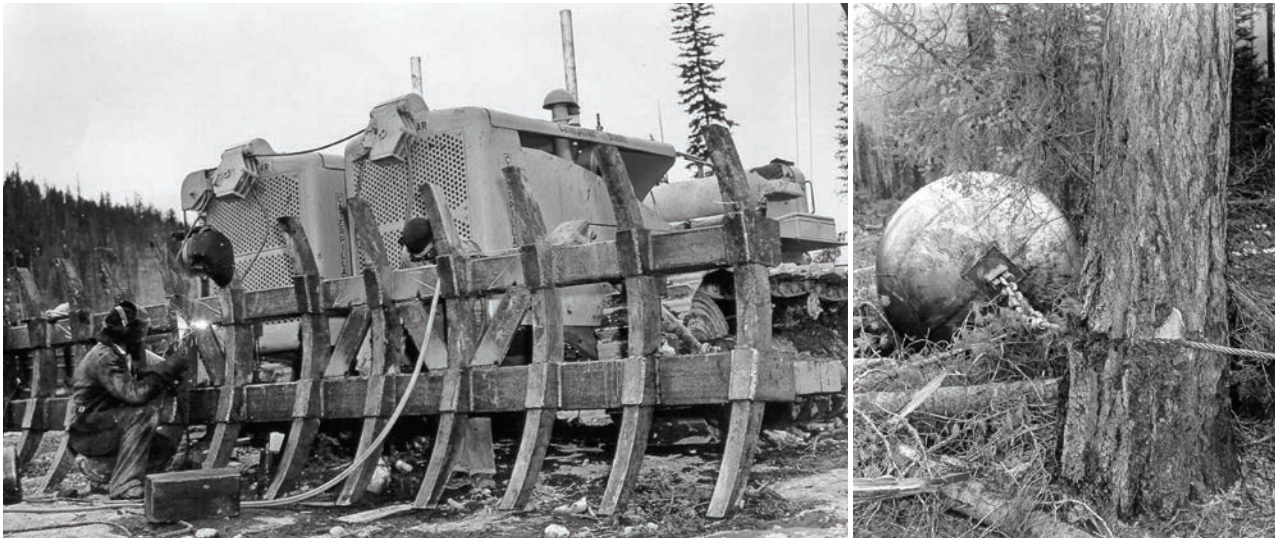


Left to right: Assembling Hungry Horse Dam Twin in Cat dealer’s shop in Kalispell, MT in May 1950; Twin D8 at Hungry Horse Dam construction site, 20 miles northeast of Kalispell, Montana in 1950.

4 “Super Cat for Dam Area”, *Kalispell Daily Inter-Lake News*, May 4, 1950, p1.

5 “Twin Cat at Work Clearing Hungry Horse Reservoir Area”, *Western Construction News*, June 15, 1950, p99-100.





*Top left, clockwise: Welder working on giant 21-ft rake for Trisdale's Twin D8; One of the giant steel balls used in clearing contract; John Trisdale; Hungry Horse Twin at work*

7,210 acres, to everyone's amazement.

Buster's Cat Twin D8 was the second innovation they used at Hungry Horse Dam. "Trisdale put two D8s side-by-side and welded them together into one unit, then fastened a 21-foot blade with thirteen teeth across the front. One man operates the 'D-16.' With 270 hp behind the blade, there is virtually nothing that this powerful rake can't move. It does the work of three separate units."<sup>6</sup> By September 1952, both contractors had cleared a total of 14,695 acres.

While firsthand accounts are well past their expiration date, Lee Hill remembers hearing stories about his uncle, John Trisdale, and the Twin Cats at the Hungry Horse Dam. According to Hill, "After they knocked everything down and exposed the roots, they'd come through there with the Peterson-built tractor [Twin] and clean up the rest. The brush rake on it would hook all those roots and jerk them out of the ground. I remember seeing pictures of them in Trisdale's office in Redding." Although the business is long gone, three of the giant steel balls still exist. One is at Hungry Horse Reservoir and one belongs to Wixson's



<sup>6</sup> "Bowling Down Forests for a Super Dam", *Popular Mechanics*, August 1950, p90-94, 246-248.



granddaughter, Kim Wixson-May of Redding. The last one is on display on property Wixson once owned at Fife Metal Fabricating along Eastside Road in Redding, just six miles south of Peterson's Redding store.

## MORRISON-KNUDSEN (1950)

The first Twin on record is Morrison-Knudsen's machine delivered to their Farmington Dam job in the Spring of 1950. While the SEQ logbook does not give a delivery date, it does specify that machines 2U9800 and 2U10438 were made into a Twin with a Euclid Drawbar and blower-type fans. M-K's in-house magazine places it in the dirt near Stockton, California, in June 1950. "A total of 2,150,000 cubic yards of earth were moved between mid-June and late September by M-K's dirt demons at a tremendous rate of 28,000 to 34,000 cubic yards per day. . . . A new wrinkle adapted to the job was the use of a 'Twin 8' combination of two Caterpillar D8 tractors joined side-by-side with inside tracks removed. This super-tractor provided the extra grunt to pull a Euclid loader."<sup>7</sup>

Two years later, the M-K Twin was at Isabella Dam near Bakersfield, California. According to the September 1952 issue of the eM-Kayan, "The men and machines of Macco-M-K began work on the auxiliary dam in October 1951. Construction of the auxiliary dam featured two pieces of equipment not often seen on earth-dam projects. One was a 'Siamese' tractor—two Caterpillar D8 tractors connected side-by-side to give greater pulling power. This behemoth pulled a specially built 15-ton ripper back and forth in the borrow area to cut furrows, allowing water to sink as deep as possible

into the fill material to increase its moisture content for maximum compaction when placed in the dam."<sup>8</sup> Thus, Morrison-Knudsen held onto its Cat Twin D8 at least through August 1952. By 1954, Caterpillar introduced the 286 hp Cat D9—its own solution for more power—negating the need for the Twins altogether.

In 1952, M-K was also experimenting with the much-touted HD-19 Allis-Chalmers dozer, like Buster had with his prototype. Trying to nail down whose came first has, so far, been elusive. Or if they

EQUIPMENT RECORD D8

TYPE MACHINE	SERIAL NO	SHIFT DATE	SHIPPED TO	REMARKS
D8	2U-1487		CLEMENTS	SOUPED UP (SEE DRWG A-372)
D8	2U10367		NM BALL	SOUPED UP (SEE DRWG A-377)
D8	2U-10753		ATKINSON	SOUPED UP - RING GEAR REVERSED (DRWG A-377 & A-385)
D8	2U-9800 2U-10438		M-K FARMINGTON	MADE INTO TWIN WITH EUCLID LOADER DRAWBAR. HAS BLOWER TYPE FANS.
D8	2U 8715		BETHEL PEICE COYNE	SOUPED UP D8
D8	?		PETER KIEWIT	SOUPED UP D8 (WE FURNISHED PARTS THEY INSTALLED)
D8			NM BALL ING KITHRIC	SOUPED UP D8 (WE FURNISHED PARTS shipped 11-20-50 They Installed)
D8	2U12911. 2U12912		HOLT CO SAN ANTONIO TEXAS	TWIN D8 HI CLEARANCE JOB
D8	2U16934 SP		MARAL IMPROVEMENTS ANTHON	INSTALLED PETERSON - 1.14 LOW GEAR - ALSO DRAWBAR & BELLYGUARD CNTRWGT
D-8	2U14772		J.D. O'CONNOR	INSTALLED PETERSON - 1.14 LOW GEAR - FRONT & REAR COUNTERWEIGHTS - HI OUTPUT KIT & CAT. AUTOMATIC SHUTOFF. (LOW GEAR HAS NEW STYLE FLOATING BUSHING)
D-8	2U17705		MANTELLI BROS.	INSTALL PETERSON - .95 EXTRA LOW GEAR - HI OUTPUT KIT & ASPARAGUS CHOPPER (102) - ENLARGED SEAT TANK A 671 (LOW GEAR HAS NEW STYLE FLOATING BUSHING)
D8	2U16624		J.C. BREWSTER	INSTALL PETERSON 1.14 Low gear - Hi output kit - Front & Rear Counterweights. Job SA-3171
D8	2U17923		P.T. & E Co	Install Peterson 1.14 Low gear - Also Std. Caterpillar Hi Reverse - Front & Rear Counterweights. FIRST ONE WITH HI REVERSE. Job-142
D8	2U17797		P.T. & E Co.	Install Peterson 1.14 Low gear - Hi Speed reverse. Front & Rear Counterweights - Steppin' engine. but no Hi output kit - SA-3369
D8	2U13631		PETER KIEWIT SONS	(HI OUTPUT KIT & FRONT & REAR CNTRWGT. WERE ON MACHINE WHEN IT WAS BROUGHT INTO SHOP)
D8	2U18650		EATON & SMITH	WE INSTALLED PETERSON 1.14 LOW GEAR CAP (SA405) INSTALL PETERSON 1.14 LOW GEAR CAP & FRONT & REAR CNTRWGT. (SA4286)

Page from Peterson's SEQ log book

7 "Earthmoving Magic: Presto! And Here's Your Dam", *The eM-Kayan*, November 1950, p15,19.

8 "Main Isabella Dam Begun on the Kern", *The eM-Kayan*, September 1952, p12-13.





The PK-MK Siamese Twin for Garrison Dam contract circa 1951

collaborated on it together. The October 1952 issue of the *eM-Kayan* discussed the experimental HD38 at Garrison Dam in North Dakota. “Forty-seven Allis-Chalmers tractors, including three ‘Siamese’ (two HD-19s joined side-by-side), are on the job. With this mighty fleet, PK-MK [Peter Kiewit and Morrison-Knudsen] last month was placing an average of 80,000 yards of earth daily on the fourth-stage section of the embankment. Nearly a third of the 18-million cubic yards of fill had been placed.”<sup>9</sup>



The Coal Twin at Tanners Creek Power Plant circa 1952

A Bismarck, North Dakota, newspaper also cited the experimental use of the Siamese tractor, which “consists of two Allis-Chalmers HD-19 tractors fastened together and running on two tracks.

A single set of controls operates both machines. Peter Kiewit and Morrison-Knudsen—contractors at Garrison Dam—are using the experimental model, one of the first of its kind. The twin HD-19 is appropriately called the HD-38.”<sup>10</sup>

A 1950s Allis-Chalmers film called *The Big Job* claims that PK-MK mechanics built the HD-38 Siamese Twins in their own on-site shop. “This Siamese dozer is another world’s largest—built right on the job by Peter Kiewit and Morrison-Knudsen maintenance personnel. The blade on this giant is 20-feet wide and nearly 4-feet high and is pushed by two 20-ton tractors connected into one mighty power unit operated by one man. It levels off the fill in one pass.”<sup>11</sup>

As a pilot, Buster Peterson often flew to remote construction sites to confer with contractors. His son, Don Peterson, remembers such trips back to the Midwest as a youngster, but just faintly. It is believed that Buster conferred with MK-PK over their Twin up at the Garrison Dam site in North Dakota. However, the only documentation is a photograph of their Siamese Twin on-site, imprinted with a “Peterson Tractor & Equipment Co.” stamp on the front, found in Peterson’s archives.

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## COAL TWIN—PART ONE (1950)

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For years, the Coal Twin was believed to be Buster’s second build. And while it left many memories in its wake, it is not recorded in Peterson’s SEQ logbook. Like the Hungry Horse Twin, it too was assembled by another Cat dealer closer to its final destination, using conversion parts and blueprints supplied by Peterson. An article in *Construction Equipment* explains (see top of next page).<sup>12</sup>

9 “Garrison Dam Booms Under Fourth Stage Construction”, *The eM-Kayan*, October 1952, p12-14.

10 “Siamese Twin Experimentally in Use at Garrison Dam”, *The Bismarck Tribune*, May 26, 1951, p8.

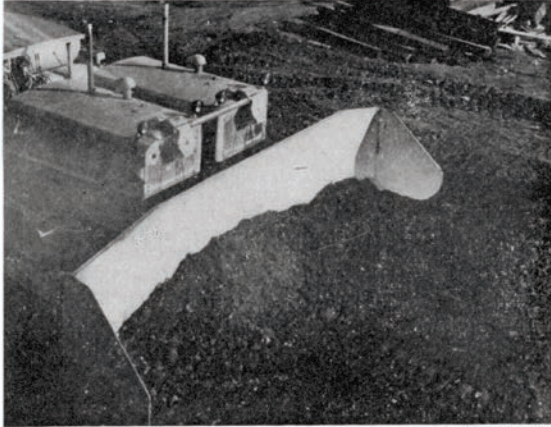
11 “The Big Job—An Allis Chalmers Job”, Allis-Chalmers film, 1950s, published on YouTube, 04:57–05:22 minute mark.

12 “Heavy Work Unit Combines Record-Size Bulldozer and Twin D8”, *Construction Equipment*, February 1951, p11.



## Heavy Work Unit Combines Record-Size Bulldozer and Twin D8

DESIGNED for heavy-duty work in reclaiming and stockpiling coal, the largest bulldozer ever fabricated for use with crawler-type tractor was assembled recently by the H.O. Penn Machinery Co., New York,



TWENTY-FOOT BLADE on Caterpillar Twin D8 is capable, under normal working conditions, of handling 20 tons of coal in one bite. Total weight of machine with rear cable control is 8,300 lb.

to form a rugged unit powered by a Twin "Cat" D8. Assembly of the giant machine is based on plans developed by Peterson Tractor & Equipment Co., San Leandro, Calif., originators of the tandem D8 idea (*Construction Equipment*, April 1950, page 15). The blade, measuring 20 ft across and 6 ft high, was fabricated in the Peterson Company shops and shipped to New York for assembly.



*Life Magazine* photographer, Andreas Feininger, shot pictures of the Coal Twin at Tanners Creek Power Plant in 1953.

While written documentation on the Coal Twin is scarce, there are two photographs of it working on the live stockpile in Lawrenceburg, Indiana. Famed *Life* magazine photographer, Andreas Feininger, shot the Coal Twins working in 1953. They never made it into *Life* magazine, but one appears in his book, *Changing America*.<sup>13</sup>

Tracking the history of the Coal Twins was fairly difficult until Providence stepped in. The Retro Twin was sitting at Ed Akin's ranch in Placerville, California, in the fall of 2016 when a chance encounter happened. "I was getting my garage door replaced one day by a local guy, Dave Baxter, who came down to the yard to see me afterward. He saw the Twin sitting there and said that he remembered having one just like it near the farm he grew up on in Indiana—at a coal plant," explains Akin.

According to Baxter, he got to ride on that big Cat Twin when he was ten years old. "My dad knew those people real well because of trucking. He used to buy coal off their barges and haul it to his customers. Sometimes he'd take me. And boy, that day I thought I was king of the world riding on that thing. It had two operators on it, and we were stripping the dirt off to get down to the coal. I rode that tractor three times but saw it working a dozen—sometime back in 1951 or '52 at the latest. They called it the Big Boy."

The Twin that Baxter remembers was owned by Ruben Coal Company, with offices in Cleves, Ohio and a strip mine in West Virginia thirty miles south of Charleston. "The one I rode on looked exactly like the one Akin built. It needed two operators because you had two sets of levers—one ran one track, the other ran the other track. And it had a big blade. It looked forty-five feet wide, but I'm guessing it was probably fourteen feet. Maybe sixteen with the side wings on. And it could push a big pile of dirt. I remember that! They'd back that sucker up and make two or three passes, and then

13 Andreas Feininger, *Changing America: The Land as it Was and How Man Changed It*, New York, Crown Publishing Group, 1955, p51.



they'd use other dozers to move the spoil bank away so it could get down deeper to the coal."

Baxter's memories were confirmed when he went back home for a visit in October 2018 and talked to a number of people who had heard of the Twin. One was John Schwartzmiller, the seventy-five-year-old son of the operator who ran it for Rubin Coal Company in West Virginia. "He told me that for the first six months, that machine ran with two operators," says Baxter. "Then they converted it to a one-man machine. And his dad always said that it came from New York. They got everything ready in New York and then shipped it to the strip-mine and assembled it there. And then in 1953, when one of the owners died, the other brother decided to shut down the business, so they took the Twin apart and shipped it off by rail. Unfortunately, John didn't know where it went. But he did say that the Rubins did a lot of business with the Lawrenceburg plant. And he'd bet money that it went there."

Since the Rubins sold plenty of coal to the power plant near Lawrenceburg, Indiana, known as Tanners Creek, it seems highly likely that the Coal Twin ended up there. And while the trail of ownership isn't solid yet, operators from both companies say they spent plenty of saddle time on that Twin D8 as part of their career.

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## COAL TWIN—PART TWO (1952-1960) TANNERS CREEK POWER PLANT

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In 1951, the Tanners Creek Power Station—owned and operated by Indiana & Michigan Electric, a subsidiary of American Electric Power—went online with its first generator. Subsequent Units 2, 3, and 4 were added in 1952, 1954, and 1964, respectively. They were all coal-powered and required continuous fuel to meet the electricity demands of the area, which covered northern Indiana to southern Michigan. And that required a large machine that could push the massive quantities of coal into the feeders and keep the reserve coal pile at capacity.

"When all four units were in operation by 1964, the need for huge machines was clearly evident," says Andy Siekman, a thirty-six-year veteran of Tanners Creek who helped spearhead the hunt for Buster's Coal Twin and its operators. "Those generators consumed 2 to 2.5 million tons of coal yearly. At the time, it was one of the largest power plants in the United States, if not the world. Unit 1 rated at 150 MW, followed by its identical twin Unit 2. And more plants followed. These were deemed super plants, and that big Cat fit into their plans of being one of the biggest and most



*Left to right: Two tractors (twin on the right) pushing coal as it is diverted onto the pile from a conveyor; Tanners Creek Power Plant in Lawrenceburg, IN on the Ohio River in 1992*





*Coal Twin keeps stacks fed at Tanners Creek Power Plant circa 1950s*

advanced plants in the world. Tanners Creek was known as an experimental plant; many industry firsts happened here.”

Siekman was a coal equipment operator, unloading barges on the Ohio River and running Cat equipment before his retirement in 2015. Due to costly EPA regulations, the last day of generation at Tanners Creek Power Plant was May 31, 2015.

Despite some minor discrepancies, it is fair to conclude that:

- there was only one Coal Twin D8
- it was an assembly kit sold to H.O. Penn of New York for assembly
- it was first owned by Ruben Coal Co. of Cleves, Ohio
- it was sold to the Tanners Creek Power Plant sometime in 1952–53.

All those that know the entire story have since passed away. But there are still a few who remember pieces. Rollin Manford, who retired from

Tanners Creek in 1994, ran the Twin from 1953 to 1958. “It was a real easy piece of equipment to run. You could really move a lot of coal with it. Once you got a blade full of coal, you could kick your power unit out of gear, and it would hold a perfect level as you went across the pile. Almost like a road grader had laid it out. You did a lot of the steering with the throttles. You’d speed up one engine or the other unless you had a real sharp turn, and then you’d use the steering clutch.”

Hilbert Keith ran the Twin D8 at Tanners Creek from 1956 to 1961. “We unloaded coal every day. It was an economical way to get the coal into the plant because we could push about twenty tons at a time with that big blade. And you could keep up with the conveyor belt going into the plant.” Around 1960, they decided to take the Twin apart and turn it back into two singles. “They ended up trading those two D8s in on an International TD-24, which was a big mistake. I drove that TD-24, and it screamed like a jet engine all the time. It was just terrible. And you had to work on it all the time. That big blade was just too heavy for the power units. On the Twin, we ran that blade and everything out of the rear power unit, and that made it a lot easier.”

Jack Tandy was a master maintenance-repair welder at Tanners Creek from 1951 to 1959. “As far as I know that Twin was there when I got there and still there when I left. They used it mostly to push coal to the stack but also to control the coal pile. I don’t know how many acres that live coal pile covered, but it was huge. I don’t remember the Twin ever being off the coal pile. You could push two or three times as much with it as you could a single dozer.”

Jim McDaniel Sr. worked in the coal yard from October 1953 to May 1954 and spent ten years total at Tanners Creek. “I wasn’t an operator, but I worked on it and around it a lot. We had to make sure the coal kept moving because there were three boilers back then. The Twin’s job was to keep the



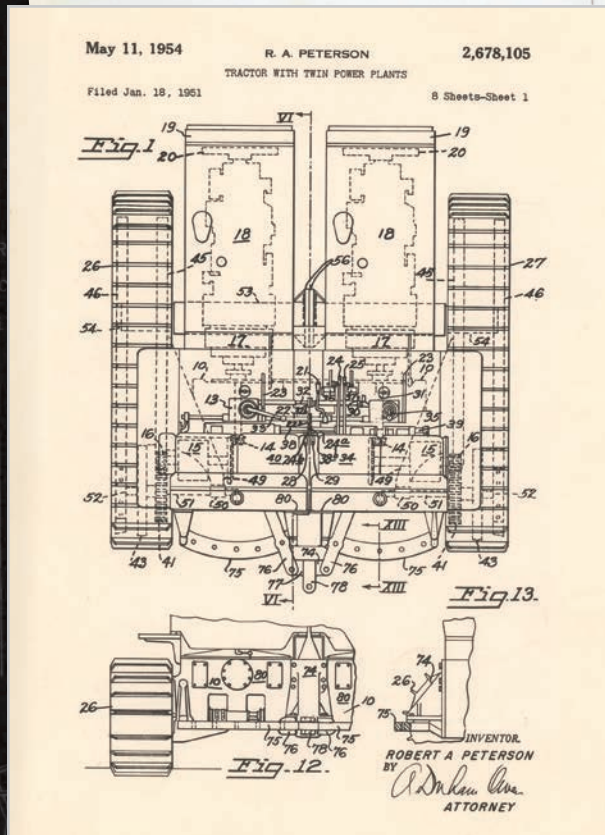
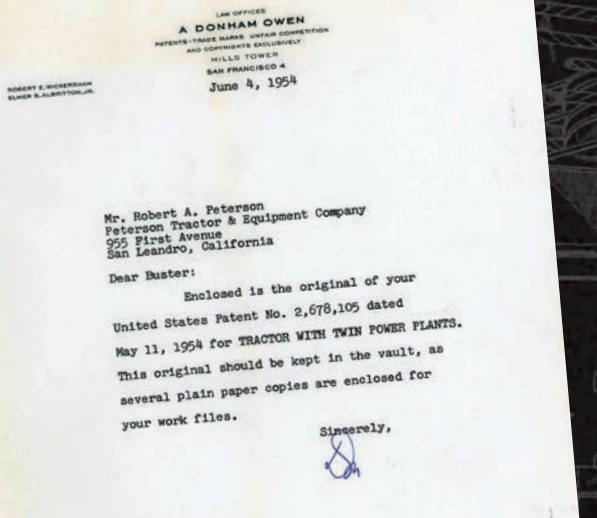
big bunker underneath the coal pile full. From there, the coal went out on a short conveyor belt and into the plant to fuel the boilers. When they were on full loads during the day, they had to have that big Twin out there. They needed it seven days a week, in two shifts. And when the load was down at night and into the wee hours of the morning, they would build that coal pile up using that D8 Twin. It worked like a charm.”

## KING RANCH HI-CLEARANCE TWINS (1950-1952)

The most well-documented of Buster’s Twin D8s is the King Ranch Hi-Clearance Twin. It is the second and only other Twin recorded in Peterson’s SEQ logbook. The record shows that the Twin D8 Hi-Clearance job utilized machines 2U12911 and 2U12912 and was shipped to the Wm. K. Holt Company of San Antonio, Texas. The 52-ton, 270 horsepower, double-wide machine had a 36-inch ground clearance and cost around \$55,000.<sup>14</sup> But that’s just part of the story.

For years, Bob Kleberg Jr., president of the King Ranch, had been collaborating with Wm. K. Holt Machinery on brush control methods for the ranch’s 825,000 acres in south Texas. He and Holt’s top executives had already developed and refined the Holt-branded root plow back in 1946. In 1949, Kleberg came up with an idea that would become the funnel dozer, also branded by Holt. These two custom implements were larger and more depth-penetrating than anything else previously seen. And, when installed on Buster’s Hi-Clearance Twin D8, the combination yielded results unheard of in the cattle ranch industry.

“They scratched out the plans for that first root plow and funnel dozer with chalk on the shop floor,” says Howard Hicks, VP of Marketing for

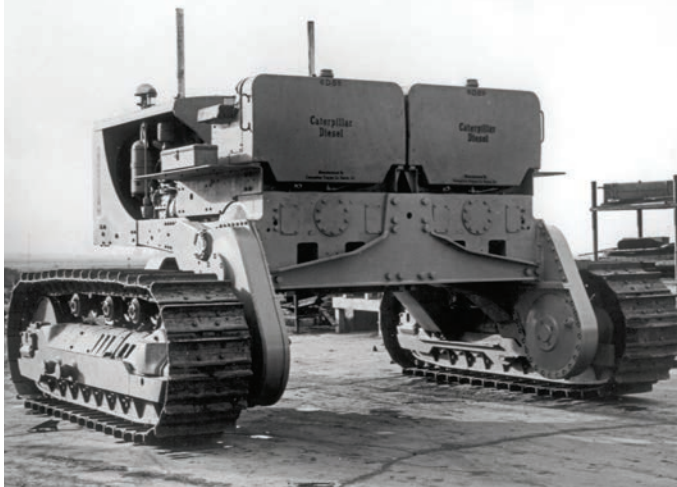
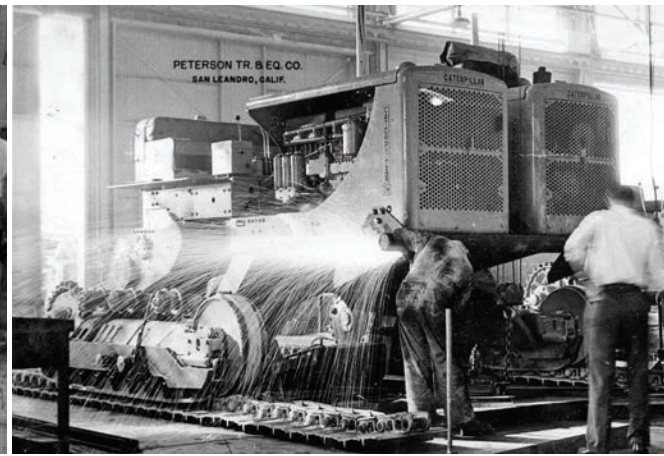
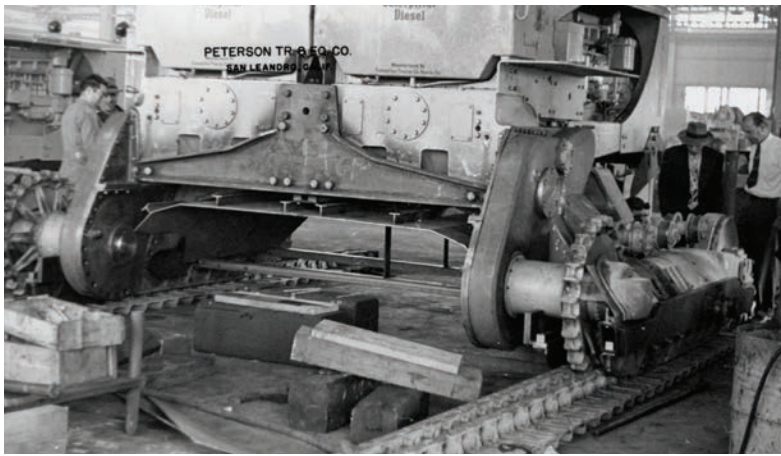


### PATENT FOR TWIN D8

Patent US 2,678,105—Tractor with Twin Power Plants  
filed Jan 18, 1951 / granted May 11, 1954  
by R.A. “Buster” Peterson

<sup>14</sup> The first Hi-Clearance Twin D8 cost \$55,000 according to an as-yet unpublished manuscript by Howard Hicks about the history of the Wm. K. Holt Company.



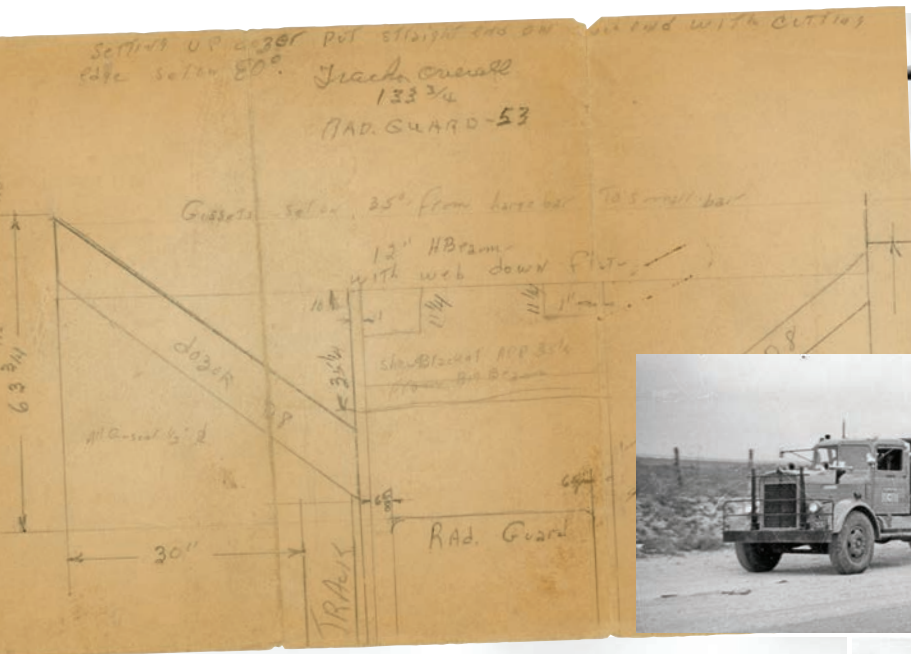


*Top, clockwise: Hi-Clearance Twin being built at Peterson in 1950; Hi-Clearance Twin working on King Ranch with Holt Plow & Funnel Blade attachments in the early 1950s; Rear view of Hi-Clearance Twin*

Holt Cat (of Texas), who retired in 2014. “That was their blueprint.” According to an as-yet-unpublished history Hicks wrote for the company, “the front was equipped with a knockdown bar capable of pushing over trees 12 to 40 feet high and up to 20 inches in diameter. The funnel dozer consisted of two [V-shaped] blades ... forming an 18-foot-wide mouth that funneled the trees between the tracks under the machine and piled it into windrows.” Mounted on the back of the Twin, Holt’s root plow cut a 16-foot wide swath—16 inches below the surface of the bud zone, which ensured the mesquite wouldn’t re-sprout and come back thicker than before. A seed blower was also attached on the back to re-seed the land as it was being cleared.

The highly-specialized Twin made history on the Texas ranch for several years. Nothing came close to its output. It performed so well that they ordered a second Twin from Peterson a year later. According to a King Ranch letter dated January 17, 1955, “It’s performance is a thing to behold. The first machine has operated 7,500 hours. The second one, delivered in March 1952, has operated 6,500 hours as of this writing. They have cleared 54,000 acres of virgin mesquite at approximately four dollars per acre.” Two years later, the two had accumulated a total of 18,750 tractor hours. “The [root plow] blades of these two machines have traveled underground more than 25,000 miles—a distance greater than the circumference of the earth at the equator.” Clearly, Kleberg was pleased.





Top/left, clockwise: Hand-scrawled notes for the Holt funnel dozer in the mid-1940s; Holt Funnel Blade attachment on Twin D8 in 1950; King Ranch Twin in transport in 1950; King Ranch Twin w/Holt attachments working in the early 1950s

Still, they were not without their problems. In order to achieve the 36-inch ground clearance, Buster stacked the two bull gears one on top of the other and housed them in a special case. This caused a lot of early final drive failures. “The load on those gears was very severe because these were two tractors hooked together, side-by-side, with double the horsepower,” explains Bill Kammer, who retired from Holt’s Technical Service Dept. in 2011. “And that doubled the stress on the bull gear. It was just too much horsepower for that particular gear. But it was worth it. That machine would clear double what anybody else could.”

As a newly hired shop mechanic in 1956, Kammer spent hours working on those bull gears. “There were little tool marks at the root of the gears from machining. And those caused metal fatigue to where they started shucking teeth. The remedy was to polish those gears to a mirror finish with a quarter-inch drill and some sandpaper. I would sit on a chair and polish those tool marks out by the hour. Once we started doing that, those gears would last ten times longer than the originals.”

Ken Martin first encountered the Twins in 1963 at Holt’s Corpus Christi branch. “Those things were





(L-R) Ken Martin with Bill Kammer at Holt's 85th anniversary event in Texas in 2018

“ They out-produced anything built at that time in history as far as a tractor in the brush country. It was just massive—the biggest one in existence at the time as far as horsepower to the ground.

– Bill Kammer, general service technical adviser, Holt of Texas, retired 2011 (regarding the King Ranch Hi-Clearance Twin)

”

a goldmine for the dealer because the undercarriage wore out about every 400 hours. The King Ranch Norias section, where they spent most of their time, was nothing but blow sand and brush. And that sand was very abrasive, just like sandpaper. It just wore everything out,” explains Martin, who retired from Holt in 2002. “So we would have to rebuild the rollers every 400 hours. The undercarriage on those old tractors was very primitive, so you had to grease the rollers all the time. They pulled a grease trailer around with them because the rollers would get so hot that the grease would run out.” In the mid-1960s, Caterpillar came out with a product improvement called Sealed Lifetime Lubricated Rollers, which helped mitigate that problem.

The other issue was the drive line. “They would break the cross shaft off the steering clutches because it was so high-powered,” recalls Martin. “You had the weight of two tractors and two engines pushing through there, which doubled everything as far as load. So those would break off regularly.” Martin also recalls watching the Twins operate out on the ranch. “That root plow would pull about two feet below the surface and cut the stump off and kick it up out of the ground. It was amazing to see those implements work. That was a time, let

me tell you. It was a time when people just didn’t see things that large.”

Sometime in the late 1960s, King Ranch sold the two Twins back to Wm. K. Holt Co. By then they had already gotten Caterpillar to build them a special King Ranch D9G high-clearance single that could out-produce the Twins with its higher horsepower and thoroughly vetted, factory-tested capabilities. Bill Kammer, who helped assemble it in Holt’s shop, recalls hearing that the Twins were shipped off to Mexico at some point and were never heard of again.

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### THE HARRISON CONSTRUCTION TWIN (1949)

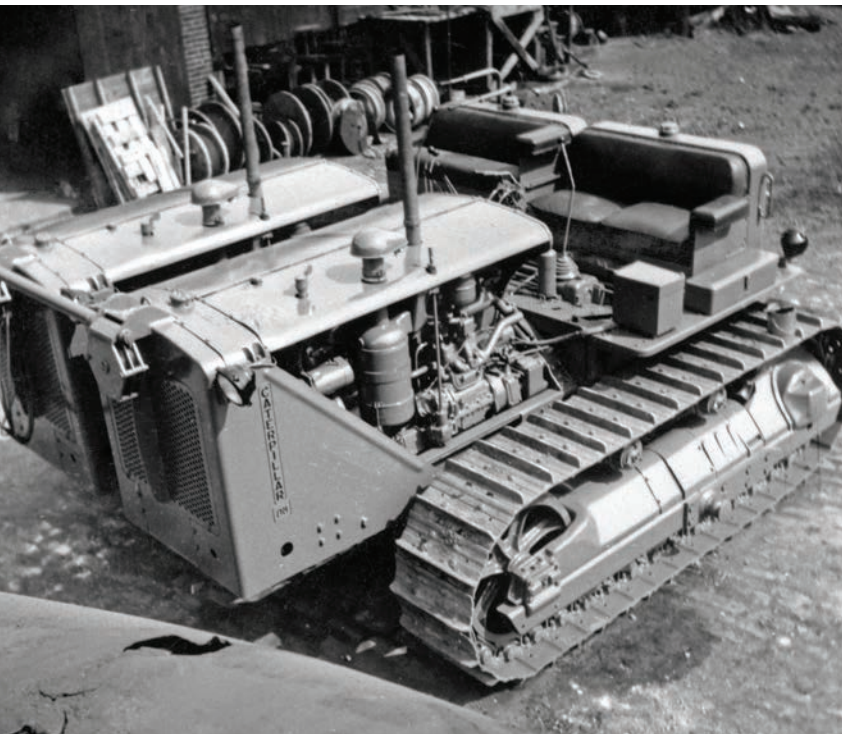
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Other Cat Twins previously unknown to Peterson, have surfaced in recent years. Some were found through association forums, pictures circulating on the internet, or word of mouth. Others showed up in newspapers or trade journals. The Harrison Construction Twin first turned up while Edgar Browning was researching his book on road construction in Pennsylvania.<sup>15</sup> A former Beckwith Machinery employee gave Browning pictures of the Twin from when it was being assembled at Beckwith’s shop in Pittsburgh.<sup>16</sup> All the photos are

15 Edgar Browning, *Roadbuilding Construction Equipment at Work in the State of Pennsylvania*, Collierville, Tennessee, InstantPublisher.com, January 2019.

16 Beckwith Machinery was the Cat dealer for Western Pennsylvania until Cleveland Brothers acquired them in 2005.





Harrison Twin D8 was delivered in 1949

marked 1949. “The Siamese Caterpillar D8 was delivered new to Harrison’s Western Avenue yard on the north side of Pittsburgh in 1949. It was first used to spread fill on the West-End Bypass project in Pittsburgh, PA. It also worked on a section of the Pennsylvania Turnpike, and later pulled a Euclid BV loader on the Ohio Turnpike project. The machine was most likely shipped by train with final assembly at Beckwith Machinery,” claims Browning, a retired homicide detective with the Hampton, Virginia, PD who has authored eleven books on historical road construction equipment and a quarterly journal, *Shovel*.

Browning’s collection of photos and trade articles corroborates his theory that the Harrison machine was one of the earliest twins built. A May 1950 article in the *Constructioneer* (above right), explains.<sup>17</sup>

A Gulf advertisement in *Roads and Streets* magazine shows a picture of the Cat Twin D8 on

### Siamese Tractor Aids Earthmoving



To rush earthmoving operations on the West End highway project at Pittsburgh, Harrison Construction Co., Pittsburgh, is using a Caterpillar Twin D8 tractor equipped with a 16-foot long 5-foot high bulldozer. The only one of its kind east of the Mississippi River, the twin D8 has a blade capacity of 12 cu. yds. and in operation can roll from 25 to 45 cu. yds. of earth. Two D8 diesel tractors are joined side by side into one rigid unit; inside crawler tracks and assemblies of the two tractors were removed and the two units fastened together, resulting in a laboratory test horsepower of 270. Engine drives are not connected and each of the two engines can operate its own outside track independently of the other, with one operator controlling the twin unit, including separate control on each engine for brakes, steering, throttle, and gear shift levers.

The road job calls for digging out the side of a mountain and involves 1,250,000 cu. yds. of excavation, mostly rock. The road will be a West End by-pass to South Hills on Route 247, connecting the south end of the West End bridge over the Ohio River with Sawmill Run at Banksville Circle. Harrison received the \$2,942,937 contract from the Pennsylvania Department of Highways.

CONSTRUCTIONER - May 22, 1950

the Ohio Turnpike in September 1954. “Harrison Construction Company of Pittsburgh, Pa., is rushing to complete sections C-6 and C-7 on the Ohio Turnpike, comprising 6.9 miles near North Jackson, Ohio. The contract involves 2.2 million cubic yards of grading (90 percent borrow); 60,000 cubic yards of concrete paving; 16,680 cubic yards of concrete for box culverts; nine bridges, and one cloverleaf interchange.”<sup>18</sup>

Given that Peterson has no record of the Harrison Construction Twin, the likely scenario is that Peterson sent the conversion parts and plans to the local Caterpillar dealer (Beckwith), who assembled it in their shop, then shipped it to Harrison’s yard in Pittsburgh. That would certainly fit with the origins of two other dealer-assembled Twins in the 1949–51 timeframe—the Hungry Horse Twin in Montana and the Coal Twin in Ohio. However, with no definitive documentation, one can only speculate.

17 “Siamese Tractor Aids Earthmoving”, *Constructioneer*, May 22, 1950.

18 “Gulf Products and Fine Service Keep Equipment Rolling on the Ohio Turnpike Project”, (Advertisement), *Roads and Streets*, Sept. 1955, p33.



## CAT MODELS VS BUSTER'S CUSTOM MACHINES

MODEL	DEBUT	SERIAL NO.	HSP	UPGRADED
Cat D8	1946	D8-2U	132 hp	144hp (1948)
Twin D8	1949	D8-2U	270 hp	Cat built D9 (1955)
Cat D9	1955	D9-18A/19A	286 hp	D9D-19A (1956) 320 hp D9D-18A (1957) 320 hp D9E-34A/49A/50A (1959) 335 hp D9G-66A (1961) 385 hp
Quad D9	1964	D9G-66A	770 hp	Cat took over production (1967-68)

INVENTOR  
ROBERT A. PETERSON



The Cat Twins, along with Buster's many other innovations, laid a solid foundation for Peterson's reputation in the earthmoving industry. One of his most complicated designs was the Triple 657 built in 1965, used by Peter Kiewit & Sons on its San Luis Canal contract. By then, Buster was part-owner of Peterson, affording him the freedom and flexibility to pursue his passion for custom design.<sup>19</sup> "The Triple 657 cost nearly a million dollars to build in those days," says his son, Don Peterson, who retired as Director of Parts and Service Operations in 1977. "Today, it would be more like five million. What it did was help develop sales to the big contractors. Not that they wanted to buy it, but they knew that Peterson was an innovative dealership that could do things that Caterpillar either couldn't do or chose not to do, just because it wasn't cost-effective. It wasn't for us either, but it helped to develop a worldwide reputation for Peterson." That reputation carries on today in the many designs and niche markets Peterson has helped to develop. A reputation that is priceless.



Top to bottom: Buster's Triple 657 scrapers in 1965; Brothers Buster & Howard Peterson/R receive scale model of the Twin D8

<sup>19</sup> In the 1970s, while still at Peterson, Buster worked on a retainer for Cat Engineering on several projects, as evidenced in patents where he was a co-assignor along with Caterpillar engineers.





*The first Caterpillar tractor Peterson sold—an RD4—back home and fully restored, in 2009.*





## THE CAT RD4

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### PETERSON'S FIRST CAT TRACTOR RETURNS

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**W**hen a young Howard Peterson sold his first Caterpillar tractor back in 1936, he probably never considered that it would come back home years later. But it did. Sometime in the mid-1990s, that first tractor—a Caterpillar RD4, Serial No. 4G2828—came back home courtesy of the original owner's family. Today, it sits proudly in the lobby of Peterson's headquarters in San Leandro.

Peterson's first Cat was built in Peoria in October 1936 and sold to Hazen A. Dennis Sr. of Mt. Eden (Hayward), California on December 8, 1936—just three weeks after Howard Peterson launched his business. At the time, Peterson was operating out of a leased building on Howard Street in San Francisco.

According to Peterson's Journal Voucher ledger for 1936–1940, Dennis' RD4 is one of four items listed that first full month of business. At \$2,000, it was the largest purchase on the books. The brand new 1936 model retailed for \$2,715. Two years later, Dennis bought a Killefer beet lifter for \$337. By that time, Peterson had moved its headquarters to a brand-new facility on Watkins Street in Hayward.

In the 1990s, his son, Hazen A. Dennis Jr., recognized the historic significance of his father's old RD4 and decided to give it back to Peterson. Through the years, his father had often mentioned that it was the very first tractor Peterson ever sold. His pride of ownership was apparent. So Hazen Jr. contacted Peterson and offered it back. That was 1994.

The machine sat at the Redding store for several years and was finally shipped to Peterson's Willows branch with instructions to get it running again in their spare time. "When we got it, both the big engine and the starter engine were frozen up," recalls Gerry Peters, who retired in 2013. "And everything was full of water. So we drained it and broke everything loose, then reconditioned the cylinder head on the big engine. We rebuilt



JOURNAL VOUCHER DATE Dec 31 1936 VOUCHER NO. 12-1

DESCRIPTION	SUBSIDIARY LEDGER			GENERAL LEDGER		
	ACCT. NO.	CHARGES	CREDITS	ACCT. NO.	CHARGES	CREDITS
Note Reciv. - J. L. How		111 58				
James E. Sullivan		168 00				
Hazen C. Dennis		7000 00				
Oakwood Farms		9500 00		121	3229 58	
Acct. Reciv. - J. L. How			111 58			
James E. Sullivan			168 00			
Hazen C. Dennis			7000 00			
Oakwood Farms			9500 00	121		3229 58

EXPLANATION  
To record various Notes Receivable - Actual on Note Register

MADE BY H. A. Dennis



Top left, clockwise: December 31, 1936 journal entry—Hazen A Dennis third line down; The Dennis & Doyle families celebrated the restored RD4 in November 2009; Original invoice for RD4 dated December 8, 1936

INVOICE

CATERPILLAR  
LE TOULNEAU JOHN DEERE  
PETERSON TRACTOR AND EQUIPMENT CO.  
1175 HOWARD STREET, SAN FRANCISCO  
UNDERHILL 1082

M. Hazen A. Dennis DATE December 8, 1936  
ADDRESS Mt. Eden (Alameda County) C.O.D. \$430.00  
California YOUR ORDER NO. TERMS Del. Cont.  
VIA Truck

SOLE BY	CASH	C. O. D.	CHARGE	ON ACCOUNT	WIRE NETS	PAID OUT
One			"Caterpillar" RD4 Diesel Tractor, Ser. #402222 44" Gauge Model, Equip. W/Top Seat, 13" Grouser Shoes Trade Allow. on Used Cat. 30 Tractor, Two Speed, Ser. #			Ind. Sales Tax \$2715.00 300.00 2415.00
			Less Allowance for Own Hauling			15.00 \$2400.00
			Insurance for Two Years			30.00 \$2430.00

No. 5611

Unfortunately, Hazen Dennis Jr. was unable to enjoy its big return. He had passed away earlier that year on January 27 taking with him a bit more of the RD4's oral history. However, his wife and family all came down to Peterson on November 19, 2009 for the grand unveiling. Today their father's RD4 is parked proudly in Peterson's front entrance at 955 Marina Boulevard in San Leandro. Back home and revitalized after all those years.

## THE EVOLUTION OF THE RD4/D4

The Dennis RD4 was part of Caterpillar's original run, launched in 1936. There were 8,857 RD4s in that original 4G series, produced in 1936-37. According to Caterpillar's online history site, "The RD4 was based heavily on the Cat R-4 spark-ignition, gasoline powered, track-type tractor but without the gasoline engine. The RD4 was powered by a Cat D4400, four-cylinder diesel engine that produced 41 horses-worth of Cat Diesel Power."<sup>1</sup>

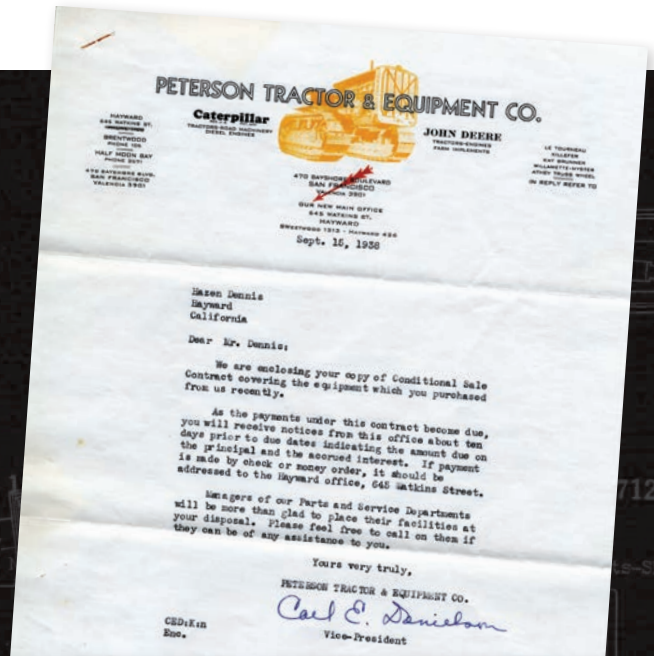
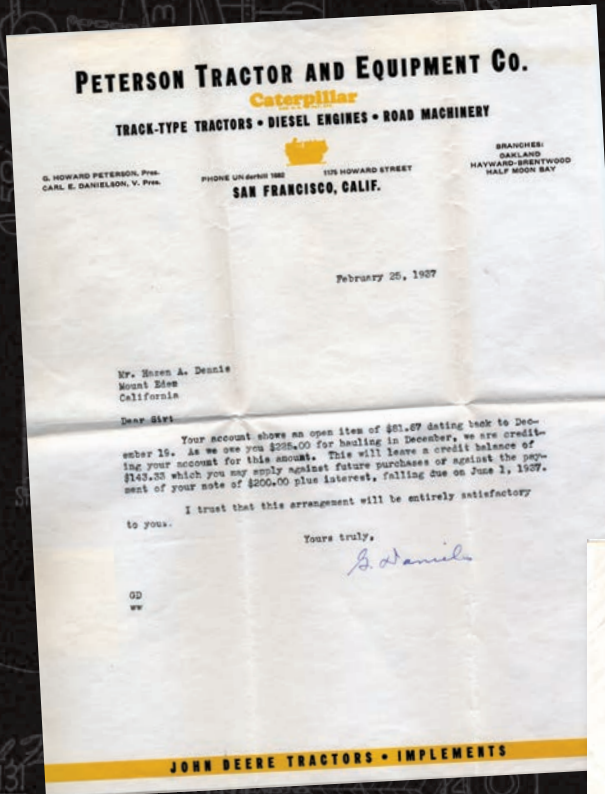
Sometime in 1937, Caterpillar changed the name by dropping the *R* to become simply the D4. The same applied to the entire RD series including the

the magneto and the carburetor on the starting engine and got it to run. There was a lot of cleaning to do because it was pretty dirty with baked-on grease. Then we painted it and shipped it down to San Leandro."

In October 2009—exactly 73 years to the month of its original manufacture date—the revitalized RD4 came back to Peterson headquarters, now in San Leandro. It came complete with the original parts catalog and packing list, the operator's manual and all the original bills and documentation. Even down to Peterson's original letterhead.

1 Caterpillar archive website, [www.caterpillar.com/en/company/history/archive/thehistoryofcatd4dozer.html](http://www.caterpillar.com/en/company/history/archive/thehistoryofcatd4dozer.html)





Peterson's Journal Voucher ledger for 1936-40 lists Hazen A. Dennis with an outstanding note of \$2,000 in Peterson's first full month of business. With a down payment of \$430 and a few incidentals, Hazen Sr. paid off his RD4 and bought a Killefer beet lifter in September 1938. (see documents on facing page).

## THE DENNIS FAMILY'S RD4

Our earliest memory of the RD4 was around 1968 when it was parked in our grandfather's shed in Middletown, California next to where dad put gas into his pickup. The gas pump was one of those that you cranked the gas into the glass bowl and then it gravity fed into your tank. We were with Dad a lot of the time when he would feed the cows at the barn. We may have heard grandpa say once: "That was the first tractor Peterson sold".

Over the years, we heard the same story repeated by our father, Hazen Dennis Jr. Dad didn't say a lot, but when he said something two or three times, we knew it was important. He would tell us: "That RD4 was the first tractor Howard Peterson sold". Dad passed away at home on January 27th 2009. He loved tractors. We know he felt honored that he could give this tractor back and would feel honored that it is here on display.

—The Hazen A. Dennis Jr Family, November 19, 2009



Mr. Hazen Dennis, Jr. passed away in January 2009 and was unable to see the restoration of his father's Cat RD4.



RD6, RD7, and RD8. As for the “new” Cat D4, everything on the tractor remained the same that year except for the radiator. In 1947, Cat upgraded its D4 with the new Cat D315 engine, rated at 48 horsepower. Both engine variations remained popular and, with regular updates, continued up to 1959. From 1936-1959, Caterpillar built a total of 94,496 RD4/D4 tractors. Today’s D4K series still retains the original design DNA of that first RD4.

### A GLANCE IN THE REARVIEW MIRROR

The threads of history between Peterson and the Dennis family have intertwined in such unusual ways through the years that the story bears retelling. In 1955, nearly twenty years after he’d bought that first RD4, Hazen Dennis Sr. decided to move out of the Bay Area. Developers were buying up all the land surrounding his property in Hayward, and he wanted out. He ended up buying three hundred acres in Middletown—a rural community in Lake County one hundred miles to the north—and went into partnership with his daughter, Marge, and son, Hazen Jr. The RD4 went with him. At the time, Hazen Jr. was just getting out of the military and was ready to settle down. He hired on as a ranch hand on the Diamond D Ranch in Middletown, then owned by Ralph K. Davies (of Louise M. Davies Symphony Hall in San Francisco).

There he met and married Margaret Delfino, who had moved from Alameda a few years earlier. The young couple moved into the little red ranch house down the lane from the Diamond D’s entrance and started building their family and life together.

Twenty-five years later, Howard Peterson bought the Diamond D from Davies’ widow—the same ranch Hazen Jr. had worked on as a ranch hand. The same ranch where his son, Dan Dennis, was born in 1961. And now the same ranch where Howard’s grandkids would spend countless hours exploring. It’s also where his grandson, Duane Doyle Sr., worked on long holiday weekends rebuilding the engine on the ranch’s old D5, and doing finals, steering clutches, and brakes on the old D7. Up to his elbows in grease and loving every minute.

By the time Dan Dennis turned twenty-three, he was living on the family property just south of town, working for a local contractor. “Howard Peterson donated a piece of his ranch along Hwy 29 to Middletown Bible Church,” recalls Dan years later. “My employer, Ed Breazeale, attended that church and donated his backhoe, and I donated my time digging the footings with it for the new building.” Dan also worked alongside Leroy Story, Howard’s right-hand man, when he was there on weekends.



*Left to right: The Diamond D Ranch gate with some of Petersons 4th generation circa 1997; The Dennis family with their grandfather’s RD4 restored in 2009*



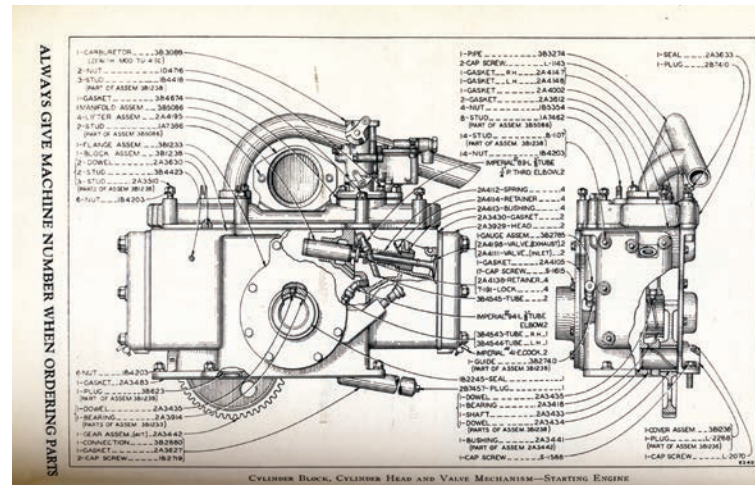
When Howard bought the Diamond D in 1980, a large collection of local Native American artifacts came with it. Ralph Davies had been an avid collector. Dan Dennis recalls a story from his youth that his dad told many times. “Dad went to San Francisco one time to pick up two carved wooden Indian statues for Mr. Davies, which he placed at the entrance to the ranch house. Later, I remember riding with my dad up to the main house, at four or five years old, and feeling dread seeing those carved Indians. I wondered if there could be any real Indians up on the hillsides.” Today, those two cigar-store Indian chiefs belong to Howard’s oldest daughter, Jeannie Doyle, and continue to startle new generations of kids in the Doyle family.

## COMING FULL CIRCLE

Looking back, who could have guessed the significance of that phone call back in 1994, when Hazen Jr. called to see if Peterson would want his father’s old RD4 back? No one had gone searching for that tractor. No one even knew it still existed.



Hazen Dennis Sr. showing off his sugar beets in 1941



Parts drawing from RD4 operators manual

## RD4 & EARLY D4 SERIAL NUMBERS

1936 RD4 4G1 – 4G3662

1937 RD4 4G3663 – 4G (N/A)

1937 \*D4 4G (N/A) – 4G8857

1938 D4 4G8858 – 4G9999

1939 D4 7J series begins

\*Cat dropped the ‘R’ mid-year to become the D4

## EARLY DIESEL TRACTOR TIMELINE

1931 Introduction of Cat Sixty – first diesel powered tractor

1934 R series gasoline tractors released as the R2, R3, and R5

1935 Introduction of diesel-powered RD6, RD7, RD8

1936 RD4 released

1937 ‘R’ is dropped from the RD designation – tractors become the D4, D6, D7, D8

1938 D2 released – there never was an RD2

1938 R4 released – gasoline engine – based on the Cat Thirty





Hazen Dennis Sr. on his RD4 in the field

5 Sheets—Sheet 1

## WHAT'S THE R FOR?

Early on, it became apparent that Caterpillar's naming method – by horsepower (i.e. Diesel Sixty, Diesel Seventy, etc.) – was too limiting. In 1935, when they upgraded the horsepower of their diesel tractors, Cat decided to release them as the RD series: the RD6, RD7 and RD8. (The RD4 wasn't introduced until 1936.)

But the 'R' remains a mystery to this day. No one knows, definitively, what it stood for but theories abound. Some argue that the 'R' denotes a gas-line-powered model while the 'D' stands for diesel power. Some say the RD stands for Rudolf Diesel, the inventor of the diesel engine. Others say it's for 'Roosevelt Diesel' in honor of the 32nd president's New Deal and all the roadwork it spawned. However, Caterpillar's top leadership at the time were not big supporters of Franklin Roosevelt, which undermines that premise.

Yet another theory centers around the locale where these machines were manufactured: Peoria. At the time, the State of Illinois named its growing network of roads simply by RD 1 for Road District 1, RD 2 for Road District 2, and so on. Some think Cat could very well have adopted a similar designation for the machines that were directly tied to the construction and on-going maintenance of those roadways. Thus, the RD4, RD6, RD8.

But today, thanks to the Dennis family, Peterson is the proud owner of the first Cat tractor Howard Peterson ever sold.

## OLD CATERPILLAR ADVERTISEMENT WITH RD4

Hazen Dennis Sr. was featured in a Caterpillar ad in the July 1941 issue of *The National Beet Grower* magazine. Pictures from the advertisement, taken by Caterpillar in October 1939, cite the specifics. "Caterpillar Diesel D4 Tractor and Killefer beet lifter, digging sugar beets in a 20-acre patch of exceptionally fine beets, which average 14 inches in length. Yield is 20-plus tons per acre in heavy adobe soil. Work is 8–10 hours a day digging 5 acres. The D4 uses 1.3 gallons of fuel (at 5¾¢) per hour. Owner has 75 acres of sugar beets and tomatoes, and also does custom work."

Page Two THE NATIONAL BEET GROWER

### Power and traction to dig the big ones

Heavy demands are placed on tractor power during beet-digging time. Growers hope for big beets—but the big ones require extra pulling power. Here's where "Caterpillar" Diesels are finding favor.

Read what a typical sugar-beet grower, Hazen A. Dennis, Hayward, California, says of his "Caterpillar" Diesel Tractor:

"The weight of my 'Caterpillar' D4 Tractor is well balanced over the tracks so the tractor won't heel back when pulling a heavy implement or working through heavy adobe soil such as we encounter in digging beets."

Why not arrange now for a profitable beet harvest by seeing your "Caterpillar" Dealer and have him check over your tractor power with you and make sure it's ready to go?

Mr. Dennis and some of his fine beets—averaging 14" in length.

Sierra Tractor & Equipment Co. Chico — Gridley — Red Bluff — Redding	Peterson Tractor & Equipment Co. Hayward — Brentwood
Marysville Tractor & Equipment Co. Marysville — Roseville	Budd & Quinn, Inc. Fresno — Madera
Holt Bros. Stockton — Lodi	Cornell Tractor Company Salinas — Watsonville — King City
Weaver Tractor Company Sacramento — Woodland	Berglund Tractor & Equipment Co. Napa — Rio Vista — Santa Rosa
Rye Tractor & Equipment Co. San Jose — Hollister	Ben Hulse Tractor & Equipment Co. El Centro — Yuma — Brawley

Hazen Dennis Sr. testimonial advertisement in *The National Beet Grower* in 1941

All original documents and photographs relating to the RD4 were gifted to Peterson by the Dennis family.



Section VI

# PETERSON'S NEXT GEN







*Duane Sr. with Erin & Duane Jr. in the backyard ... 1987*





## PETERSON 4.0

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### RAISING THE NEXT GENERATION

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**I**t takes a lot more than product knowledge and a college degree to build a successful business and take it through to its fourth generation. Research shows that only 30 percent of family-owned businesses transition successfully into their second generation; 12 percent make it to their third. And surviving to the fourth generation is a 3 percent long-shot. But that's exactly where Peterson is today. Part of an owner's responsibility is to raise the next generation to love the business, and to be good leaders and stewards of the company. Little did Duane and Sue Doyle know they were actually raising *two* leaders.

Back in the 1980s, long before Duane Doyle Jr. and Erin (Doyle) Sorgel stepped into their current roles as President of Earthmoving and CFO, respectively, they were learning about tractors. It wasn't just in their genes. It was in their daily life, like identifying dozers and scrapers along the freeway from their car seats. Or making tractor birthday cakes with Grandma. Or sitting on Poppa Bill's lap driving a tractor for the very first time. Or talking business around the dinner table—even to naming their dogs Dozer, Skidder, Ripper, Diesel, and Grader. It was all just part of growing up a Doyle. They were learning to fall in love with the business.

To understand the kids, however, you have to understand their father, who was raised in much the same manner. Duane Sr.'s first business trip, in fact, was spent sound asleep in a motel drawer. His dad, Bill Doyle, explained back in 2017. "We had sold a used D8 to a logger in the Eureka area and the winch broke. So Peterson bought a new one from Brizard-Matthews and I delivered it and helped the customer do the installation." That summer of 1955, Bill and his wife Jeannie—Howard Peterson's oldest daughter—were living at Howard's Triple J Ranch in Dublin with their six-month old son Duane. And Jeannie didn't want to be left out there all alone while her husband went on a business trip. Instead, she packed up her son with all the baby paraphernalia and went along. While her husband was out in the woods working on tractors, she spent most of





*Top left, clockwise: Duane Jr.'s 4th birthday party in August 1988; Doyle family (L-R) Sue, Duane Jr., Duane Sr., Erin with horses Holly & Babe, and dogs Dozer & Skidder circa 1997; Poppa Bill & Duane Jr. share August birthdays in 1987; Duane Sr. at San Leandro showroom in 1958; Duane Sr. & Ed Rapp at Peterson picnic in 1992; Duane Jr. & Erin with Poppa Bill in 1987*



her time making formula and washing out diapers in their motel room while the baby slept close by in a dresser drawer.

Perhaps one of the biggest boosts to Duane Sr.'s career was the day he met Ed Rapp. As Peterson's new Cat district manager in 1990, a critical part of Rapp's job was to get Duane Sr. over the finish line as Peterson's next dealer principal. "Traditionally, Bill would take the new district manager for a branch by branch review so he could get to know them and they could get to know the territory. But since Peterson was at a critical stage of succession planning for the next generation, Bill and I agreed that I should take the trip with Duane instead," explains Rapp. "So Duane and I piled into his Ford Bronco and traveled to every Peterson branch, for a week. That's when Duane and I started to forge a relationship. We didn't walk into the front door and into a conference room with the branch manager. We walked out into the shops and parts departments, and Duane called people by name. On that trip, Duane went from hopping up on a customer's wheel loader to check an intermittent power issue out in the field, to discussing the debt-to-equity and long-term outlook of Peterson with me. We also talked about family and faith. It didn't take long to figure out that Duane was the real deal."

Starting in the early 1990s, and still today, the Doyles and Rapps share family vacations, combining business with fun and family. "On those vacations between Christmas and New Year's, I'd have my kids write down their goals and affirmations for the following year," says Rapp, who retired as a Caterpillar group president in 2016. "And I took Duane Jr. through the same process. From an early age, he wanted to engage and to understand. He has always been very coachable. I felt I had to be very thoughtful in any direction I provided because he was listening. I think the yellow blood transfusion for both these kids took place at the hospital. Duane and Sue never separated work and home. Peterson was just a part of home. They got the kids involved at a very early age."



*Celebrating Duane Sr's succession at Trader Vic's with executive team (L-R) Ernie Fierro, Jerry Lopus, Jeff Goggin, Jack Gallagher, Duane Doyle Sr., Bill Doyle, and Walt Perry, in July 1995.*

It was, however, important to both Duane and Sue that their kids feel free to make their own career choices. "We tried to be very intentional not to create the expectation that they had to work in the business," explains Sr. "We didn't want them to feel obligated because a family business really takes dedication and desire. It's more than just a job. It's a commitment not only to the business but also to all the employees who work there." Over time they developed a deep love for the business. "A lot of dealers put their kids in a job and move them around every six months to give them a lot of exposure," says Duane Sr. "We didn't do that. We gave them real jobs and they were expected to perform them just like everybody else. They had real accountability just like everybody else. They couldn't just float around and learn by osmosis. They had to earn their way through the organization as opportunities presented themselves."

At home, they spent quite a bit of time out in the garage working on cars. Duane Sr. and Sue bought each of them fixer-uppers—Erin's, a cherry red '67 convertible Mustang; Duane Jr.'s, a blue '67 Shelby Mustang (kit) fastback. "They each spent a lot of time with me rebuilding their cars," says Duane Sr. "They were interested and willing to roll up their sleeves and really dive into restoring a car. That's a big endeavor, especially for a teenager."





*The Doyles & Rapps in Hawaii in May 2018*

Since day one, their biggest fan has been their mom. “Creativity has been an asset to both Erin and Duane Jr. in their lives and careers,” says Sue Doyle. “It’s been fun to watch Erin use this gift in her job as a [QFS] Black Belt and as CFO. She is always looking for ways to creatively fix or improve areas that she is involved in, whether it’s with the banks, technology or personnel.

“It’s also been fun listening to Junior as he thinks of ways to bring more business into the company

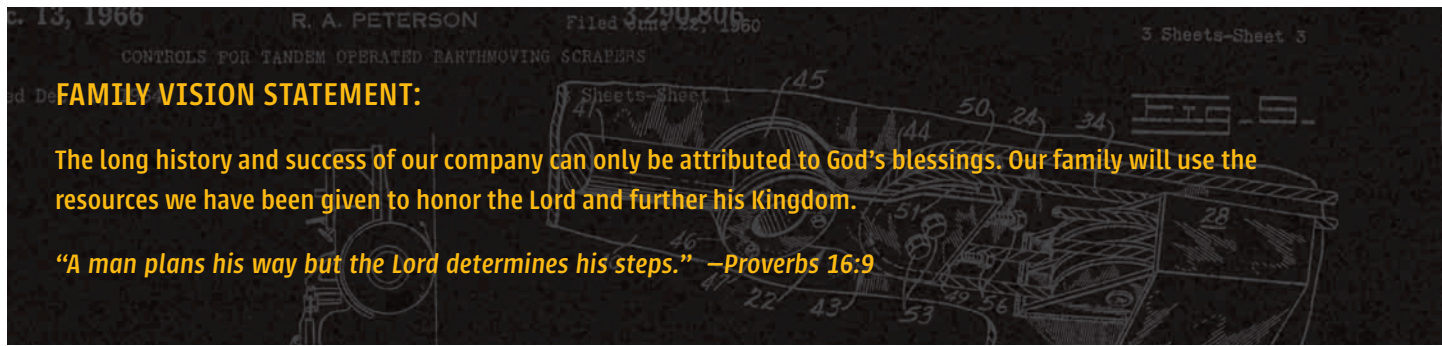
or finds creative ways to meet a customer’s specific equipment need. He has always been like that. When he was 12 years old, he was asked to hand-water some trees around the house,” recalls Sue. “He came up with a pump inside a wagon, that he pulled with a little tractor. More recently he created a weed removal device for the docks at Clear Lake by making a special blade attached to a small aluminum boat. He’s always looking for creative ways to get things done.

“Another quality that has taken both Erin and Duane Jr. quite far is their ability to take their ideas to the next level. They don’t just come up with the idea. They find ways to implement it and see it through to the end. They are both diligent, hard-working, and driven when pursuing a goal—some might even say stubborn. Erin’s determination and drive have been evident since she was young. At a martial arts tournament, when she was 14 years old, they matched her up with a girl quite a bit bigger and two belts above her. Erin went in, did great and ended up tying the match. Her ‘can do’ attitude really showed when she was away at college and decided to remodel a bathroom in the condominium she was living in. When Sr. told her



*Erin working on her mustang in the garage in 1999*





Left to right: Duane Jr. with his restored '67 Shelby Mustang in 2002; Erin with her mom, Sue Doyle, at Peterson Family Fun Day in 2019

that it would require dealing with plumbing issues, she told him that she'd already watched a YouTube video and it wasn't that hard. And with some help from Sr., she got that bathroom remodeled."

Many others have influenced Erin and Duane Jr. through the years on their climb up through the organization. John Wells, current general manager for Peterson Tractor, is one of them. "Erin and Duane Jr. started at the bottom and worked hard to be where they are now. They have great vision for what they want to do and where they want the company to go and aren't afraid of working hard to get there. For me, that's really refreshing and exciting."

Mark Ehni, VP of Parts Operations (retired 2020), is another Peterson veteran who has worked with both kids through the years and watched their progress. "Erin and Duane Jr. bring a fresh set of eyes and perspective to the company that they will be running in the future. Duane Sr. has done a very good job making them work their way up through the ranks so that they really understand the business—and understand it from a regular employee's perspective. That's going to be of tremendous value leading the company because they have lived it and understand what it takes. They don't have a silver spoon view. They have respect for the average person instead of the misconception that they're somehow above others because of the family they were born into."





*Top, clockwise: Erin Sorgel; Erin on showroom tractor at four years old in 1986; Erin working remotely from college in 2003; A fitting symbol—the fearless girl facing down the charging bull of Wall St.*

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## ERIN IN A NUTSHELL

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On May 1, 2017, Erin became Peterson’s Chief Financial Officer and the very first female officer of the company. She started at age 16, working in the marketing department in San Leandro for Shannon Thomas. “One thing about Erin that has always stuck with me is her curiosity. She wants to understand. And she wants to be involved whenever she can affect a change or make a difference. When she first came to me, I remember thinking, ‘Oh my gosh. Here’s the owner’s daughter. I’ve got







*Erin's biggest fan—Sue Doyle—with Duane Sr. and the 5th generation in 2019*

to protect her.’ Within months I realized, ‘Nope. This one can take care of herself.’ It didn’t matter what I gave her—setting up tables or pop-up tents at a trade show or carrying big loads to and from an event—she was right in there. She would often take the lead. That’s just Erin. I wouldn’t have to hold her hand. If I gave her some basic instruction, away she went. She’s a take-charge kind of person. Her tenacity and curiosity, her work ethic and her humility are the essence of what makes her such a super person.”

During college at the University of Colorado, Erin worked remotely for the accounting department reworking Peterson’s budgeting process with Bob Klapperich, Peterson’s controller at the time. Back home during the summers, she worked in the accounting department as a general accountant. Upon graduation, she spent a year doing audits for an accounting firm, earning her CPA license and gathering valuable financial experience. In 2007, she returned to Peterson, earned her QFS Black Belt and went on to lead the QFS department for several years before stepping into financial planning and analysis for Peterson.

Along the way, Erin has had a number of influencers in her life, but one role model rises above the rest. “My mom set a really good example being a woman of faith. Waking up every morning, I would always see her sitting at the kitchen table in the same spot reading her Bible. She’s a really good, kind, helpful person and has always been super supportive of me. She is fiercely loyal and always has my back. It’s been invaluable, over the years, to be able to talk through challenges at work with her, since she has a great perspective and love of our business. Both my parents are very hard-working and never really stop working. They just keep going.”

The other half of the equation is her dad, Duane Doyle Sr.—ironically, the one she is most like. “One of the things my dad taught me growing up was that you can do anything. If you want to learn



*Top to bottom: Erin helping build a barn in 1997; Erin & Duane Sr. showing her '67 mustang at Peterson's Hot August Night car show*



how to drive a horse trailer, then go drive a horse trailer. No big deal. If you want to install a toilet, just do it. It doesn't need any more thought than that. Just go do it. In hindsight, that's really cool."

Through the years, Erin's analytical smarts, drive, and competitive spirit have helped her carve out a place in a traditionally male-dominated industry. "There have always been strong women in the Peterson and Doyle families," says Goggin, mentor and COO, "but with Erin, we have a woman that's out in front. She has a real drive to make a contribution in what was, in past generations, principally considered a man's business. There was

never really an intention for Erin to be an officer of the company. That wasn't the original plan because the world looked very different back when she and Junior were little kids." But times have changed, and Erin has since earned her way to the top. "Erin is spectacular," says Goggin. "I had no idea before that she was as ambitious or as driven as she is. And I didn't really know she had this talent. She doesn't think of herself as particularly smart, but she is. Her natural instincts for understanding what's important to her family and the legacy of the company is allowing the sibling team concept of leadership to work." And Caterpillar is very pleased with the results.

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### LEVELING UP WITH CAT FINANCIAL SERVICES

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In 2011, Peterson was still trying to recover from the Great Recession of 2007–2009. The company was going through a major reorganization and Mark MacGuidwin (CFO) was restructuring the finance area. "Mac came to me one day and asked who we had that could be his successor," explains Goggin. "He had signed up for a five-year stint and wanted to start grooming his replacement. "That's easy," I said. "You've got Erin. She's a CPA. She's got her credentials and she's worked her way up through the company." "

What MacGuidwin needed was a financial planning analyst (FP&A) to help with all the planning, budgeting and forecasting. "Before, we did one budget once a year and basically put it on the shelf," says Erin. "Now we forecast every quarter so we know how we think the next quarter is going to look. And even into the next year. And then we can tweak it accordingly."

Managing Peterson's debt and banking relationships was a big part of her new job. And that involved building relationships with the Cat Finance group, Peterson's exclusive bank at the time. In 2015, when Peterson had to renegotiate its line



Top to bottom: Erin receives her 20 year service award, standing with her parents and mentor, Jeff Goggin in 2018; At boss Mark MacGuidwin's retirement party (L-R) Kimie Pellizzaro, Julie Cunha & Erin Sorgel in 2017.





*Grand Opening of Hillsboro facility in 2018 (L-R) Erin Sorgel, Kim Lund (works for contractor who built Hillsboro facility) and Kimie Pellizzaro*

of credit with Cat Fi, it was Erin who led the negotiation. “We went back to Cat Fi in Nashville and presented our plan to the president of Cat Financial and his people. My dad and Mark were there too. There was probably a dozen people total. It was basically a kickoff to get their approval for our five-year plan. Then we went back home and spent months and months working with lawyers, which involved thousands and thousands of pages of documents.”

When the executive team at Cat Financial changed in 2018, Erin went back to Nashville to reaffirm the contract with Cat Financial, present Peterson’s strategic plan for the next business cycle, and tell the Peterson story to the new executives. Courtney Graf, western region finance manager for Cat Financial at the time, was in that meeting. “Erin walked us through Peterson’s history back to her grandfather’s time. She talked about all the acquisitions and the growth from a financial perspective; she talked about the debt-to-equity through the years and why the financials looked the way they did, and how they were getting much stronger. It was a very important discussion and a very important time to tell the Peterson story. There was a lot riding on that meeting. My boss and his boss—the president of Cat Financial—were fairly new to their positions and needed clarity on why Cat Financial was providing support to Peterson

that was typically provided by banks. Despite the smaller group in the room, the level of people in there had to be intimidating.”

Today, a major part of Erin’s responsibility is reducing Peterson’s debt-to-equity ratio to a more mature level, which in turn, gives Peterson more stability. “We’ve gotten super aggressive with our financing,” says Erin of her team—Kimie Pellizzaro, director of finance and treasurer; Julie Cunha, controller; and Frances Yee, Peterson’s general counsel. “We spend the majority of our time focusing on ways to reduce our debt and get better credit lines for the company. We’ll peel off a piece from Cat Fi and give it to a different bank with a better interest rate. It’s all incredibly time-consuming.”

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## FINANCIAL AND LOGISTICAL SUPPORT

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Erin has spearheaded a number of major projects over the last decade involving an intense amount of focus, teamwork, and financial acumen. Many have centered around territorial growth. Back in 2010, when Peterson acquired Halton-Cat, Erin was the project manager. “I was essentially the black belt on Halton. When you’re taking on a dealership, there are thousands of action items that have to get done. We had a project group that met regularly to talk all that through. Like how we were going to have paper on the first day or cellphones. Who was changing the signs? Who was changing the locks? Who was changing the utilities? Who was going to make sure we could sell a part that first day?”

Then there was Peterson’s Portland headquarters move in 2018. Transferring the entire operation to a brand-new facility in Hillsboro was a huge undertaking for everyone involved. “It took us a year to get the financing done for Hillsboro,” says Erin. “And it took us a year before that to get the construction loan done. These things just take forever. The Hillsboro documentation alone filled two legal-size binders. It was crazy.”





*Left to right: Family & friends celebrate Erin receiving the CFO of the Year award in San Francisco in 2019; Erin with husband, Chase Sorgel*

In 2018, Erin also handled the financial details for the purchase of Brattain International (Trucks) in Portland, Oregon. “These projects start in Finance and Operations long before the actual sale. You have to determine if it’s a good business to buy. You do all of the financial modeling, the due diligence, check financials and run through different scenarios. My dad did a lot of the front-loading negotiation for the actual purchase. I did the minutiae negotiation and execution.” Even with all that careful planning, just before move-in there were a few issues that had to be worked out. “This was the first acquisition we’ve ever done where we didn’t have to borrow any money,” says Erin. But Cat Fi still had some say-so since they were Peterson’s bank. The day before the big weekend move, Cat stopped the process because of some missing legal language for an amendment they required. And that set Erin’s determination into fourth gear. “We had spent thousands of hours preparing for this day and I wasn’t going to let that happen.” Instead she got on the phone, got the language nailed down and got it worked out. “I’m very proud of our Brattain purchase because of all the planning that went into it which made it go off so well. Not only did we buy a business in a weekend, but we put them on a new computer system so we were able to sell a part that Monday morning at 7:00 am. The amount of work that went into that and all

the planning and teamwork across five locations—it was just incredible what we pulled off.”

A year later, Erin was named CFO of the Year in the San Francisco Bay Area for a non-public company. The Hillsboro and Brattain deals were two signature projects that helped earn that award. It was a big moment at the presentation, which her family and team members attended. “I was there, and I couldn’t have been prouder if I was her dad,” says Goggin. Bill Bean, VP/GM of Peterson in Oregon and Washington, concurs. “When I read about that in the company newspaper, I found myself grinning from ear to ear because she’s so deserving. She’s a breath of fresh air in meetings, she’s pretty humble and always positive. And the people that work for her up here in Oregon think a lot of her. She gets out and mingles with people really well. And that makes people want to go the extra mile.”

“For me, Erin is a unique combination of drive and determination and compassion,” says Ed Rapp. “She just gets things done, and she relates to people at all levels of the company. Through the years, Peterson has always had a stretched balance sheet. I am very confident that when Duane Jr. and Erin’s reign comes to an end, Peterson will be financially stronger than it’s ever been.”





*Duane Jr. in San Leandro main shop in the summer of 2006*

## DUANE JR. IN A NUTSHELL

As a young teenager, Duane Jr. wasn't completely sold on the idea of taking over the family business. He started pulling parts at Power during his summer break at age 15. "I wasn't super excited about that initially but at 15, what do you know? I just knew that none of my friends had a job, and I was working 40 hours a week." The next summer he worked in the CCE shop, and each subsequent summer he worked in a different shop—BCP, the component shop, the main shop, field service. "Over time, I really enjoyed the work. It was very hard work, but it was very important because management is hard work too. It's a different type of work but it never really ends. It's nonstop."

For his final two years of college, Duane Jr. transferred to the University of Oregon to earn a degree in Business with a minor in Economics. During that time, he worked part-time at Peterson's Cat Rental Store in Springfield. In 2007, he graduated from the UofO, and earned his QFS black belt. And in 2008, he became a parts & service sales rep (PSSR)—the classic training ground for Peterson's up-and-comers.

Growing up in the business, Duane Jr. had quite a few mentors. One of his earliest was his dad's friend, Ed Rapp. "I've always looked up to Ed Rapp. He set a great example for me. When I was 17, he would ask me about my goals and have me write them down and email them to him. I did that for several years. I don't see him very often now but when I do, he's always willing to give advice. And it's always valuable. One thing he likes to remind



*Top right, clockwise: Onsite at Schnitzer Steel—Anthony DeStefano (Peterson's resident tech) with PSSRs Bob D'Amore & Duane Jr. in 2008; Golfing on family trip with (L-R) Chase Sorgel, Ed Rapp and Duane Jr. in May 2018; Duane Jr. as PSSR with customer Coastal Berry out of Watsonville, CA in 2008*





Top: Painting of the original Oroville Dam construction by nine-yr old Duane Sr. in 1964; Bottom: Generations 1–4 at Chico Store (L–R) Howard Peterson, Duane Sr. & Bill Doyle in 1959; and Duane Jr., Bill Doyle & Duane Sr. in 2017

me of is that this is a relationship business. We just happen to sell machines, engines, and parts.” Ed also taught Duane the value of fitness. “Ed is the one that coined the phrase *corporate athlete*,” says Duane. “He instilled in me the importance of physical fitness to stay healthy and manage stress, which helps you maintain a competitive edge.”

In 2010, Jeff Goggin took Duane Jr. on as a mentor guiding him through the succession process of becoming Peterson’s next dealer principal and CEO. “Jeff taught me just how important relationships are, especially with Cat people. At Cat meetings, he would always be the last to go up to bed. My dad is usually the first and I’m somewhere in between. But from Jeff I saw the value of sitting





*Poppa Bill (Doyle) with Duane Jr. at Oroville Dam in August 2017*

at the bar and talking with people. It's not about drinking all night. It's about building relationships. And they truly matter. I've gotten some very important things done at the bar."

From Goggin's perspective, "Duane Jr. is a very hard worker. One thing I really appreciate about him is his ability to keep a secret. He has an incredible sense of duty and an amazing ability to focus, even at a level above Senior. He just doesn't get distracted when he's on task. The room could be on fire and it wouldn't faze him. He's also very competitive. And hard on himself."

Ed Rapp also recognized that competitive spirit, which is actually a family trait. "I remember one visit when we lived in South Africa. Erin and I would team up against Jay [Rapp's son] and Duane Jr. in sports. We'd play football and cricket and basketball. I found out that not only is Duane Jr. competitive, but Erin is too. What she may have lacked in pure athletic talent she made up for with grit and determination. Both of them are extremely competitive. I got to see that in these kids at an early age and I've seen it translate into the way they run Peterson."



*The Duanes working on Jr's mustang in 1999*

### THROUGH A SON'S EYES

"There are three key areas I've always looked up to my dad for," says Duane Jr.

- He always puts God first in his life, with his family and as a leader.
- He loves to work, especially outside of Peterson. It's how he has fun. Both my mom and dad instilled a strong work-ethic in us at a young age.
- He is a visionary that always sees things as they can be, not how they are.



*At Cal Berkeley game (L-R) Jeff Goggin, Duane Sr., Duane Jr., Jerry Lopus in 2006*



Junior's biggest role model, however, has been his dad. Like most little boys, he followed Duane Sr. around, imitating the things he saw his dad do. He worked on his cars and tractors, just like his dad. He was keenly interested in airplanes, just like his dad. And he spent a lot of time in the garage working on projects with his dad. So it's no surprise where he ended up. "My dad took what he was given and built it into a very successful business. It's grown more than three times since he took over in 1995. I really respect his vision and his unwavering optimism and his make-it-happen-no-matter-what attitude. There have been a lot of obstacles and challenges during his time [as CEO] and I've always admired how he overcame them."

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## MENTORING IN THE FIELD

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Much of what Duane Jr. learned as a mechanic came first from his dad, and later, from Peterson field ace Doug Brecheisen. Brecheisen was the ultimate teacher, both for younger Peterson techs and customers' mechanics out on the jobsite. Duane Jr. spent most of the summer of 2007 with Brecheisen, working side by side and gleaning from his thirty years of knowledge. "I loved teaching Duane things," says Brecheisen, "but my bosses would always warn me: 'Remember, he goes home and has supper with Duane Sr. so be careful what you tell him.' Well I decided to tell him everything because



*Mentor Doug Brecheisen*

he was going to run the company some day and he needed to know the stuff that goes on behind his back. I tried to instill little tidbits of knowledge that I've learned over the years, that I think would help, and what I would want to know if I owned a company." Many of the things Brecheisen taught him about troubleshooting equipment could be applied—with a little imagination—to other business challenges down the road.

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## MENTORING IN MANAGEMENT

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For the past several years, John Wells, GM of Peterson Tractor-CA, and Bill Bean, VP/GM of Peterson Machinery-OR/WA, have mentored and worked alongside Duane Jr., teaching him from their combined 80 years of experience. "We're the old guard so we're just trying to teach him everything we can," says Wells. "We all started our careers in the product support business so watching Junior totally immerse himself in the sales side has been very impressive to watch. He goes after everything he takes on and wants to know everything about it. He is very strong in his way of thinking and makes smart decisions. We've been there just to guide and support him in his development. The amazing thing, to me, is just how committed he is to the business. Both he and Erin are unwavering in their desire to be the best."



*Duane Jr. & John Wells at a UCA golf tournament in 2016*



Bill Bean watched Duane Jr. grow from a young regional product support manager in Oregon to the GM & executive VP of Earthmoving. “When I first met Duane Jr., I didn’t know what to expect because he was the boss’s son and you just don’t know how much they’ll want to grasp. But from the beginning, I could tell he was a hard worker. He would ride with me, back and forth between the Eugene and Redmond stores and he always had a ton of questions for me.” Since then, Bean has seen a lot of growth and maturity in how Duane

Jr. handles himself. “What I tried to teach him is the old saying from Brand Ambassador: Show up and be present. Listening to people when they’re talking and the value of relationship are huge. So I really encouraged him to go out in the shops and talk to the mechanics. And he’s really good at all that. The other thing is that he was never going to have a day where he got everything done. It just goes on and on and on. And that’s an incredible amount of pressure for someone his age to take on. It’s like he takes on the world every day.”

## BRECHEISEN’S RULES

### RULE #1

If you tear it down far enough, you’re bound to run into the problem eventually.

Translation: If you need help diagnosing, call another Peterson mechanic or T.C.

### RULE #2

Don’t jump the gun and replace a part by the first thing you think. Prove it to yourself.

### RULE #3

You need at least two reasons to condemn a part or a component—three or four is even better.

### RULE #4

Fix what you see first and then keep diagnosing because that just might be the problem.

If you see something that’s wrong, fix it if possible. You might be surprised how it can affect the problem you’re trying to solve.

### RULE #5

You’re probably not the first mechanic to find the problem. Check for service letters first.

### RULE #6

If it ain’t broke, don’t fix it.

Make sure there really is a problem before ordering parts and installing them and then having to return them when they don’t fix the problem.



### RULE #7

The dumber you are, the more money you make.

A young tech once said to me, “No offense but some of the guys think that your saying is stupid.”

I said, “Good, you understand. It is stupid. But it’s also true. The less knowledge you have, the longer it takes to fix the problem, the more money you’re going to make. Right up until the day they fire you.”

### RULE #8

Treat people with respect and they’ll be loyal to you.

Sometimes it costs the company more money to do the right thing but if they really knew what was going on behind their back, it would save them money in the long run.



## RISKS THAT PAID OFF

Peterson was built on the backs of risk and innovation. Founder Howard Peterson set the tone. At the end of WWII, he bought dozens of army surplus Cat machines from the government for \$2,000 apiece. Most were new or barely used. Their one stipulation? He had to go find them himself—out on the islands of the South Pacific. So Howard partnered with a local used equipment dealer and chartered a ship for \$1,000 a day to go collect Cat D7s and D8s in places like Bora Bora, the Solomon Islands and the Philippines. There were 160 machines total. Howard got half. Since the construction industry was starved for equipment, he got top dollar for every single one. It was a very smart move because nobody could get equipment out of Caterpillar at that time.

Other risky business decisions throughout Peterson's history:

- Turning down two other Cat dealerships before getting the one he wanted in the SF Bay Area—Howard Peterson
- Building a giant showroom at the San Leandro HQ facility in 1947-48—Howard & Buster Peterson
- Numerous SEQ innovations: Quad D9s, Triple 657s, Twin D8s, SnoCats—34 patents in all—Buster Peterson
- The computerized Kenway parts retrieval system in the San Leandro Parts Dept. during the 1970s—Bill Doyle
- Taking on 3 new Cat territories in the 1980s during recovery from 1981-82 recession—Bill Doyle
- Buying Cresco in the 1990s at the beginning of Peterson's third generation—Duane Doyle Sr.
- Creating Power's project management software program—EBMS—in the 1990s, which Cat bought—Tim Treat
- Ordering twenty scrapers on a handshake deal with DeSilva-Gates in 2003—Jerry Lopus
- The turbine rental business in the 2000s—Jeff Goggin, Roger Wood, Gene Hamilton
- The chiller rental business in the mid-1990s—Jeff Goggin, Roger Wood, Matt George
- Buying an International Truck dealership in 2010 after Cat quit the truck engine business—Duane Doyle Sr. and Eric Martin



Left to right: The beginning of Peterson's fourth generation, with Duane Jr. in 1984; Duane Sr. & Duane Jr. in 2019



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## INNOVATION AND RISK

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One of the hallmarks of Duane Jr.'s character is a particular bent towards innovation. Like his great-grandfather, Howard Peterson, Duane Jr. is an innovative thinker, an entrepreneur and a calculated risk-taker. At 37, he's already got an impressive list of innovations that he's made happen.

- Antarctic Challengers and extreme-weather machines (see pg 331)
- FTO forestry project (see pg 147)
- Finning equipment prep (see pg 144)
- 527 TSK project (see pg 193)

“Duane has taken the initiative on several projects,” says Duane Sr. “He was the driving force behind the 527 track skidder. There were a lot of negotiations with Caterpillar and lots of different pieces that had to come together to make it happen. And he had a lot of people helping him on it. But he's the one that got it done. It was a big deal. Same thing with FTO. That was a case where most people would have said there's no sense worrying about something like that because it would never happen. But Duane made it happen—with both Caterpillar and Finning.”

In 2011, Duane Jr. asked to take on oversight of Special Services because it had lost its momentum. He wanted to get it back on track and revive Peterson's reputation of customization. “We're a very innovative dealer. We'll do whatever customers need to help them be successful. A lot of times, that's customized tractors.” Beginning with Buster Peterson in the 1940s, '50s, and '60s, Peterson built a reputation for custom fabrication, building one-offs for customers when there wasn't a machine that fit their need. In the late 1970s and '80s, that fell off drastically because of potential liability issues and other aspects of the business demanding attention. Under Duane Jr., Peterson is once again actively pursuing custom fab projects both for customers and new niche markets.



*Duane Jr. as PSSR at Schnitzer Steel in 2008*

“My dad and I are both risk-takers. We really enjoy these kinds of projects,” says Duane, “but you have to find the right balance. I appreciate that my dad gave me room to learn from my mistakes. What I learned is that you have to be responsible because you could run with all kinds of crazy projects. We still have to run the business and make money. And most of these projects are not going to make money.”

Some of that wisdom came from an experience back in 2009 when Duane Jr. was a PSSR. “I had a customer who owned dozens of D4Es outfitted with special crop spraying equipment. My idea was to convert all those D4Es to Tier 4 compliant engines without changing any of the customer's special attachments. I worked on that for over a year and they finally gave me a tractor,” says Duane Jr. “The concept was very appealing to them. And it had a huge potential payoff for Peterson.” Unfortunately, after the first attempt, the customer lost patience. “You have to learn from each one of these and get smarter about the projects you choose and the business decisions you make, what business you want to pursue and, more importantly, which ones you need to say *no* to. And you have to learn quick because these lessons are very expensive.”



## CREATIVE PROBLEM-SOLVING 101

In the summer of 2001, Duane Jr. started working as a trainee mechanic in the BCP shop. Over the next several years, he worked his way through a number of Peterson shops until he graduated from the University of Oregon in 2007. But the summer he spent in the BCP shop was especially instructive. As a kid, you have to earn your way up the ladder. And if you're the boss's kid, that means working harder and getting dirtier than everyone else to prove that you belong—on your own merits. In the BCP shop during that period, there was one seasoned technician who liked to dish out his own brand of teasing and testing to anyone he felt needed it, which basically meant everyone.

After three months of taunting and harassment towards just about everyone in the shop, Duane Jr. had had enough. On the last day of summer before returning to high school, he drove down to the local grocery store and bought two whole fish—ten pounds-worth—head, skin, bones, and all. After loosening up the wrapper, he stuck it under the seat of that technician's field truck and went back to work.

A few days later, the tech started complaining to anyone who would listen. And then he found it, that now-ripe fish baked onto the floor of his service truck. And he was mad! He peeled the fish off the floorboard while everyone in the shop was laughing. No one would fess up so he took his best guess, and that night put the fish in that tech's toolbox. The next day that guy passed the fish onto another tech who passed it on to another until it had traded toolboxes several times. About a week later, Joe finally figured out who had punked him. When Duane Jr. returned for work the following summer, he and Joe had a good laugh, and a new respect and understanding between each other.

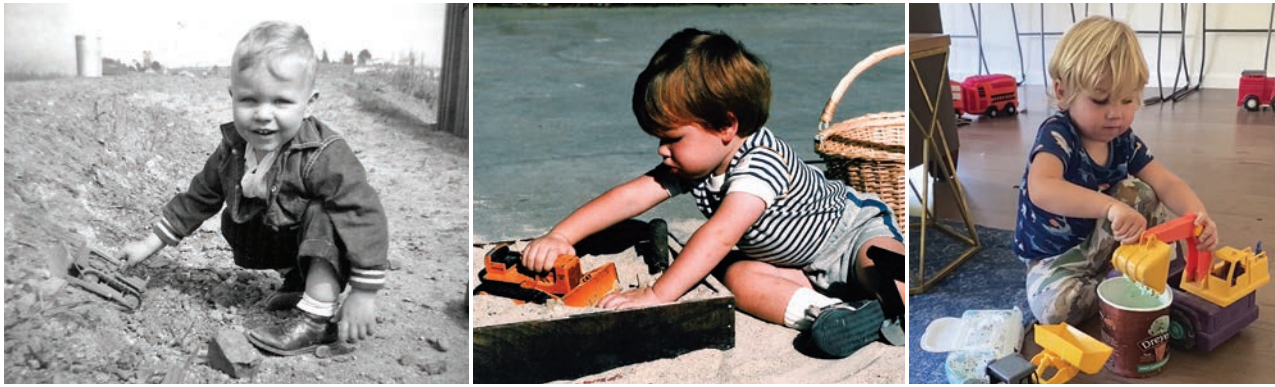
“One of the things that tickles me about Duane Jr. is that he fully embraces the custom fab aspect of our business,” says aunt, Eileen Grafton—from Peterson's third generation. “Custom fab is one of the things that sets us apart from everyone else. It's our edge within the Caterpillar dealer network. And it lost its way for a while, but he's bringing it back. He's reconnecting us to our roots as innovators within the industry.”

So far, Duane Jr.'s favorite project has been the Antarctic Challengers, partly because it was such a success. “I really hope we get the opportunity to do that again. We had a strong team. We made some really good friends and deep relationships. And we proved that Peterson can do anything we set our minds to. Very few dealers could have accomplished what we did from a quality and timeline standpoint. And the customer acknowledged that.” At one point, an outsider said it would be impossible to get done. Joe Frati, the project manager, knows better. “That's one thing you don't tell the Doyles—that something can't be done—because then it's not about making money anymore. It's about showing people that we can do it. And we did.”

## BUILDING THE NEXT LEADERSHIP TEAM

As Duane Jr. reached the higher rungs of the management ladder, he began looking at the future he wanted to build and the team he would need to accomplish it. He started looking at Peterson's succession plan—who was due to retire over the next several years, who would replace them, and who needed more seasoning. In effect, he started developing his own bench—Team 4.0. “We have a succession plan and I'm very fortunate to have Erin to help,” says Duane Jr. “At some point, we'll have to find replacements for key people like Jeff [Goggin, COO] when they retire. Right now, the next group is starting to develop and come up through the company. And that's very important for continuity.”





*Three generations playing 'tractor': Duane Sr., Duane Jr., and Jr's son, Kellan.*

Cross-training high potentials is a big part of Duane Jr.'s strategy—and something relatively new to Peterson. In past generations, people moved up within their own departments and didn't stray too far from their area of expertise. An enterprising mechanic, for example, might become a foreman, then dispatcher, service manager, general service manager and finally VP of product support. That same trajectory happened in parts, sales, accounting and across the company. But it's not a straight line anymore. That was yesterday. Now Duane Jr. is cross-training people for more diversity of knowledge and experience, and more options to cover for attrition and retirements down the line.

Mark Ehni, VP of parts operations, is one of a handful of Peterson employees who moved around the organization over his 39-year career. "I was very fortunate. Jeff Goggin and I were the exceptions in our era. Cross-functional training helps strengthen an organization because it provides a solid understanding of the business. If you were in product support and now you're in prime product sales, or vice versa, that's where you're really getting the diversity of experience and thought that strengthens a leadership team."

Peterson's exponential growth over the last decade has driven the need for top management to understand the full scope of its many different facets. To that end, in 2019 Duane Jr. took a product support manager in California and moved him into prime product sales management in Oregon. He



*Duane Jr with Kirk Miller and Duane Sr. in Hillsboro in June 2020*

transferred an Oregon-based, regional product support manager into used equipment management in California. And that template is being used across Peterson, which ultimately will yield better, well-informed decisions based on what's good for the entire company.

## SUCCESSION PLANNING

Over the next decade, 60 to 70 percent of Caterpillar's US dealers will be transitioning into their next generation. Each successful transition is a big win for Cat who takes great pride in its dealer network. It is one of their greatest strengths. The Cat-dealer partnership, in fact, has no equal in the industry anywhere in the world. And there's good reason. Caterpillar invests a great deal of time and effort into the succession process. District managers spend a third of their time on that alone. "Caterpillar looks at the succession process as a 30-year decision," says Kirk Miller, Cat's Seattle



district manager overseeing Peterson's transition process. "It's all about the continuity of ownership over multiple generations. Peterson is very fortunate to have two family members whose skill sets complement each other. Erin is the financial strategist. Duane Jr. excels in product and operations. Duane will talk to customers all day long. He knows the product inside out and he understands applications. Erin excels in dealing with bankers and managing lines of credit. She handles all that expertly. We look at them as a team," says Miller. "Caterpillar has very high confidence in the two of them running the Peterson organization over the next three decades. They are a one-plus-one-equals-three scenario."

The development of that team was something of a surprise. Caterpillar had been watching Duane Jr. for years. It was obvious he was being groomed to be the next CEO. But Erin was another story. "Erin has proven to be a very high performer. She was just in the shadows. But as she started to be groomed by Mark [MacGuidwin] for the CFO position, she started to get more exposure. And the response was, 'Wow! Where did Erin come from? She really knows her stuff.' Erin has a lot of influence and she gets things done. She just came out of nowhere. That was the perception of several people at Cat. Today, Erin has a fantastic reputation within Caterpillar. They both do."

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### TEAM AT THE TOP

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For a Cat dealer, a family leadership team at the top is an anomaly—not unheard of but certainly not the norm. "Duane Jr. and Erin are not the first sibling duo, but Caterpillar views them as a very complementary team," says Goggin. "They have a mutual respect and love for each other. The way they complement each other is something Cat sees as a strength."

While there can only be one dealer principal, Caterpillar is very pleased with Duane and Erin as

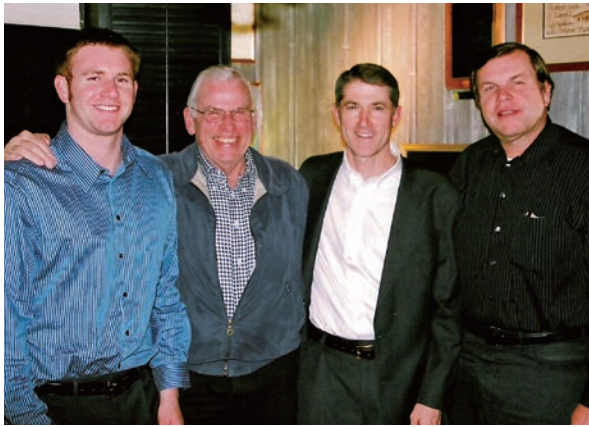
a team. They like the synergy, the trust, and the collaboration. "Cat dealers are becoming very large businesses so I'm really fortunate to have Erin," says Duane Jr. "We get along well. It's a package deal. Caterpillar loves that Erin is in the business. She could easily step in and take over if anything ever happened to me. They've already acknowledged that. And they've told both of us, and my dad, that our situation is about as good as it gets."

"There's a common glue that ties these two together and that's their values and culture," says Rapp. "I used to see them compete like mad when we were playing sports but I never once, in my professional career, saw any jockeying between them to try to take advantage over the other. They have a love as brother and sister, but they also have a mutual respect for who they are as leaders. It takes special circumstances to have two individuals that complement each other versus compete with each other. And an understanding that it's not about the individual; it's about the enterprise. That's unique. And it goes back to the way they were raised."



Top to bottom: Peterson's Next Gen leaders Erin & Duane Jr in 1987; Erin & Duane Jr. in 2020





*Celebrating at Trader Vic's (L-R) Duane Jr., Bill Doyle, Ed Rapp and Duane Sr. around 2003*

As young teenagers, there was friendly ribbing, but both have grown into their respective roles according to their strengths. “Duane used to bug Erin about being his ‘numbers girl’, which didn’t go over too well,” recalls their aunt, Eileen Grafton. “We all knew that if Erin wanted to be the head, she could handle it. That’s just Erin. She can do anything she sets her mind to.”

And that’s where the weight of the legacy kicks in. As Peterson’s incoming fourth generation, they each recognize that this is way bigger than any one person. “We both respect this too much to squabble over it or go at each other,” says Erin. “We both want to be really good at what we do, but not at the other person’s expense. These businesses are way more complex than they were 20 years ago. Dealers are getting to be mega dealers. It’s just too complicated for one person anymore. The climate is super legalistic with all the regulations. Everything has to be air-tight, otherwise you’re not going to make it. And to think that one person can handle these billion-dollar businesses, to me, is just silly.”

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## THE CULTURE OF CONTINUITY

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One of the best tools they have to ensure the continuity of Peterson’s legacy is Brand Ambassador. Erin and Duane Jr. have been all-in since the beginning. “Brand Ambassador is embedding the

culture that came from Howard (first gen) and Bill (second gen) in a way that ensures the company will move through the generations to come,” says Rapp. “The fact that Erin and Duane Jr. teach it not only ensures that the culture will pass onto the next generation of leadership but it’s also reinforcing it in them every day.”

Brand Ambassador also gives Peterson a subtle edge in the work force. “We can’t compete with the big high-tech companies in our territory,” says Erin when it comes to signing bonuses, free lunches, sporting events, and other perks. “We give our employees something else they can’t get there. We give them a family environment. And Brand Ambassador is the starting point for that.” As the company continues to grow, transmitting the Peterson culture to new employees is vital. “It’s one thing if you’ve grown up here,” says Duane Jr. “You get it through osmosis. But when we started doubling the size of the company by acquiring new businesses, we needed to accelerate that learning curve. That’s why teaching our core values through Brand Ambassador is so important. It gets everyone on the same page.”

Today, Peterson has grown into one of Caterpillar’s largest US dealerships, with revenues in excess of \$1 billion in 2019. It has more than tripled in size since Duane Sr. took over in 1995—not only in territory, but in the number of employees and sales volume. “Excellence is my favorite core value right now,” says Duane Jr. “We’ve gotten to be a really big company. We are trying to digest all these new businesses and employees and make the entire company excellent across the board. But it’s not just about being big. We want to be the best, not just the biggest. And Excellence is the best way to ensure that Peterson will live on to the fifth generation. At some point, there won’t be any more Cat dealers to acquire so it’s really about health and building up equity. We want to provide a great environment for our people and be as good as we can possibly be.”





*Top left, clockwise: Erin & her crew in the backyard (L-R) Cooper, Erin, McKenna, Peyton in 2019; Duane Jr.'s family (L-R) Joanna with Kellan, Hadley, Reagan, and Duane Jr. in 2019; Gen 5.0 in a skidsteer in 2019*



## STEWARDSHIP

At a meeting in June 2019, Duane Jr. addressed a crowd of fifty Cat reps who call on the six West Coast dealers. “As the fourth generation, Duane does not see himself as the owner of the business,” says Kirk Miller, Seattle district manager, who called the meeting. “He doesn’t see it as his business. He views himself as the steward of Peterson for the time he’s in the seat. That really impressed me. The last slide of his presentation that day showed his and Erin’s kids sitting around a pool. ‘This is the next generation,’ he said. ‘My role is to be the steward of this business until one of them takes over.’ In my mind,” says Miller, “that’s indicative of the type of values Duane and Sue instilled in Junior and Erin.”

Passing a healthy, vibrant business into the hands of the next generation is the ultimate trust. “I didn’t know my great-grandfather from a professional standpoint, so for me, it’s about the legacy he left. I appreciate and respect it very much. I want to honor and live up to that. Erin would say the same thing. It’s our job to keep the company going. Each leader was what the business needed

at the time. Grampie built the business. Poppa kept it going and made sure that there was a third generation; and my dad really took it and built this very successful business. Erin and I can already see that our focus isn’t going to be so much about huge growth—although if opportunities come, we’ll take advantage of them. But the big growth was in my dad’s years. Our goal is about making the company healthy, successful and sustainable for the long-term. That’s our focus.”

Having a family business is a huge responsibility to live up to. And when that business grows



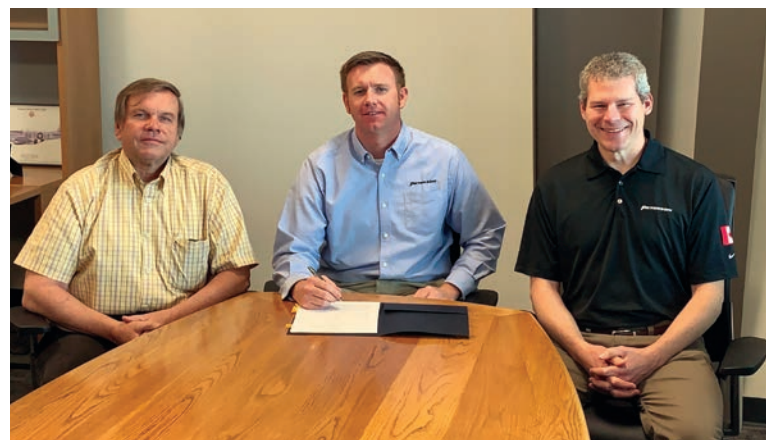
exponentially, so too does the scope of commitment and demands. As Peterson's first female officer and mother of three, Erin understands that more than most. "People ask me all the time, 'How did you guys make it to four generations?' And I tell them we're blessed. There's no other answer. It could have fallen apart at any time. And it almost did a few times. But it didn't. We always made it. Dad, Poppa, and Grampie were very good stewards of what we've been given. And we've all worked our tails off. In a family business, you don't get to go home and shut it off. When we go on vacation, we have family meetings, we talk about work. You're on your phone constantly dealing with stuff. There is no shutoff valve. But we are very, very blessed. God has blessed our whole family through this business."

## PETERSON 4.0 BECOMES OFFICIAL

On June 11, 2020, Duane Jr. officially signed on to Caterpillar's Sales & Service Agreement as Peterson's next dealer principal. Since Caterpillar prefers a five-year overlap, both Duane Sr. and Duane Jr. will run Peterson as co-signatories until 2025. In a letter dated February 10, 2020, Duane Sr. wrote, "It is with great pleasure and confidence that I can announce that Peterson's continuity plan to the fourth generation has been enthusiastically accepted by Caterpillar. Duane Jr. and Erin have been approved to carry on the great partnership between Caterpillar and Peterson for many years to come."

That proud announcement was a culmination of years of planning, grooming, and hard work by all involved. None are prouder than Duane Sr. and Sue. "Duane and Erin really lean on each other," says Duane Sr. "Caterpillar recognizes that fact and really appreciates it. Kirk Miller, our Cat district manager, says that Duane and Erin are like one plus one equals three. So they are very highly regarded within Caterpillar."

As overseer of dealership succession for Cat's Seattle district, Miller has perhaps the best take on how Caterpillar views Peterson's leadership. "Every dealer principal has a certain profile. Duane's (Sr.) style with Caterpillar is *think first, speak second*. Every executive at Caterpillar I've ever come across has high regard and high trust in Duane. He comes off as very authentic and very genuine, and what you see is what you get. And that fosters trust, which is extremely important to Caterpillar." And so it will continue with Peterson's fourth generation, Duane Doyle Jr. and Erin Doyle Sorgel, because they have grown to love the business just like the generations before them.



Top to bottom: Signing Cat's Sales & Service Agreement in June 2020 made Duane Jr. the officially recognized 4th generation president & CEO of Peterson. Pictured (L-R) Duane Doyle Sr., Duane Jr., and Kirk Miller; Duane Jr., Erin & Duane Sr. in San Leandro in 2020



## CORE VALUES:

### ADJUSTABLE CABLE HOPPER DOOR ACTUATING MECHANISM R. A. PETERSON Filed June 22, 1960 3,290,806 CONTROLS FOR TANDEM OPERATED EARTHMOVING SCRAPERS 3 Sheets-Sheet 3 1964 TROUBLESHOOTING A BEAST (AUGUST 2007)

The late summer sun had already dipped below the horizon out at the Vulcan Materials quarry in Pleasanton. But for Ashley Harden, the day wasn't over yet. He was deep in the bowels of a D11—solo—trying to diagnose a persistent hydraulics problem. It had a self-adjusting Carrydozer with a complicated electric-over-hydraulics system that was giving him fits. He and fellow field tech Doug Brecheisen had spent hours tag-teaming this beast all summer and still hadn't been able to resolve the issue. Last year, Vulcan had bought two D11s, both still under warranty. Having one limp through its workday until 3:00 p.m. shutdown wasn't what they'd paid for. Peterson wanted them to get their money's worth.

As the light was beginning to evaporate, Harden heard a voice overhead.



Field tech Ashley Harden spent a lot of time troubleshooting Vulcan's Carrydozer the summer of 2007.

"Run into anybody lately?" It was the boss, Duane Doyle Sr. The Big Kahuna.

"Oh. You already know about that, huh?" A week earlier, he'd rear-ended somebody in his field truck. "Sorry about that. I've already got the parts. I'll fix it on my own time."

Ten minutes later, he and Sr. were huddled over a giant schematic held with magnets to the side of Brecheisen's field truck. Doug had arrived earlier with his summer sidekick—Duane Doyle Jr.—to help diagnose the problem. Now someone was holding a flashlight over the giant blueprint while somebody else traced along the path of the



**CUSTOMER FIRST • INTEGRITY • EXCELLENCE • TEAMWORK • FUN**



Doug Brecheisen at Vulcan

hydraulic oil with a colored pencil. They were having an impromptu school.

2,485,407

Filed April 8, 1947

4 Sheets-Sheet 3

For the past several weeks, Duane Jr. had been working with Brecheisen at Independent Construction jobsites. The rest of the summer he'd spent with Harden learning things you just can't get in a shop. Both men meant to instill as many trade secrets as they could cram into him in a summer. Each had been mentored themselves—Brecheisen by legendary Peterson field ace Paul Diehn, and Harden by Brecheisen.

Duane Sr. wasn't there by accident either. Once Brecheisen had gotten the dispatch call to head over to Vulcan, Duane Jr. had called his dad, knowing he'd be interested. At the time, Duane Sr. was out to dinner with his wife in Livermore, but in short order they headed over to the Vulcan yard and the downed D11.

The machine in question was the only D11 Carrydozer in Peterson's territory at the time according to Brecheisen, who retired in 2013. The huge special application blade was used primarily at gravel quarries to maximize loads to the hopper. They needed to determine if the problem was in the hydraulic valve, the hydraulic pump, the cylinders, the electrical system, or the onboard computer system. They needed to pinpoint exactly where the problem was and why.

Back in 1996, Brecheisen had been a resident field tech for Wyoming Machinery, working at Bridger Coal Mine. Part of his job was to follow their new D11—one of only three prototypes—and work with Cat's engineering group. These were the first D11s with computerized engines. It was a very big deal. And yet with all that



July 12, 1955

2,712,873

R. A. PETERSON

PIPE LAYING TRACTOR



experience, Brecheisen still hadn't been able to figure out what was going on in the hydraulics system of Vulcan's Carrydozer. So tonight, he fell back on a trick he'd learned at a Peterson class on hydraulic excavators years earlier. "That whole class I spent with colored pencils following the oil flow. The next time I was out on a job and couldn't figure out what was wrong, I went back to the shop, printed out a giant schematic, and started coloring."

At Vulcan, once they'd taped the 3x4-foot schematic to his truck, they grabbed colored pencils and started highlighting.



Duane Jr working in the main shop at San Leandro in the summer of 2006

After observing for a couple minutes, Duane Sr. grabbed a pencil. "Hey, look at this. Look down here."

Harden was impressed. He knew Duane Sr. had been a mechanic, but this was a way more complicated system than earlier generations. Yet Sr. read the schematics and picked up right where they were and understood exactly what they were doing and what they were trying to prove. He was right there handing them stuff and having fun.

After plugging into a computer and running lots of tests, they finally concluded that a piece inside the hydraulic valve needed to be replaced. At that point, they were five hours in. It was sometime after midnight, pitch black outside except for the

stars and their headlights. Duane Sr.'s wife, Sue, had long since gone home.

"It's in that valve. We've proven it," said Sr., "so let's go ahead and buy it."

Harden looked over at him. "Yeah, but that valve is \$12,000. And the only one in existence is in Melbourne. So if we're wrong, we're \$12,000 in the hole."

"Order it," said Sr. "Overnight it. And as soon as it gets here, spend all night and put it in. If anybody says anything, you tell them to call me."

The next morning, Ashley and Duane Jr. went into the shop to order the part—overnight from Melbourne, Australia.

"Who authorized that?" the back-counter partsman wanted to know.

"Senior."

"What? Why? Was he out there with you last night?"

"Yep," Doug Brecheisen walked in just then. "Ashley's right. Order the valve."









*Bill & Jeannie Doyle with Duane Sr. at Peterson's 80th celebration in 2016*





## CONCLUSION

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### SENIOR'S CORE PRINCIPLES

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**C**haracter is built on the core values and principles one believes in. The following illustrations highlight some of the principles Duane Doyle Sr. has subscribed to all his life, both in business and personally.

**Work as fun**—Both my grandfathers were in the business and both had a big effect on me in terms of work ethic. They really enjoyed working. And they instilled that in me to where I actually think work is fun. That's what they did all the time and they enjoyed doing it. They were always building things and fixing things, both inside and outside the business. Pa [Ed Doyle] was an automotive mechanic early in his life, and Grampie [Howard Peterson] was a welder. It wasn't that they were heavy duty equipment mechanics. My attraction and aptitude for working on heavy equipment was acquired from enjoying things like that and being around it. I credit both of my grandfathers for exposing me to that as a little kid. Even letting me drive the ranch Jeep when I could barely reach the pedals.

**Learn from your mistakes**—I credit my dad a lot for giving me space to learn and not be protected—room to fail, I call it. Even though you don't want to fail, you learn more from your mistakes than you do by just doing what somebody tells you to do all the time. At Warm Springs Dam and at the Redding store, specifically, I was pretty much on my own. It was, *Here's your job, figure it out*. There were people that helped me, but there were other people that kind of stayed out of the way because they didn't know what to do with the owner's son.

**Lead by example**—In Brand Ambassador, we've done more than seventy seminars, so far. I've only missed two because I just couldn't be there. That's 180 of my workdays, but it's very important. It's culture work. It's culture change. And it's very important. I've been told by many people at other companies that, normally, the CEO comes in and introduces the thing and then leaves. They've been quite impressed that the upper leadership of



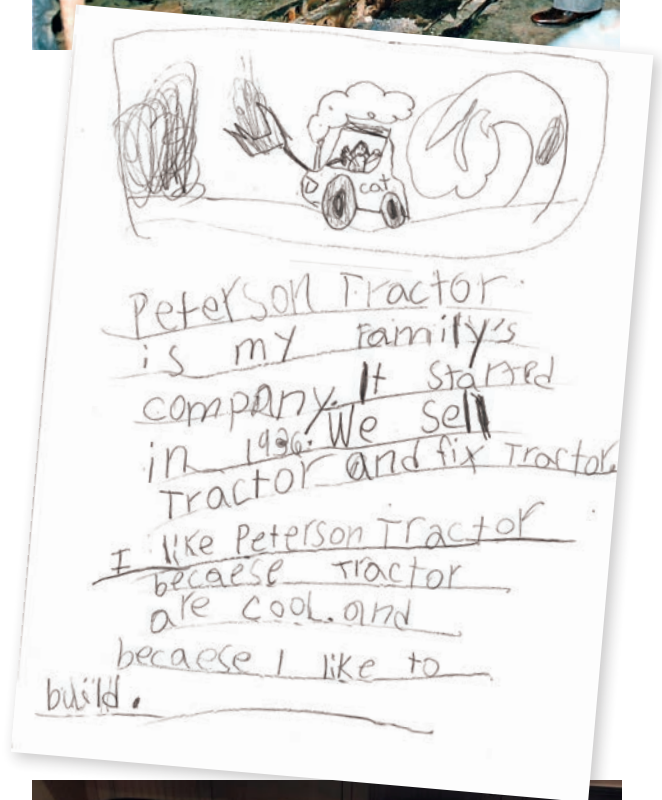


*Top left, clockwise: Doyle family at Family Fun Day 2016; Duane working on ranch tractor with Bill Doyle & Howard Peterson looking on in early 1990s; Seven yr old Peyton Sorgel's Peterson Review in 2019; Box full of Doyle grandkids in 2020*



Peterson is so engaged and consider ourselves to be the same as everybody else. But how can I expect people to move out of their comfort zone and change their behavior if I'm not willing to be there too? We hope that what we're teaching and trying to model will rub off on everyone else."

**Put the customer first**—Howard really established the Customer First culture by taking care of the customer, not just always taking care of Peterson. We look at what's good for the customer and believe that it's going to turn out good for us too. With a lot of companies, it's a me-me-me philosophy. One of the things Howard did was to have empathy and understanding for what customers were going through and then help them through it. In return, they became very loyal. A good example is Ferma. In the beginning, they had no reputation. They had no credit. They had nothing. But Howard let Roy Ferrari have a couple of tractors on a handshake to really get their business going. They joked about it because Roy Ferrari is obviously Italian. And Howard, being Swedish, looked him up and down and said, "Well you look like a good Swede. I'm going to trust you with it." A couple weeks later, they needed another tractor, but they still hadn't paid for the first one yet. But Howard loaned him another one. And the Ferrari's were loyal customers for years and years. Those are the kinds of things that have endeared Peterson to customers for decades.







**HONOR GOD IN ALL YOU DO.**

The most important core value of Howard Peterson's life was to honor God in everything he did.

He modeled this in his caring for people, his generosity and his untold giving in many different ways.

— Duane Doyle Sr.  
(eulogy of Howard Peterson, May 1999)

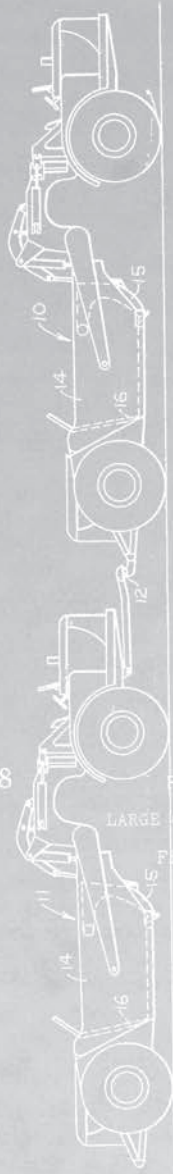
*Top to bottom: Doyle family with new puppies (L-R) Track, Dozer & Bucket in 2020; Doyle family (L-R) Sue, Duane Jr., Erin with Duane Sr. seated, in 2020*

**Done once, done right**—That was my grandfather's mantra. He wanted things to be perfect. One of the lessons I learned from him was work hard and do it right. He was a tireless worker and a true perfectionist. He got me and many others to work hard by setting an example. He was usually senior to anyone else, but he would get right in the middle of things and show you up if you didn't put out. I've heard stories from the old timers in the weld shop of how he ruined more than one business suit by jumping in and helping with a job that had to get done. He was a perfectionist and he held others to his standards. I remember when I was first learning to weld and was perhaps overly pleased with my progress until he told me my welds looked like pigeon droppings.

**Respect for others**—Treating people with respect is very important. You hire good people. You believe in them. And then you let them do the job you hired them to do. That's how I see it. Micro-managing, on the other hand, is counter-productive because then people defer everything back to you. And that effectively limits what the organization can do by your own capacity. Instead, believing in people and expecting the best out of them causes people to push their own limits, take ownership of their job, and ultimately propel the company further on toward success.



FIG. 1



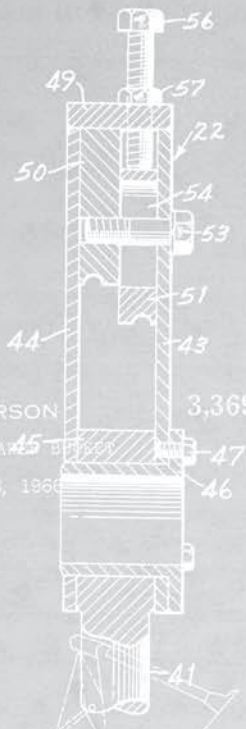
Feb. 20, 1968

R. A. PETERSON 3,369,680

LARGE CAPACITY LOADER BUCKET

Filed July 18, 1966

FIG. 2



INVENTOR  
ROBERT A. PETERSON  
BY  
*Wagner and General*  
ATTORNEYS

Patented April 13, 1971

INVENTOR  
*Robert A. Peterson*

*Wagner and General*  
ATTORNEYS

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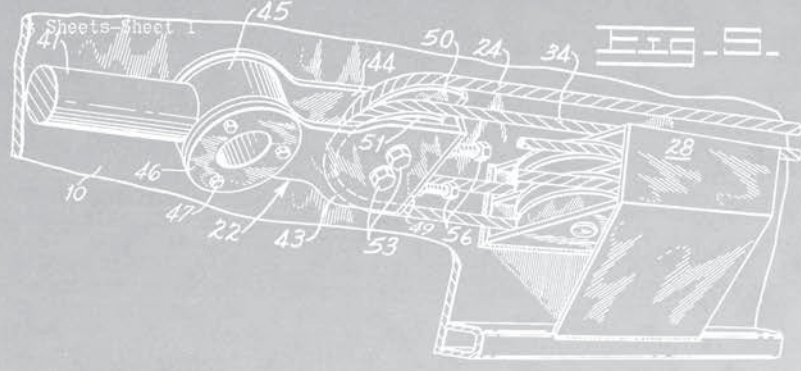
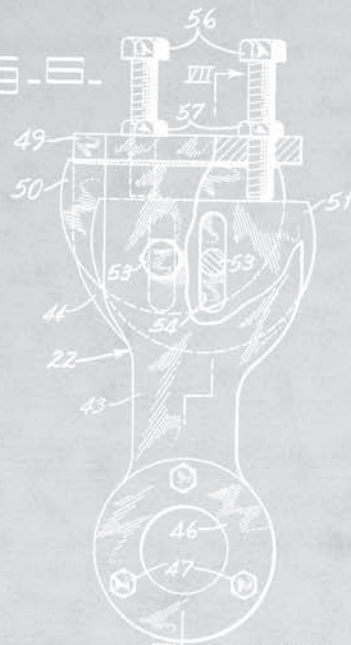


FIG. 4



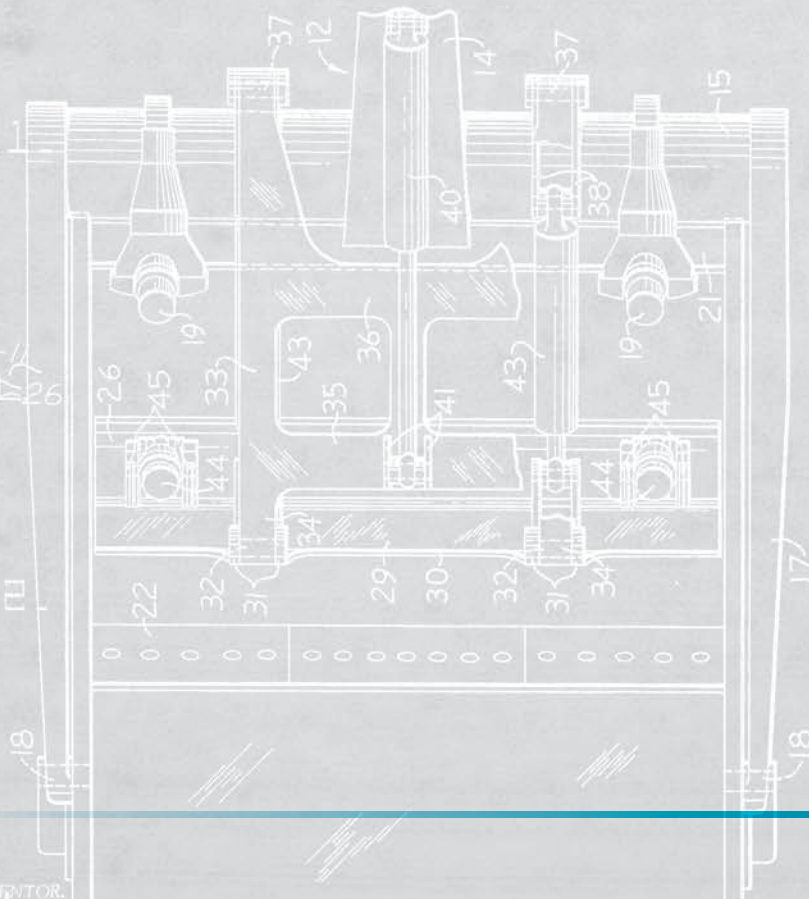
II



3,574,960



FIG. 6



III



FIG. 8

INVENTOR



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- Page 430 Bottom/L: Twin D8 with Holt Root Plow & Funnel Dozer, working on the King Ranch (mid-1950s), courtesy of King Ranch Archives, King Ranch Inc., Kingsville, Texas
- Page 430 Bottom/R: Close up of Holt Root Plow mounted on the back of Twin D8, working on the King Ranch (early 1950s), courtesy of King Ranch Archives, King Ranch Inc., Kingsville, Texas
- Page 432 Top/L: Twin D8 delivered to Harrison Construction (1949), Edgar Browning Collection
- Page 432 Top/R: Constructioneer trade article "Siamese Tractor Aids Earthmoving" (May 22, 1950), Edgar Browning Collection
- Page 437 Bottom: Hazen Dennis Jr., 2nd gen owner of first Cat tractor Peterson sold (early 2000's), courtesy of Dan Dennis
- Page 448 Bottom: Statue of Fearless Girl with Wall St. Bull (2017), quietbits/Shutterstock.com







## EPILOGUE

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### IT'S ALL ABOUT RELATIONSHIP

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One of my mentors at Caterpillar once told me, “We are in the relationship business. We just happen to sell and support equipment, engines, trucks, and technology.” That philosophy had a great impact on me early in my career. Business can still be done on a handshake when there is mutual trust and respect. It is our commitment to continue this principle because that’s how our great-grandfather founded this company and it has served us well for four generations.

Peterson’s legacy—now 85 years strong—was built by the thousands of people who have worked and become part of the Peterson family. It all begins and ends with people. What we do matters. Our products and services shape our world and build our future, a future that will be better because of what our resilient and talented family of Peterson people do each day.

This business was founded on relationships. The ties between generations of Peterson people, generations of customers, generations of dealer peers and our manufacturing partners have made us who we are today. There aren’t many businesses where employees have multi-generational relationships with their customers. Our kind of work makes these special relationships possible. When you do impactful work, it attracts like-minded, hard-working people who want to make a difference. Peterson will continue to do what we’ve always done; bring great people together—employees and customers—to build a better future.

—Duane Doyle Jr. & Erin (Doyle) Sorgel







Oct. 18, 1949.

R. A. PETERSON

2,485,407

BULLDOZER

Filed April 8, 1947

4 Sheets-Sheet 3

R. A. PETERSON

3,296,885

ACCELERATOR SYSTEM FOR MULTIPLE ENGINE CONTROL

Fig. 4.

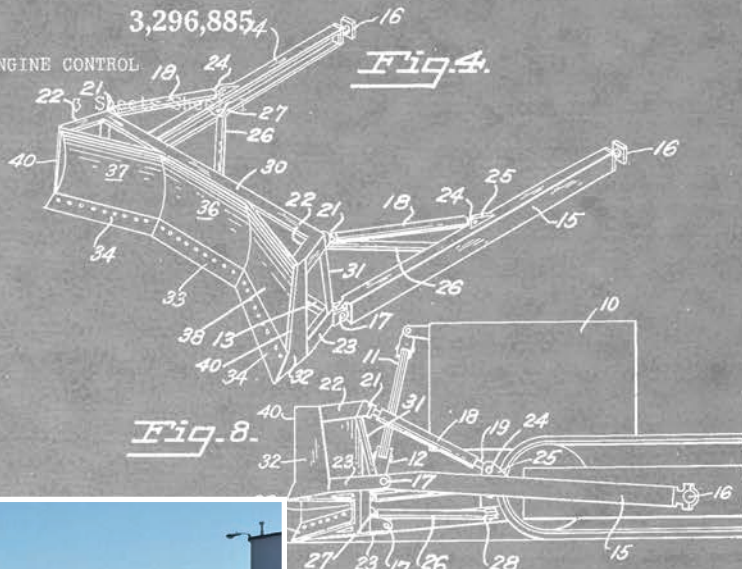


Fig. 8.

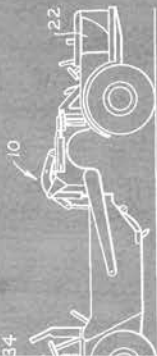


Fig. 7.

R. A. PETERSON  
 TREE LAYING TRACTOR

2,712,873

5 Sheets-Sheet 1

Fig. 6.

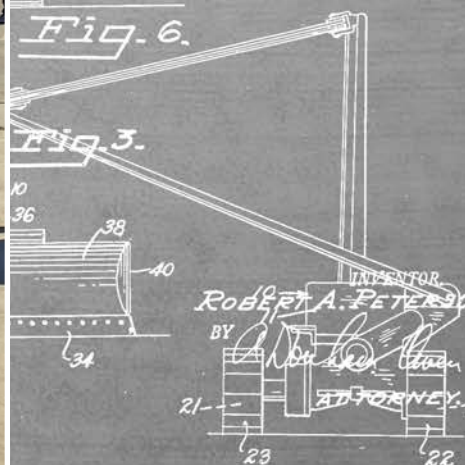
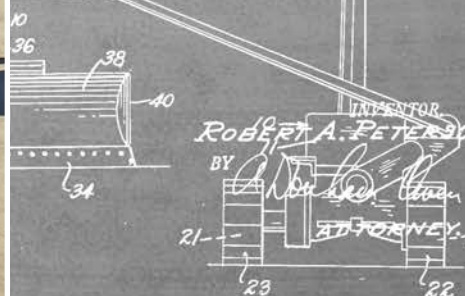
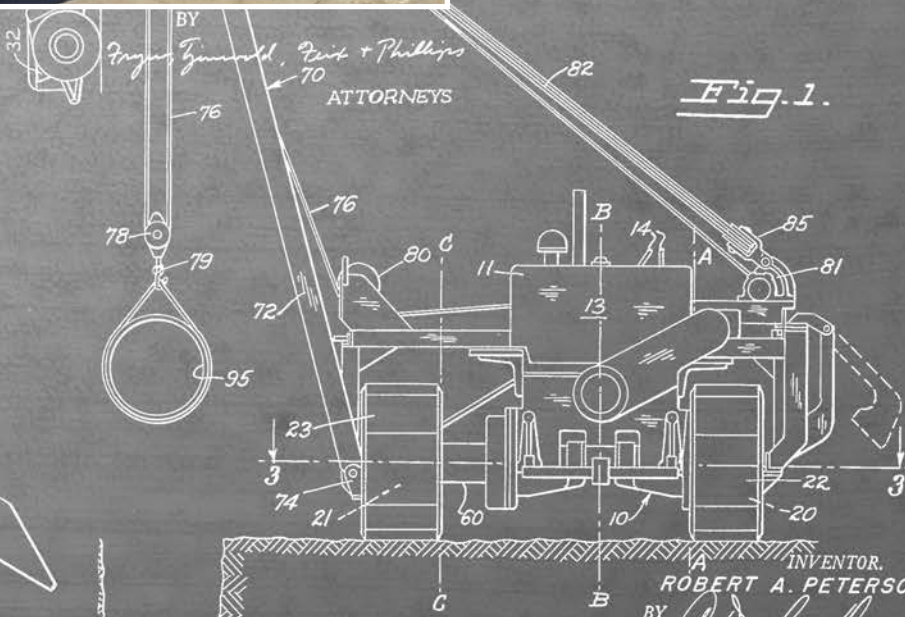


Fig. 3.

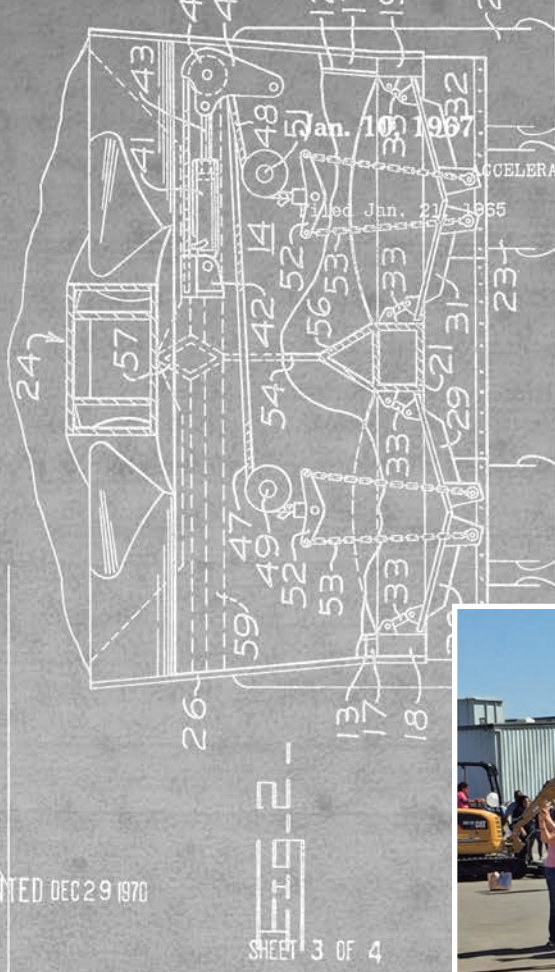


INVENTOR  
 ROBERT A. PETERSON  
 BY *Frank A. G...*  
 ATTORNEY

Fig. 1.



INVENTOR  
 ROBERT A. PETERSON  
 BY *Frank A. G...*



SHEET 3 OF 4

INV.  
 ROBERT A. PETERSON  
 FRANK A. G...

BY  
*Frederic, Zimmard, Zeit, Phillips*  
 ATTORNEYS



REGISTERED DEC 29 1970

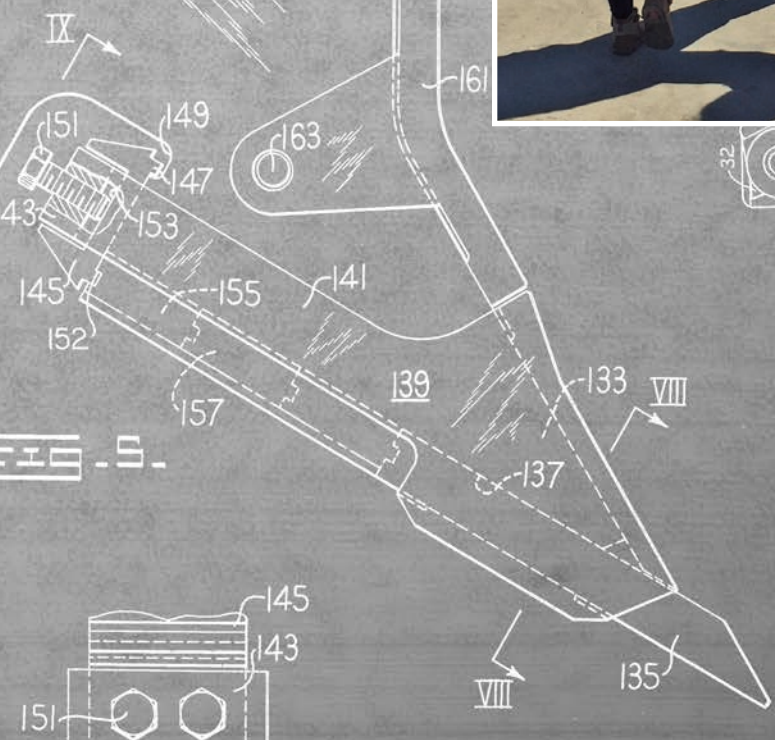


Fig. 5.



FIG. 1

Feb. 20, 1968

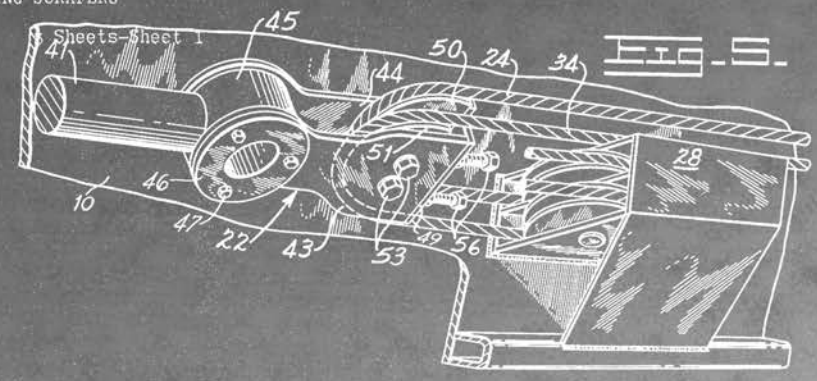
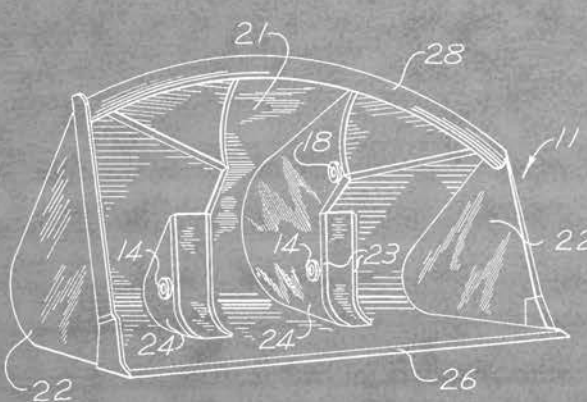
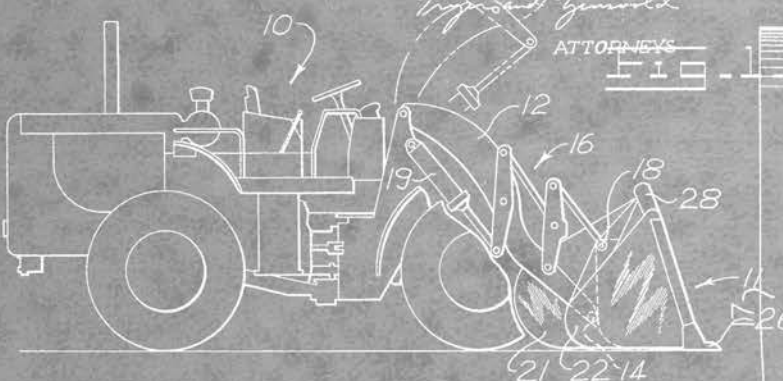


FIG. 3

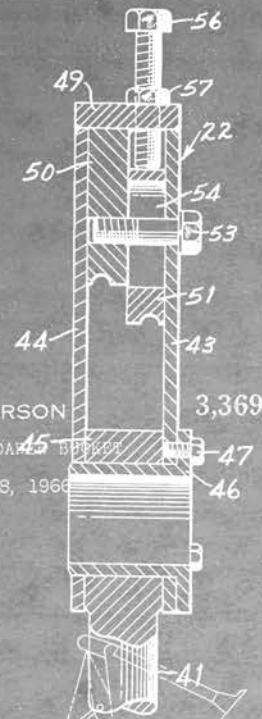
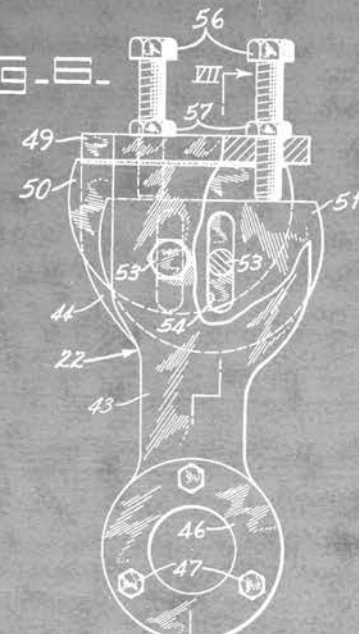


FIG. 4



INVENTOR.  
*Robert A. Peterson*  
 Patented April 13, 1971  
*Fryer and Ginnell*  
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R. A. PETERSON  
 LARGE CAPACITY LOADER BUCKET  
 Filed July 18, 1966  
 3,369,680

INVENTOR.  
 ROBERT A. PETERSON  
 BY *Fryer and Ginnell*  
 ATTORNEYS

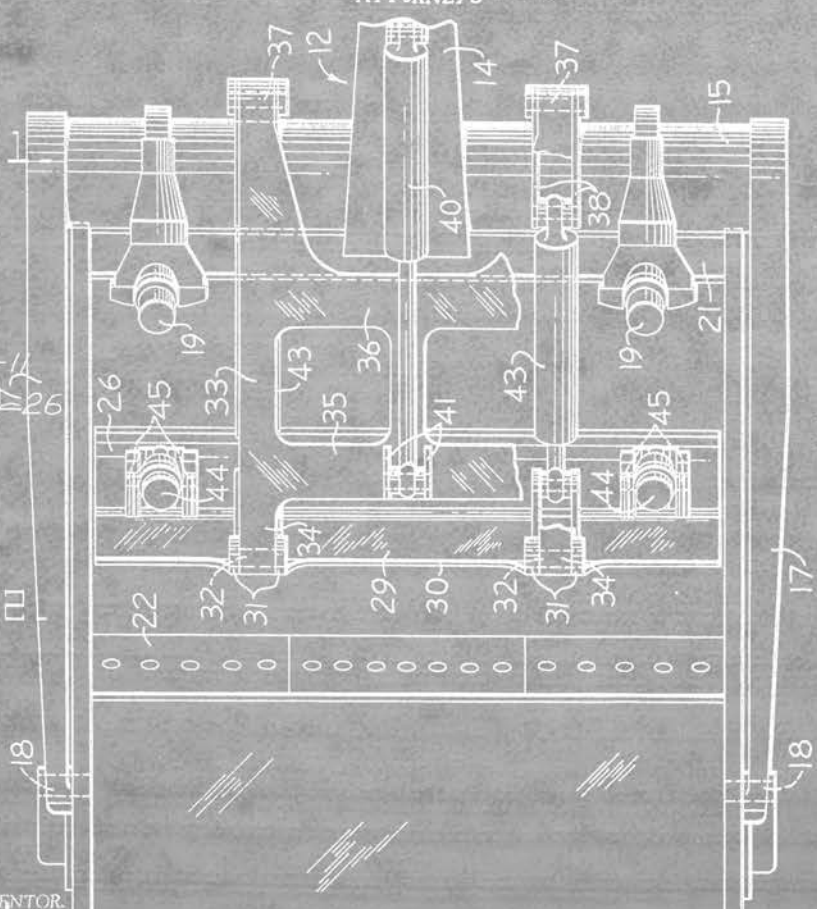


FIG. 6

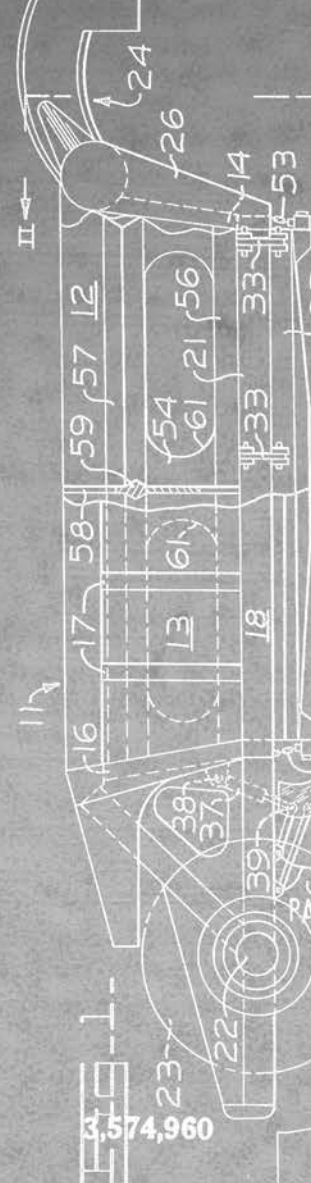


FIG. 7

INVENTOR.



Filed April 8, 1947

4 Sheets-Sheet 3

R. A. PETERSON

3,296,885

ACCELERATOR SYSTEM FOR MULTIPLE ENGINE CONTROL

Jan. 10, 1967

Filed Jan. 21, 1965

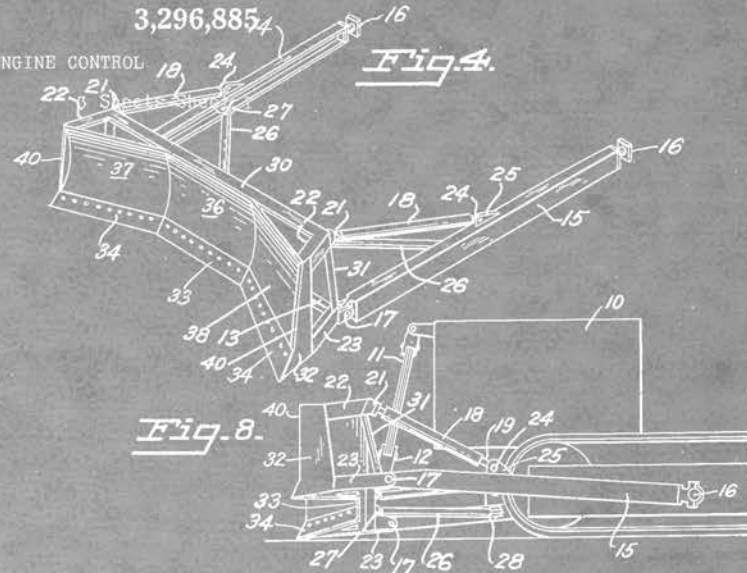
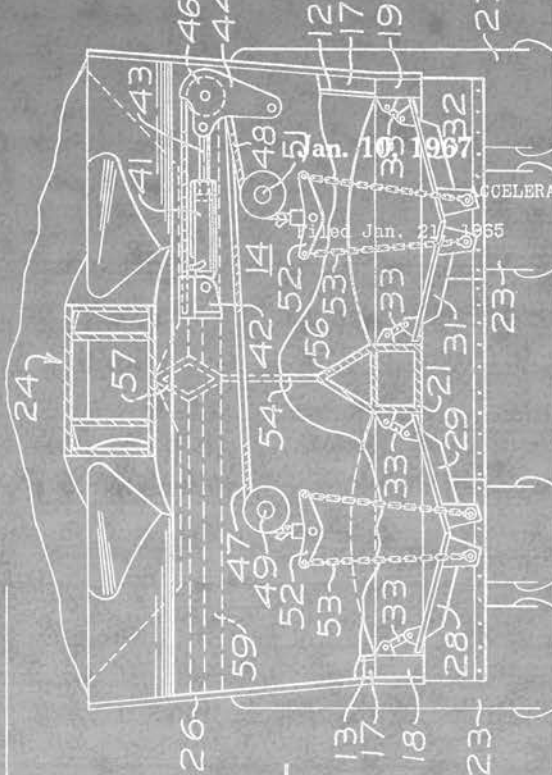


Fig. 4.

Fig. 8.

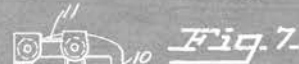


Fig. 7.

July 12, 1955

R. A. PETERSON

2,712,873

Filed Nov. 22, 1949

5 Sheets-Sheet 1

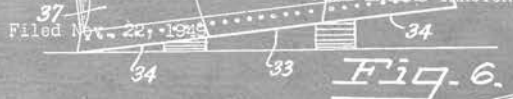


Fig. 6.



Fig. 3.

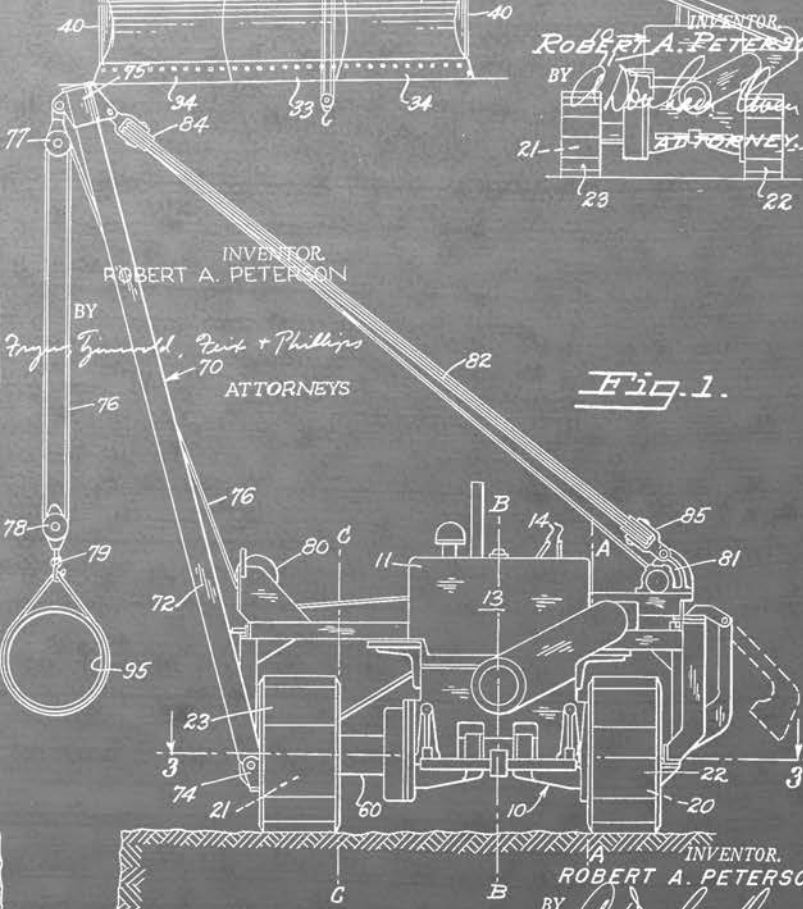


Fig. 1.

INVENTORS  
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INVENTOR  
ROBERT A. PETERSON  
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*Robert A. Peterson*  
ATTORNEY

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INVENTOR  
ROBERT A. PETERSON  
BY  
*Robert A. Peterson*

PRINTED DEC 29 1970

SHEET 3 OF 4

3,550,691

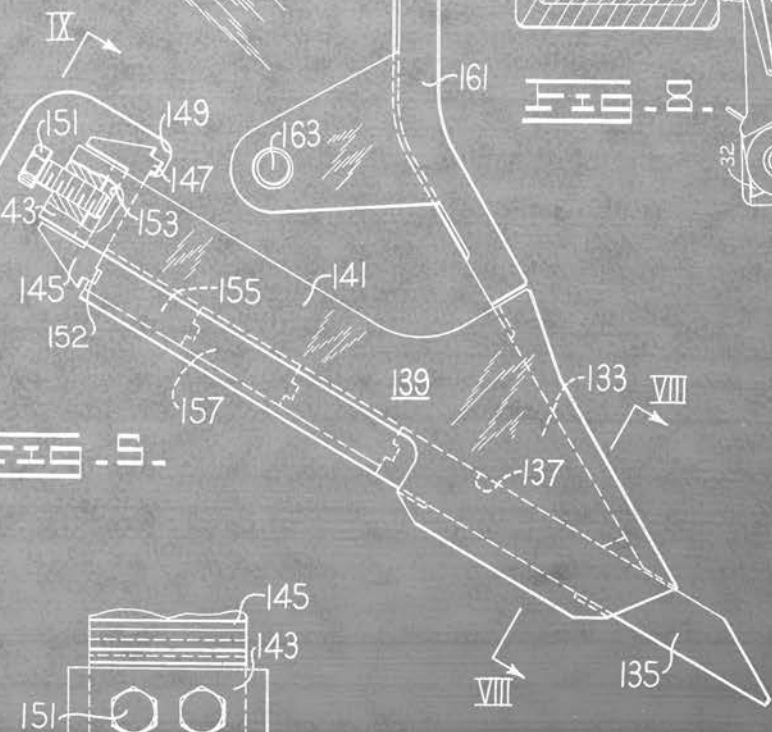


Fig. 5.

34

29

II



FIG. 1



Feb. 20, 1968

R. A. PETERSON 3,369,680

LARGE CAPACITY LOAD DEVICE

Filed July 18, 1968



FIG. 7



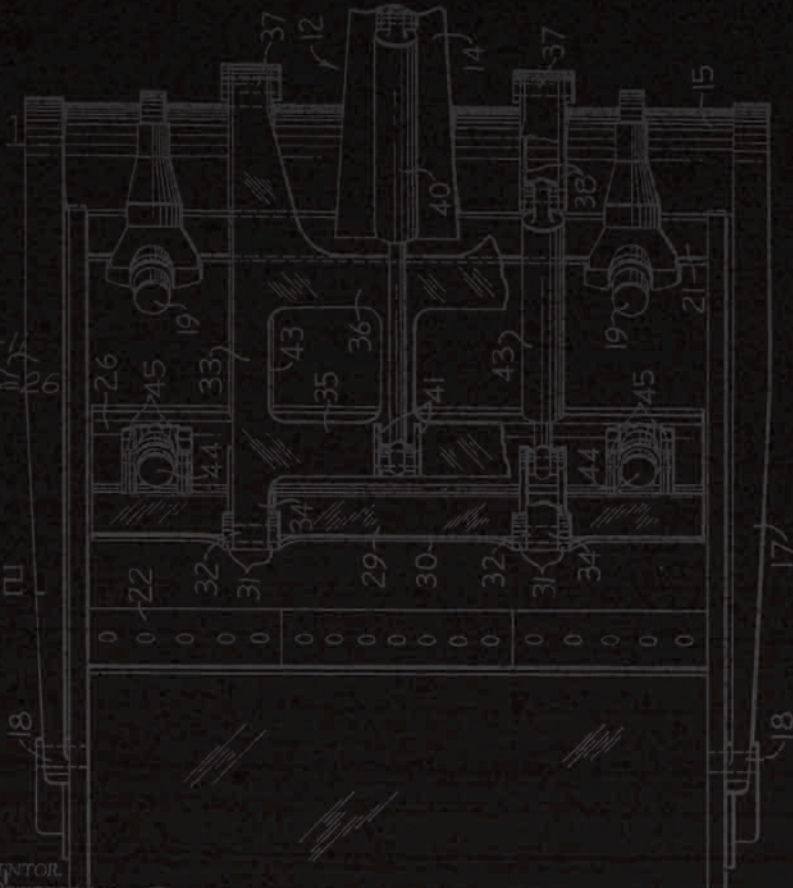
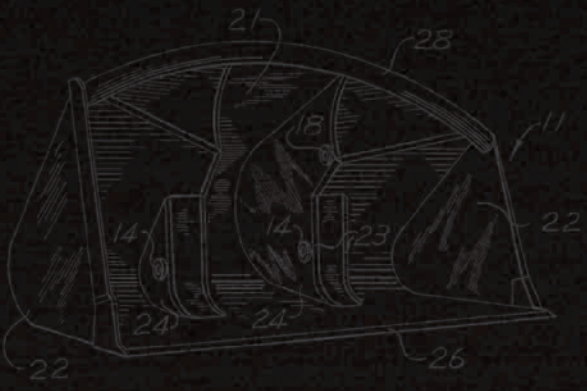
FIG. 8



INVENTOR  
Robert A. Peterson  
Patented April 3, 1971

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INVENTOR  
ROBERT A. PETERSON  
BY *Frederick G. Gurdall*  
ATTORNEYS



3,574,960

INVENTOR  
ROBERT A. PETERSON