

Well Articulated

Knucklebooms keep on trucking.

The F1450HXP is part of the Fassi line of Techno cranes.

Stick-boom cranes are the instrument of choice for most mechanic's trucks. Not so for Elite Sales & Service of Benson, Arizona.

The company has knuckleboom cranes on five of its six trucks, says Earl East, who co-owns the company with his father, Ellis, who founded Elite in 1995.

"All are either a Kenworth or Peterbilt class 8 truck, and the knucklebooms vary from a 4,000 lbs. lift to 12,000 lbs. lift," Earl East said.

The sole exception is a corner-mounted stick-boom crane on a Summit mechanic's body. The knucklebooms, mostly Palfinger and Hiab models, are all mounted on the tractor between the cab and custom bodies that Earl East fabricated himself.

Better Balance

"I like the knuckleboom on trucks because I just feel like it's a more balanced weight on the truck," East said. "Instead of having that big crane over there on the right-hand side like most mechanic's trucks, I feel that the truck handles it a lot better and it's a little more diverse."

The "push and pull factor" is another thing East likes about knucklebooms, also called articulating cranes. "If you get into a position and you've got to straighten out a piece of metal, you can literally take the boom and push on it or pull on it," he said. One of East's knucklebooms even has an auxiliary power port to run a power cylinder for doing fabrication work.

Based about 50 miles east of Tucson, Arizona, Elite does "a little of everything." That includes servicing construction, mining, and railroad industries, bucket trucks, repairing RVs, doing heavy fabrication, and conducting dielectric testing.

"We're pretty diversified," said East, who prefers Palfinger cranes.

"They just seem to run a lot smoother, personally," he said.

The younger East, who joined the family firm in 2012 after working as a



Photo courtesy of Fasca International

contractor in Iraq and Afghanistan, also has praise for Hiab. "My dad's

Hiab crane has been bolted onto his truck since '98. And we've never had an issue with it," East said. "It's picked up a lot of stuff."

Strong Market

Greg Sneek, articulating cranes product manager for Palfinger North America, said the market for knucklebooms is quite strong.

"Manufacturers and dealers/installers continue to deal with supply chain issues," Sneek said. "This also affects end customers looking to put new equipment into service and/or service existing equipment."

Because of their versatility, knucklebooms are finding their way into traditional stiff-boom markets. "We continue to see more demand in bigger knuckleboom cranes," Sneek said.

Austria-headquartered Palfinger's newest knucklebooms are its TEC series, which includes six new models, ranging from the PK 35.502 TEC 5 to the PK 165.002 TEC 7, which has a maximum lifting capacity of 70,600 lbs.

"Our patented boom system is revolutionary, and cranes are performing a

class above previous and/or competitive models," Sneek said.

Supply Shortages

Bernie Faloney, president and CEO at Fasca International, agreed that supply chain issues have persisted and are resulting in long delivery times and above-normal price increases.

"Ninety-nine percent of the cranes that come into this market require mounting on trucks, which are experiencing very long and reduced manufacturing due to their own component supply shortages," Faloney said.

Fasca offers a complete line of Italian-made Fassi articulated cranes. New models for 2022 included the F1450R and F1750RL "Techno" cranes with the "X-Boom" (10-sided boom); and the F245AZ Grapple Crane for use in debris clean-up and removal.

Those and other new crane models and systems enhancements will be displayed at the 2023 ConExpo-Con/Agg heavy-equipment show in Las Vegas this coming March.

"The design and high-performance



Elite Sales has its Palfinger PK 13000 knuckleboom crane mounted behind the cab of a service mechanic's truck.

steel of the Fassi X-Boom allow increased strength while lightening the overall crane weight,” Faloney said.

An “obvious demand” for knucklebooms is in construction, such as material handling for foundations and roof trusses. Other industrial uses include oil and gas, railroad construction, tree care, and crane rental.

“But there is growth in other markets, limited only by the ingenuity of the project teams and crane owners,” Faloney said, pointing to special applications like construction at the World Trade Center site.

Articulating Art

“Articulated cranes are also being used to move, handle, and place sculptures and large works of art,” Faloney noted.

Recent technological innovations fall into two categories: digital and green. “There’s certainly an overall trend in the industry toward easier and stronger connectivity between the truck and crane, and a tablet or smart phone to monitor key metrics and performance,” Faloney said.

To that end, Fassi has developed a trademarked “Internet of Cranes,” Fassi IOC. “For example, using Fassi’s FX-Link (the Fassi Connectivity System) and the DBF (Drive By Fassi) technologies, an operator can maneuver/drive a truck and crane via the crane’s radio remote control,” Faloney said.

And on the sustainability front, Fassi has introduced its smart hybrid technology (SHT) that reduces fuel costs and a crane’s carbon footprint.

Knuckleboom Newcomer

A relative newcomer to the knuckleboom space in North America is Manitex Cranes. The company joined the party in 2015 when Manitex acquired Italian manufacturer PM Cranes.

In recent years, Manitex has sold those knucklebooms in North America under the MAC brand.

In 2023, however, Manitex will revert to the PM name for the North American knuckleboom market, said Colton Peterson, director of sales and development for Manitex articulating cranes.

“PM is still a global brand. But in North America, we’ve been leveraging



Palfinger PK 135.002 — owned by Braymore Crane Service of North York, Ontario — delivers a load of material.

Photo courtesy of Palfinger North America



MAC brand knuckleboom cranes from Manitex, such as the 70.5 SP shown here, will revert to the PM brand name in 2023.

Photo courtesy of Manitex Cranes

the Manitex brand because people know Manitex here in North America,” Peterson said. “So, when they see a Manitex articulating crane, they can expect the same level of quality that’s coming out in the Manitex plant here in Georgetown, Texas.”

A new 83.5-tonne-meter (603,955 ft.-lb.) model, the 83.5 SP, will be unveiled in 2023. “The 83.5 is still preliminary. We haven’t released load charts or a lot of sales material on that model just yet,” Peterson said.

Its launch comes on the heels of the 70.5 SP unveiled at Bauma 2022 this October in Munich, Germany. Peterson describes it as “go between in the heavy crane class” between the 65 SP and the 85 SP, which is being discontinued to make

way for the 83.5 SP.

Manitex currently has dozens of knuckleboom models, ranging from the 1.5-tonne-meter (10,850-ft.-lb.) 1.5 LA up to the 210-tonne-meter (1,518,931-ft.-lb.) super-heavy 210 SP.

12 Core Models

“In the North American market, we try to focus on 12 core models, but the total portfolio spans all the way from one tonne-meter up to 210 tonne-meters,” Peterson said. “The smallest one for the North American market is 8.5. And then that will span all the way up to the 210.”

Most knucklebooms in North America are truck-mounted with a sub-market for trailer-mounted versions, Peterson said.

Popular uses include tree care, trenching and shoring, and general rental, he added.

“You have some smaller markets, like precast concrete delivery,” Peterson said. “Then you get up into the Northeast where the super heavy cranes, the 150 and the 210, really shine and they’re doing taxi crane work in New York City.”

While the biggest markets are the Midwest and Northeast, the South and West are opening up, even with persistent supply chain issues, he said.

“The advantage of the knuckleboom is you can get similar capacity in a much smaller, easier-to-maneuver package,” Peterson said. “It’s not uncommon, especially in the wallboard industry to stick

the tip of the boom in through a window to deliver wallboard or something like that.”

Northern Exposure

Manitex knucklebooms are also making inroads into Canada. “It’s kind of interesting because they use bigger equipment but with a similar application,” Peterson said. For example, where a U.S. customer might deploy a 38.5-tonne-meter (278,470-ft.-lb.) crane for material delivery, a Canadian customer might go for a 65-tonne-meter (470,145-ft.-lb.) model, he said.

“I think the biggest thing with the bigger cranes is having more horizontal

capacity,” Peterson said. “For example, it helps when you’re lifting up and over the peak of a roof to put shingles on the back side for roofers.”

Meet the Beast

North of the border, Tharrow Crane Services of Prince George, British Columbia, has eight truck-mounted knuckleboom cranes, including a Palfinger PK 150002, which Tharrow acquired in 2018.

Nicknamed “The Beast,” it’s mounted behind the cab of a Peterbilt tandem tri-drive chassis, said Tharrow president Glenn Lafleche.

“She’s a pretty big knuckleboom. I think there’s a couple of them in North America. We acquired it out of Alberta with the hope we can create work within British Columbia, and it’s turned out OK,” Lafleche said of the PK 150002.

With a capacity of 51,674 lbs. at a 13.5’ radius and 8,774 lbs. at 69’, the PK 150002 is suited for heavy industrial applications, such as mills, railways, and pipelines, like the existing Enbridge natural gas line that has been in operation since the 1960s, Lafleche said.

“It’s not really for a commercial or residential application. It just doesn’t fit,” he said.

Tharrow also has smaller knucklebooms — from Palfinger, Hiab, and Ferrari — including one mounted on a single-axle truck.

In addition, Tharrow has a couple other knucklebooms mounted on high-rail units for railway maintenance.

“Knucklebooms are good for inside buildings,” Lafleche said. “They work really, really well, whereas stiff booms are very limited.”

While Tharrow’s territory is primarily in British Columbia and neighboring Alberta, it occasionally also works in Manitoba and Ontario.

“They needed equipment from Prince George,” Lafleche said. “And we were the only ones that answered the phone and were willing to go right away. We don’t use a dispatch service. Everything comes to my phone.” ■



The Beast is the nickname of Tharrow Crane Service’s Palfinger PK 150002 knuckleboom.

Photo courtesy of Tharrow Crane Services



Hiab is among several brands of knuckleboom cranes. Though most service trucks still use straight-boom cranes, knucklebooms are gaining popularity with some users.

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