Texas-sized pivots solve labor-intensive problem

Oil and water don't mix, but some Texas-sized pivots have helped the two co-exist in the Lone Star state.

Donald Roulain and Bobby Neal, both of Whiteface, farm ground which is spotted by oil wells—some of which are nearly 40 feet (12.2 m) tall. The wells were drilled before the ground was farmed, so the two Texas farmers have had to work around the wells, which are owned by Exxon and Mobil.

They previously irrigated around the wells by using side rolls, which was very labor intensive. The irrigation equipment had to be broken down and put back together each time the side roll had to pass an oil well.

"Every time it was at least four to six hours to shut off the system, drain the hose, move the hose and put it back together again," said Roulain. "It could take a month to put down four inches on an entire field."

But all that would change after Zimmatic Dealer L & B Supply in Morton helped Roulain and Neal design a solution—tall-towered pivots. "They are masters with numbers and making things work," Neal said. "I recommend L & B very highly," said Neal. "They are good, honest folks. And I'm pretty hard to please."

Roulain, who farms 850 acres (944 ha) of cotton and milo by himself, has three Zimmatic center pivots—two of which have tall towers. Each pivot irrigates about 130 acres (52.6 ha) and passes over nine to ten oil wells.

Several of his towers are 40 feet (12.2 m) high, which are the tallest towers ever built by L & B. "When looking at them from a distance, I guess you could say they look like a big dinosaur, like a brontosaurus with the big hump," said Roulain.

Three towers are 40 feet high, the remaining towers on his two systems are between 12 (3.6 m) and 18 feet (5.5 m) high—enough height to provide at least two feet of clearance over each oil well. The extra tall towers with wider than normal bases, require dual motors to keep the pivot moving smoothly.

Another challenge from the extra weight is ruts. "Because of the extra weight, the tracks can tend to get deeper over time," said Roulain. "So you need to limit each watering application to two inches or less. I would also recommend using oversized tires on the pivot system to help manage this problem."

Roulain said he is also looking at options, including broadcast seeding, to farm the land under the pivots. This is
because conventional tillage practices could put too much pressure and tension on the tall tower systems coming in and out of listed rows.

Bobby Neal, who is in partnership with his mother Lois, farms about 3,275 acres (1,326 ha) of cotton and milo and custom farms another 1,100 acres (445 ha). He operates four tall-towered pivots, of which the partnership owns three. The fourth is owned by the operation Neal custom farms. In all, Neal owns nine Zimmatic pivots and is installing a new one this spring.

Neal installed his first tall pivot for the 1994 crop year. This seven-tower system irrigates 115 acres (46 ha) and pumps 450 gallons (1,703 l) as it passes over four oil wells. His towers are between 18 (5.5 m) to 20 (6.1 m) feet in height to provide the two-foot clearance. He added two other tall pivots in 1996. Both pump 650 gallons (2,460 l) per minute and irrigate about 115 acres (46.5 ha) each. Between the two systems, there are seven extra tall towers of about 18 feet (5.5 m) in height.

The system on the custom ground was installed for the 1995 crop season. It's a ten-tower system, with three tall towers that operate at 750 gallons (2,839 l) per minute.

According to Neal, the extra materials needed for taller towers, can add at least 20 percent to the cost of a new pivot. “And that cost could be higher with taller towers,” he said.

If it weren’t for the flexibility of Exxon, Neal might have had the extra expense of even taller towers. “Exxon originally had taller pump jacks on my ground,” said Neal. “But they were kind enough to switch them out for shorter ones to help me save my costs. It made it a lot less trouble for me.”

In addition to carefully monitoring wheel track management, extra care (continued on page 8)

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**Custom Requirements? You’ve Come to the Right Place**

Designing pivots with “Texas-Tall” towers (story at left) is all in a day’s work for Lindsay and its Zimmatic dealers. According to Charlie Meis, Lindsay’s vice president of engineering, tower height is just one of a long list of ways that Zimmatics are job-tailored. They include:

- Enlarging pivot pad size to provide added stability and/or room for other equipment
- Providing alternative panel locations
- Adding special braces or reinforcement when terrain and pivot length or height cause extra stress
- Adding plastic pipe to handle corrosive water and “basically anything that’s needed to fit the pivot to the job”

“Our dealers do a terrific job of field engineering,” Meis said, “and we work closely with them in providing special design modifications and in verifying the feasibility of changes they propose. It’s important, because a pivot will deliver more long term value when it’s designed to focus on your specific needs.”
David Roulain (above) worked with L&B Supply, Morton, TX, to prove that tall-towered Zimmatics could solve his oil well clearance problems.

should be taken when maintaining these systems, said Neal. “With the tall pivots you can’t be as relaxed. The taller you get, the engineering gets more complex, which exposes you to more risk,” said Neal. “You don’t have to necessarily do anything special, but you need to stay on top of regular maintenance.”

Another special consideration is the length of drops near the oil rigs. “They have to be cut way back to clear the well,” said Neal. Normally, his systems are equipped with wobblers that hang three feet off the ground, so wind drift isn’t a concern. But in small bands around the circle, at the point of the wells, wind drift can be an issue. “We try to put a little larger nozzle on those drops to compensate,” said Neal. “So we do the best we can to minimize drift.”

The extra height also added a few challenges in operating Roulain’s end guns. “I had to lower the end guns to six or seven feet off the ground to maximize the efficiency of the system,” he said. “I can pick up an extra 100 feet (30.5 m), which adds up.” However, the benefits of going to pivots far outweigh these minor challenges and the extra costs. “The pivots are huge time and labor savings. They are more convenient and more effective, especially with cotton,” said Neal. “It’s so easy to overwater cotton with side rolls, especially late in the season when it’s critical for boll development.”

Roulain agrees that pivots beat side rolls hands down. “You can’t beat the time and labor savings,” he said.

Pivots are also a great tool for controlling risk. “The flexibility to control application rates helps reduce my risk,” Neal said.

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