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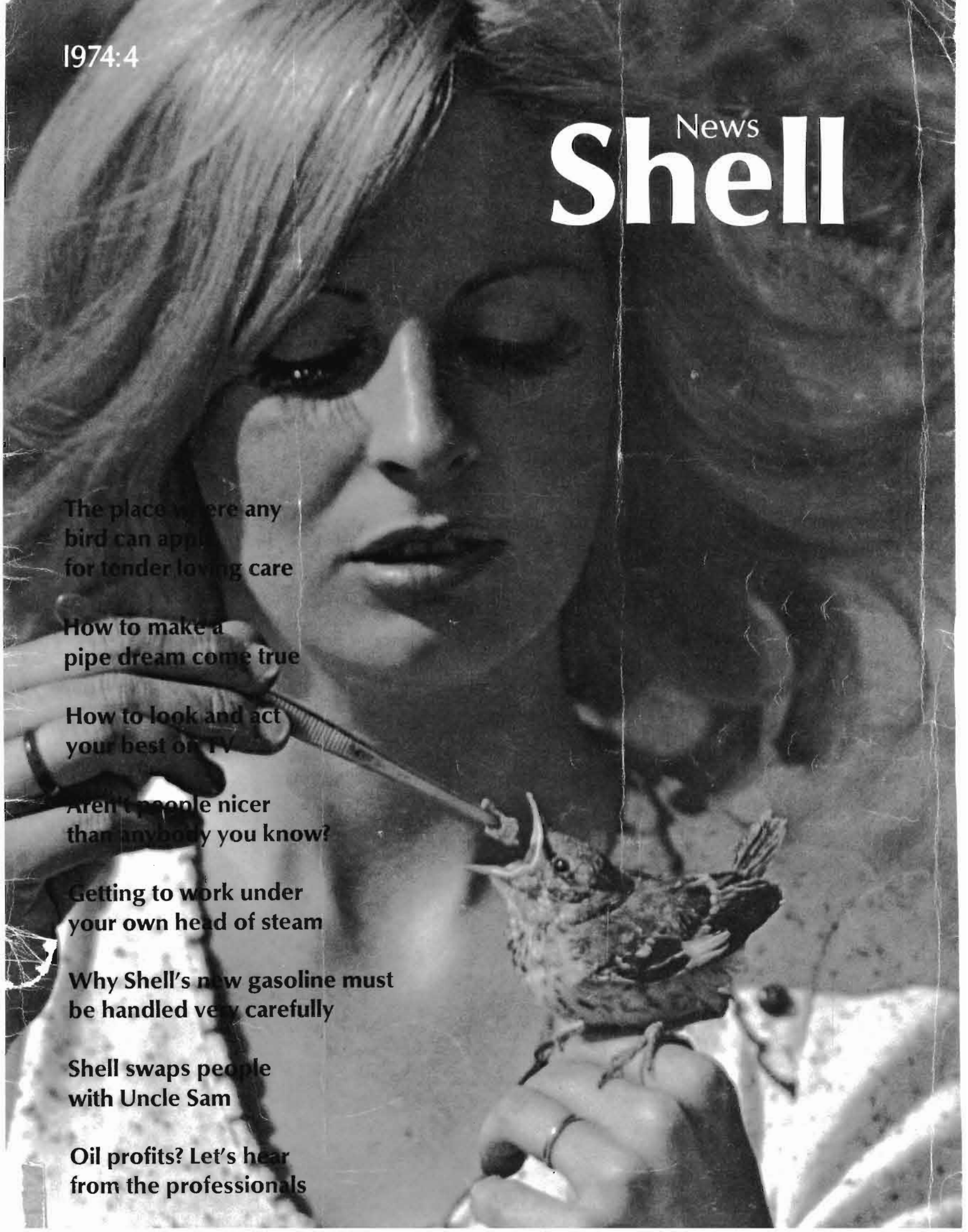
Shell News



The place where any bird can apply for tender loving care

How to make a pipe dream come true

How to look and act your best on TV

Aren't people nicer than anybody you know?

Getting to work under your own head of steam

Why Shell's new gasoline must be handled very carefully

Shell swaps people with Uncle Sam

Oil profits? Let's hear from the professionals

The great crude oil pipe dream

We stood beneath the eave of Duck's Grocery out of a driving Louisiana downpour, munching on "Duckburgers," the specialty of the house—thin slices of ham stacked thick between layers of lettuce and fresh bread. Across the famous River Road that winds its narrow way between Baton Rouge and New Orleans along the muddy, fast-running Mississippi River, we could see the bridge of the *Olympic Gulf*, a 275,000-barrel tanker from the Onassis fleet, sticking up from behind the grassy levee that keeps the river respectable. This was swamp country, 50 miles below Baton Rouge near the community of St. James, and you'd think it was suitable only for alligators and water moccasins until you top the tall Sunshine Bridge and see below you a refinery and an electric power plant and a half dozen tankers plying back and forth.

It is also the southern terminal of Capline, the free world's largest crude oil pipeline, and I'd come to chronicle its

It was a fantastic idea that never would have jelled if seven pipeline companies hadn't been willing to risk $200 million to make it a reality

story. With me was Bob Grounds, the dock foreman. "You want to know how Capline got started?" he asks. "Well it got started when a bunch of oil companies got together and decided to build it because a pipeline was the best way to get crude oil up to the Middle West where it was needed pretty bad. It was such a big project that one company couldn't handle it all alone."

"That sounds like an ordinary, sensible business arrangement," I observe. "When something big has to be done and you can't handle it alone, you go out and get a partner or two."

"That's catching on quick," Bob smiles. "The oil companies got together to do something good for everybody concerned."

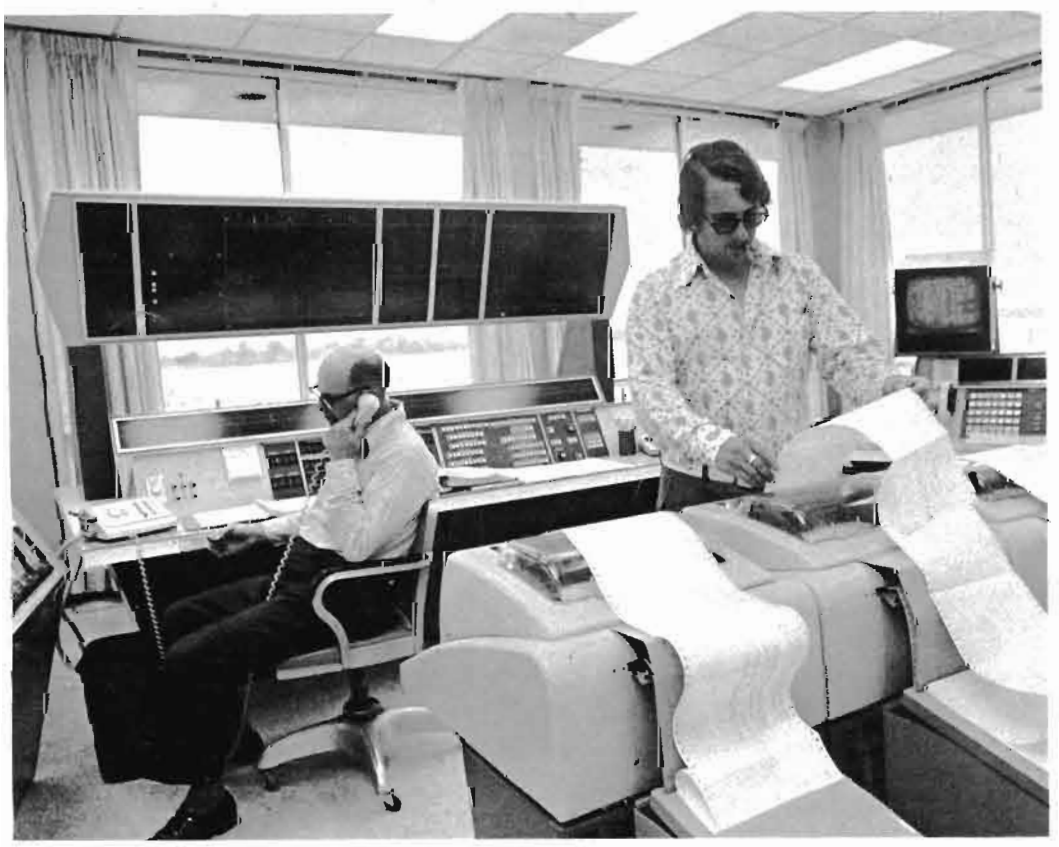
Now when you work for an oil company, you don't argue with logic like that. So I smiled right back and got to work learning what I could about this pipeline that takes a back seat in size only to Comeon in Russia, and then only in length.

Capline, which is operated by Shell Pipe Line for a group of owner companies, is a big 40-incher, a main artery pumping crude oil to the heart of the Midwest. It runs north from St. James for 630 miles, out of a land of sugarcane and wild rice, where oil is now king, to Patoka in southern Illinois, a land of wheat and soy beans and white Berkshire hogs, where coal used to be king. And it came into existence pretty much the way Bob Grounds had described it.

Something had to be done

Ten years ago, the demand for crude in the Midwest was approaching 3½ million barrels a day. This was more than double the amount of oil produced in the area, so pipelines from the West and river barges from the South tried to take up the slack. But demand was still going up, and to make matters worse the producing fields feeding the lines from the West were on the decline.

Something obviously had to be done, and the answer came from Shell Pipe Line: since production was up in Louisiana, why not build a crude line to the Midwest from there? It would be a monumental undertaking, so many other companies were invited to come around and talk about joining the effort.



Crude oil comes to St. James via pipeline, barge and tanker. That's terminal foreman Woody Clemmons (above left) with Captain George Dimitriadis and wife, Marina, of the Olympic Gulf, and dock foreman Bob Grounds who also appears at the top of the page. Left: Dispatchers Carl Fiene (seated) and Rudy Hebert monitor the control center, sending oil 630 miles north to Patoka. It's pushed along in a 40-inch pipe by eight pump stations manned by attendants like Dave Dreon at Marion, Illinois (opposite page).

'As big as that pipe was, she went down into the ground like any little ol' 20-incher'

"The pipeline companies got together to minimize risk and spread construction costs," explained Mike Papadopoulos, president of Shell Pipe Line today. "The line was going to be so big, so important, that we couldn't leave it up to one company. There were a lot of refineries up at the northern end waiting for crude."

So the long meetings began, recalls Sam Evans of T&S Economics, who was one of the Shell Pipe Line principals involved in the discussions. Representatives of the various companies shuttled in and out, chewing over the details. In the process the number of interested pipeline companies dwindled from a talking dozen or more to a participating seven—Shell, Ashland, Marathon, Amoco, Mid-Valley (Standard of Ohio and Sun Oil), Southcap (Clark Oil and Union Oil), and Texas (Texaco). And that seven finally agreed—yes, the line had to be a massive 40-incher, and yes, they would go ahead and build it. They also agreed that, since too many cooks spoil the broth, Shell Pipe Line, originator of the idea, should build and operate the line.

Pay according to use

Now, how to pay for it? The usual partnership arrangement didn't seem to be the answer here, for the participating companies decided they wanted to pay according to the amount of use they might get from the line. They bought into it by shares, therefore, with pipe space and pumping time determined by the size of the share. And then they did something else which was very important as far as the free enterprise system is concerned. Each shareholder retained the right to vie with the other shareholders in selling space in the line to prospective customers by setting competitive rates. In short, Capline would be operated as though it were not one but seven pipelines owned by seven companies.

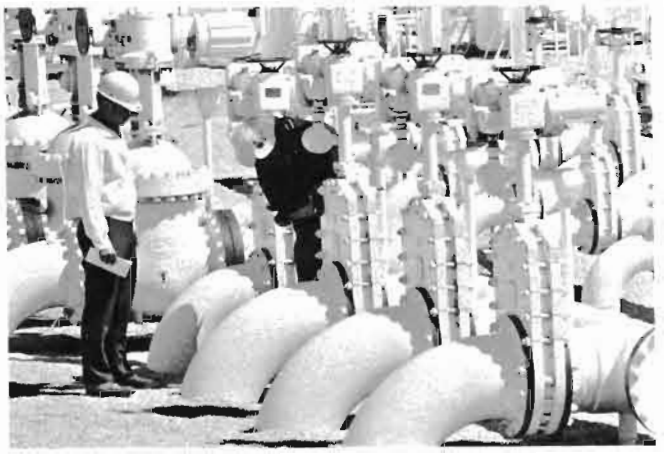
Now they were ready to lay line. "As big as that pipe was," recalls Jack Gaines, who was construction project manager, "she went down into the ground like any little ol' 20-incher." Six crews under six separate contracts, up to 2,000 men at a time, moved out along the route, from the Mississippi River at St. James across the swamps and into the pine forests of Mississippi, across the mountainous corners of Tennessee and Kentucky, and into the rolling farmland of southern Illinois.

When they were done, they had dug up 166 million cubic feet of earth (double the volume of the great pyramids), crossed 21 waterways, burrowed beneath 104 roads and slogged through three major swamps. It was the kind of feat that would have made Mark Twain or Gib Morgan, accomplished braggarts both, green with envy.

Astride a monster snake's head

Down in Louisiana, for example, they trenched for miles through the Sorrento Swamp, then laid the first section of pipe in the water-filled ditch. When they were sure it was buoyant, they joined more sections behind it, pushing the string out in front until, at one time, it was seven miles long. That's pretty good by itself, but here's the part that would have tickled Gib and Mark: One man rode the head of that monster snake of a pipe, poling off the sides of the trench bateau-style so it wouldn't bite into the gummy walls and just keep on going until it disappeared in the muck of that black swamp.

When they got into the Mississippi pine, the forest was so thick and dark that it was almost impossible at times to shoot survey readings with elevation guns, even though the way had been cleared by machete and bush ax. Gaines, now manager-engineering with Shell Pipe, credits then-chief inspector C.B.



Capline was built to supply crude oil to refineries in the Midwest. Although pipes, valves and meters are visible (right), most of the system lies buried out of sight. Inside the station at Patoka—the northern end of the line—a wall-to-wall monitoring panel is kept under surveillance around the clock.

Left: At St. James on the southern end, near New Orleans, Shell Pipe Line President Mike Papadopoulos goes over the activity log with Rudy Hebert. The dispatcher was taken aback by the president and regional manager who dropped in unexpectedly. But as usual, everything was in shipshape order.

Barker with an ingenious solution—surveying at *night* under the high-intensity beam of an old, truck-mounted World War II anti-aircraft searchlight.

"That's the truth, I swear," laughs Gaines. "The only trouble we had with it was the way it sometimes stirred up the local folks. They'd come a-running into town, all lathered up with excitement, swearing they'd seen a flying saucer flashing around in the woods."

Probably the worst time came when the pipe-laying crews were trying to cross the Ohio River in the winter. Gaines doesn't remember a day when it didn't rain "buckets." The rising river made life miserable for the men, the equipment bogged down and only the dredge could work, sucking out a trench along the bottom. But with all the mud and silt in the flooding river, the trench kept filling in again. It took eight months before they finally slid the concrete-coated line off the back of a barge and lowered it into the trench. "The only nice thing about that whole business," says Gaines, "is that once we got the pipe down to the riverbottom, we didn't have to worry about covering it over."

Hardly a trace left

By the time the line reached Patoka, the stringing crews had dropped enough pipe to fill 7,000 railroad flatcars. Hydraulic pipe-bending machines tailored the sections, 40 feet long with walls 1/3-inch thick, to hump over a hill or bottom out in a valley. Welded, cleaned and coated, the pipe was lowered into the trench and covered. Then the right-of-way was smoothed over, grass replanted, fences mended and all signs of construction wiped away until the only trace of the line was a snaking of fresh earth, hardly discernible except from the air.

The "snaking" came about because easements had to be obtained from some 2,200 landowners. It took a year to get them all, and when a property owner on the straight-line wouldn't sign for one reason or another, the pipe had to wiggle and bend until it could cross the land of one who would.

Finally, when all the links in the long chain were completed, Capline was primed with five million barrels of crude oil and an operating crew of 50 took over. Its nerve center was a pushbutton marvel installed at St. James—an elaborate electronic network feeding into the control center—which included teletype printouts of all Capline's vital signs. These were monitored by a calculating computer, which in turn was watched over by a dispatcher, the only human element. At the dispatcher's signal, when all was ready at the northern end, the computer crackled out a message over a microwave radio system to the valves and pumps along the way, and the first barrel of oil —the first of 750 million since then—gurgled out of the line and into a glistening white storage tank at Patoka.

The control center at St. James is housed in a three-story structure stuccoed with brown pebbles and marked by a 200-foot-tall communications tower next to the levee. Standing by a window on the third floor I could see, far back and away from the winding river road on the 600-acre spread, the tank farm, engulfed in lush green countryside. Just upriver, to the left, the *Olympic Gulf* was still pumping. At the end of a runway leading to another dock, a barge was unloading. Down-river, to the right, was a new tanker dock, not in operation yet, and below that there were two more barges, up near the river bank with lines linked to tree trunks and held there against the swift current by a tug.

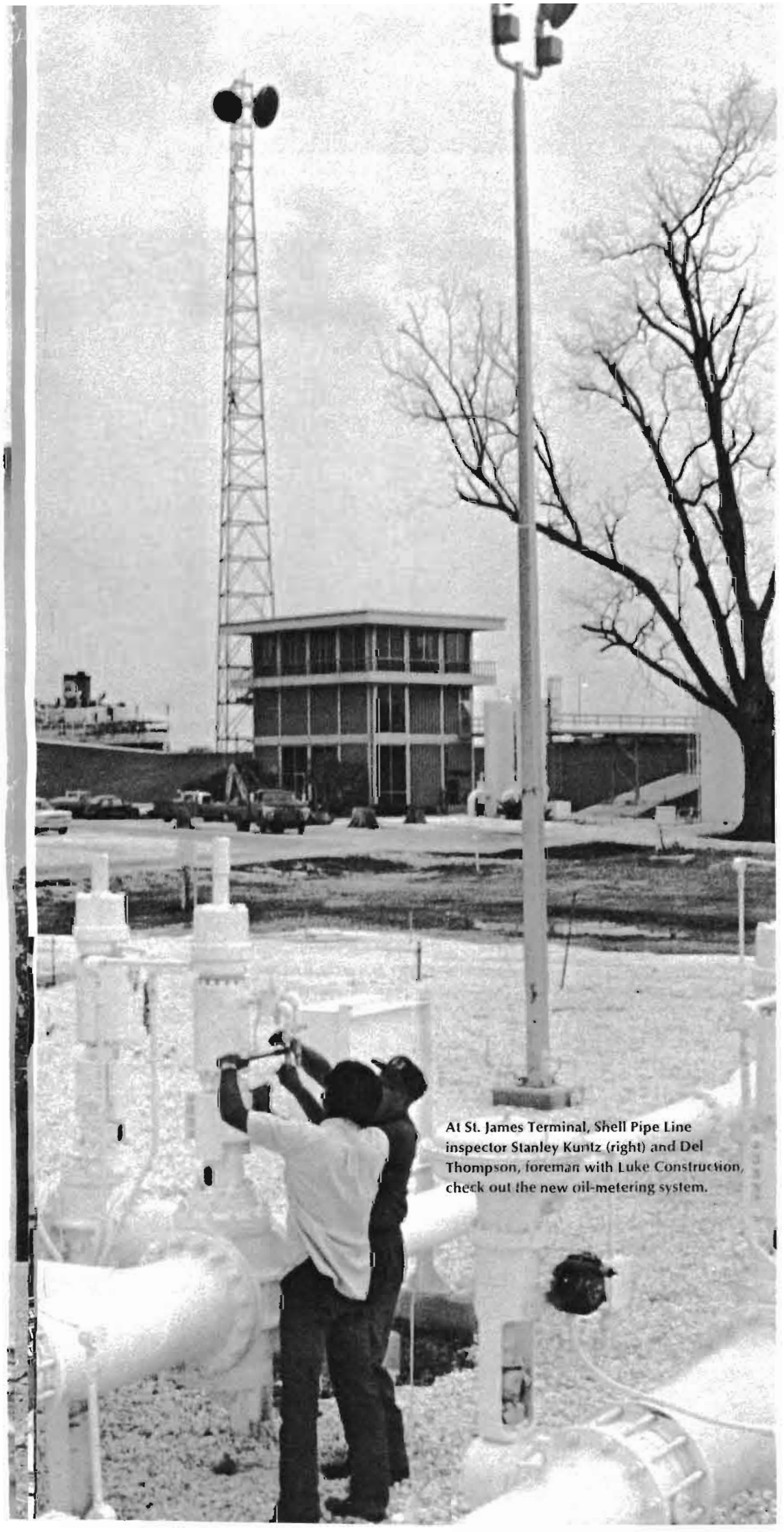
More than a million by 1978

"Shades of Huckleberry Finn," I said to Woody Clemmons, terminal foreman. "If you spelled your last name C-l-e-m-e-n-s I'd be willing to bet your first name was Sam."

He responded with a quick grin, then said, "It's a convenient spot to wait your turn." Nodding at the offloading tanker, he added, "The new tanker dock will give us three tie-ups now. Seems like we just get through with one expansion and right away we have to start another—more

Capline spans the Ohio. Pontoons buoy up the 26-ton, concrete-coated sections as they are pulled across the river by cable.

Pipe without the concrete wrap is buoyant enough to be joined and pushed ahead in this water-filled ditch.



At St. James Terminal, Shell Pipe Line inspector Stanley Kuntz (right) and Del Thompson, foreman with Luke Construction, check out the new oil-metering system.

'On an individual basis, costs would soar, the efficiency would probably disappear and everything would suffer—including the consumer's pocketbook'

cause we haven't had a leak in the six years we've been in business. I guess somebody did something right when they built this line."

As big and efficient as Capline is, however, it can no longer, by itself, offset the rising demand for crude in the Midwest. So the seven owners have invited other interested pipeline companies to indicate their interest in joining the present arrangement in the construction of a second 40-incher to parallel the existing line from St. James to Patoka.

The reasons for spreading the ownership widely come down to simple economics. The first pipe took almost two years to lay and to date has cost, counting all the expansions, nearly $200 million. The second line will cost considerably more, as everything does these days —about a half million dollars a mile—and no one company wants to swing for that much money for a venture which, although basically sound, still contains elements of risk.

You can't refine hopes

What could go wrong? For one thing, the owners of Capline are looking to imported oil to help justify the laying of a second line. They're counting on LOOP, the proposed Louisiana Offshore Oil Port, to bring in supertankers loaded with super cargoes of oil. But what happens to their plans—and their investment—if LOOP is built, the pipeline is laid and then Middle East oil is shut off again? There are high hopes for new crude production out in the Gulf, of course, but hopes usually don't refine very well.

Government studies cite the remarkable efficiency of pipeline operation, which is a direct result of joint ownership. If companies had to go into the business on an individual basis, costs would soar, the efficiency would probably disappear and everything would suffer—including the consumer's pocketbook.

— Tom Winfield