

Hard Hat Divers

Equipment modernized in the 1930s; the Thompsons played a key role in the Belle Fourche Dam

By Patrick Lapinski

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EDITOR'S NOTE:

Patrick Lapinski, a Superior native with a passion for maritime history, prepared this article on a longtime family-owned diving business and most graciously provided the article to the readers of the *Nor'Easter*. We are pleased and proud to publish the article and its accompanying photos. Part 1 of the article ran in the 4th Quarter 2009 issue. This is Part 2.

Increasingly, John began to do more of the jobs that had once been handled by Horace. The succession of generations was paralleled by a significant change in diving technology.

"When John started to dive, the traditional hand pump gave way to an air compressor powered by a gas engine," related Jerry Norick, following the chronology of the Thompson family as closely as he can. Holly refused to use the gas powered compressor, insisting that the hand pump was the only reliable source of air for his dives.

The increasing dependence on gas-powered generators in the 1930s presaged the end of the five- or six-man dive teams. James Thompson stepped into the role of the permanent family dive tender, paired alongside his father, Horace. Depending on the size of the project, the Thompson family crew was now either a two- or three-person team.

The 1940s found John and James working in tandem on several large projects outside of the Duluth area. Depending upon where the job was, the Thompsons would reach the dive site via several methods.

"We used to have a scow, with a small tug," recalled Marie.



John (left) and Jim Thompson at Belle Fouché Reservoir, September 1948.

Photo by T.R. Broderick

"There were also a lot of jobs where you could pull up to the edge of the dock and your work was right below you," added Jerry. "But for some jobs where work was isolated, out in the middle of the drink someplace, then you had to have a boat. Because of the nature of some

of the work, you were hired by a contractor, and generally a contractor had a lot of floating gear and tugs to get you back and forth, so you just offloaded your gear on to his barge and that would take care of you. So there were a lot of combinations."

On one large project, the brothers



The *Ford Truck Times* was very good to the diving Thompsons.

Photo by Charles M. Sheridan

were hired by a St. Paul contractor in the employ of the Great Northern Railroad, to work on the railroad's bridge spanning the Mississippi River at St. Cloud, Minnesota. The 85-foot high bridge, built in 1891 for the Minneapolis Western Railway, needed reinforcement to be able to support the new, heavier diesel train engines being built.

At the onset of the project John directed the removal of rock and debris from the base of the span's trestle supports. Descending to the bottom of the river, at a depth of about 20 feet, John, in communication with the crane operator via a two-way radio system, helped guide the scoop shovel over the rocks. As the project progressed, John assisted on other aspects of

the reinforcement, such as placing sacks of concrete to seal coffer dams around the bridge piers so that they could be filled with cement.

Unaccustomed to the nature of hard hat divers, the local press was extremely curious about how the brothers performed their work. John and James were forthcoming about their trade, with John doing his level best to dispel some of the myths he had come across over the years, such as how divers walk beneath the

water. "The only time a diver walks upright underwater is in the movies," he explained. "We generally lay flat on our stomach on the river bottom and make like we're swimming."

Characteristic of John's sense of humor, he demonstrated how quickly he could get to the bottom and return to the surface in his dive suit. It took him about a second to hit the bottom after jumping off the work scow, and then, inflating his suit to full pressure, he returned to the surface in about two and one half seconds, breaching the water like a mechanical fish.

James, for his part, was candid about the importance of his role as tender to the diver. By this time, gas powered generators had long since replaced the hand-cranked air pump, so the regulation of air to the bottom was not so difficult, but the line still needed to be monitored while the diver was under the water. During the winter, when air temperatures can dip to 30 degrees below zero, frost could form on the inside of the brass joints connecting various sections of the air hose, seriously constricting the flow of air to the diver. In this situation, an observant tender was the difference between life and death for the diver below.

John preferred winter diving over work he'd conduct in the summer. "The water is clearer and I can see better," he explained.

"Around Allouez and the DM&IR docks in summer I can hardly see a thing because the boats keep the water roiled up." In fact, John admitted to feeling sorry for the tender because "they're the ones who have to work above, in the frigid air, while he's relatively comfortable beneath the water. Winter-diving is safer in some ways. It's better than working from a boat in rough water because you know that your tender and air compressor are on good solid ice and won't be bobbing around up there."

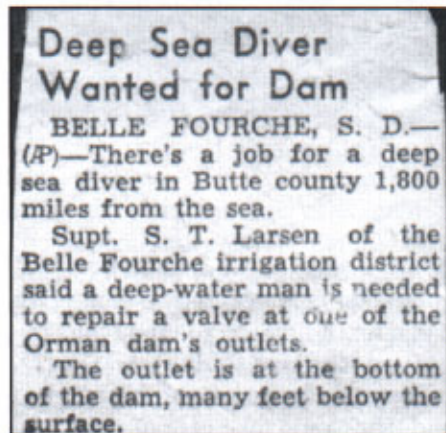
The Thompsons generally received work by word of mouth. Their reputation at the head of the lakes made it almost impossible for an outsider to be considered for a local project. Melford Robinson, a hard-hat salvage diver for the Army, returned home to Duluth at the end of the Second World War, but was unable to find any work in his field.

"I got back here, and it was a closed deal," Robinson said. "A guy by the name of Thompson had all of the diving jobs in town here. He did everything. There was nothing," recalled Robinson in an interview late in his life.

Sometimes, finding work for the Thompsons was almost as easy as looking out the window across the lake from the homestead, as was the case when the steamer *Robert Hobson* careened into the break wall at the Superior entry during a snow squall. As a result of the collision, a large piece of concrete dislodged from the pier, landing upright on the bottom of the channel, posing a threat to every ship passing near it.

It would be the summer of the following year, 1949, before John Thompson was summoned to remove the obstacle. The turbidity of the water made it impossible for Thompson to see anything before him on the dives, causing John to quip, "I've been working on the concrete block for about a week and haven't seen it."

To remove the rock, Thompson drilled just over a dozen, eight-foot holes into the rock, in which he placed dynamite to blow it apart;



Newspaper article that led John Thompson to a job in South Dakota.

no small feat when conducted in total darkness. What made the job additionally difficult was the strong current running through the channel, a natural phenomenon exaggerated by freighters passing above. "There is nothing one can do but lie flat on the bottom and hang on for dear life," said John.

On other occasions, John would find a job opportunity by reading the local newspaper. One evening, a tiny notice placed at the bottom of a page caught his eye.

"There's a job for a deep sea diver in Butte County 1,800 miles from the sea," the ad read.

Figuring he could shave at least 1,200 miles worth of travel expenses off of the cost of anyone on either coast, John placed his bid. Soon afterward, he and James were loading their gear onto a westbound train, bound for a large earthen dam at Belle Fourche, in the heart of South Dakota.

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The hostile, arid environs of South Dakota may seem like one of the most unlikely places you would expect to find a dive project, but for the Thompsons it really wasn't that unusual. Irrigation dams were frequently in need of divers for underwater repairs. In 1915, John's father Holly traveled as far southwest as Raton, New Mexico, to repair a valve leaking in a spillway after dive teams from Los Angeles were unable to withstand the strong current of the river in the vicinity of the dam. Holly had gained experience working in the fast flowing waters of the Mississippi River, so he was accustomed to working in strong currents.

At the time of John's South Dakota project, the Belle Fourche Dam was "one of the largest earth fill dams in the world." The dam, at a height of 112 feet, and a width of 6,262 feet, distributed water from its reservoir via two canals. A release valve on the dam's north canal would not close completely, due to a loss of hydraulic pressure, making



John and Horace Thompson in an undated photo.

it impossible to control the flow of water through the outlet. A diver was needed to make temporary repairs so the valve could be closed and the water diverted to a twin valve at the end of the tunnel. The repair was expected to hold until the valve's scheduled replacement date, two years into the future.

To access the valve, John would first need to descend a 70-foot vertical shaft, barely wider than a passenger elevator, just to reach the floor of the tunnel leading to the valve. At this intersection the tunnel reached its maximum height of 7 feet, gradually tapering to 5 feet over the length of the tunnel before

reaching the damaged valve. "In an emergency, the diver would have to walk the 200 feet back to the shaft before he could possibly get out."

With the shaft and tunnel still flooded, Thompson made his initial assessment dive, during which he discovered not one, but two small leaks in the valve. In his subsequent dives John used a combination of hand and air-powered tools to bore out the openings and place temporary seals over them. Once the holes were patched, the valve was finally closed, allowing the shaft and tunnel to be emptied of water so that the repair could be inspected and completed. Thompson completed



John, on ladder, and Jim Thompson (center) at work on a municipal water line in Negaunee, Michigan.

Photo by the Marquette Mining Journal

the job in four days, during which he made a total of six dives.

The Belle Fourche project garnered the Thompsons national attention when it was featured in the September 1948 issue of *The Reclamation Era*, the journal of the U.S. Department of the Interior's Bureau of Reclamation. Two years later, in November 1950, the brothers were story subjects again, this time in *Ford Truck Times*. An assignment photographer on location in Washburn, Wisconsin, to photograph a Ford truck owned by the City of Washburn, captured an amused looking John and his brother James taking a respite on the ice in Chequamegon Bay during the repair of the city water intake pipe.

While the Thompsons occasionally had fun with the press, they were very serious about how they conducted their dives; their lives depended on it. Exercising caution was important to the

Thompsons, and John made sure that he took steps to protect his family before the start of each project. All major projects were recorded in a case history with an insurance firm. The need for this caution was exemplified in particularly dangerous projects, such as the one undertaken for the Department of the Interior at Belle Fourche.

In May 1954, John was again back in the Dakotas, preparing to take part in a historic undertaking, the mammoth Garrison Diversion. The

project was conceived in 1944 when plans were presented to Congress for "harnessing the unruly and extravagant Missouri" to provide water for irrigation. Legislators, unable to choose from several proposals, blended two plans together, in what became known as the "Pick-Sloan" plan. The Pick-Sloan plan called for water to be diverted from the Garrison Dam reservoir, near Riverdale, North Dakota, disseminating it over a 22-county area.

A key component of the diversion project was the Garrison Dam, built by the U.S. Army Corps of Engineers between 1905 and 1914. By 1954, when the Thompsons arrived on the project, the reservoir had been storing water for nearly three years in preparation for the full diversion. The generation of electrical power from the dam was expected to bring in roughly \$10 million dollars in revenue per year,

and cover 80 to 90 percent of the cost of the construction.

In preparation for the electrical generation, John was employed by Kaiser-Perini-Walsh to place stop logs into fitted slots between the concrete piers on the downstream side of the powerhouse. The stop logs were a temporary measure, used, as their name suggests, in forming a preventive wall to keep water from entering the area while the turbines and generators were under construction.

Weighing up to 22 tons apiece, each log was lowered into the water where John, working on the downstream side, guided it into a predetermined slot. Once the log was in place he moved to the upstream side and disconnected the crane sling from the log before resurfacing. After the next log was lowered into the water, Thompson repeated the procedure.

To help offset the strong current moving along the bottom of the Missouri River, John used a 60-pound anchor to help stabilize his position. On this project the Thompsons worked with Cliff Sine, a diver from Ockley, Indiana.

In January 1956, just before the power generating plant went on line, John and James returned to Riverdale to remove the stop logs. This time, Marvin Bowes, a diver for Roen Salvage, of Sturgeon Bay, worked alongside John on the project. Before the removal of the stop logs the two divers were lowered down a 100-foot intake "well" to clear debris away from the front of the intake gates. It was reported that the massive turbines could easily chew up a stray two-by-four, but John and Marvin found many other items that could have caused considerable damage to the turbine blades. Among them were the usual wooden forms and logs, and the not so usual items such as an old skiff, and "a raft supported by six empty oil barrels."

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The story of the Noricks diving family concludes in the next *Nor'Easter*.