

HISTORY
OF SHELL OFFSHORE SEISMIC OPERATIONS
IN THE UNITED STATES

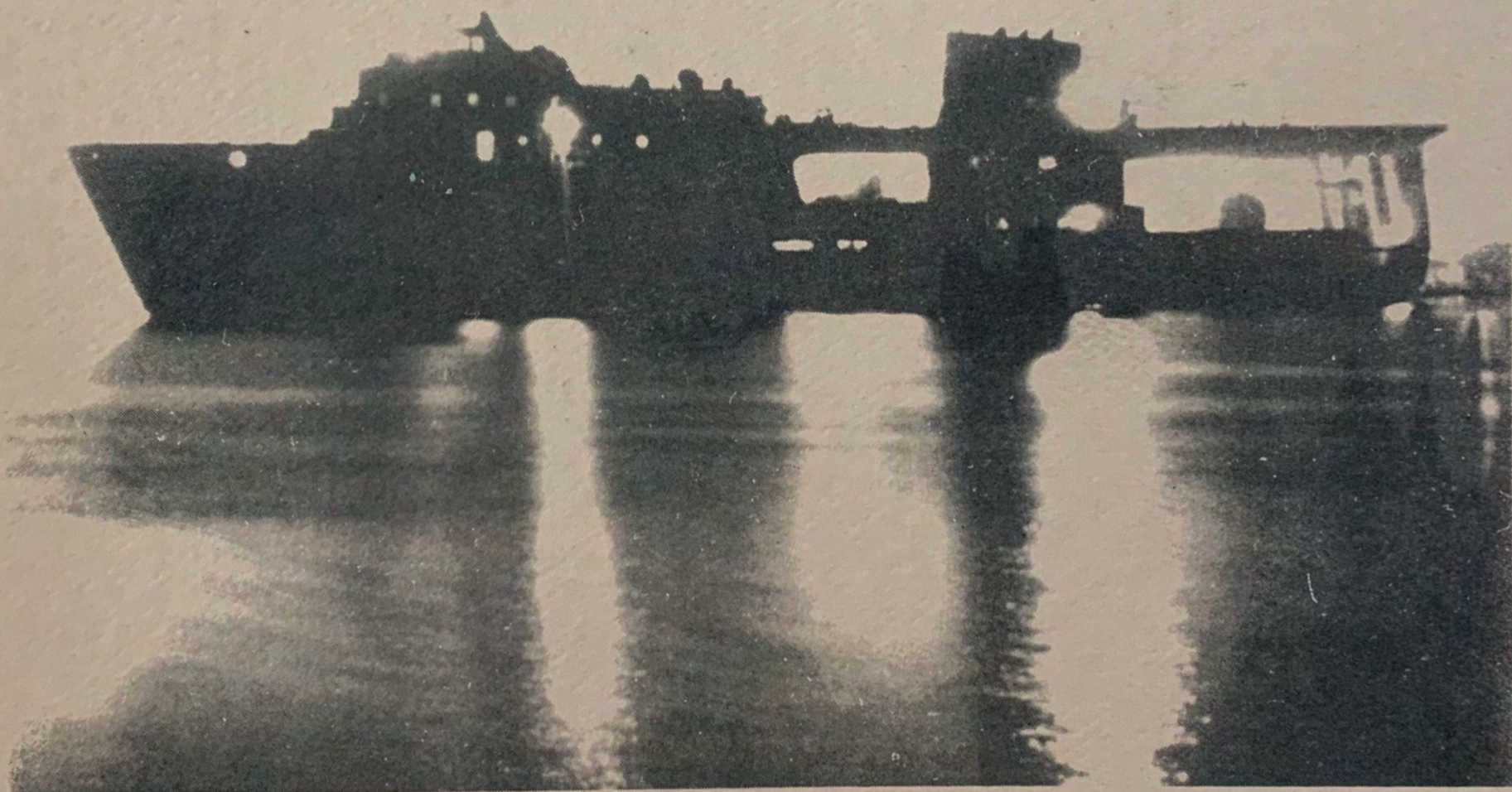


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Shell Oil Company

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Many of the people who started Shell's offshore seismic work have retired or are deceased, but a few who worked in the early days are still with Shell. Senior and younger personnel have supplied their recollections for the compiling of this history. They are acknowledged at the end of this introduction.

Table 1 lists offshore seismic party chiefs who implemented the various technological advancements of the past fifty years. This list has been compiled from the memories of a number of people and therefore, like the rest of this history, may not be totally accurate or complete. We apologize for any errors or omissions. These party chiefs, their crews, R&D personnel, Head Office Field Engineering, management, and many other categories of personnel share credit for meeting the challenges of a new field in petroleum exploration.

Meanwhile, Party 88 was experiencing difficulties with the land-based SHORAN system on Padre Island. The beach sand was very soft, and at high tide so soft as to be nearly impassable for a Dodge Power Wagon. Nevertheless, the party managed to map most of the area from the Mexican border to about 27 degrees 30 minutes latitude, in 15-90 foot depths, before discontinuing refraction work because of interpretation problems. The area had a very strong regional southeast dip and faulting which produced misleading accelerations.

As a result, in September 1949, Party 88 changed to continuous reflection profiling offshore Nueces County and worked northward. The procedure used by Party 129 was followed until the end of the year when the continuous cable was replaced by one made of 200-foot sections. The advantage was that they now needed only one complete cable with several spare sections where before they had kept two or three complete cables on hand.

Because offshore leasing was not expected in the near future and more land parties were needed, Party 129 was disbanded in March 1950 and converted to a land party (143). Party 88 continued operations, keeping both the minesweepers and the crash boat (the *Mary G*) and releasing the other two boats (the *Ruth* and the *Wilma*). Figure 24 was taken about 1950 and shows some of the people working on the *Mary G*.

In May 1950 Shell purchased a Paslay cable, which consisted of nine 300-foot sections made of vinyl. Each section was filled with a special light oil and contained 40 hydrophones, except the center section which was the shotpoint. (See Figure 25.) A 300-pound depressor kept the cable just off the bottom.

In operation, the speed of the instrument boat was kept constant, and on reaching a shotpoint the cable was reeled out slightly faster than the boat was traveling so that the cable sank to the bottom with no tension on it. The reel "yo-yo" operation reduced the wear on the clutches of the instrument boat. The greater length of the cable and this easier system doubled the coverage per month.

The Paslay cable was used off Matagorda Island to complete work not previously surveyed by Party 129. Then Party 88 used it to cover an area south of Nueces County to the Mexican border, to an area off Freeport to extend Party 129 work farther offshore, and finally to the Sabine River where the program was tied into the Louisiana program. Exploration was completed out to a 100-foot depth in 1951 aided by an increase in SHORAN range. Range was increased by taller towers, directional-antennas, and better communication among mobile and base stations.

F. H. Jackson started work under Leroy Fendleston in 1956 on the *Ruth* as gravity meter operator. He went to seismic in 1959 and was made Division Operator in 1968. He was made Operations Superintendent in 1975. A. M. (Tony) Zibilich became Division Operator in 1975.

Note: The minesweeper the *Ora Mae* had a long career. One report is that after her Shell service ended, she participated in the Bay of Pigs invasion of Cuba.



Figure 24 - 1950: Left to right, "Snowball," R. A. "Shorty" Bourge, _____ Lane, Johnny Champaign, and G. R. Methvin. On the left hang balloons used for floating charges.

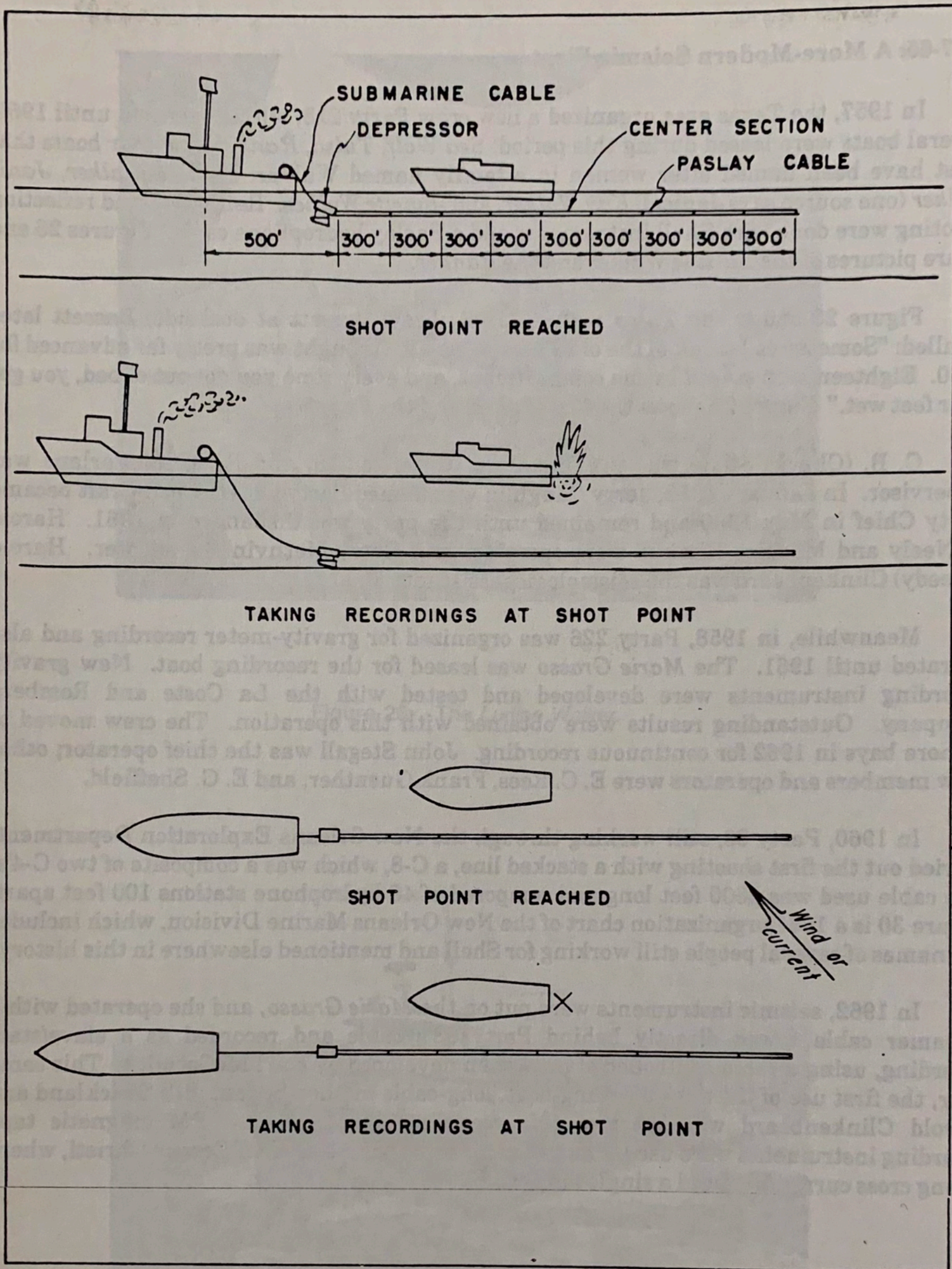


Figure 25 - 1950: Reflection shooting with new Paslay cable.

1957-65: A More-Modern Seismic Fleet

In 1957, the Texas area organized a new crew Party 218, which operated until 1961. Several boats were leased during this period: *Sea Wolf*, *Tulsa*, *Ranger*, and four boats that must have been named after women in a family named Walker: *Lurline Walker*, *Janie Walker* (one source says Janice), *Kay Walker*, and *Jonette Walker*. Refraction and reflection shooting were done with Shell instruments and a Paslay hydrophone cable. Figures 26 and 27 are pictures of the *Lurline Walker* and the *Ranger*.

Figure 28 shows the *Tulsa* with A. J. (Aubrey) Bassett at dockside. Bassett later recalled: "Sometimes I think of the old *Tulsa*, which we thought was pretty far advanced for 1960. Eighteen men stayed in one compartment, and every time you got out of bed, you got your feet wet." Figure 29 shows the *Kay Walker* and the *Ranger*.

C. B. (Chuck) Stone was the first Party Chief of 218, and R. C. McFarlane was Supervisor. In January 1959, Jerry Caughlin was named Party Chief. Cecil Craft became Party Chief in May 1960 and remained until the party was disbanded in 1961. Harold McNeely and Maurice Rimkus were operators and Gerry Methvin the shooter. Harold (Speedy) Clinkenbeard was the seismologist assistant.

Meanwhile, in 1958, Party 226 was organized for gravity-meter recording and also operated until 1961. The *Marie Grasso* was leased for the recording boat. New gravity recording instruments were developed and tested with the La Coste and Romberg Company. Outstanding results were obtained with this operation. The crew moved to inshore bays in 1962 for continuous recording. John Stegall was the chief operator; other crew members and operators were E. C. Rees, Frank Guenther, and E. G. Sheffield.

In 1960, Party 88, still working through the New Orleans Exploration Department, carried out the first shooting with a stacked line, a C-8, which was a composite of two C-4's. The cable used was 4800 feet long and composed of 48 hydrophone stations 100 feet apart. Figure 30 is a 1961 organization chart of the New Orleans Marine Division, which includes the names of several people still working for Shell and mentioned elsewhere in this history.

In 1962, seismic instruments were put on the *Marie Grasso*, and she operated with a streamer cable towed directly behind Party 88's cable and recorded as a slave/start recording, using a radio-controlled start system developed by Karl McCormick. This same year, the first use of the two-recording-boat, long-cable method began. Bill Strickland and Harold Clinkenbeard were part of this recording development. FM magnetic tape recording instruments were used. The two-cable method was used off Corpus Christi, where strong cross currents caused a single long cable to curve excessively.

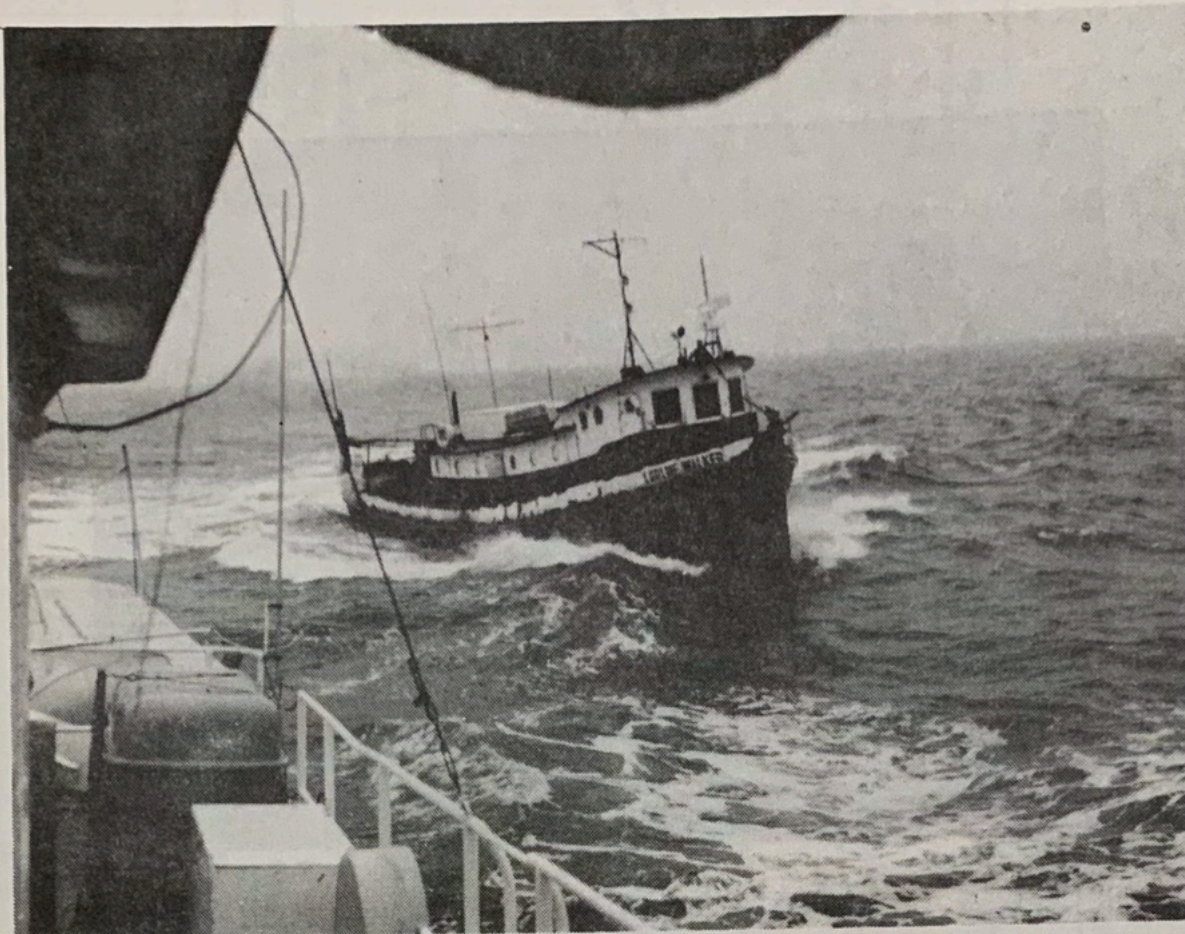


Figure 26: The *Lurline Walker*.



Figure 27: The *Ranger*.

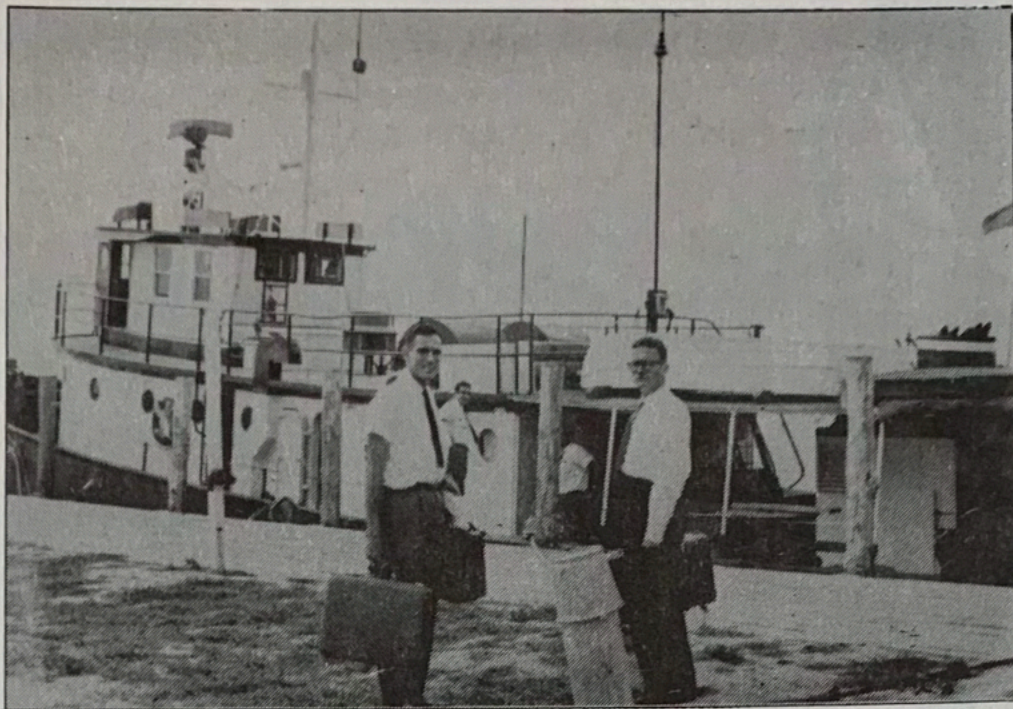


Figure 28 - 1957: Offshore Texas: The 100-foot utility boat *Tulsa*, used as an instrument boat, is shown docked. A. J. Bassett is pictured at left. The other man cannot be identified.



Figure 29 - 1957-61 era: Offshore Texas: The instrument boat *Kay Walker* is shown at left; behind is the *Ranger*, a shooting boat which worked with the *Tulsa*.

Figure 30 - Organization chart from 1961 for New Orleans Area Marine Division.

A new offshore crew was formed by transferring Party 143 from the bay to deep-water operation. Four new boats were leased and outfitted with the latest equipment: *Anna M*, *Mr. Jake*, *Captain Carl*, and *Colorado*. Later, Harold Wise and his Bellaire Research Center group used the *Mr. Jake* as a sniffer/sparker boat in the Gulf of Mexico and, until 1975, in the Atlantic Ocean from Florida to Nova Scotia (more about the sniffer operation shortly). Figure 31 is a newspaper clipping about the *Mr. Jake*, which relates some of the boat's colorful history and the end of its career as a fireboat. Figure 32 is a picture of the *Mr. Jake*.

Figure 33 is of *Anna M*, used as a shooting boat and also for sniffer operations from 1964 to 1965. Figure 34 shows the *Colorado*, an instrument boat.

Some of the new equipment included SIE GA-22B recording instruments with FM magnetic tape; Century Dry-Write oscillograph camera; notch filters to eliminate "singer" signals; slip-ring contacts on cable reel; FM and SSB radios; radar; Fathometer; conveyor belt for loading and unloading explosives; automatic steering; LORAN, RAYDIST, and DECCA survey location instruments; and SDS-92 digital recording instruments. (Earl Hicks and Andy Gump were very instrumental in getting the digital system going.)

Party 143 chiefs were Jerry Caughlin, Chuck Andrews, Arlie Leifeste, and Jules Laine (when the crew worked for New Orleans). Supervisors were Red Lowe and Ralph Knapp. Operators were Harold McNeely, Doug Pittman, Charlie Sommer, Mitch Howell, and Tony Zibilich.

The offshore exploration method known as the sniffer was developed by the BRC lab and operated by Harold Wise and his crews all over the world. Others involved were Arley Walters, Walter Babcock, Harold McNeely, and Doc Prescott.

In the sniffer operation, a long hose with a water pump attached to the lower end was towed a few feet from bottom. Water samples were pumped continuously to a sealed instrument room on the ship as it moved along in the water. The water samples were "sniffed" for hydrocarbon and gas content, and a chart was plotted for pump locations. This way, Shell was able to detect cracks and faults on the sea bottom where hydrocarbons had seeped upward from rock strata below. During sniffer operations, a seismic profile called a "sparker" was used to record shallow, under-bottom sections. In addition to its use on the *Mr. Jake* and the *Anna M* in the period being discussed here (1957-65), the sniffer was employed on the *Helen* in the Pacific from 1966 to 1968, on the *Sea Scope* in Alaska in 1973, and on the *Van Tide* in California in 1974.

In the 1960's, the history related to this chapter begins to overlap with that in Chapter 4 about Shell's new fleet of seismic vessels, the first of which, the *Phaedra*, was launched in 1965. Party 143 and the *Colorado* were involved in early work connected with the *Phaedra* until 1968 when Party 143 was transferred back to land operations in Texas.

Captain brings 30 years of seafaring to fireboat

By M. GENE MEARNS

St. Bernard/Plaquemines bureau
Capt. David L. Labruzzi of the St. Bernard-based fireboat Mr. Jake went to sea when he was a 9-year-old boy in San Diego, working on his family's fishing boats.

Of Italian-Portuguese descent, Labruzzi, 41, spent years on the water, fishing for tuna and other West Coast species, and obtaining a master's license along the way. Eventually, he owned his own commercial fishing boat.

But "there was a three-year break for Vietnam," he said. "I was a helicopter crew chief."

Then, Labruzzi sold his fishing boat. After that, he married a woman from New Orleans and the couple moved here from the West Coast.

Next came jobs with Gulf Fleet and Crewboats Inc., where he sometimes captained big boats that ranged far into the Gulf, supplying fire protection and other services to offshore oil and gas platforms.

When the St. Bernard Port, Harbor and Terminal District obtained the government-surplus Mr. Jake for \$18,000 and decided to convert it into a fireboat, Labruzzi applied for service aboard the 112-foot, steel-hulled craft.

On Dec. 1, 1983, he was hired as fireboat supervisor and took over the former seismographic vessel.

Built in 1962 as an offshore oil utility boat in Port Arthur, Texas, the Mr. Jake became well-known at Gulf ports while exploring for oil and gas.

But then Mr. Jake fell on hard times. Government agents seized the vessel during a drug-smuggling case and it was tied up at Port Aransas, Texas, to await an uncertain fate. That turned out to be service as a fireboat in St. Bernard.

When Labruzzi boarded the Mr. Jake, it was in sad shape. Vandals and others had removed equipment, there were patches of rust and it sorely needed a general overhaul.

"We had to get all pumps working, clean up the engine room, install living

quarters, remodel the interior, paint the exterior, fabricate equipment and install electronic gear," Labruzzi said. Instructors and students at Elaine B. Nunez Vocational-Technical School in Chalmette lent a hand. During refitting, the Mr. Jake became a floating classroom as experts in diesel mechanics, welding, electronics, carpentry, air conditioning and other trades helped get it in shape.

The refurbishing — plus the firefighting equipment — cost \$333,000. But on April 1, Mr. Jake was fully operational and on patrol.

The Mr. Jake is on 24-hour duty. It has two crews, working seven days on, seven days off. All crewmembers live in St. Bernard. The captains are Richard Ducros II and Mark Grusich. The engineer-firefighters are Todd Bergeron, Frank Adams and Chris Nehlig. All have formal firefighting training and will receive additional safety and lifesaving instruction, Labruzzi said.

"The Mr. Jake patrols an area from the Intracoastal Waterway lock at the

Claiborne Avenue Bridge in New Orleans all the way down the Mississippi River-Gulf Outlet to the Hopedale light," Labruzzi said. "That includes a sizable area around New Orleans such as the Industrial Canal, the France Road area and the Turning Basin."

"This is an area of extensive shipping interests with chemical plants, container wharves and other marine and port-related industries."

The Mr. Jake coordinates with the New Orleans Harbor Police, the agency that maintains the fireboats Deluge and Bourgeois patrolling the Mississippi River waterfront and anchorages.

"We can fight any ship fire," Labruzzi said. "We can put 8,000 gallons of water a minute on a fire through four monitors, or nozzles. And we have foam-injection equipment. We can fight any type of ship or land fire we can get to."

If land-based fire companies can get their hoses to the Mr. Jake, the boat

can pump water to six fire engines ashore, Labruzzi said.

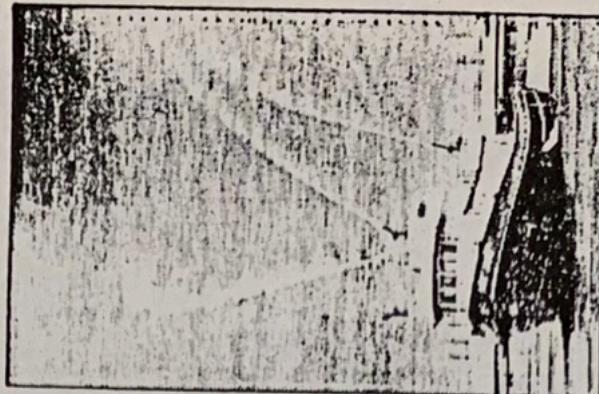
St. Bernard Port Director August A. "Duke" Robin said the Port of New Orleans collects fire protection harbor fees from vessels within its jurisdiction and divides them between the Mr. Jake, Deluge and Bourgeois.

"This started April 1 and we project that the Mr. Jake will earn \$160,000 a year," Robin said. "This will go a long way toward paying the expenses of the vessel."

Robin said the Mr. Jake will respond not only to shipping and maritime emergencies, but also to other commercial vessels and pleasure boats in distress. "We think it is an asset to all of St. Bernard," Robin said.

"If we save one human life in a fire, all the time and money we've spent on the Mr. Jake will be justified," Labruzzi said.

"We are insurance," he said. "We are on patrol just in case. I hope we never have to fire a gun — except just for show."



—Staff photo by Chuck Cook
Mr. Jake shows off in Bayou Bienvenue.

Figure 31 - This newspaper clipping (date not identified) relates some of the colorful history of Mr. Jake, which Shell used for offshore exploration. Apparently, after Shell no longer had the vessel, Mr. Jake was involved in drug smuggling and ended its career as a fireboat.

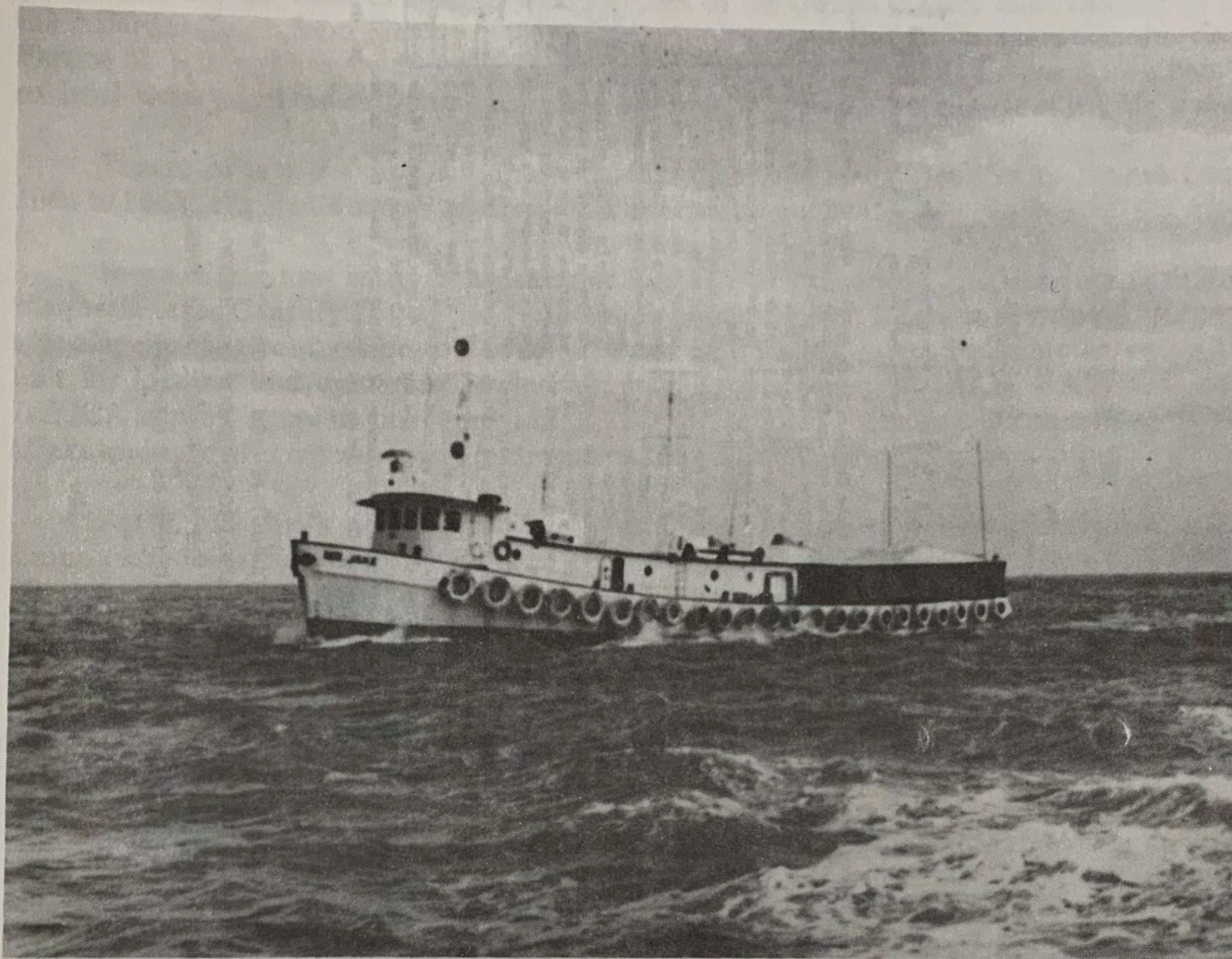


Figure 32 - 1964: Mr. Jake

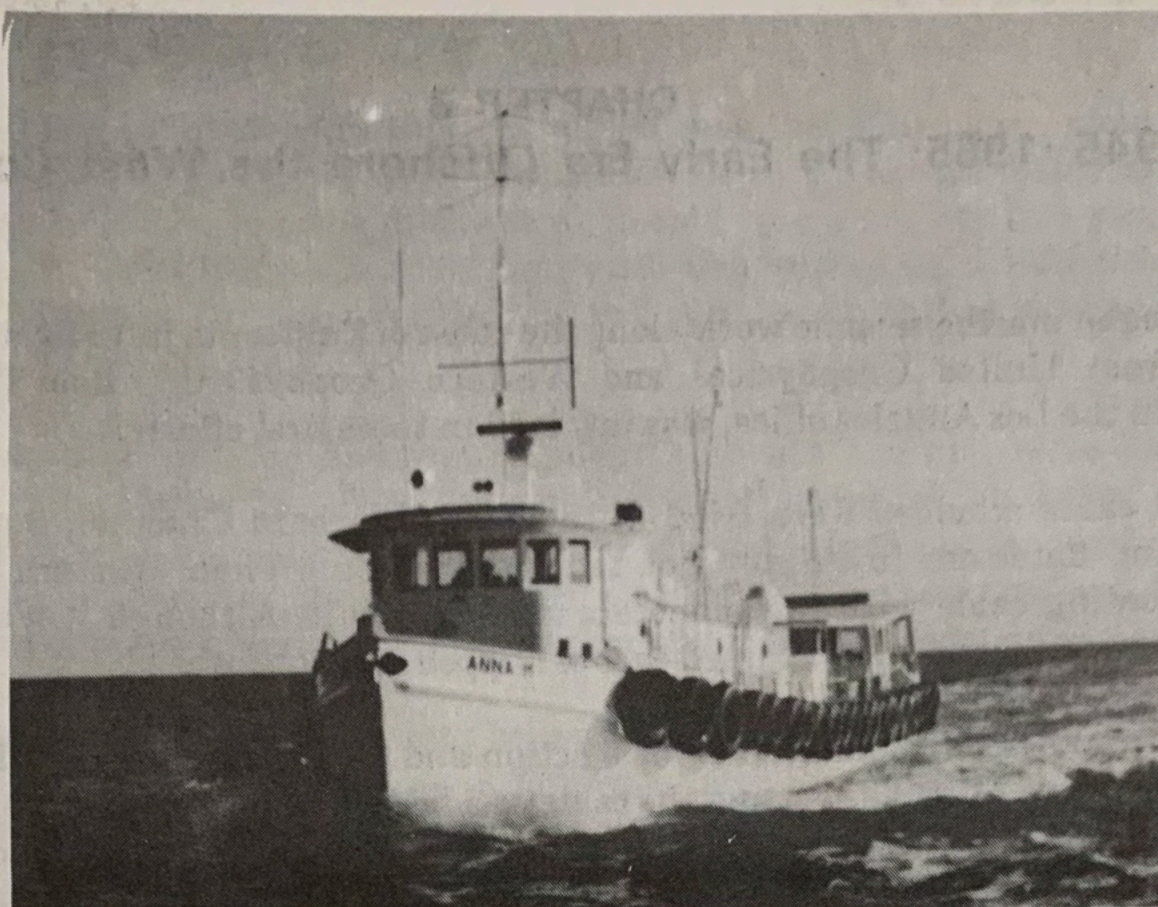


Figure 33 - 1964: Offshore Texas: *Anna M* was used as a shooting boat and for early trials of the sniffer exploration system.

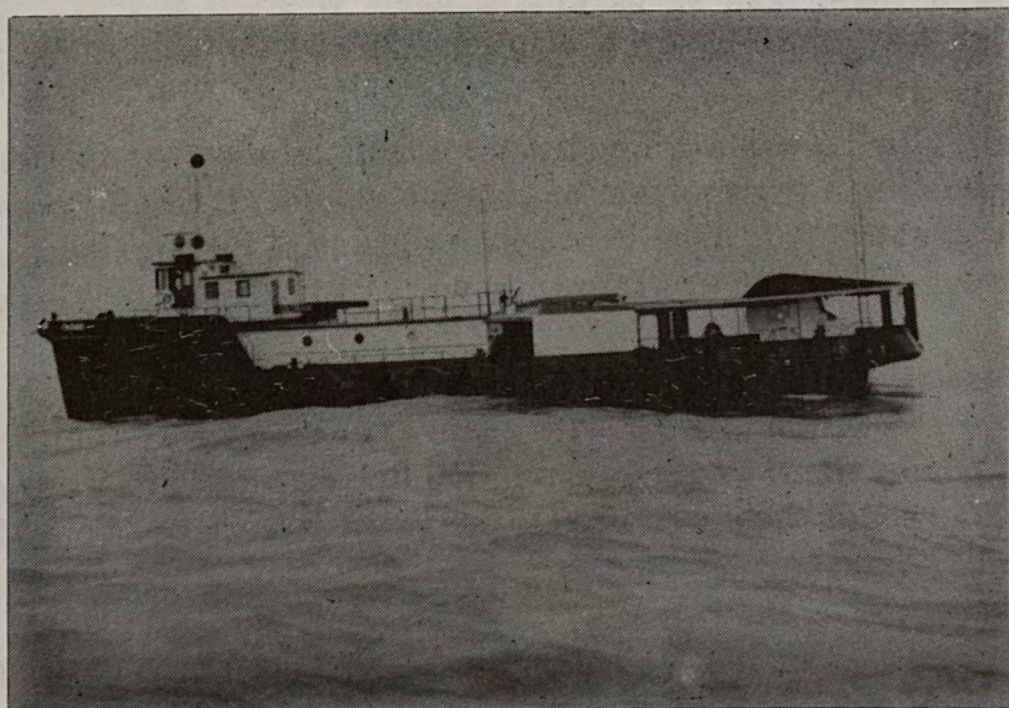


Figure 34 - 1964: Offshore Texas: The instrument boat, the *Colorado*. Later, the *Colorado* was involved in early work with Shell's first vessel specifically designed for seismic work, the *Phaedra*.