

# Glomar Explorer, Built to Raise Soviet Sub, Faces

By WALTER SULLIVAN

The Glomar Explorer, built at vast expense to raise a sunken Soviet submarine, faces a deadline to determine if she should be sold for scrap or used to perform roles in deep-sea drilling beyond the capability of any other vessel.

Proposals under consideration could mean that eventually Soviet scientists, in a multinational program now under way, will ride the ship that once tried to lift a Russian submarine from the floor of the Pacific northwest of Hawaii in 1974.

Among proposed tasks for the ship is drilling into the deep accumulations of sediment on fringes of the oceanic basins, where great oil reservoirs are suspected. Modifications that would make the ship the first capable of extracting oil at such depths are expected by Government officials to cost less than \$2 million.

The problem is the ship's operating cost, which some estimate at \$30 million a year. The vessel currently being used for the international Deep Sea Drilling Project, the Glomar Challenger, costs only about \$8 million a year to operate but cannot be used for drilling on the fringes of the ocean bases.

The prefix "Glomar" is applied to drill ships operated by Global Marine Inc. During

Project Jennifer, the secret salvage effort, the Glomar Explorer was ostensibly owned by Howard Hughes' Summa Corporation and operated by Global Marine.

Last August, when California sought to tax Summa as owners, the Justice Department affirmed the ship's Federal ownership—presumably by the Central Intelligence Agency—and a Federal judge has rejected the local tax claim. The ship, now reportedly in Long Beach, Calif., was recently transferred to the General Services Administration for disposition.

The G.S.A. has set June 30 as a deadline for a decision on whether to keep the ship or

sell her for scrap. Its original cost has unofficially been put at \$250 million.

One proposition, at least for the interim, is to offer her for lease to conduct deep-water commercial drilling. The purported mission of the vessel, during her construction in the early 1970's, was deep-sea mining on behalf of Mr. Hughes.

This proved to be camouflage for her true purpose—the salvage of a Soviet submarine that had sunk in almost 17,000 feet of water 750 miles northwest of Honolulu. It became known last year that part of the submarine had been recovered, but not the missiles and coding devices that had been hoped for.

Most, if not all, proposals under consideration involve conversion of the ship for drilling, rather than mining. Her 209-foot derrick can lift 800 tons, making her suited to drilling into deep-sea oil deposits.

## Three-Mile Pipe

Essential for this is to completely enclose the drill pipe in an outer casing, or "riser," linking the ship to the hole in the sea floor. Also required is installation of a "blow-out preventer," consisting of remotely controlled valves cemented into the well head that can be closed if high pressure oil or gas erupts up the drill hole.

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# Decision: to Be Scrapped or to Be a Deep-Sea Driller

In her efforts to raise the submarine, the Glomar Explorer used a suspended, three-mile pipe of massive dimensions—16 inches in diameter with walls five inches thick. To minimize stresses on the pipe, as the ship heaved and rolled, the pipe hung from a "heave compensator" and the drill platform was mounted on gimbals.

According to Dr. Melvin N. D. Peterson of the Scripps Institution of Oceanography in La Jolla, Calif., the ship is ideal for very deep drilling because the sections of pipe can be assembled or disassembled in a continuous, highly automated process. Dr. Peterson is man-

ager of the Deep Sea Drilling Project.

While the Glomar challenger can drill in water of great depth, her drill pipe is not enclosed. Water is driven down inside the pipe to flow back up outside it from the bottom of the hole, carrying stone chips with it. This water discharges into the sea. If an oil reservoir under pressure were tapped, the oil would escape into the sea. This has made it necessary to avoid drilling anywhere this might occur.

If the drill pipe were enclosed in a riser—the method used by oil companies—a heavy compound (called "mud") would be pumped down the

drill pipe and would return up the riser all the way to the drill ship carrying flushed out chips with it. The latter would provide samples of material from all layers drilled.

## 'A Great Resource'

Among those involved in consideration of future roles for the Glomar Explorer is Dr. Robert E. Hughes, deputy director of the National Science Foundation, who observed yesterday that the ship was "a great national resource" that should not be lost.

One problem, however, he said, is that the most obvious role for the ship—drilling into

the oceanic fringes—is not expected to become a focus of the Deep Sea Drilling Project for several years. In the meanwhile the less costly Glomar Challenger can fulfill the proposed tasks. That ship is drilling east of the Mid-Atlantic Ridge between Cuba and Africa.

Britain, France, Japan, the Soviet Union and West Germany are contributing \$1 million a year to the project, with the United States furnishing the remaining funds—about \$10 million. All have a say in the program and any early commitment to the Glomar Explorer seems unlikely.