

Sea-Mine Rivals Did Not Suspect Sub

By BAYARD WEBSTER

The Central Intelligence Agency's "cover"—a Howard Hughes deep-sea mining operation—for its mammoth effort to raise a Russian submarine from the Pacific seabed three miles below the surface was such a realistic one that even rival sea-mining companies did not seriously question the operation.

A few anomalies were noticed and some suspicions aroused but they were quickly dismissed in view of the eccentric and unpredictable nature of the way Mr. Hughes operates.

The operation appeared so bona fide to two ocean mining consultants that they prepared a computer analysis of the commercial possibilities of the Glomar Explorer project that showed it would probably be financially successful and worth any risks involved.

And, in general, the image of the project being conducted by Mr. Hughes's Summa Corporation and its 618-foot-long ship fit in with the well-publicized fact that tremendous deposits of manganese nodules containing quantities of nickel, copper and other valuable metals were lying on the floor of the Pacific Ocean, waiting for commercial exploitation.

But in some minds there were doubts, suspicions and questions.

'A Little Unusual'

"The whole thing seemed a little unusual to us," said James J. Victory, director of materials of Deepsea Ventures, Inc., a subsidiary of the Tenneco Corporation, which is spending

millions of dollars on its own deep-sea mining program.

"We didn't feel the Hughes approach was a sound one. We wouldn't have jumped in with such an immense initial expenditure without some modeling and research," he added.

Mr. Victory said that at one point the Hughes people displayed a section of the pipe they said was going to be used in the Glomar Explorer mining venture.

"We noticed how thick and heavy the pipe was—it was three inches thick," he recalled. "And we thought, he's never going to be able to such nodules up through pipe like that — it's

—it's just impractical. But now, of course, we see that to pull up a sub you'd need pipe like that." Mr. Victory said that another thing that piqued his company's curiosity was the conformation of the Glomar Explorer.

"Our ship looks like that but it doesn't have those two big towers at either end of the ship. That made us curious," he said.

Further Doubts

The Kennecott Copper Corporation's Ocean Resources Department, which is developing a large-scale program aimed at commercial mining of some 3 million tons of manganese nodules a year by 1980, also had some doubts about the Summa Corporation's mining methods.

"We didn't quite believe what they were doing, but we didn't have any evidence of what it was they were doing,"

said Steven van der Veen, assistant director of the department.

"It just seemed to us that they were taking an unusual business approach—making a big investment without much research into metallurgy or undersea nodules. This made us curious."

But two mining consultants, in a paper published last year in *Engineering and Mining Journal*, took the Glomar Explorer at her face value and made a computer model of the project.

Using such factors as "mining system efficiency," "price of copper," "mining head design capacity," "grade of nickel," "capital investment" and "fixed operation costs," the computer model predicted "acceptable risk" and a "positive cash flow over the life of the project."

Were Taken In

The authors of the model are Francois J. Lampietti and Leslie F. Marcus. Dr. Marcus told a New York Times reporter in Paris that they had been completely taken in by the C.I.A. cover story and had operated on the assumption the Glomar Explorer was what she seemed to be.

But whether the Glomar Explorer will eventually become what she seemed to be was a question that the Summa Corporation could not shed much light on yesterday.

Paul G. Reeve, general manager of the Ocean Mining Division of the Summa Corporation, said that the Hughes company had first gotten interested in ocean mining in the mid-sixties.

"We have plans for developing a prototype mining system, he said, adding that the Glomar Explorer "would be a help to us" and "would lend itself" to the mining of seabed minerals and metals.

Mr. Reeve said it would be costly to change the ship into a mining vessel but that it was impossible to estimate the cost now.