Sea mining — potential bonanza

By Mick Lowe
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In August, 1973, a strange-looking ship quietly weighed anchor in Philadelphia Harbour and began a deep-sea voyage that was to have immense consequences for the Canadian economy.

The decks of the ship were crammed from stem to stern with derricks, cranes and super-secret machinery. Built by billionaire Howard Hughes at a cost of $343 million and dubbed the Glomar Explorer, the vessel's publically-announced purpose was to recover mineral-rich nodules from the ocean's depths.

But in March, 1975, the Glomar made headlines around the world when its real purpose was revealed: to raise a sunken Soviet submarine off the floor of the Pacific for study by the CIA.

Yet, some sharp-eyed observers wondered, which cover story was covering which? For in the long run, Hughes' debut as an ocean miner could prove more strategically vital than decoding the Soviet military secrets allegedly contained in the sunken sub.

A wealth of riches will accrue to the company or the country that first perfects the technology of raising the fist-sized nodules that litter the ocean floors.

But more than that, the nodules could make the fondest dreams of the Pentagon come true: they could provide the United States military with its own guaranteed supply of strategic minerals like nickel, copper, manganese, and cobalt.

Today, the U.S. is forced to import 82 per cent of its nickel, a like amount of manganese, 77 per cent of its cobalt and 4.6 per cent of its copper. Much of these imports (with the exception of manganese come from Canada.

Our country's exports of nickel and copper were worth $1.5 billion in 1975, and they meant tens of thousands of jobs in mining, smelting and transportation.

Two of Canada's biggest employers in the metals industry — Inco Ltd. and Noranda Mines of Canada — are already in the forefront of developing the new seabed mining technology.

And judging from the money that both these shrewdly-managed multinationals are investing in their respective consortia (see sidebar), they mean business.

"Seabed mining is no fairytale," says Inco's representative to Ocean Management Inc., John Shaw, "but it's not in the bag, either, by any means. It's all very new and very risky."

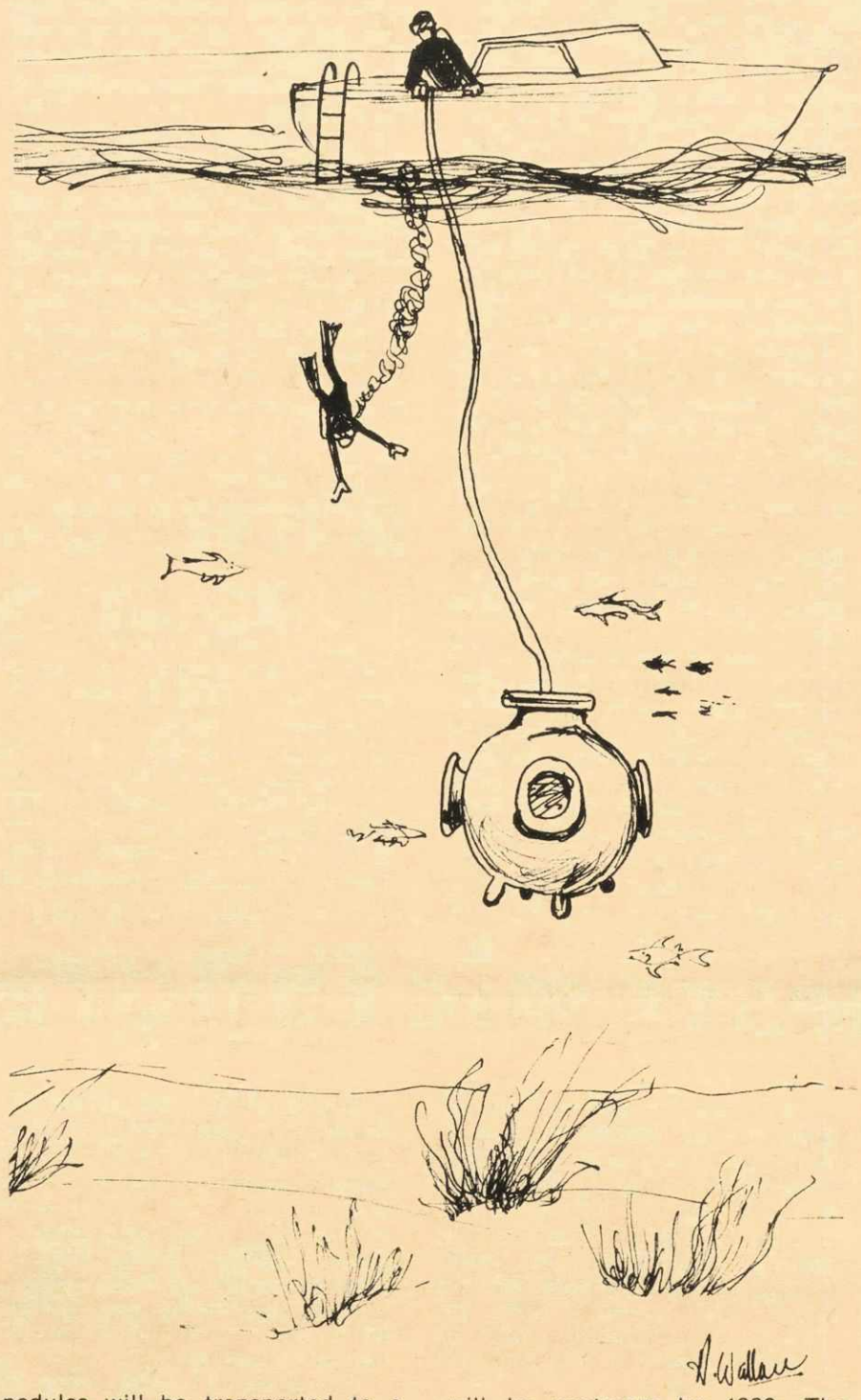
The big question mark at the moment, Shaw explains, is the technology needed to raise the potato-shaped nodules from the ocean floor at depths as great as 10,000 feet.

Shaw is understandably reluctant to divulge details of his group's mining methods, but it's clear that they involve a strictly capital-intensive operation with no mine workers as we know them today.

Basically, Ocean Management plans to dredge the nodules in a ship similar to the Glomar Explorer by using a 10-inch diameter, thick-walled steel pipe three miles in length.

The pipe will be suspended from the recovery vessel and the nodules will be sucked off the ocean floor by a collector head similar to a vacuum cleaner.

Once on the recovery ship the nodules will be transported to a freighter for transport to a land-based refinery.



Stretching even the strongest steel pipe through three miles of turbulent ocean depths may seem like science fiction, but the Ocean Management group plans to have its experimental ship operating in the Pacific by next fall.

If all goes well, according to Shaw, the first full-scale operation will be onstream by 1982. The nodules will be a bonanza for Inco et al., because their metal content is far higher than the richest grade ore to be found anywhere in the earth.

How will all this affect Canada's vital copper and nickel industry?

"I don't think it will affect it substantially for a long time to come", says Shaw. "It will mainly depend on economics — whether the new recovery method is more or less expensive than the old."

But at least one Canadian mining expert, former Ontario Mining Association president Charles Elliott, sees a cause for concern due to seabed mining.

"One reason for concern is that we don't really know how cheap seabed mining will be. But there are insiders in the industry right now who say the nodule recovery process will be cheaper than land-based mining."

The first traditional operations to be threatened will likely be the lateritic nickel deposits of Guatemala and the Dominican Republic, Elliott says.

Although the cost of mining lateritics is cheaper than recovering the sulphide (or sulphur-bearing) ores found in Canada, the laterite refining process is energy intensive.

As energy costs continue to skyrocket, Elliott predicts the laterite deposits will be rendered less and less competitive.

Four major variables will determine the future of Canada's nickel and copper industry relative to seabed mining: long-term demand, long-term supply, the costs of production of the respective methods, and international law determining jurisdiction of the richest seabed areas which lie in international waters.

The latter point is one of the major issues at the Law of the Sea Conference. U.S. mining companies are anxious to start mining the seabed, but the U.S. State Department has so far insisted that the jurisdictional hassles will be resolved first.

But once the Americans start recovering nodules in commercial quantities, Elliott fears, they may place an embargo on imports of nickel and copper, with disastrous consequences for the Canadian industry.

At least one Canadian, New Democratic MP John Rodriguez, has a plan of action that he believes the federal government should pursue before it's too late.

The representative for the Sudbury Basin's Nickel Belt riding, Rodriguez knows that his constituency has the most to lose from seabed mining.

The government, he says, should buy out Falconbridge Nickel Mines Ltd., the only major Canadian producer not already involved in a seabed consortium.

Once Falconbridge is included in the federal government's Canadian Development Corporation it should join one of the existing consortia so that Canada will be on the forefront of seabed developments.

The profits from the Falconbridge venture should then be invested in the Sudbury area to compensate for any loss the Basin might suffer as a result of seabed mining.

It's a safe bet, too, that unions representing Canadian miners and smelters in the nickel and copper industries will soon start hearing about seabed mining at the bargaining tables.

Just as the Third World lateritic deposits were used by the mining companies as a threat in order to reduce wage demands, so will the threat of seabed competition.

Any real threat from seabed production is still probably twenty years away, and if the Canadian government wakes up to the long-term problems, damage to our economy can be minimized.

But if we remain complacent for too long, the August, 1973 voyage of the Glomar Explorer may some day be recognized as the beginning of the end for Canada's billion-dollar-a-year copper and nickel industry.

The rush for the riches

The world's major mining corporations are already ganging up into hugh consortia that are scrambling to develop the new technology necessary to plunder the wealth of the ocean depths.

The major companies, their consortia, and estimated investments are:

Ocean Management Inc., which includes **Inco Ltd.**, a Japanese combine comprising **Sumimoto**, **Nippon Mining**, **Dowas Mining** and **Sedco Ltd.**, a Dallas-based exploration firm. Total investment: $35 to $40 million over three to four years.

The Kennecott consortium, owned 50 per cent by **Kennecott Copper Corp.**, along with Britain's **Rio Tinto-Zinc Corp.**, Japan's giant **Mitsibushi Corp.**, and Britain's **Consolidated Gold Fields**. Total investment: $50 million.

Deepsea Ventures involves **Tenneco Inc.** of Houston, **U.S. Steel**, Belgium's **Union Miniere**, and yet another Japanese consortium. Investment: $20 million.

Summa Corp., owned by late billionaire Howard Hughes got off to an early lead, but Hughes' death combined with the Russian sub scandal has slowed its progress.

The Soviet Union and West Germany are believed to be in the running with exploration firms of their own.