A MECHANICALLY MARVELOUS SEA SAGA:

Plumbing the Depths of Cold War Paranoia

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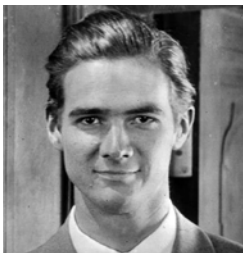
In the summer of 1974, long before Argo, there was "AZORIAN"—the code name for a CIA gambit to recover cargo entombed in a sunken Soviet submarine—the K-129—from the bottom of the Pacific Ocean. The challenge: exhume—intact—a 2,000-ton submarine and its suspicious cargo from 17,000 feet of water.



Undated photo of a young Howard Hughes—entrepreneur, inventor, movie producer—whose Jimmy Stewart-like appearance here belies the truly bizarre enigma he would later become.

The Soviet sub had met its end (no one claims to know how, and the Russians weren't talking) in 1968, all hands lost, some 1,560 nautical miles northwest of Hawaii. After a Soviet-led, unsuccessful search for the K-129, the U.S. undertook one of its own and, by the use of gathered sophisticated acoustic data, located the vessel.

What made this noteworthy was that the U-boat was armed with nuclear missiles. Nuclear arms-capable submarines posed a new threat to the U.S. and its allies in that missiles launched from a submarine cannot be detected on radar until they are already underway to their target. For the bold caper to succeed, however, a cover story, a distraction—or a McGuffin, as Hitchcock enjoyed putting it—was needed; more on that follows.

> "No one had ever tried to design an at-sea docking system for such massive bodies. To have gotten it right on the first try, without the benefit of today's CAD/CAM capabilities, is simply incredible."
>
> **David H. Sharp,** author of The CIA's Greatest Covert Operation and CIA head of systems recovery on the Hughes Glomar Explorer

The custom-designed, one-off vessel was the *Hughes Glomar Explorer.* The ship's "owner" was none other than storied aviator and inventor Howard Robard Hughes, Jr. Hughes was recruited for the "job" by the CIA, and one can only wonder at the reaction from the bizarrely private and legendary paranoid. In truth, however, Hughes had little to do with building the *Glomar Explorer;* it was only the Hughes *brand* that was needed—as a front. Project Azorian proved to be "one of the most complex, expensive, and secretive intelligence operations of the Cold War—at a cost of ($3.7 billion in 2013 dollars)," but none of it came out of Hughes' pocket.

Designated by ASME in 2006 as "a historical mechanical engineering landmark," the ship had an array of mechanical and electromechanical systems with heavy-duty applications requiring robust gear boxes; gear drives; linear motion rack-and-pinion systems; and precision teleprint (planetary, sun, open) gears.

One standout was the *Glomar's* advanced rack-and-pinion jacking system: its impressive motors and gear boxes provided the massive lifting force needed for bringing the sub to the surface. Other marvels cited by ASME: a "claw" (think old-timey arcade game) designed to grab and hold the submarine with mechanically articulated fingers that used surface-supplied sea water as a hydraulic fluid; a motion-compensated, gimbaled (bearings, bearings) work platform system for enhanced roll, pitch and heave motion control.

And that cover story that was used by the CIA to explain the presence of the U.S. ship in international waters? People paid to know these things (oceanographers) say that areas of the Pacific sea floor are paved with manganese nodules. Seizing upon this serendipitous cover afforded them, the G then approached Hughes about using a deep-ocean mining project (the nodules) of his as a front for the clandestine project. Hughes was all-in.

But now, the bad news: After a number of attempts, the ship's "custom claw" managed to sustain a firm grip on the submarine, but at about 9,000 feet roughly two-thirds of the (forward) hull broke away when a number of the claw's teeth failed. The broken hull of the submarine returned to the bottom, and with it most of the intelligence that the CIA was expecting to recover. The *Explorer* did ultimately retrieve the section of the hull—along with the bodies of six Soviet submariners.

Spook watchers have speculated over the last 30+ years as to the intelligence that Project Azorian sought so dearly—and expensively. The gambit's cost overruns have been estimated at about $500 million—*in 1974 dollars.* The CIA would not so much as reveal the mission's name until 2010.

A second mission to recover the K-129's broken hull was scheduled, but the mission was scrapped as the U.S. government was attempting at the time to improve relations with the Soviets. In 1976, Hughes died—intro irony here—on an airplane while en route to Methodist Hospital in Houston. The *Glomar Explorer* was eventually "decommissioned" and in 1997 was leased out for deep-water drilling. She was stripped of her high-tech mechanical systems, her "marvel" status along with them.

(Sources: *cia.gov; hnsa.org; navsource.org;* historylearningsite.co.uk; *gwu.edu; asme.org*)