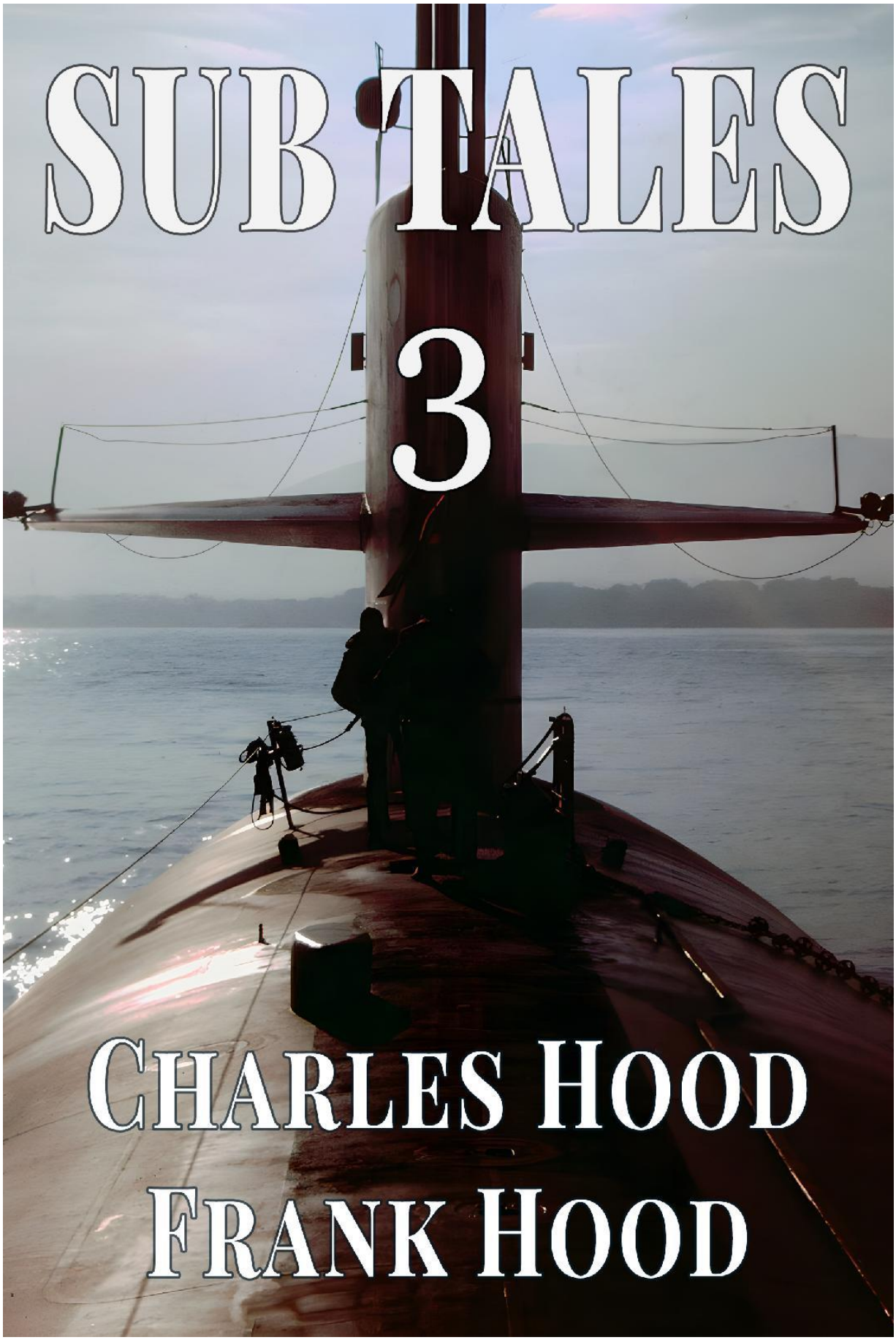
SUB TALES 3

- by Charles Hood & Frank Hood



BOOK PREVIEW

From the chapter "Playboys of the Pacific":

At the time of her assignment to New London in the spring of 1960, the US Navy announced an ambitious scientific mission for the retooled Archerfish. Dubbed "Operation Sea Scan", the project would carry the submarine, her crew, a small team of civilian scientists, and research equipment to vast unexplored stretches of the ocean around the globe. The stated goals of Sea Scan were a bit fuzzy, but they included the study of water composition and temperature, measurement of ocean depth. and analysis of maritime weather conditions.

The Navy emphasized the noncombative nature of the project by pointing out that the Archerfish would not be carrying any weapons. With her guns and torpedoes removed, the submarine became essentially "demilitarized." The research work, explained under the pretext of advancing knowledge in the discipline of oceanography, would be conducted under the auspices of the Naval Hydrographic Office. This bureau, established in 1866, was charged with the preparation and publication of official US Navy sea maps and charts.

The generic descriptions provided for the mission objectives of Operation Sea Scan were convincing enough, apparently. Contemporary newspaper and magazines picked up on the themes and published articles (often written tongue-in-cheek) to reinforce the public impression of the expedition as an entirely scientific inquiry.

The initial coverage of Sea Scan dutifully checked off these boxes, but the aspect of the enterprise that drew the most interest (by far) was the chosen makeup of the Archerfish crew: All of her sailors would have to be single. (Although there were rare exceptions, the occasional married crew member would be explained away breezily: "He loves the Navy!" or "His wife will be busy anyway pursuing her degree.") The very idea of a "bachelor brigade" at sea caused a brief press sensation that prompted the question: "Why was it necessary to choose the crew based on marital status?"

The Navy had a pat answer prepared. The hydrographic missions conducted by the Archerfish would be very lengthy, officials promised, and the work would demand the sailors' full attention for months on end. In determining the crew mix for such a demanding itinerary, the Navy had concluded that unmarried men would face fewer distractions and complaints than those who had already tied the knot. A single man with no domestic obligations would not have to worry as much about the effects of his prolonged absences upon his family back home. The explanation made intuitive sense. The genius of the all-bachelor crew concept was in its success in further drawing attention away from the true purpose of Operation Sea Scan.

Accordingly, a call went out to Navy personnel in early 1960 requesting volunteers for a "two-year special mission" aboard the Archerfish; only single men who had earned their dolphins ("Qualified in Submarines") would be considered. The response was overwhelming, and over the lifetime of Operation Sea Scan, the waiting list for open slots on the Archerfish swelled to as many as 700 applicants.

The first skipper of the Archerfish ("A-fish") for the new operation was Lieutenant Commander (LCDR) Kenneth ("Ken" or "Kenny") Woods, who held command from March 1960 to September 1962. Woods, 35, was a native of Philadelphia, PA, and a 1947 graduate of the US Naval Academy. He served on four submarines before taking the conn of the Archerfish: USS Tilefish (SS-307), USS Stickleback (SS-415), USS Sea Cat (SS-399), and USS Sea Lion (APSS-315). Woods was the executive officer (XO) on the Sea Cat and commanding officer (CO) on the Sea Lion.

Woods justified the unusual selection process for the crew on the A-fish in a 1961 interview by noting, “It will be practically impossible to let a man go home in the event of some family emergency. So, we prefer unmarried men.” The tradeoff for so much time spent away from the home port (initially New London, then Pearl Harbor), he explained, was the opportunity to travel the world and visit countless ports, both traditional and exotic. To another reporter inquiring about the constituency of the crew in March 1961, Woods dryly noted, “We’re gone for long periods…the Navy doesn’t want any men aboard who will be worried about wives and children—and storks.”

Behind the scenes, it was Woods who had spearheaded the idea and then overseen the implementation of the all-bachelor crew. Given his experience on several boats up to that time, Woods sagely surmised that few marriages could survive such lengthy periods away from home. His influence on the makeup of the crew is one of the little-known details of Operation Sea Scan.

The Real Reason

Operation Sea Scan began at the dawn of a decade of unprecedented growth in the US Navy Submarine Force. Shipyards were building both fast-attack and fleet ballistic missile submarines at a rapid clip. A discerning student of history might have reasonably posed the question, “During a time that saw the addition of dozens of new submarines to the fleet, why would such an important scientific mission be relegated to an old diesel-electric boat that had clearly seen better days?” The answer to the question is an interesting one that gets to the heart of the true purpose of Operation Sea Scan.

The following information, no longer classified, sheds light upon why a World War II-era submarine found new life during the period of brinksmanship that defined the Cold War. Many of the details presented here are borrowed from a fabulous book about the Archerfish called Gallant Lady: A Biography of the USS Archerfish, written by Don Keith and Ken Henry. Like several other submarine books written or co-written by Keith, it’s an entertaining and enlightening read.

Beneath the veneer of a straightforward oceanographic survey was an important covert mission objective for the US Air Force. While the buildup of nuclear weapons by the world’s two superpowers was well underway by the late 1950s, a vexing problem in missile targeting had been identified by the US. Observers noted that test-fired ballistic missiles often missed their targets—sometimes by a little, sometimes by a lot. Concerns mounted that should the Soviets become aware of this flaw in American delivery systems, it could shift the balance of power unfavorably.

Researchers examining the problem made an important discovery: the trajectory of test-fired ballistic missiles routinely deviated slightly from expected course on the basis of small perturbations in the strength of the Earth’s gravitational force. Gravity was not uniform around the globe, and launch calculations that failed to take local variances into effect resulted in errant targeting. A detailed mapping of the gravitational field strength around the globe was needed, but the database was woefully incomplete.

Why isn’t the strength of gravity the same everywhere on Earth? Several factors come into play. First, the Earth is not a perfect sphere; because of rotation around a north-south axis, it bulges slightly at the equator. Simultaneously, the North and South Poles are flattened by the same centrifugal force, making the planet an “oblate spheroid”. Second, because gravitational force between two objects (say, a missile and the Earth) is directly proportional to the masses of the objects, any variations in Earth’s density would affect the value at a given point. For example, the Earth’s crust—composed of relatively light continental rock and somewhat heavier oceanic rock—varies considerably in thickness as it overrides

the denser rock of the mantle. Such variations in mass influence the local gravitational force and thus infinitesimally alter the flight path of a missile traveling overhead.

The Air Force needed a comprehensive global map of gravitational field strength to program the correct flight paths. Since the majority of the Earth (71%) is covered by oceans, and because intercontinental missiles must fly over such seas, the task of mapping would require a reliable ocean-going vessel to complete. Therefore, the Navy was brought in to acquire the necessary data for the Air Force.

High-level discussions at the Pentagon laid out the prerequisites for such a maritime expedition. The information would need to be gathered discreetly in a manner that would not arouse suspicion by an adversary of the ship's true intentions. Furthermore, the instrumentation required to calculate the subtle fluctuations in gravity would require a steady platform; where ocean conditions were calm, surface transit was preferable, but where the sea state deteriorated by storms or high winds, the capacity to submerge to more placid depths to continue the uninterrupted collection of readings was considered essential.

Enter the Archerfish. As a fleet submarine, she was first a steady performer on the surface. Yes, she could submerge for limited periods, but like other submarines of her era, her hydrodynamics (V-shaped hull, small superstructure) were optimized for surface transit. She also featured a spacious afterdeck ("cigarette deck") between the conning tower and stern that would allow crew members to escape the confines of the sub interior for fresh air and sunshine—a key psychological asset during any prolonged mission.

At 18 years of age, the Archerfish was too old to be seriously considered for modernization, but that very liability could provide ample cover for the cutting-edge scientific work that she would be asked to perform. At a time when most of her sister boats were being permanently inactivated (or sold to other countries' navies), the meanderings of the Archerfish around the globe in the stated pursuit of purely oceanographic advances would attract little international scrutiny.

Although it certainly didn't convey the primary intent of Sea Scan, the cover story was not entirely a fabrication. For example, the Archerfish did collect ample data on ocean depth that helped to redraw maps of the seabed. At any one time, usually two or three civilian scientists accompanied the crew, and their work encompassed the covert measurement of gravitational force as well as the publicly acknowledged objectives.

From the chapter "Larger than Life" in Sub Tales 3:

In late 1968, the Lapon returned to Newport News for her Post Shakedown Availability (PSA)—a routine shipyard checkup for new ships. During the PSA, Mack took advantage of the down time to resupply; he was obsessed with carrying enough spare parts. Past experience had taught him the importance of having the right parts available at crucial moments during an extended mission to avoid an unfortunate scrub. Despite his run-in with Rickover during their first encounter the previous decade, the two men had grown close, and Mack would often contact Rickover to nudge the bureaucratic morass when he needed something done in a hurry or outside usual channels.

In the instance of the 1968 PSA, Mack took added advantage of the fact that the prior 10-week mission had seen unusually high ozone levels within the Lapon; the electric precipitators meant to control the atmosphere within the boat were temperamental, such that the resulting high ozone levels caused the premature deterioration of materials made of rubber or soft synthetics—including all mattresses, which had to be discarded. The refurbishment required at Newport News was just the excuse Mack needed to garner even more spare equipment; these supplies were unloaded to a warehouse, and those crew

members not involved in upkeep and yard worklists spent their days reviewing and examining the inventory of all items on the list.

With his boat in tip-top shape with a well-seasoned and familiar crew, Whitey Mack and the other men of the Lapon prepared to sail into submarine history.

Trailing the Yankee

In September 1969, the Lapon left Norfolk to begin a "Northern Run"—the term coined for a fast-attack reconnoiter in icy waters also patrolled by the Soviet Navy. Details of such missions largely remain undisclosed, but thanks to Commander Mack's prominent appearance in the best-seller Blind Man's Bluff (and countless subsequent newspaper, magazine, and TV inquiries), one of the most celebrated Cold War missions of all time is now firmly ensconced in the public record. We discuss it here for its daring, bravery, and tenacity—the personification of every man aboard the Lapon and the embodiment of her captain's best qualities.

The Soviet Union had introduced a fearsome class of boomers—the so-called "Yankee" class, nicknamed because of their close resemblance to American FBM submarines. These ships carried potent thermonuclear weapons (24) akin to the weaponry on our boomers. The first Yankee was commissioned in 1967, but by late 1969 the US had gathered precious little intelligence about the new submarines. Both photographic and acoustic (sonar) data were sorely lacking because no American boat had been close enough, for long enough, to get a good "look".

An example of the very limited success thus far was provided by the Lapon in the Barents Sea earlier in March 1969. During that mission, the Lapon had approached within 300 yards of a Yankee and snapped some periscope photos. The Soviet boat picked up on their unwanted company, forcing the American fast-attack to quickly depart. No other boat had come that close since. What was needed was complete photographic documentation and acoustic "fingerprinting" of the 400-foot-plus Yankee from all angles. Mack hoped to accomplish that mission and much more; he had an even loftier goal in mind.

The September 1969 mission was intended to take the Lapon again far north to the seas outside Murmansk, the home of the Soviet Northern Fleet. However, on 16 September 1969, after just a week underway in the North Atlantic, command informed the Lapon that a Yankee had been detected north of Scandinavia in the Barents Sea, heading south toward the Greenland Strait (the body of water between Greenland and Iceland). The Greenland Strait was a narrow part of the so-called GIUK gap—the naval chokepoint between the landmasses of Greenland, Iceland, and the United Kingdom. It offered an ideal location to intercept the Yankee.

Mack ordered his boat into the Greenland Strait to await the Yankee's arrival. The next day, sonar picked up the faint acoustic fingerprint of the Yankee, but it was too far away and the trail was soon lost. During this initial attempt to make undetected contact with the Yankee, the Lapon inadvertently snagged a fishing net. The timing could not have been worse; the net ripped off a few external protuberances and loosened a hull anode ("sacrificial" anode) designed to control galvanic corrosion. The boat had to surface while divers cleared the net. Once underway again, a loud banging noise was heard emanating from the loose anode. Back to the surface went the Lapon while divers were again deployed to cut off the anode. By then, the trail had gone cold.

Commander Mack was not deterred by the setback. He figured that his boat was faster than the Yankee; the question was, where was the Soviet boat heading next? Mack gathered with several others in the wardroom to anticipate the Soviet captain's next move. After poring over maps and charts for more

than two hours, a consensus emerged: the Azores, the chain of Portuguese islands in the North Atlantic Ocean about 1,000 miles due west of the Iberian Peninsula.

The hunch proved correct. The Lapon transited to the Azores at flank speed and beat her prey to the area by a day. There, she made silent contact with the Yankee, which began to trace a huge circular path in the Atlantic as it settled into its patrol at a prescribed depth, its ballistic missiles at the ready. Of course, dozens of other boomers representing both the US and USSR were making near-identical slow laps elsewhere throughout the global oceans, ensuring that one another's major cities were always within range of the lethal submarine-launched ballistic missiles. But this was the only Soviet boomer with an uninvited guest.

For the next 47 days, the Lapon trailed the Soviet Yankee without being detected. The fast-attack found the Yankee's blind spot—known in the business as "the baffles"—a relatively short distance behind its stern. Submarines of that era had bow-mounted sonar systems to "see" where they were going; this arrangement created an imaginary cone of silence or undetectability immediately behind the spinning screw at the stern. Enemy subs could exploit this vulnerability but only at great peril, since the proximity between the leading and trailing boats was so close that both the risk of collision or provoking a torpedo strike if detected was considerable.

The Lapon settled into its role as "tailgater" as the days passed, consistently staying within 3,000 yards of the Yankee—and sometimes a lot closer. At times, the separation was so narrow that crew members of the Lapon could hear flushed heads and dropped tools on the other boat. One crew member recalled, "You could hear them so close it sounded like the screw was going right through our hull." For the majority of time while in pursuit, however, the Lapon stayed back at a comfortable distance of more than 2,000 yards (greater than a mile); this sizeable gap between the two ships was made possible in large part by the very noisy Yankee.

During the entire endeavor, the crew remained on heightened alert. Those who were there likened it to being on battle stations for weeks on end, without a single break. Chuck Petterson recalls, "It was a very stressful time…like one big blur."

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