Of Driftnets and Buoy Tenders

USCG'S Urgent Need for Deepwater Replacements

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On 26 June 1997 a Canadian Forces CP-140 surveillance aircraft sighted a Chinese fishing vessel, the *Cao Yu 6025,* approximately 1,200 miles northwest of Midway Island. An alert Canadian fisheries officer recognized the fishing gear aboard as large-scale driftnets. The vessel did not return the CP-140's radio calls. Because the *Cao Yu 6025* was within the U.S. area of jurisdiction, the U.S. Coast Guard launched one of its own aircraft, an HC-130H Hercules search aircraft, from Barbers Point, Hawaii, to monitor the vessel's movements.

Because no high-endurance cutter was available, the Guam-based USCGC *Basswood,* a Coast Guard buoy tender more than 40 years old, also was ordered to get underway, from Japan, to relieve the HC-130H. Upon arrival the *Basswood* contacted the *Cao Yu 6025,* which claimed Peoples Republic of China (PRC) registry. The claim was not confirmed by the Chinese government. The vessel therefore was classified as stateless.

The ship's master refused to grant boarding permission, so the *Basswood,* with a maximum speed of only 12 knots, could only keep the subject vessel under surveillance until the USCGC *Chase,* a 378-foot high-endurance cutter, arrived on the scene. On 10 July, the *Chase* and *Basswood* joined forces to board and seize the *Cao Yu 6025,* arrest the crew, and eventually tow the fishing vessel to Guam.

In court, the master admitted to the charges of illegal fishing with driftnets and was convicted. The ship's catch, over 120 tons of tuna, was sold for $65,000, and the *Cao Yu 6025* itself was publicly auctioned.

That one detection, search, and seizure effort covered over 1,700 nautical miles in all, and occupied aircraft and vessels from two countries for over 20 days.

Obsolete Ships, An Ancient Attitude

Why did the U. S. Coast Guard respond to this case? Here, a little history may help. On 20 December 1991, the United Nations enacted Resolution 46/215, entitled "Large-Scale Pelagic Driftnet Fishing and its Impact on the Living Marine Resources of the World's Oceans and Seas." The U.N. resolution established a worldwide moratorium on large-scale driftnet fishing on the high seas. The U.S. Congress quickly passed, and the president signed into law, implementing legislation—the High Seas Driftnet Fisheries Enforcement Act—that prohibits the use of driftnets on the high seas. The U.S. Coast Guard was tasked with enforcing this much-needed legislation, and now averages over 100 days at sea, and over 300 flight hours each year, to enforce the driftnet prohibition.

One might ask why an ancient buoy tender, which could barely keep up with the illegal fishing vessel, was used at all. The short answer is that there was no other U.S. Coast Guard vessel available. The United Nations did what was needed in enacting the worldwide ban. The U.S. Congress also did the right thing by passing appropriate implementing legislation. The task was assigned to the correct agency, the U.S. Coast Guard. But no additional funding was authorized to make it possible for the Coast Guard to carry out yet another new mission. The Coast Guard simply was expected—as always, it seems—to use its existing cutters, aircraft, people, and funds. And, of course, the Coast Guard was expected to comply with its traditional *Semper Paratus* (Always Ready) attitude.

The Coast Guard was ready, of course, and did use its existing resources—the same resources it has used, and overused, since the early 1960s (or, in the case of *Basswood,* a vessel designed and built in the 1940s).

The *Cao Yu 6025* incident clearly illustrates what senior Coast Guard and Department of Transportation (DOT) officials have long known: The Coast Guard's major cutters are old and in need of replacement. The average age of the USCG's major cutters is 25 years, which makes them older than 36 of the world's 41 naval fleets. In short, the *Chase* and her sister ships are operationally challenged, economically obsolete, and logistically almost insupportable.

More Than 50 Miles From Shore

An analysis of Coast Guard budgets in recent years reveals that the service's AC&I (acquisition, construction, and improvements) allocations have averaged slightly below $400 million annually for the past 10 years. The Coast Guard operates a capital plant with a conservatively estimated replacement value of $19 billion, which makes the reinvestment rate approximately 2.1 percent. That level of funding means that the Coast Guard will, on average, be able to replace its equipment only when that equipment is 47.5 years old.

Traditional industry standards require a reinvestment rate of at least 5 percent; if that standard were adopted for the Coast Guard the service would need a minimum of $950 million each year in AC&I funding. It is not difficult to see why, using those simple calculations as a basis, the Coast Guard needs to more than double its recent AC&I budget authority if it is to upgrade or replace its aging infrastructure on a timely basis.

There is another factor to consider: The very name "Coast Guard" implies that almost all of the Coast Guard's operations are carried out within 50 miles of the U.S. coasts. The truth is, though, that the Coast Guard spends 56 percent of its available cutter funding—which translates into 11 percent of the USCG's entire operating budget every year—on operations more than 50 miles from shore.

To ensure orderly replacement of its Deepwater assets in time to meet the challenges of the 21st century, the Coast Guard has initiated a long-term procurement program that is expected to lead to a contract award in 2001, at "Key Decision Point 2" (KDP2) in the program, for system development. The Coast Guard circulated a draft RFP (request for proposals) to industry in mid-1997, and later refined its plans, after evaluating the considerable input received from industry. In accordance with the revised REP, distributed to industry in February 1998, three teams will be selected for Phase I by June 1998. During Phase I each team will develop its concept of how best to meet the Coast Guard's future mission requirements, develop performance specifications for and evaluate the life-cycle cost of that concept, define the mission effectiveness in as much detail as possible, and develop an implementation and support plan for the concept. The Coast Guard will reimburse each Phase I team for part of its expenses.

Phase II RFP in 2000

After the Phase I proposals have been submitted (no later than December 1999), the Coast Guard will evaluate the concepts proposed and, if it finds all of them acceptable, will issue an REP for Phase II—probably in the April 2000 time frame. The Phase II RFP will require detailed proposals, including probable costs, for building the proposed system. The Coast Guard expects to make the final system development award sometime in mid-2001.

The Coast Guard itself defines the so-called Integrated Deepwater System, known simply as Deepwater, as all Coast Guard missions that occur in "waters beyond 50 miles offshore including, but not limited by, the 200-mile Exclusive Economic Zone." The Deepwater missions are further described as those "requiring sustained on-scene presence, long transit times, or forward deployment to perform the mission."

The USCG's current Deepwater resources include virtually all of the Coast Guard's major ships and aircraft, as well as all the communications, sensors, and other equipment associated with those systems. In the Coast Guard's Deepwater ship inventory are: 12 Hamilton-class 378-foot high-endurance cutters, built between 1965 and 1972; 16 Reliance-class medium-endurance cutters, built between 1964 and 1969; and 13 somewhat more modern Famous-class medium-endurance cutters, built between 1979 and .1991.

The Coast Guard's 49 Island-class 110-foot patrol boats, built between 1986 and 1992, also have been pressed into Deepwater service at times despite the fact that they were designed primarily for coastal drug interdiction. The Coast Guard's two oldest cutters, *Storis* and *Acushnet,* were commissioned in 1942 and 1944 respectively.

The Coast Guard aerial fleet is only slightly better off. Included in the USCG aircraft inventory are: 30 HC-130H Hercules long-range fixed-wing surveillance aircraft, the oldest of which is over 26 years old; 23 HU-25 Falcon medium-range surveillance aircraft, built between 1982 and 1984; and the Coast Guard's youngest helicopters, 42 HH-60J Jayhawk medium-range recovery helicopters, delivered between 1991 and 1996. When they are deployed aboard Coast Guard cutters, the USCG's 95 HH-65A Dolphin short-range recovery helicopters, the first of which was bought in 1984, also are counted in the Deepwater inventory.

"At the Lowest Possible Cost"

A recent Coast Guard briefing to the Navy League of the United States, at the League's 1997 Winter Meeting in Arlington, Va., ended with the statement that "Deepwater will provide a fully integrated system of cutters, aircraft, and sensors that maximizes operational effectiveness and provides the American taxpayer with the highest level of response at the lowest possible cost."

Coast Guard Commandant Adm. Robert E. Kramek said, "I believe the Integrated Deepwater System would pay for itself within 25 years, based on the outyear operational cost reductions achievable with the new system."

The Coast Guard has adopted a unique approach in formulating its Deepwater procurement plans. Instead of defining what systems should be replaced and which should be upgraded, then defining in minute detail exactly what characteristics each platform or system must have, the Coast Guard has instead defined the *missions* that must be carried out at sea, and has asked U.S. industry to help define the best ways to meet the requirements postulated. Coast Guard officials say they are seeking an "integrated" response—i.e., one that considers the capabilities and limitations of all of the service's Deepwater assets, that will enable those assets to work most effectively as an integrated team, and that synergistically achieves the effectiveness required at the lowest total life-cycle cost to the American taxpayer.

The Coast Guard also has encouraged industry teams—which are made up of ship and aircraft builders, sensor and data-management specialists, integration houses, analysts, logistics experts, and representatives of many other disciplines—to work together to define how best to meet the Coast Guard's stated needs. The Coast Guard Deepwater team has postulated its program guidelines as follows:

1. A one-for-one replacement of current assets is neither mandatory nor desirable;
2. Whatever systems are selected must provide Coast Guard operators the capabilities needed to achieve the various missions assigned;
3. All system components must complement one another;
4. Operational effectiveness must be optimized; and
5. Overall life-cycle costs must be kept to the minimum.

The emphasis on total life-cycle cost, rather than simply lowest initial cost (for procurement), recognizes the fact that the lifetime operating and support costs of the Deepwater system will undoubtedly exceed procurement costs by a wide margin, and that, to ensure the lowest total cost to the American taxpayer, any new start must factor total outyear costs into the budget equation.

High Price Tag for Lip Service

This nontraditional approach puts less emphasis on the initial procurement cost and allows industry to design for lowest total cost, rather than for lowest unit-procurement cost. As an article ("Grappling with Spares") by Bill Gregory in the October 1997 issue of *Armed Forces Journal International* notes, the significance of life-cycle costs "has won lip service for years, but the reality is that acquisition costs have been traded off against ownership costs. That is, relatively small savings in acquisition costs have been gained at the expense of higher ownership costs." The Coast Guard view is that making total life-cycle cost the critical determinant is a major step in the direction of more efficient government.

Even the *Chase,* one of the Coast Guard's largest and fastest cutters, is ancient by the standards of modern navies. She is powered by diesels for cruise, and by gas turbine engines for high-speed operations up to her maximum 29 knots. The turbines are converted Pratt & Whitney FT4A-6 gas turbine engines originally used in the venerable Boeing 707 airliner. Those engines have been out of production for more than 20 years, though, and new spares are no longer available. The Coast Guard therefore has to turn to the used-aircraft market if it needs spares for Chase-class cutters—which were designed in the 1960s when crew size was less of a cost factor. Today, almost 70 percent of the life-cycle cost of a ship is attributable to personnel. The *Chase's* complement is 19 officers and 148 enlisted personnel, or about twice as large a crew as that required to man a much more modern, and considerably more capable, 400-foot cutter.

Currently, the Coast Guard's most critical lack of capability may well be in the important area of C4ISR (command, control, communications, computers, intelligence, surveillance, and reconnaissance) systems. As Lt. Cdr. Carl Frank said in a recent article in the Naval Institute *Proceedings*, "The Coast Guard's current assets suffer from a chronic and degenerative case of sensory deprivation."

Others have described the current deficiencies as "Hear no Evil, See no Evil, Speak no Evil." In other words, the USCG's ships and aircraft often can neither hear nor see the ships, boats, and aircraft they are looking for—and even when they do succeed in establishing initial contact they have trouble communicating this important information to those who have a need to know. The cutters now in the Coast Guard inventory have no air-search radars, no modern synthetic-aperture radars, no sonar systems, no infrared sensors, and no night-vision equipment. They also lack the equipment needed to allow the analysis and sharing of tactical information between Coast Guard units. With the best equipment the Coast Guard now has a cutter may be able to identify a 60-foot vessel at 2,000 yards—but that means that the 25-foot "cigarette boats" favored by drug runners have little to fear.

A Major Economic Boost For U.S. Defense Industries

If all current Coast Guard Deepwater assets are either replaced or significantly upgraded during the projected 20-year span of the project, the impact on U.S. industry would be profound. The potential ship-replacement market alone includes 43 major cutters and possibly 49 offshore patrol boats. A level of effort such as that anticipated would provide a critical economic boost for U.S. shipyards, which have recently been in steep decline. Unlike most ships built for the U.S. Navy, moreover—which, primarily for security reasons, tend to have limited overseas markets—a Coast Guard high-endurance cutter in the 400-foot class could generate significant overseas sales. It would be in the size, weight, and price class of the ships currently being sought by many U.S. allies, and would benefit from the quality and service guarantees that accompany the "made in America" label. Additionally, a smaller ship, if it were part of a winning bid, would be a serious competitor for the stated offshore patrol vessel requirements of many developing countries.

The potential aircraft replacement/upgrade market is almost as significant: 53 fixed-wing aircraft with medium-and long-range capabilities, along with 137 helicopters, a collective market potential that no U.S. builder can ignore. Although it is doubtful that all of the Coast Guard's existing systems will require replacement, most can be expected to need significant modification, at the minimum.

The U.S. Navy also stands to benefit, with the new Coast Guard vessels and aircraft providing major low-end capabilities designed specifically to complement the Navy's own high-end combat ships and aircraft. Although 40 vessels might not be a major force in a 600-ship Navy, those same vessels would be a most helpful addition to the probably much smaller U.S. Navy fleet of the future. Moreover, the Navy itself is restricted, by the Posse Comitatus Act (18 U.S.C. 1385), from any and all police activity, whereas the Coast Guard has federal police authority that authorizes it to act in numerous legal situations in which the Navy would have no legal jurisdiction.

In the end, the American public will be the big winner, with a more capable and more responsive Coast Guard, paid for at the most reasonable cost. The need for Deepwater is clear. The program the Coast Guard has defined seems to be logical, executable, and sensitive to the American public's desire for cost-effective government.

The one question remaining, therefore, is, will the administration and the Congress provide the funding necessary to carry out the plan?