

# Committee on Resources

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## Witness Testimony

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Testimony of

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Before the Subcommittee on Fisheries

Wildlife, and Oceans

27 March 1996

Thank you for your invitation to submit testimony before the Subcommittee on Fisheries, Wildlife, and Oceans of the Committee on Resources. I am Charles Bookman, Director of the Marine Board, of the National Research Council. The National Research Council (NRC) is the operating arm of the National Academy of Sciences, National Academy of Engineering, and the Institute of Medicine, chartered by the Congress in 1863 to advise the government on matters of science and technology.

The Marine Board has undertaken independent and objective studies of NOAA's sea-going missions and capabilities. Based on the published NRC reports, this statement conveys observations on the present status of NOAA's sea-going activities and comments on initiatives to strengthen NOAA's sea-going operational capability.

### NRC Study on NOAA's Fleet Replacement and Modernization Plan

For nearly a decade, the National Oceanic and Atmospheric Administration (NOAA) has searched for ways to modernize its fleet of research and survey vessels. In 1993, NOAA asked the Marine Board of the NRC to assess their fleet replacement and modernization plan. The 1994 study of the status of NOAA's Fleet Replacement and Modernization (FRAM) Program concluded that NOAA requires access to modern assets for oceanographic research and monitoring, assessment and management of living marine resources, and charting and surveying. Moreover, the study recognized that owning and operating vessels would continue to be an essential element of NOAA's operating capability. However, the study recommended that NOAA "follow a multisource approach that combines charters, leases, [vessel modernization], possible cooperative partnerships, [and] data acquisition service contracts," in addition to acquiring new ships. The message of the 1994 NRC FRAM study was that NOAA should acquire data and conduct research in the most cost-effective manner possible. To accomplish this, program managers need to be empowered to make decisions about how to conduct seagoing operations on the merits of cost-effectiveness and efficiency, rather than basing such decisions on the need to fully utilize a fleet of government owned and operated vessels.

### National Oceanographic Fleet Assets

The United States has four different oceanographic fleets:

1. The largest, by far, is the 27-ship academic research fleet funded largely by the National Science Foundation and, to a lesser extent, the U.S. Navy and operated by academic institutions under a coordinating entity, the University National Oceanographic Laboratory System (UNOLS).
2. While not specifically designated as research vessels, the U.S. Navy operates less than ten multi-mission oceanographic survey ships under the Military Sealift Command.
3. NOAA's fleet is comprised of vessels working in three different categories: oceanographic research and monitoring, assessment and management of living marine resources, and nautical charting and hydrographic surveying.
4. Other federal agencies (the Environmental Protection Agency, the Department of Energy, and the U.S. Geological Survey), some states, and a few commercial enterprises also operate vessels capable of conducting oceanographic

research.

## Oceanographic Research and Monitoring

No other nation has invested as much as the United States in international ocean research programs and activities. The importance of this work has grown with the recognition of the fundamental role of the oceans in climate change and the habitability of the planet. Most of the oceanographic research programs that NOAA scientists participate in are multiple-agency efforts that involve participants from the academic community. In many cases, NOAA makes a significant contribution, albeit as one participant in large, well-coordinated multi-organization programs.

The UNOLS fleet provides a major source of ships for oceanographic research. However, UNOLS is experiencing a growing gap between operating costs for their fleet and expected revenues; the gap will grow to \$18 million within five years. Compounding the problem is a new group of large (275-foot) oceanographic research vessels that have been (or are about to be) completed. Three of the ships were constructed with Navy funding and have been placed with academic institutions for operation under UNOLS. The new vessels exacerbate the overcapacity and budgetary dilemmas, even if they replace older vessels. The fourth ship (Researcher) was funded by the Department of Commerce to support NOAA's oceanographic programs.

The 1994 NRC report on NOAA's fleet recommended that NOAA undertake a more extensive partnership with UNOLS in the conduct of oceanographic research:

NOAA should enter into discussion with other federal research fleet operators, UNOLS, and appropriate commercial enterprises to enhance coordination of ship use and remove artificial barriers to expanded cross-use of these assets . . . (NRC, 1994a).

Given the interdisciplinary and inter-institutional nature of oceanographic research programs and the overcapacity and budget problems encountered by all federally funded oceanographic assets, the logic of this recommendation is even more compelling in 1996 than it was in 1994. Proposals are afloat to consolidate the management of all federally funded oceanographic ships, including exploration of new cooperative arrangements for NOAA and UNOLS. This would enable sharing of capabilities, streamlining of scheduling, and a unified approach to adopting the most efficient and cost-effective ship management and operating strategies.

## Assessment and Management of Living Marine Resources

Understanding the condition of living marine resources (and, in particular, fisheries) is a necessary element of management. More days at sea are required for this purpose than for any other NOAA seagoing activity. Of the three types of vessels operated by NOAA, ships that gather data on fisheries appear to be in greatest need of modernization or replacement (as a class). With the exception of the modernization of the Delaware II and minor repairs to other fisheries vessels, required investments have not been forthcoming. Without necessary investment or without embracing a different data acquisition strategy, NOAA's capability to acquire vitally needed fisheries data will be compromised in the future.

Some regions of the National Marine Fisheries Service (NMFS) make extensive use of contracted vessels for data acquisition. Other NMFS regions avoid contracted surveys in the belief that data gathered by the same vessel and crew, with the same equipment, are likely to produce higher quality and, therefore, more useful time-series data sets. NMFS's experience with contracted surveys in at least one region demonstrates that there is capacity in the private sector to undertake fisheries surveys under contract. Moreover, many states and academic institutions own and operate fisheries research vessels, which could possibly be made available to NOAA through partnerships or under contract. These options could be explored in other regions. Just as NOAA has undertaken pilot projects to conduct hydrographic surveys under contract in order to gain experience (see following discussion), NOAA should also consider undertaking pilot projects with the private sector and with other institutions for the conduct of living marine resources surveys. This strategy was recommended as an issue for further inquiry in the 1994 FRAM report as a means of obtaining information to conduct a trade-off analysis of alternatives to acquiring ships.

## Charting and Surveying

NOAA's National Ocean Survey gathers data and produces navigation charts for all U.S. waters and the Great Lakes. Three ships currently are operated for charting and surveying. The NRC has recommended that NOAA focus on building and maintaining a nautical information database and on ensuring quality control and quality assurance of hydrographic data (NRC, 1994b). The 1994 report on nautical charting concluded that NOAA could accommodate much of its surveying mission through contracting arrangements with the private sector and partnerships with other agencies. NOAA has followed this advice and has embarked on a course of expanded contracting of hydrographic surveying with the private sector in order to gain experience with technical management and quality assurance under this alternative data acquisition strategy.

While the 1994 report recommends transferring the majority of surveying to private contracts, it also recommended strongly that NOAA maintain an in-house, state-of-the-art capability for hydrographic data collection within NOAA to enable the agency to set standards, train personnel, develop and test advanced technology, and maintain U.S. credibility and representation internationally in hydrography. This core competence could be maintained by operating as few as two hydrographic vessels, one on each coast.

The private sector asserts that it has the capacity to meet NOAA's requirements nationally (including Alaska), but this remains to be demonstrated. Moreover, NOAA has yet completely to reposition its technical management of hydrographic data acquisition. Contracted efforts are still pilot projects, and potentially troublesome issues concerning liability and quality control remain to be fully addressed and resolved.

The U.S. Army Corps of Engineers (USACE) conducts extensive hydrography, most of it contracted directly to the private sector. The USACE employs Brooks Act contracting procedures (P.L. 92-582), which enables services to be procured on the basis of professional qualifications. As NOAA moves more heavily into contracting for hydrographic and other ship services, it also may need to use Brooks Act contracting procedures (NRC, 1994b).

If contracted efforts are to be expanded, then NOAA will need answers to the following questions:

What is the need now and in the future for conducting hydrographic surveys of U.S. waters?

Can new technology accelerate the pace of hydrographic surveys, reduce cost, or improve accuracy?

What is the capacity of the private sector to respond to NOAA's requirements for hydrographic surveys?

What technical specifications for quality control and quality assurance will be necessary to ensure that data from non-NOAA sources is acceptable?

What management and other skills are needed at NOAA to implement expanded contracting activity?

What are the appropriate contractual mechanisms, basis for selection of contractors, and levels of compensation?

How can liability concerns be addressed if data is acquired through contractors?

#### Comments on the FY 1997 Budget Request and Next Steps to Be Taken

The message in the NRC's 1994 FRAM report that NOAA empower its program managers to acquire data in ways that are determined to be most cost-effective for specific programs and that NOAA maintain and renew a basic seagoing capability in oceanography, fisheries, and hydrography remains relevant and valid.

According to NOAA, the FY 1996 FRAM budget (\$8 million) and FY 1997 FRAM budget request (\$12 million), combined with the Marine Services request for FY 1997 (\$56 million) are adequate to maintain and renew essential national capability in all areas except fisheries research. In my view, Congress would do well to augment these budget requests in appropriate ways and the nation would benefit in the long term. At the same time, NOAA needs to continue and accelerate its efforts to substitute comprehensive programs of chartering and partnering appropriate to each mission area for NOAA-owned and -operated seagoing assets that are unlikely to be replaced. Congress has the

opportunity to encourage and accelerate these efforts. NOAA has correctly adopted a "walk before you run" strategy in contracting out ship services and some at-sea activities. Congress should encourage them to walk a little faster in this direction at this time.

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