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## Artificial Reefs

### A Disposal Option for Navy and MARAD Ships

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## SUMMARY

By 2005, the U.S. Navy and the Maritime Administration (MARAD) will have accumulated some 360 retired ships in need of disposal. These ships include military ships of various types, plus commercial ships in the Ready Reserve administered by MARAD. In previous decades, these ships would have been recycled, or “scrapped,” by recycling yards in either the United States or overseas, and the federal government would have realized some monetary gain. U.S. shipyards can no longer economically recycle ships, and concerns about environmental and safety conditions in foreign recycling yards have led to suspension of that disposal option.

In a previous study (Hess et al., 2001), we assessed the recycling options, along with two other ship-disposal options – keeping ships in storage indefinitely and donating them for use as artificial reefs. We concluded that reefing was the least-expensive feasible option. In fact, economic activity associated with reefs could generate taxes at various levels of government that together would be sufficient to offset federal costs. Overseas recycling was also judged to be inexpensive, possibly even a no-cost option, but U.S. Environmental Protection Agency (EPA) regulations prohibit the export of items contaminated with polychlorinated biphenyls (PCBs), a category into which military ships fit. Domestic recycling would now have to be funded by the U.S. government, and long-term storage would require regular protective measures and occasional dry-docking to counteract the corrosive effects of salt water. Either approach would be more expensive than reefing.

Having demonstrated the potential attractiveness of reefing as a disposal option, we turned in the current study to an examination of economic, legal, environmental, and programmatic issues that might bear on a decision on whether and how to pursue the reefing option more seriously. Our conclusions are as follows:

- There is plenty of demand for ships for reefing, particularly along the mid- and southern-Atlantic and Gulf coasts. There are at least 400 sites ready to accept ships. The federal government may thus have the luxury of choosing among applicants according to criteria such as a match of funds at some level.

- Many elements of the institutional apparatus required to implement a reefing program are in place. Most coastal states have artificial-reef programs, and regional fishery commissions coordinate state interests. MARAD has donated ships for reefing projects, some after transfer of title from the Navy. Precedents may also be found in the National Fisheries Enhancement Act of 1984, which permitted the conversion of exhausted oil rigs to reefs, and in the Coast Guard's routine practice of retiring its ships for reef use. The Army Corps of Engineers has a permitting process in place that ensures artificial reefs do not obstruct navigation. The Federal Aid in Sport Fish Restoration Act of 1950 provides a potential source of funding for state or local reef-building entities, which operate on very limited resources.
- Environmental concerns have been raised, chiefly with respect to the release of PCBs from sunken ships into the littoral environment. A Navy testing program is allaying some of these fears, and a new EPA process for approving unusual disposals is in place. There is, thus, a basis for an EPA permitting process for reefing, and a further basis can be found in standards established by Canada for that purpose. Other environmental issues appear not to be as serious as the PCB issue.
- Two further problems need to be addressed before a reefing program can be pursued:
  - The programs will need a business model. Will the Navy or MARAD run the reefing program itself? Or will a separate agency or federal corporation be established? Or will the Navy or MARAD retain ownership while a contractor operates the program? Or could both ownership and reefing be put out for bid? These alternatives entail differing mixes of costs and risks for the Navy, the resolution of which is beyond the scope of this study. Whichever model is chosen, however, it would be most attractive to reef-building entities if there were a single point of contact within or under contract to the federal government. Likewise, it would be most efficient for the contact if it had to deal with only the states – that is, if each state decided which proposals were most meritorious and put those forward under its name.
  - Certain laws would have to be amended. A provision against spending federal money on reefing would probably have to be repealed. Unless title of all ships to be reefed is to be transferred

to MARAD, the Navy will need clearer authority to donate ships for reefing. It may also need broader authority to transfer ships for reefing to another agency. Finally, of course, authorization and appropriations acts will have to provide funding, otherwise the program will go nowhere.