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*Office of Inspector General*

***Audit Report***

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**REPORT ON THE PROGRAM  
FOR SCRAPPING OBSOLETE  
VESSELS**

*Maritime Administration*

*Report No. MA-2000-067  
Date Issued: March 10, 2000*





# Memorandum

**U.S. Department of  
Transportation**

Office of the Secretary  
of Transportation  
Office of Inspector General

Subject: INFORMATION: Report on the Program for  
Scrapping Obsolete Vessels  
Maritime Administration  
MA-2000-067

Date: March 10, 2000

From: Alexis M. Stefani  
Assistant Inspector General for Auditing

Reply To JA-40  
Attn of:

To: Maritime Administrator

This report presents the results of our audit of the program for scrapping obsolete vessels controlled by the Maritime Administration (MARAD). The objectives of this review were to evaluate MARAD's progress in meeting its legislative mandate to dispose of obsolete vessels in the National Defense Reserve Fleet by September 30, 2001; identify what action MARAD has taken toward meeting the mandate; and identify potential alternatives to assist MARAD in achieving its goals.

Our draft report was provided to MARAD on February 8, 2000. MARAD concurred with our findings and recommendations. We consider them resolved. The progress made by MARAD in implementing the actions agreed to or planned is subject to the audit follow-up provisions of DOT Order 8000.1C.

We appreciate the courtesies and cooperation of MARAD representatives during this audit. If you have any questions concerning this report, please call me at (202) 366-1992 or Tom Howard, Deputy Assistant Inspector General for Maritime and Departmental Programs, at (202) 366-5630.

Attachment

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**REPORT ON THE PROGRAM  
FOR SCRAPPING OBSOLETE  
VESSELS**

*Maritime Administration*

*Report Number: MA-2000-067*

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# Executive Summary

## *Program for Scrapping Obsolete Vessels Maritime Administration*

MA-2000-067

March 10, 2000

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### OBJECTIVES

The objectives of this audit were to (1) evaluate the Maritime Administration's (MARAD) progress in meeting the legislative mandate to dispose of obsolete vessels in the National Defense Reserve Fleet (NDRF or Fleet); (2) identify what action MARAD has taken toward meeting this mandate; and (3) identify potential alternatives to assist MARAD in achieving its goals.

### BACKGROUND

The Merchant Ship Sales Act of 1946 created the NDRF, a Government-owned and administered Fleet of inactive, but potentially useful, merchant and non-military vessels to meet shipping requirements during National emergencies. MARAD administers the Fleet, and the Department of Defense (DoD) provides the funding to maintain the Fleet. The Federal Property and Administrative Services Act gave MARAD the responsibility of disposing of all Federal government merchant-type vessels of 1,500 gross tons or more. The National Maritime Heritage Act of 1994 requires MARAD to dispose of obsolete vessels in the Fleet by September 30, 2001, in a manner that *maximizes financial return to the United States*.

As of February 29, 2000, 110 vessels were designated for disposal because the majority of them are no longer operational. Eighty-eight of the 110 vessels are slated for scrapping. The remaining 22 vessels will be disposed of through the fish reef program, used by a state or Federal agency, or held for useful parts and equipment.

MARAD maintains the 110 inactive vessels, with the exception of two vessels, slated for disposal in the water at the following locations:

- (1) James River Reserve Fleet (JRRF), Ft. Eustis, Virginia (58 vessels);
- (2) Beaumont Reserve Fleet (BRF), Beaumont, Texas (9 vessels); and
- (3) Suisun Bay Reserve Fleet (SBRF), Benecia, California (41 vessels).

Two vessels are held by the Coast Guard in Mobile, Alabama. The average age of the 110 vessels targeted for scrapping is 46 years. These vessels have been in the Fleet for an average of 13 years. Figures 1, 2, and 3 show examples of vessels awaiting disposal.



**Figure 1. James River Reserve Fleet**



**Figure 2. Beaumont Reserve Fleet**



**Figure 3. Suisun Bay Reserve Fleet**

Environmental dangers associated with MARAD's old, deteriorating ships are increasing daily. These vessels are literally rotting and disintegrating as they await disposal. Some vessels have deteriorated to a point where a hammer can penetrate their hulls. They contain hazardous substances such as asbestos and solid and liquid polychlorinated biphenyls (PCBs).

If the oil from these vessels were to enter the water, immediate Federal and state action would be required. For example, one vessel in the James River Reserve Fleet is over 30 years old, contains hazardous substances including asbestos, and has leaked oil into the James River. MARAD has applied over 20 patches to leaks, removed hazardous materials, deployed containment booms, and pumped

oil out of the vessel. The vessel is disintegrating to a point where it will not be seaworthy much longer.

## **RESULTS IN BRIEF**

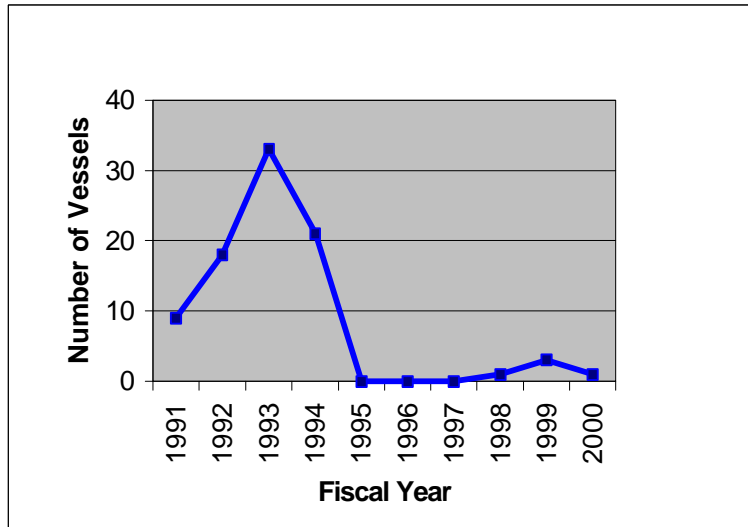
The Department, the Administration, and the Congress face a challenge in determining how to dispose of MARAD's Fleet of environmentally dangerous vessels in a timely manner. MARAD will not achieve the legislative mandate to dispose of its obsolete vessels by 2001 nor will the disposals yield financial benefits to the United States. MARAD will need relief from these requirements. The current approach of selling obsolete vessels for domestic scrapping is not likely to work in today's marketplace. There is limited domestic scrapping capacity, and by law, MARAD is prohibited from paying for scrapping services. It cannot, therefore, compete with a Navy pilot project, which pays contractors for scrapping obsolete vessels. Further, MARAD is constrained from selling vessels overseas for scrapping, although this had been a key market in the past. The longer the vessels are in MARAD's Fleet awaiting disposal, the more the environmental risks increase. MARAD will need authorization and funding for a program to pay for the disposal of vessels if it is to have the potential to significantly reduce the number of obsolete vessels in the Fleet.

### **Progress in Scrapping Vessels Has Been Limited**

Since 1995, MARAD has scrapped only five vessels. Although MARAD sold 17 vessels to contractors in 1999, only 1 of these has been scrapped. Another of the 17 vessels was moved from the Fleet to a contractor's site in November 1999. The remaining 15 vessels sold are still moored in MARAD's Fleet, requiring continued maintenance at U.S. Government expense. Moreover, based on recent contractor performance, it is not likely the contractors will take possession of the remaining vessels in the near future, if at all.

### **Loss of Overseas Market and Limited Domestic Capacity Reduced Progress**

As shown in Figure 4, MARAD's lack of progress in scrapping vessels represents a significant change from the early 1990s, when vessels were sold overseas.



**Figure 4. MARAD Vessels Scrapped**

Between 1991 and 1994, MARAD sold 80 vessels overseas for scrapping at an average price of \$433,000 per vessel. Recent vessel sales yielded between \$10 and \$105 per vessel. MARAD suspended the sale of vessels overseas for scrapping in 1994 because the Environmental Protection Agency prohibited the export of Government-owned ships containing PCBs. In September 1998, an Administration moratorium halted all sales of Government-owned vessels for scrapping overseas. Although the overseas market still exists, U.S. policies prevent the sale of vessels overseas for scrapping.

As a result, MARAD has been relying on the domestic market, but capacity in the domestic market is limited. In the 1970s, there were 30 U.S. contractors in the ship scrapping industry. As of December 1999, only four companies had bid on MARAD’s scrapping contracts and passed MARAD’s technical compliance review to scrap vessels. Additional companies are not attracted to this industry because of the low profits currently available. Scrap steel prices in the United States are low, and contractors must comply with environmental regulations.

### **The Number of Vessels Awaiting Disposal is Increasing**

The number of obsolete vessels has almost doubled over the last 2 years. MARAD expects its inventory of obsolete vessels awaiting priority disposal will increase to 152 by the end of fiscal year (FY) 2001 because of additional vessel transfers from the Navy, downgrades of other NDRF vessels to obsolete status, and the inability to sell ships for scrap. Of the 152 vessels, 130 will be targeted for scrapping. The majority of the remaining 22 vessels are slated for other forms of disposal. Some of these, however, may be transferred into the scrapping category in future years if they are still awaiting disposal.

## **Obsolete Vessels Pose Environmental Risks**

The 110 vessels currently awaiting disposal pose environmental risks because they are deteriorating, contain hazardous materials, and contain oil that could leak into the water. Although MARAD considers the disposal of all 110 vessels to be a priority, it has designated 40 as “worst condition” vessels. These 40 vessels have been in MARAD’s Fleet for an average of 20 years, are in particularly bad condition, and may require additional or special maintenance. A routine inspection of 11 of the 40 “worst condition” vessels revealed corrosion, thinning, and rusting of the hull; asbestos hanging from pipes below deck; lead-based paint easily peeled from the ship; solid PCBs (in cabling); and in some instances remnants of liquid PCBs in electrical equipment.

Costs to maintain these vessels will likely increase due to their deteriorating condition, leaks, and the need for additional time-sensitive maintenance. For example, MARAD spent \$1.3 million to maintain 1 of the 40 “worst condition” vessels over the past 2 years because it deteriorated to the point where oil leaked into the water requiring costly environmental clean-up. Monitoring efforts for this vessel are ongoing.

## **The Navy’s Pilot Project May Be a Model for MARAD**

The Department of the Navy experienced a similar inability to sell its combatant vessels for domestic scrapping. In 1998, Congress authorized and appropriated funding for a Navy pilot project for the disposal of obsolete vessels. Under the pilot project, the Navy is not subject to a legal requirement to maximize financial returns on its obsolete vessels. On September 29, 1999, the Navy awarded four contracts amounting to \$13.3 million for the scrapping of four vessels.

The purpose of the Navy project is to quantify the costs associated with ship scrapping, and it could lead to the disposal of 66 warships. If MARAD was authorized to implement such a project, it could cost as much as \$505 million for the disposal of the obsolete vessels that it expects to have by the end of FY 2001.<sup>1</sup>

## **Alternatives Offer Potential but Will Not Solve the Problem**

While MARAD has been pursuing ways to improve scrapping sales, its ability to explore creative solutions for disposing of vessels is constrained by the requirement to maximize financial returns. Also, the programs and alternatives MARAD is pursuing may contribute to the goal, but they do not have the potential

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<sup>1</sup>This estimate is based on an average of the \$3.325 million the Navy has awarded to 4 contractors, multiplied by the 152 obsolete vessels MARAD expects to have in its Fleet by the end of FY 2001.



to significantly reduce the backlog of vessels awaiting disposal in a timely manner. We have identified some additional alternatives that MARAD has not explored that may have the potential to contribute to the goal of disposing of obsolete vessels.

Programs to improve scrapping sales and alternatives MARAD is exploring include:

- coordination with the Navy and a West Coast Company on a proposal for a potential scrapping site;
- participation in interagency work groups to look for innovative ways to improve the ship scrapping process and establish consistent procedures;
- donation of vessels designated for disposal for uses such as museums and the fish reef program, given legislative or executive approval; and
- coordination with the Navy on its program to sink vessels in deep water, after hazardous materials are removed.

MARAD may be able to explore alternatives that have the potential to assist in disposing of some of its vessels, such as:

- selling vessels to other countries for non-military uses, given legislative approval; and
- requesting approval from the EPA to sell vessels to overseas markets that are capable of scrapping them in an environmentally compliant manner.

## **RECOMMENDATIONS**

We recommend that the Maritime Administrator:

1. Seek legislative approval to extend the 2001 mandate to dispose of obsolete vessels and to eliminate the requirement that MARAD maximize financial returns on the sale of its obsolete vessels.
2. Continue to pursue programs to improve scrapping sales and identify alternative disposal methods that can contribute to the goal of reducing the number of obsolete vessels awaiting disposal, to include working with the Navy on the results of its studies on the environmental impact of sunken vessels.
3. Develop a proposal for submission to Congress seeking approval and funding for a project to pay contractors for vessel scrapping. The proposal should include a plan to target the 40 “worst condition” vessels first, and identify

funding and staffing requirements, and provide milestone dates to dispose of all obsolete vessels.

## **MANAGEMENT RESPONSE**

A draft of this report was provided to the Maritime Administrator on February 8, 2000. MARAD concurred with our recommendations and indicated actions planned or underway to implement them. MARAD has requested an extension to the legal mandate to dispose of its obsolete vessels. MARAD will also seek legislative approval to eliminate the requirement to maximize financial returns on the sale of its obsolete vessels and plans to develop a proposal to seek approval and funding for a project to pay contractors for vessel disposal. MARAD will continue to pursue programs to improve ship scrapping sales and identify alternative disposal methods. MARAD asked that we emphasize the need to continue coordination with the Navy on its vessel disposal programs and studies.

## **OFFICE OF INSPECTOR GENERAL COMMENTS**

We revised our second recommendation to emphasize the need to continue coordination with the Navy. The actions planned and underway by MARAD are responsive to our recommendations.

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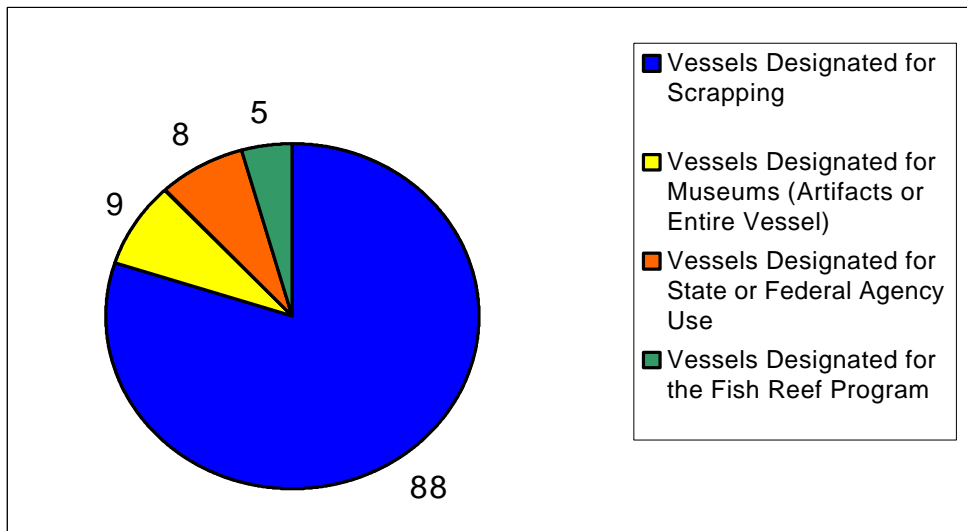
# INTRODUCTION

## *Background*

**The National Defense Reserve Fleet.** The National Defense Reserve Fleet (NDRF or Fleet) is comprised of Government-owned and administered inactive merchant and non-military vessels set aside to meet shipping requirements during National emergencies. The Maritime Administration (MARAD) maintains the Fleet and ensures that vessels are available to meet Department of Defense (DoD) needs.

The two components of this Fleet are maintained by MARAD. The first component consists of vessels that can be quickly activated, within 4 to 30 days, and is called the Ready Reserve Force (RRF). The second component consists of vessels that are inactive, the majority of which are obsolete. As of February 29, 2000, 110 of the inactive vessels were designated for priority disposal because their condition had deteriorated to a point where the majority of them are no longer operational.

Eighty-eight of the 110 priority disposal vessels are slated for scrapping. The remaining 22 vessels have been set aside for other purposes, such as the fish reef program, use by a Federal or state agency, or donation as museums or other uses. Figure 1 shows the number of vessels targeted in each category.



**Figure 1. NDRF Priority Disposal Vessels**

For FY 1999, MARAD's cost to manage the NDRF was approximately \$17.1 million. Of that amount, \$3 million was spent for improvements and emergencies. The cost to maintain the vessels in the Fleet during FY 1999 was approximately \$14 million. Costs to maintain the 110 vessels awaiting disposal amounted to \$4.2 million, with an additional \$1 million for an emergency hull problem with one vessel. Examples of these vessels at each fleet are shown in Figures 2, 3 and 4.



**Figure 2. James River Reserve Fleet**

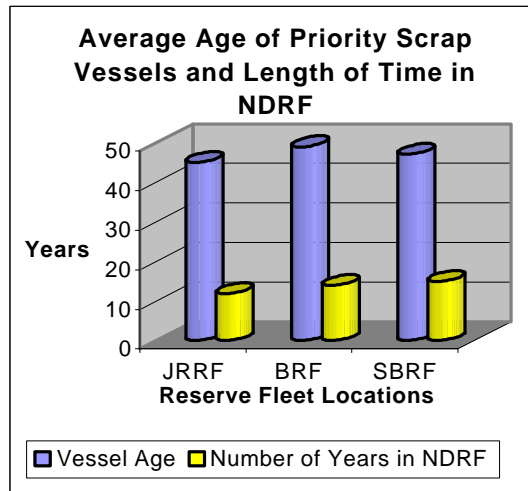


**Figure 3. Beaumont Reserve Fleet**



**Figure 4. Suisun Bay Reserve Fleet**

MARAD maintains the 110 disposal vessels at the 3 Reserve Fleet locations: 58 at the James River Reserve Fleet (JRRF) in Virginia; 9 at the Beaumont Reserve Fleet (BRF) in Texas; and 41 at the Suisun Bay Reserve Fleet (SBRF) in California. In addition, two disposal vessels are held by the U.S. Coast Guard in Alabama. Since most of these vessels were built over 40 years ago, they were constructed with substances now classified as hazardous such as asbestos, and solid and liquid polychlorinated biphenyls (PCBs). Figure 5 shows the average age of the vessels awaiting disposal.



**Figure 5. Average Vessel Age**

The National Maritime Heritage Act of 1994 requires MARAD to dispose of obsolete vessels in the Fleet by September 30, 2001, in a manner that *maximizes financial return to the United States*. By law, the monetary returns from the sale of obsolete vessels in the NDRF are to be expended as follows: (a) 50 percent to the Maritime Administrator for vessels currently in the NDRF; (b) 25 percent to the Maritime Administrator for the expenses incurred by state or Federal maritime academies for facility and ship expenses; and (c) the remainder made available to the Secretary of the Interior for maritime heritage grants. MARAD also uses funds from its operations and training budget to support the U.S. Merchant Marine Academy and state maritime schools.

**The Ship Scrapping Process.** Ship scrapping is a labor-intensive industry with extremely high risks with respect to environmental and worker safety issues. A ship is normally dismantled from the top down and from one end to the other with torches that cut away large parts of the ship. Pieces of the ship are lifted by crane to the ground where they are cut into the shapes and sizes required by the foundry or smelter where the scrap will be shipped. Remediation of hazardous materials takes place before and during the dismantling process. If done improperly, ship scrapping can pollute the land and water surrounding the scrapping site and jeopardize the health and safety of the people doing the scrapping. Figure 6 shows a typical scrap yard in Brownsville, Texas, and Figure 7 shows part of the scrapping process.



**Figure 6. A Brownsville, Texas Scrap Yard**

In December 1997, the *Baltimore Sun* published a series of articles exposing the hazards to workers and the environment caused by the ship scrapping industry. Accounts of workers maimed and killed in ship scrapping operations and poor environmental conditions in Alang, India, contributed to a Government-wide cessation of selling vessels overseas for scrapping.



**Figure 7. Worker Scrapping a Vessel**

Recently, the ship scrapping problem earned international attention when the First Global Ship Scrapping Summit was held in Amsterdam in June 1999. The purpose of the Summit was to discuss the issue of ship scrapping and possible approaches to dealing with the problems that have been identified with it. Summit participants concluded that practical solutions to improve work practices and environmental conditions are needed for scrapping in developing countries.

## ***Objectives, Scope, and Methodology***

The objectives of this audit were to (1) evaluate MARAD's progress in meeting its legislative mandate to dispose of obsolete vessels in the National Defense Reserve Fleet by September 30, 2001; (2) identify what action MARAD has taken toward meeting this mandate; and (3) identify potential alternatives to assist MARAD in achieving its goals. To perform this assessment, we performed work at the three reserve fleet sites – James River Reserve Fleet, Virginia, Beaumont Reserve Fleet, Texas, and the Suisun Bay Reserve Fleet, California, as well as MARAD's Headquarters in Washington, D.C.

We obtained and analyzed data on the number of vessels at each location, how long the vessels have been in the NDRF, and the costs to maintain each vessel. We also inspected vessels at each site to determine their conditions. We reviewed Maritime Administration policies and procedures for National Defense Reserve Fleet vessels at each of the fleet sites and interviewed MARAD staff members.

We met with three domestic contractors currently in the ship scrapping industry in Brownsville, Texas, to analyze the domestic capacity for scrapping MARAD's ships. We also discussed disposal alternatives with two Virginia companies and one California company that have expressed an interest in MARAD's obsolete Fleet. We conducted interviews with numerous independent consultants to explore possible alternatives for the disposal of MARAD's obsolete vessels.

To assess Federal, state, and local agency efforts in the field of ship scrapping, we interviewed staffs of the General Accounting Office (GAO), the U.S. Coast Guard, and the Environmental Protection Agency (EPA). This work included discussing prior evaluations of MARAD's obsolete vessels as well as identifying regional efforts to oversee environmental threats from the worst of MARAD's obsolete vessels.

We interviewed personnel at other Federal agencies regarding oversight of and coordination for ship disposal, including staffs of the Department of the Navy and the Occupational Safety and Health Administration. We assessed interagency cooperation regarding ship scrapping as well as each individual agency's position on the current state of ship scrapping.

We interviewed representatives of more than 75 Federal and state offices, consultants, and other industry personnel during the audit, including staff members of the House Committee on Transportation and Infrastructure and its Subcommittee on Coast Guard and Maritime Transportation. We assessed the need for alternatives to assist MARAD in meeting its mandate to dispose of these



vessels. We examined all suggestions we received during our interviews to determine their feasibility.

We conducted the audit between June and December 1999 in accordance with Government Auditing Standards prescribed by the Comptroller General of the United States.

## ***Prior Audit Coverage***

**Review by Interagency Panel on Ship Scrapping.** Because of congressional concern about the conditions documented in the *Baltimore Sun* articles, on December 24, 1997, the Under Secretary of Defense for Acquisition and Technology established the Interagency Panel on Ship Scrapping (Panel). The Panel's objective was to review the Department of the Navy and MARAD programs to scrap vessels and to investigate ways to ensure that vessels are disposed of in an environmentally sound and economically feasible manner.

The Panel Report<sup>1</sup> contained the following three broad recommendations related to disposing of obsolete vessels.

1. The Department of the Navy and MARAD must be able to continue to scrap obsolete vessels, with the option open to scrap them both domestically and internationally.
2. The Department of the Navy and MARAD should continue to look for innovative ways to improve the vessel scrapping process and establish consistent vessel scrapping contracting procedures.
3. The Department of the Navy and MARAD should ensure that changes to vessel scrapping in the future apply to both agencies to maintain economic competition in the scrapping of Government vessels.

**General Accounting Office Review.** In October 1998, the GAO reported<sup>2</sup> that there was a shortage of contractors in the domestic ship scrapping market, as well as other factors working against MARAD's progress in scrapping its obsolete vessels. GAO recommended that the Department of Transportation work with other agencies (i.e., EPA, Department of State, and Department of Commerce) to establish time frames for completing a review of the Panel's recommendations.

A key recommendation was for the Secretaries of Defense and Transportation to designate lead responsibilities within their organizations for addressing individual

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<sup>1</sup>Report of the Interagency Panel on Ship Scrapping, April 1998.

<sup>2</sup>GAO/NSIAD-99-18 Report, Federal Surplus Ships, Government Efforts to Address the Growing Backlog of Ships Awaiting Disposal, October 1998.

panel recommendations after milestones were established. The GAO report also mentioned the Panel's recommendation that more could be done to improve the ship scrapping contracting process. As a result of the Panel's and GAO's recommendations, MARAD assisted in establishing and participating in work groups to discuss issues and problems related to obsolete vessel disposal.

## **FINDINGS AND RECOMMENDATIONS**

Because of prohibitions on selling vessels overseas for scrapping, a limited domestic market, and competition from the Navy's pilot project, MARAD will not meet the mandate to dispose of its obsolete vessels by 2001 nor will it be able to maximize returns on these vessels as required by law. As of February 29, 2000, the National Defense Reserve Fleet contained 110 vessels designated for disposal. Eighty-eight of these vessels are specifically targeted for scrapping. The vessels are deteriorating, contain hazardous substances, and pose an immediate environmental threat. MARAD expects its inventory of obsolete vessels awaiting disposal will increase to 152 vessels by the end of fiscal year (FY) 2001, with 130 of them slated for scrapping.

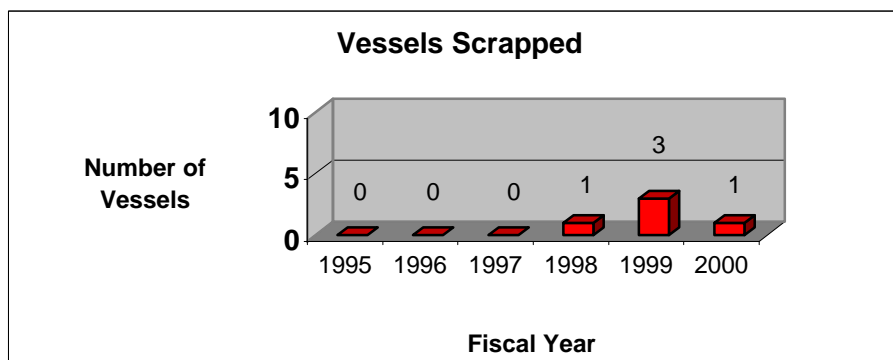
The Department, the Administration, and the Congress face a challenge in determining how to dispose of MARAD's Fleet of environmentally dangerous vessels in a timely manner. MARAD must work to: get the law changed to eliminate the requirement to gain financial returns on vessel sales; to extend the mandated deadline to dispose of its obsolete vessels; and to obtain approval and funding for a project to pay contractors for ship scrapping.

### **Progress in Scrapping Has Been Limited**

MARAD has made limited progress toward meeting the mandates to dispose of its obsolete vessels by 2001 and maximize financial returns on these vessels. Although MARAD has sold 22 vessels to scrap companies since 1995, only 5 vessels have actually been scrapped, as shown in Figure 8.<sup>3</sup>

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<sup>3</sup>Two additional vessels on the priority disposal list were donated for use as museums in 1999.



**Figure 8. Vessels Scrapped in Recent Years**

In 1999, MARAD sold 17 obsolete vessels, but only 1 of these was scrapped during the year and another was moved from the Fleet to a contractor for scrapping.<sup>4</sup> To date, contractors have not taken delivery of the remaining 15 vessels. Even though MARAD has sold vessels, contractors do not always adhere to scheduled time frames for removing vessels from the Fleet.

The restrictions placed on selling vessels overseas for scrapping, beginning in 1994, has negatively impacted MARAD’s progress in disposing of its obsolete vessels.

**Prohibitions on Exporting Vessels for Scrapping.** MARAD has not sold any vessels to overseas markets for scrapping since 1994. Prior to 1994, overseas markets were the primary source for scrapping obsolete vessels. Of 130 vessels MARAD disposed of during the period 1987 through 1994, 128 of them were exported to China, India, Mexico and Taiwan.

In response to an April 1993 letter from EPA advising MARAD that the Toxic Substances Control Act<sup>5</sup> applied to the export of vessels containing various levels of PCB materials, MARAD suspended the sale of vessels overseas for scrapping. In 1997 MARAD and the Navy negotiated an agreement with EPA to allow for the sale of vessels for scrapping overseas, provided certain criteria were met. This agreement also required notification to the countries buying the vessels that they may contain PCB materials. However, in December 1997, the Navy decided to temporarily suspend the export of vessels for scrapping. In January 1998 MARAD voluntarily suspended the sale of vessels overseas for scrapping pending the issuance of the Interagency Panel’s report.

<sup>4</sup> Three vessels that MARAD sold in previous years were completely scrapped in 1999.

<sup>5</sup> Toxic Substances Control Act, United States Code Title 15, Section 2605e, describes PCB restrictions.

In September 1998, the Administration placed a moratorium on overseas scrapping due to concerns about the environment and worker health and safety. During the moratorium, however, MARAD could request exceptions to this prohibition through the Chair of the Council on Environmental Quality as of January 1, 1999. To obtain an exception, MARAD would have to ensure that vessels sold overseas would be scrapped in an environmentally sound and economically feasible manner. During this time, MARAD did not request any exceptions to sell vessels overseas. The moratorium expired on October 1, 1999. Currently, MARAD is required to request approval from the EPA to sell vessels overseas to markets that are capable of scrapping them in an environmentally compliant manner.

Coupled with the restrictions on selling vessels overseas for scrapping, the domestic market is very limited, which has also negatively impacted MARAD's progress in disposing of its obsolete vessels.

**Limited Domestic Capacity.** MARAD's scrapping efforts are hampered by a lack of domestic scrapping companies. In the 1970s there were up to 30 domestic companies scrapping vessels. As of December 1999, only four companies had bid on MARAD's scrapping contracts and passed MARAD's technical compliance review for scrapping. These four companies can only handle approximately two to five vessels at a time, depending on the size of the scrap yard and the dimensions of the vessel. For example, one company could only scrap two or three vessels per year. According to industry sources, it takes approximately 4 to 6 months to completely scrap a MARAD vessel. Figure 9 shows a yard in Texas that can only scrap one vessel at a time.



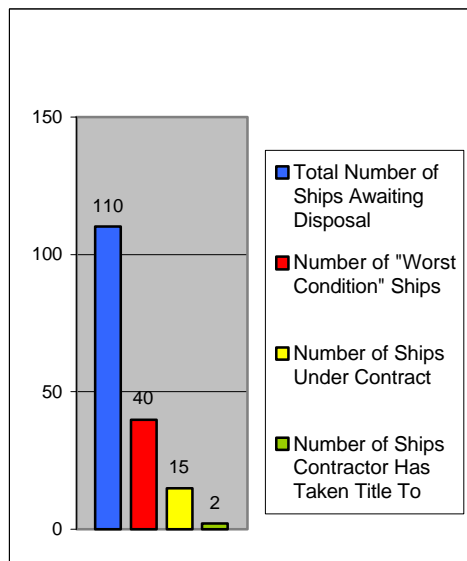
**Figure 9. Scrap Yard in Brownsville, Texas**

Also, scrap steel prices in the United States are low, and domestic contractors must comply with environmental regulations that limit their ability to make a profit. Most of the domestic scrapping company officials we contacted indicated that the profit from scrapping vessels is not worth the effort. At a minimum, contractors in this business must pay for the towing costs and provide \$150,000 as

a performance bond to secure a vessel after a contract has been awarded. Contractors receive no return on a vessel until scrap metal and the equipment removed from the vessel are sold.

MARAD's current contracting process assigns the responsibility of environmental compliance entirely to the contractor. According to contractors in the ship scrapping industry, one of the primary problems in dismantling Government ships is that removing all traces of PCBs is not only costly, it is virtually impossible. Other hazardous materials that need to be abated in the process of scrapping a vessel include asbestos, lead-based paint, chromate, fuels, and hydraulic oils. As contractors spend more on compliance and earn less from the sale of scrap, their profits decline and fewer contractors are willing to bid on MARAD's vessels.

Even when it has been able to sell vessels, MARAD has encountered problems with domestic contractors. In 1999, MARAD sold 17 vessels to 3 ship scrapping companies located in Brownsville, Texas. From our review, we found that only two companies were actively scrapping ships, and only one of these companies was currently scrapping a MARAD ship. MARAD has granted a number of extensions to contractors, and in one instance, MARAD had to resell vessels because of contractor default. Another company has not taken possession of any vessels because of an ongoing dispute with the Port of Brownsville regarding contamination of its scrapping site. The distribution of vessels awaiting disposal is shown in Figure 10.



**Figure 10. Vessels Awaiting Disposal**

**Navy Pilot Ship Disposal Project Poses Competition for MARAD.**

Although the Department of the Navy transfers merchant vessels to MARAD for disposal, the Navy also has its own ship scrapping program for its combatant

vessels. The Interagency Panel on Ship Scrapping recommended that the Navy develop a ship scrapping pilot project. In 1998, Congress authorized funding for a Ship Disposal Pilot Project for the purpose of testing new methods of ship scrapping and quantifying the costs associated with ship scrapping. Under the pilot project, the Navy is not subject to a requirement to gain returns on its obsolete vessels. The pilot project precludes any risk to the contractor because the Navy will pay for the scrapping services.

On September 29, 1999, the Navy awarded four cost-plus contracts totaling \$13.3 million for the scrapping of four vessels under its new Pilot Ship Disposal Project. This pilot project departs from the sales contracting process by providing for cost plus incentive fees for cutting the first vessels. It guarantees profitability by providing for the cost of scrapping the vessels and gives the contractor the opportunity to earn incentive fees, which encourages and rewards superior contractor performance. If the contractors are successful in scrapping the first 4 vessels, they will be given the opportunity to scrap more vessels, potentially leading to the disposal of 66 warships.

Since MARAD is required by law to sell its obsolete vessels and gain the maximum financial return, it cannot compete with the Navy's current method of paying for scrapping services under the pilot project. The competition MARAD faces with the Navy's project, coupled with the statutory requirement to maximize returns to the United States, nearly eliminates all opportunities for MARAD to award domestic contracts for ship scrapping.

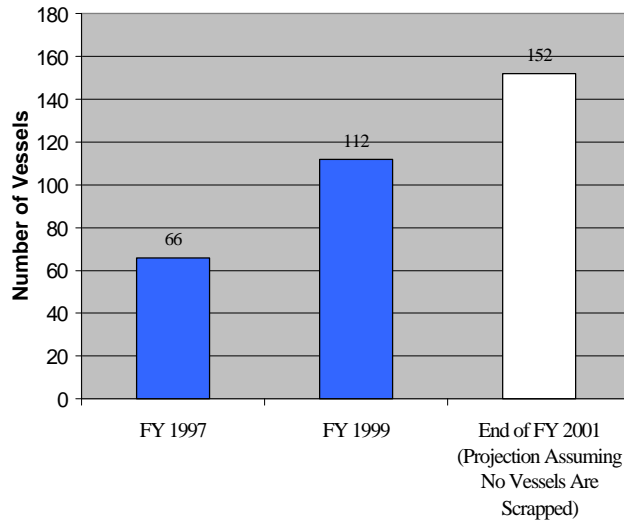
According to the Deputy Chief of Naval Operations, the Department of the Navy and MARAD are coordinating efforts to improve ship scrapping programs. This supports the recommendations of both the Interagency Panel on Ship Scrapping and GAO. The Navy agreed to share its findings from the results of the pilot project with MARAD.

## **The Number of Vessels Awaiting Disposal Is Increasing**

The inventory of obsolete vessels has almost doubled over the last 2 years because of additional vessel transfers from the Navy, downgrades of RRF vessels to obsolete status, and MARAD's inability to sell ships for scrap. As of February 29, 2000, MARAD had 110<sup>6</sup> vessels awaiting disposal, as shown in Figure 11.

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<sup>6</sup>Vessels awaiting disposal in FY 1999 totaled 112, however by 1<sup>st</sup> quarter, FY 2000, 2 vessels were removed, bringing the total to 110 as of February 29, 2000.



**Figure 11. Vessels Awaiting Disposal**

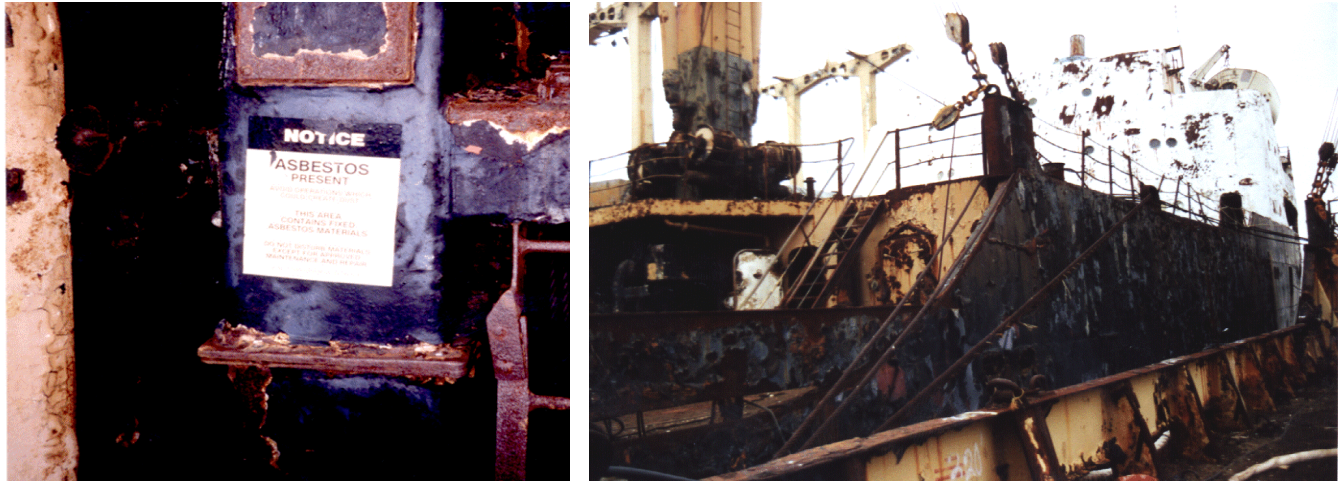
MARAD projects that another 24 MARAD vessels and 18 Navy vessels will be transferred into MARAD’s inventory by the end of FY 2001. As a result, the projected total awaiting disposal by the end of FY 2001 will be 152 vessels, with 130 slated for scrapping, and 22 targeted for other uses to include the fish reef program and use by Federal and state agencies. Some of the 22 vessels may eventually be transferred into the scrapping category.

### **Obsolete Vessels Pose Environmental Risks**

Environmental dangers associated with MARAD’s old, deteriorating ships are very real and increasing daily. These vessels are literally rotting and disintegrating as they await disposal. Some vessels have deteriorated to a point where a hammer can penetrate their hulls. They contain hazardous substances such as asbestos and solid PCBs, and in some instances liquid PCBs. MARAD has designated 40 of the vessels awaiting disposal as those in “worst condition” due to their severe deterioration and threat to the environment.

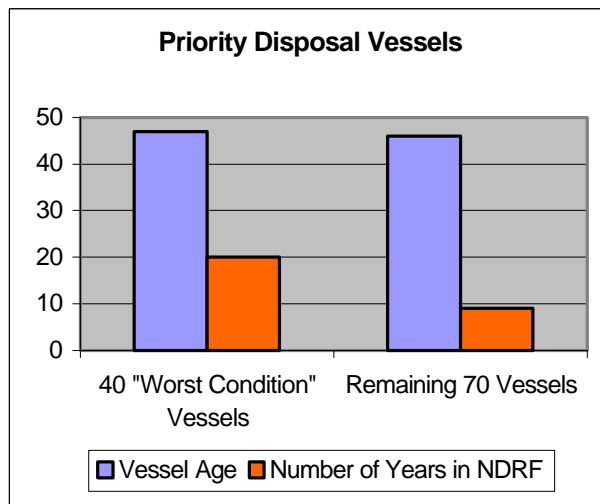
If the oil on these vessels were to enter into the water, immediate state or Federal action would be required. For example, during a fly-over of the fleet by the Virginia Department of Environmental Quality in 1998, an oil slick was spotted in the James River next to a vessel’s hull. The Virginia Department of Environmental Quality served MARAD with a notice of violation for the spill and

is drafting a memorandum of understanding with MARAD in lieu of a fine. The U.S. Coast Guard mandated additional measures that are intended to prevent such an incident from occurring again, and monitoring efforts for this vessel are ongoing. Figure 12 shows examples of the vessel's condition.



**Figure 12. Deteriorating Vessel at the James River Reserve Fleet**

The 40 “worst condition” vessels have been in MARAD’s Fleet for an average of 20 years. The remaining vessels have been in the Fleet for an average of 9 years.



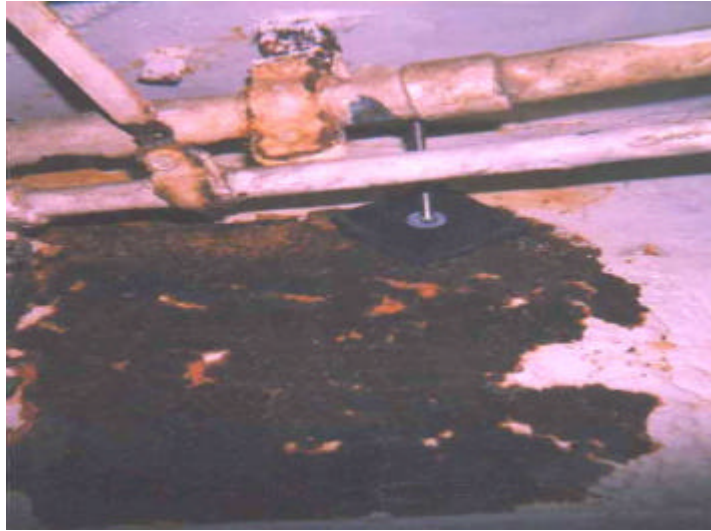
**Figure 13. Vessel Ages**

Figure 13 shows the average age of the vessels and the average length of time the vessels have been MARAD’s responsibility.

The James River Reserve Fleet maintains 32 of the “worst condition” vessels awaiting disposal. In September 1999, the JRRF was hit by Hurricane Floyd



causing several ships to move from their moorings, thereby incurring unexpected maintenance and repair costs and the potential for environmental damage. One “worst condition” vessel at the JRRF is over 30 years old, contains hazardous substances including asbestos, and has leaked oil. MARAD has applied over 20 patches to leaks and deployed containment booms, but the vessel is disintegrating to a point where it will not be seaworthy much longer. Figure 14 shows a leak on this vessel.



**Figure 14. Patched Leak on JRRF Vessel**

The Suisun Bay Reserve Fleet maintains four vessels in the “worst condition” category. An inspection of these vessels revealed substantial hull corrosion as well as peeling lead-based paint. Holes and rust on the topside decks and houses were evident, allowing rainwater to enter interior spaces.

The Beaumont Reserve Fleet maintains four vessels in the “worst condition” category. A 42-year-old vessel has been in this fleet awaiting disposal for 14 years. It has deteriorated to a point where the stairs connecting decks are unusable because they are so weakened by rust and age. Figure 15 shows examples of the deterioration of these vessels.



**Figure 15. Vessel Deterioration at Beaumont Reserve Fleet**

### **Alternatives Offer Potential but Will Not Solve the Problem**

While MARAD has been pursuing ways to improve scrapping sales, its ability to explore creative solutions for disposing of vessels is constrained by the requirement to maximize financial returns. The programs and alternatives MARAD is pursuing may contribute to the goal, but they do not have the potential to significantly reduce the backlog of vessels awaiting disposal in a timely manner. There may be additional alternatives MARAD could explore that would also contribute to the goal of disposing of its obsolete vessels.

### **Alternatives MARAD Is Exploring**

**Coordination with West Coast Company on Potential Scrapping Site.** MARAD and the Navy are currently coordinating efforts on ship scrapping with a West Coast company that is proposing to both build and dismantle ships at an existing ship yard. Company officials have been working with both organizations on its proposal. However, a separate company providing financial backing recently withdrew from the proposal, and the original plan for the West Coast site has fallen through. Also, the Navy and MARAD have not yet agreed to commit to the proposal, based on cost estimates provided to them. The West Coast company is now working to merge with East and Gulf Coast companies to establish scrapping sites in those areas. This may still serve as a viable future option for both MARAD and the Navy.

**Participation in Interagency Work Groups.** MARAD is participating in interagency work groups assembled to implement recommendations of the Interagency Panel on Ship Scrapping. The Panel recommended that the Navy and MARAD coordinate efforts in looking for innovative ways to improve the ship scrapping process and establish consistent procedures. The interagency work groups meet to discuss current issues and to coordinate efforts.

**Vessel Donations.** Recently, MARAD donated two of the vessels awaiting disposal for use as museums. Parties seeking MARAD vessels or parts of MARAD vessels make such requests to Congress. After legislation is passed, requests are forwarded to MARAD. Once the vessel or artifact has been deemed to have no value to MARAD, a property transfer may then take place, and MARAD is able to relinquish the vessel. Five of the vessels on the disposal list are also targeted for the fish reef program, where remediated vessels are sunk in medium depth water for fish to inhabit.

**Sinking MARAD Vessels.** The Navy is currently completing a study entitled “SINKEX” that involves sinking ships in deep water after all oil, fuels, oil residue, and liquid PCBs are removed. As of December 1999, the Navy has found no changes in the marine environment immediately surrounding the ship and no elevated levels of PCBs in water samples. This may be a viable option for some of MARAD’s obsolete ships. The EPA has allowed the Navy to sink roughly eight ships annually and has granted it a permit to continue to do so. MARAD would be required to consult with the EPA to obtain permits in order to sink its vessels in deep water. Also, MARAD vessels would require remediation prior to being sunk.

### **Other Alternatives May Have Potential**

MARAD is not currently exploring these alternatives because their implementation would require congressional authorization or the approval of another Federal entity.

**Sales of Vessels Before They Become Obsolete.** There are vessels in MARAD’s Fleet that could be sold, given legislative approval, before they become obsolete, thus reducing the number of vessels MARAD must dispose of in the future. The vessels in the Ready Reserve Force that are slated for future scrapping but are still operational could be sold for non-military use prior to their transfer into the obsolete vessel category. Under current law, other vessels could also be sold for non-transportation uses, such as for museums.

One contractor we interviewed has successfully purchased vessels and then sold them to a foreign country. Company officials contend that foreign countries could

get another 20 to 25 years of use out of a vessel, for water transport, as an example. Vessels would have to be overhauled in the United States in preparation for sale, potentially creating jobs. According to the December 31, 1999 National Defense Reserve Fleet Ship Disposal and Exemption Report, MARAD had 26 vessels deemed operational.

**Exceptions to Sell Vessels Overseas.** A Vice Presidential moratorium suspended the export of vessels for scrapping on September 23, 1998, due to concerns about environmental hazards and worker safety. The loss of overseas markets for scrapping obsolete vessels resulted in (1) a backlog of obsolete vessels targeted for disposal and (2) large expenditures to maintain these vessels. As of January 1, 1999, MARAD could have requested exceptions to this restriction from the Chair of the Council on Environmental Quality. Since then MARAD has not requested exceptions to the moratorium. If it did so, MARAD would be required to ensure that these vessels are scrapped in an environmentally sound and economically feasible manner.

## **Conclusion**

The Department, the Administration, and the Congress face a challenge in determining how to dispose of MARAD's Fleet of environmentally dangerous vessels in a timely manner. The requirement to maximize financial returns on the disposal of obsolete vessels may not work in today's marketplace. MARAD will need relief from this requirement, as well as authorization and funding for a program similar to the Navy pilot. This could cost as much as \$505 million for the disposal of the 152 obsolete vessels that MARAD expects to have awaiting disposal by the end of FY 2001. Given the potential magnitude of this funding request, MARAD will have to identify relative priorities for disposal and develop appropriate annual funding requests.

## **RECOMMENDATIONS**

We recommend that the Maritime Administrator:

1. Seek legislative approval to extend the mandate to dispose of obsolete vessels by 2001 and to eliminate the requirement that MARAD maximize financial returns on the sale of its obsolete vessels.
2. Continue to pursue programs to improve scrapping sales and identify alternative disposal methods that can contribute to the goal of reducing the number of obsolete vessels awaiting disposal, to include working with the Navy on the results of its studies on the environmental impact of sunken vessels.
3. Develop a proposal for submission to the authorization and appropriations Committees in Congress seeking approval and funding for a project to pay contractors for vessel scrapping. The proposal should include a plan to target the 40 “worst condition” vessels first, identify funding and staffing requirements, and provide milestone dates to dispose of all obsolete vessels.

## **MANAGEMENT RESPONSE**

A draft of this report was provided to the Maritime Administrator on February 8, 2000. MARAD concurred with our recommendations. MARAD has requested in its FY 2001 authorization bill an extension to the September 30, 2001 mandate to dispose of its obsolete vessels. MARAD also stated it would work with the Executive Branch to seek legislative approval to eliminate the requirement to maximize financial returns on the sale of its obsolete vessels. In response to our recommendation that MARAD continue to pursue programs to improve scrapping sales and identify alternative disposal methods, MARAD plans to continue to do so, and will report on its progress by the end of the year. MARAD asked that we emphasize the need for it to continue coordination with the Navy on various methods to improve the cost-effectiveness of vessel disposal, to include coordinating with the Navy on study results on the environmental impact of sunken vessels. MARAD fully concurred with our recommendation to develop a proposal to seek legislative approval and funding for a project to pay contractors for vessel scrapping. MARAD plans to complete this action this spring.

The complete text of MARAD’s comments is shown at the Appendix to this report.

**Office of Inspector General Comments**

We revised our second recommendation to emphasize the need to continue coordination with the Navy. The actions planned and underway by MARAD are responsive to our recommendations and we consider them resolved. The progress made by MARAD in implementing the actions agreed to or planned is subject to the audit follow-up provisions of DOT Order 8000.1C.

## APPENDIX. MARAD's Comments

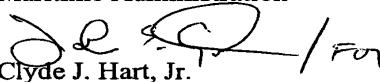


U.S. Department  
of Transportation  
**MARITIME  
ADMINISTRATION**

# Memorandum

Subject: **ACTION:** Draft Report on the Program for  
Scrapping Obsolete Vessels  
Maritime Administration

Date: **FEB 29 2000**

From:   
Clyde J. Hart, Jr.  
Maritime Administrator

Reply to  
Attn. of:

To: Alexis M. Stefani  
Assistant Inspector General for Auditing

By memorandum dated February 8, 2000, you sent me a draft report which presents the results of your audit of the program for scrapping obsolete vessels controlled by the Maritime Administration (MARAD). The objectives of this review were to evaluate MARAD's progress in meeting its legislative mandate to dispose of obsolete vessels in the National Defense Reserve Fleet by September 30, 2001; identify what action MARAD has taken toward meeting the mandate; and identify potential alternatives to assist MARAD in achieving its goals.

You first recommended that MARAD seek legislative approval to extend the mandate to dispose of obsolete vessels by 2001. MARAD has in fact requested an extension to September 30, 2006, in its FY 2001 authorization bill.

You also recommended that MARAD seek legislative approval to eliminate the requirement that MARAD maximize financial returns on the sale of its obsolete vessels. As you know, legislative initiatives have to be coordinated within the Administration, and MARAD will work to obtain Executive Branch concurrence for our proposal.

Your second recommendation is that MARAD continue to pursue programs to improve scrapping sales and identify alternative disposal methods. MARAD's endeavors on these items continue and, bolstered by your recommendation, we will continue our efforts and report on our progress by the end of the year.

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Recyclable

I fully concur with your third recommendation that MARAD develop a proposal for submission to the authorization and appropriations Committees seeking approval and funding for a project to pay contractors for vessel scrapping. Any legislation will have to be developed this spring in order for it to be included in MARAD's FY 2002 budget request.

With regard to your final recommendation for MARAD to work with Navy to determine more cost-effective methods to dispose of vessels using recommendations from their ongoing studies on environmental impact of sunken vessels, we will continue our ongoing efforts with Navy.

I appreciate the efforts of your staff and look forward to continuing to work with you to address the critical issues surrounding vessel disposal.

If you have any questions concerning this report, please call me or Raymond R. Barberesi, Director, Office of Sealift Support, at (202) 366-2323.



## ***Exhibit. Major Contributors to This Report***

### **THE FOLLOWING INDIVIDUALS CONTRIBUTED TO THIS REPORT**

<b><u>Name</u></b>	<b><u>Title</u></b>
Steve Rybicki	Program Director
Pamela Steele-Nelson	Project Manager
Janice Alger	Auditor-in-Charge
Gary Stivers	Auditor
Michael Butchko	Evaluator
Liz McNally	Evaluator
Sara Guthrie	Evaluator
Shirley Murphy	Editor
Mi Hwa Button	Staff Assistant