Report of the Interagency Panel on Ship Scrapping

April 1998

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Executive Summary

In late 1997, members of Congress and environmental groups expressed concern over the Department of the Navy's ship scrapping program. The news media described environmental, health and safety violations that occurred in the United States and highlighted poor environmental, safety, and health conditions that exist overseas. On December 19, 1997, the Secretary of the Navy temporarily suspended any efforts exploring options to sell US Navy ships overseas for scrapping. On December 24, 1997, the Under Secretary of Defense for Acquisition and Technology established an Interagency Ship Scrapping Panel. The purpose of the Panel was to review the Department of the Navy and US Maritime Administration programs to scrap vessels and to investigate ways to ensure that vessels are scrapped in an environmentally sound and economically feasible manner.

Scrapping vessels presents many challenges due to the complexity of the ships themselves, the environmental and safety issues, uncertainties about the domestic industrial base and our limited economic leverage in international markets. The Panel found that the Department of the Navy, the Defense Logistics Agency (the Department of the Navy's disposal agent) and the US Maritime Administration recognized the problems with past practices and have already taken steps to address many of the problems identified with past ship scrapping practices. The Agencies are continuing to carefully assess and evaluate the results of the current ship scrapping contracts awarded using the new procedures and will implement changes as necessary.

The Panel endorses the recent efforts to improve the domestic ship scrapping process. The Panel also found that more could be done to improve the process both domestically and internationally. Implementing these changes will likely result in a need for additional funding.

General Recommendations

- The Department of the Navy and the US Maritime Administration must be able to continue to scrap obsolete vessels; and in so doing, the option to scrap vessels both domestically and internationally should not be foreclosed, subject to the Panel's other more specific recommendations below.
- The Department of the Navy and the US Maritime Administration should continue to look for innovative ways to improve the ship scrapping process, both domestically and internationally, to minimize environmental and occupational risks.
- The Department of the Navy and the US Maritime Administration should ensure that changes to ship scrapping in the future apply to both agencies to maintain economic competition in the scrapping of government vessels in recognition of the fact that both agencies are operating in the same domestic and international market.
- The Department of Defense should reconvene the Panel, or a similar group, to evaluate the results of implementing the recommendations made one year after the report is issued and should consider whether any modifications should be made with regard to ship scrapping.

Contracting Improvements

- The US Maritime Administration should add a requirement for a Safety and Occupational Health Plan (comparable to the existing Defense Logistics Agency requirement) to its invitation for bid.
- The Defense Logistics Agency, the US Maritime Administration, and Federal, State, and Local regulatory agencies should develop protocols to share information about potential contractors and their facilities.

Performance Bonds

- The Defense Logistics Agency and the US Maritime Administration should develop standardized performance bonds that protect the US Government's interests in the event that a scrapping contractor fails to perform and maximize the contractors' incentive to scrap ships in an environmentally sound, safe, and economical manner.

Data Gathering and Pilot Projects

- The Department of the Navy should carry out a pilot project to quantify the scope and costs associated with ship scrapping in private industry as a vehicle for gathering information to improve the ship scrapping process. Any pilot project should run concurrently with ongoing ship scrapping operations so it does not interfere with mandates to reduce the number of vessels in storage.
- The Defense Logistics Agency and the US Maritime Administration should develop a plan to enable scrappers to share their financial and environmental data with the US Government, so that the US Government has a better understanding of the scope and costs of hazardous material abatement and the profit centers of a ship scrapping operation.

PCB Guidance

- The US Environmental Protection Agency and the Occupational Health and Safety Administration, in coordination with the Defense Logistics Agency, the Department of the Navy, the US Maritime Administration and interested parties, should develop guidance for testing, removal, and disposal of non-liquid polychlorinated biphenyls (PCBs) in accordance with applicable rules and regulations. The Panel recognizes the necessity for data or information on the presence, use, and ultimate disposition of non-liquid polychlorinated biphenyls (PCBs) on vessels to be scrapped in order to develop guidance. The Panel believes anyone having such information should provide it to the US Environmental Protection Agency promptly to assist in the development of guidance.

Leveraging Regulatory Oversight

- The Defense Logistics Agency, the Department of the Navy, the US Maritime Administration, the Occupational Safety and Health Administration and the US Environmental Protection Agency should enter into Memoranda of Agreement that set out responsibilities for coordination. It is anticipated that Memoranda of Agreement will include provisions addressing the following issues:
- Notification by the Defense Logistics Agency and the US Maritime Administration to the US Environmental Protection Agency, the Occupational Safety and Health Administration or the involved State and Local agencies, before a vessel has been moved, that a contract has been let and the location of the proposed scrapping operation;
- Identification of points of contact in the US Environmental Protection Agency and the Occupational Safety and Health Administration (both nationally and regionally) and State agencies that may choose to attend post-award/pre-performance conferences at which environmental and occupational health and safety plans are reviewed;
- Sharing of information by the US Environmental Protection Agency and the Occupational Safety and Health Administration about compliance histories of prospective bidders upon request of the Defense Logistics Agency and the US Maritime Administration.
- The US Environmental Protection Agency and the Occupational Safety and Health Administration should conduct, where appropriate, joint coordinated inspections of ship scrapping operations. These inspections should provide a more comprehensive and efficient approach to maintaining compliance with all applicable environmental and occupational requirements.
- The US Environmental Protection Agency should conduct comprehensive, multimedia, environmental inspections of ship scrapping operations. The US Environmental Protection Agency's National Enforcement Investigations Center should develop a protocol for such inspections which would address compliance with environmental laws and regulations not only under the Toxic Substances Control Act, which covers polychlorinated biphenyls (PCBs), but the Clean Air Act, the Clean Water Act, and the Resource Conservation and Recovery Act, which applies to solid and hazardous wastes.
- The US Environmental Protection Agency, the Occupational Safety and Health Administration, the Defense Logistics Agency and the US Maritime Administration should develop a compliance manual that outlines for ship scrappers the relevant environmental and occupational health and safety requirements of their contracts and applicable laws and statutes.
- The Department of the Navy, the Defense Logistics Agency, the US Maritime Administration, the US Environmental Protection Agency, and the Occupational Safety and Health Administration should continue to educate the ship scrapping industry in the regulations and expectations of the US Government through educational vehicles such as seminars and workshops.

International Issues

- The Department of the Navy, the US Maritime Administration, and the US Environmental Protection Agency should revise those agreements as follows:
- Expand notification regarding specific ships to include detailed information about the materials commonly found on these ships.
- Revise the notification to include tacit agreement, if no objection, within 30 days of notification.
- Review export agreements annually to evaluate their use and determine whether export agreements should remain in force.
- The Defense Logistics Agency and the US Maritime Administration should examine how to use enforceable contract terms to promote environmental protection and worker safety, including consideration of the following mechanisms:
- Requirement for the bidders to submit technical plans to demonstrate how they plan to comply with local environmental, health, and safety rules and regulations.
- Request for available information on qualifications and past performance of the scrappers from the US State Department.
- Incorporation of technical plans in the terms and conditions of the contract.
- Requirement for a performance bond from a third party or international letter of credit as an incentive for foreign scrappers to comply with contractual requirements including compliance with local environmental, health, and safety rules and regulations.
- Development of an oversight program.
- The Department of the Navy, the US Maritime Administration, the US Department of State, the US Department of Commerce, the US Environmental Protection Agency, the US Department of Labor, and the Agency for International Development should evaluate how meaningful technical assistance could be provided to interested importing countries, including whether current statutory authorities and funding are adequate for this purpose.
- The US Department of Labor and US Department of State, with the assistance of other Agencies, should explore the possibilities for promoting improvements in safety and health protection in the international ship scrapping industry. This would include working through the private sector with various classification societies, such as the American Bureau of Shipping, and working through the public sector with international organizations, such as the International Labor Organization.

I. Panel Description

On December 24, 1997, the Under Secretary of Defense for Acquisition and Technology established an Interagency Ship Scrapping Panel to review the Department of the Navy and the US Maritime Administration programs to scrap vessels. The Office of the Deputy Under Secretary of Defense for Environmental Security within the Department of Defense is responsible for protection of worker safety and the environment, and was assigned as the lead for the Panel. The Panel members are senior officials and flag officers representing the Department of State, the Department of the Navy (Chief of Naval Operations), the Defense Logistics Agency, the Department of Justice, the US Department of Labor (Occupational Safety and Health Administration), the Department of Transportation (both the US Maritime Administration and the US Coast Guard) and the US Environmental Protection Agency. In addition, a number of other agencies, including the US Department of Commerce, the National Oceanic and Atmospheric Administration and the US Trade

Representative were consulted on specific issues. When the Panel first convened in February 1998, a charter was developed that contains the Panel's goals and approach. The primary goal was to ensure that vessels are scrapped in a manner that is environmentally sound, safe and economically feasible. Complete text of the charter can be found at Annex A.

Working Groups

The Panel formed four working groups to address different aspects of the ship scrapping process and issues identified by the Panel as needing further study. Working groups were charged with gathering information important to the Panel and reporting back to the Panel for use in its deliberations. The work groups addressed:

- International Law and Policy, chaired by Office of the Deputy Under Secretary of Defense for Environmental Security
- Environmental & Occupational Health Impacts of Ship Scrapping, chaired by Office of the Deputy Under Secretary of Defense for Environmental Security
- Ship Scrapping Process & Industrial Base, chaired by the Department of the Navy
- Contracting and Cost Estimate, chaired by the Defense Logistics Agency

Information Gathering and Public Input to the Panel

The Panel sought input from a broad cross-section of the public through several approaches. The first step was to establish a web page, www.denix.osd.mil, where information about the Panel, its membership and its charter were posted. Additionally, the web page has an area where comments can be posted by anyone who wishes to express views. All comments submitted by mail or fax on the subject of ship scrapping have been posted at that location on the web. The Panel also reached out by holding a public meeting in Washington, DC, on March 5, 1998. Comments were offered to the Panel, verbally and in writing, by members of Congress, representatives of environmental groups, consultants, industry and labor representatives, professional associations and concerned citizens. A summary of the views expressed at the public meeting and all written comments were also posted on the web site. Using this approach the Panel has collected a broad spectrum of views for its consideration.

II. Background

History

The US Government has sold many of its vessels at the end of their useful lives for ship scrapping. Because of the value of salvageable equipment and recyclable metals, obsolete vessels have been regarded as assets.

In the 1960s and 1970s, the US Government sold hundreds of ships for scrap, relying on the private sector to perform the work. During the 1980s, Department of the Navy ship scrapping ended because of the Reagan era naval build-up. At the same time, the US Maritime Administration continued to sell ships for scrap, most of which were exported by the purchaser. The Department of the Navy resumed ship scrapping in 1991 to deal with the influx of ships to the inactive fleet as a result of military downsizing. Between 1991 and 1997, only thirty-four US Navy and US Maritime Administration vessels were scrapped domestically. An additional twenty ships sold for scrap had to be recovered by the Department of the Navy due to contractor default. The discovery of regulated polychlorinated biphenyls (PCBs) on vessels in the inactive fleet led to the cessation of exporting ships for scrapping during this time period.

Currently there are over 180 vessels under Department of the Navy and US Maritime Administration control that are designated for scrapping. These vessels are being stored at several locations around the United States. The Department of the Navy's vessel storage facilities are near capacity, requiring some ships to be berthed at US Maritime Administration facilities on a reimbursable basis. Some US Maritime Administration ships are in such poor condition that they will soon require dry-docking for repairs, without which they would sink in place, potentially causing pollution in US waters or creating navigational hazards.

Most of the processes of ship scrapping can be extremely hazardous when performed without appropriate industrial process, worker safety, and environmental controls. Ship scrapping in the 1990s is more difficult and controversial than in previous years due to tougher environmental standards and the regulation of many hazardous materials, including asbestos, lead-based paints, and items containing liquid and non-liquid polychlorinated biphenyls (PCBs) on board ships in items such as electrical equipment, gaskets, paints, and insulating materials.

Ship Scrapping Authorities

The objective of both the Department of the Navy and the US Maritime Administration has been to scrap obsolete ships with minimal risk and cost to the Government, in a manner that is in compliance with all applicable Federal, State and Local laws and regulations.

US Maritime Administration Role. The US Maritime Administration is responsible for the administration and operation of the National Defense Reserve Fleet. As these vessels become obsolete, the US Maritime Administration sells them in accordance with the Merchant Marine Act of 1936 (as amended). Pursuant to the Federal Property Administrative Services Act of 1949 (as amended), the US Maritime Administration is also the US Government's disposal agent for

merchant-type vessels of 1500 gross tons or more. The Defense Logistics Agency sells Department of the Navy ships not transferred to the US Maritime Administration.

Prior to 1994, proceeds from the sale of National Defense Reserve Fleet vessels were required to be deposited in the Vessel Operations Revolving Fund and used to maintain and purchase newer vessels for the Ready Reserve Fleet. In October 1991, a US General Accounting Office report, entitled "Strategic Sealift, Part of the National Defense Reserve Fleet Is No Longer Needed," recommended that the US Maritime Administration accelerate its scrapping of older National Defense Reserve Fleet ships. Consistent with the General Accounting Office report, Congress directed the US Maritime Administration through the National Maritime Heritage Act of 1994, to scrap all unassigned obsolete vessels in the National Defense Reserve Fleet by September 30, 1999 (since changed to 2001), in a manner that maximizes the return to the United States. The US Maritime Administration does not interpret the requirement to maximize benefits to the US through these sales as a mandate to consider only price when accepting bids for its vessels.

Department of the Navy Role. The sale of naval vessels is covered by Section 7305 of Title 10 United States Code, which until October 1997 authorized the Secretary of the Navy to sell vessels only to the highest acceptable bidder. In October 1997, the Defense Authorization Act for 1998 modified Section 7305 of Title 10 United States Code to allow ships to be sold by competitive negotiation in order to obtain the best overall value to the government.

Regulatory Authorities

The Occupational Safety and Health Administration Role in the Ship Scrapping Process. From an occupational safety and health perspective, the Occupational Safety and Health Administration makes no distinction between shipbuilding, ship repair, and ship scrapping operations. The Occupational Safety and Health Administration considers all of these segments of employment as a high hazard industry. Over the past five years (10/01/92 through 12/31/97), the Occupational Safety and Health Administration conducted 1,947 inspections that detected 8,357 violations of Occupational Safety and Health Administration standards and resulted in penalty assessments of approximately $5.1 million. The primary focus of the majority of these inspections was and continues to be shipbuilding and ship repair operations. Ship scrapping is a very small part of this industry and manifests itself in two primary areas: the commercial segment of the shipyard industry (typically barges scrapped on the US Gulf Coast) and the scrapping of US Navy ships.

The US Environmental Protection Agency Role in the Ship Scrapping Process. The US Environmental Protection Agency has regulatory oversight with respect to domestic scrapping. Because ship scrapping involves potential emissions to the air and coastal waters as well as the creation of hazardous and toxic waste, almost every major Federal environmental statute is applicable to the process. These statutes include, but are not limited, to, the Clean Air Act (CAA), the Clean Water Act (CWA), the Resource Conservation and Recovery Act (RCRA), the Toxic Substances Control Act (TSCA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA (Superfund)). Many Federal environmental statutes have delegation provisions that allow States to use their own programs under State law to fulfill Federal requirements. In addition, States that do not operate delegated programs may implement parallel programs under their own statutes unless specifically preempted by Federal law. These laws generally do not apply to regulate environmental conditions that occur soley in other countries. If a

country allows the import of a vessel, the vessel is subject to the environmental requirements of the receiving country.

The Ship Scrapping Process

Scrapping conventionally-powered ships is a heavy industrial activity, and as such, it is a dirty, difficult and hazardous job. Many of the vessels currently designated for scrapping were built in the 1940s, 1950s and 1960s and employed then state-of-the-art materials in their construction. While those materials were in common use at that time to protect human life and extend the service life of the vessels, many have since been classified as hazardous. They include asbestos, polychlorinated biphenyls (PCBs), lead, chromates, and mercury.

Complicating the problem is that, through repair and retrofitting, hazardous materials in some areas have been removed while additional hazardous materials previously considered beneficial may have been incorporated (either intentionally or unintentionally) into a vessel. Because these activities take place at different times, at different facilities around the world and are of varying magnitudes, even vessels of the same type may have vastly different amounts of hazardous materials in different locations. Furthermore, some vessels in the National Defense Reserve Fleet are of private origin and as such were not always under government control. Consequently, complete and accurate records cataloguing the location and extent of hazardous materials rarely exist.

This limited knowledge on the type and quantity of hazardous materials makes abatement difficult and increases risk when trying to make accurate estimates of how much work will be involved. In some cases, the actual location and extent of hazardous material cannot be identified until the ship is being scrapped.

For both domestic and international ship scrapping operations the skills required to dismantle a ship are a unique blend of technical knowledge and physical labor. Technical knowledge is needed to properly eliminate hazardous materials and safely remove heavy sections of steel hulls. Ship scrapping is still a labor-intensive process with much of the work being done using hand held cutting tools.

The Economics of Ship Scrapping

The key factors involved in the financial aspects of the Ship Scrapping program are costs and value to the US Government and costs and value to the purchaser.

For the past 15 to 20 years, the highest bids for US ships have been for scrapping in foreign countries. The US Maritime Administration historically has sold most of its ships for export at an average price of $108 per ton. The two most recent ship sales for domestic scrapping provided the US Maritime Administration with about $10 per ton. Currently, there are 70 obsolete ships in the National Defense Reserve Fleet totaling approximately 400,000 light ship tons. At $10 per ton, the ships are worth $4 million; at $100 per ton, they are worth $40 million. On January 27, 1998, the US Maritime Administration received 15 bids for its most recent Invitation for Bid: eight for domestic scrapping and seven for foreign scrapping. Two of the domestic bids were negative, while the remaining domestic bids ranged from $1 to $20 per ton. The foreign bids ranged from approximately $7 to $41 per ton. However, the US Maritime Administration believes these bids are likely low as a result of the current uncertainty over the ability to export and because the buyer assumes the risk

under the contract that it may be unable to obtain approval for export. The US Maritime Administration has not been able to sell a vessel for export in over three years.

Costs and Revenue to the US Government

Costs to Prepare and Store Vessels Designated for Scrap. Some vessels have been stored in the inactive fleet up to fifty years. Depending on when the vessels were inactivated, various levels of environmental remediation have been performed. The Department of the Navy and the US Maritime Administration perform a number of activities before a ship is sold for scrap. Some of those activities are in common; however, many, such as demilitarization are performed only by the Department of the Navy. In fiscal year 1997, the Department of the Navy spent approximately $6.3M preparing ships newly decommissioned and maintaining the 111 ships designated for scrapping. This does not account for the unmeasured labor efforts performed by ship's crew preparing the ship for inactivation prior to decommissioning. Additionally, the US Maritime Administration expended approximately $1.9M in fiscal year 1997 for the storage of 70 vessels designated for scrap.

A significant contributor to the difference between the Department of the Navy and the US Maritime Administration costs is what is undertaken by each prior to offering a vessel for disposal and the budget authority to prepare vessels for sale. The US Maritime Administration performs certain steps such as the removal of bulk hazardous wastes as part of routine maintenance of the vessels but relies upon the scrapper to perform most remediation actions and offers their vessels for sale "as is, where is." The US Maritime Administration would require additional authorizing legislation and appropriations if required to perform additional remediation prior to sale.

In part because many US Navy ships are retained as mobilization assets or designated for foreign military sales, the Department of the Navy is able to perform some additional remediation during the inactivation of their vessels or prior to sale. However, the Department of the Navy relies primarily on the scrapper to perform most of the hazardous waste remediation during the scrapping of the vessels.

The Panel has received comments that it would be possible to reduce the scrapper's costs if the US Government did more preparation prior to sale. Some sample remediation estimates developed by the Department of the Navy for its 111 ships designated for scrapping are:

- Remove and dispose of thermal insulation — $100 million
- Remove residual fuels and lube oils — $20 million
- Gas free all fuel oil piping — $10 million
- Remove residual hydraulic oil from systems and piping — $5 million
- Remove and dispose of all equipment containing or suspected of containing PCB transformers and capacitors — $10 million

While these steps may reduce the scrapper's cost, they come at an expense to the US Government, and they may have only partial benefit that may not be proportionate to the costs; i.e., the effort would not be complete because much of the hazardous material, including asbestos and polychlorinated biphenyls (PCBs), are integral parts of the vessel's structure and would be inaccessible until the vessel is dismantled.

The Department of the Navy and the US Maritime Administration previously estimated they would spend approximately $58 million (in Fiscal Year ‘97 dollars) over the next six years, if they could not dispose of their excess vessels. Since the estimate was prepared, the Department of the Navy and the US Maritime Administration combined have awarded contracts for the scrapping of only four vessels. Today over a dozen US Maritime Administration ships are in such poor condition that they will soon require dry-docking for repairs to prevent the ships sinking in place. Estimates for the cost of repairing the worst ships run as high as $800,000 per ship. Even proceeding under a "scrap the worst first" formula, some vessels will require repair if not scrapped in a reasonable period of time. The US Maritime Administration estimates it will have to scrap an average of 18 ships per year to avoid dry-docking costs. Because these US Maritime Administration expenditures would be billed back to the Department of the Navy as a part of the National Defense Reserve Fleet, over the next six years the Department of the Navy could find itself spending much more than previously reported.

Contract Administration and Oversight. This process involves the evaluation of a technical compliance plan submitted by the bidder, compliance checks and site visits as part of the bid evaluation and monitoring performance of the contract. As the US Maritime Administration and the Defense Logistics Agency continue to sell their obsolete vessels, the administrative costs will include increased expenses associated with salaries for contract and environmental personnel necessary to conduct the technical review of the bids and oversight of contract performance.

The estimates shown below are based on limited experience with two contracts awarded for the scrapping of four vessels under the new Defense Logistics Agency and US Maritime Administration processes, discussed in section three.

FY97 Contract Administration Costs (dollars)

	Defense Logistics Agency	US Maritime Administration
Salaries (benefits/overhead/rent):	367,000	350,000
Printing and Mailing	5,000	10,000
Surveys		6,500
Travel	40,000	25,000
Full time surveillance costs	160,000	
Total	572,000	391,500
FY 97 Receipts from ship scrap sales	371,189	*243,000
Cash Flow = Net Loss	(200,811)	(147,500)

* Receipts are not returned to the US Maritime Administration to offset these costs

Note: There were no international sales in FY97.

Costs and Value to the Purchaser

The purchaser's cost will vary by the type of ship. Ship scrapping is economically viable only when the proceeds from the resale of scrap metals and useable equipment from a ship is greater than the sum of:

- Purchase price of the scrap vessel,
- Cost of towing the vessel to the scrapping location, including preparation and insurance,
- Cost of hazardous materials abatement, including personal protective equipment,
- Cost of labor and training to dismantle the ship,
- Cost of infrastructure, equipment and machinery where the ship is dismantled,
- Cost of marketing and transport of saleable items
- Costs of fees, permits, insurance, bonds

The Department of the Navy and the US Maritime Administration believe that ship scrapping in the United States is an industry with a small margin of profit because of the factors listed above. The profit centers for the purchaser are the volume and value of the usable items removed from the vessel and the value of the metal (ferrous and non-ferrous). Both of these will vary based on the size and type of ship, as well as the value of the metals on the metals market.

Representatives of the US scrapping industry have stated that it is more difficult for companies to scrap ships profitably in the domestic market as a result of more protective environmental, safety, health and labor laws in the United States. Another factor affecting profitability of the US scrapping industry has been the inconsistent supply of ships to be scrapped. Still, some US ship scrapping organizations told the Panel that ship scrapping can be profitable, provided a steady supply of ships is available either from the US Government or from the commercial shipping industry. However, other ship scrappers have testified that they do not believe domestic scrapping can be profitable unless subsidized.

The Worldwide Ship Scrapping Market and the US Industrial Base

Between 1970 and 1982, 533 US Navy ships were scrapped, 10% of which were scrapped overseas, while 781 US Maritime Administration ships were scrapped, 38% of which were scrapped overseas. The Reagan era military build-up of the 1980s resulted in only a few US Navy vessels released for scrapping. Only three diesel submarines were scrapped domestically from 1983 to 1989. The US Maritime Administration sold 132 ships for foreign scrapping during this time. Between 1991 and 1994 the US Maritime Administration scrapped a total of 81 ships with only one being scrapped domestically.

During the 1970s, the world's ship scrapping industries were primarily located in the United States, Spain, Portugal and Italy. By the beginning of the 1980s, there had been a shift of these industries to Taiwan, South Korea and the People's Republic of China. Since then, nearly all large commercial vessels have been exported for scrapping. The US ship scrapping industry became almost non-existent during this time. By 1988, ship scrapping emerged on the Indian subcontinent with the afloat (beaching) scrapping methods previously described. Today, India, Pakistan and Bangladesh dominate the world ship scrapping market, while Vietnam, the Philippines and Thailand are rapidly developing scrapping industries.

When compared to the estimated worldwide quantity of ships available for scrapping, the Department of the Navy and the US Maritime Administration portion is extremely small. Within 10 years there will be an estimated 68 million light displacement tons of tankers, bulk carriers, and other commercial ships available for scrapping worldwide. The combined tonnage of Department of the Navy and US Maritime Administration surplus ships awaiting scrapping is currently about one million tons and it is estimated that only an additional one million tons of ships will become available to the Department of the Navy and US Maritime Administration for scrap over the next ten years. Thus the US Navy and US Maritime Administration ships available for scrapping will constitute only about 3% of the world's ship scrapping market.

US Private Sector

The shipping industry in the United States that owns and operates merchant ships regularly disposes of them overseas. The Oil Pollution Act of 1990 encourages the early phase-out of some private ships by requiring the use of double hulls on tankers operating in United States navigable waters.

- The United States relies on the US-flag merchant fleet as a fourth arm of defense to provide sealift support in times of war or national emergency. In 1996, Congress enacted the Maritime Security Act of 1996 to provide annual operating payments of $2.1 million per vessel to US companies to maintain 47 liner vessels under the US-flag. The Panel did not address any barriers related to the private sector. However, according to a commenter at the public meeting on ship scrapping and private sector representatives who have met with the US Maritime Administration, many US-flag carriers cannot afford to remain under the US-flag if they are subject to a ban on overseas scrapping or forced to remediate their ships at cost in the United States.

III. Catalyst for change — Present Practices

Recently the US Government's ship scrapping program has come under criticism for contracting with companies that have violated environmental, worker health and safety regulations and established ship scrapping practices. Some instances of illegal dumping of asbestos, polychlorinated biphenyls (PCBs), oil, lead, and chromates, as well as dangerous working conditions have been reported in the United States. Exporting ships for scrapping has also come under criticism because some foreign scrapping facilities (usually found in developing countries) are reported to have serious health and safety problems, and little or no enforcement of environmental or occupational safety and health regulations. Recognizing the need for improvements in the ship scrapping process, the Defense Logistics Agency, the Department of the Navy and the US Maritime Administration began instituting changes in their programs in 1996 to address management practices, ship preparation processes, contracting processes, contractor oversight, and vessel exports.

Positive Management Practices

Interagency Work Group. In December 1996, the Department of the Navy, the Defense Logistics Agency, and the US Maritime Administration and the US Coast Guard, along with other involved agencies, began meeting quarterly to discuss program improvements and share evaluation procedures and oversight information.

The Surface Ship Inactivation and Disposal Office. The Department of the Navy created the Surface Ship Inactivation and Disposal Office on November 1, 1997 in order to consolidate total responsibility and authority for inactivation and disposal of surface ships under a single Program Manager. The surface ship inactivation and disposal program is responsible for the planning, programming, budgeting and execution of the Department of the Navy's inactivation/disposal of conventional surface ships.

Ship Scrapping Teams. The Defense Logistics Agency and the US Maritime Administration have formed ship scrapping teams that bring together functional specialists in sales, contracting, legal, environmental and safety to evaluate the scrapping process and implement changes.

Seminars, Working Groups and Industry Outreach. The Defense Logistics Agency held a series of workshops with prospective bidders to improve the overall sales contracting process. These workshops have helped the Defense Logistics Agency improve their contract management and oversight while increasing bidders' working knowledge of the technical proposal process resulting in the preparation of more comprehensive plans. Additionally, participation by the Defense Logistics Agency and the US Maritime Administration in private industry and maritime conferences and symposiums have enhanced communications and created a forum for the exchange of information. Informal dialogue with private industry has further enhanced the understanding of the private sector and government on issues faced in ship scrapping.

Regulatory Oversight

The US Environmental Protection Agency. The US Environmental Protection Agency has conducted inspections at ship scrapping sites in Brownsville, Texas, Wilmington, North Carolina and in Baltimore, Maryland, resulting in a criminal conviction in the scrapping of the ex-Coral Sea in Baltimore and civil penalties against scrappers in Brownsville and Wilmington.

The Occupational Safety and Health Administration. The Occupational Safety and Health Administration has inspected a number of the ship scrapping operations. Twenty-two inspections resulted in the detection of 137 violations of Occupational Safety and Health Administration standards.

State and Local Authorities. State environmental and safety regulatory organizations regularly conduct inspections on ships undergoing scrapping. The panel has not collected the results of these efforts.

Contracting Process Improvements

In retrospect, the sales process for ship scrapping before 1996 did not adequately address environmental and safety concerns because the sales awards were based solely on the highest bid.

Other weaknesses included: lack of a requirement for a technical plan prior to award, lack of business or financial information, no independent evaluation of the companies' financial backgrounds, minimal contract oversight and limited on-site progress reviews.

In recognition of these weaknesses both the Defense Logistics Agency and the US Maritime Administration instituted a number of changes applicable to domestic contracts. The first change was to include the requirement for prospective domestic scrappers to submit technical plans that are used to evaluate responsibility and capability to perform. The technical plans consist of an environmental compliance plan, an operational plan (a plan which describes how the ship will be cut, etc.), a business/financial plan and a safety and health plan. The US Maritime Administration does not require a separate health and safety plan; however, many of these elements are included in the environmental plan. Each plan must include detailed descriptions on how the job will be executed by the bidder and provides a good indication of the bidder's capabilities and knowledge to scrap a ship in accordance with all United States Federal, State, and Local laws and regulations.

Teams of experts composed of environmental protection specialists, health and safety specialists, marine surveyors, engineers, and financial analysts review the technical plans. The teams evaluate the plans to determine whether the bidder has sufficient knowledge and technical ability to conduct the scrapping in an environmentally and technically responsible manner. For example, the teams check the past performance of the bidder and subcontractors with cognizant Federal, State and Local regulatory authorities. The process includes telephone, and where necessary, written communication with the regulatory authorities, and, where possible, database searches.

The US Maritime Administration undertakes a pre-award survey for bidders whose technical plans appear on paper to be substantially complete and responsible. This survey includes a site visit and review to further evaluate environmental, health and safety issues. Based upon the technical plan review and pre-award survey, the US Maritime Administration rates bidders on a pass/fail basis. Only those bidders who receive a passing grade are considered further on the basis of the bid price.

The Defense Logistics Agency has a similar sealed bid process divided into two separate steps. The first step is the request for submission of a technical proposal (plans). Step two is the issuance of an invitation for bids to only those offerors submitting acceptable technical proposals in step one. Prior to award, the Defense Logistics Agency conducts a pre-award survey of the highest bidder to determine its responsibility. Award is made to the highest responsive, responsible bidder. The successful bidder's technical proposal is incorporated in the contract and is enforceable contractually.

Lot sales of ships. As a result of input obtained through participation with private industry, the Defense Logistics Agency changed its sales procedures from individual ship bids to lot sales of as many as six ships. The latest request for technical proposal released by the Defense Logistics Agency in February 1998 allows sales of ships in lots of six. This allows the bidder to have a stream of ships for continuous throughput making possible economies of scale in operations and minimizing overhead costs. The US Maritime Administration is considering additional flexibility to facilitate purchase of lot sales of multiple ships.

Domestic Contract Oversight

The procedures used to oversee domestic contracts by the Defense Logistics Agency and the US Maritime Administration have improved over the past several years as these organizations' experience with ship scrappers has grown and as it has become evident that more scrutiny over the process was required. Once a contract has been awarded, both the Defense Logistics Agency and the US Maritime Administration conduct contract oversight (surveillance) of the ship scrapping contractor(s). Both agencies follow similar plans that currently consist of the following measures:

- Post-award/pre-performance meeting between the agency, contractor and invited Federal, State and Local officials to discuss the contractor's plan for disposing of the ship and to review the environmental and safety laws at the contractor's facility.
- A scheduled quarterly visit by the agency that may include the Sales Contracting Officer, an environmental specialist, safety specialists, and a Navy or marine engineer to the contractor's work site. During the visit, all work to date is reviewed, work progress is noted, and a check made of environmental and safety compliance and worker training.
- An unscheduled quarterly visit by each Agency (environmental and safety specialists) to check environmental and safety compliance
- Unscheduled visits by the Federal, State, and Local regulators/officials.
- The Defense Logistics Agency makes additional unannounced inspections that are based on a company's contract performance and a color based rating system.
- A **GREEN** (no violations or minor warnings) rating results in the once-a-quarter visit, unless inspection results warrant increased surveillance.
- An **AMBER** (minor compliance violations) rating merits several unannounced inspections in a quarter.
- A **RED** (numerous minor compliance violations or a major compliance violation), rating results in the company coming under full-time surveillance.

Export Agreements

The distribution of polychlorinated biphenyls (PCBs) in commerce for disposal, including export, is generally prohibited under the Toxic Substances Control Act and implementing regulations. In August and November 1997, in anticipation of the US Environmental Protection Agency regulatory changes to establish a process for authorizing export of ships for scrapping, the Department of the Navy and the US Maritime Administration, respectively, entered into interim export agreements with the US Environmental Protection Agency under which the Department of the Navy and the US Maritime Administration could sell vessels containing polychlorinated biphenyls (PCBs) for overseas scrapping. The export agreements were necessary because current regulations prohibit the export of polychlorinated biphenyls (PCBs) for disposal.

The current export agreements between the US Environmental Protection Agency and the US Maritime Administration and the US Environmental Protection Agency and the Department of the Navy require the removal, prior to export, of all transformers and large high and low voltage capacitors that contain dielectric fluids with polychlorinated biphenyls (PCBs) in any concentrations, as well as the removal of all hydraulic and heat transfer fluids containing polychlorinated biphenyls (PCBs). The export agreements also mandate the removal of solid items containing polychlorinated biphenyls (PCBs), when such solid items are readily removable and their removal does not jeopardize the structural integrity of the ship or the ability of the ship to be operated in a seaworthy manner for delivery to the location where it will be scrapped. The export agreements define "readily removable" as meaning the polychlorinated biphenyls (PCBs) or polychlorinated biphenyl (PCB)

items can be removed in a cost effective and efficient fashion without significant risks to human health and the environment. Objects are not readily removable if the objects must be removed by heat, chemical stripping, scraping and abrasive blasting or similar processes.

The export agreements require a two-part notification process to inform importing countries of the likelihood of polychlorinated biphenyl (PCB) containing materials on US Government ships that are exported for scrapping through these export agreements. Pursuant to the terms of the agreement, the first notice is provided annually by the US Environmental Protection Agency to the embassies or alternative designated contacts of the countries that may be scrap-ship importers. In August 1997 notices were sent to Bangladesh, China, Korea, Indonesia, Mexico, Pakistan, Philippines, Portugal, Spain, Taiwan, and Vietnam. The second notice, which references the first notice, is to be sent by the US Environmental Protection Agency to the specific country that will be receiving a vessel under this Agreement. The vessel may not be exported for 30 days following the transmission of such notice. Currently, the US Environmental Protection Agency has not sent any second notices as the US Maritime Administration and the Department of the Navy suspended their efforts to export vessels under their Agreements with the US Environmental Protection Agency pending the deliberations of the Interagency Ship Scrapping Review Panel.

In January 1998, both the Department of the Navy and the US Maritime Administration confirmed that they would not export any vessels under those export agreements until the Interagency Ship Scrapping Panel issues its report. Also, they will confer with the US Environmental Protection Agency and other interested agencies to discuss the report's implications, if any, for the responsible conduct of ship scrapping under the agreement before resuming efforts to export ships.

IV. Panel Efforts

While actions have already been taken to address many of the problems in the ship scrapping process, the Panel believes there are opportunities for improvements. The Panel reviewed both domestic and international issues and made recommendations relating to contracting improvements, data gathering and pilot projects, PCB guidance, leveraging regulatory oversight, and international issues. Implementing these recommendations will likely result in a need for additional funding and legislative authority.

In addition, the Panel makes the following general recommendations:

- The Department of the Navy and the US Maritime Administration must be able to continue to scrap obsolete vessels; and in so doing, the option to scrap vessels both domestically and internationally should not be foreclosed, subject to the Panel's other more specific recommendations below.
- The Department of the Navy and the US Maritime Administration should continue to look for innovative ways to improve the ship scrapping process, both domestically and internationally, to minimize environmental and occupational risks.
- The Department of the Navy and the US Maritime Administration should ensure that changes to ship scrapping in the future apply to both agencies to maintain economic competition in the scrapping of government vessels in recognition of the fact that both agencies are operating in the same domestic and international market.

- The Department of Defense should reconvene the Panel, or a similar group, to evaluate the results of implementing the recommendations made one year after the report is issued and should consider whether any modifications should be made with regard to ship scrapping.

Domestic Issues

The Panel endorses the recent efforts by the Defense Logistics Agency, the Department of the Navy and the US Maritime Administration to improve domestic ship scrapping processes. However, there has been insufficient experience to evaluate the impact of these changes. The Agencies are continuing to carefully assess and evaluate the results of the current ship scrapping contracts awarded using the new procedures and will implement changes as necessary.

Industrial Base Assessment

In mid 1997, seven ship scrapping entities reportedly existed in the United States — six private and one public (Puget Sound Naval Shipyard, which recycles naval nuclear-powered vessels). Some private facilities have had serious environmental, health and safety problems. While new ship scrapping ventures appear regularly, most have little track record scrapping vessels in the United States.

Over the last several years, a number of entities have expressed varying levels of interest in the possibility of scrapping government vessels. In response to its 1996 solicitation for the scrapping eight vessels, the US Maritime Administration received both negative and positive bids. (Positive bids are those with a purchase price greater than $0.00. Negative bids are those that require the government to pay for the scrapping). Out of the five positive bids, the US Maritime Administration identified only one potentially responsible bidder to which it awarded only two ships because of the bidder's limited capacity and the US Maritime Administration's lack of experience with the bidder. The Defense Logistics Agency's September 1996 two-step solicitation for five ships on the west coast resulted in only two of five technical proposals found to be technically acceptable and only two of the five ships were awarded. The Defense Logistics Agency awarded those two ships to the same bidder who received the award under the US Maritime Administration's 1996 solicitation. The Defense Logistics Agency's May 1997 two-step solicitation for six ships on the east coast resulted in two technically acceptable proposals but no responsive positive bids. In response to its most recent solicitation for 13 vessels, the US Maritime Administration also received both positive and negative bids. Although the US Maritime Administration has not completed its evaluation of the positive bidders, it anticipates that the number of potentially responsible bidders will be small.

Based on public comment, the Panel has reason to believe that there are domestic scrappers who remain interested in purchasing government ships and who can make a profit from scrapping government ships. The current record of domestic bids for ship scrapping does not provide a basis for optimism that the domestic industry currently has the existing capacity to handle the current backlog of vessels. There is not enough experience to determine whether newly implemented Defense Logistics Agency and US Maritime Administration procedures will provide sufficient incentive for new or existing scrappers, or shipbuilding and repair yards to enter or return to the market on a sales basis.

In view of the decline in available ship building and repair work for US shipyards in many parts of the nation, the Panel considered whether those yards could be brought into the scrap market in order

to retain jobs and use America's experienced shipyard workforce. There is little doubt that shipbuilding and repair yards have the technical capability to scrap ships. Many yards have established, experienced worker health, safety and environmental personnel and programs that address many of the same hazardous materials abatement, handling and disposal issues faced in ship scrapping (e.g., respiratory protection, confined spaces, etc.). In addition, because the job skills required and the equipment used to perform scrapping operations do not differ significantly from those necessary for ship repair or building, little if any additional training is necessary. Many also have cranes and other heavy equipment necessary to handle scrap metal and slips and dry-docks in which scrapping could take place.

Some US yards have made or considered forays into the ship scrapping market. Unfortunately, they have generally found it unprofitable to purchase and scrap vessels under a sales process. Some yards may find it difficult to compete with domestic scrapping operations and foreign bidders. Many have cited the environmental, health and safety costs and risks as significant factors as well as the uncertain supply of vessels. Other factors may include labor costs; difficulties in balancing and coordinating the processing of scrap vessels with other yard activities; location and associated towing costs; lack of access to and knowledge of markets for scrap material; and competition with more profitable uses for facilities. Although some domestic repair yards continue to express an interest in ship scrapping, they have not participated in recent solicitations. Many of those yards that have expressed an interest have indicated that they would be willing to conduct scrapping only if the Government is willing to pay on a cost plus basis or profit sharing arrangement.

Positive bids from potentially responsible purchasers still are being received from some domestic scrappers and the new processes have not been in place long enough for industry and the US Government to assess their success. However, the Panel encourages continued exploration of the utility of demonstration projects and continued discussion of policy options to assess how to both protect workers and the environment and maximize the scrap value of ships for the US Government and taxpayers. In addition, a number of the Panel's recommendations are designed to assist the domestic industry and the US Government to understand better the costs, environmental, health and safety risks, liabilities, and processes associated with domestic ship scrapping. The Panel recommendations are also designed to provide guidance on how to scrap vessels in an environmentally and economically sound and safe manner. Through these efforts the Panel hopes that a responsible domestic scrapping industry will develop that can handle a more significant portion of the backlog of US Navy and US Maritime Administration vessels.

Contracting Improvements

The Panel recognizes that the Defense Logistics Agency and the US Maritime Administration have begun addressing many of the problems identified with past practices. The Panel believes that more effective use of US Government resources can be made by better coordinating Defense Logistics Agency and US Maritime Administration responsibilities for contract oversight and US Environmental Protection Agency, Occupational Safety and Health Administration, and State and Local authority, responsibilities for monitoring compliance with regulatory requirements.

The Panel evaluated the contracting processes of both the Defense Logistics Agency and the US Maritime Administration. Contract clauses were reviewed by a work group of the Panel with special attention given to those relating to environmental and occupational heath and safety. The emphasis of the review was to ensure that all applicable environmental and occupational health and safety

standards were incorporated so that health and safety would be maintained. The results of the reviews concluded that the process could be improved by implementing the following recommendations.

Recommendations:

- The US Maritime Administration should add a requirement for a Safety and Occupational Health Plan (comparable to the existing Defense Logistics Agency requirement) to its invitation for bid.
- The Defense Logistics Agency, the US Maritime Administration, and Federal, State, and Local regulatory agencies should develop protocols to share information about potential contractors and their facilities.

Performance Bonds. A performance bond is an incentive to the contractor to perform as required by the contract. The US Maritime Administration currently requires a performance bond in the amount of $150,000 per ship while the Defense Logistics Agency requires a performance bond of $50,000 per ship. The US Maritime Administration believes this puts them at a competitive disadvantage.

Recommendation:

- The Defense Logistics Agency and the US Maritime Administration should develop standardized performance bonds that protect the US Government's interests in the event that a scrapping contractor fails to perform and to maximize the contractors' incentive to scrap ships in an environmentally sound, safe, and economical manner.

Data Gathering and Pilot Projects

Because domestic ship scrapping has historically been done through a sales process, little information is available to the US Government regarding the scope and costs associated with the complete abatement of hazardous material on government vessels. Under the current sales contracting process, contractors are not required to divulge their cost data. To date, research that has been undertaken reflects a wide range in the scope and costs of hazardous material abatement, even among similar vessels. As noted elsewhere, even sister ships originally constructed to the same specifications can be vastly different when they are ready to be scrapped.

Panel members, industry representatives, and consultants have suggested that additional knowledge on the techniques for scrapping large vessels and the range, types and locations of hazardous materials would help to ensure that ships are scrapped in an economically viable and environmentally sound manner. Information gained could help determine the feasibility of alternate contracting strategies, improve technical processes, improve regulatory compliance and monitoring, provide training opportunities in ship scrapping, and provide data to develop budget requirements. Economic analysis of the results could provide improved projections of ship disposal costs as part of new ship acquisition life cycle costs.

Recommendations:

- The Department of the Navy should carry out a pilot project to quantify the scope and costs associated with ship scrapping in private industry as a vehicle for gathering information to

improve the ship scrapping process. Any pilot project should run concurrently with ongoing ship scrapping operations so it does not interfere with mandates to reduce the number of vessels in storage.
- The Defense Logistics Agency and the US Maritime Administration should develop a plan to enable scrappers to share their financial and environmental data with the US Government, so that the US Government has a better understanding of the scope and costs of hazardous material abatement and the profit centers of a ship scrapping operation.

PCB Guidance

There is no approved guidance for developing and evaluating sampling plans for testing solid materials containing polychlorinated biphenyls (PCBs) for purposes of disposing of them correctly. As a result ship scrappers are not able to properly address non-liquid polychlorinated biphenyls (PCBs) in their environmental compliance plans and the Defense Logistics Agency and the US Maritime Administration are not able to evaluate those plans.

Recommendation:

- The US Environmental Protection Agency and the Occupational Health and Safety Administration, in coordination with the Defense Logistics Agency, the Department of the Navy, the US Maritime Administration and interested parties, should develop guidance for testing, removal, and disposal of non-liquid polychlorinated biphenyls (PCBs) in accordance with applicable rules and regulations. The Panel recognizes the necessity for data or information on the presence, use, and ultimate disposition of non-liquid polychlorinated biphenyls (PCBs) on vessels to be scrapped in order to develop guidance. The Panel believes anyone having such information should provide it to the US Environmental Protection Agency promptly to assist in the development of guidance.

Leveraging Regulatory Oversight

The Panel also reviewed the effectiveness of regulatory compliance monitoring by the US Environmental Protection Agency and the Occupational Safety and Health Administration and recommended enhancements that can be made in the regulatory compliance monitoring process. The US Environmental Protection Agency, the Occupational Safety and Health Administration, and their State and Local counterparts are responsible for monitoring compliance of ship scrappers with applicable environmental and occupational health and safety standards, and for taking enforcement actions when these standards are violated. As noted previously, where States have been granted environmental, safety and occupational regulatory authorities, they should be included in the implementation of these recommendations.

Recommendations:

- The Defense Logistics Agency, the Department of the Navy, the US Maritime Administration, the Occupational Safety and Health Administration and the US Environmental Protection Agency should enter into Memoranda of Agreement that set out responsibilities for coordination. It is anticipated that Memoranda of Agreement will include provisions addressing the following issues:

- Notification by the Defense Logistics Agency and the US Maritime Administration to the US Environmental Protection Agency, the Occupational Safety and Health Administration or the involved State and Local agencies, before a vessel has been moved, that a contract has been let and the location of the proposed scrapping operation;
- Identification of points of contact in the US Environmental Protection Agency and the Occupational Safety and Health Administration (both nationally and regionally) and State agencies that may choose to attend post-award/pre-performance conferences at which environmental and occupational health and safety plans are reviewed;
- Sharing of information by the US Environmental Protection Agency and the Occupational Safety and Health Administration about compliance histories of prospective bidders upon request of the Defense Logistics Agency and the US Maritime Administration.
- The US Environmental Protection Agency and the Occupational Safety and Health Administration should conduct, where appropriate, joint coordinated inspections of ship scrapping operations. These inspections should provide a more comprehensive and efficient approach to maintaining compliance with all applicable environmental and occupational requirements.
- The US Environmental Protection Agency should conduct comprehensive, multimedia, environmental inspections of ship scrapping operations. The US Environmental Protection Agency's National Enforcement Investigations Center should develop a protocol for such inspections which would address compliance with environmental laws and regulations not only under the Toxic Substances Control Act, which covers polychlorinated biphenyls (PCBs), but the Clean Air Act, the Clean Water Act, and the Resource Conservation and Recovery Act, which applies to solid and hazardous wastes.
- The US Environmental Protection Agency, the Occupational Safety and Health Administration, the Defense Logistics Agency and the US Maritime Administration should develop a compliance manual that outlines for ship scrappers the relevant environmental and occupational health and safety requirements of their contracts and applicable laws and statutes.
- The Department of the Navy, the Defense Logistics Agency, the US Maritime Administration, the US Environmental Protection Agency, and the Occupational Safety and Health Administration should continue to educate the ship scrapping industry in the regulations and expectations of the US Government through educational vehicles such as seminars and workshops.

International Issues

The Panel reviewed the advantages and disadvantages of exporting vessels and their implications for US domestic and foreign policy. The historical practice in the maritime industry throughout the world in dealing with vessels at the end of their useful lives has been to sell them for scrap in the international marketplace. Major scrapping countries include India, Pakistan, Bangladesh, China and Mexico. In most of these countries the demand for scrap steel is high because of the lack of ready supplies of raw materials. In those countries, scrap steel is fundamental to economic development and scrap from vessels is used to manufacture such products as basic construction materials. For example, according to the US Department of State publication, *1996 Background Notes*, Bangladesh

now meets most of its domestic steel needs through ship scrapping. This is one reason why prices for scrap vessels generally have been higher in the international market, and it reflects the importance of the ship scrapping industry to the economy and development of these major ship scrapping nations.

Many of the countries where scrapping is performed do not have environmental, health and safety standards and practices or enforcement comparable to those in the United States. This reality is not limited to the scrapping industry. The United States is a nation that has a high regard for environmental stewardship and worker safety and views itself as an international leader in this arena. The practice of exporting obsolete vessels for scrapping is common today among both developed and developing countries. However, recent concerns in the US have viewed this practice as equivalent to exporting one's worker safety and health and environmental problems, a perception that can impact the image of the United States abroad.

The Panel recognizes, however, that these perceptions must be balanced against the economic realities of developing countries. Recognizing the importance of ship scrapping to these countries, while also recognizing the serious environmental and worker safety issues that exist, the goal of US policy should be to promote improvements in ship scrapping practices in those countries, particularly with respect to protection of workers and the environment.

The Panel reviewed the key international authorities that might bear on decisions to export vessels for scrapping, including the Basel Convention on the Transboundary Movements of Hazardous Wastes and two Organization for Economic Cooperation and Development decisions concerning the control of transfrontier movements of wastes, including wastes destined for recovery operations. In addition, the Panel considered other international instruments, but none were found directly controlling. These included the bilateral hazardous waste agreements between the United States and Canada and Mexico, the recently negotiated Convention on the Prior Informed Consent for the Trade in Certain Hazardous Chemicals and Pesticides, the recently negotiated Protocol on persistent organic pollutants to the Convention on Long Range Transport of Air Pollution and the Asbestos Convention developed by the International Labor Organization.

The Basel Convention controls exports of hazardous waste, including polychlorinated biphenyls (PCBs) and asbestos, but recent changes clarifying the scope of the convention generally do not treat scrap metal as a hazardous waste unless it is contaminated with substances to an extent that renders it hazardous. To date, the Parties to the Convention have not specifically classified obsolete vessels under the Convention. It appears that most countries are not applying Basel controls to obsolete vessels and the Panel is not aware of any country that has specifically classified obsolete vessels as a hazardous waste. The United States is a signatory to the Basel Convention but is not a Party to the Convention.

The 1992 Council Decision (C(92)39/FINAL) on exports and imports for recovery/recycling among member countries of the Organization for Economic Cooperation and Development uses a three tiered system of listed waste. "Green" list wastes can generally be traded under normal commercial controls; "amber" wastes require prior written notice to and tacit consent from the importing country; and "red" list wastes require prior written notice to and written consent from the importing country. The Organization for Economic Cooperation and Development "green" list includes vessels and other floating structures for breaking up, properly emptied of any cargo and other materials arising from the operation of the vessel which may have been classified as a dangerous substance or waste.

The "amber" and "red" lists include some of the materials that may be found on vessels, such as asbestos or polychlorinated biphenyls (PCBs).

Two domestic laws contain export controls on toxic or hazardous chemicals/materials and hazardous wastes, the Resource Conservation and Recovery Act and the Toxic Substances Control Act. The Resource Conservation and Recovery Act includes a notice and consent regime for the export of hazardous wastes. The proposed country of import must give its consent to the shipment before the material leaves the United States. The US Environmental Protection Agency, however, has not determined whether Resource Conservation and Recovery Act export controls should apply to ships that are partially dismantled and towed for scrapping abroad.

The Toxic Substances Control Act contains provisions that generally prohibit the distribution of polychlorinated biphenyls (PCBs) in commerce and allow the US Environmental Protection Agency to regulate other toxic substances, including asbestos. Under this authority, the US Environmental Protection Agency has prohibited the export of polychlorinated biphenyls (PCBs) for disposal, and it treats the export of a vessel as the export of polychlorinated biphenyls (PCBs) if the vessel contains any materials that may contain or may be contaminated with polychlorinated biphenyls (PCBs) at regulated concentrations. The Toxic Substances Control Act includes a requirement to provide notice to an importing country, but not to obtain its consent, before the export of materials subject to regulation under the statute.

The US Environmental Protection Agency is currently in the process of revising its polychlorinated biphenyl (PCB) export regulations. In 1994, it published a proposed rule for controlling the export and import of polychlorinated biphenyls (PCBs) for disposal. The proposed rule discussed a process for allowing the export of vessels under certain conditions, one of which was the removal of liquid polychlorinated biphenyls (PCBs) in transformers, large high and low voltage capacitors, and hydraulic systems and heat transfer equipment. Liquid polychlorinated biphenyls (PCBs) pose some of the greatest environmental and public health risks due to their toxic, persistent, and bioaccumulative properties. As discussed earlier in the report, the US Environmental Protection Agency entered into interim export agreements in 1997 with the Department of the Navy and the US Maritime Administration, under which the Department of the Navy and the US Maritime Administration could sell, for overseas scrapping, vessels that contain polychlorinated biphenyls (PCBs) at regulated levels. The export agreements were developed as a temporary measure to address the export of vessels until the US Environmental Protection Agency issues a final PCB export rule. Rulemaking under the Toxic Substances Control Act is a complex process which includes publishing a notice of proposed rulemaking, accepting both written and oral comments from the public and publishing a final notice of rulemaking. This rulemaking will take two years from now to complete.

Also, as discussed earlier in this report, the interim export agreements require removal of liquid polychlorinated biphenyls (PCBs) and certain solid items containing polychlorinated biphenyls (PCBs) and a two-part notification process to inform importing countries of the likelihood of polychlorinated biphenyl-containing materials on US Government ships that are exported for scrapping through these export agreements. Such notices provide an opportunity to object to the imports. No country has objected to vessel imports based on the first round of notices provided in August 1997; however, the Government of India, in response to an earlier notification, has requested additional time to consider the matter. The US Environmental Protection Agency has not provided second notices, which are required only once a decision has been made to export a specific vessel to

a particular country, because the US Maritime Administration and the Department of the Navy have suspended efforts to export vessels for scrapping until the Interagency Ship Scrapping Review Panel completes its report. The Department of the Navy and the US Maritime Administration have also agreed to confer further with interested agencies before resuming exports under the interim Export Agreements.

Against this background, the Panel considered how best to address the issue of whether and how the US Government should continue to scrap its vessels in the international marketplace. Several key factors influenced the Panel's conclusion.

- Environmental, health and safety standards and conditions in many of the countries where ship scrapping is performed are less stringent than those in the United States.
- On a relative scale, the tonnage of US Government vessels is small compared to the available tonnage for the international market. The current backlog of vessels amounts to only 1 million light ship tons, with another 1 million tons available over the next 10 years, whereas the tonnage of obsolete vessels available for scrap in the global marketplace is expected to amount to nearly 68 million light ship tons over the next ten years.
- The US Maritime Administration has both a statutory mandate to sell ships and authority, under existing law, to sell them overseas. If the export option and the revenue it generates were not available, the statutory programs supported by US Maritime Administration sales would have to be funded through alternative means.
- There appears to be no prohibition on the export of uncontaminated ships for scrapping in international law or export agreements to which the United States is a party. The Panel is not aware of any countries that prohibit the export of obsolete vessels on the basis that they may contain hazardous materials.
- The Panel recognizes the Department of the Navy and the US Maritime Administration have agreed to confer with the US Environmental Protection Agency and other interested agencies to discuss this report's implications before resuming the exporting of ships for scrapping.

Recommendations:

- The Department of the Navy, the US Maritime Administration, and the US Environmental Protection Agency should revise those agreements as follows:
- Expand notification regarding specific ships to include detailed information about the materials commonly found on these ships.
- Revise the notification to include tacit agreement, if no objection, within 30 days of notification.
- Review export agreements annually to evaluate their use and determine whether export agreements should remain in force.
- The Defense Logistics Agency and the US Maritime Administration should examine how to use enforceable contract terms to promote environmental protection and worker safety, including consideration of the following mechanisms:
- Requirement for the bidders to submit technical plans to demonstrate how they plan to comply with local environmental, health, and safety rules and regulations.
- Request for available information on qualifications and past performance of the scrappers from the US State Department.
- Incorporation of technical plans in the terms and conditions of the contract.

- Requirement for a performance bond from a third party or international letter of credit as an incentive for foreign scrappers to comply with contractual requirements including compliance with local environmental, health, and safety rules and regulations.
- Development of an oversight program.
- The Department of the Navy, the US Maritime Administration, the US Department of State, the US Department of Commerce, the US Environmental Protection Agency, the US Department of Labor, and the Agency for International Development should evaluate how meaningful technical assistance could be provided to interested importing countries, including whether current statutory authorities and funding are adequate for this purpose.
- The US Department of Labor and US Department of State, with the assistance of other Agencies, should explore the possibilities for promoting improvements in safety and health protection in the international ship scrapping industry. This would include working through the private sector with various classification societies, such as the American Bureau of Shipping, and working through the public sector with international organizations, such as the International Labor Organization.

No Unreasonable Risk Determination for Vessel Exports

The Toxic Substances Control Act generally provides that "no person may manufacture, process, or distribute in commerce or use any polychlorinated biphenyls (PCBs)." The Toxic Substances Control Act also provides that the US Environmental Protection Agency may issue rules to authorize such activities if it finds that the activities "will not present an unreasonable risk of injury to health or the environment." For export, a primary factor for this determination is the extent and impact of translocation of polychlorinated biphenyls (PCBs) because of their persistence and mobility in the environment. The Panel was asked to review "information related to the US Environmental Protection Agency's consideration of whether the export of non-liquid polychlorinated biphenyls (PCBs) in vessels to be scrapped presents no unreasonable risk and the basis, if any, for this determination." However, because the US Environmental Protection Agency is engaged in a rule making process to address these activities, the Panel believes that the rule making process is the appropriate forum for considering whether the export of polychlorinated biphenyls (PCBs) in vessels to be scrapped presents an unreasonable risk. The Panel recognizes the need for data or information on the presence, use and ultimate disposition of polychlorinated biphenyls (PCBs) on vessels to be scrapped, and the Panel encourages anyone having such information to provide it to the US Environmental Protection Agency promptly to assist in the rule making process.

Annex A:
Charter for the Department of Defense Interagency Ship Scrapping Review Panel

A. PURPOSE: To review the Department of Navy and U.S. Maritime Administration (MARAD) programs to scrap vessels and, as necessary, make recommendations for improvement. The focus will be to ensure that these vessels are scrapped in an environmentally sound, safe, and economically feasible manner. The Panel will review the process and procedures in place and in development for scrapping vessels, from preparing vessels for scrapping through to final closure of contracting actions, for domestic as well as international ship scrapping. Specific activities to be examined will include, but not be limited to: information about the hazardous and toxic materials on the vessels; the

legal authorities for scrapping vessels; the language in solicitations/requests for technical proposals; development of government cost estimates; the criteria used to evaluate technical proposals/bids; the process for reviewing technical proposals/bids to include technical expertise of members of the review panel; contract clauses; the ability of industry to responsibly carry out government contracting requirements; level, technical capability, and process of the DoD, MARAD, OSHA, and EPA oversight of contractor/purchaser operations; and relationships with environment, safety, and occupational health regulators. In addition, the Panel will review information related to EPA's consideration of whether the export of Non-Liquid Polychlorinated biphenyls (NLPCBs) in vessels to be scrapped presents no unreasonable risk.

B. TERMINATION: The Panel will terminate on March 31, 1998, or earlier. The Under Secretary of Defense (Acquisition & Technology) (USD(A&T)) may recommend the continuation of the Panel, if needed.

C. AUTHORITY: The Interagency Ship Scrapping Review Panel is established by direction of USD(A&T) on December 24, 1997.

D. FUNDING: Members of the Panel will fund their own participation, with the exception of the representative of a State environmental agency, if invited to participate.

E. MEMBERSHIP: The Assistant Deputy Under Secretary of Defense (Cleanup) will serve as the chair. Representatives from the Office of the Deputy Under Secretary of Defense (Environmental Security) will serve as the Secretary of the Panel. The Panel will consist of one representative from the Department of State, the Department of the Navy, the Defense Logistics Agency, the Department of Justice, the Department of Commerce – National Oceanic and Atmospheric Administration, the Department of Labor -- Occupational Safety and Health Administration, the Department of Transportation -- Maritime Administration, the Department of Transportation -- U.S. Coast Guard, and the Environmental Protection Agency. Representatives of the Office of the Secretary of Defense's Director of Defense Procurement and Office of General Counsel will serve as advisors to the Panel.

Each Panel Member will identify a Liaison and a Legislative Affairs (LA) point of contact. The Liaisons and LAs can attend all meetings with their Panel Members. In the event that a Panel Member cannot attend a meeting, they are required to designate an Alternate Panel Member that has authority of the Panel Member. The Liaison may serve as the Alternate Panel Member, if desired. The Legislative Affairs points of contact will coordinate all dealings with Congress.

F. OTHER PARTICIPANTS: The Panel may invite representatives of other DoD or MARAD functional areas or representatives of other government organizations or activities to participate on an as needed basis. Representatives of non-government organizations may be asked to provide information to or communicate with the Panel, but may not participate in the development of any recommendations.

G. PROCEDURES: The Chair will encourage open discussion and expression of views during the meetings. The Panel Members will ensure that their organizations are fully informed on results of the Panel meetings and will seek to represent the consensus position of their respective organizations.

The Secretary will develop and distribute minutes, including items agreed upon, disagreed upon and action items. Draft minutes shall be forwarded to the Panel Members for review and comment within two business days following the Panel meeting. The Panel Members shall provide comments within two business days of receipt, or the minutes will be assumed correct. Security sensitive issues may be discussed in a closed session and not reflected in the minutes.

H. REPORT: The final report from the Panel and any recommendations will be reached by majority vote. Alternative views, if any, will be appended to the final report. The Panel results and any recommendations will be presented to the USD(A&T). After endorsement, the USD(A&T) will provide the report to Panel Members and Congress and make the report available to the public.

I. WORK GROUPS: As necessary, the Panel may establish Work Groups to examine specific issues. Each of the Work Groups will be chaired by a DoD representative. Panel Members shall offer representatives to participate in the Work Groups, as appropriate. The Work Groups will develop proposed Goals and Objectives for Panel approval. The Work Groups will provide status reports at each Panel meeting. Each Work Group will draft a separate chapter for the final report to reflect the results of their review and any recommendations. The reports will include Issue, Background, Discussion, Findings and Recommendations, if any, and be concise. The Work Groups may include, but are not limited to, International Policy & Law, Environment, Safety, and Occupational Health Impacts of Ship Scrapping, Ship Scrapping Process & Industrial Base, and Contracting & Costs.

APPROVAL:

Dr. Jacques Gansler Dated: 2/10/98
Under Secretary of Defense
(Acquisition & Technology)