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# DEFENSE LOGISTICS

## Navy Needs to Develop and Implement a Plan to Ensure That Voyage Repairs Are Available to Ships Operating near Guam when Needed



# Report Documentation Page

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Highlights of [GAO-08-427](#), a report to the Committee on Armed Services, House of Representatives

## Why GAO Did This Study

Unscheduled ship maintenance, known as voyage repairs, is a high priority for the U.S. Navy. Such repairs are sometimes beyond the capability of the ship's crew to perform; cannot be deferred; and must be made at a remote location. After the 1995 Base Realignment and Closure Commission recommended closing the former Naval Ship Repair Facility, Guam, the Navy leased the property at that facility to the Guam Economic Development and Commerce Authority, which sub-leased the property to a private shipyard. DOD has since begun planning for a military buildup on Guam. In January 2007 the Navy recommended allowing the private shipyard's lease on Navy land to expire in 2012. Consequently, the House Armed Services Committee asked GAO to determine the extent to which the Navy has (1) identified future ship repair requirements at Guam, and (2) identified and assessed options to address those requirements. GAO reviewed documents related to ship maintenance and interviewed officials affiliated with private contractors, the Guam government, the Marine Corps, Military Sealift Command, and the Navy in conducting this review.

## What GAO Recommends

GAO recommends that DOD estimate future voyage repair requirements for vessels at Guam; assess the options for providing repairs; and select the best option or combination of options. DOD concurred with comments to these recommendations.

To view the full product, including the scope and methodology, click on [GAO-08-427](#). For more information, contact Brian J Lepore at (202) 512-4523 or [leporeb@gao.gov](mailto:leporeb@gao.gov).

## DEFENSE LOGISTICS

### Navy Needs to Develop and Implement a Plan to Ensure That Voyage Repairs Are Available to Ships Operating near Guam when Needed

#### What GAO Found

The Navy has not identified voyage surface ship repair requirements for 2012 and beyond for vessels operating near Guam, although some information is available on which to base estimated requirements for planning. Navy officials stated that they cannot estimate such requirements because the Navy expects to change its force structure, the Marine Corps has not finalized its plans for any additional vessels associated with the buildup, and Military Sealift Command expects changes to its force structure at Guam. Although the Navy, Marine Corps, and Military Sealift Command have not made final force structure decisions or operational plans for vessels operating at or near Guam, information is available to support an estimation of ship repair requirements as part of the multiyear planning and budgeting process. Specifically, the Navy (1) knows the history of voyage repairs conducted on Guam; (2) can identify vessels likely to operate near Guam based on planned force structure realignments in the 2006 Quadrennial Defense Review; and (3) can identify ship repair capabilities available at other strategic locations in the Pacific area, including Yokosuka, Japan. Developing requirements is a prerequisite for planning, and without developing estimated repair requirements the Navy cannot adequately evaluate options for meeting them.

Navy officials identified potential options for providing repairs in Guam, but have not fully assessed their viability or identified time-critical planning tasks. According to Navy officials, once the Navy identifies voyage ship repair requirements for the Guam area, they will choose from four options or a combination of options for providing voyage repairs. First, the Navy could try to expand existing organic repair capabilities to conduct voyage repairs. However, the existing ship maintenance capabilities and facilities have little excess capacity without augmentation, limiting their ability to perform additional work. Second, the Navy could rely on repair teams flown in from naval shipyards in the United States. Third, the Navy could build a new Navy ship repair facility, though that could require years of planning and new funding. Fourth, the Navy could contract out work to either or both of the private ship repair providers now operating in Guam, or to any other private ship repair facility that might choose to locate in Guam. Three of these options might require building new facilities or expanding existing facilities. Officials said they would not begin planning until preparations begin for submissions to the President's budget for fiscal year 2012. However, lead time is required to perform planning tasks necessary to provide repair capabilities from the Navy's suggested options. Without assessing the viability of each option for voyage repairs in a timely manner, the Navy increases the risk that voyage repair capabilities for ships operating in the Pacific may not be available when needed, potentially undermining ships' ability to accomplish their missions.

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## **Abbreviations**

DOD	Department of Defense
MSC	Military Sealift Command

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United States Government Accountability Office  
Washington, DC 20548

May 12, 2008

The Honorable Ike Skelton  
Chairman  
The Honorable Duncan L. Hunter  
Ranking Member  
Committee on Armed Services  
House of Representatives

Guam is a territory of the United States with strategic value to the Department of Defense (DOD). It is the westernmost U.S. territory with Navy repair facilities, and DOD projects it will become increasingly important in supporting emerging U.S. strategic and political interests in the Pacific. U.S. Navy and Military Sealift Command (MSC) ships operate at or near Guam.<sup>1</sup> Between fiscal years 1987 and 1995 the Navy downsized its fleet from 594 to 392 ships and the Secretary of Defense proposed to close the Naval Ship Repair Facility, Guam,<sup>2</sup> as part of the 1995 Base Closure and Realignment process, based on the excess capacity in Navy depot maintenance capabilities. The 1995 Base Closure and Realignment Commission generally agreed with the Secretary and recommended that the facility be closed. At that time, the Naval Ship Repair Facility, Guam, performed intermediate- and depot-level repairs<sup>3</sup> that included (1) major maintenance and overhaul, and (2) emergent and voyage repairs (hereinafter referred to as voyage repairs) on Navy and MSC ships.<sup>4</sup> The commission also found that the Navy repair facility should be replaced by a private-sector repair capability if MSC ships were to remain at Guam. Because MSC ships did remain, the Navy leased the property on which the

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<sup>1</sup> MSC operates logistics support vessels and stations them at strategic points such as Guam, and typically has several vessels at or near Guam.

<sup>2</sup> Ship repair facilities differ from shipyards in that shipyards are generally found near fleet homeport concentrations while ship repair facilities are generally found near more remote deployment or operating areas.

<sup>3</sup> Navy maintenance is performed at three different levels of increasing complexity: shipboard, intermediate, and depot. Depot-level maintenance is generally performed by civilian depot artisans or contractors.

<sup>4</sup> Emergent and voyage repairs generally consist of maintenance to repair any problems that emerge during deployment, or emergency work needed to enable a ship to continue its mission and which can usually be accomplished without a significant change to a ship's operating schedule.

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former Naval Ship Repair Facility, Guam resided to the government of Guam, which in turn leased it to a contractor doing business as Guam Shipyard. The Navy pointed to the strategic value of having a private ship repair capability in Guam as the rationale for noncompetitively awarding contracts to Guam Shipyard from 1998 to 2007 to overhaul MSC ships and conduct other Navy ship repair work, including voyage repairs. Guam Shipyard continues to operate on the leased property. Guam Shipyard's lease was to expire by October 1, 2007, although Guam Shipyard exercised an option to extend its sub-lease with the Guam Economic Development and Commerce Authority by 5 years, and they in turn exercised the option to extend the lease by 5 years with the Navy. The lease terms gave the Navy the power to terminate the lease at any time for cause, if cause existed.

DOD's planning effort for a military buildup on Guam, which could have an impact on ship repair requirements in Guam, has begun.<sup>5</sup> DOD plans to (1) relocate about 8,000 Marines and 9,000 dependents from Okinawa to Guam, (2) construct a new Navy pier to support visiting aircraft carriers, (3) improve piers to support visiting amphibious vessels, (4) increase the submarine presence on Guam and in the Pacific region generally, and (5) locate an Army ballistic missile defense capability on Guam. Historically, U.S. naval ships whose home port was Guam were permitted by U.S. law to undergo overhaul, repair, or maintenance in shipyards outside the United States or Guam. The John Warner National Defense Authorization Act for Fiscal Year 2007 (the Act) amended section 7310 of Title 10 of the U.S. Code to prohibit U.S. naval vessels home-ported in Guam from undergoing such work in shipyards outside the United States or Guam, other than in the case of voyage repairs. The Act also required the Navy to evaluate options for Guam Shipyard's lease and any anticipated future ship repair workloads in Guam, and to report its findings to Congress. In January 2007, the Navy issued its report and concluded that it would prefer that future ship repair contracts on Guam be awarded competitively, and that it would be premature to extend the lease with Guam Shipyard as a result of the planned military build-up on Guam. Specifically, the Navy recommended that the lease with the government of

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<sup>5</sup> In 2004 the United States and Japan began a series of sustained security consultations aimed at, among other things, repositioning U.S. forces from Japan to other areas, including Guam. GAO's September 2007 report on DOD's Overseas Master Plan ([GAO-07-1015](#)) stated that DOD's planning effort for the buildup of military forces and infrastructure on Guam was in its initial stages, with many key decisions and challenges yet to be addressed.

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Guam and with Guam Shipyard be allowed to expire on October 1, 2007, and that negotiations be opened to terminate Guam Shipyard's option to extend the lease by 5 years or to allow the lease to run to the 2012 expiration on a smaller acreage, if negotiations to terminate the extension option failed.<sup>6</sup> The Navy has not initiated negotiations since issuing its recommendations, and has taken no action to terminate its lease with the government of Guam for cause. Guam Shipyard exercised its option to extend its lease with the government of Guam until 2012 without reducing its acreage, and the government of Guam completed its lease extension with the Navy for that time period.

The Act also required GAO to evaluate the Navy report. On June 22, 2007, we briefed your staff on our evaluation and concluded that the Navy's recommendation to allow Guam Shipyard's lease to expire was logically supported, and we could not disagree with the Navy's conclusion based on the information available at that time.<sup>7</sup> At that briefing, your staff asked that we also determine the extent to which the Navy has (1) identified future ship repair requirements for the Guam area, and (2) identified and assessed options to address those requirements. This report responds to that request.

To determine the extent to which the Navy has identified future repair requirements for ships operating in the Guam area and identified and assessed options to address those requirements, we reviewed documents related to past ship repair requirements in Guam, contracts associated with ship repairs, and Navy records related to ship repair facilities and activities. In addition, we interviewed officials at Guam Shipyard and another private ship repair provider, Gulf Copper, Inc.; Guam government officials; Navy officials in Washington, D.C., Hawaii, and Guam; and MSC officials in Washington, D.C., Norfolk, Virginia, San Diego, California, and Guam. We conducted this performance audit from July 2007 to March 2008 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient and appropriate evidence to provide a reasonable basis for our

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<sup>6</sup> Guam Shipyards operates on 100 acres at the former Naval Ship Repair Facility, Guam, but Guam Shipyard and Navy officials indicate that it may be possible for them to continue operations from a smaller acreage of about 23 acres.

<sup>7</sup> The Navy had concluded that, although there would be increased ship presence in the Pacific, there would be no additional home-porting on Guam and that additional voyage repairs resulting from the increased presence were expected to be within the capability and capacity of the home-ported submarine tender repair department.

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findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. See appendix I for a more detailed scope and methodology.

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## Results in Brief

The Navy has not identified voyage ship repair requirements for surface vessels operating near Guam for 2012 and beyond, although some information is available for developing estimated requirements for use in planning. Navy officials stated that they do not have enough information on which to base such an assessment. Nonetheless, while the Navy has plans for an increased ship presence in the Pacific and can generally predict the number and types of vessels likely to operate near Guam for the next 2 years, the Navy has not determined precisely how changes to its force structure for 2012 and beyond will impact ship repair requirements in Guam. Furthermore, the Marine Corps has not finalized its plans for additional vessels at Guam, or for the potential frequency and duration of visits to Guam anticipated for amphibious vessels which are currently home-ported in Japan, but that may be moved to Guam by 2014 to support Marine Corps units being moved there. In addition, MSC expects changes to its force structure operating at or near Guam. Officials stated that the timeline is uncertain for these changes, and thus the timing of future voyage repair requirements remains uncertain. While the Navy, Marine Corps, and Military Sealift Command have not made final force structure decisions or operational plans for vessels operating at or near Guam, information is available to support estimations of ship repair requirements as part of the multiyear planning and budgeting process. Moreover, DOD guidance requires that maintenance programs be clearly linked to strategic and contingency planning. Previous ship repair records and certain other information exists that could support development of at least estimated requirements. Specifically, the Navy (1) has historical data regarding voyage repairs conducted at Guam, (2) can identify vessels likely to operate near Guam based on planned force structure realignments in the 2006 Quadrennial Defense Review and developing operational plans, and (3) can identify ship repair capabilities available at other strategic locations in the Pacific area. Estimation of requirements is a prerequisite for performing an assessment of the viability of each option available for addressing those requirements in a cost-effective and timely fashion. Without developing estimated repair requirements, the Navy cannot determine the best alternative among various potential sources of repair or support planning to provide needed maintenance capabilities.

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Navy officials have identified potential options to meet voyage repair requirements on Guam for 2012 and beyond, but have not assessed their viability or identified the critical planning tasks. By not performing timely planning the Navy risks not having a repair capability in place when needed and, as time passes, limits the options that are available to it. Navy officials told us that once the Navy identifies voyage repair requirements for surface ships operating at or near Guam, they will select one or more of four options for providing those repairs. The options are to (1) expand existing Navy repair capabilities on Guam, (2) utilize repair teams flown in to Guam from U.S. Naval shipyards, (3) establish a new Navy repair capability on Guam, or (4) contract with one or more private ship repair providers. However, existing Navy-owned repair sources will face limitations in their ability to provide additional voyage repair capabilities for surface ships because they do not have excess capacity to accept additional workload, and the Navy has not determined the extent to which it will rely on U.S. Naval shipyards for voyage repair capabilities on Guam. Additionally, building a new Navy repair facility would require years of planning and additional resources, and such planning has not begun. Finally, the Navy has not determined the extent to which it would rely on private-sector ship repair providers beyond 2012, the year that the lease with Guam Shipyard will expire based on its exercise of the extension option. Military construction may be required depending on the option selected. Navy officials stated they will not begin planning to address voyage repair requirements on Guam until preparations begin for submissions to be included in the President's budget for fiscal year 2012. Without performing an assessment of the viability of each of the options for voyage repairs in a timely manner to support planning and budgeting of critical tasks, the Navy risks not having adequate voyage repair capabilities in place when needed to support operations in the Pacific Ocean. Further, as time passes, the Navy limits the options that are available to it because of the lead time that would be required to support some of the options.

To ensure that adequate repair capabilities are available when needed, we are recommending that the Secretary of Defense direct the Secretary of the Navy to (1) estimate requirements for repairs for surface vessels operating on or near Guam based on data determined to be most appropriate by the Secretary of the Navy; (2) assess the benefits and limitations that exist in each of the options selected for providing repairs to ships operating near Guam in the future, and perform an assessment of anticipated costs and risks associated with each option; and (3) select the best option or combination of options for providing repair capabilities to support surface ships operating near Guam, and develop a plan and

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schedule for implementing a course of action to ensure that the required ship repair capability will be available by October 2012.

In commenting on a draft of this report, DOD concurred, with comment, with each of our three recommendations. The department also provided technical comments which were incorporated as appropriate. DOD's comments and our evaluation are provided in the "Agency Comments and Our Evaluation" section of this report.

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## Background

Ships' crews are often able to complete voyage repairs while the ship or battle group is underway. According to Navy officials, because ships often include redundant systems, repairs can usually be undertaken without interrupting the ship's mission or be postponed until the ship reaches a repair facility or its home port. However, voyage repairs are occasionally beyond the capability of ships' crews to complete, and must be performed by an intermediate or depot-level ship repair activity. Historically, Navy ships home-ported in Guam were permitted by U.S. law to be overhauled, repaired, or maintained in shipyards outside the United States or Guam. However, the John Warner National Defense Authorization Act for Fiscal Year 2007 amended section 7310 of Title 10 of the U.S. Code to prohibit U.S. naval ships home-ported in Guam from being repaired in shipyards outside the United States or Guam, other than in the case of voyage repairs.

Since the closure of the Navy Ship Repair Facility, Guam, the Navy and MSC have relied on four different sources to provide voyage repairs in Guam. First, the Navy submarine tender USS Frank Cable, which is a ship home-ported in Guam, has provided voyage repair capabilities for submarines when needed. Second, the Navy has relied on its Emergent Repair Facility to repair submarines by using a repair crew left behind from the USS Frank Cable when that ship is deployed. Third, fly-away teams from U.S. Naval shipyards have been sent to Guam to conduct voyage repairs when needed.<sup>8</sup> Finally, the Navy has used its contract with Guam Shipyard for voyage repairs of both submarines and surface ships.

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<sup>8</sup> Fly-away teams consist of personnel with needed skill sets from U.S. Naval shipyards to provide voyage repairs on an as-needed basis at significant distances from U.S. Naval shipyards.

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Guam Shipyard has repaired most MSC ships operating around Guam and has assisted the Navy in completing voyage repairs on other ships and submarines. For example, Guam Shipyard assisted U.S. Naval shipyards with extensive voyage repairs on the USS San Francisco, a submarine that struck an undersea mountain, by providing dry-dock services and selected support services. Voyage repairs have averaged about 17 percent of the total annual workload performed at Guam Shipyard. While Guam Shipyard officials told us that the voyage repair work would not be sufficient to support its current infrastructure and personnel, in 2007 it won a competition for the overhaul of the USNS Bridge, an MSC Pacific fleet support vessel. Competitions for overhaul of other MSC ships operating near Guam are scheduled beyond 2008.

While Guam Shipyard has been the only commercial shipyard capable of supporting Navy ship repair and overhaul requirements on Guam since 1998, a private ship repair provider new to Guam, Gulf Copper, has initiated ship repair operations there. Although the Navy had indicated in its 2007 report to Congress that additional voyage repairs could be addressed by the submarine tender USS Frank Cable's repair department, MSC has awarded contracts to both Guam Shipyard and Gulf Copper for voyage repairs that may be needed during fiscal year 2008. MSC awarded single-year contracts without renewal options, but MSC officials said that they plan similar contracts for 2009 that will include option years. Voyage repairs are unscheduled, and the capabilities required to address them cannot be precisely predicted.

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## Navy Has Not Identified Future Voyage Ship Repair Requirements at Guam although Some information is Available for Use in Planning

The Navy has not identified voyage ship repair requirements for 2012 and beyond for surface vessels operating at or near Guam, although some information is available on which to base estimated requirements to support planning efforts. Navy officials stated that requirements have not been developed for the following three reasons. First, the Navy has not fully identified its future Pacific force structure or finalized operational plans. Second, the Marine Corps' plans for additional vessels, if any, and operations at Guam are still evolving. Third, MSC projects making changes to its force structure for ships operating near Guam. However, some information is available that could enable the Navy to develop estimates of ship repair requirements. Estimation of requirements is a prerequisite for assessing each option's ability to address those requirements in a cost-effective and timely fashion. Without developing estimated repair requirements, the Navy cannot determine the best alternative among various potential sources of repair or support planning to provide needed maintenance capabilities.

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## Officials State That Requirements Cannot be Estimated until Force Structure Plans Are Final

Navy officials stated that voyage ship repair requirements at Guam cannot be identified until its future force structure plans are finalized. The 2006 Quadrennial Defense Review indicated that the Navy plans to operate six aircraft carrier strike groups and 60 percent of its submarine force in the Pacific. Moreover, the service has plans for a 313-ship Navy, but it has not yet identified the specific ships that will comprise the force structure in the Pacific beyond 2012. Officials stated that operational plans will dictate the number and type of vessels that will visit Guam, but those plans are periodically adjusted due to changes in the global security environment. As a result, Navy officials stated that they cannot yet develop requirements for voyage ship repairs at Guam for 2012 and beyond.

Similarly, the Marine Corps' plans for additional vessels in Guam have not been finalized, but conceptual plans for relocating Marines from Okinawa to Guam may include the home-porting of four new High-Speed Vessels<sup>9</sup> and two new Littoral Combat Ships<sup>10</sup> at Guam. In addition to the possibility of adding vessels, the Marine Corps' force relocation from Okinawa to Guam is expected to result in visits by amphibious vessels home-ported in Japan. These vessels are to deploy to Guam to support training exercises for the Marines stationed on Guam, and they may generate demands for voyage repairs during these operations.

MSC also expects changes to its force structure operating near Guam, but the timeline for these changes is uncertain. Current MSC vessels, such as ammunition ships<sup>11</sup> and combat stores ships,<sup>12</sup> are expected to be replaced by new dry cargo/ammunition ships<sup>13</sup> on a one-for-one basis. MSC officials

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<sup>9</sup> High-Speed Vessels can operate in shallow waters and reach speeds of 35-45 knots to allow for rapid deployment of Marine Corps company-sized units with their vehicles, or be reconfigured to become a troop transport for an infantry battalion.

<sup>10</sup> Littoral Combat Ships are being built to operate in shallow waters close to shore. The ship uses interchangeable mission packages so that it can be rapidly reconfigured for different missions.

<sup>11</sup> T-AE ammunition ships provide logistic support to U.S. Navy ships at sea for all types of ammunition and assist with the transfer of ammunition between weapons storage and maintenance facilities worldwide.

<sup>12</sup> T-AFS Combat Stores Ships provide supplies to U.S. Navy ships at sea using tensioned cargo rigs and CH-46 Sea Knight (or commercial equivalent) helicopters.

<sup>13</sup> T-AKE Dry Cargo/Ammunition Ships are new vessels for transferring cargo at sea to station ships and other naval warfare forces. The T-AKE may also operate in concert with T-AO oilers as a substitute on-station ship, providing direct logistic support to ships within a single carrier strike group.

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believe that these new vessels will require less maintenance than the vessels they replace, thus potentially reducing repair requirements. For example, these vessels use new technology, including propulsion and electrical systems that are thought to require less frequent maintenance and different repair capabilities. Guam's first new dry cargo/ammunition ship is to arrive on station sometime in 2008, but acquisition schedules for additional such ships indicate deployment delays. Delaying the arrival of the new ships will delay decommissioning of the older ships, thus raising questions about the need to continue existing levels of repair capabilities in the near term, as MSC believes the older ships may require more intensive maintenance.

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### Some Information Is Available to Develop Estimated Requirements for Repair Capabilities

While the precise force structure requirements associated with the military buildup around Guam remain uncertain, the Navy has some information that can be used to identify estimated ship repair requirements. Specifically, the Navy knows the history of voyage repairs conducted on Guam; it can identify vessels likely to operate near Guam, based on planned force structure realignments in the 2006 Quadrennial Defense Review; and it can identify ship repair capabilities available at other strategic locations in the area, including Pearl Harbor, and Yokosuka, Japan.

Historical data are available showing voyage repairs that have been performed on surface vessels and submarines in Guam for at least the past 6 years, and could be used to estimate likely future repair requirements based on past experience. MSC recently used these data to formulate contracts awarded for providing voyage repairs on vessels operating at or near Guam for fiscal year 2008. Table 1 shows the average number of man-days and the cost to complete voyage repairs from private sources on Guam for fiscal years 2002-2007.

**Table 1: Voyage Repair Man-Days and Costs for 2002-2007**

Fiscal year	Man-days utilized	Dollar value
2002	5,919	\$4,198,962
2003	6,564	4,120,036
2004	4,315	3,252,163
2005	12,137	8,507,291
2006	9,274	5,506,583
2007	3,582	5,390,946
Average	6,965	\$5,162,663

Source: Military Sealift Command.

The Navy has identified some vessel assignments associated with the force structure changes identified in the 2006 Quadrennial Defense Review. Specifically, the Navy plans to replace the USS *Kitty Hawk* at its home port in Japan with the USS *George Washington*—a new, nuclear-powered aircraft carrier. Navy officials stated that operational plans for that carrier’s strike group will include visits to Guam for periods of 2 to 3 weeks. Although the Navy has not identified the specific vessels that will make up the strike group, Navy officials know the types of vessels that are normally part of a strike group. Moreover, Navy vessels have operated in the Pacific for decades, and voyage repair experiences are readily available to the Navy through repair records, shipyard billing, or similar documents. Nonetheless, the Navy has not used these records to forecast estimated surface ship repair requirements for Guam beyond 2012.

Further, extensive ship repair capabilities exist in other locations in the Pacific, such as Pearl Harbor. Given that future ship repair capabilities on Guam may need to support a larger number and different mix of ships, the Navy could use ship repair data from Pearl Harbor and other strategic forward-deployed locations—such as the Navy Ship Repair Facility, Yokosuka, Japan, and the facility that repairs the Navy amphibious ships that support the Marine Corps at Sasebo, Japan—to help it develop estimated voyage repair forecasts for Guam.

DOD guidance requires that maintenance programs be clearly linked to strategic and contingency planning, and that a determination be made as to whether a specific industrial capability is required to meet DOD needs. This guidance calls for the Navy to follow industrial-based planning to ensure that required ship repair capabilities will be available when needed. Specifically, DOD Directive 5000.60, “Defense Industrial Capabilities

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Assessments,” requires that planning occur when a known or projected problem exists, or when there is a substantial risk that an essential capability may be lost. Such problems can consist of inadequate industrial capacity operated by a DOD entity or similar inadequate capabilities in the private sector. Estimation of requirements is a prerequisite for performing an assessment of the viability of each option available for addressing those requirements in a cost-effective and timely fashion. Although some information is available for developing estimated requirements, the Navy has not identified voyage surface ship repair requirements for 2012 and beyond for vessels operating near Guam. Without developing estimated repair requirements the Navy cannot determine the best alternative among various potential sources of repair or support planning to provide needed maintenance capabilities.

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## The Navy Has Not Evaluated Options for Meeting Voyage Repair Requirements in Guam beyond 2012, and Risks Not Having a Repair Capability in Place when Needed

While the Navy has not planned for meeting voyage repair requirements on Guam for 2012 and beyond, it has identified options for providing repairs, although some require long lead times to implement. However, by not performing timely planning the Navy risks not having a repair capability in place when needed, and as time passes, limits the options that may be available to it. Navy officials have stated that they do not intend to develop plans for a voyage ship repair capability on Guam until preparations for the 2012 budget cycle begin. However, in response to our inquiries, the Navy identified four potential options for meeting future voyage ship repair requirements on Guam and acknowledged that it cannot avoid doing some voyage repairs there. First, the Navy could use existing Navy-owned voyage repair capabilities in Guam, though these face certain limitations in their ability to take on additional voyage repairs. Second, fly-away teams could be brought in from Navy-owned shipyards in the United States, and these teams would rely on facilities and infrastructure in place on Guam. Third, the Navy could develop a new repair facility, which would entail significant planning, repair of existing infrastructure, and possibly new military construction. Fourth, the Navy could contract out the work to either or both of the existing private ship repair providers or to any other contractor that might choose to locate at Guam. DOD guidance requires that a determination be made as to whether a specific industrial capability is required to meet DOD needs and that a selection be made for meeting those needs. Moreover, Navy officials acknowledge that if the option to expand existing Navy repair capabilities on Guam or establish new Navy repair capabilities were chosen, early identification of mission requirements would be needed to facilitate planning and budgeting of new or expanded Navy construction to ensure that a fully functioning Navy-owned ship repair facility would be operational in 2012.

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## A Navy-Operated Ship Repair Capability Presents One Option, but Existing Navy-Owned Capabilities on Guam Are Inadequate to Accept Additional Voyage Repairs

Existing Navy-owned capabilities in Guam are inadequate to address current voyage repair requirements for surface vessels and are unable to address additional voyage repair requirements without increased capabilities and capacity. First, the primary mission for the USS *Frank Cable* is to provide maintenance and support for the three fast attack submarines home-ported on Guam, and to address the needs of visiting submarines. At the time of our review, the submarine tender's repair crew was operating at full capacity in meeting its primary mission. As a result, the Navy contracted with Guam Shipyard to complete \$1.2 million in voyage repairs on submarines between fiscal years 2002 and 2007, mostly to provide additional manpower to augment the submarine tender's repair crew. Although the Navy has not developed voyage repair plans for surface ships, it has developed some plans for the provision of voyage and other repairs for submarines. For example, current plans will require the USS *Frank Cable* to provide support for the new guided missile submarine that will visit Guam for rotational crewing. Additionally, the Navy plans to use part of the repair crew from the USS *Frank Cable* to perform repair services for the submarine tender USS *Emory S. Land*, which will be stationed at Diego Garcia in the British Indian Ocean Territories.<sup>14</sup> The repair crew on the USS *Frank Cable* will be increased by about 170 personnel to enable about 160 to rotate for workload assignments on the USS *Emory S. Land*, leaving no more than 10 repair personnel to take on additional work. As a result, according to Navy officials, it is unlikely that the USS *Frank Cable* could provide voyage repairs for surface vessels in Guam in the future without adding capability and capacity beyond the 170 additional personnel already planned.

Second, the Emergent Repair Facility on Guam that supports submarines when the USS *Frank Cable* is away from port<sup>15</sup> lacks the capability to meet surface voyage repair requirements. This facility is used by a stay-behind repair crew from the USS *Frank Cable* when that ship is away from its home port. According to Navy officials, the Emergent Repair Facility is not adequate even for its current role. Officials estimated that the Navy would need about \$21 million to expand and equip the facility just to meet its current submarine mission requirements, without taking on additional

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<sup>14</sup> Diego Garcia is an island military reservation located off the tip of India with multiple resident commands including Afloat Pre-Positioning Ships Squadron 4, Maritime Pre-Positioning Ships Squadron 2, and a Naval Mobile Construction Battalion Detachment.

<sup>15</sup> Navy officials estimate that the submarine tender is deployed elsewhere for 8 to 20 weeks per year.

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voyage repairs for surface ships. For example, the facility has no communications capabilities; repair personnel must use personal cellular telephones for any necessary communications. Navy officials acknowledge that it would have to be expanded to meet any future surface voyage repair requirements. Moreover, larger vessels may be unable to approach the Emergent Repair Facility without conducting dredging operations and completing pier improvements. As a result the Emergent Repair Facility cannot be used to provide voyage repairs for surface vessels without considerable planning and capital investment.

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**Effective Use of Fly-Away Teams from U.S. Naval Shipyards Is a Second Option, but Depends upon Ability of Naval Shipyards to Deploy Personnel to Guam and the Infrastructure and Facilities Available There**

The effective use of fly-away teams from Navy-owned shipyards in the continental United States to perform voyage repairs at Guam depends on the ability of U.S. Naval shipyards to provide personnel to perform repairs without negatively impacting their own ongoing work, as well as on the adequacy of infrastructure and facilities available for their use in Guam. Further, U.S. Naval shipyards have not been provided with voyage repair estimates to conduct workload planning and determine their capacity to provide fly-away teams to Guam. The use of fly-away teams may not be practicable or cost-effective for performing large amounts of voyage repair work, because Navy-owned shipyards in the United States that provide fly-away teams are currently operating beyond their target capacities, although they anticipate having excess capacity in the coming years. However, deploying fly-away teams to Guam to meet large amounts of voyage repair requirements without advance planning could undermine scheduled maintenance at the U.S. Naval shipyards. Fly-away teams also need sufficient infrastructure and equipment at the location at which they will conduct voyage repairs. Because the USS *Frank Cable* and the Emergent Repair Facility both face limitations, fly-away teams that deploy to Guam cannot be assured that these facilities would be available to provide needed infrastructure or equipment. Without more clearly defined repair requirements and further examination of equipment and personnel necessary to meet those requirements, the viability of using fly-away teams to provide future voyage repairs is uncertain.

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**Establishment of a New Navy Depot Capability on Guam Is a Third Option, but Would Require Infrastructure, Equipment, Personnel, and Funding**

Building a new Navy depot-level repair capability would require years of planning and additional infrastructure, equipment, personnel, and funding. If the lease on the property at the former Naval Ship Repair Facility, Guam, is allowed to expire, establishing a new Navy-owned ship repair capability at that location would require the Navy to address infrastructure, equipment, and personnel requirements to create the capability needed to meet surface voyage repair requirements on Guam.

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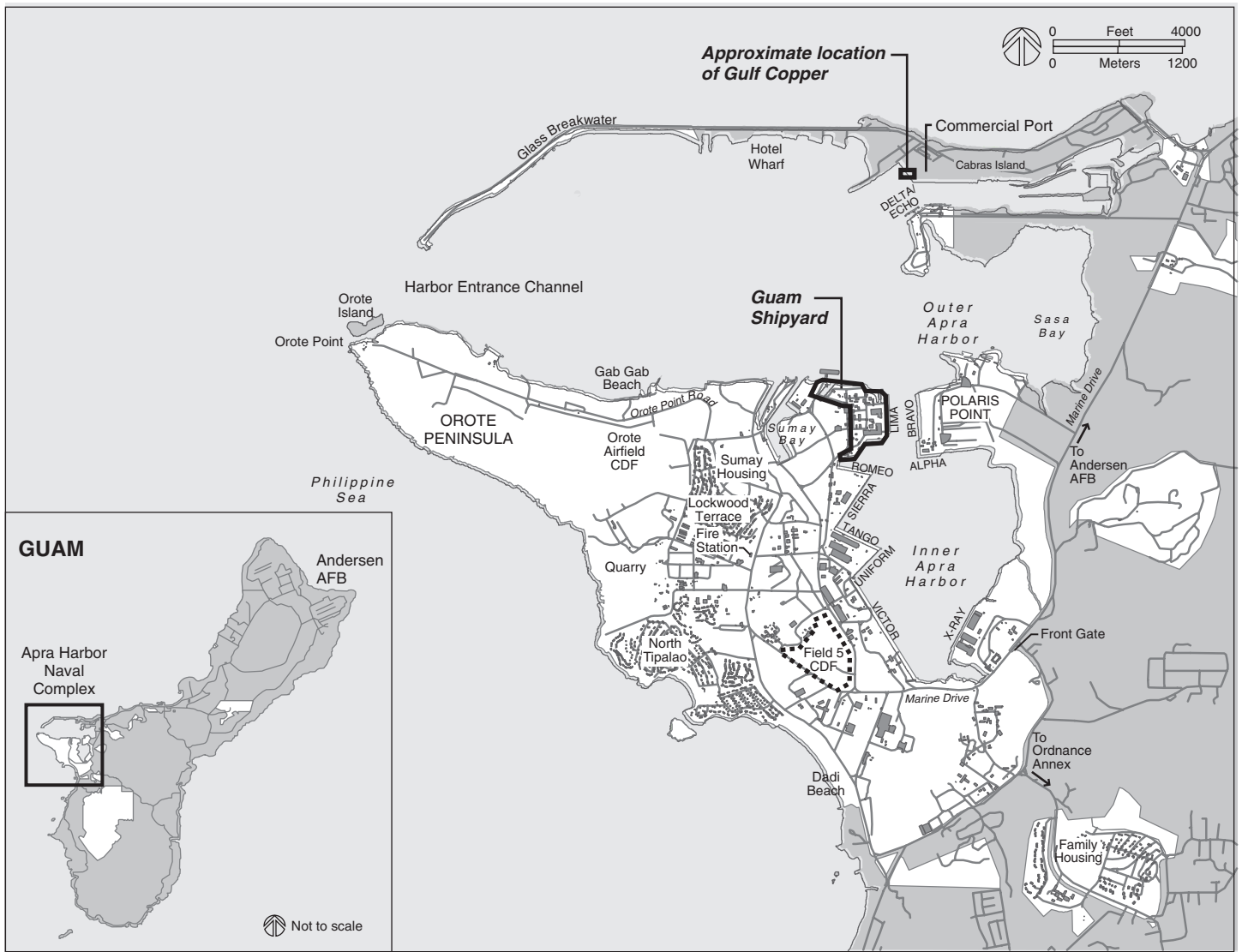
The Navy would have to determine what capability is needed and then take action to acquire the equipment to provide that capability. Furthermore, infrastructure repairs may be needed to support work on Navy vessels. For example, according to Navy officials the typhoon moorings at Guam Shipyard may require repair. A new Navy depot-level ship repair capability in Guam would also require staffing by military and civilian personnel. Without a determination of equipment, infrastructure, personnel, and funding requirements for providing new surface ship repair capabilities, the Navy cannot know whether establishing a new ship repair capability in Guam is a viable option. Additionally, implementing this option would also require significant lead time.

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**Private-Sector Ship Repair Providers Offer a Fourth Option, but the Navy Has Not Determined the Extent to Which It Will Rely on Them beyond 2012**

The Navy has not determined the extent to which it will rely on private-sector ship repair providers beyond 2012, when the lease on Navy property occupied by Guam Shipyard expires. While it is unclear what kind of private sector capability will be available beyond 2012, both private ship repair providers operating in Guam have been awarded 1-year contracts by MSC to provide selected voyage repairs to surface vessels operating at or near Guam for fiscal year 2008. According to MSC officials, new contracts are to be executed by the end of fiscal year 2008, and this contracting arrangement will include option years that address voyage repair requirements for MSC ships through 2012. Guam Shipyard operates on Navy property located within Naval Base, Guam. Gulf Copper operates from approximately 700 feet of pier space at the commercial port opposite Navy property on Apra Harbor. It is possible that additional private ship repair providers may express interest in performing voyage repairs at Guam in the future, and that Guam Shipyard may continue operations at another location in Guam beyond 2012 when its lease on U.S. Navy property expires. Figure 1 depicts the physical locations of Guam Shipyard and Gulf Copper.

**Figure 1: Physical Locations of Private Ship Repair Facilities**



- Navy land
- Non-Navy

Sources: GAO, U.S. Navy.

The Joint Depot Maintenance Program provides guidance on selecting sources of maintenance and repair, and a DOD Handbook entitled Assessing Defense Industrial Capabilities provides a framework for

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coordinating analysis and determining the most cost- and time-effective options for meeting DOD needs. If the option selected by the Navy for providing ship repairs in Guam requires military construction, as may be the case if the Navy chooses to expand existing Navy-owned capabilities or to establish new Navy-owned capabilities, the military construction requirements would have to be included in the budgeting process for fiscal year 2010 in order for new facilities to be ready by October 2012. However, Navy officials have stated that they do not intend to develop plans for a voyage ship repair capability on Guam until preparations for the 2012 budget cycle begin. Without performing an assessment of the viability of each of the options for voyage repairs in a timely manner to support planning and budgeting of critical tasks, the Navy risks not having adequate voyage repair capabilities in place when needed to support operations in the Pacific Ocean, and as time passes, limits the options that could be available to it by 2012.

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## Conclusions

The Navy has not effectively identified voyage repair requirements that are a prerequisite for selecting among the options to provide such capabilities on Guam. While the Navy does not fully know its voyage surface ship repair requirements near Guam for 2012 and beyond, it does possess data that could be used to estimate requirements. Namely, it could use existing ship repair experiences, projected requirements identified in the 2006 Quadrennial Defense Review, and information about repair capabilities maintained at other strategic locations to identify its ship repair requirements for Guam in the near term and to aid in developing a baseline forecast of repair capabilities it will need for 2012 and beyond. Moreover, the requirements determination process is a precursor to planning for the provision of ship repair capabilities and selecting an option to provide those capabilities, since a certain amount of lead time would be required to implement some of the options. Additionally, a decision about future industrial repair requirements should be an integral part of ongoing Guam infrastructure planning to support the transfer of Marines to Guam from Japan. However, the Navy has not developed such plans, nor has it assessed the challenges associated with the options identified, or selected an option to provide ship repair capabilities on Guam. Without identifying requirements, performing a risk-based assessment of the viability and costs of each of the options, selecting the best option or combination of options available, and then developing and implementing an action plan to address any challenges associated with the option or options selected, the Navy lacks reasonable assurance that it will have sufficient time to prepare the best option or combination of options for meeting future surface ship repair requirements on Guam beyond 2012.

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## Recommendations for Executive Action

To ensure that adequate voyage repair capabilities are available for ships operating near Guam, and recognizing the lead time required to implement options, we recommend that the Secretary of Defense direct the Secretary of the Navy to

- estimate requirements for repairs for surface vessels operating at or near Guam based on data determined to be most appropriate by the Secretary of the Navy;
- assess the benefits and limitations of each of the options for providing repairs to ships operating near Guam, and perform an assessment of anticipated costs and risks associated with each option; and
- select the best option or combination of options for providing repair capabilities to support surface ships operating near Guam, and develop a plan and schedule for implementing a course of action to ensure that the required ship repair capability will be available by October 2012.

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## Agency Comments and Our Evaluation

In a written response to a draft of this report, DOD concurred with all of our recommendations with comments. The department's comments are reprinted in their entirety in appendix II. The department also provided several technical comments that have been incorporated as appropriate.

With regard to our first recommendation for an assessment of requirements for repairs for surface vessels operating at or near Guam, the Navy responded that it has a methodology to determine annual emergent repair requirements by ship class and fleet—which includes voyage repair execution history as a subset—and that this requirement will be included in the future years defense plan, and that no further direction is necessary. While we acknowledge that the Navy looks at overall maintenance requirements as a part of the annual budget process, this process does not provide a detailed listing of specific capabilities required for voyage repairs at strategic locations, such as Guam beyond 2012. Given its unique location and the changing circumstances that will impact voyage repair requirements in and around that location, we continue to believe that a specific assessment of requirements for providing surface vessel voyage repairs in Guam represents a necessary baseline for planning for the provision of ship repair capabilities beyond 2012 and for the selection of an option or combination of options to provide those capabilities.

In concurring with our second recommendation regarding the need for an assessment of the benefits and limitations of each of the options for providing repairs to ships operating near Guam, the department's response was that the Navy has already identified a plan for providing repair

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capabilities for ships operating near Guam and that the Navy has determined that establishing a new repair facility on Guam is not viable since the expenditure of funds to do this is not necessary. The department's response also noted that the Navy is already developing a military construction project to expand the existing repair capabilities on Guam in fiscal year 2010, that the Navy intends to continue the practice of utilizing repair teams from U.S. Naval shipyards and private shipyards as needed, and that the Navy intends to continue the practice of contracting voyage repair work to one or more private ship repair providers. The Navy may have determined that a new repair capability on Guam is not necessary, but much of the existing repair equipment currently used to support voyage repair on surface vessels—including floating dry dock, floating crane, and industrial equipment—are owned by Guam Shipyard and could potentially be removed at the conclusion of the existing lease, if a new lease were not negotiated. We continue to believe that it is essential that the department determine whether it will have continued need for expensive capital equipment such as the floating dry dock and crane, and whether the capability provided by such equipment will be available from the private sector. Finally, it is commendable that the Navy has a plan for providing ship repair capabilities on Guam and is moving forward to implement it. However, at the time of our exit briefing with the Navy in January, the Navy did not inform us of this plan. Moreover, Navy officials have told us that this plan was developed in February, subsequent to our exit briefing and in response to our recommendations.

In concurring with our third recommendation regarding selection of the best option or combination of options for providing repair capabilities to support surface ships operating near Guam, the department stated again that the Navy's plan for providing repair capabilities to support surface ships operating near Guam has already been determined, and that direction from the Secretary of Defense to the Secretary of the Navy is not needed. The response also stated that committing the Navy to a lease agreement in 2008 for a capability in 2012 is premature. While we agree that committing the Navy to a lease in 2008 for a capability required in 2012 is premature, it is not premature to decide whether or not there will be an industrial activity—either owned and operated by the government or leased by a private contractor—within the Navy installation. The department stated in its response that the Navy intends to use private-sector capability, but it did not state whether that would be on the Navy installation on Guam. Given the detailed planning that is required to support the planned buildup of military personnel expected over the next few years in Guam, we believe it is essential that the Navy determine whether or not it expects to continue to have an industrial activity


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operating as a part of the Guam Master Plan, and that it determine what acreage this activity would occupy.

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We are sending copies of this report to the appropriate congressional committees; the Secretary of Defense; the Secretary of the Navy; the Commandant of the Marine Corps; and the Director of the Office of Management and Budget.

If you or your staff has any questions about this report, please contact me on (202) 512-4523 or at [leporeb@gao.gov](mailto:leporeb@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Additional contacts and staff acknowledgments are provided in appendix III.

A handwritten signature in black ink, appearing to read "Brian Lepore". The signature is written in a cursive, flowing style.

Brian J. Lepore, Director  
Defense Capabilities and Management

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# Appendix I: Scope and Methodology

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To determine the extent to which the Navy has identified future ship repair requirements for ships operating in the Guam area and assessed options to address those requirements, we reviewed documents related to ship maintenance. In addition, we interviewed officials responsible for force structure planning, contracting for repairs on vessels belonging to the U.S. Navy and Military Sealift Command, and performing repairs on vessels belonging to the Navy and Military Sealift Command on Guam as well as related organizations in Hawaii, and on the west coast of the United States. Specifically, we interviewed officials and analyzed documents related to ship repair requirements and the options proposed to meet them at the offices of the Chief of Naval Operations; the Commander, Pacific Fleet; the Commander, Marine Forces Pacific; the Commander, Naval Sea Systems Command; the Commander, Naval Forces Marianas; the Chief of Naval Installations; the Commander, Military Sealift Command; the Commander, Naval Facilities Pacific; and the Guam Economic Development and Commerce Authority. We also performed work at the offices of several private ship repair providers to determine the extent to which private-sector repair capabilities may be available on Guam in the future. We also examined Department of Defense (DOD) policy and Joint Guidance for providing maintenance and repair of DOD assets afloat. We performed our review from July 2007 to January 2008 in accordance with generally accepted government audit standards. Those standards require that we plan and perform the audit to obtain sufficient and appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

# Appendix II: Comments from the Department of Defense



DEPUTY UNDER SECRETARY OF DEFENSE FOR  
LOGISTICS AND MATERIEL READINESS  
3500 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3500

APR 17 2008

Mr. Brian Lepore  
Director, Defense Capabilities and Management  
U.S. Government Accountability Office  
441 G Street, N.W.  
Washington, DC 20548

Dear Mr. Lepore:

This is the Department of Defense (DoD) response to the GAO draft report, GAO-08-427, "DEFENSE LOGISTICS: Navy Needs to Develop and Implement a Plan to Ensure that Voyage Repairs are Available to Ships Operating Near Guam When Needed," dated March 17, 2008 (GAO Code 351068).

The Department concurs with comment with each recommendation. An explanation of the DoD position is enclosed. Technical corrections were provided under separate cover. The Department appreciates the opportunity to comment on the draft report.

Sincerely,

  
Jack Bell

Enclosure:  
As stated



GAO DRAFT REPORT - DATED MARCH 17, 2008  
GAO CODE 351068/GAO-08-427

**“DEFENSE LOGISTICS: Navy Needs to Develop and Implement a Plan to Ensure  
that Voyage Repairs are Available to Ships Operating Near Guam When Needed”**

**DEPARTMENT OF DEFENSE COMMENTS  
TO THE RECOMMENDATIONS**

**RECOMMENDATION 1:** The GAO recommends that the Secretary of Defense direct the Secretary of the Navy to estimate requirements for repairs for surface vessels operating at or near Guam based on data determined to be most appropriate by the Secretary of the Navy.

**DOD RESPONSE:** Concur with comment. The Navy has a methodology to determine annual emergent repair requirements by ship class and fleet, which includes voyage repair execution history as a subset, and has included that requirement in each year’s Presidential Budget. All ship repair requirements, to include vessels operating near Guam, are identified in the Navy’s POM build and ultimately are included in the FYDP. Further direction regarding emergent repair requirements is not necessary.

**RECOMMENDATION 2:** The GAO recommends that the Secretary of Defense direct the Secretary of the Navy to assess the benefits and limitations of each of the options for providing repairs to ships operating near Guam, and perform an assessment of anticipated costs and risks associated with each option.

**DOD RESPONSE:** Concur with comment. The Navy’s plan for providing repair capabilities to support surface ships operating near Guam has already been selected and is described below. The Navy has determined that establishing a new repair facility on Guam, option 3 of the report, is not viable since the expenditures of funds to do this are not necessary for the following reasons:

1. Navy is already developing a MILCON project to expand the existing Navy repair capabilities on Guam in FY10. (Option 1 of the report)
2. Utilizing repair teams flown into Guam from Naval Shipyards and private shipyards in the United States is already a practice in Guam and elsewhere, and Navy plans to continue this practice in the future in order to efficiently utilize existing ship repair expertise as needed. (Option 2 of the report)
3. Navy intends to continue the practice of contracting voyage repair work to one or more private ship repair providers. (Option 4 of the report).

The Navy will use combinations of options 1, 2, and 4 to ensure adequate resources are available to meet voyage repair requirements for surface vessels operating at or near Guam. Additional direction is not necessary.

**RECOMMENDATION 3:** The GAO recommends that the Secretary of Defense direct the Secretary of the Navy to select the best option or combination of options for providing repair capabilities to support surface ships operating near Guam, and develop a plan and schedule for implementing a course of action to ensure that the required ship repair capability will be available by October 2012.

**DOD RESPONSE:** Concur with comment. As mentioned in response to Recommendation 2 above, the Navy's plan for providing repair capabilities to support surface ships operating near Guam has already been determined. Accordingly, direction from the Secretary of Defense to Secretary of the Navy to develop such a plan is not needed. Navy recognizes this plan is contingent upon Navy, OSD and Congressional approval of the MILCON project to expand the existing Navy repair capabilities on Guam in FY10. Also, committing Navy to a lease agreement in 2008 for a capability in 2012 is premature. In the interim, Navy plans to utilize existing Navy facilities on Guam, fly away teams from U.S. shipyards and the private sector ship repair capability on Guam to execute voyage repairs on ships operating near Guam. To date this combination has successfully provided needed voyage repair capabilities.

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# Appendix III: GAO Contacts and Staff Acknowledgments

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## GAO Contact

Brian J. Lepore, (202) 512-4523 or leporeb@gao.gov

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## Acknowledgments

In addition to the contact named above, Julia Denman, Assistant Director; Jeffrey Kans; Julia C. Matta; John E. Trubey; and Cheryl Weissman made major contributions to this report.

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