



April 2014

MILITARY CAPABILITIES

Navy Should
Reevaluate Its Plan to
Decommission the
USS *Port Royal*

Why GAO Did This Study

The USS *Port Royal*, one of the Navy's newest cruisers, ran aground in 2009. Although it was repaired by the Navy, it was slated for decommissioning in fiscal year 2015. Two separate mandates directed the Navy to comprehensively assess the condition of the ship before its decommissioning. This report evaluates the extent to which (1) the Navy's 2013 assessment and report to Congress addressed congressional direction; and (2) Navy's decision to decommission the *Port Royal* aligns with current information and Navy decommissioning requirements.

GAO reviewed the Navy's assessment and supporting documentation. In addition, GAO interviewed Navy personnel who performed the assessment or evaluated the results. GAO also interviewed officials from the independent organizations that reviewed the Navy's assessment and discussed the findings of their reviews. Finally, GAO interviewed Navy officials responsible for maintaining the *Port Royal* and officials involved with the decommissioning decision.

What GAO Recommends

GAO recommends the Secretary of Defense direct the Secretary of the Navy to reevaluate the decision to decommission the *Port Royal* in light of the Navy's 2013 assessment and internal and external experts' assessments subsequently provided to the Navy. The Department of Defense concurred with GAO's recommendation, and the Navy has subsequently decided to retain the *Port Royal* and place it in a phased modernization program along with several other ships.

View [GAO-14-336](#). For more information, contact John Pendleton at (404) 679-1816 or PendletonJ@gao.gov.

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Navy Should Reevaluate Its Plan to Decommission the USS *Port Royal*

What GAO Found

The Navy's 2013 report to Congress on the *Port Royal's* material condition partially addressed congressional reporting requirements but has likely overstated modernization costs should the ship be retained in service. While the Navy acknowledges that it did not obtain an independent structural assessment as required by one of the mandates, the Navy found the condition of the ship to be comparable to other cruisers when its own technical experts assessed the ship. For example, in addressing the congressional requirements, the Navy assessed the *Port Royal's* structure and found the condition of the superstructure and interior hull to be typical of other cruisers in the class, indicating its suitability for continued use. The mandate also required that the Navy's assessments be reviewed by experts. GAO found that the Navy's assessment was reviewed by the Naval Sea Systems Command Engineering Directorate, the Navy's technical authority, and by independent boards of subject-matter experts from the Department of Defense and industry—the Board of Inspection and Survey and the American Bureau of Shipping, respectively. All three reviewers generally concurred with the assessment. Finally, the Navy's report to Congress included some combat-system modernization upgrades that are not consistent with plans for similar cruisers. Removal of these costs would reduce the total cost to repair and modernize the *Port Royal* from \$712 million to \$406 million.

On the basis of current information, the Navy's plan to decommission the *Port Royal* is not aligned with decommissioning requirements. Navy officials told GAO that, in 2011, they decided to decommission the *Port Royal* based on certain factors included in the Navy's decommissioning policy; however, the 2013 assessment revealed that the Navy's original assumptions about those factors were inaccurate. Specifically, the Navy made negative assumptions about the ship's material condition, repair and modernization costs, and the effect of the 2009 grounding. The Navy's policy on the retirement of naval vessels identifies not only material condition and life-cycle costs as key factors to be considered when determining which ships to retire, but also estimated service life and operational effectiveness. According to officials, the Navy assumed in 2011 that the *Port Royal* was in poor material condition, that the grounding had created hidden maintenance problems, and that midlife costs would be very expensive; therefore, they planned to decommission the *Port Royal* in part to avoid these modernization and other operating and maintenance costs. However, the Navy's 2013 assessment showed that the *Port Royal's* material condition is similar to other cruisers and that the grounding should have no significant effect on the ship's future maintenance needs or costs relative to other cruisers. GAO found that, in terms of its estimated service life and capabilities, the *Port Royal* has some advantages. The ship is the youngest cruiser in its class and has more service life remaining than any other cruiser. The *Port Royal* also has some key capabilities that many of the Navy's other cruisers lack, including a ballistic missile defense capability that is highly sought after by combatant commanders. Navy officials are aware of the findings of subsequent assessments, but, at the time of GAO's review, did not have plans to reevaluate their decision. Unless the Navy reevaluates its decision, it risks prematurely decommissioning a ship that could provide many additional years of service, as well as needed ballistic missile defense capability.

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Abbreviations

ABS	American Bureau of Shipping
Appropriations Act	Consolidated and Further Continuing Appropriations Act of 2013
BMD	Ballistic Missile Defense
DOD	Department of Defense
INSURV	Board of Inspection and Survey
NAVSEA	Naval Sea Systems Command
NAVSEA 05	Naval Sea Systems Command, Engineering Directorate
NDA	National Defense Authorization Act
OPNAV	Office of the Chief of Naval Operations

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April 8, 2014

Congressional Committees

In an effort to achieve budgetary savings following the enactment of the Budget Control Act of 2011, the Navy decided to decommission seven cruisers, including the USS *Port Royal* (CG-73),¹ and two amphibious ships. According to Navy officials, the decommissioning of these nine ships was projected to save the Navy approximately \$6 billion from fiscal years 2013 through 2017. This decision was controversial because the *Port Royal*, a \$1 billion Ticonderoga-class (CG-47) cruiser, is one of the newest ships in its class and is capable of ballistic missile defense operations. On February 5, 2009, the *Port Royal* had run aground on a reef off the coast of Hawaii, which caused significant damage to a number of the ship's components, including the sonar dome, propellers, superstructure, and underwater hull. While the Navy completed repairs to these components in January 2010, Navy officials reported that concerns the ship had sustained additional damage persisted within the Navy leading up to the decommissioning recommendation.

In January and March 2013,² two separate congressional reports directed the Navy to reexamine the condition of the *Port Royal*, noting that the Navy had not provided adequate analysis and cost data on the structural condition of the ship. The conference report accompanying the National Defense Authorization Act (NDAA) directed the Secretary of the Navy to conduct a material condition assessment of the *Port Royal*, to be reviewed by the appropriate Navy technical authority and independent boards from the Department of Defense (DOD) and industry. The report directed the Navy to submit the results of its assessment, along with the

¹Hereafter in this document referred to as the *Port Royal*.

²The congressional reports referenced in this paragraph are found in the conference report accompanying the National Defense Authorization Act (NDAA) for Fiscal Year 2013, Pub. L. No. 112-239, which was enacted in January 2013, and in the conference committee explanatory statement accompanying the Consolidated and Further Continuing Appropriations Act (Appropriations Act) of 2013, which was enacted in March 2013, Pub. L. No. 113-6. Section 4 of the Appropriations Act provides that the explanatory statement shall have the same effect with respect to the allocation of funds and implementation of this legislation as if it were a joint explanatory statement of a committee of conference. For ease of reference, we will refer to the two conference reports as the NDAA conference report and the Appropriations Act conference report throughout our report.

results of independent reviews, to the congressional defense committees. In a separate mandate, the Consolidated and Further Continuing Appropriations Act of 2013 (Appropriations Act) conference report directed the Navy to carry out an independent structural assessment of the *Port Royal*. In response to these congressional reports, the Secretary of the Navy directed the Naval Sea Systems Command (NAVSEA) to provide a comprehensive assessment of the *Port Royal*'s current material condition, and NAVSEA's Deputy Commander for Surface Warfare led this effort.³ The Navy's assessment was conducted from February to March 2013. On August 1, 2013, the Navy issued a report, *USS Port Royal (CG 73) Material Condition Assessment*, to the congressional defense committees to address both mandates.⁴

The NDAA conference report mandated that GAO review the Navy's report directed by the NDAA conference report, and the Appropriations Act conference report mandated GAO to review the independent structural assessment that the Navy was required to carry out. This report evaluates the extent to which (1) the Navy's 2013 assessment and report to Congress addressed congressional direction, and (2) the Navy's decision to decommission the *Port Royal* aligns with current information and Navy decommissioning requirements.

To address our objectives, two GAO analysts independently reviewed the Navy's assessment and determined whether the assessment met the requirements listed in the conference report and explanatory statement. The analysts agreed on all requirements decisions. We also interviewed nine of the technical experts who inspected the ship during the 2013 assessment concerning what guidance they were given before conducting the assessment, how they conducted the assessment, and what criteria they employed.⁵ We also interviewed six of the Technical

³This directorate (NAVSEA 21) is responsible for the maintenance and modernization of nonnuclear surface ships currently operating in the fleet. Additionally, this directorate oversees the ship inactivation process, including ship transfers or sales to friendly foreign navies, inactivation, and disposal.

⁴All of the documentation supporting the material condition assessment and the Navy's report to Congress will be referred to as the Navy's 2013 assessment of the *Port Royal*.

⁵The structural inspector we interviewed not only performed the inspection for the Navy's 2013 report to Congress, but he also inspected the *Port Royal*'s hull from February to March 2011 and in October and December 2011 during the ship's last deployment.

Warrant Holders⁶ and discussed their evaluation of the assessment and their understanding of the material condition of the *Port Royal*. We also obtained these technical experts' conclusions about the *Port Royal* compared to other ships in its class, based on their latest assessments. In addition, we interviewed representatives from the independent organizations that reviewed the Navy's assessment and discussed the findings of their reviews. We also interviewed officials who are directly responsible for the maintenance of the ship at its homeport in Hawaii. We reviewed the Navy's list of needed repairs for the *Port Royal* and compared the Navy's approach for estimating repair costs against general principles of cost-estimating. We also reviewed information concerning the age of the *Port Royal* and its capabilities relative to other cruisers. We compared the information available to the Navy following its 2013 assessment to the requirements contained in the Navy's decommissioning instruction.⁷

We conducted this performance audit from May 2013 to April 2014 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, 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.

Background

USS *Port Royal* (CG-73)

The *Port Royal*, commissioned in 1994, is one of 22 active Ticonderoga-class cruisers⁸ capable of performing multiple missions including air, undersea, and strike warfare. Each cruiser costs about \$1 billion to

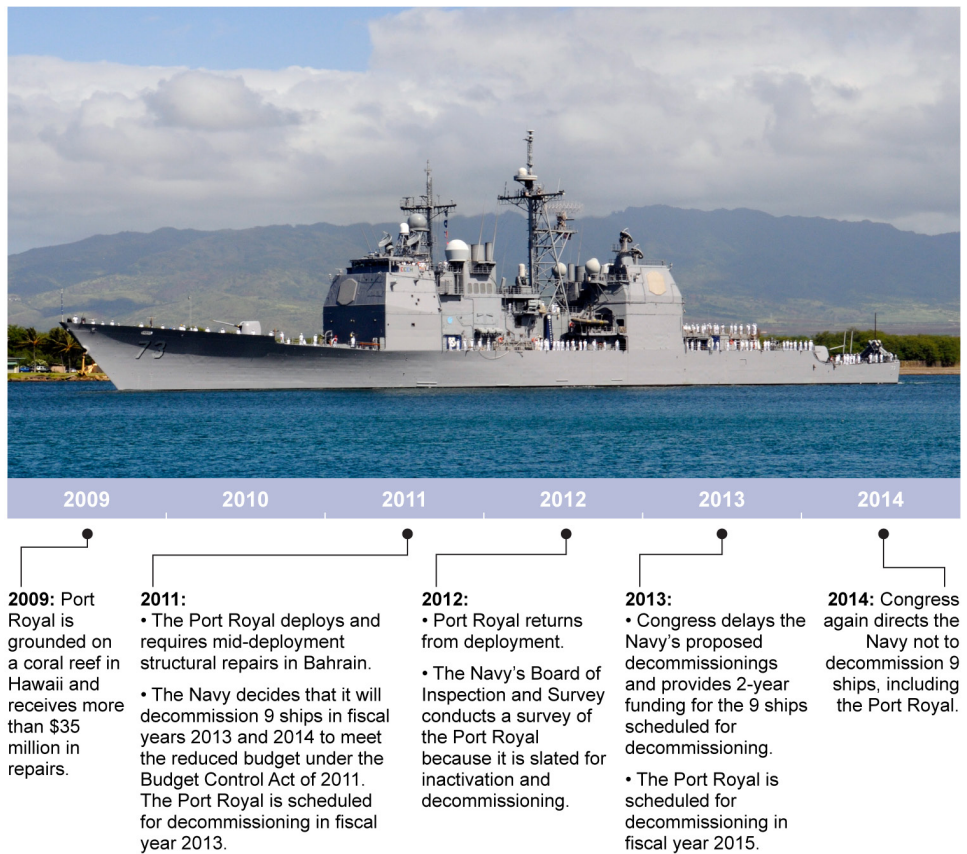
⁶The Technical Warrant Holders are subject-matter experts that serve as the Navy's technical authority for specific ship systems.

⁷Office of the Chief of Naval Operations, *General Policy for the Inactivation, Retirement, and Disposition of U.S. Naval Vessels*, OPNAV Instruction 4770.5G (Washington, D.C.: February 2009).

⁸Hereafter referred to as cruisers. Note: The *Ticonderoga* class originally consisted of 27 ships, CG-47 (USS *Ticonderoga*) through CG-73 (USS *Port Royal*). As CG-47 through CG-51 did not have the vertical launch system—a significant combat upgrade—these 5 ships were decommissioned between 2004 and 2005.

procure and has an estimated service life of 35 years. The ships can operate independently or in support of carrier battle groups and are equipped with a range of armaments, including a vertical launching system for various types of missiles, torpedoes, lightweight guns, and close-in weapon systems. The *Port Royal* is one of five cruisers with Ballistic Missile Defense (BMD) capabilities. Figure 1 lists some key events in the *Port Royal's* recent history.

Figure 1: Key Events in the Recent History of the *Port Royal*



Source: GAO analysis of Navy records (data); DVIDS (photo).

Organizations Overseeing Ship Maintenance and Conducting Inspections

A number of organizations oversee ship maintenance. For example, NAVSEA is responsible for repairs and alterations on all Navy ships from a technical standpoint. As the lead technical authority, it develops and manages maintenance programs for each ship class. Specifically, it

establishes hull, mechanical, electrical, and combat systems technical requirements, provides technical support to maintain the material condition of all ships, sets maintenance intervals and durations, and establishes preventive maintenance requirements. Another organization that assists the Navy with overseeing ship maintenance is the American Bureau of Shipping (ABS), an industry group. ABS provides marine classification services, which involve conducting periodic ship surveys, examining repairs and modifications, and verifying that marine vessels comply with their standards. NAVSEA had previously contracted with ABS to assess surface combatant ships' abilities to achieve their expected service lives through corrosion assessments, engineering analysis, and maintenance recommendations, and ABS assists NAVSEA in maintaining a database of the structural condition of Navy ships.

For its part, the Navy's Board of Inspection and Survey (INSURV) conducts a number of inspections over the life of a ship. INSURV is an independent activity that reports to the Chief of Naval Operations and the Commander, U.S. Fleet Forces Command. Its primary missions include conducting acceptance trials of newly constructed ships, performing material inspections of all naval ships periodically to determine a ship's fitness for further service, and accomplishing surveys for the purpose of determining and documenting the material condition of ships at the time of their inactivation.⁹

Navy's Assessment of the USS *Port Royal* Partially Addressed Congressional Direction

The Navy's assessment of the *Port Royal's* material condition partially addressed congressional reporting requirements, but has likely overstated the modernization costs for the *Port Royal* should it be retained in service. The two reporting requirements were similar in that they both focused on the material condition of the *Port Royal*. The broader mandate in the NDAA conference report directed the Secretary of the Navy "to conduct a detailed material condition assessment of the U.S.S. *Port Royal* that will: include a comprehensive inspection of the ship's major structural, machinery, electrical, combat and weapons systems elements." The Navy was to "identify the necessary repairs and modernization, including detailed costs to make those repairs and upgrades, that would be required for the ship to meet its expected service

⁹Office of the Chief of Naval Operations, *Mission, Organization, and Functions of the Board of Inspection and Survey*, OPNAV Instruction 5420.70F (Washington, D.C.: August 2006).

life, consistent with other ships in the Ticonderoga class.” Also, the assessment was to be evaluated by the “appropriate Navy technical authority” and reviewed by “an independent board of subject matter experts from both industry and the Department of Defense (DOD).” The narrower mandate in the Appropriations Act conference report focused on the structural condition of the *Port Royal*. In it, the Conferees directed the Secretary of the Navy to “carry out an independent structural assessment” of the *Port Royal* that was to include a comparative structural assessment to other cruisers of the same class. The independent assessment was to provide a detailed cost estimate to repair the ship and indicate how that estimate differs from the cost to repair other cruisers of the same class. It was also to identify the issues that would be corrected during planned maintenance availabilities. Under relatively short time frames and having already begun its assessment to address the first and broader mandate before the second mandate was issued, in August 2013 the Navy issued one report to Congress to address both mandates. We found the Navy had addressed several requirements in the congressional mandates as part of its assessment and report to Congress, but had not done an independent structural assessment and had included some modernization costs that were not consistent with other cruisers. Table 1 describes the results of the Navy efforts to address each element of the two congressional mandates, and our evaluation.

Table 1: GAO’s Evaluation of the Extent That the Navy Addressed Congressional Direction

Congressional requirements	<i>Port Royal</i> material condition assessment, reviews, and report to Congress	GAO’s evaluation of the assessment, reviews, and report to Congress
The NDAA conference report directed the Secretary of the Navy to conduct a detailed material condition assessment of the <i>Port Royal</i> to include a comprehensive inspection of the ship’s major structural, machinery, electrical, combat, and weapon systems elements.	The Navy conducted a detailed material condition assessment of the <i>Port Royal</i> and found the condition of the ship to be comparable to other Ticonderoga class cruisers.	The Navy utilized qualified personnel and appropriate criteria to conduct the assessment.
<ul style="list-style-type: none"> The assessment should identify the necessary repairs and modernization, including detailed costs to make those repairs and the upgrades that would be required for the ship to meet its expected service life, consistent with other ships in the Ticonderoga class. 	The Navy’s report states it would cost \$712 million to repair and modernize the <i>Port Royal</i> to meet its expected service life—\$92 million for repairs, \$250 million for the development of modernization upgrades, and \$370 million for the procurement and installation of modernization upgrades.	The Navy’s report included modernization upgrades that are not consistent with other ships in its class. Removal of these upgrades and their development costs would significantly reduce the cost to repair and modernize the <i>Port Royal</i> .

Congressional requirements	Port Royal material condition assessment, reviews, and report to Congress	GAO's evaluation of the assessment, reviews, and report to Congress
<ul style="list-style-type: none"> The results of the <i>Port Royal</i> material condition assessment will be evaluated by the appropriate Navy technical authority. 	<p>Naval Sea Systems Command's (NAVSEA) Engineering Directorate (NAVSEA 05), the Navy's technical authority for ships and ship systems, reviewed and commented on all findings from the material condition assessment. They concurred with most of the findings identified in the material condition assessment.</p>	<p>NAVSEA 05 is the appropriate technical authority to review the assessment.</p>
<ul style="list-style-type: none"> The results of the <i>Port Royal</i> material condition assessment will be reviewed by an independent board of subject-matter experts from industry and the Department of Defense (DOD). 	<p>ABS and INSURV reviewed the <i>Port Royal's</i> material condition assessment and both boards generally agreed with the Navy's findings concerning the ship's material condition. ABS and INSURV also reviewed the Navy's repair cost estimates and respectively found them to be "realistic and accurate" and "reasonable." However, ABS did not review the Navy's \$250 million estimate for the development of modernization upgrades because it did not receive the detailed information needed to evaluate the estimate. INSURV disagreed with some of the items included in the modification cost.</p>	<p>It was appropriate for the ABS and INSURV to review the assessment. ABS is a commercial organization that conducts periodic ship surveys and verifies that marine vessels comply with their standards. INSURV is an independent Navy organization that conducts material inspections of all naval ships to determine their fitness for continued service. Our analysis also found repair costs to be well documented, but found modernization costs to be questionable since some of these costs were not consistent with other ships in the class.</p>
<p>The Appropriations Act conference report directed the Secretary of the Navy to carry out an independent structural assessment of the <i>Port Royal</i> that includes comparisons to structural assessments of other cruisers of the same class.</p>	<p>The Navy assessed the <i>Port Royal's</i> structure and found the condition of the superstructure and interior hull to be typical of the Ticonderoga class cruisers.</p>	<p>The assessment was not independent in that the data and information presented in the Navy's report to Congress came from Navy sources. During our review, Navy officials acknowledged that the structural assessment was not independent and stated that to best utilize the resources at the time and to meet the tight time frame they did not contract for an independent assessment.^a</p>
<ul style="list-style-type: none"> The review shall include a detailed cost estimate to repair the ship. 	<p>The Navy compiled detailed cost estimates during its assessment, but in its report to Congress, the Navy reported only total costs.</p>	<p>Our review of the Navy's detailed cost estimates found that structural repair costs accounted for approximately \$17 million of the \$92 million in total repair costs.^b</p>
<ul style="list-style-type: none"> The review shall show how the detailed cost estimate differs from the cost to repair other cruisers of the same class, including what issues would be corrected during planned maintenance availabilities. 	<p>The Navy planned on two maintenance availabilities for the <i>Port Royal</i>—one in fiscal year 2014 and the other in fiscal year 2016. For 2014, the Navy compared the <i>Port Royal's</i> total repair cost to two other cruisers; for 2016, the Navy compared the <i>Port Royal's</i> total repair cost to five other cruisers. The Navy did not make any conclusions about these comparisons. However, INSURV concluded that the cost of maintaining and modernizing the <i>Port Royal</i> was comparable to other CG-47 Class ships.</p>	<p>The Navy identified the structural issues it would correct but did not compare <i>Port Royal's</i> structural repair costs to the structural repair costs of other cruisers.</p>

Source: GAO analysis of DOD information.

^aAccording to Navy officials, the Navy had already started its assessment of the *Port Royal* with Navy personnel based on the NDAA conference report mandate, which did not require independence, before the Appropriations Act conference report mandate was issued. To conserve resources and

meet the deadlines for both mandates, the Navy utilized the same Navy personnel to meet the mandate requirements of the Appropriations Act conference report.

^bTo determine the cost to complete *Port Royal's* structural repairs, we reviewed the results of the assessment, identified structural repairs documented in the assessment, and totaled the Navy's cost estimates for these repairs. We confirmed our list of structural repairs with Navy officials.

On the basis of our analysis of the Navy's report to Congress, the most significant issue is the inclusion of modernization costs that would not need to be performed if the *Port Royal* were to remain in service; as a result, the Navy's estimate to repair and modernize the *Port Royal* is likely overstated by at least \$306 million. Specifically, the Navy included costs associated with the combat system Baseline 9B and Ballistic Missile Defense (BMD) 5.0 upgrades for Ticonderoga-class cruisers. These upgrades would enhance the ability of Ticonderoga class cruisers to conduct both Anti-Air Warfare and BMD missions. However, Navy officials reported that there are currently no plans to finish the development of Baseline 9B and BMD 5.0 for cruisers.¹⁰ They explained that they included these items for the *Port Royal* because the congressional mandate language directed them to include modernization costs, and the Navy had intended to make these modernizations to the *Port Royal* prior to the decision to decommission the ship.¹¹ However, the mandate language also directed the Navy to include modernization costs "consistent with other ships in the Ticonderoga class," and, at the time of the Navy's 2013 assessment of the *Port Royal*, the Navy was not planning on implementing these modernization upgrades for other cruisers. Further, a senior INSURV official stated that the cost of two modernization upgrades (BMD 5.0, combat system Baseline 9B) is not consistent with other Ticonderoga class cruisers and that it is speculative to say that the Navy might choose to implement these upgrades in the future on the *Port Royal*. Table 2 shows these questionable costs.

¹⁰In comments on a draft of this report, DOD stated that the modernization package for BMD-capable cruisers is under review.

¹¹According to Navy officials, when the Baseline 9B and BMD 5.0 were planned the Navy would have spread the development cost across all five BMD-capable cruisers that would have received the upgrades. However, since there are no current plans to upgrade the other BMD-capable cruisers and the congressional mandate only concerned the *Port Royal*, the Navy attributed the entire \$250 million in developmental costs to the *Port Royal*.

Current Assessments Run Counter to the Assumptions the Navy Used When It Decided to Decommission the *Port Royal*

Table 2: *Port Royal* Costs That Are Not Consistent with Other Ticonderoga-Class Cruisers

Dollars in millions	
Cost description	Cost
Developmental costs—for combat system Baseline 9B and Ballistic Missile Defense (BMD) 5.0 for cruisers	\$250
System upgrades for BMD 5.0	56.1
Total	\$306.1

Source: GAO analysis of DOD information.

If the Navy did not include the costs in table 2, which are unique to the *Port Royal* and not consistent with planned costs for other cruisers, the Navy's total cost to repair and modernize the *Port Royal* would decrease by \$306 million, from \$712 million to \$406 million.¹²

On the basis of current information, the Navy's plan to decommission the *Port Royal* is not aligned with decommissioning requirements. The Navy decided to decommission the *Port Royal* in 2011 based on certain factors in its decommissioning policy, including material condition and life-cycle costs; however, the 2013 assessment, which provided additional information on the ship's condition, future costs, and the effect of the grounding, revealed that the Navy's original assumptions about those factors were inaccurate. Although aware of the additional assessment information, the Navy, at the time of our review, did not have any specific plans to reconsider its decision to decommission the *Port Royal*. Apart from these expert assessments, the *Port Royal* also has some advantages relative to other cruisers in terms of service life and special capabilities—other factors considered in the decommissioning of ships.

¹²Depending on how the Navy would use the *Port Royal*, if it remains in service, the modernization costs may be overstated by an additional \$167 million. In its report to Congress, the Navy included \$167 million of combat systems upgrades to get the ship to the 9B configuration. The Navy's four other BMD cruisers are not scheduled to receive this upgrade. However, the Navy's 17 non-BMD cruisers have received, or are scheduled to receive, combat systems upgrades, which bring the non-BMD ships to a 9A configuration. *Port Royal* could receive these 9A upgrades, which would enhance its anti-air warfare capabilities consistent with the Navy's non-BMD cruisers. However, if the *Port Royal's* combat systems were upgraded to the 9A configuration, the ship would no longer be capable of executing the BMD mission.

Navy Policy Identifies Factors to Be Considered before Decommissioning Ships

The Navy's policy on the retirement of naval vessels¹³ identifies material condition, life-cycle costs, operational effectiveness, and service life as key factors to be considered when determining which ships to retire. The policy contains additional requirements for ships that are going to be decommissioned early, which is prior to the end of their estimated service lives. Specifically, the policy requires that the Navy describe, in the form of a decision memorandum, why it is in the best interest of the Navy to retire the ship early, identify any resulting capability gaps and their duration, and recommend strategies to mitigate those capability gaps.

Navy Officials Planned to Decommission *Port Royal* Based in Part on Assumptions Relating to Material Condition, Grounding, and Maintenance and Modernization Costs

Although the Navy did not prepare a decision memorandum, officials told us that in 2011 the Navy decided to decommission the *Port Royal* in the context of a broader decommissioning proposal that included other cruisers and amphibious ships. Navy officials identified a number of assumptions that led the Navy to including the *Port Royal* as one of the nine ships planned for decommissioning. Officials specifically noted that the condition of the *Port Royal's* hull and superstructure were key reasons why they recommended decommissioning the ship.¹⁴ They also explained that the 2009 grounding of the *Port Royal* created uncertainty regarding future maintenance requirements. According to Navy officials, another primary reason the *Port Royal* was selected for decommissioning was the avoidance of upcoming maintenance and modernization costs, particularly midlife modernization costs. Many of the Navy's other active cruisers had already received their midlife modernizations. According to Navy officials, the Navy also discussed *Port Royal's* BMD capability as a key factor, in terms of the potential benefits this capability provides, while developing its decommissioning proposal. However, the Navy ultimately decided to decommission the *Port Royal* based on its assumptions concerning material condition, the effects from the grounding, and costs.

¹³Office of the Chief of Naval Operations, *General Policy for the Inactivation, Retirement, and Disposition of U.S. Naval Vessels*.

¹⁴Officials repeatedly referenced an incident in 2011 when the ship's supporting structural beams separated from the hull of the ship.

Experts' Assessments of Material Condition, Effect of the Grounding, and Repair Costs Run Counter to the Navy's Original Assumptions

The Navy's 2013 assessment of the *Port Royal* provided additional information on the ship's material condition, the residual effects of the 2009 grounding, and life-cycle costs; much of this information runs counter to the assumptions the Navy relied on in 2011 when it decided to decommission the ship. The 2013 assessment showed that the *Port Royal's* material condition was similar to other cruisers and that the 2009 grounding should have no significant effect on the ship's future maintenance needs. The assessment also showed that the repair cost projections for the ship were similar to other cruisers. On the basis of current information, the Navy's plan to decommission the *Port Royal* is not aligned with decommissioning requirements.

Material Condition and Effect of the Grounding

As shown in table 1, the Navy's 2013 assessment of the *Port Royal* concluded that the *Port Royal's* material condition was similar to other cruisers. For example, the Navy's 2013 assessment of the *Port Royal* found that the ship's superstructure and its interior steel hull were in similar or better condition than the comparable components of several other cruisers—CG-70, CG-71, and CG-72—that were not being decommissioned. Reviewers of the assessment and technical experts we interviewed confirmed this conclusion. In its review of the Navy's assessment, INSURV stated that the *Port Royal's* material condition is comparable to other ships in the class, and in some cases superior. According to INSURV, the Navy's 2013 assessment of the *Port Royal* does not present material evidence to support the recommendation to decommission the *Port Royal* rather than other cruisers in the class.

Navy technical experts we interviewed also characterized the ship's material condition as being similar to other cruisers. In interviews, some of these experts provided the following comments about the *Port Royal's* ship systems:

- Hull: *Port Royal's* hull has no unique or ship-specific structural discrepancies.
- Superstructure: *Port Royal's* superstructure is in line with the rest of the ships in its class.
- Engines: *Port Royal's* engines are generally on par with other ships.¹⁵

¹⁵Technical experts clarified further that some engines need to be replaced because of total operational hours since the last major overhaul, not because their material condition was not well maintained.

-
- Electrical system: *Port Royal's* system is in comparable or better condition compared to other cruisers.
 - Weapons Handling system: *Port Royal's* system is in average condition compared to other cruisers.
 - Aegis Weapon System Fire Control System: *Port Royal's* system is the same or better than the Fire Control System on other cruisers.
 - Aegis Weapon System Radar Components: *Port Royal's* components—signal processor and antenna—are in above-average condition compared to other cruisers.

In one exception, the Navy's technical expert on the ship's sewage system characterized the *Port Royal's* sewage system as significantly worse than other ships. However, according to this same official, much of the system's deterioration was likely due to maintenance being deferred after the ship was identified for decommissioning. In addition, cruisers are supposed to have their sewage systems modified as part of the normal cruiser modernization programs.

In contrast to the Navy's earlier assumption that the 2009 grounding would lead to ongoing maintenance issues, the Navy's 2013 assessment of the *Port Royal* found no lingering effects from the 2009 grounding. The Navy's 2013 assessment identified plans for maintenance for the *Port Royal* in fiscal years 2014 and 2016 if the ship were not decommissioned and noted that hundreds of repair items would be completed during these availabilities. The Navy's assessment listed four possible causes that could have necessitated these repairs. While "residual result of the ship's grounding" was one of the possible causes,¹⁶ none of the listed repair items was attributed to the ship's 2009 grounding. Navy officials stated that one repair item, which is not included in the 2014 and 2016 maintenance availabilities, can be directly attributable to the 2009 grounding—a repair to adjust the magnetic signature of the ship, which costs \$100,000. According to Navy officials, they deferred this repair related to the 2009 grounding, in part, because it cannot be done in Hawaii; moreover, many ships that have not run aground require this same maintenance action as they age.

¹⁶The other three causes were: (1) result of deferred maintenance in anticipation of decommissioning, (2) normal problem / maintenance issue for *Ticonderoga* class, and (3) issue specific to USS *Port Royal* (CG-73). The cause attributed to most repair items was cause (2), but a number of repair items were also attributed to causes (3) and (1).

Costs to Repair and Modernize
the *Port Royal*

The 2013 assessment of the *Port Royal* provided additional information on the costs to repair the *Port Royal* compared to similar ships. During fiscal year 2014, the Navy would address most of the repair items identified during the 2013 assessment, and in fiscal year 2016 the Navy would conduct a second depot period to accomplish all modernizations and upgrades, as well as complete additional maintenance.¹⁷

Although the Navy assumed the *Port Royal* was in need of costly repairs that other cruisers would not require, the Navy's 2013 assessment showed that the estimated repair costs for the proposed 2014 and 2016 maintenance periods would be similar to repair costs for other cruisers. For example, the projected cost of the *Port Royal*'s 2016 maintenance is similar to the maintenance costs that four other cruisers incurred during their modernizations. According to Navy officials involved in the 2013 assessment of the *Port Royal*, there is no significant difference in the cost estimate to repair and modernize the *Port Royal* compared to other ships in the class; there is also no significant difference in the cost estimate to do the structural work on *Port Royal* compared to other ships in its class. Furthermore, INSURV stated that the Navy's report does not present financial evidence to support the recommendation to decommission the *Port Royal* rather than another cruiser.

After reviewing the recent 2013 *Port Royal* assessment, senior Navy officials acknowledged that the ship was in "good shape" and "consistent with" other cruisers. They also stated that, if they had the opportunity to revisit the 2011 decision, they likely would select a different cruiser for decommissioning. The officials also noted that the Navy is considering some different options for keeping the ships, including the *Port Royal*, after decommissioning them. However, they did not outline, at the time of our review, any specific plans to reverse the decision to decommission the *Port Royal*.

¹⁷The 2016 depot period would be the ship's midlife availability. In a midlife availability, the Navy accomplishes major modernization to the hull, mechanical, electrical, and combat systems throughout the ship. The goal is to restore and modernize the material condition of a ship so it can reach its estimated service life.

Navy Policy Requires that Estimated Service Life and Capabilities Are Considered before Decommissioning Ships

In terms of its estimated service life and capabilities, the *Port Royal* has some advantages when compared to the Navy's other cruisers. Commissioned in 1994, the *Port Royal* is the youngest cruiser in its class and has 15 years of service life remaining—more than any other cruiser in the Navy. The *Port Royal* also has some key capabilities that many of the Navy's other cruisers lack. One of these capabilities is the *Port Royal's* BMD capability. Aegis BMD is the naval component of the Missile Defense Agency's Ballistic Missile Defense System. In May 2013, the Director of the Missile Defense Agency testified that the Aegis BMD is a prominent part of DOD's regional defense posture in Europe and in Japan. He also stated that the demand for missile defense from the combatant commanders is increasing in terms of capacity required. As a result, the Navy is currently trying to increase the number of ships with BMD capabilities due to this high level of demand for this capability. Such efforts consist of upgrading Aegis destroyers to the BMD capability, incorporating Aegis BMD into the Aegis Modernization Program, and new construction of Aegis BMD destroyers. Figure 2 shows the Navy's 22 active cruisers and lists their remaining service lives and whether or not they have BMD capabilities. It also shows which cruisers the Navy plans to decommission.

Figure 2: Service Lives and Ballistic Missile Defense Capability for Active Cruisers (Newest to Oldest)



Source: GAO analysis of Navy documents.

While the *Port Royal* has BMD capabilities that other cruisers do not possess, there are some capability upgrades that the *Port Royal* has not received. These include upgrades for weapon systems such as the Vertical Launch System, the MK 34 Gun Weapon System, and the Aegis Weapon System. However, *Port Royal* is not the only ship that lacks these upgrades. Several other cruisers that are not scheduled for decommissioning, including CG-70, CG-71, and CG-72, also have not received these weapon-systems upgrades.

Conclusions

Navy officials have cited the *Port Royal's* 2009 grounding, as well as the avoidance of midlife modernization and maintenance costs, as determining factors in the ship's decommissioning. However, the Navy's report to Congress shows that the ship has recovered from the grounding and that the ship's material condition and repair costs are similar to other cruisers. Navy officials are aware of the findings of the 2013 assessment, but, at the time of our review, did not have specific plans to reevaluate their decision. The Navy could capitalize on its additional information it has gathered by reevaluating the extent to which its decision to decommission the *Port Royal* met its criteria for early ship decommissioning. By reevaluating its original assumptions on the *Port Royal* in light of its additional information, the Navy can better ensure that it is making the best decision with regard to its current budget and its requirements to support the needs of the combatant commanders.

Recommendation for Executive Action

To optimize capabilities within its current budget constraints, we recommend that the Secretary of Defense direct the Secretary of the Navy to reevaluate the Navy's decision to decommission the *Port Royal* in light of the current information available to the Navy—including internal and external experts' assessments of the *Port Royal*.

Agency Comments and Our Evaluation

In written comments on a draft of this report, DOD concurred with our recommendation that the Secretary of Defense direct the Secretary of the Navy to reevaluate the Navy's decision to decommission the *Port Royal* in light of the current information available to the Navy. Subsequent to conducting the material condition assessment, the Navy has decided to retain the *Port Royal*. The Navy's reevaluation of the decision to decommission the *Port Royal*—given the additional information available about its material condition and other factors discussed in this report—meets the intent of our recommendation. Instead of decommissioning the *Port Royal*, the Navy will place its 11 newest cruisers, including the *Port*

Royal, into a long-term phased modernization plan starting in fiscal year 2015. After undergoing modernization, the service lives of these cruisers will be extended by 5 years, and the Navy will reactivate these ships on a one-for-one basis as its 11 oldest cruisers (CG 52-62) reach their expected service life. Under this plan, the Navy would bring the *Port Royal* back into active service in 2026, when it retires USS *Chancellorsville* (CG-62), and *Port Royal* would remain in an active status through 2044—15 years later than its original expected service life. DOD’s written comments are reprinted in their entirety in appendix II. DOD also provided technical comments, which we incorporated where appropriate.

We are sending copies of this report to congressional defense committees and the Secretary of Defense. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>. If you or your staff has any questions about this report, please contact me at (404) 679-1816 or pendletonj@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report are listed in appendix III.



John H. Pendleton
Director
Defense Capabilities and Management

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The Honorable Rodney Frelinghuysen
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The Honorable Pete Visclosky
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Appendix I: Objectives, Scope, and Methodology

The objectives of this report were to evaluate the extent to which (1) the Navy's 2013 assessment and report to Congress addressed congressional direction, and (2) the Navy's decision to decommission the *Port Royal* aligns with current information and Navy decommissioning requirements.

To evaluate whether the Navy's 2013 assessment and report addressed the requirements contained in the conference report to the National Defense Authorization Act (NDAA) of 2013, and the conference report to the Consolidated and Further Continuing Appropriations Act of 2013, two analysts independently reviewed the Navy's report and determined whether the report met the specific requirements listed in the conference report and explanatory statement. The analysts agreed on all requirements decisions. Additionally, we interviewed nine of the In-Service Engineering Agents from the Naval Surface Warfare Center, Carderock Division-Ship Systems Engineering Station, and Naval Surface Warfare Center, Port Hueneme Division, who assessed the *Port Royal*, to learn what guidance they were given to conduct the assessment, how they conducted the assessment, and what criteria they employed. We also interviewed six of the Technical Warrant Holders in the Naval Sea Systems Command (NAVSEA) Engineering Directorate, who evaluated the *Port Royal* report as the Navy's technical authority, and discussed their evaluation of the assessment and their understanding of the material condition of the *Port Royal*.

In addition, we interviewed representatives from the Navy's Board of Inspection and Survey (INSURV) and the American Bureau of Shipping (ABS) and discussed their review of the Navy's *Port Royal* report and their review findings. We interviewed officials from the Surface Warfare Directorate of NAVSEA to learn how they planned, conducted, and managed the material assessment of the *Port Royal*, developed cost estimates of repairs and modernizations, and prepared their report. We met with the analyst from the Office of the Secretary of Defense, Cost Assessment and Program Evaluation, to discuss his review of the cost estimate contained in the *Port Royal* report. We also discussed the material assessment of the *Port Royal* with the Commanding Officer of the *Port Royal*, the Pearl Harbor Port Engineer for the *Port Royal*, and officials from the Navy's Surface Maintenance Engineering Planning Program.

Finally, we discussed with officials from Program Executive Office, Integrated Weapons Systems, the cost estimate of combat systems modifications for the *Port Royal*. We reviewed the list of repairs and

upgrades and compared the Navy's approach estimating the repair and upgrade costs against principles in the Department of Defense's (DOD) Operating and Support Cost-Estimating Guide.¹ To determine the cost to complete *Port Royal's* structural repairs, we reviewed the results of the Navy's assessment, identified structural repairs documented in the assessment and confirmed, with Navy technical experts, that the items we selected were structural repairs, and then totaled the Navy's cost estimates for these repairs.

To evaluate the extent to which Navy's decision to decommission the *Port Royal* aligns with current information and Navy decommissioning requirements, we examined the report and interviewed officials involved in preparing or reviewing the assessment. We interviewed officials from the staff of the Office of the Chief of Naval Operations, Pacific Fleet, and Commander Naval Surface Forces Pacific to learn the rationale for placing the *Port Royal* on the decommissioning list. We obtained technical-expert assessments of how the *Port Royal* compares to other ships in its class to determine whether a clear rationale among Navy stakeholders exists to decommission the *Port Royal* early. For example, we interviewed technical experts who had inspected *Port Royal's* engines and other systems associated with weapons handling, oil pollution abatement, and components of the Aegis weapon system and asked them how these systems' material condition compared with other cruisers and how they were affected by the 2009 grounding. We compared this information with Navy's General Policy for the Inactivation, Retirement, and Disposition of U.S. Naval Vessels,² which lists relevant factors for ship retirements, and with the mandate language itself. We also analyzed information concerning the age of the *Port Royal* and its capabilities (e.g., ballistic-missile-capable versus not ballistic-missile-capable) relative to other cruisers.

To address our reporting objectives, we reviewed relevant documents and interviewed knowledgeable officials from the following DOD and Navy offices, as well as the independent industry board:

¹Office of the Secretary of Defense Cost Analysis Improvement Group, *Operating and Support Cost-Estimating Guide* (Washington, D.C.: October 2007).

²Office of the Chief of Naval Operations, *General Policy for the Inactivation, Retirement, and Disposition of U.S. Naval Vessels*, OPNAV Instruction 4770.5G (Washington, D.C.: Feb. 6, 2009)

- Office of the Secretary of Defense, Cost Assessment and Program Evaluation;
- Office of the Chief of Naval Operations (OPNAV):
 - OPNAV N43, N80, N9I;
- Naval Sea Systems Command (NAVSEA):
 - NAVSEA Engineering Directorate and Surface Warfare Directorate;
 - In-Service Engineering Agents who inspected the *Port Royal* from NAVSEA Ship Systems Engineering Station and from Naval Surface Warfare Center, Port Hueneme Division;
 - Program Executive Office, Integrated Weapons System;
 - Surface Maintenance Engineering Planning Program;
- Commander Naval Surface Forces Pacific:
 - CG-73 Pearl Harbor Port Engineer;
 - N43;
- Space and Naval Warfare Systems Command;
- U.S. Pacific Fleet:
 - Force Structure;
 - N43;
- Commanding Officer of the *Port Royal*;
- Navy's Board of Inspection and Survey (INSURV); and
- American Bureau of Shipping (ABS).

We conducted this performance audit from May 2013 to April 2014 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, 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



DEPARTMENT OF THE NAVY
OFFICE OF THE ASSISTANT SECRETARY
(RESEARCH, DEVELOPMENT AND ACQUISITION)
1000 NAVY PENTAGON
WASHINGTON DC 20350-1000

MAR 24 2014

Mr. John Pendleton
Director, Defense Capabilities and Management
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Pendleton:

This is the Department of Defense (DoD) response to the GAO Draft Report, GA0-14-336, "MILITARY CAPABILITIES: Navy Should Reevaluate Decommissioning Decision," dated February 14, 2014 (GAO Code 3351825).

Enclosed is the DoD response to the GAO recommendation made in the draft report.

If you should need any further assistance regarding this GAO engagement, please contact Mr. Dan Gulotta, daniel.gulotta@navy.mil, (703) 697-3781.

Sincerely,

A handwritten signature in blue ink, reading "Allison F. Stiller".

Allison F. Stiller
Deputy Assistant Secretary of the Navy
For Ship Programs

Enclosure:
As stated

cc:
ASN(RD&A)
COMNAVSEASYSKOM

GAO DRAFT REPORT DATED FEBRUARY 14, 2014
GAO-14-336 (GAO CODE 351825)

“MILITARY CAPABILITIES: NAVY SHOULD
REEVALUATE DECOMMISSIONING DECISION”

DEPARTMENT OF DEFENSE COMMENTS
TO THE GAO RECOMMENDATIONS

RECOMMENDATION: To optimize capabilities within its current budget constraints, GAO recommends that the Secretary of Defense direct the Secretary of the Navy to reevaluate its decision to decommission the Port Royal in light of the current information available to the Navy – including internal and external experts’ assessments of the Port Royal.

DoD RESPONSE: Concur. The Department of the Navy’s material condition assessment indicated that the material condition of the Port Royal is comparable to other similar Ticonderoga Class cruisers. The evaluation by independent subject matter experts from the DoD and industry support this assessment. Subsequent to conducting the material condition assessment, the Navy decided to retain the Port Royal and ten other Ticonderoga Class cruisers, and to induct them into a phased modernization plan.

Appendix III: GAO Contact and Staff Acknowledgments

GAO Contact

John H. Pendleton, (404) 679-1816 or pendletonj@gao.gov

Staff Acknowledgments

In addition to the contact named above, key contributors to this report were Michael Ferren, Assistant Director; Robert Breitbeil; Kevin Keith; Amie Steele; and Richard Powelson.

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