

REPORT BY THE COMPTROLLER
GENERAL OF THE UNITED STATES

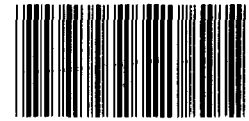
THE NAVY'S LANDING CRAFT AIR
CUSHION--UNCERTAINTY OVER
HOW IT WILL BE USED WITH
AMPHIBIOUS FORCES

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D I G E S T

The Landing Craft Air Cushion (LCAC) is an advanced design, high-speed air cushion vehicle being developed by the Navy for use in conducting amphibious operations. A \$38.6 million contract for long-lead items and detailed design was awarded to Bell Aerospace Textron in June 1981. Total program acquisition costs are estimated at about \$3.2 billion, in escalated dollars, for 107 craft. (See pp. 1 and 3.)

This review was conducted to provide the Congress with an assessment of the LCAC program as it approaches the start of production in 1982 and to identify important issues which should be considered in progressing to full production in 1985.



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LCAC is being developed to replace current landing craft which possess a number of operational performance limitations. Although still being designed, studies conducted and testing completed on full-scale advanced development air cushion vehicles supports LCAC's potential to improve the Navy's surface assault capability. (See pp. 6 to 8.)

LCAC is expected to possess a number of operational advantages, such as high overwater speed and the ability to cross the beach and discharge cargo on firm ground. Navy studies have also identified disadvantages associated with its introduction. These are high cost, increased maintenance requirements, and modifications to ships that will transport LCAC. (See pp. 8 and 9.)

There are a number of additional matters which will require special attention and monitoring as the program progresses to the full-scale production decision scheduled for 1985. These are:

- To take full advantage of LCAC's potential operational capabilities, the Navy and the Marine Corps have determined that a revised operational

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concept and changes to current amphibious operations tactics and doctrine is necessary. It is uncertain as to how the revised concept will affect LCAC's current mission, performance requirements, the number of craft ultimately required, the planned acquisition of a future Marine Corps assault system, and the planning and conduct of future LCAC test and evaluation. The Secretary of the Navy has directed a program review no later than November 1, 1982, to review the LCAC performance thresholds, revised operational concept, and other issues. (See pp. 11 to 14.)

--Problems identified during testing of advance development air cushion vehicles which need to be resolved and incorporated into the LCAC design include propeller and lift fan erosion, corrosion of electrical and electronic components, and the need to decrease craft vulnerability. (See pp. 19 to 21.)

--The use of demonstrated, low-risk technology has been used to support LCAC limited production. However, the Navy has identified compressor problems associated with the TF-40B engine under consideration for craft use. Although the Navy believes the engine problem can be solved, an alternative engine, the LM-500, is being studied. Selection of the latter would introduce an additional risk into the program. (See pp. 21 and 22.)

--As a result of tests of the advanced development air cushion vehicles, the Navy's Commander, Operational Test and Evaluation Force, stated that LCAC has the potential to be operationally effective. However, the Test Force cannot comment on LCAC operational suitability, such as reliability, maintainability, and availability, until test and evaluation of a representative craft scheduled for 1985. The Test Force believes LCAC's operational suitability represents an area of risk because it has not been tested. (See pp. 22 and 23.)

--Prior to test and evaluation of a representative craft scheduled in 1985, the Navy plans limited production of 12 LCACs at a cost of \$343 million. This increases the importance of maintaining a low-risk program and conducting periodic reviews to monitor and ensure the timely resolution of program issues. (See p. 23.)

--In October 1980 the Deputy Secretary of Defense, citing low risk as a basis, waived the first scheduled LCAC major milestone review at full-scale development. Then in June 1981 the program was designated a nonmajor acquisition because the dollar threshold criteria used for designating major systems increased. The Secretary of the Navy was then designated the decision authority for future program reviews. While this delegation of authority is consistent with current Defense initiatives, recent decisions have increased the program size to where cost is now estimated to be \$3.2 billion. As such, it should be a high visibility program necessitating close monitoring. (See pp. 23 and 24.)

--LCAC is not presently on the Selected Acquisition Report system. As a result, high-level visibility by top Office of the Secretary of Defense management and congressional oversight committees is not available in the same way as Selected Acquisition Report-designated systems. This lack of visibility deprives key decisionmakers of a useful management tool. (See p. 24.)

COMING EVENTS

The first major program review, to be held no later than November 1, 1982, will be extremely important in ensuring that LCAC's acquisition strategy is appropriate and can be achieved.

RECOMMENDATIONS TO THE SECRETARY OF DEFENSE

Although the Secretary of the Navy has been designated the decision authority for future LCAC program reviews, the Secretary of Defense is the ultimate decisionmaker on all weapon system acquisitions, in that he has the final say over the budget preparation in the Department of Defense. Because the Secretary of Defense will not be directly involved in detailed reviews of the program, and in accordance with the new Defense acquisition initiatives, GAO recommends that the Secretary, as a minimum, closely scrutinize the Navy's acquisitions plans for LCAC during the Program Objective Memorandum and the Program, Planning, and Budgeting System reviews. This would include determining how

--the revised LCAC operational concept will influence craft performance requirements, system

design, number to be procured, and program cost;

--LCAC will interface with and influence the composition of future surface assault forces, such as the Marine Corps LVT-X program; and

--the LCAC test program is being structured to ensure that any changes in the craft's performance thresholds as a result of agreements reached on the operational concept have been incorporated into the future test plan.

GAO also recommends that the Secretary of Defense direct the Secretary of the Navy to make sure the ongoing lead production effort, regardless of its size, provides adequate milestones for monitoring cost, schedule, and performance progress. Special attention should also be given to those matters not specifically planned for the Secretary of the Navy review scheduled for no later than November 1, 1982, including

--the effect engine selection will have on the program as currently structured;

--accumulation of assessable reliability, maintainability, and availability data; and

--the incorporation into the LCAC design of solutions to problems identified during testing of advance development air cushion vehicles, including propeller and lift fan erosion, corrosion of electrical and electronic components, and the need to decrease craft vulnerability.

GAO further recommends that the Secretary of Defense require preparation of Selected Acquisition Reports on LCAC beginning with the April 1982 quarter. This would provide decisionmakers and the Congress with valuable information.

MATTERS FOR CONSIDERATION
BY THE CONGRESS

Although LCAC has been designated as a nonmajor acquisition, GAO believes the program demands high visibility by top Department of Defense management and congressional oversight committees. The Congress should pay particular attention to the actions surrounding the acquisition of this multibillion dollar program. The critical management actions identified in this report and the forthcoming decisions to acquire

LCAC will have significant budgetary implications for years to come.

VIEWS OF PROGRAM OFFICIALS

GAO did not request official comments on this report because of the need to issue it in time for congressional consideration of the fiscal year 1983 defense budget request. GAO did, however, discuss a draft of this report with high level officials associated with management of the program and they agreed with the facts presented. Their views are incorporated as appropriate.