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U.S. GENERAL ACCOUNTING OFFICE

STAFF STUDY

[ CVAN-68/69 NUCLEAR AIRCRAFT CARRIERS ]

DEPARTMENT OF THE NAVY

FEBRUARY 1973

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## ABBREVIATIONS

|          |  |
|----------|--|
| AEC      | Atomic Energy Commission   |
| CVAN     | Nuclear-Powered Attack Aircraft Carrier  |
| CVN      | Nuclear-Powered Attack Aircraft Carrier with<br>Antisubmarine Warfare Capability |
| DOD      | Department of Defense  |
| GAO      | General Accounting Office  |
| NAVSHIPS | Naval Ship Systems Command   |
| SAR      | Selected Acquisition Report  |

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## SYSTEM DESCRIPTION AND STATUS

The NIMITZ class is a class of nuclear-powered attack carriers that support and operate aircraft to engage in attacks on targets afloat and ashore which threaten our use of the sea, and to engage in sustained operations in support of other forces. The carriers are to be powered by a two-reactor nuclear propulsion plant.

Two carriers, CVAN-68 and 69, are under construction. The CVAN-68 is scheduled for delivery in September 1973 and the CVAN-69 for June 1975. In the September 30, 1972, Selected Acquisition Report (SAR), the Navy included a third carrier which is designated CVN-70, an attack aircraft carrier with antisubmarine warfare capability. In fiscal year 1973, \$299 million has been appropriated for procurement of long lead-time requirements for the CVN-70.

GAO studies on the NIMITZ class program similar to this have been issued annually beginning in February 1971. This report covers changes made to the program during fiscal year 1972. To a limited extent, the report has been updated to include significant data from the September 30, 1972, SAR.

## COMING EVENTS

Sea trials are scheduled to begin in August 1973 for the CVAN-68. The Project Manager stated that the schedules established for testing are tight and it is too early to know whether the presently scheduled contract delivery date of September 1973 will be achieved. Testing progress in the next few months will determine whether a delay will materialize.

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COST

The June 1972 cost estimate for the two CVAN's of \$1,316.2 million is \$82.4 million more than last year's estimate, and \$369.7 million more than the September 1965 planning estimate. A comparison of cost changes by ship for fiscal year 1972 follows:

| <u>Date of SAR</u> | <u>Current estimate</u>   |                        |                        |
|--------------------|---------------------------|------------------------|------------------------|
|                    | <u>Total program cost</u> | <u>Cost of CVAN-68</u> | <u>Cost of CVAN-69</u> |
|                    | (in millions)             |                        |                        |
| June 1971          | \$1,233.8                 | \$605.8                | \$628.0                |
| June 1972          | 1,316.2                   | 639.4                  | 676.8                  |
| Increase           | <u>\$ 82.4</u>            | <u>\$ 33.6</u>         | <u>\$ 48.8</u>         |

The \$82.4 million increase represents a potential shipbuilding contract cost increase of \$44.9 million and a cost increase for the nuclear propulsion plant of \$37.5 million. These increases were projected by the Navy after a production audit of the contractor and were included in our March 1972 study.

The September 30, 1972, SAR reflects the current estimate of total program cost as \$2,311.5 million. The increase is attributed to the addition of a third ship (CVN-70)--\$973 million; revised shipbuilding escalation factors--\$18.4 million; incorporation of limited changes which were dictated by changing threat requirements--\$3.9 million. The estimated cost of the CVAN-68 and 69 increased to \$646.9 million and \$691.6 million respectively.

Costs not included in the current estimate

In our March 1972 study, we reported that additional estimated costs of \$463.6 million were not included in the current program estimate. The costs were identified by category.

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|  | (millions)     |
|--|----------------|
| One set of major spare reactor components    | \$108.0        |
| Navy Research and Development                | 89.4           |
| AEC Research and Development and other       | 262.7          |
| Navy preliminary construction design of ship | 3.5            |
|  | <u>\$463.6</u> |

These costs were projected through fiscal year 1972. Navy officials told us that the costs are inappropriate because the Navy and the Atomic Energy Commission's (AEC) Research and Development estimates include some costs not related to the CVAN's. The Congress has asked the Department of Defense (DOD) to include all costs related to a weapon system in each SAR. Consequently, the Naval Ship Systems Command (NAVSHIPS) is reevaluating the above costs and will report the related costs in accordance with DOD instructions.

## Economic escalation

Since funds for the two ships had been appropriated in prior years, there was no economic change in the current estimate between the June 1971 and the June 1972 SAR's.

The total allowance for escalation in the current estimates as of June 1972 remained at \$146.7 million. The basis for this allowance was explained in our February 1971 study. In the September 30, 1972, SAR, however, the Navy revised the shipbuilding escalation factors to reflect actual experience through fiscal year 1972, and the projections in the fiscal year 1974 budget submission. The total allowance for escalation in the current estimate for the CVAN-68 and 69 increased by \$18.4 million.

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With the addition of the CVN-70 to the program, the total allowance for escalation in the current estimate of September 1972 was \$224.1 million.

### Program funding

The current estimate as of June 1972 was \$1,316.2 million. This amount was to be funded by \$1,040.4 million already appropriated, \$162.9 million reprogrammed, \$93.7 million in the fiscal year 1973 budget, and \$19.2 million in future years. Total funds obligated for the CVAN-68 and 69 program at June 30, 1972, were \$1,092.7 million.

### CONTRACT DATA

The CVAN's are being constructed by the Newport News Shipbuilding and Dry Dock Company, Newport News, Virginia, under a fixed-price incentive contract awarded September 14, 1970. According to Navy studies, the Company is the only shipbuilder capable of building this class of carrier.

At June 30, 1972, there had been 636 change requests issued on the shipbuilding contract. The estimated cost of these changes was \$19,311,259, about 2 percent of the Navy's estimated end cost of the contract. Of these changes, 588 had been priced at a total amount of \$18,161,259 and 48 estimated at \$1,150,000 had not yet been priced.

DOD Directive 7000.2 (Performance Measurement for Selected Acquisitions) was not invoked in the construction contract for the CVAN-68 and 69. Reports required by the contract are considered adequate by the Navy for management of the CVAN construction program. The Navy has identified certain deficiencies in the contractor's cost reporting system, particularly in the area of budgets related to contract price, updating of the

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budgets to reflect changes, rework, etc.; and prompt identification of budget variances and causes. A general criteria for cost control in shipbuilding which is nearly identical to the criteria of DOD Directive 7000.2 has been provided to the contractor. The contractor is making efforts to improve the systems in accordance with Navy guidance.

## PERFORMANCE

There have been no changes in key performance characteristics of either the CVAN-68 or 69 since the planning estimate.

## PROGRAM MILESTONES

There were no changes in the current estimate of scheduled shipyard milestones between the June 1971 and the June 1972 SAR. The only changes since the 1965 planning estimate for the CVAN-68 were reflected in the September 1970 SAR when both the launch and delivery dates were established 15 months later than forecast in the planning estimate.

## RELATIONSHIP TO OTHER SYSTEMS

The Navy's program for the nuclear-powered guided missile frigate (DLGN-38) is closely related to the Navy's program to acquire nuclear aircraft carriers. The Navy plans to have four DLGN's for each nuclear carrier with the possibility that a nuclear-powered guided missile cruiser (CGN) could be substituted for a DLGN.

The Navy has one nuclear carrier in operation and two under construction. Advance procurement funds for a fourth carrier were provided in the fiscal year 1973. As of June 1972, the Navy had two DLGN's and one CGN in operation, and five DLGN's planned for construction.

Considering the Navy's plan to provide four DIGN's to escort each nuclear carrier, the Navy is currently providing four ships less than its stated needs for the three nuclear carriers in use or under construction. This shortfall will be increased to eight if the Congress authorizes the construction of a fourth carrier.

#### SELECTED ACQUISITION REPORTING

The June 30, 1972, SAR generally meets the requirements of DOD Instruction 7000.3, Selected Acquisition Reports. However, as discussed in the cost section of this study, certain estimated costs have been excluded which we feel appropriately accrue to the estimated total program costs. The Navy is reevaluating these costs and will report related costs in accordance with DOD instructions

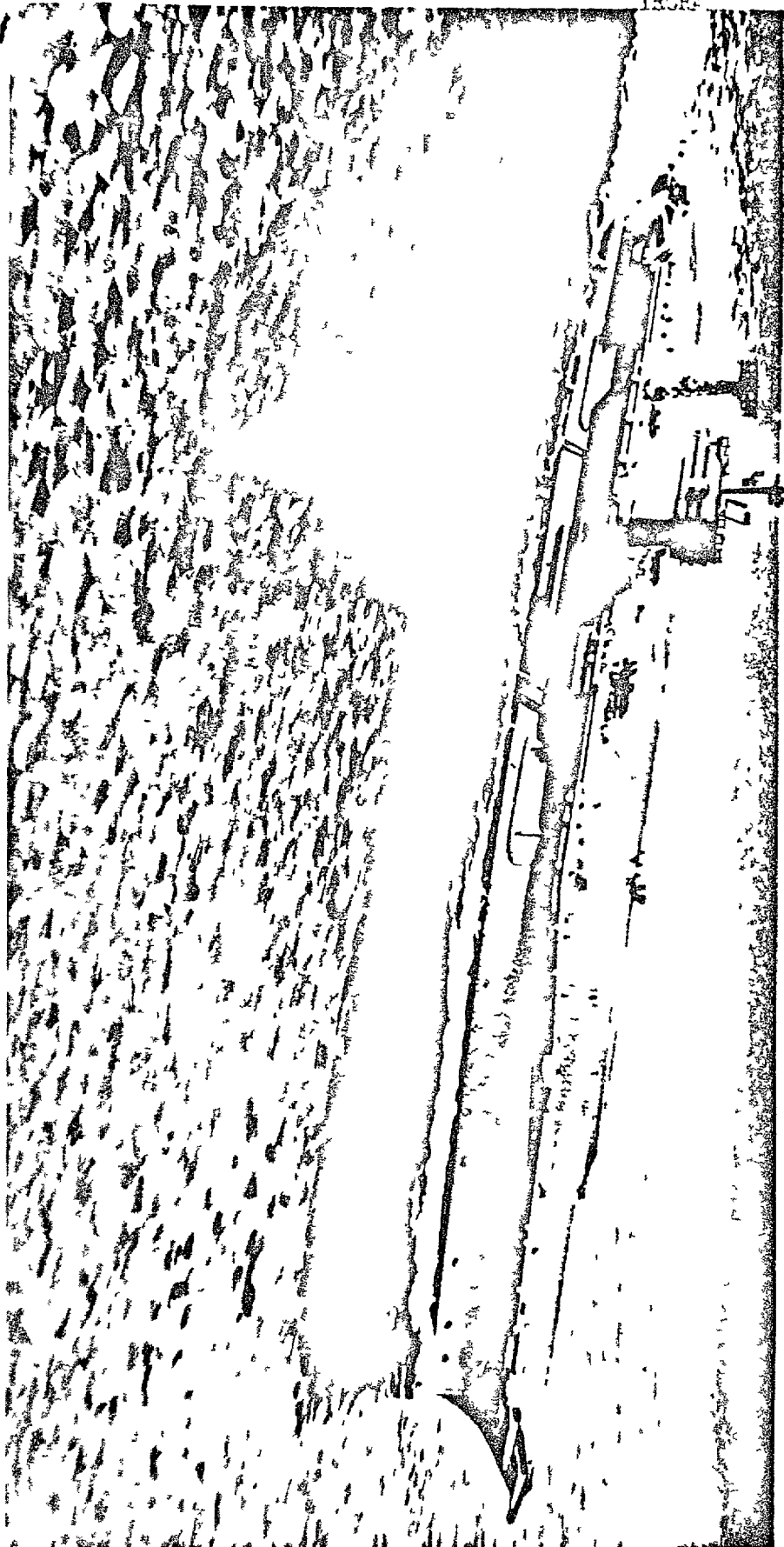
#### MATTERS FOR CONSIDERATION

If there is a need for nuclear-powered aircraft carriers in the Navy inventory and if nuclear-powered escorts are required to maximize the effectiveness of the carriers, then it follows that the quantities and construction schedules of each should be constrained to the highest degree of compatibility.

#### AGENCY REVIEW

A draft of this staff study was reviewed by Navy officials associated with the management of this program and comments were coordinated at the Headquarters level. The Navy's comments are incorporated as appropriate. As far as we know, there are no residual differences in fact.





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