

DOCUMENT RESUME

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[Construction of Space Shuttle Facilities at Vandenberg Air Force Base]. B-183134. June 2, 1977. 2 pp. + enclosure (6 pp.).

Report to Rep. George H. Mahon, Chairman, House Committee on Appropriations; by Elmer B. Staats, Comptroller General.

Issue Area: Facilities and Material Management: Design and Construction of Federal Facilities (707); Federal Procurement of Goods and Services: Notifying the Congress of Status of Important Procurement Programs (1905).

Contact: Procurement and Systems Acquisition Div.

Budget Function: National Defense: Department of Defense - Procurement & Contracts (058).

Organization Concerned: Department of Defense; Department of the Air Force: Vandenberg AFB, CA; Department of the Air Force.

Congressional Relevance: House Committee on Appropriations; House Committee on Appropriations: Military Construction Subcommittee.

GAO examined the reasonableness of the Department of Defense's (DOD's) estimated cost of the planned space shuttle facilities at Vandenberg Air Force Base, California, particularly from the standpoint of meeting total DOD space shuttle facilities requirements and providing for complete usable facilities. Findings/Conclusions: Requirements for DOD facilities to support the Space Transportation System (STS) are not fully defined, and cost estimates are still being refined and validated. The lack of firm requirements and cost estimates is due to the dynamic nature of the program in that it is still changing in terms of operational concepts and anticipated levels of operation. The request for military construction funds does not include all costs necessary to provide completely functional facilities. Additional costs are included under the support equipment and the research, design, test, and evaluation appropriation codes. Recommendations: To get better visibility as to the total costs of DOD's STS facilities, the Appropriations Committee of the House should require the Air Force to: identify all items necessary for the construction of completely usable and functional facilities that are not being funded under the military construction appropriation; and prepare a separate DD Form 1391 for each STS facility.
(Author/QM)

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COMPTROLLER GENERAL OF THE UNITED STATES

WASHINGTON, D.C. 20548



B-183134

JUN 2 1977

The Honorable George H. Mahon
Chairman, Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

Your letter of August 2, 1976, asked us to obtain information on the Department of Defense construction program for facilities to support the Space Transportation System at Vandenberg Air Force Base. As you suggested, we met with the staff of the Subcommittee on Military Construction, House Committee on Appropriations, to discuss its specific interests in this program. As agreed with the staff, we examined the reasonableness of the Department of Defense's estimated cost of the space shuttle facilities, particularly from the standpoint of meeting total Department of Defense space shuttle facilities requirements and providing for complete usable facilities.

Generally, we found that requirements for Department of Defense facilities to support the Space Transportation System are not fully defined and that cost estimates are still being refined and validated. The lack of firm requirements and cost estimates is, in our opinion, due to the dynamic nature of the program in that it is still changing in terms of operational concepts and anticipated levels of operation.

We also found that the request for military construction funds (appropriation code 3300) does not include all costs necessary to provide completely functional facilities. Additional costs are included under the support equipment (3020) and the research, design, test, and evaluation (3600) appropriation codes.

We recommend that the Committee, to get better visibility as to the total costs of the Department of Defense's Space Transportation System facilities, require the Air Force to (1) identify all items necessary for the construction of completely usable and functional facilities that are not being funded under the military construction appropriation and (2) prepare a separate DD Form 1391 (Military Construction Project Data) for each Space Transportation System facility.

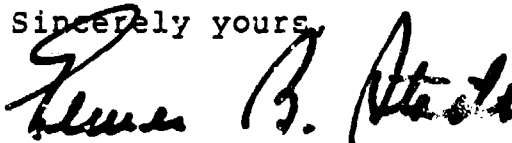
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We discussed these matters with Air Force officials and they believe that the Committee has adequate visibility on facilities costs. They also believe it is essential to maintain the program flexibility offered by consolidating all facilities on one DD Form 1391.

Details of these matters as presented to the Subcommittee staff in an earlier briefing are summarized in the enclosure to this letter. Please let us know if we can be of further assistance.

Sincerely yours,

A handwritten signature in black ink, appearing to read "James B. Atchefs". The signature is written in a cursive style with a large initial "J" and "A".

Comptroller General
of the United States

Enclosure

SUMMARY OF INFORMATION OBTAINED
FOR SUBCOMMITTEE ON MILITARY CONSTRUCTION,
COMMITTEE ON HOUSE APPROPRIATIONS
ON CONSTRUCTION OF SPACE SHUTTLE FACILITIES
AT VANDENBERG AIR FORCE BASE

BACKGROUND

The Department of Defense (DOD) plans to build facilities to support the Space Transportation System (STS) primarily at Vandenberg Air Force Base, California, and Port Hueneme, California. Some DOD facilities will also be constructed at Kennedy Space Center, Florida. In addition, DOD has requirements to construct facilities at Johnson Space Center, Texas, or other locations.

The STS-related facilities at Vandenberg are intended to achieve an initial operating capability, late in 1982, using one launch pad. The acquisition cost is based on a 3-year construction schedule starting early in 1979 and ending late in 1981. DOD plans to fund the facilities through two budgetary requests for military construction funds (appropriation code 3300), one in fiscal year 1979 and one in fiscal year 1980, rather than requesting money for each year of the construction schedule. These requests will also include funding for facilities which may be required at Kennedy Space Center or elsewhere.

A second launch pad and associated facilities scheduled for completion late in 1986 are still being evaluated. DOD plans to request funds for construction of the second launch pad, if needed, starting in fiscal year 1983.

DOD ACQUISITION COSTS
FOR STS FACILITIES

Acquisition costs for STS facilities at Vandenberg and Port Hueneme include development efforts, military construction, and support and communications equipment. Details of costs by type of appropriation are presented below.

Acquisition Costs for STS Facilities at
Vandenberg Air Force Base and Port Hueneme

<u>Description</u>	<u>In real year dollars (note a)</u>		<u>Total</u>
	<u>Launch pad No. 1 and associated facilities</u>	<u>Additional funds if launch pad No. 2 is added (note b)</u>	
	----- (millions) -----		
Military construction (appropriation code 3300)	\$222.2	\$136.7	\$ 358.9
Support equipment (appropriation code 3020)	251.8	129.7	381.5
Research, design, test, and evaluation (appropriation code 3600)	311.3	56.4	367.7
Communications equipment (appropriation code 3080)	<u>44.8</u>	<u>17.5</u>	<u>62.3</u>
	<u>\$830.1</u>	<u>\$340.3</u>	<u>\$1,170.4</u>

a/Real year dollars, also known as current dollars, are always associated with the purchasing power of the dollar in the year that the expenditure will occur. When future costs are stated, the figures given are the actual amounts which will be paid, including inflation.

b/Includes support facilities, such as transportation and utilities.

Air Force Space and Missile Systems Organization (SAMSO) officials estimated additional costs of about \$70 million to \$100 million for DOD security and communications requirements at Johnson Space Center and about \$4.8 million for a payload installation facility at Kennedy Space Center. These officials also said a considerable increase in facility costs of as much as \$95.5 million is possible due to additional requirements which are being validated.

PLANNING ASSUMPTIONS FOR DOD's STS
FACILITIES AND OBSERVATIONS THEREON

The planned STS operational flow and facilities at Vandenberg were based on the following key considerations:

- A rate of 20 launches a year with a two-orbiter fleet.
- Orbiter turnaround time of 205 hours.
- An initial operating capability late in 1982.
- Maximum use of existing facilities.

However, several changes in the operating concepts and the number of shuttle launches planned for Vandenberg have occurred since the original planning effort.

A maximum rate of 40 launches a year from Kennedy Space Center and 20 launches a year from Vandenberg was based on a national traffic model of 572 launches during fiscal years 1980-92. There have been several versions of the traffic model since that time. The most current thinking is that there will be a total of 560 shuttle launches. This model provides for a maximum of 129 launches over a 10-year period (average of 13 per year) from Vandenberg as compared to the 572 model which provided for 173 launches over the same 10-year period (average of 17 per year).

The two orbiters planned for use at Vandenberg are included in the National Aeronautics and Space Administration's (NASA's) fiscal year 1978 authorization and appropriations requests currently with the Congress. A congressional decision to approve less than a five-orbiter fleet for the STS could reduce the number of orbiters that will be available for use at Vandenberg. SAMSO officials agreed that either a reduction in launch rate or a decrease in the number of orbiters could result in deletions or changes in the Vandenberg facilities.

The estimated orbiter turnaround time of 205 hours also considered in planning the Vandenberg facilities has been revised. The estimate was increased to 336 hours in October 1976.

Another area for potential change is the planned 3-year construction schedule; Air Force officials are concerned whether the December 1982 initial operating capability date can be met. Their concern centers around the magnitude of the STS facilities project and the lack of flexibility for contingencies, such as labor strikes or other unknowns. Further, requirements for the presently planned STS facilities at Vandenberg may not be firm.

INTEGRAL EQUIPMENT NOT FUNDED FROM
MILITARY CONSTRUCTION APPROPRIATIONS

The request for military construction funds (appropriation code 3300) does not include all costs necessary to provide completely functional facilities. Additional costs are included under the support equipment (3020) and the research, design, test, and evaluation (3600) appropriation codes.

According to documents available at SAMSO, Air Force officials had directed that all long lead items (e.g., stainless steel tanks, bridge cranes, elevators) required for a military construction program would be budgeted under the support equipment (3020) appropriation. A SAMSO official believed this was done because only complete facilities, not just portions of a facility, could be purchased from military construction funds. A June 1976 letter, from Air Force headquarters, states, however,

"* * * that MCP funds could not be made available in FY 78 due to constraints on the program * * *. However, * * * a decision was reached by the Air Staff to transfer P-3020 funds from the Interim Upper Stage (IUS) Program at Kennedy Space Center to the Ground Support Systems Facilities Program at Vandenberg AFB for the specific use of providing the required long lead procurement items."

The mate/demate facility estimated to cost \$6.8 million is an example of a facility being funded from several appropriation codes, including the military construction and the support equipment appropriations. This facility is planned to be constructed at Vandenberg for use in lifting the orbiter on or off the carrier aircraft. About \$0.9 million, primarily for construction of a concrete base, is categorized as military construction. The crane portion of the mate/demate facility, estimated to cost \$2.8 million, is categorized as support equipment. NASA, on the other hand included the cost of its crane in the "cost of facilities" (i.e., construction) estimate.

IMPROVED CONTROL NEEDED
OVER DOD'S STS FACILITIES

The submission of the budgetary requirements for military construction funds (appropriation code 3300) will

be accomplished by means of a consolidated DD Form 1391 (Military Construction Project Data) covering all shuttle facilities at Vandenberg to be funded in any one fiscal year. This form includes a project description and justification, project cost estimates, and other data. The rationale for consolidating all facilities on one DD Form 1391 is to (1) facilitate preparation and review of documentation and (2) provide a degree of programmatic flexibility essential in a program of this magnitude and complexity.

Public law authorizing military construction allows variations in project costs provided the total for any given base within the continental United States is not exceeded by more than 5 percent, and the total authorized for the Air Force is not exceeded. An exception to this limitation occurs when construction at a base consists of one line item (i.e., one DD Form 1391); under this situation, the Secretary of Defense may approve variations up to 125 percent of the congressionally authorized amount without advising the Congress.

With the currently estimated value of the consolidated DD Form 1391s planned to be submitted for fiscal year 1979 (\$128.5 million) and for fiscal year 1980 (\$86.5 million) an additional \$32.1 million and \$21.6 million, respectively, in construction funds could be approved by the Secretary of Defense without congressional oversight. For the Congress to have adequate visibility on the scope and magnitude of costs of space shuttle facilities, a separate DD Form 1391 should be prepared for each facility. This would also allow the Congress to follow program changes and measure program progress.

RECOMMENDATIONS TO THE COMMITTEE

To get better visibility as to the total costs of DOD's STS facilities, the Committee should require the Air Force to

- identify all items necessary for the construction of completely usable and functional facilities that are not being funded under the military construction appropriation and
- prepare a separate DD Form 1391 for each STS facility.

AGENCY COMMENTS

We met with officials at Air Force headquarters to discuss matters in this report. They believe the Committee is given adequate visibility of the Space Transportation System facilities program cost. They also believe it is essential to maintain the program flexibility offered by consolidating all facilities on one DD Form 1391.