

National Aeronautics and
Space Administration

Washington, D.C.
20546

Office of the Administrator

November 20, 1978

MEMORANDUM FOR: The Secretary of State
The Secretary of the Interior
The Secretary of Agriculture
The Secretary of Commerce
The Director of Central Intelligence

SUBJECT: Space Transportation System Enhancement Study

Presidential Directive/NSC-42 calls for an interagency task force to make recommendations by August 1, 1979, on what future space transportation system capabilities will be needed. Dr. Press has asked the Department of Defense and NASA to co-chair this Task Force; Dr. Hans Mark, Under Secretary of the Air Force, and Dr. A. M. Lovelace, Deputy Administrator of NASA, have agreed to lead this important study of incremental improvements to the basic Shuttle transportation system.

As a first step, DoD and NASA have identified these areas as requiring early attention:

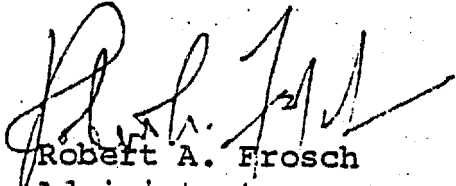
1. The basic Shuttle orbiter is limited by its on-board electrical power system. This limitation placed operational constraints on Shuttle orbital stay times as well as on the design of integral Shuttle payloads. Preliminary studies have already identified a number of candidate approaches to increase the electrical power available to Shuttle and Shuttle payloads. It would be very helpful if interested agencies would outline their foreseeable space power requirements over the next ten to fifteen years for integration into the study.

Declassified for NASA
Equities - per NASA Ltr.

2. The Shuttle system as presently configured will require some thrust augmentation capabilities in order to meet its specified performance envelope. While the minimum thrust augmentation required is established by currently programmed missions, it would be helpful to receive potential future payload weight and orbit projections from the interested agencies to factor into the study.
3. The orbiter's integral Remote Manipulation System provides only a limited capability for manipulation of payloads in space. A number of important on-orbit activities are now being identified that may require an extension of these capabilities, such as remote on-orbit maintenance, repair, or refueling. It would be useful to have the views of the interested agencies on those on-orbit capabilities felt to be needed over the next fifteen years.
4. At present, the Shuttle system includes the IUS and the SSUS's as propulsive stages. Future missions may require additional capabilities for propulsion and new operational flexibilities such as reusability.

These initial study areas do not, of course, represent the full spectrum of potential additional capabilities that could be considered in the evolution of space transportation; interested agencies are invited to outline other specific foreseen needs that the Task Force should study.

It would be appreciated if the agencies desiring to participate would develop and document their views on these topics and, at the same time, identify a senior agency representative to the Task Force. Communications on this matter should be addressed to either Dr. Lovelace or to Dr. Mark, with a copy to the other.



Robert A. Frosch
Administrator

cc:

The Secretary of Defense
Assistant to the President for
National Security Affairs
Director, Office of Science and
Technology Policy
Director, Office of Management and Budget

UNCLASSIFIED CONFIDENTIAL SECRET

EXECUTIVE SECRETARIAT (O/DCI)
Routing Slip

PM

TO:

		ACTION	INFO	DATE	INITIAL
1	DCI		✓		
2	DDCI		✓		
3	DD/RM	✓			
4	DD/NFA				
5	DD/CT				
6	DD/A				
7	DD/O				
8	DD/S&T		✓		
9	GC				
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SUSPENSE DATE: 7 DEC 78

Remarks:

To 3 - For comment to DCI.

D/Executive Secretary
22 NOV 78
Date

I will ask AT
to follow
anyone else?

TRANSMITTAL SLIP		DATE: 14 Dec
TO: <input type="text"/>		
ROOM NO.	BUILDING	
REMARKS: More on the Shuttle Study. F-1, and file. Check with <input type="text"/> to make sure you get identified to <input type="text"/> as the security point man on this issue.		
FROM: <input type="text"/>		
ROOM NO.	BUILDING	EXTENSION
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INTELLIGENCE COMMUNITY STAFF

[Redacted]

F. V. L.

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attached note
from*

[Redacted]

CFM

14 Dec 78

[Redacted]

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[Redacted]

said he

*knows of our interest in this area
& would keep those cards & letters
coming!*

[Redacted]

INFORMATION

P.S. Will you supply secure batteries to the upgrade?