RTP

THE DEPUTY UNDER SECRETARY OF DEFENSE FOR POLICY

February 17, 1988

AF-Dr. Cook/LTC Beale
Army-Dr. Norwood
Navy-RADM Brickell, Jr.
PA&E-Jim Brooks
USD(A)-Gene Sevin/Dennis Granato
JCS-Gen Grinalds
SDIO-Gordon Smith
LA-Doug Graham/Tom Harvey

Attached is the draft Space Station Report to Congress and cover letter, for security review and comments no later than COB 23 February. (Earlier concurrence or comments would be much appreciated.) The Report will be up for discussion at our Review Group meeting this Friday.

Thanks,

Philip Kunsburg

Honorable Les Aspin
Chairman, Committee on Armed
Services
House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

I am pleased to provide this response to the requirement in Section 255 of the Defense Authorization Act for 88/89 (Report 100-446) for a "report on the activities planned by the Department of Defense to be conducted on or in conjunction with the permanently manned space station."

The enclosed Report describes potential Defense uses of the U.S. Space Station and illustrates the type of projects we expect to carry out in the near term. The Report cannot be comprehensive because it is impossible to predict the strategic or technical environment in space over the planned 30-year evolution of the Space Station. Furthermore, planned or potential uses must remain tentative until they become approved programs. We do not intend by this Report to prejudge requirements or to short-circuit the programming and budget process.

Provisions of the recently completed international Space Station agreements, and an associated exchange of letters by Heads of Delegation, clearly preserve the right of the United States not only to use the Space Station for national security purposes, but also to be the sole judge of whether such uses are lawful and consistent with the Space Station agreements. While the agreed documents do not impose any new restrictions on Defense activities in outer space (beyond those imposed by current domestic and international law), we recognize the overall civil character of the Space Station and will not undertake activities that would give it a dominant military character.

The large investment by the United States in the Space Station program will provide a unique national resource. We cannot afford to duplicate its capabilities exclusively for military purposes and should explore its full potential for achieving scientific, technical, commercial and national security goals. The body of evidence indicating the advantages of man in space in support of national security requirements is growing; the Soviet lead in exploring and advancing the techniques and technology of a permanent, manned military presence in space is rapidly increasing. While the Department of Defense has so far been able to accomplish

A REPORT TO THE COMMITTEES ON ARMED SERVICES OF THE SENATE AND HOUSE OF REPRESENTATIVES ON

POTENTIAL DEPARTMENT OF DEFENSE USE OF THE PERMANENTLY MANNED SPACE STATION

In support of United States Space Policy, the Department of Defense recognizes space as being a medium within which the conduct of military operations in support of our national security can take place, just as on land, at sea and in the atmosphere, and similarly, from which military space functions of force enhancement, space control and force application can be performed. (A fourth functional category, space support, consists primarily of ground-based operations.)

The Department of Defense intends to conduct research and technology development to preserve and enhance a strong technology base for the advancement of military space capabilities beneficial to national security. Defense will also sponsor and encourage private sector innovation in space activities to increase capabilities and reduce costs, including technology development and the use of products and procedures developed by commercial space enterprises.

In this context, the Department of Defense regards the U.S. Space Station as a national resource, dedicated primarily to civil space activities, but available to the DoD in accordance with national commitments and priorities. To the degree the U.S. Space Station creates new capabilities to accomplish in-space military related research and development, Defense will seek to use those capabilities if they are available and economical. Defense also is actively exploring possible roles for military man-in-space focused on unique or cost-effective contributions to valid operational missions and requirements.

Future decisions on actual military space station utilization and activities will be made in the context of our overall space and space research and development policies and programs. As always, those decisions will be based on the contribution these proposed activities will make to military capabilities supporting our requirements to achieve overall national security objectives.

DRAFT PENDING SECURITY REVIEW

space missions most effectively using robotic capabilities, we can no longer ignore the possible advantages of having military personnel in space. Moreover, as described in the Report, certain near-term research activities clearly would benefit from hands-on control and human observations in space.

Mindful of the major and sustained commitment of the Soviet Union to a military manned presence on their space station, I believe that it is time for the United States to move from speculating about possible national security advantages and begin to learn through experience the extent of potential contributions. Although, we may ultimately decide that most of our national security missions can be performed more reliably and at lower cost without a human presence in space, we should make those decisions on the basis of solid experience.

Because Space Station detailed design and development activities have only recently begun and specific capabilities can only be estimated, extensive work to evaluate and eventually develop technical projects is premature. We do not intend by our preliminary concept development for use of the Space Station, nor by this report, to influence Space Station design or development.

Its permanent manned presence is what makes the Space Station unique among U.S. space programs. It follows that much of our current thinking regarding its utilization is focused on those activities which either require the presence of a man or explore the role of military man-in-space.

We cannot at this time describe finite characteristics of any one project or identify relative priorities. None of the projects or activities currently under consideration is a major, deployable payload. We have no current requirements for major payloads which would use or rely upon the Space Station.

Defense Department uses of the Space Station will primarily focus on low level, long duration research and development activities which require either extended manned involvement or take advantage of specific Space Station capabilities. Once Space Station technical and operational features are known, Defense users will determine the relative costs of accomplishing in-space activities on the Space Station in comparison to other platforms such as the Shuttle and unmanned systems.

Many of our research efforts have the potential to result in valuable new space-based operational capabilities to support military needs. For example, human observations from space may have an operational role. Conceivably, in the long-term evolution of the Space Station and our national security activities in space, it may prove most effective and efficient to conduct certain of these activities on the Space Station, or on an associated DoD element, on an operational basis. Any such activity would require extensive coordination with NASA and integration into the overall Space Station program.

If the Space Station fulfills its potential, it could evolve into a logistics base for repair and refurbishing of spacecraft, or into an intermodal point of transfer for cargo and crew. DoD missions could make use of such facilities or services.

Security and political considerations make it impractical to plan major weapon system tests involving the Space Station. Although we do anticipate that man-tended on-orbit development and testing of certain force application system components, such as those for strategic defense, may be advantageous or necessary, the Department of Defense is not considering Space Station activities which relate to specific systems. This is particularly true for development and testing components of space-based force application systems for strategic defense.

For each of the following areas of research, potential operational applications are indicated as a guide to the type of end-use we currently foresee.

a. Activity: Direct View Optical System

Description: Conduct direct view, real-time enhanced visual observation of land, sea, and airborne features and activities of interest. Develop visual sensor systems (optical, electro-optical, infrared, etc.) to enhance man's visual ability and pattern recognition from space.

Application: Manned observation from space has potential application for battle management, intelligence, surveillance, weather support and other functions in support of practically the full range of military operations.

b. Activity: Latitude/longitude Locator

Description: Determine surface location of oceanographic, terrestrial, and meteorological phenomena. Develop and evaluate a "space sextant" for accurately establishing latitude/longitude.

Application: Accurately establishing the location of terrain features, ice, water, weather systems, etc., is critical to military operations. Direct uses would include mapping, digital data bases for targeting, and tactical combat planning and operational support as well as corroboration of other (unmanned) systems.

c. Activity: Maritime Observation

Description: Conduct direct visual observation of naval activity. Develop specialized training and tools to support manned evaluation and assessment of the activity of naval forces and civil shipping and port functions.

Application: Employ man's capability to determine the type, composition, location, direction and speed of travel, and activities of deployed naval forces and commercial vessels. Use manned observation and reasoning ability to supplement other sources of information concerning naval and maritime activity in port such as order of battle, dockside stores and loading activity. There is also potential for monitoring arms control agreements, as well as conducting peacetime intelligence assessments and direct support of naval planning and operations.

d. Activity: Direct Support of Tactical Operations

Description: Examine the value of astronaut support of air, land and sea battle from space. In direct support of a field commander, a trained observer in space supported by a variety of orbiting sensors, automated tools and data bases, connectivity with ground and air observers, and intelligence reporting, would assist in making combat decisions.

Application: From the vantage point of space, a man could assimilate a vast amount of information to make recommendations for decisions and tactics and to report on the complete battle scene. A Space observer could provide uniquely valuable and timely inputs concerning activity far removed from the battle scene such as naval and air support outside the field commander's field of view, enemy logistics and reinforcement measures, and weather.

e. Activity: Space Debris Management

Description: Evaluate man's potential for operational characterization of space debris and its control or removal. Remote earth-bound sensors are not always sensitive enough or capable of confirming the identity of space debris. In particular, expendables (or "junk") form earlier space activities are very difficult to identify. Once identified as useless debris, objects could either be collected or their orbital decay accelerated.

Application: Debris in the path of valuable and sensitive space systems is a growing hazard. Systems to identify, collect and or to deorbit such material could be used on the Space Station and future platforms.

f. Activity: Launch Detection

Description: Evaluate man's ability to visually detect missiles launched from land, sea, and airborne platforms.

Application: As a complement to other capabilities, or interacting with them, an astronaut would have an extraordinary field of view and may be able to detect and characterize launches which go undetected by other systems.

g. Activity: Monitor Atmospheric Environment

Description: Evaluate man's ability to monitor global and localized environmental conditions in the atmosphere in support of military planning, operations, and system development. Develop manned sensors to determine various environmental factors significant to military systems.

Application: Direct, real-time weather and environmental (atmospheric) support information for individual air, naval , and land operations as well as precise area forecasting could prove to be extremely valuable. Sensor-supported manned analysis would also contribute valuable information for development of future aeronautic systems and for improved performance of current systems.

h. Activity: Monitor Space Environment

Description: Evaluate the potential for an astronaut to provide space environment information support for military planning, operations and system development. Develop sensors to support the analysis and monitoring of space environmental factors.

Application: Radiation, gravitational and upper atmosphere factors play an important part in the development and operation of current military aerospace systems and will have increasing importance as advanced systems come into being. For example, electrical charging and radiation have significant effects on space systems. How these factors will affect advanced systems such as the National Aerospace Plane and new-generation satellites must be thoroughly studied.

i. Activity: Space Designation

Description: Evaluate an astronaut's ability to locate, identify, and track air, sea and land and space targets. Develop and test orbiting elements for use in conjunction with advanced weapon systems.

Application: A man in space could add a new technical advantage to the effectiveness of future ("smart") weapon systems developed for precision and economy of force.

j. Activity: Foreign Payload Mission Assessment

Description: Develop the capability for sensor-supported astronauts to assess the mission of foreign space systems.

Application: The ability to identify and determine the mission of objects placed into space by foreign parties is seriously limited by reliance on ground-based sensors. A man-operated suite of in-space sensors could be key to determining the purpose, capability, and status of those satellites not successfully monitored by current sensors because of concealment or technical limitations. As new foreign launch systems and advanced space-based military systems come into service, it will be necessary to improve our capability to identify, track and monitor their operation. Shuttle-type systems in particular create the possibility of covertly deployed satellites, or satellites with a covert mission .

k. Activity: Space-Based Communication

Description: Evaluate the value of a manned in-space communication uplink/down link capability in support of specialized operational requirements using both clear and secure voice and data systems.

Application: A space-based manned communication node could support a large variety of military needs. Emergency line-of-sight links, high priority operational support, and routine services could be made available.

l. Activity: Space System Servicing and Repair

Description: Develop experience in on-orbit servicing and repair of satellite systems. Develop the support systems necessary for in-space satellite servicing and repair.

Application: On-orbit support of military satellite systems could extend the life of space systems by routine servicing, correct minor malfunctions which would otherwise render systems inoperable, and avoid the cost of returning reusable space systems to earth for refitting and servicing.

m. Activity: On-orbit Construction

Description: Develop techniques for on-orbit assembly of satellite systems. Evaluate man's capability to assemble and test space systems in orbit.

Application: It may be more practical and less costly to assemble possible future large space structures such as very large antennae and orbiting fuel storage farms in space rather than designing them for self-assembly and deployment.

n. Activity: Power Production Research

Description: Conduct research in the production of electrical power for space systems.

Application: Space-based development and testing of power systems for use on military space systems, with direct human monitoring or interaction, may be more effective and less costly. New power systems will be required for long-lived advanced military systems.

All military uses of the the Space Station will undergo thorough coordination and programmatic scrutiny. Much as is done for military activities conducted on the Shuttle, proposed Defense uses of the Space Station will be reviewed, approved, and prioritized by the tri-service Military Man in Space (MMIS) board before being forwarded to NASA for processing through the appropriate Space Station management bodies.