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Paulson Prof 11 April 80

THE DAMON PROGRAM

Background:

The advent of the Shuttle will have the most fundamental and extensive impact on the NRP since its inception. The impact will not be only on the launch part of the program but on payload ground processing and on-orbit operations as well. There are a myriad of unresolved issues and questions which must be answered before successful NRP Space Shuttle operations can be initiated. DAMON offers an inexpensive way to answer these critical questions as well as to provide a significant amount of useful search imagery.

Objectives:

The major objectives of the DAMON experiment are:

1) To act as a precursor/pathfinder for major NRO/STS payloads [redacted]. (b)(1) (b)(3)

2) To serve as a backup/gap filler in the 82-83 time-frame when we will be operating with limited resources (GAMBIT and HEXAGON).

3) Lastly, it will serve as a testbed to determine if metric data for mapping, charting and geodesy can be obtained from a sortie flight.

Scope:

1) The DAMON program will establish the procedure of use of the STS for reconnaissance operations and the BYEMAN and DOD security requirements for NRO payloads. The integration of complex payloads on the Shuttle will be a technically demanding and critical task. The payload-launch vehicle integration will involve every aspect of planning, analysis, scheduling, interfacing and physical interaction between the Shuttle and payload. There is no Shuttle experience base for this critical activity. The process can be planned in great detail but only when you begin to perform the actual hardware integration do the real problems surface. That is why a photographic payload was selected by the NRO for the pathfinder, to ensure the ability to integrate a complex sensitive NRP payload.

2) The DAMON program can provide a significant amount of useful search-type imagery. A single sortie mission will be capable of imaging 12-15 million square nautical miles of ground in stereo and will have a capability for mixed mono-stereo operations. The quality of the data will be NIIRS 3 to 5. In

82-84 time period when we will have only a limited number of HEXAGON vehicles, DAMON could act as a backup in case of launch or on-orbit failure or as a gap-filler. In addition to black and white, DAMON has the potential for collecting color and [redacted] for economic and drug traffic analyses. (b)(1) (b)(3)

The DOD has requested that we consider adding the necessary additional hardware to evaluate whether metric data for MC&G purposes can be collected from a Shuttle sortie mission. This stems from the concern over satisfying DMA requirements in the late 1980 timeframe as described in a letter from Harold Brown.

It is important to conduct an experiment soon to gather data upon which to base a decision on whether a free flying satellite or a Shuttle pallet could satisfy the DMA requirements.

Summary:

In summary, it would be extremely beneficial to continue the DAMON program on schedule.

The roles of DAMON as a pathfinder, a backup search quality (HEXAGON) collector and a possible MC&G experiment make it a critical program for the NRO. In addition, the costs are minimal.