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WASHINGTON, D.C.

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THE NRO STAFF

December 31, 1980

MEMORANDUM FOR THE ACTING DIRECTOR FOR INTELLIGENCE POLICY, ODUSD(PN)  
THE DIRECTOR OF NATIONAL INTELLIGENCE SYSTEMS, OASD(C-1)

RE: Your letter, subject: "SECDEF Launch Plan Questions",  
dated 24 December 1980

Attached are our responses to your questions pertaining to the upcoming GAMBIT  
launch. We await coordination on your memorandum to the SECDEF.

*Jim Hill*  
J. D. HILL  
Director

1 Attachment  
Responses

GAMBIT HEXAGON



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Date ..... Initials .....

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NRO RESPONSES TO GAMBIT LAUNCH QUESTIONS

1. What is the exact launch date scheduled for GAMBIT in March?

Although the DCI has requested a GAMBIT launch by 1 March 1981, it can be supported as early as 26 February 1981. The exact date, however, may depend upon operational constraints imposed by the recovery of RV-4 from HEXAGON Mission 1216, now expected to occur in the time frame 21 through 25 February 1981. Recovery of RV-4 is expected earlier than the previous estimate of 6 March 1981 due to higher than predicted drag forces on the satellite. It is highly undesirable to schedule the GAMBIT launch in close proximity to HEXAGON recovery operations due to the potential conflict for Air Force Satellite Control Facility (AFSCF) resources in the event hardware contingency actions become necessary. Therefore, GAMBIT will not be launched within two days after RV-4 recovery or within three days prior to RV-4 recovery. This will require some flexibility in the GAMBIT launch date and/or RV-4 recovery date. A better estimate of the actual RV-4 recovery date is expected in mid-January after Mission 1216 is returned to nominal operating orbit altitudes.

2. How many days before launch must a decision be made to use G-51 or G-52?

Final mission profile (G-51 versus G-52 and high versus low altitude) must be defined no later than launch minus 30 days. The due date for this decision is therefore 27 January 1981 to achieve the earliest possible GAMBIT launch on 26 February 1981.

3. How many days can GAMBIT be held in an "on-pad" launch condition?

and

4. Assuming that GAMBIT is in an "on-pad" launch condition, how long after the launch order is given would launch occur?

It is not recommended that GAMBIT be "held" indefinitely in an "on-pad" launch condition. Due to adverse environmental conditions at the pad it is advisable to spend as little time as possible with the spacecraft at the launch site. Therefore, the GAMBIT spacecraft and payload are maintained at the factory in a "ready" condition for shipment to the pad when a launch decision is made. Normally the spacecraft can be launched within 45 days after the decision, although it is possible (as demonstrated with Mission 4350) to maintain GAMBIT in a "call-up" status for processing and launch within 20 days if necessary. These timelines are predicated, however, on having the GAMBIT launch vehicle erected at the pad and available for spacecraft and payload integration. Normally the launch vehicle requires 30 days for processing before integration with the spacecraft at the pad. Once erected at the pad, the launch vehicle could be held in a ready condition with periodic

GAMBIT HEXAGON 

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revalidation tests for an indefinite period until preempted by other pad users, [REDACTED] Prior to testing the GAMBIT photographic payload section on launch minus 10 days, the GAMBIT system can be maintained on "hold" for up to 14 days, paced by wet stand life of the booster ordnance batteries. Starting at launch minus four days, there are critical operations of booster and satellite vehicle propellant loading and pressurization. After these critical events are completed at launch minus two days, an unnecessary hold in excess of two days is not recommended.

5. How long after GAMBIT is launched before imaging can take place?

Imaging operations may be tasked beginning with Rev 4 (first access to the Sino-Soviet Bloc) after a nominal GAMBIT launch operation into a low altitude orbit. Ascent to the high altitude orbit requires about 24 hours after which normal imaging operations would begin on Rev 17.

6. How long will it take to receive a GAMBIT RV after a decision to deorbit an RV is given?

The precise timelines for the deorbit and receipt of a GAMBIT reentry vehicle (RV) are highly dependent upon the particular tasking and operational factors associated with a particular mission. If operational requirements dictate, a GAMBIT recovery can be effected after notice of not-less-than 24 hours prior to passage through the Hawaii recovery zone. Photo operations may be conducted in parallel with final recovery preparations during this 24-hour period. It may, of course, require several days before a special photo operation is conducted due to access constraints in the target area. During low altitude operations, access to all targets occurs within four days. For high altitudes (450 nm), accesses occur daily above 20 degrees north latitude, and every other day below the latitude. In case of early return of either RV, of course, it is highly possible that all film available in the mission would not be consumed.

7. How long to develop and process the film in a RV after it has been physically captured?

After the RV is physically captured in the Hawaii recovery zone, it is returned to Hickam AFB after a two to five hour flight. C-141 flying time from Hickam AFB to Rochester, New York is 14 hours, and processing/development time at Rochester normally requires a minimum of about 24 hours. Thus, a total time of about 67 hours will normally lapse after the recovery notification before a complete film hardcopy is available.

GAMBIT HEXAGON [REDACTED]

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8. What is the maximum on-orbit life for G-51 and G-52? Does film usage make a difference?

The maximum on-orbit lifetime for both G-51 and G-52 is constrained by spacecraft electrical power and propulsion system performance capabilities. If operated above 75 nm, in either low altitude or dual modes, G-51 and G-52 each have a maximum on-orbit life of 120 days. Film usage does not constrain GAMBIT on-orbit lifetime and can be managed to any mission length.

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GAMBIT HEXAGON

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