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ENCLOSURES

BYE-26906-67

RECEIPT NUMBER

2 of 2

Detailed cost breakdown for Missions 7106 and 7107

[illegible]

ROUTE SHEET
G-NRL-10-863c (Rev. 5-54)

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CODE	DATE	INITIALS	*PURPOSE	REMARKS
5614	6 Mar	RDM		Ref (10)
5610	6 Mar	JF		
5600	3/6	NAB		
5170	3/6	PGW		
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2

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*PURPOSES

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FROM Director, NRL

To: Director NRO

DIVISIONS, DO NOT FILL IN

DATE OF MATERIAL

6 March 1967

BRANCH IDENT. SYMBOL

5600-RM:bdk

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SUBJECT

Detailed cost breakdown for Missions 7106 and 7107

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From: Director, Naval Research Laboratory, Washington, D. C. 20390
To: Director, NRO

Subj: Detailed cost breakdown for Missions 7106 and 7107

Ref: (a) NRL ltr 5600:RDM:jch of 7 Feb 1967 BYE-26904-67

Encl: (1) Monthly expenditure-rate and Funding Summary Table
(2) Mission 7107 Cost Comparison - TABLE I
(3) Program/FY Costs - TABLES II & III
(4) Program Cost Details Based on 7107 (Accelerated Program)
(5) Program Cost Details Based on 7107 (Present Program)

1. The Naval Research Laboratory forwarded a proposal for Missions 7106 and 7107, reference (a), which recommended approval for the Mission 7107 concept so that certain economies could be effected by placing the Mission 7107 procurement orders in parallel with those now under way for Mission 7106. This would allow detailed planning and expediting of Mission 7107 to obtain the earliest possible launch-date in response to the urgent ABM/AES problem. By telephone request, Mr. William Boenning of the NRO staff requested a detailed cost breakdown to show the cost, by year and the economies anticipated for an accelerated program if the Mission 7107 concept is approved by 10 March 1967. In addition, it was requested that these cost be compared with those which would result for the present program where Mission 7107 approval would be delayed until just prior to the launch of Mission 7106, scheduled for 10-months after launch of Mission 7105.

2. Enclosure (1) shows a summary of funding for the POPPY Program and the monthly expenditure status reported by the Naval Research Laboratory for the first 7-months of FY-67 plus an estimate for February. Note that the summary Table I at the bottom of enclosure (1) gives the total funds obligated through 31 January 1967 and an estimate for both the accelerated and the present program and compares these costs with the funds received through FY-67. The deficit of \$640,000.00 shown is an estimate of the costs which would be necessary to fund on an accelerated program, the Mission 7107 procurements for the remaining 4-months of FY-67.

3. Enclosures (2) and (3) summarize and compare the accelerated and present programs, using the details presented in enclosure (4) (for the accelerated program) and enclosure (5) (present program). These details include the expenditure and obligations incurred during the first 7-months of FY-67 and

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estimated for the remainder of FY-67 as well as FY-68, FY-69 and FY-70. The savings of \$1,763,000.00 saved plus the 8-month earlier launch schedule for Mission 7107 are the most highly significant benefits of adopting the Accelerated Program. This Accelerated Program requires Mission 7107 concept approval by 10 March 1967 as well as \$640,000.00 to cover the early procurement costs of Mission 7107 long-lead-time components. These procurements during March and April 1967 can be easily expedited by adding them to the procurements already in progress for Mission 7106. This is particularly appropriate for the majority of the SIGINT sub-system components since the two missions are so very similar. Thus, significant cost savings can be effected by quantity purchase of components for both missions at one time. Of far greater importance than these savings in costs are the benefits inherent in the schedule acceleration which would result by the early procurement of the flight sub-system components, thus avoiding the usual vendor delivery delays in the NRL production and fabrication schedule. The "Present Program" would require Mission 7107 approval only by December 1967 (just prior to the launch of Mission 7106) and would result in a 7107 launch schedule following 7106 launch by about 18-months. This "Present Program" represents the stance normally taken in the POPPY Program where the future mission is not approved until just prior to the contemporary launch. It has the benefit of assuring the latest requirements are used in formulating the design goals for each mission but the flexibility and responsiveness of the POPPY design team has been demonstrated recently by the changes in Mission 7105 to accommodate the ABM/AES tasking.

4. Enclosure (4) presents for the "Accelerated Program" the detailed costing which would result in a Mission 7107 launch 10-months following the launch of Mission 7106 and 7106 would follow the launch of Mission 7105 by about 10-months, as given in reference (a). FY-64, FY-65 and FY-66 costs have not been included because they have been supplied in the past. Notice that the FY-67 costs to Mission 7107 would be almost entirely in the Payload Development costs for electronic equipment. These costs are further summarized in enclosures (2) and (3) TABLE II.

5. Enclosure (5) provides the "Detailed Costing" for the POPPY Program under the "Present Program" including the FY-67 costs through 31 January and estimates for those of the remainder of FY-67, FY-68, FY-69 and FY-70. These costs are further summarized in enclosures (2) and (3) TABLE III.

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6. NRL is sincere in desiring to be responsive to the urgent requirement of the President's Scientific Advisory Committee and, therefore, requests early concurrence of the "Accelerated Program". Delays of even a matter of a week will require modification in contracts which have time-limited options which must be exercised at the earliest possible time to avoid expiration.

7. Your early response is urgently requested.

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Encl (1) to NRL ltr
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(7-Months FY-67)

FY-67		Monthly Total (In thousands)	Cumulative (In thousands)
FY-67	July	\$240.6 K	\$240.6 K
	August	335.8	576.4
	September	265.0	841.4
	October	708.2	1,549.7
	November	252.8	1,802.5
	December	204.4	2,006.9
	January	823.5	2,830.4

FY-67 Average (7-month) expenditure - \$404.3 K

February (estimate)	Monthly Total	Cumulative
	\$1,200.0 K	\$4,030.4 K

Average monthly expenditure (8-months) estimated - \$503.8 K

FUNDING SUMMARY TABLE

FY	Present Program Total Obligations and Estimated Costs	Accelerated Program Total Obligations and Estimated Costs	Program Funds Received
'64	\$4,365.0 K	\$4,365.0 K	\$6,000.0 K
'65	5,934.0	5,934.0	6,000.0
'66	6,645.0	6,645.0	6,000.0
'67	7,004.0 5655	7,644.0	5,849.0
	\$23,849.0 K	\$24,489.0 K (* \$640.0 K Deficit)	\$23,849.0 K

* Note the Accelerated Program will require immediate approval of Mission 7107 design concept and the provision of \$640.0 K of FY-67 funds.

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Encl (2) to NRL ltr
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TABLE I
MISSION 7107 COST COMPARISON

<u>Costing Element</u>	<u>Accelerated Program</u> <u>(Immediate Approval</u> <u>10 March 1967)</u>	<u>Present Program</u> <u>(Approval Prior to</u> <u>7106 Launch by Dec '67)</u>
I. Payload (Developmental) Recurring	\$4,736.5 K	\$5,999.1 K
II. Ground Station (Investment)	2,048.9	2,226.9
III. Facilities (Investment)	547.5	580.5
IV. Services (Operational)	700.0	990.0
	<u>\$8,032.9 K</u>	<u>\$9,796.5 K</u>

7107 LAUNCH DATE RELATIVE TO 7106 - 10-months + 10-months

+ 18-months

Accelerated Program for Mission 7107 saves \$1,763.6 K

Accelerated Program for Mission 7107 saves approximately 8-MONTHS in Launch Schedule.

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TABLE II
PROGRAM/FY COSTS - ACCELERATED PROGRAM
(Assuming 7107 Approval by 10 March 1967)

FY	Mission Cost Estimates			Total by FY
	7106 533.3	7107		
'66				
'67	\$2,855.7 K	\$ 2,640.0 K		\$7,654.7 K
'68	6,000.0 K	2,147.9		8,147.9
'69	-	5,245.0		5,245.0
'70	-	-		-
	<u>\$8,855.7 K</u>	<u>\$8,032.9 K</u>		
	9389.0			

10,260.8K
Totals by Events

TABLE III
PROGRAM/FY COSTS - PRESENT PROGRAM

(Assuming 7107 Approval by December 1967)

FY	Mission Cost Estimates			Total by FY
	7106	7107		
'67	\$2,855.7 K	\$ -		\$2,855.7 K
'68	6,000.0	2,296.5 K		8,771.5
'69	-	6,000.0		6,000.0
'70	-	1,500.00		1,500.0
	<u>\$8,855.7 K</u>	<u>\$9,796.5 K</u>		

Totals by Events

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(In thousands)

	FY-67 Obligations (7-mo.)		FY-67 Estimates (5-mo.)			FY-68 Estimates		FY-69 Estimates
	7105	7106	7105	7106	7107	7106	7107	7107
I. PAYLOAD (development-recurring)								
A. Electronic Equipment (Data & TM)	231.0	419.7	72.0	590.5	585.0	490.0	472.0	450.0
B. Stabilization Systems	154.8	-	-	242.0	-	160.0	193.5	150.0
C. Power Systems	63.8	-	-	250.0	-	180.0	200.0	140.0
D. Control Systems	54.6	-	-	100.0	-	150.0	80.0	100.0
E. Compatibility & Environmental Tests	9.1	-	2.2	15.0	-	50.0	12.0	50.0
F. Mechanical Structures & Fabrication	47.6	-	-	125.0	-	25.0	100.0	30.
G. NRL Salaries and Overhead	714.7	20.0	155.3	378.0	5.0	1235.0	315.0	863.
H. Misc. Materials, Travel & Shipping	280.2	30.0	69.8	220.0	15.0	805.0	176.0	800.0
	(1555.8)	(469.7)	(299.3)	(1920.5)	(605.0)	(3095.0)	(1548.5)	(2583.0)
II. GROUND STATION (investment)								
A. Electronics (Recv., Record & Timing)	210.8	55.0	234.8	55.0		1130.0	44.0	870.0
B. Antenna Systems	19.5	-	67.5	37.5		160.0	29.9	360.0
C. NRL Salaries & Overhead	42.0	8.0	60.0	10.0		260.0	8.0	192.0
D. Misc. Materials, Travel & Shipping	65.4	15.0	106.0	25.0		475.0	20.0	525.0
	(337.7)	(78.0)	(468.3)	(127.5)		(2025.0)	(101.9)	(1947.0)
FACILITIES (investment)								
A. Test equipment & facilities	213.2	44.0	317.4	216.0	35.0	350.0	172.5	340.0
	(213.2)	(44.0)	(317.4)	(216.0)	(35.0)	(350.0)	(172.5)	(340.0)
IV. SERVICES (operational)								
A. Operational Field Assistance	104.4		718.0			375.0	325.0	250.0
B. Computer Services	37.3	57.7	97.7			155.0	-	125.0
	(141.7)		(815.7)			(530.0)	(325.0)	(375.0)
TOTALS	2248.4	591.7	1900.7	2264.0	640.0	6000.0	2147.9	5245.0

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Encl (5) to NRL ltr
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(In thousands)

	FY-67 Obligations (7-mo.)		FY-67 Estimates (5-mo.)			FY-68 Estimates		FY-69 Estimates	FY-70 Estimates (3-mo.)
	7105	7106	7105	7106	7107	7106	7107	7107	7107
I. PAYLOAD (development-recurring)									
A. Electronic Equipment (Data & TM)	231.0	419.7	72.0	590.5		490.0	775.0	740.0	88.0
B. Stabilization Systems	154.8	-	-	242.0		160.0	193.5	160.0	-
C. Power Systems	63.8	-	-	250.0		180.0	200.0	180.0	-
D. Control Systems	54.6	-	-	100.0		150.0	80.0	150.0	-
E. Compatibility & Environmental Tests	9.1	-	-2.2	15.0		50.0	12.0	50.0	10.0
F. Mechanical Structures & Fabrication	47.6	-	-	125.0		25.0	100.0	25.0	25.0
G. NRL Salaries & Overhead	714.7	20.0	155.3	378.0		1235.0	277.0	1235.0	500.0
H. Misc. Materials, Travel & Shipping	280.2	30.0	69.8	220.0		805.0	193.6	805.0	200.0
	(1555.8)	(469.7)	(299.3)	(1920.5)		(3095.0)	(1831.1)	(3345.0)	(823.0)
II. GROUND STATION (investment)									
A. Electronics (Recv., Record & Timing)	210.8	55.0	234.8	55.0		1130.0	44.0	880.0	180.0
B. Antenna Systems	19.5	-	67.5	37.5		160.0	29.0	160.0	20.0
C. NRL Salaries & Overhead	42.0	8.0	60.0	10.0		260.0	8.0	260.0	100.0
D. Misc. Materials, Travel & Shipping	65.4	15.0	106.0	25.0		475.0	20.0	475.0	50.0
	(337.7)	(78.0)	(468.3)	(127.5)		(2025.0)	(101.9)	(1775.0)	(350.0)
III. FACILITIES (investment)									
A. Test equipment & facilities	213.2	44.0	317.4	216.0		350.0	113.5	350.0	117.0
	(213.2)	(44.0)	(317.4)	(216.0)		(350.0)	(113.5)	(350.0)	(117.0)
IV. SERVICES (operational)									
A. Operational Field Assistance	104.4	-	718.0			375.0	250.0	375.0	150.0
B. Computer Services	37.3		97.7			155.0	-	155.0	60.0
	(141.7)		(815.7)			(530.0)	(250.0)	(530.0)	(210.0)
TOTALS	2248.4	591.7	1900.7	2264.0	0.0	6000.0	2296.5	6000.0	1500.0

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