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MEMORANDUM FOR: Deputy Director, National
Reconnaissance Office

SUBJECT : CR-8 Refurbishment, UTB Usage and
Stretch-out Costs

REFERENCE : Meeting at Headquarters, 26 August 1969

[redacted] NRO; Messrs. [redacted]
and [redacted] OSP

1. In the meeting in my office on 26 August 1969, we discussed the subjects of CR-8 refurbishment, use of UTB vice STB in Corona systems, and Corona stretch-out costs.

a. CR-8 Refurbishment - This payload already has 77,000 cycles on one camera and 75,000 on the other primarily because this system has been used as a test bed for UTB compatibility. Because of the servo changes to accommodate UTB (which also helps STB) and other minor changes made in CR-8 and the rest of the J-3's and the fact that these systems will be launched in a different mode (i. e., supply cassetts POWER OFF - BRAKE ON) from the previous CR launches (POWER ON - BRAKE OFF), it is considered necessary to requalify this configuration. This will add about 500 cycles. In addition, CR-8 has not completed its test and certification cycle which will add about 14,000 more cycles to the system. At launch it is expected that there would be about 92,000 cycles on one instrument and 90,000 on the other. I consider experience has indicated that it is too risky to fly a system with this great number of operating cycles. Accordingly, I recommended that CR-8 be refurbished and flown as the last system in the Corona launch schedule. Estimated costs (in millions) to accomplish this refurbishment are:

GROUP 1
Excluded from automatic
downgrading and
declassification

Declassified and Released by the NRC

CORONA

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[redacted]

In Accordance with E.O. 12958

NOV 26 1997

SUBJECT: CR-8 Refurbishment, UTB Usage and Stretch-out Costs

	<u>FY 1970</u>	<u>FY 1971</u>	<u>Total</u>
Itek	[REDACTED]	[REDACTED]	[REDACTED]
GE	[REDACTED]	[REDACTED]	[REDACTED]
AP	[REDACTED]	[REDACTED]	[REDACTED]
Total	[REDACTED]	[REDACTED]	[REDACTED]

A major portion of the Itek costs are associated with the reactivation of the manufacturing and test facilities and start up costs of manning them.

b. UTB versus STB - The Corona Program has been directing its efforts toward accommodating UTB in the J-3 system. Many tests and analyses have been conducted. With the changes referred to in the above paragraph, I feel that there is a good likelihood that UTB will be successful when next flown in a system. As you will recall, CR-3 had a 2,000 foot strip of UTB on the tag end for preliminary evaluation. The photographic and camera performance results of this UTB strip were in all aspects as good if not better than STB. However, in CR-5 which was completely UTB configured, camera performance was not up to the standards of previous CR flights using STB, although the photographic interpreters indicated that CR-5 gave good results. In fact as stated to COMIREX, "the product of 1105-1 was good; sufficiently good so that if NPIC had its choice it would suggest (that) another poor UTB (mission) would provide more information on the search problem than a J-3 with standard film, provided it was no worse than 1105."

Major difference of CR-5 configuration was the low film tensions used (35 ± 2 ounces versus 46 ± 2 ounces used on previous flights). As a result of CR-5 camera performance, a UTB Task Team was formed to investigate and recommend solutions. The modifications of CR-8 were the results of the

SUBJECT: CR-8 Refurbishment, UTB Usage and Stretch-out Costs

UTB Task Team test recommendations. Advantages of UTB in Corona J-3 from a coverage as well as resolution standpoint are obvious. From an operational consideration, tests have shown that, for the first forty-eight hours in orbit, there is a film flatness variability and slight out of focus condition until the film equilibrates. Thereafter, the film behaves satisfactorily. (I feel that this need not affect the [redacted] targeting as the results should be as good as the best J-1 missions.) Accordingly, I recommend that UTB be flown in CR-11 and, if successful, be considered the standard film for all future CR flights except for CR-10 now configured as a STB payload.

c. Corona Schedule Stretch-out - The directed Corona schedule stretch-out (5-5-2 program) has been coordinated with [redacted] staff and the following schedule is submitted for approval of your office (all CR's to be UTB unless otherwise noted).

<u>Date</u>	<u>Payload</u>	<u>Back-up Payload</u>
17 Sep 69	J-46	CR-9 (STB)
7 Jan 70	CR-9 (STB)	CR-10 (STB)
4 Mar 70	CR-11	CR-10 (STB), CR-12
22 Apr 70	CR-10 (STB)	CR-12, CR-13
22 Jul 70	CR-12	CR-13, QR-2
30 Sep 70	CR-13	QR-2, CR-14, CR-15
9 Dec 70	QR-2	CR-14, CR-15
24 Feb 71	CR-14	CR-15, CR-16
19 May 71	CR-15	CR-16
2 Sep 71	CR-16	CR-8
10 Nov 71	CR-8	

As a result of the stretch-out, the additional Corona funding (in millions) required is estimated as follows:

SUBJECT: CR-8 Refurbishment, UTB Usage and Stretch-out Costs

	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>	<u>Total</u>
Itek				
GE				
AP	(spares)			
Total				

2. The estimated funding required by paragraphs a. and c. above is in addition to our previously submitted budget estimates for Fiscal Years 1970 and 1971. However, we have effected savings in other areas and are determining the availability of prior year funds which will reduce the total additional funds required. I have instructed Mr. [redacted] to contact [redacted] as soon as possible and work out the necessary funding arrangements. Sufficient funds are presently available to initiate the actions recommended above and your approval is requested to proceed.

[redacted]
Director of Special Projects
DD/S&T

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Page Four
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