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RB/OSA

[REDACTED] 9040-69  
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28 October 1969

NRO REVIEW COMPLETED.

MEMORANDUM FOR THE RECORD

SUBJECT: Trip Report 5-11 October 1969

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1. Facilities visited - Edwards (North Base),  
[REDACTED] Lockheed (Burbank), and Itek (Palo Alto).

2. Personnel contacted:

Edwards (North Base)

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Lockheed (Burbank)

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GROUP 1  
Excluded from automatic  
downgrading and  
declassification

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Itek (Palo Alto)



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3. Items for discussion at Edwards (North Base):
- a. Preparation actions to support Scope Saint III.

COMMENTS: All preliminary preparation actions had been accomplished and I visualized no problems associated with this deployment.

- b. Wing rework on Article 055.

COMMENTS: The previously reported lateral problems with Article 055 in low speed carrier landing configuration were confirmed. However, the originally reported left wing being the cause was disproved. The problem associated with this non-symmetrical configuration was the result of the right wing twist, which, because of aerodynamic characteristics, caused the right wing to continue flight beyond the natural stall speeds. The procedure utilized by Lockheed to reposition wing panels in an effort to reduce the amount of twist of the right wing removed approximately one-third of the twist from the aerodynamic loft of the right wing. Subsequent discussions with Lockheed and flight test indicated that the amount of correction was adequate to satisfy lateral control requirements associated with carrier landing.

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c. Reliability and repeatability of the Iris II to meet operational requirements.

25X1A COMMENTS: Preliminary review of appropriate  in Headquarters indicated an inability to correlate the various sensors with Articles to determine reasons or causes for reported equipment malfunctions, smearing, double imagery, and softness of take with the Iris II. Through 30 September 1969, 48 sorties were flown by Detachment "G" encompassing all Articles.

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25X1A In re-reviewing the appropriate  and the take from various sensors during the test and qualification phase, two significant points contributed to the problem:

(1) aircraft motion in the roll axis was of primary concern, while some excursions in the yaw and pitch axis contributed their share. This situation conceivably contributes a masking effect in attempting to resolve causes for poor productivity of quality, high resolution photography.

(2) Although the undersigned obtained specific specifications from Itek during winter/spring time frame, 1969, and assured Itek that the modification in process to the Article autopilot would be such that aircraft motion in all axis would be less than the defined specs on the sensor, Itek Reps denied any knowledge of the final baseline oscillations that could be anticipated on the Article. This information was obtained from Lockheed and provided Itek. (Attachment I). After receipt of these specifications, it was mutually agreed by all that Article motion with the modified autopilot was considerably below the defined specs of the

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Iris II, and that the vehicle would provide a platform whose stability in all axes would satisfy sensor requirements by a considerable margin.

b. Minimum requirements for qualification of all Iris II sensors in the future:

COMMENTS: Specific instructions and guidance were provided Detachment "G" in the presence of Itek Representatives that all future O/R qualifying flights involving the Iris II would incorporate the Hycon instrumentation package; and an analysis would be made of aircraft motion, simultaneous with the NPIC evaluation of take, for correlation purposes to insure that, not only would the quality of take satisfy O/R requirements, but that aircraft motion during this take satisfy the Article specs in the three axes of motion.

4. Items for discussion

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5. Items discussed at Lockheed (Burbank)

- a.  and appropriate ECP's/Service Bulletins.

COMMENTS: Lockheed indicated they have settled on the emergency power requirements and have an ECP in print; however, as yet it has not been forwarded to Project Headquarters. I advised them to

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hold until such time as the total [ ] package could be submitted with cost quotes. The emergency aircraft power will be satisfied by removing the DC generator from the engine and substituting a CSD and an additional AC generator, which when called upon, will provide 100% back up. Thus any future electronic equipment will not pose emergency power problems. The DC power requirement will be satisfied through rectifiers off the AC generator. Lockheed has provided [ ] the space envelope for the repackaging of the appropriate parts of the [ ]

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[ ] As of this date Lockheed has had only verbal indications that the equipment can be packaged within this space envelope. Lockheed has not received specifications so that that portion of the ECP can be prepared.

b. Autopilot Mod Kit

COMMENTS: Kits to satisfy Detachment "H" requirements have been supplied; kits for two Detachment "G" articles have been supplied; one additional kit will be provided on 9 or 10 October, and the fourth kit will be provided mid October. As a matter of information, Article 057 at Detachment "H" is modified; Article 058 will receive its kit during present PE; Detachment "G" 053 is modified; 051 being modified during PE; 055 will be modified during week of 13 October 1969; and, contingent on receipt of fourth kit, Article 054 will be modified immediately thereafter.

c. Cabin pressure dump deflector


COMMENTS: Itek expressed concern relative to the cabin pressure-suit pressure dump into the Q-Bay, in that moisture was being expended through the dump and settling on the Iris hatch glasses. Lockheed was requested to investigate the feasibility

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of installing a deflector which would deflect the air to the upper portion of the Q-Bay, and hopefully eliminate the suspected moisture problem on the glass. Lockheed indicated that this should not be a problem and that a proposal would be forthcoming.


d. Flap track problems being experienced at Detachment "H".

COMMENTS: A flap jack screw returned from Detachment "H" was in the possession of Lockheed, and an investigation was underway to determine causes for problems that have been repeatedly reported relative to jack screw popping out of track. Up to receipt of this jack screw considerable effort had been taken by Lockheed to solve this problem, primarily in the area of structural design, etc. The significant point, however, is that for the first time, as evidenced on this screw, corrosion may be a contributing, if not total cause for the problem. In scrutinizing the condition of the screw, apparent to the human eye was a considerable amount of pitting of the threads, which caused binding on the traveling nut as it progressed through the threads. At all points of binding, when the traveling nut was backed off, pitting was apparent in each area. Further investigation for possible solutions is underway at Lockheed. Their thinking is in terms of lubricant, and I was quick to state that, regardless of the type lubricant recommended, they must consider climatic conditions in total; i.e., wet, dry, hot, cold, dusty environments.

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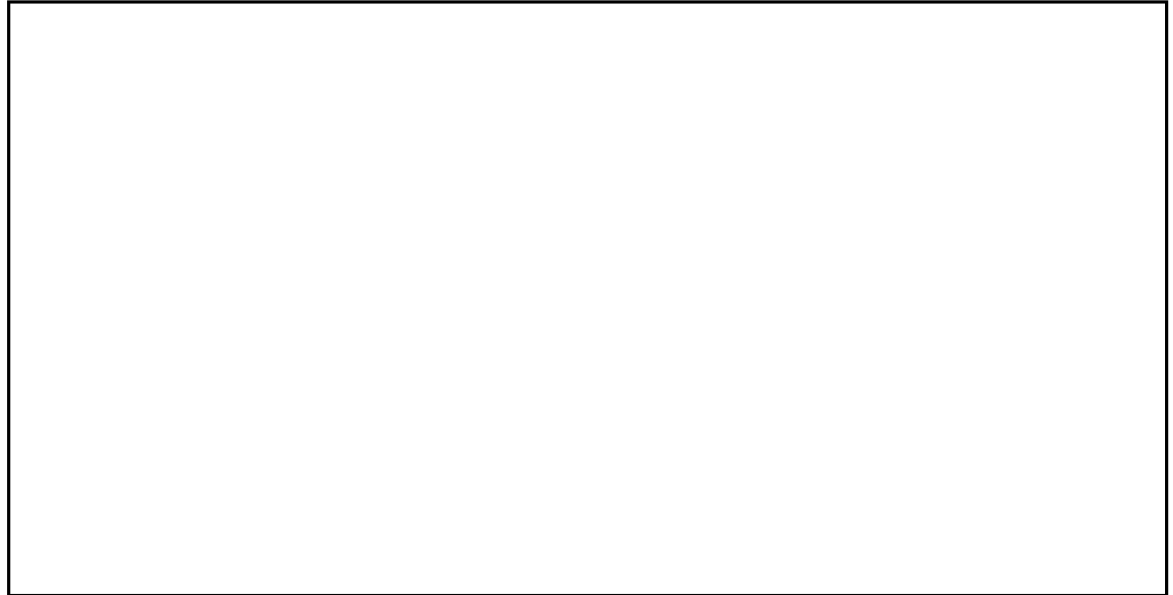
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f. [ ]

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COMMENTS: A brief discussion was held relative to [ ] and the future scheduling of this program. During this discussion [ ] made reference to charts pertaining to various carriers by class, by name, and specifics, pertaining to U-2 landing thereon. A set of these drawings was obtained and given to IDEALIST/Operations to assist them in their computations of factors relative to carrier programs in the future.

6. Items discussed at Itek (Palo Alto)

a. In discussions relative to the performance of the IRIS II it became obvious that the analysis materials utilized by Project Headquarters to determine repeatable reliability of photography were not the same materials utilized by Itek. i.e., this office utilized data obtained from [ ] Project Manager, East Coast, indicated he had never

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seen the [ ] and therefor had not utilized info therein in his analyses. I advised all that [ ] were provided both East and West activities, as indicated on the addressee block of these reports, and indicated that, before we could run a comparative study between our two activities, all facts relative to system operation must be considered. [ ] stated that this was obviously an internal problem within Itek, which, he would attempt to immediately rectify, and would, if necessary, revise his analyses.

7. Suggested proposals by Itek that should receive Project Headquarters consideration:

a. Comparative take analysis with SO230 film. They believe considerable improvement will be realized in the take.

b. Investigate and attempt to determine the 70 cycle vibration source showing up in the sensor. This matter has been referred to Lockheed for action.

c. Deflector on pressurized dump into Q-Bay. This matter has been referred to Lockheed for action.

d. Itek is interested in additional data relative to Iris operation in flight, and were invited to submit their proposal for revision to this Headquarters for incorporation in [ ]

e. Itek suggested reduced exposure time and change from 23A to 15 filter, believed to improve resolution and assist in motion degradation elimination.

f. Reservations were expressed about the compressor, its mounting, and method of mounting. It was suggested that Itek coordinate with Lockheed and provide Headquarters an agreed position.

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g. Possibility of using a fixed slit as standard operating procedure, with the capability for automatic (AEC) if desired.

h. A query was made relative to sustaining engineering funds. This subject was resolved between D/M and CMD. Funds are available and have been obligated. Itek has been advised.

8. I was left with the impression that a focal point within Itek for managing this program was not what we would anticipate. I believe this thought was somewhat concurred in by Itek Representatives, and feel that the future management of this equipment on their part should improve. Further details and specifics relative to the session which [redacted] and I attended at Itek Palo Alto are expounded on in trip report, OSA-0827-69, Attachment II.

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[redacted]  
Deputy for Materiel, OSA

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Attachments: a/s

D/M/OSA [redacted] (24 October 1969)

Distribution:

- #1 - D/M/OSA (w/att)
- #2 - D/SA (w/att)
- #3 - D/O/OSA (w/att)
- #4 - IDEA/O/OSA (w/att)
- #5 - R&D/OSA (w/att)
- #6 - COMPT/OSA (w/att)
- #7 - CMD/OSA (w/att)
- #8 - D/M/OSA (Chrono) (w/att)
- #9 - MD/M/OSA (w/att)
- #10 - RB/OSA (w/o att)
- #11 - [redacted] (w/o att)

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