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Copy 10 of 10

8 May 1963

MEMORANDUM FOR: Deputy Assistant Director, OSA

SUBJECT : Project OXCART - Security  
(Foreign Object Damage to Engines

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REFERENCE : -2631-63 dtd 30 Apr 63, To: DAD/OSA,  
From: C/SS/OSA, Subj: As Above

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1. As a result of the continued FOD problem   
 Assistant Security Officer,  
OSA-DD/R, on 1-3 May 1963, conducted a review of Security  
procedures in effect  This memorandum is to  
record Security actions initiated and anticipated, and  
to record Staff discussions held  during that  
period.

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2. The conclusions reached during these discussions  
are: (1) FOD has been somewhat corrected by installation  
of screens in the bleed by-pass doors; this correction has  
been one of degree; (2) FOD may be considerably reduced by  
the installation of "flapper valves" within the nacelle area,  
designed to eliminate damage caused by reverse airflow of  
secondary air experienced during ground runs; and (3) FOD  
is most probably attributable in some degree to laxity in  
the physical management of the flight test program   
 particularly in the areas of housekeeping, aircraft  
maintenance and quality control inspection procedures.

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3. FOD has been a continuing problem  since  
June 1962. (Attachment #1 records a chronological history  
of FOD to date.) On 2 May engine #219 experienced major  
FOD, after having been installed for 35 minutes in the left  
nacelle of Aircraft #121. Similar damage was experienced  
in the same nacelle on 26 April 1963 while engine #216 was

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Handle via   
Control System

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installed. During the interim, 26 April - 3 May, engine #216 had been installed (on 1 May) in Aircraft #126 and used as a "vacuum cleaner" without resultant FOD. As a result of the 2 May FOD on #219 engine, Project Headquarters directed initiation of a thorough investigation by appropriate components . The Security Staff was directed to investigate the possibility of Sabotage.

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4. On 2 May 1963 the Chief, Security Staff/OSA, directed  the Security Officer,  to address his full efforts to several specific areas of concern. The specific directives and the security actions taken to date are summarized as follows:

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a. Review access procedures to aircraft and consider maintaining access log. The  Security Office has in operation a long established compartmentation system. Individuals are granted access to physical areas within the Test Site on an "as needed basis." Currently there are six (6) aircraft in place, housed in two hangars. Approximately  people require access to these hangars. Access is authorized by the inclusion of a figure 1 on their security badge, which must be worn exposed at all times. On 2 May, the Security Officer,  and  discussed with the Base Commander,  and Mr. Clarence L. (Kelly) Johnson, Vice President, Lockheed Aircraft Corp., a possible reduction in the number of people having such access. It was unanimously agreed that present access standards are satisfactory. On 3 May it was decided that during non-working periods in the future, the Security guard assigned to the hangar area is to maintain a written log of all personnel entering the hangar.

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b. Assure that Security Personnel are constantly alert to possible Sabotage. Security personnel are periodically rebriefed on the necessity to be alert to saboteurs. As of 2 May a Security Guard will be permanently assigned, on a 24-hour-a-day basis, to each hangar. It must be realized, however, that we are dealing with hangars large enough to house three Project

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CI man into the LAC work force. The extensive area of activity would be extremely difficult for one man; indeed, five men would be a mere beginning. Consequently, consideration was given to developing long term, proven employees within the LAC group who have been formerly associated with this Agency.

Development of these employees is, again, a delicate situation. Labor-management implications are serious. Consequently, the undersigned requested [ ] West Coast Security Officer at LAC, to coordinate this technique with LAC Security. 25X1A

25X1A To date [ ] has, on an informal basis, developed three members of the LAC work force for this purpose.

e. Review Security files of personnel having access to Vehicle.

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25X1A As was stated above, approximately [ ] people at [ ] have access to the Vehicle. Information available to [ ] Security Officer indicated that a Security file review should commence with LAC Quality Control Inspectors as they are normally the last persons to closely survey the area of interest. Furthermore, one of the Inspectors, [ ] LAC, is the one individual at [ ] who has been described as a somewhat disgruntled employee and rabble rouser. The files of all LAC inspectors (fifteen in number) were reviewed by Headquarters Security and [ ] Security with favorable results on 2 May 1963. 25X1A 25X1A

25X1A The files of the [ ] firemen, [ ] and employees, personnel who are normally in close proximity to the Vehicle immediately prior to engine start, will be reviewed by Project Headquarters.

At the request of Deputy for Technology/OSA, the LAC personnel currently assigned to the night shift will be reviewed.

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25X1A f. Possibility of use of TV cameras in hangar areas. The extensive area to be covered and the mobility required, in the opinion of [ ] preclude the use of TV or other photo equipment.

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5. On 3 May 1963, a meeting was held at [ ] to explore all possible causes of FOD. In attendance were the following:

Project Headquarters

Mr. John Parangosky

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[ ]

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[ ]

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[ ]

Burbank

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[ ]

6. Detailed reporting of this meeting is available from Deputy for Technology. Considerable discussion was devoted to the use of screens on the engine by-pass doors and the use of flapper valves against reverse air flow. Both fixes represent possible solutions to FOD. The flapper valves should be available for installation in approximately two weeks.

a. Consideration was again given to the possibility of sabotage. Consequently, the following actions were decided upon: 25X1A

(1) [ ] will determine the identities of personnel who signed the grievance petition mentioned in paragraph 3c. above and submit the names to Project Headquarters for Office of Security file review.

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(2) [ ] will determine the nature of the grievances and corrective action taken.

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25X1A (S) [redacted] will interview [redacted]  
[redacted] former LAC engineer who recently  
resigned [redacted] reportedly because of his  
disenchantment with LAC management policies [redacted]  
25X1A [redacted]

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b. Every effort was made to determine patterns on the FOD; there are none. However, the following factors pertain to 90 percent of the FOD: (1) FOD occurs during ground run; (2) FOD occurs during military power or above; (3) FOD occurs after some modification of the nacelle. The latter characteristic was proven by the history of Aircraft 121; and the history of Aircraft 121 tends to limit the geographical area of concern to [redacted]  
[redacted]

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c. The most significant revelations at the 3 May meeting concerned the management, maintenance, and inspection policies and procedures currently utilized by LAC at [redacted]. [redacted] the Director of Operations; [redacted] Director of Materiel; [redacted] Airframe Specialist/OSA; and [redacted] Engine Specialist/OSA, were unanimously appalled at the careless approach of LAC. Among the significant revelations made were:

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(1) The Flight Test Program [redacted] is managed by [redacted] who, regardless of personal competency, pursue a dictatorial personnel policy and often irritate the hourly employees.

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(2) Indications of frictions within LAC Engineering-Supervisory groups and generally poor morale.

(3) Contrary to Mr. Johnson's February 1963 statement that corrective action had been taken, LAC employees work in generally dirty environment. No corrective action has been taken to sterilize workers' clothing, even though mechanics are working in most delicate areas of the aircraft, e.g. nacelle. It was

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pointed out that in normal aircraft production, many precautions are taken along these lines, e.g., "bunny suit coveralls."

(4) There are no standardized procedures for maintenance or inspection; each aircraft seems to be handled differently.

(5) Work in the Spike-Control Area is carelessly done. This is a prime area of concern and suspect cause of FOD. The record shows that aircraft 123 and 124 have had little or no FOD because they fly with the Spike locked; others fly with movable Spike.

(6) Definite absence of close supervision of aircraft crews.

(7) Definite lack of check list procedures during maintenance and inspection.

25X1A 7. It is the opinion of □ that the FOD problem  
25X1A □ is predominantly one of basic housekeeping. Because of its persistent and recurrent characteristics, the possibility of sabotage cannot be dismissed and investigation will continue. However, the less than effective maintenance and inspection procedures on the part of LAC have been allowed to persist throughout the duration of FOD. The problem has been slightly alleviated, in degrees, by the screen modifications; further improvements, perhaps only partial, hopefully will result from the flapper valve mod.

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25X1A 8. It was the summary recommendations of □ that Project Headquarters immediately insist on a review and correction of the LAC physical management of the Flight Test Program at □, coincident with continued intensive investigation of the possibility of sabotage.

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9. As you are aware action has been taken to implement this recommendation.

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Chief, Security Staff  
OSA

cc: Director of Security

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OSA/SS: /mpr (8 May 1963)

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