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~~SI~~ NATIONAL RECONNAISSANCE OFFICE
WASHINGTON, D.C.

OFFICE OF THE DIRECTOR

30 December 1970

MEMORANDUM FOR DEPUTY SECRETARY OF DEFENSE

SUBJECT: TAGBOARD Flight Analysis

Analysis of the 17 December TAGBOARD flight has been completed. All indications from the TM data are that the drone flew the route as programmed and the systems functioned properly through the package eject sequence.

It now appears that the most probable cause of the malfunction which prevented recovery was understrength nylon ribbon tape being used to reinforce the vent band at the top of the drogue chute. The purpose of the drogue chute is to decelerate the package from its eject velocity of Mach 1.8 to a velocity of Mach .8 at the time of deployment of the main chutes.

The suspect nylon tape is specified to be 1500 lb tensile strength material. Even though no hardware or parachutes were recovered from drone 523, understrength nylon tape was found in the parachute system of drone 527, the sister drone carried by the B-52 on the mission. In addition, understrength nylon tape was found in two of eight drogue chutes inspected at the contractor's facility.

Use of the understrength material could result in failure of the drogue chute, thereby preventing the required deceleration of the package. This in turn would cause the main chutes to deploy at speeds in excess of their design speed. An excessively high speed deployment would overload the attachments causing failure of the main parachute recovery system. The above failure sequence is substantiated by eye witness accounts by the recovery air crews.

Attachment one is a diagram of the complete parachute recovery system. Attachment two is a blow-up of the drogue chute showing the location of the suspect understrength nylon tape. Attachment three depicts the parachute system during descent as viewed by the JC-130 recovery crews.

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Presently all TAGBOARD parachute systems are being completely dismantled and parts and materials inspected and tested to insure proper strength and operation. Acceptable chutes will then be repacked and drones will be ready for operational use in early January 1971.

In view of the flight analysis, the still valid need for photo reconnaissance of priority targets in South China, and the significant lack of tracking by Chinese Communist radars on the 17 December mission, I recommend the proposed TAGBOARD mission for January 1971 be approved.

John L. Lucas
John L. Lucas

3 Attachments

1. Diagram Parachute Recovery System
2. Diagram Drogue Chute
3. Diagram Parachute System as Viewed by Air Recovery Crew

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