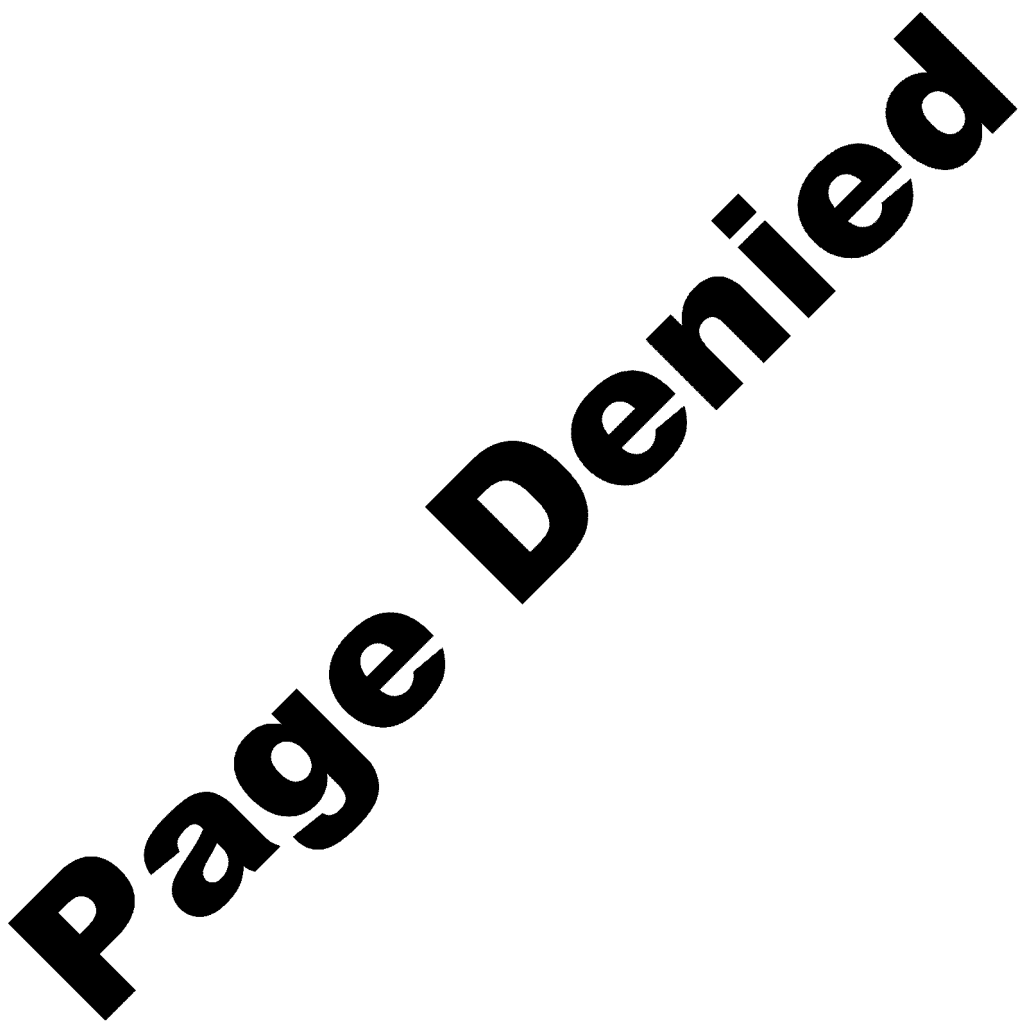


Approved For Release 2006/08/09 : CIA-RDP71B00399R000600130003-7

TOP SECRET

FINAL REPORT

OPERATIONAL SUITABILITY OF BLACK SHIELD AIRCRAFT AND COMPONENTS

PROJECT 65-8

13 December 1965

DETACHMENT 1

1129TH USAF SPECIAL ACTIVITIES SQUADRON

[redacted]

25X1

TOP SECRET

TS#162629
Cy 3 of 37 Cys
Page 1 of 34 pages

TOP SECRET

TABLE OF CONTENTS

	Page
Review and Approval	1
Introduction	2
Objective	2
Description of Equipment	2
Test Methods and Limitations	2
Data Collection and Reduction	3
Accuracy of Data	3
Test Results	3
Conclusions and Recommendations	7
Appendix A - Mission Profile	8
Appendix B - Detailed Validation Item Results	9
Distribution List	32

TSH 162629
Cy 3 of 37 cys
Page 2 of 34 pages

25X1

TOP SECRET

REVIEW AND APPROVAL

PREPARED BY:

REVIEWED BY:

REVIEWED BY:

REVIEWED BY:

REVIEWED BY:

APPROVED BY:

TOP SECRET

TS# 162629
Cy 3 of 37 cys
Pgs 3 of 39 pgs

INTRODUCTION

1. This test was conducted under the authority of the Deputy Commander for Operations, Det 1, 1129th USAF Special Activities Squadron. On 12 and 13 May, 1965, a meeting between Headquarters, [redacted] and LAC personnel was held to determine basic test and system validation requirements to meet an Operational Readiness Inspection Test date of 15 December on Black Shield aircraft. The test was conducted from 1 October to 1 December in accordance with the Test Plan as amended. 25X1

OBJECTIVE

2. The objective of this test is to determine the operational suitability of A-12 aircraft and component systems as modified to the Black Shield configuration.

DESCRIPTION OF EQUIPMENT

TEST ITEM

3. The test was conducted using the three A-12 airplanes designated as primary for Black Shield. These aircraft, numbers 126, 127 and 128, were in standard configuration and instrumented with two cockpit cameras each to photograph the instrument panels, and one oscillograph each to record the performance of the inlet ducts. In addition, each airplane was equipped with a voice recorder. Normal support equipment was used during the test conduct.

TEST METHODS AND LIMITATIONS

TEST PROCEDURES

4. Prior to the initiation of this test, the subject airplanes were engaged in a series of flights to demonstrate performance and systems reliability. These flights, consisting of approximately six sorties per aircraft, were completed satisfactorily and this Operational Suitability Test was begun on 1 October 1965. Physical Testing was completed on 20 November 1965. A total of nine successful sorties were flown, consisting of three per airplane. Six of these sorties included three air refuelings with four high speed cruise legs, for a total flight time of approximately six hours each. The final three sorties were simulated operational missions which included two air

TS# 162629
Cy 3 of 37 cys
Pge 4 of 34 pgs

refuelings each with trans-continental routes. Flight times for these sorties were approximately four hours each. Pilots were briefed using standard Detachment procedures for mission functions, and all tactics used were as specified in the Detachment Tactical Doctrine. The Limited Climatic Test, Black Shield Validation Item #25A, was completed as a separate test and the results forwarded in a separate report. As noted in the report the windshield deicing test has yet to be completed.

DATA COLLECTION AND REDUCTION

5. During pre-mission briefings, the validation items were reviewed for the pilots, along with the satisfactory-unsatisfactory criteria. In the test flights, pilots noted the functional operation of the validation items and voice recorded necessary data for climb, cruise and descent performance. In the post flight debriefings, pilots completed test mission forms on which all validation items were listed. Each item was rated as satisfactory or unsatisfactory, the latter rating requiring explanatory remarks. Similar forms were completed by DCM personnel to acquire data on items best evaluated during post flight functions. DCM personnel also reviewed the voice recorder tape playback and the cockpit camera film for additional data. Evaluation of payload material, INS, etc., were provided by the applicable agencies and included on the forms completed by DCM. Performance data was transcribed from the voice recorders by DCOM personnel and dispatched to LAC for reduction.

ACCURACY OF DATA

6. Most of the rating criteria was set to specified limits, but in some cases the ratings were qualitative; based on pilot/technician experience and judgement. In the case of performance, the profile presented in Appendix A is from data based on average test day atmospheric conditions. Operational performance will vary somewhat with changes in air temperatures.

TEST RESULTS

GENERAL

7. A total of 12 sorties were flown for 52:40 hours. Overall, nine sorties were rated as satisfactory with three air

aborts. One abort was charged to a low oil pressure indication and the other two to ARC-50 UHF failure. For an overall rating of satisfactory, a mission had to be completed as briefed with the entire route covered and all refuelings met. For overall performance success, inlet unstarts were acceptable as long as altitude loss did not exceed 2,000 feet or to below [redacted] feet during penetration legs. Only missions which were airborne were considered. Ground aborts and schedule cancelations were not considered as they are beyond the scope of this test. 25X1

PERFORMANCE

8. Appendix A contains a typical performance profile compiled from data based on average test day atmospheric conditions. Complete performance data generated from this and other tests were published in the A-12 Utility Flight Manual in a change dated 1 Dec 65. These data are presently being reduced to standard conditions and when completed will be published in the flight manual.

VALIDATION ITEMS

9. Appendix B contains a breakdown of validation items by aircraft, date, rating, and explanatory remarks. The following table summarizes the results by satisfactory-unsatisfactory criteria and percent satisfactory:

SUMMARY OF RESULTS

ITEM	CRITERIA	RATE
1A & 2A - Performance. Multiple A/R High Speed Profiles. NOTE: No unsatisfactory ratings were due to inlet malfunctions.	1. All legs and refuelings completed as briefed.	75%
	2. Maximum alt. loss of 2000 ft during unstarts or to a min of [redacted] during penetration legs.	25X1
3A - Inlets	Unsatisfactory if any unstarts were encountered.	64%

TS# 162629
Cy 3 of 37 cys
Page 6 of 39 pgs

TOP SECRET

ITEM	CRITERIA	SUCCESS RATE
4A - Air Data Computer	Normal Function	100%
5A - LOX (Deleted)		
6A - LN_2	Minimum 15 liters reserve	100%
7A - TACAN	Normal functions and DME agreement with INS within 10%.	75%
8A - IFF	As reported by Radar	92%
9A - Aft Fuel Feed and Transfer	Normal functions	100%
10A- SR-3 Compass	Remained in sync after 180° turn, with attitude indicator precession of no more than 3°.	92%
11A- Oil Pressure	Normal Limits	67%
12A- All Attitude Fuel Readout	No more than 2000 lbs fluctuation after attitude or acceleration change.	100%
13A- Fire Warning	Normal indications	100%
14A- Engine Durability	No engine change or major repair required.	82%
15A- SC & DM Switching	Normal function	100%
16A- [redacted]	1. No erroneous signals	92%
	2. Proper signals transmitted	
17A- DECM	Ground Report	63%
18A- SIP	Ground Report	100%
19A- ARC-50	Normal UHF, internal & external. Normal DME	17%

25X1

TOP SECRET

TS# 162629
Cy 3 of 37 cys
Pge 7 of 34 pges

ITEM	CRITERIA	SUCCESS RATE
20A - INS/ECM Compatibility	INS not affected by ECM.	100%
21A - Plastics	No breaks or delaminations	100%
22A - Mach Hold	(Deleted)	
23A - SSB	Normal functions	100%
24A - Camera	Normal function and acceptable resolution.	90%
25A - Climatic Test	(Separate report)	
26A - INS	1. Remained within specs	73%
	2. 5° Max steering bias	
	3. Auto Nav bank angle 35° + 0-3°	
27A - Complete System Test	Cmdr, DCO and DCM evaluation	75%

OTHER ITEMS

10. Test Plan Revision Number 2 added the requirement for further evaluation of cockpit radiation heat shields and weather modifications. No evaluation of these items was accomplished as the heat shields were not available and rain, high humidity, and icing conditions were not encountered during the test. Pilots were asked to comment on cockpit heat problems during descents and the consensus was generally favorable. However, descents were initiated with fuel remaining in the order of 20,000 lbs where adequate sink was still available for air conditioning. It is anticipated that if descent fuel remaining is in the order of 5000 lbs or less, pilot comfort may become a flight safety hazard.

TS # 162629
Cy 3 of 37 Cys
Pge 8 of 34 pages

CONCLUSIONS AND RECOMMENDATIONS

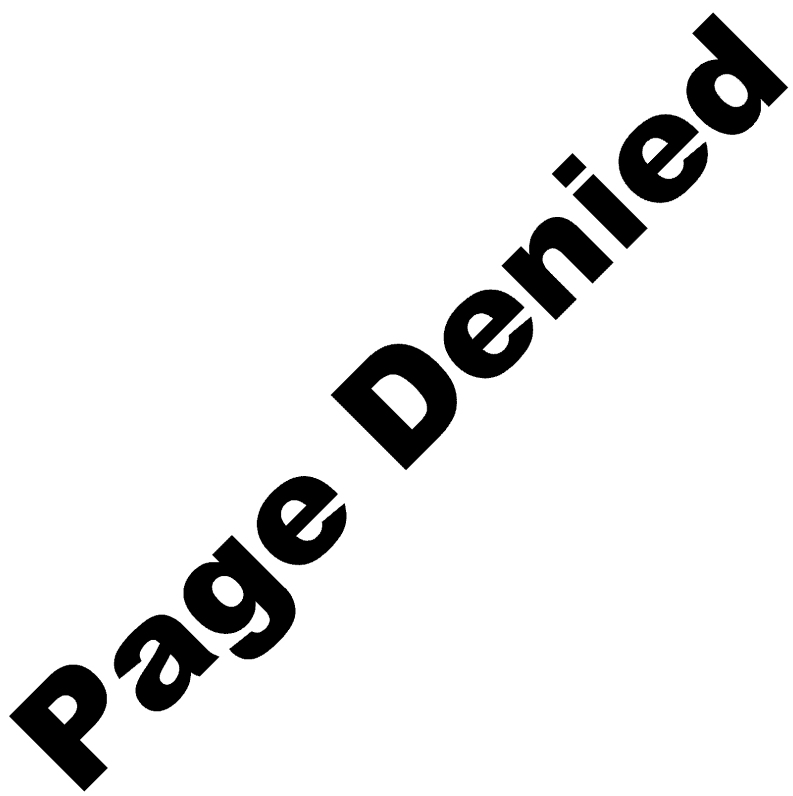
11. An overall satisfactory rate of 75% for the long endurance high speed missions flown on this test illustrates the great improvement in performance and reliability of the A-12 aircraft. This improvement is primarily due to the Black Shield modification program and more effective quality control. It must be pointed out that the 75% is not really a true picture, since two of the three aborts were due to ARC-50 radio failure rather than basic airframe systems. Had the radio problems been solved, the rate would have been more in the order of 90%. It is significant to note that none of the unsatisfactory ratings for overall performance were due to inlet malfunctions. With unmodified aircraft, inlet system malfunctions was the most serious A-12 problem area. The most serious problem now is the ARC-50 UHF radio which had a satisfactory rate of 17%. The ARC-50 is important since external DME and ADF modes are the primary tanker rendezvous aids, especially under restricted visibility conditions. It may be argued that during this test no air refuelings were missed in spite of the poor ARC-50 performance, but back up aids were used and weather conditions were better than will generally be encountered during deployment operational flights. Based on the lack of a reliable all weather rendezvous aid, it is recommended that the A-12 aircraft be considered operationally ready with a VFR rendezvous restriction until improved or substitute equipment is available. Efforts to improve the ARC-50 are being continued to provide an operationally suitable system.

12. DECM shows marginal performance with a rate of 63%. It is recommended that an intensive flight test program be initiated to isolate and solve the problems. Emphasis should be placed on DECM performance below 60,000 feet to afford protection in the event an A-12 must descend over enemy territory.

13. Engine oil and pressure indicating systems continue to be somewhat a problem with a rate of 67%. The indicating system is the primary trouble and further efforts are necessary to eliminate this problem.

14. Cruising range of the A-12 has improved drastically but more data is necessary to further refine the results to date. Performance testing is being continued with a minimum of turns in the flight profiles and range extensions to allow cruising to 10,000 pounds of fuel remaining at start of descent. To date, most of the data from 20,000 to 7,500 lbs of fuel remaining is extrapolated. Performance data is lacking for a penetration technique of a constant [redacted] ft cruise altitude instead of cruise climb. This area should be explored in the performance follow-on testing. 25X1

TS #162629
Cy 3 of 37 cys
Pge 9 of 34 pges



Approved For Release 2006/08/09 : CIA-RDP71B00399R000600130003-7

TOP SECRET

ITEM 1A & 2A

PERFORMANCE

Msn or Route	Rating	Acft #	Date	Flt Time	Remarks
	U	128	7 Oct	4:30	Air abort due to oil Pressure. RH engine shut down - 4th leg not flown.
	S	126	12 Oct	6:05	
	S	128	13 Oct	6:10	
	U	128	20 Oct	0:40	Air abort, UHF failure. Subsonic flight
	S	127	21 Oct	6:20	
	S	128	22 Oct	5:50	
	S	126	26 Oct	5:30	
	S	127	28 Oct	5:40	
	S	127	3 Nov	3:55	
	U	126	5 Nov	1:00	Air abort - ARC-50 failure.
	S	128	11 Nov	4:00	
	S	126	20 Nov	4:00	

25X1

NOTE: The last 4 sorties were actually under Item 27A.

Appendix B - Detailed Validation Item Results.

TOP SECRET

TS# 162629
cy 3 of 37 cys
Page 11 of 39 pages

ITEM 3A

INLETS

Rating	Acft#	Date	Remarks
S	128	7 Oct	
S	126	12 Oct	
U	128	13 Oct	Spike too far Fwd - Door open. LH side malfunction last leg - Computer amplifier malfunction.
-	128	20 Oct	Air abort - UHF. Subsonic
S	127	21 Oct	
U	128	22 Oct	RH inlet unstarted at beginning of two descents. LH inlet operated manually on 4th leg.
U	126	26 Oct	RH inlet unstarted at beginning of last descent. Both inlets unstarted during turn - Due to erratic Mach Hold.
S	127	28 Oct	
S	127	3 Nov	
S	126	5 Nov	Max Mach 2.5
S	128	11 Nov	
U	126	20 Nov	Unstarts in two climbs & accel - Mach 2.5.

TOP SECRET

ITEM 4A

AIR DATA COMPUTER

Rating	Acft #	Date	Remarks
S	128	7 Oct	
S	126	12 Oct	
S	128	13 Oct	
S	128	20 Oct	
S	127	21 Oct	
S	128	22 Oct	
S	126	26 Oct	
S	127	28 Oct	
S	127	3 Nov	
S	126	5 Nov	
S	128	11 Nov	
S	126	20 Nov	

TOP SECRET

TS#162629
Cy 3 of 37 cys
Page 13 of 39 pgs

TOP SECRET

(ITEM 5A LOX - DELETED)

ITEM 6A LN_2

Rating	Acft #	Date	Remarks
S	128	7 Oct	
S	126	12 Oct	
S	128	13 Oct	
S	128	20 Oct	
S	127	21 Oct	
S	128	22 Oct	
S	126	26 Oct	
S	127	28 Oct	
S	127	3 Nov	
S	126	5 Nov	
S	128	11 Nov	
S	126	20 Nov	

TOP SECRET

TS#160629
Cy 3 of 37 cys
Pgs 14 of 34 cys

TOP SECRET

ITEM 7A

TACAN

Rating	Acft #	Date	Remarks
S	128	7 Oct	
S	126	12 Oct	
U	128	13 Oct	TACAN Inop due to faulty circuit breaker.
S	128	20 Oct	
S	127	21 Oct	
S	128	22 Oct	
U	126	26 Oct	TACAN failed in flight. Faulty BHDI (DME stuck) and TACAN unit itself (fuse blown).
S	127	28 Oct	
U	127	3 Nov	40° right on Ch 57. Marginal TACAN unit.
S	126	5 Nov	
S	128	11 Nov	
S	126	20 Nov	

TOP SECRET

TSH 160629
Cy 3 of 37 cys
Pgs 15 of 34 pgs

TOP SECRET

ITEM 8A

IFF

Rating	Acft #	Date	Remarks
S	128	7 Oct	
S	126	12 Oct	
S	128	13 Oct	
S	128	20 Oct	
U	127	21 Oct	IFF completely Inop - cause unknown.
S	128	22 Oct	
S	126	26 Oct	
S	127	28 Oct	
S	127	3 Nov	
S	126	5 Nov	
S	128	11 Nov	
S	126	20 Nov	

TOP SECRET

TS#162629
Cy 3 of 37 cys
Pge 16 of 34 pgs

TOP SECRET

ITEM 9A

AFT FUEL FEED & TRANSFER

Rating	Acft #	Date	Remarks
S	128	7 Oct	
S	126	12 Oct	
S	128	13 Oct	
S	128	20 Oct	
S	127	21 Oct	
S	128	22 Oct	
S	126	26 Oct	
S	127	28 Oct	
S	127	3 Nov	
S	126	5 Nov	
S	128	11 Nov	
S	126	20 Nov	

TOP SECRET

TS#162629
Cy 3 of 37 cys
Page 17 of 39 pgs

ITEM 10A

SR-3 COMPASS

Rating	Acft #	Date	Remarks
S	128	7 Oct	
S	126	12 Oct	
S	128	13 Oct	
S	128	20 Oct	
S	127	21 Oct	
S	128	22 Oct	
U	126	26 Oct	Slaved Gyro would not hold sync. Comp card fluctuated ±2°.
S	127	28 Oct	
S	127	3 Nov	
S	126	5 Nov	
S	128	11 Nov	
S	126	20 Nov	

TS# 162629
Cy 3 of 37 cys
Pgs 18 of 34 pgs

TOP SECRET

ITEM 11A

OIL PRESSURE

Rating	Acft #	Date	Remarks
U	128	7 Oct	RH oil pressure erratic - then dropped to zero. RH low quantity lite came on. Found to be indicating system in both cases. Oil quantity serviced 6.5 Qts low after 4:30 flight.
S	126	12 Oct	
U	128	13 Oct	Oil pressure below 55 psi in flight. RH low lite came on. Low warning deactivated per letter.
S	128	20 Oct	
S	127	21 Oct	
U	128	22 Oct	RH oil pressure went to 0 on final. 30-32 psi in flight. Pressure transmitter problem.
U	126	26 Oct	Oil pressure erratic RH side. Excessive oil consumption (17 qts in 5:30). Engine changed.
S	128	28 Oct	
S	127	3 Nov	
S	126	5 Nov	
S	128	11 Nov	
S	126	20 Nov	

TOP SECRET

TS#162629
Cy 3 of 37 cys
Page 19 of 34 pgs

TOP SECRET

ITEM 12A

ALL ATTITUDE FUEL READOUT

Rating	Acft #	Date	Remarks
S	128	7 Oct	
S	126	12 Oct	
S	128	13 Oct	
S	128	20 Oct	
S	127	21 Oct	
S	128	22 Oct	Fuel Ind. fluctuated 1 time 11to 5 M #. Duplicated on ground - Small wiring problem.
S	126	26 Oct	
S	127	28 Oct	
S	127	3 Nov	
S	126	5 Nov	
S	128	11 Nov	
S	126	20 Nov	

TOP SECRET

TS# 162629
Cy 3 of 37 cys
Page 20 of 39 pages

TOP SECRET

ITEM 13A

FIRE WARNING

Rating	Acft #	Date	Remarks
S	128	7 Oct	
S	126	12 Oct	
S	128	13 Oct	
S	128	20 Oct	
S	127	21 Oct	
S	128	22 Oct	
S	126	26 Oct	
S	127	28 Oct	
S	127	3 Nov	
S	126	5 Nov	
S	128	11 Nov	
S	126	20 Nov	

TOP SECRET

TS # 162629
cy 3 of 37 cys
Page 21 of 39 pages

TOP SECRET

ITEM 14A

ENGINE DURABILITY

Rating	Acft #	Date	Remarks
S	128	7 Oct	
U	126	12 Oct	LH engine exhaust heat shield failed.
S	128	13 Oct	
S	128	20 Oct	
S	127	21 Oct	
S	128	22 Oct	
U	126	26 Oct	Excessive oil consumption, RH.
S	127	28 Oct	
S	127	3 Nov	
S	126	5 Nov	
S	128	11 Nov	
S	126	20 Nov	

TOP SECRET

TS# 162629
cy 3 of 37 cys
Pgs 22 of 34 pgs

ITEM 15A

SC & DM SWITCHING

Rating	Acft #	Date	Remarks
S	128	7 Oct	
S	126	12 Oct	
S	128	13 Oct	
S	127	21 Oct	
S	128	22 Oct	
S	126	26 Oct	
S	127	28 Oct	
S	127	3 Nov	
S	128	11 Nov	
S	126	20 Nov	

TS# 162129
Cy 3 of 37 cys
Page 23 of 34 pgs

ITEM 16A

25X1

Rating	Acft #	Date	Remarks
S	128	7 Oct	
S	126	12 Oct	
S	128	13 Oct	
S	127	21 Oct	
S	128	22 Oct	
U	126	26 Oct	Erroneous chirps such as cabin pressure failure.
S	127	28 Oct	
S	127	3 Nov	
S	126	5 Nov	
S	128	11 Nov	
S	126	20 Nov	

TS #162629
Cy 3 of 37 cys
Pge 24 of 34 pges

TOP SECRET

ITEM 17A

DECM

Rating	Acft #	Date	Remarks
S	128	7 Oct	
S	126	12 Oct	
S	128	13 Oct	
S	127	21 Oct	OK on 1st run. Acft not acquired by radar on 2nd run.
S	128	22 Oct	
U	126	26 Oct	OK on 1st run. Inop on 2nd run. Replaced antenae.
U	127	28 Oct	[redacted] not triggered by proper correlation. [redacted] did not see ground emissions. 25X1 25X1
U	126	20 Nov	DECM ineffective.

NOTE: No DECM installed on two missions.

TOP SECRET

TS #162629
Cy 3 of 37 cys
Pge 25 of 34 pgs

ITEM 18A

SIP

Rating	Acft #	Date	Remarks
S	128	7 Oct	
S	126	12 Oct	
S	128	13 Oct	
S	127	21 Oct	
S	128	22 Oct	
S	126	26 Oct	
S	127	28 Oct	

TS#162629
Cy 3 of 37 cys
Pge 26 of 34 pges

ITEM 19A

ARC-50

Rating	Acft #	Date	Remarks
U	128	7 Oct	DME erratic. Receiver weak.
U	126	12 Oct	Ext failed completely for 3rd rendezvous.
U	128	13 Oct	Ext DME Inop.
U	128	20 Oct	Air abort due to ARC-50 failure.
S	127	21 Oct	No ADF antenna. Ext interrogate would not stay in continuous for more than 4-5 cycles.
U	128	22 Oct	Ext DME failed after 1st AR.
U	126	26 Oct	Ext DME Inop.
U	127	28 Oct	Ext DME & Voice failed after 1st AR.
U	127	3 Nov	Ext failed after 1st AR.
U	126	5 Nov	Entire X-MTR ARC-50 failed after T.O. Air abort.
S	128	11 Nov	No ADF.
U	126	20 Nov	No ADF. Erratic DME.

NOTE: If other functions were normal, ARC-50 was considered satisfactory with ADF failure or ADF antenna not installed.

ITEM 20A

INS COMPATIBILITY W/ECM

Rating	Acft #	Date	Remarks
S	128	7 Oct	
S	126	12 Oct	
S	128	13 Oct	
S	127	21 Oct	
S	128	22 Oct	
S	126	26 Oct	
S	127	28 Oct	
S	126	20 Nov	

TS# 162629
Cy 3 of 39 cys
Page 28 of 34 pages

ITEM 21A

PLASTICS

Rating	Acft #	Date	Remarks
S	128	7 Oct	
S	126	12 Oct	
S	128	13 Oct	
S	127	21 Oct	
S	128	22 Oct	
S	126	26 Oct	
S	127	28 Oct	
S	127	3 Nov	
S	128	11 Nov	
S	126	20 Nov	

TS #162624
Cy 3 of 39 cys
Page 29 of 34 pages

(ITEM 22A - MACH HOLD - DELETED)

ITEM 23A

SSB

Rating	Acft #	Date	Remarks
S	128	7 Oct	
S	126	12 Oct	
S	128	13 Oct	
S	127	21 Oct	
S	128	22 Oct	
S	126	26 Oct	
S	127	28 Oct	
S	127	3 Nov	
S	126	5 Nov	
S	128	11 Nov	
S	126	20 Nov	

TS #162624
Cy 3 of 37 Copies
Page 30 of 34 Pages

TOP SECRET

ITEM 24A

CAMERA

Rating	Acft	Date		Remarks
S	128	7 Oct	Type I	
S	126	12 Oct	Type II	
U	128	13 Oct	Type I.	Malfunction lite, last leg. Material tension regulator problem.
S	127	21 Oct	Type II	
S	128	22 Oct	Type I.	Ran out of material toward end of last leg.
S	126	26 Oct	Type II	
S	127	28 Oct	Type II	
S	127	3 Nov	Type I	
S	128	11 Nov	Type II	
S	126	20 Nov	Type I	

TOP SECRET

TS#162629
Cy 3 of 37 cys
Pge 31 of 34 pges

TOP SECRET

(ITEM 25A - CLIMATIC - COMPLETED)

ITEM 26A

INS

Rating	Acft #	Date	Remarks
S	128	7 Oct	
U	126	12 Oct	1.1 Times spec error.
S	128	13 Oct	
U	127	21 Oct	1.6 Spec error.
S	128	22 Oct	
U	126	26 Oct	19 mile error.
S	127	28 Oct	Bank angle went to 50° on one turn - cause unknown.
S	127	3 Nov	
S	126	5 Nov	Short flight.
S	128	11 Nov	
S	126	20 Nov	

TOP SECRET

TS# 162629
Cy 3 of 37 cys
Pge 32 of 34 pges

ITEM 27A

COMPLETE WEAPON SYSTEM TEST

Route	Rating	Acft #	Date	Remarks
[redacted] 25X1	S	127	3 Nov	No ECM. ARC-50 Ext failed after 1st A/R. TACAN Marginal.
	U	126	5 Nov	Air abort due to ARC-50 failure.
	S	128	11 Nov	No ECM. No ARC-50 ADF.
	S	126	20 Nov	ECM Inop.

NOTE: These missions were considered satisfactory although ECM was not installed or malfunctioned.

TS#162629
Cy 3 of 34 cys
Page 33 of 34 pgs

TOP SECRET

DISTRIBUTION LIST

Agency	Copies
1129th USAF Sp Actys Sq, Det 1	
Commander	4
DCO	6
DCM	6
R&D	2
1129th USAF Sp Actys Sq	
Project Headquarters	10
Other	
[redacted]	3
	3

25X1

TOP SECRET

TS #162629
Cy 3 of 32 cys
Pge 34 of 34 pges