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OXCART IDEALIST

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BYE-2511-67
Copy 7 of 9

31 JUL 1967

MEMORANDUM FOR: Director, CIA Reconnaissance Programs

SUBJECT: Program Progress Report

Forwarded herewith are Program Progress Reports (5 copies each) for OXCART and IDEALIST for the period 1 April 1967 - 30 June 1967.

[redacted]

PAUL N. BACALIS
Brigadier General, USAF
Director of Special Activities

Attachments - 2
As Noted Above
(BYE-0100-67)

MARD/Compt/OSA/[redacted]dbt (4526 - 25 July 67)

Distribution:
Cy 1,2,3,4,5 - D/CRP w/atts
6 - DDS&T Reg w/o atts
7 - D/SA w/atts
8 - MARD/Compt/Chrono w/atts
9 - RB/OSA w/o atts

BYE-0100-67
Tab A
Section 1

OXCART

DEVELOPMENT SUMMARY AND PROGRESS

(1 April 1967 - 30 June 1967)

I. AIRFRAME

A. Aircraft 122 was released from major modifications and flown twice during this reporting period. No major discrepancies were noted.

B. Aircraft Systems Division, R&D, OSA, provided OXCART Division, OSA, the estimated cruise performance of the A-12 at Mach Nos. 2.6 and 2.8 in support of the SCOPE LOGIC project.

II. PROPULSION

OXCART reliability records for engine and inlet systems were updated to include calendar year 1967 accumulated experience. Results of 100 detachment flights for the period 1 January to 30 April 1967 are summarized below:

1. Engine

a. 95% of all flights were completed with a satisfactory engine rating.

b. 97% of all flights were not prematurely terminated because of engine malfunctions.

2. Inlet System

a. 89.1% of all flights were completed with a satisfactory inlet system rating.

b. 96.8% of all flights were not prematurely terminated because of inlet system malfunctions.

III. PAYLOAD

A. During May 1967 as a result of NPIC's evaluation of Type IV SN-1's validation flights, it was noted resolution had dropped markedly during April 1967. Hycon was asked to take this configuration back to their plant and determine the cause and remedy the deficiency. This was done and SN-1 was returned to [redacted] late in June 1967 and is ready for validation flights.

[redacted]

D. Twenty-eight (28) photo configuration sorties were flown during this period.

Type	No. of Flights
I	19
II	4
IV	5

Type I: Sixteen missions were successful of which four were operational missions. Three non-operational missions experienced single malfunctions which were corrected to preclude future reoccurrences.

Type II: Missions flownwere successful. The two (2) Type II cameras are located at Kadena and are operationally ready.

Type IV: Four flights were successful. Postflight inspection in one instance, however, disclosed that the

outer pane of the right oblique window was cracked. Evidence indicates the window was damaged by some object after aircraft touchdown. One flight was only partially successful (2426'/side) because failure of a one-ohm resistor caused the oblique head to lock in the [redacted] position. This was a random failure but could possibly be a QC problem.

IV. AIRCRAFT FLIGHT TEST SUMMARY (APRIL, MAY, JUNE 1967)

Acft. No.	Flights	Time	Total Flights	Total Time
121	10	19:41	286	334:40
122	3	5:22	160	175:01
123	--	--	78	136:10
124	17	29:40	557	983:15
125	--	--	203	334:50
126	--	--	104	169:16
127	10	25:05	208	379:50
128	20	44:45	197	379:20
129	19	48:45	220	316:29
130	8	20:05	172	313:13
131	11	29:35	124	215:25
132	8	22:30	152	267:57
133	--	--	9	8:17
Totals	106	245:28	2470	4013:43

V. LIFE SUPPORT

A. The following is a summary of Life Support Equipment Improvement Program activity:

1. The new easier boarding life raft developed by David Clark Company has been tested and approved for incorporation into the OXCART life support system. The raft will be used in parasail training at Lake Mead during July 1967.

2. New improved shoulder harnesses were received and incorporated into the ejection system during April 1967.

3. Modifications to the parachute pack, designed to reduce headrest/parachute interference and to increase reliability, have been evaluated and found acceptable. Minimum testing is required [redacted] before incorporation. Installation of the rescue beacon (URT-27) has been developed, however, testing is being held in abeyance because of reported beacon deficiencies.

4. The David Clark Company has redesigned the primary, undersuit, flotation garment to provide higher flotation and a more vertical orientation in the water. It is anticipated the prototype will be evaluated during July-August 1967.

5. Both Lockheed Aircraft Corporation (LAC) and Firewel have developed and tested battery packs for visor emergency heat. Both will be tested and evaluated further during July 1967 and a final selection is anticipated in August 1967.

6. The Firewel Company's heat/altitude chamber has been completely overhauled for studies of man's tolerance to heat under complete loss of an aircraft's cooling system. The final plans of the details of the study will be established during July-August 1967.

7. A summary report on the problem of reflectance and the use of the PPG visor is being prepared.

8. Because of long lead time, required tests, and costs involved, the development of a Seat Kit Automatic Development System was cancelled in April 1967.

B. BLACK SHIELD gave rise to the following activity:

1. A manual on-off selector for the parachute installed URT-21 rescue beacon and an improved mounting bracket were developed by [redacted]. Four dummy-drop tests were proposed by ASD/R&D to qualify these items for use in BLACK SHIELD operational parachutes. Tests will be performed and parachutes modified in early July 1967.

2. Six standard USAF personnel lowering devices were obtained on a priority basis from the depot. Rocketjet Engineering Corporation is fabricating new seat cushions which will incorporate the device which is intended to permit a tree'd pilot to lower himself to the ground. Prototype evaluation will be in mid-July 1967 and delivery of operational items will follow soonest.

VI. OTHER COMMENTS

A. The BLACK SHIELD SC&DM record performance was evaluated as satisfactory.

[redacted]

C. A thermodynamic review of the air-conditioning system in the OXCART aircraft was conducted to provide a better understanding of potential problem areas which might be associated with operation in the warm, high-humidity environment at Kadena AB, Okinawa.

D. The semi-annual OXCART A-12 Aircraft Experience Data and Systems Reliability publication has been updated through 30 June 1967. It is now being printed and will be available for distribution during the week of 10 July 1967.

BYE-0100-67
Tab A
Section 2

OXCART

OPERATIONAL SUMMARY AND PROGRESS

(1 April 1967 - 30 June 1967)

I. DEPLOYMENT SUMMARY (SPINDLE)

A. Operational approval to deploy to Kadena AB, Okinawa and conduct operational missions against targets in North Vietnam was received on 16 May 1967. Quick Reaction Checklist (QRC) actions were completed according to schedule and the first of three A-12 aircraft was targeted to deploy on 21 May 1967.

B. Following is a summary of A-12 aircraft deployments to Kadena AB, Okinawa:

Mission No.	Date of Arrival	Aircraft No.	Time Enroute
NOX511	22 May 1967	131	6 Hrs.10 Mins.
NOX512	24 May 1967	127	6 Hrs.10 Mins.
NOX513	27 May 1967	129	9 Hrs.44 Mins.

Mission NOX511's departure was delayed 24 hours due to weather.

Mission NOX513 made a precautionary landing at Wake Island on 26 May 1967 after elapsed flight time of 4 hours 30 minutes. The remaining flight leg was flown on 27 May 1967 utilizing subsonic/buddy tactics with time enroute of 5 hours 14 minutes.

II. COMMAND POST EXERCISE (NOX518)

A Command Post Exercise (CPX) was initiated 28 May 1967 for the purpose of exercising command, control, and coordination procedures required to generate a BLACK SHIELD operational mission from Kadena AB, Okinawa. The exercise was terminated on 29 May 1967 to prepare for the first operational mission.

III. OVERFLIGHT SUMMARY (PINWHEEL)

Following is a summary of operational missions flown during the period April 1 through June 30, 1967, by A-12 aircraft; all missions were launched from and recovered at Kadena AB, Okinawa:

Mission No.	TARGET	DATE	FLT. TIME	RESULTS
BSX001	N.Vietnam	31 May 1967	3 Hrs.40 Mins.	Good
BSX003	N.Vietnam	10 June 1967	4 Hrs.28 Mins.	Good
BX6705	N.Vietnam	20 June 1967	5 Hrs.26 Mins.	Excellent
BX6706	N.Vietnam	30 June 1967	4 Hrs.52 Mins.	See Comment

Mission BX6705 was the first "double loop" or double penetration mission performed.

Mission BX6706 preliminary results indicated another highly successful mission. This was the first OXCART mission [redacted]

IV. FORWARD BASE EXERCISE (JULIET)

A Forward Base Exercise was conducted at Incirlik AB, Turkey by the OXCART Division during the period April 16-20, 1967. Representatives from Project Headquarters, SAC/Beale and AFRDR-P participated as observers. The exercise was highly successful and no problem areas were encountered, which would preclude operational missions being flown from this base.

V. CONTROL AND SEPARATION OF AIRCRAFT ABOVE FL-600

A meeting was held at FAA on April 21, 1967, with representatives of Project Headquarters, 9th SRW, Beale AFB, Headquarters SAC, Headquarters USAF and FAA attending. Purpose of the meeting was to discuss methods for resolving conflicts in flight paths and high speed aircraft separation above FL-600. All participants agreed that the present method of altitude reporting above FL-600 by use of the coded altitude designator system was adequate and necessary and

recommended that pilots report their altitude, using the coded system, when passing from one control center to another. The above recommendation will be incorporated in FAA Order 7100.1A and CASF message 80447 after coordination with other users of the altitude reporting system has been effected.

VI. CONTINGENCY PLANNING

A. SKYLARK

No change.

B. MIDDLE EAST (SCOPE PEG)

The OXCART Division initiated and is continuing with "in-house" contingency planning for use of the OXCART vehicle against Middle East targets. Planning has included a preliminary survey of Pease AFB, New Hampshire, as a possible launch/recovery base.

VII. PILOTS AND A-12 AIRCRAFT LOCATION JUNE 30, 1967

	[redacted]	OKINAWA KADENA AB
Pilots	3	3
A-12 Aircraft	6	3

A 45 day rotation schedule to/from Kadena AB, Okinawa has been implemented for Project pilots.

There were two pilots in training during the previous reporting period. One was declared operationally ready on June 20, 1967; the other resigned and his contract was terminated effective June 30, 1967.

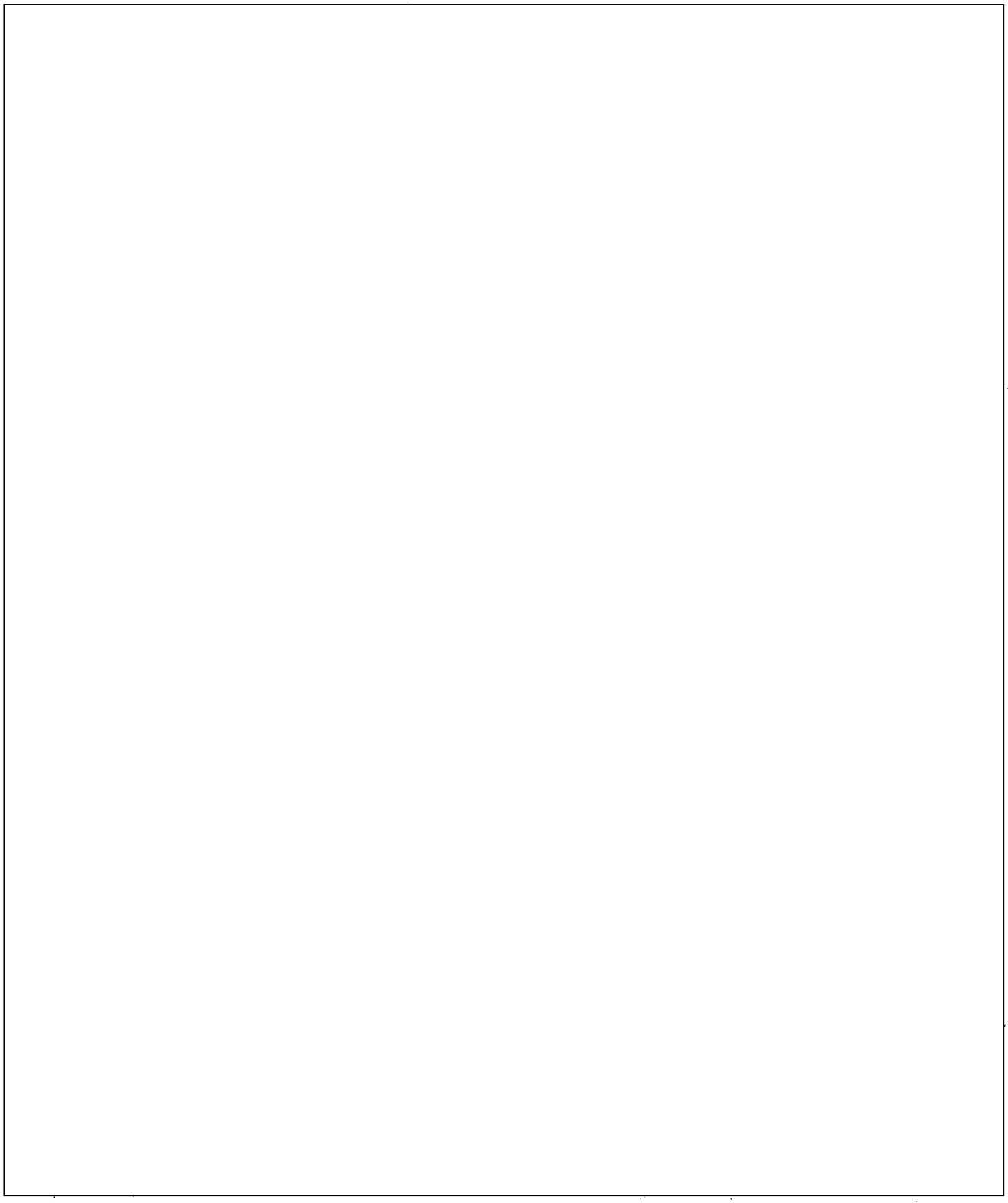
Four of the six aircraft [redacted] are assigned to the Detachment and two to the Flight Test Center. Aircraft 124 is a J-75 equipped dual seat trainer; all other aircraft are J-58 equipped.

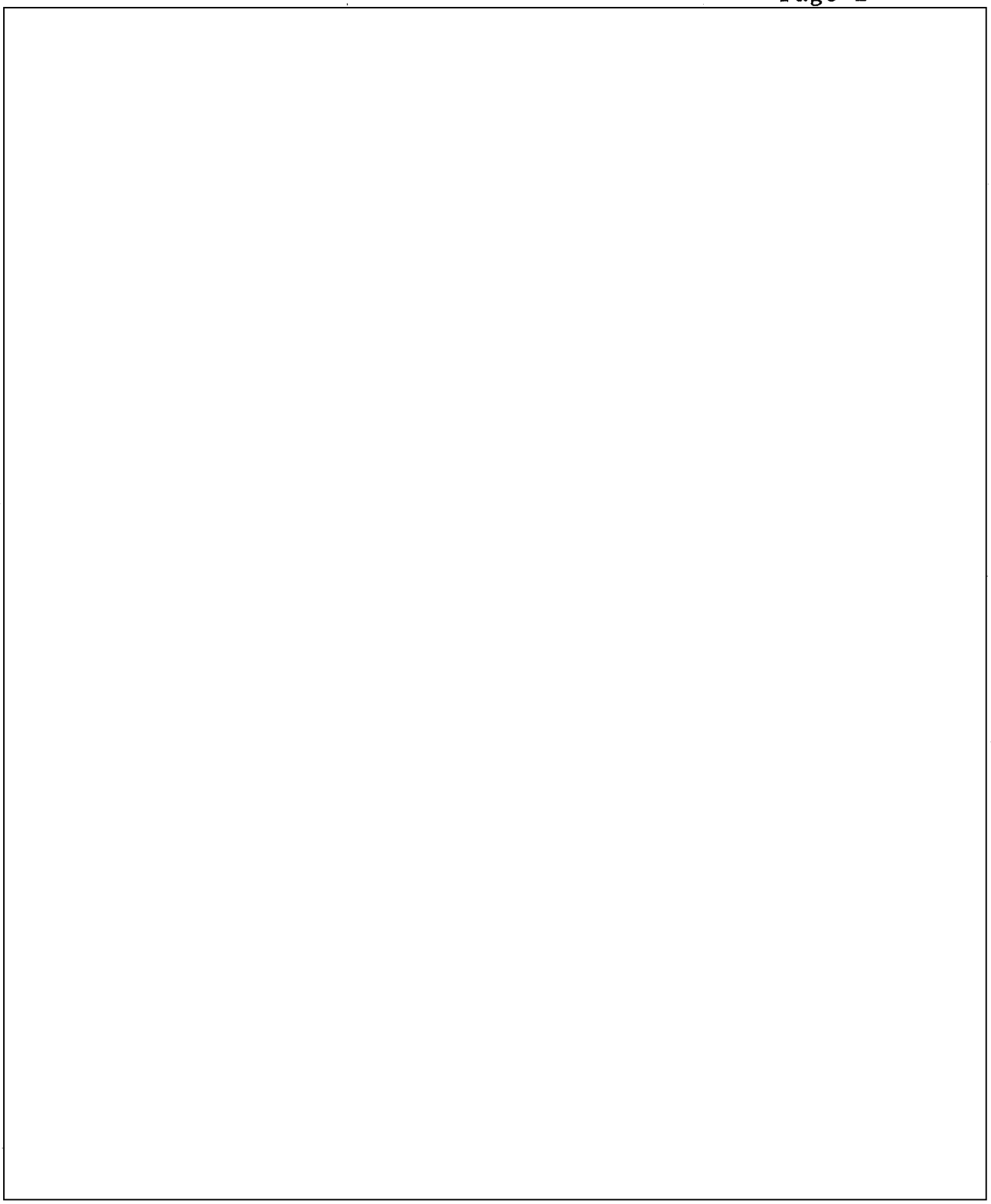
VIII. PERFORMANCE DATA AND STATISTICS

A. DATA - The OXCART effective operational range has increased 190NM to 2770NM with 7500# fuel reserve over high cone. This range increase was realized by adoption of the 32 thousand foot, level A/R as the primary air refueling tactic and from the demonstrated/proven performance published by Lockheed in Technical Data Change #46. At the conclusion of a performance data meeting held at Project Headquarters April 25-26, 1967, it was agreed to incorporate this new performance data into operational mission planning as well as flight planning for everyday ZI training missions.

B. STATISTICS - Performance statistics as stated in the January 1967 report (BYE-2154-67) remain unchanged as of April 30, 1967, with the following exception:

j. Average A-12 time operationally ready Detachment pilots ... 380 hours.





[redacted]

IV. LIFE SUPPORT

A. The following is a summary of Life Support Equipment Improvement Program activity:

1. A prototype sleeping bag packed seat cushion has been developed that can be used with the present seat kit for all [redacted] and with a modified seat kit for all project pilots. Final evaluation found the item completely satisfactory. A cost proposal and delivery schedules were submitted in June 1967 and funding has been requested.

2. The attaching of a 22 cal. survival weapon to the parachute harness was disapproved, with the concurrence of Intelligence Division, OSA, due to potential danger of interference with parachute function and ejection clearances.

3. Initial evaluation indicated that the additional survival weapon for [redacted] was too large for safe and comfortable attachment to the flying boot, coverall, or pressure suit of these pilots. It has been recommended that a smaller weapon be utilized.

4. A prototype improved seat kit was under development during June 1967. Initial evaluation is scheduled for mid-July 1967.

B. The following is a summary of U-2R Life Support System activity:

1. Recommendations regarding facilities and personnel requirements for Detachments G and H to support the U-2R life support equipment were made and agreed to at a Headquarters meeting between R&D, Operations, and Materiel, OSA. However, the OXCART deployment has affected these proposals, and an alternate approach must be reached.

2. A meeting was held between the contractors, Headquarters, Detachment G, and USAF representatives at LAC on 25 May 1967. Final configurations and test requirements for the U-2R escape system, seat kit, parachute, pressure suit, and cockpit pressurization/ air conditioning system were reviewed. In addition technical advisors met with contractors, depot and materiel representatives to establish firm requirements for AGE and spares provisioning. AGE and Test Equipment for support of the new S-1010 PPA were reviewed during June 1967 at Firewel. All items are progressing well towards completion with delivery expected to be on schedule.

3. The S-1010 PPA is nearly complete in terms of development as reviewed at the David Clark Company in June. The prototype suit will be fabricated during the period from July through September. Plans were formulated during June for measuring, fitting, and training project pilots.

4. Interim (OXCART) pressure suits were being modified for LAC test pilots [redacted] during June 1967. Test equipment and tools for these suits were identified and located. The Freuhauf Maintenance Van for pressure suit support was transferred to Detachment G.

V. GENERAL R & D

A preliminary performance analysis of the Blivot, Model D-33-A, was completed. There was very good agreement between the results of Aircraft Systems Division (ASD), OSA, and those

of the contractor. However, due to the lack of substantiating data, ASD/OSA assumed that the proposal aerodynamic data, engine data, and gross weights were correct. Further analysis will be undertaken by ASD when more substantiating data become available.

B. Representatives of Director, R&D, attended two briefings on advanced aircraft and propulsion concepts.

1. The first briefing was given by representatives of Vehicle Research Corporation, Pasadena, California, in [redacted] office on 6 June 1967. This briefing covered an advanced closely integrated aircraft propulsion system concept for the elimination or significant reduction of sonic boom. This concept represents such a close integration of airframe and propulsion system that it would only be applicable to a complete, newly designed aircraft. The briefing was given by [redacted] who is primarily a theoretical aerodynamicist.

2. In response to a question from PSD/OSA as to whether or not [redacted] and his associates had ever considered advanced aerodynamic concepts for improving high altitude capability of subsonic airfoils, the briefing was extended to include a concept for reducing or eliminating induced drag of airfoils. This has been studied quite extensively and tested by Vehicle Research Corporation, and represents a concept which could be applied to current aircraft. Reports covering both of the above concepts have been forwarded to PSD by [redacted] office.

3. The second briefing was given by representatives of the Marquart Corporation and Aerojet-General Corporation in the DD/S&T Conference Room on 21 June 1967 regarding a rather advanced propulsion system referred to as SERJ, for Supercharged Ejector Ramjet. This propulsion system has a speed capability to Mach 4.5 at altitudes to 120,000 feet and promises a relatively high thrust to weight ratio. It involves a rather complicated system of components, however, to achieve a speed capability which represents only a 1.0 to 1.5 Mach number improvement over OXCART. (Detailed memoranda, covering both of the above briefings, are being prepared by PSD/R&D.)

C. Side Looking Radar Systems:

1. General discussions were held with REWSON regarding the possible turn over of the APQ-93 to the [redacted] On the basis of these conversations, and other related studies, a paper was prepared recommending that the systems be turned over to REWSON. EO 12958 1.4(c) <25Yrs

2. Subsequently, a visit was made to the Sanford Naval Air Station, Headquarters of ReconAttack Wing One, operators of the RA5C Integrated Operational Intelligence System, including the carrier based integrated Operational Intelligence Center. It appeared from this visit that the Navy could, in fairly short order, make operational use of the APQ-93 in conjunction with the RA5C program.

3. A visit was made to the Hughes Aircraft Company's laboratories in Culver City; the visit was primarily concerned with Hughes' work in side-looking radar. They are working with WPAFB Avionic Lab, in a follow-on to the APQ-108 program. The Hughes system is based on an electronic correlation technique (rather than the optical correlation of other systems). Correlation is done immediately after data collection. While Hughes claims equal performance, we were not too sure, although it appears to be a very much faster correlation system than the optical, and much more flexible. The applicability of the Hughes correlator to the APQ-93 warrants further consideration.

4. The pulse compression breadboard CHIRP system has been completed and has been undergoing test. Range resolution of about 9 feet has been demonstrated against stationary ground targets and against overflying aircraft. Currently, we do not plan to continue the work beyond this breadboard effort. Some discussions have been held with the Navy on the potential use of the APQ-93 equipment for investigating some Navy problems. Such investigations would be done under Navy funding and supervision.

D. Side Looking Radar System, AN/APQ-93 (XA-1)

1. [redacted] Westinghouse, came in with a verbal report on his visit to the University of Michigan. Data films from the APQ-93 can be processed on the University

of Michigan's correlator, in 70 mm widths. Resolution obtained by the University compared favorably with that previously reported by Westinghouse--4 ft. azimuth and 15 ft. range, for the short pulse experimental flight. The speed of the U. of Michigan's correlator is considerably higher than the Itek correlator, although the 70 mm restriction would hamper its operational usage. At the same time, we discussed the proposed Navy program, and briefed Deputy Director of Special Activities on the current status of the program. The advanced studies are progressing. The study on azimuth steering and multiple look is turning out rather unfavorably. It does not look promising as an approach to improve image interpretability. The CHIRP scheme is well under way and is being checked out against stationary targets and overflying aircraft. An in-house effort is looking at the directions Westinghouse would advise going on recorder improvements, probably toward a laser recorder. Basic drawings on the U-2R were given to Westinghouse for use in a preliminary look at problems of installation.

2. Navy has requested use of the APQ-93 for some test work this summer in a F-101. It has been suggested that they address this request to us through Dr. Flax. It was also suggested that the RA5C program need for the APQ-93 be addressed to us through Dr. Flax.

E. High-Quality Photographic Data Transmission Systems:

1. Perkin Elmer/Human Factors: Perkin Elmer and Human Factors are continuing to survey the literature on the field of Image Quality requirements for sampled images. The list of papers, about 200 total, has been reviewed cursorily, and about twenty-five selected for more detailed review. This review should be complete within a few weeks.

2. Fairchild Camera Instrument Corporation (FCIC): Two meetings have been held to define the basic parameters of the system. On the basis of this definition, FCIC is proceeding with the conceptual system design and program plan.

3. United Aircraft Corporate Systems Center (UACSC): A similar pair of meetings were held with UACSC. The system design is proceeding. A rough order of magnitude budget plan was submitted.

4. General: During the week of 24-28 April 1967 Hughes Aircraft and Marquardt Aircraft were visited to assess their capability and interest in this field.

(a) Marquardt: Interest in Marquardt was aroused by the appearance of a couple of contracts in related fields. Conversations at Marquardt revealed that, while it may have some hardware of interest, it basically is too far back in the research cycle to be of immediate interest to us.

[redacted]

5. An Itek briefing of 10 May indicated that they have constructed a video transmission system for reasonably high quality photo-transmission from balloons, as part of another test program. We are attempting to get further data on this through [redacted] of Itek.

6. Conversation was held with Adm. Fitzpatrick, J-6, on a Department of Defense experiment on high quality photography transmission.

7. Short conversations were held with UACSC on the programs under way. UACSC was interested in gaining access to Columbia Broadcasting System (CBS) work but, with the J-6 work above under way, they were advised that we do not wish to pursue the question of access to CBS data.

8. Conversation with [redacted] National Photographic Interpretation Center (NPIC), relative to the work which [redacted] Human Factors, did for them in assaying the operations at NPIC--as I have considered having Human Factors look at the operation envisioned for the photo-transmission system to get his comments on the human element involved. They were quite well satisfied, however, it was noted that the more recent work has been split between Human Factors and Boeing.

[redacted]

[redacted]

VI. SUPPORT ACTIVITIES

[redacted]

C. At the request of Office of Research and Development (ORD)/DDS&T, ASD/OSA prepared and submitted comments on a North American Aviation Corporation report entitled "Technical Proposal for the Investigation of Skin Friction Drag Reduction".

[redacted]

E. Arrangements were completed for the OSA portion of the DDS&T Career Development Training Course and its presentation supervised.

1. The Chief, ASD/OSA, presented 3½ hours of briefings to the students. The subjects covered were (a) aircraft performance analysis methods, (b) flight control and navigation systems, and (c) project management during the development phase. The life support section presented three hours of instruction on the life support program and the requirements for life support equipment on 12 April.

2. A view-graph illustrated lecture on propulsion systems was presented by PSD/OSA. The lecture consisted of two parts, (a) Propulsion System Performance and Development and (b) Airframe/Propulsion System Interface and included a ten minute sound motion picture on J58 engine development. A general review of propulsion system performance and aircraft-engine matching was presented in addition to propulsion system aspects of OSA associated programs.

3. SSD/OSA presented a lecture on Sensor Development Cycle and User Interface. Typical reconnaissance systems were described and some projections made with regard to future systems.

4. The Chief, Advanced Projects Division (APD)/OSA, lectured on advanced system development cycles and, in particular, on the ISINGLASS program.

5. A final, summary analysis of the course presentation for the DD/S&T Career Development Course was written. The briefing materials, course schedules, etc., have been consolidated and organized in order that they may be available next year when the course might be given again.

VII. BUDGET ACTIVITY

A. At the FY 68 Budget briefing with [redacted] he deferred action on budget request on data transmission pending review by OSA of the overlap with the AF program. Subsequently,

the matter was discussed with Col. Sweeney, Project Officer. Col. Sweeney arranged a visit to CBS Laboratories, one of his contractors, and is keeping OSA advised of developments. The three studies for OSA under way are drawing to a close and some definitive data should be available in June. The results of the FY 68 General R&D Budget review with [redacted] were the subject of a separate memorandum dated 25 May. (BYE-2416-67)

B. The budget for R&D under sponsorship of OSA has been reviewed and technical support given to Comptroller in establishing the justification and amounts to be included in the 1969-1973 budgets for sensor and aircraft related development. (We do not include any research in our program plans. OSA primarily carries projects through development, engineering, test, and operation, basing the development on research sponsored by other components of the Agency and other governmental agencies.)

VIII. MISCELLANEOUS

[redacted]

B. Some minor consultations were held with Foreign Missile and Space Analysis Center/DDS&T on some problems related to usage of SLR for ocean surveillance.

C. A paper by [redacted] Chairman, Indications Task Force, COMOR, entitled, "Requirements for Image Forming Satellite Reconnaissance Responsive to Warning/Indications Needs," was reviewed.

D. A paper by [redacted] on the ISINGLASS type concepts was reviewed.

BYE-0100-67
Tab B
Section 2

IDEALIST

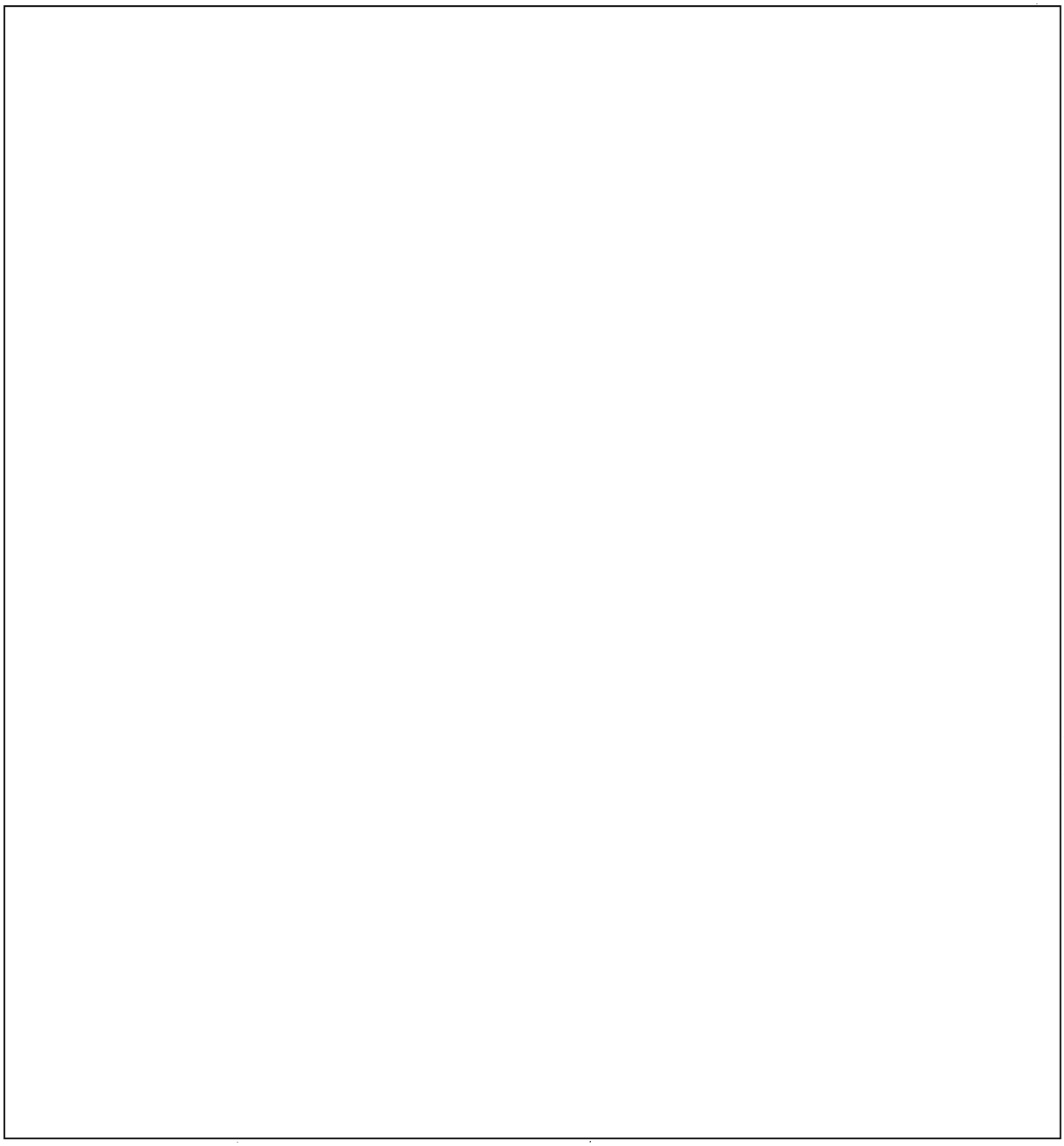
OPERATIONAL SUMMARY AND STATUS

(1 April 1967 - 30 June 1967)

I. GENERAL SUMMARY

[redacted]

EO 12958 3.3(b



[redacted]

F. [redacted] one of the original program pilots, was retired from the program effective 30 June 1967.

G. Summary of systems test flights April, May, and June 1967:

1. On 3, 5, and 7 April, tests on the HIRAMS (System 22) were flown in Article 349 at [redacted] Preliminary information indicates that these tests were successful.

[redacted]

3. System 17 test was scheduled with Article 349 on 26 April, which was cancelled due to inoperative system. It was flown on 27 April.

4. Additional tests conducted during the month were three air data computer flights in Article 349, two Red Dot film tests, one EKIT film test and one U.S. MULE checkout.

5. On 2 May, an IR camera comparison test was flown between the "I" and "O" aircraft in an attempt to identify and reduce problem areas. Evaluation of data obtained is still in progress at this writing.

6. On 2 and 3 May, Article 348 flew HARD HAT tests with the system 12C prototype and the new MC recorder to thoroughly check out this equipment. Tests were successful.

7. On 3 and 4 May, the U.S. MULE system was flown to test the compatability of the modified U.S. MULE hatch with the T-35 and airborne electronic systems. All systems operated perfectly.

8. Five EKIT tests were flown during May. All utilized the Delta III-6 unit with various film loads.

II. PRODUCT IMPROVEMENT

A. System validation flights on the Doppler Systems were successfully completed and the systems were deployed in support of an operational requirement.

B. Two U.S. MULE configurations were tested and modifications to the systems were performed to provide T-35 Tracker installation and Oscar Sierra antenna installation. Final flight tests and packaging modifications will be completed in early May. The systems will then be ready for deployment.

D. The Oscar Sierra Mark III System was flight tested and will require some refinement in the electronic circuitry to be considered OR.

E. On 27 and 28 June Systems 25 and 26 were test flown against the [redacted] The purpose for the tests was to determine if these systems favorably compared with existing Systems 12B-1, 12C, Oscar Sierra MKIIA and Oscar Sierra MKIII. The Systems 25/26 seemed to perform as expected and did exhibit some new and desirable operational features. A meaningful comparison cannot be made until all the flight test data and General Dynamics tests are thoroughly studied and analyzed.

F. A modification on the MC recorder is being strongly considered to make it more compatible with a number of different ECM equipments which have a variety of output impedances. The change consists primarily of adding a record amp to each channel and removing the present IK ohm input impedance to the MC recorder.

G. The updated System 6 (6A) is presently being mocked-up at LAC with TRW doing the development work. This change will be covered by a LAC S/B which includes the permanent installation of the MC recorder in all Articles and outfitting the vehicles with the new System 6A.