

TOP SECRET
OXCART/IDEALIST

NRO REVIEW COMPLETED

[] 2691-67
Copy 8 of 9
20 OCT 1967

25X1A

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 July 1967 - 30 September 1967.

(Signed) Paul N. Bacalis

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

Attachments - 2

As stated
[] (0150-67)

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GROUP 1
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SAS/O/OSA (17 Oct 67)
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OXCART

DEVELOPMENT SUMMARY AND PROGRESS

(1 July 1967 - 30 September 1967)

I. AIRFRAME

In response to several requests, D/R&D/OSA assisted OSA in the preparation of several papers for Dr. Flax relating to the SR-71/A-12 debate.

II. PROPULSION

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A. A visit was made to Pratt & Whitney Aircraft, East Hartford, Connecticut, by [redacted] OEL, and [redacted] PSD, for a quarterly review of progress on the [redacted] program which OEL has under contract.

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25X1D

B. A review of improved propulsion systems for possible high altitude reconnaissance applications was also conducted while at East Hartford.

C. This included possible performance growth of the J-75-P-13B through application of advanced cooled turbine techniques.

III. PAYLOAD

During this quarterly period a total of (40) camera configuration sorties were flown.

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TYPE I

Twenty-eight (28) of these were with Type I, seven (7) of which were operational missions. There were two (2) failures. One, a partial failure (camera operated for approximately 30 minutes), was due to an a/c inverter problem. The second failure (on Type I-G) was due to an overtension condition in film transport and intermittency in the electrical circuitry. The configuration (I-G) is back in ZI and undergoing thorough check and analysis.

TYPE IV

Twelve of the 40 sorties were flown with Type IV configurations. There were two failures. One was due to failure of take-up mechanism which caused film to jam the film transport system. The second failure was caused by a tab on the shutter blade assembly breaking and a fragment jamming a component of the film transport system.

IV. AIRCRAFT FLIGHT TEST AND OPERATIONAL TRAINING SUMMARY*
(July, August, September 1967)

<u>Acft</u>	<u>Flights</u> <u>J-A-S</u>	<u>Time</u> <u>J-A-S</u>	<u>Total</u> <u>Flights</u>	<u>Total</u> <u>Time</u>
121	11	27:44	297	362:24
122	2	2:11	162	177:12
123	-	-	78	136:10
124	17	30:40	574	1013:55
125	-	-	203	334:50
126	-	-	104	169:16
127	11	28:30	219	406:00
128	6	11:45	203	391:05
129	18	35:05	238	351:34
130	13	31:05	185	344:18
131	12	26:30	136	241:55
132	10	19:03	162	286:00
133	-	-	9	8:17
Totals	100	212:33	2570	4222:56

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V. LIFE SUPPORT

A. During this period, the following life support items received final testing and evaluation and were approved for use in the OXCART life support system:

1. Improved URT-21 Beacon Installation with Manual On/Off Selector. The improved bracket for installation allows quick removal of the beacon from the parachute by the pilot after reaching the ground. The manual selector allows the pilot to select an "automatic on" position over friendly territories, which will allow the beacon to be automatically activated upon ejection. When penetrating denied/unfriendly territory, the pilot selects the "beacon off" position, which does not allow the beacon to be activated upon ejection. This system is now installed in all parachutes used for BLACK SHIELD operational flights.
2. Sleeping Bag-Packed Seat Cushion with Personnel Lowering Device. This modification includes a mummy-type sleeping bag suitable for survival in NVN and a personnel lowering device to allow the pilot to reach the ground if the parachute is entangled in trees. The lowering device has a 150 ft. lowering capability and was specifically developed for use by aircrews in SEA. Four operational cushions and two training units have been provided to the OXCART program.
3. New Life Raft. The open-end life raft for easier boarding was approved for use and 16 rafts (8 yellow and 8 green) have been ordered. The first units will be delivered in early November.
4. Emergency Visor Heat Battery Pack. This unit, which will provide visor defogging/defrosting during bailout, has now been completely evaluated and tested. It was approved for installation in the OXCART parachute back pan and has been installed in BLACK SHIELD operational parachutes. All parachutes will be equipped in the near future, as battery packs are completed.

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5. Solid Piece Oxygen Controller Fittings. All suit controllers now have solid piece oxygen hose fittings to prevent breakage during buffeting or ejection.
6. Stabilization Parachute Pack Modifications. Modification kits have been delivered to the field for incorporation. The modifications were made to improve pack opening and to smooth out the pack/headrest interface.

B. All other development efforts, including the pressure suit flotation improvements, have been dropped or placed in a hold status because of the planned OXCART phaseout.

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OXCART
OPERATIONAL SUMMARY AND PROGRESS
(1 July 1967 - 30 September 1967)

I. OVERFLIGHT SUMMARY (PINWHEEL)

Seven (7) overflight missions were flown during this period. All missions were launched from and recovered at Kadena Air Base, Okinawa. Following is a brief resume of each mission:

- 25X1D A. [redacted] against North Vietnam targets in the North Central area. Total flight time enroute was 3:40. [redacted]
- 25X1D [redacted] A total of 71 SAM sites were identified, including one new site. Five of the sites were occupied.
- 25X1D B. [redacted] against Central and South Central areas in North Vietnam. Total time enroute was 5:05. A total of 166 SAM sites were identified, including four new sites. Twelve of the sites were occupied. Five of the nine priority SSM targets in North Vietnam were covered.
- 25X1D C. [redacted] against North East areas in North Vietnam. Eighty SAM sites were identified, twenty of which were not covered on [redacted]. Five SAM sites were occupied, two were new. Seven of the nine priority SSM targets in North Vietnam were covered. This was the first "back-to-back" OXCART mission.
- 25X1D D. [redacted] against North Vietnam targets in the North Central area. This was the first mission to utilize route options. Total flight time enroute was 3:55. [redacted]
- 25X1D [redacted]
- 25X1D [redacted]
- 25X1D [redacted] A total of 108 surface-to-air missile sites were covered; 14 sites were occupied and one new site was identified. Nine of the nine first priority surface-to-surface missile targets were covered.

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25X1D

E. [redacted] against North Vietnam targets in the North Central and South Eastern areas with one pass over the DMZ. Total flight time enroute was 5:12. [redacted]

25X1D

No evidence of offensive surface-to-surface missile equipment or facilities observed. Mission was partially successful; photography of land mass was 6/8 cloud covered.

25X1D

F. [redacted] against North Vietnam targets in the North Central area. Total flight time enroute was 4:01. [redacted]

25X1D

[redacted] Due poor target area weather, only 22 surface-to-air missile sites were covered; 4 sites were occupied. Three of the nine first priority surface-to-surface missile targets were covered.

25X1D

G. [redacted] against North Vietnam targets in the North Central area. Total flight time enroute was 4:00. [redacted]

25X1D

25X1D

[redacted] A total of 124 surface-to-air missile sites were covered; 19 sites were occupied and four new sites identified. Nine of the nine first priority surface-to-surface missile targets were covered.

II. PILOT AND A-12 AIRCRAFT LOCATIONS

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	U.S.	Okinawa
Pilots	4	2
A-12 Aircraft	5*	3

*Includes trainer and one test aircraft (#121). Aircraft #122 placed in flyable storage at Palmdale on 16 September 1967.

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IDEALIST

DEVELOPMENT SUMMARY AND PROGRESS

(1 July 1967 - 30 September 1967)

I. AIRFRAME

The first flight of the U-2R took place at Edwards Air Force Base, California, on 28 August 1967. Since that time, five flights have been flown.

II. PROPULSION

A visit was made to Pratt & Whitney Aircraft, East Hartford, Connecticut, by [redacted] OEL, and [redacted] PSD. A review of improved propulsion systems for possible high altitude reconnaissance applications was conducted. This included possible performance growth of the J-75-P-13B engine, through application of advanced cooled turbine techniques.

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III. PAYLOAD

A. A continuous test and training program on the "H" camera has been accomplished at Detachment "H" during this period.

[redacted]

C. Six [redacted] sorties [redacted] were flown during this quarter. The last test was flown on 28 September 1967 and a final report will be forthcoming.

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[redacted]

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25X1D

IV. LIFE SUPPORT

A. U-2C Program

1. Q-445 Seat Kit Improvements. A proposal was received during this period for modifying and updating the Q-445 seat kit/emergency oxygen system. Providing funds can be made available, this effort will be initiated. The modifications include replacing both the ship-to-kit and the personal leads quick disconnects to improve safety and reliability, replace the oxygen system for more capacity but with less bulk, reduce the lid thickness to accommodate a sleeping-bag packed seat cushion, and to provide an adjustable press-to-test button to allow the pilot to inflate his pressure suit to any extent in flight for comfort reasons.
2. NOMEX Coveralls. A program to replace all pressure suit outer coveralls with NOMEX coveralls was initiated during this period. Fire/flame protection during ejection, crash landings, or cockpit fires in flight or on the ground is the reason for this effort. Funds have been requested and a request for purchase has been made.
3. [] Pressure Suit Training. Subject training was conducted by the ASD/R&D life support officer during this period at the Castle AFB, California Physiological Training facility.

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B. U-2R Program

25X1A 1. Interim Pressure Suits. Modified OXCART pressure suits were provided for LAC test pilots [redacted]

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[redacted] At present, it is planned that LAC test pilots will not receive any other pressure suits in order to reduce costs and insure an adequate number of suits for Project Pilots.

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2. Interim Support. Additional personnel (1 Firewel technical representative and 1 David Clark technical representative) were provided to Detachment G to assist in supporting the full pressure suit program for the U-2R. A maintenance van was provided from [redacted] as the nucleus of an interim support facility. A housing-type trailer complex was also provided and converted into a work, storage, and pre-breathing facility for the Detachment G life support section. AGE and test equipment was purchased, borrowed or transferred to provide adequate support for the interim pressure suits.

3. AGE and Test Equipment. Production of a full complement of equipment for full pressure suit/liquid oxygen support at Detachment G is nearly complete. All items will be delivered prior to the end of November, 1967. Production of items for Detachment H and/or fly-away kits is being held pending allocation of funds for this purpose [redacted]

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4. S-1010 Pilots Protective Assembly. The prototype S-1010 PPA was completed on 29 September 1967 and will receive full factory testing and evaluation during the period from 2-13 October 1967. Initial functional and subjective evaluation will be conducted by the ASD/R&D life support officer during the period 16-20 October utilizing the Firewel Co. Altitude Chamber. The flotation system of the S-1010 was evaluated by the ASD/R&D life support officer in a lake at Worcester, Massachusetts on 22 September 1967. The flotation system is excellent and a marked improvement over previous systems. During late October or early November, the prototype S-1010 will be displayed and discussed at both Headquarters and Detachment G for the benefit of all interested individuals.

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5. Training. The initial group of life support personnel from Detachment G completed factory-conducted training on the S-1010 PPA. In addition, the Firewel Co. technical representative received full pressure suit AGE and test equipment training during this period. Additional training programs will be conducted in late October 1967 and in early January 1968. A life support equipment training program for IDEALIST pilots is being formulated jointly by ASD/R&D and Detachment G Life Support personnel at the present time.

V. PRODUCT IMPROVEMENT

A. All articles are being provided with the facility to accept a new type recorder which will provide multi-channel recording capacity. A multi-channel recorder has been installed and tested satisfactorily.

B. A capacitor which will improve the operation of the Time Code Generator is being installed in all articles.

C. The drop tank mechanism has been reworked and some minor changes made to facilitate interface between the aircraft and drop tanks. This will eliminate the possibility of drop tank "hang-up" in the event drop tank jettison.

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E. To improve the heading reference system, a new improved flux gate wire harness was installed.

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IDEALIST

OPERATIONAL SUMMARY AND STATUS

(1 July 1967 - 30 September 1967)

I. OVERFLIGHT SUMMARY

Six Agency U-2 overflights were flown during the first quarter of FY 68. An additional two were scheduled but subsequently cancelled [Redacted]

25X1C

25X1D

[Redacted]

2

25X1D

[Redacted]

This mission covered the Central China coast from Shanghai to Amoy. This was the pilot's first operational overflight and was highly successful.

3

25X1D

[Redacted]

This was a peripheral mission which averaged about 10-15 N.M. offshore from Hong Kong to Makung Island. This was the first operational mission utilizing the "H" camera. Although the photo quality was good, the mission was less than successful due to weather in the target areas.

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[Redacted]

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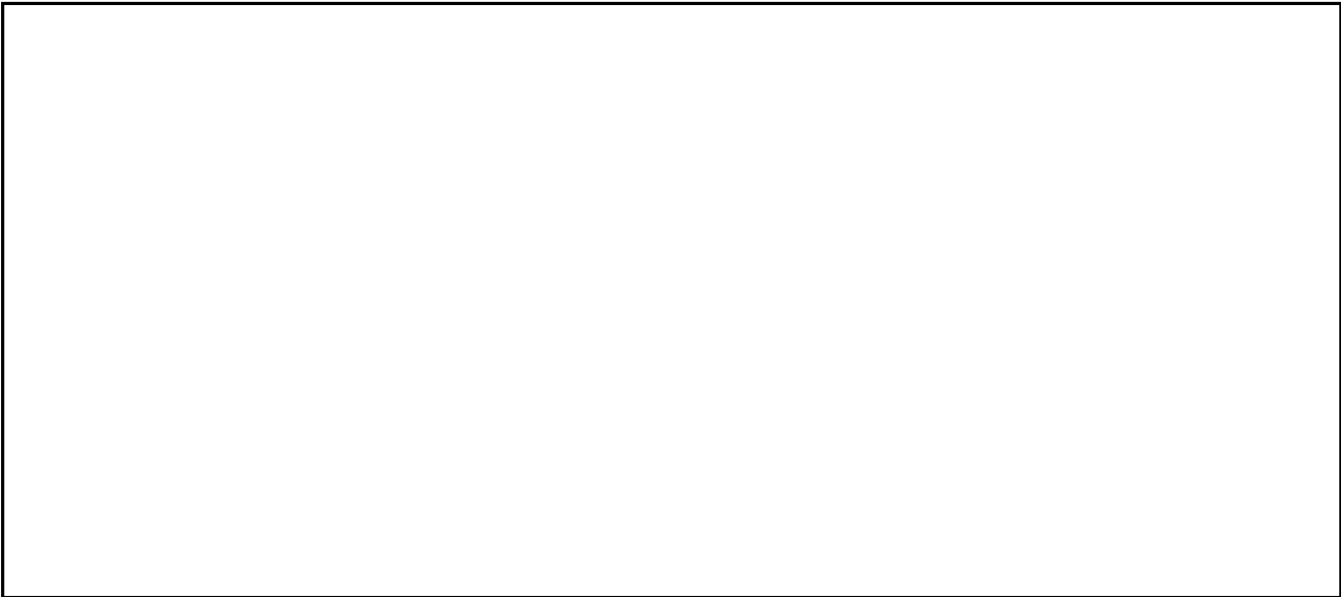
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25X1D



II. GENERAL

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1. (carrier requalification) was scheduled for September 22 and 23 1967. Multiple MLP's were flown at Edwards preparing for the requalifications. It was subsequently cancelled due to the temporary grounding of U-2 aircraft during the only time period that the carrier could be made available.

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RESEARCH & DEVELOPMENT, OSA

QUARTERLY PROGRAM PROGRESS REPORT

(1 July 1967 - 30 September 1967)

I. A visit was made by [redacted] D/R&D/OSA representative [redacted] PSD/D/R&D/OSA, to review cryogenic fueled air breathing aircraft propulsion systems with Pratt & Whitney Aircraft at the Florida Research & Development Center. The status of Pratt & Whitney's R&D efforts in methane fueled engines was reviewed. The [redacted] concept and efforts required to convert the J-58 engine to hydrogen fuel for application to [redacted] was discussed.

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II. Unfunded general studies of high altitude propulsion system concepts initiated on earlier visits to FRDC were reviewed including application of the J-58 engine to high altitude, subsonic missions through a modified compressor design and elimination of the afterburner.

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[redacted]

IV. D/R&D/OSA received a proposal from the [redacted] [redacted] for reducing the induced drag of a high-altitude, sub-sonic aircraft. At the request of the D/NRO, the proposal and supporting data were forwarded to his office.

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V. D/R&D/OSA personnel accompanied ORD [redacted] to provide technical support for ORD drone projects.

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VI. Dr. Flax was briefed on general R&D items proposed for the FY 68 budget.

VII. Messrs. Fischer and Sorrell, Bureau of the Budget, were briefed on the technical aspects of general R&D projects.

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