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[redacted]

19 March 1962

STATUS OF ULTRA SECRET INTELLIGENCE COLLECTION SYSTEMS

OXCART

1. The objective of the OXCART program is to obtain a reconnaissance aircraft capable of collecting photographic data of technical intelligence quality. The aircraft characteristics are sufficiently advanced so as to enable its use on a covert basis and to ensure its minimum vulnerability to enemy countermeasures.

2. The initially delivered OXCART airframe is expected to fly for the first time within the next month. These initial flights will be made with a substitute engine (J-75) and will take place about one year later than forecast when the program was begun in September 1960. The first flyable version of the intended J-58 engine is scheduled for June and the first fully rated engine in August of this year. Camera payloads and other important system components, although late in terms of original expectations, are still well meshed with availability of aircraft.

[redacted]

4. The most difficult problems which have contributed to delays totalling about one year in the first flight and to a slow production rate thereafter are the use of new and untried materials in the engine, but more importantly in the airframe. Not only the contractors who are building the airframe and engine, but also all the metal processors including the producers of the raw metal have had to devise methods to roll, forge, cast, design and fabricate parts from the new metals going

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into airframe and engine. There was and is no known alternative to these difficult processes if the necessary system performance is to be achieved.

5. While it is true that as of this writing the engine sets the pace for the OXCART program, it appears that the airframe will become the limiting factor by next fall. The most recent forecast of the rate at which airframes can be constructed from now on indicates that no more than five aircraft could be available by the end of 1962 and that the total of ten now on order could not be delivered before the summer of 1963.

6. To achieve a state of operational readiness it is necessary to prove by flight test experience the excellence, reliability and integrity of airframe, engine, payloads, and associated system components, as well as to train crews and perfect operational procedures. In addition to these functions which are common to all reconnaissance aircraft developments, in the OXCART program it will be necessary to assess by ground and flight tests the success achieved with anti-radar measures and then to develop operational techniques which exploit this feature. Given only a limited number of aircraft, these interests become somewhat competitive for aircraft flying time. Additionally it would be unduly optimistic not to foresee and provide for the likelihood of technical difficulties in the real life environment of actual flight.

7. Examples of such further problems are:

a. Loss of one of the very first few experimental test aircraft could delay the attaining of operational readiness by several months.

b. Slow progress in perfection of engine and aircraft hydraulic pumps and engine control mechanisms is also a source of potential delay.

c. Improper sealing of aircraft fuel tanks against leakage at the high temperatures of high speed flight is presently causing serious difficulties.

d. Although the new cameras have been successful thus far in initial tests in existing aircraft, perfecting their performance and reliability under the severe environment of the new aircraft may present new and difficult problems.

SECRET

e. Finally, a potential but non-technical source of delay is the possibility of a strike at the airframe manufacturer's plant. Premature action by the government to forestall this eventuality could be more damaging than helpful in that it is still uncertain that this manufacturer will become the union target. This situation is under continuous scrutiny.

8. The following measures, which we expect to add [redacted] to the program in FY 62-63, have been undertaken to cope with [redacted] potential difficulties:

a. The military versions of the aircraft have been deferred in order that the full number of reconnaissance vehicles will be available as soon as possible.

b. The airframe contractor has been authorized additional funds in excess of [redacted] dollars to determine ways and means of improving the productivity of the airframe. He will increase the manufacturing staff by 500 men now and ultimately by 860 to establish duplicate manufacturing and assembly capacity. The manufacturing and assembly areas are also being consolidated into one location from the several scattered facilities used for the first aircraft.

c. The engine and airframe contractors are being supplied with additional testing and production facilities and alternative avenues are being explored to obtain particularly difficult or critical items including pumps, valves, sealing compounds, and other accessories. Such efforts are focused more at immediate rather than long term payoffs.

d. An accelerated flight test phase has been planned from the outset of the OXCART program. Very careful attention will be paid to obtain greatest over-all benefit from each and every hour of flight test.

[redacted]

7. Both internally in government and particularly in the pace-setting industrial organizations, a special briefing program has been instituted to re-emphasize strongly the national importance of the OXCART program and to reiterate the government's continuing offer to assist each contractor in solving his peculiar problems.

8. While the preceding remarks portray a state of serious difficulty, it is appropriate to state that such problems were not unforeseen and must be expected in advanced developments of this nature which penetrate the frontiers of the state of the art. The present program schedule calls for initial operational status by summer 1963, however it would be unrealistic not to be prepared for some additional slippage in a program of this nature.

[redacted]

[redacted]

[redacted]

[redacted]

5. It appears possible and desirable to obtain photography at an early date with resolution betwe[redacted] CORONA-M/201 (E-6) performance, and action is being [redacted]gly. Such a system will consist of a greatly simplified version of the discontinued 101 B (E-5) project, using the same optical system, and much of the hardware already produced, but with film being recovered in the DISCOVERER type re-entry capsule. The payload will be boosted by a THOR/AGENA, with the THOR augmented by three X6-33 solid rocket boosters (called THORAD JR) which will be dropped at about 60 seconds after launch. Such a project will have a four-day life and should produce photography with ground resolution of from 4.5 to 5.5 feet at altitudes of 110-130 nautical miles. This system, called LANYARD, can fly in January 1963. LANYARD payloads will be interchangeable with CORONA-M and ARGON payloads. By providing for six additional CORONA-M payloads and five LANYARD payloads (possible by using existing items from 101 B), as many as three LANYARD flights can be flown [redacted] for quasi-tactical objectives or ARGON flights for mapping. Costs for six additional CORONA-M payloads will require approximately [redacted] in FY 62. LANYARD will require the THORAD JR solid boosters [redacted] estimates indicate will require development funds in the order o[redacted]

[redacted] Such procurement can be accomplished on a fixed price basis. The [redacted] execution of a five-flight LANYARD program will be about [redacted] of which approximately [redacted] will be required in FY [redacted].