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OXC-0763

9 AUG 1960

MEMORANDUM FOR: Director, Bureau of the Budget

SUBJECT : Possibility of Duplication between Project OXCART and Other Aerial Reconnaissance Projects

1. This paper examines the possibility stated above and presents the views of the U. S. Air Force and Central Intelligence Agency that, by reasons of expected operational lifetimes and technical performance, there is no duplication between Project OXCART and other current programs in aerial reconnaissance.

2. Project OXCART evolved from an extensive series of feasibility investigations into aircraft and engine design possibilities, photographic systems, and associated air and ground equipment. The physical vulnerability of this general class of aerial reconnaissance systems as well as the over-all need for and value of the kind of intelligence information thereby obtained was scrutinized and evaluated at the same time. All of these studies and assessments were presented in several meetings to a scientific advisory panel consisting of Drs. [redacted] This group had been convened at the request of Dr. James Killian, the then Scientific Advisor to the President, together with the Secretary of Defense. The Assistant Secretaries for Research and Development of the Air Force and Navy were present also at the deliberations of this panel.

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3. The findings of the panel, as presented to and favorably received by the President in November 1958 and again in August 1959 were, in essence, that there would continue to be a great need with highest priority for photography of USSR territory taken at times and places of our choosing, and of a quality comparable with that obtained from the U-2 program; that an aircraft designed to exploit recent significant achievements in radar camouflage was feasible and could be built to fly sufficiently long distances and at such high speeds and altitudes that its physical vulnerability would be minimum.

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4. The final configuration of Project OXCART is a piloted aircraft capable of cruising over 4,000 miles at a speed greater than three times the speed of sound and at altitudes between 85,000 and 95,000 feet. In actual operation this aircraft would depart from a remote airbase in the U.S., cruise to a rendezvous for refueling several hundred miles from the perimeter of denied territory, proceed on a four thousand mile reconnaissance mission, repeat the refueling and return to the original operating base. The combination of high speed, high altitude, and low radar echo make practically impossible any accurate radar tracking and successful attack against this aircraft by presently known weapons.

5. The OXCART program is expected to produce photographic data improved in both quantity and quality over those obtained via the U-2 project. With the use of newly designed aerial cameras it is expected that a resolution of about 1 1/2 feet on the ground will be obtained under the usually encountered visual conditions. Similar conditions produce ground resolutions of about 2 1/4 feet with the U-2 camera system. Under ideal conditions the new cameras are expected to produce a ground resolution of about one foot. In terms of the photo interpreter who extracts the intelligence information from such photographs it will be possible to differentiate and identify objects whose dimensions are about double these numbers. Such refined resolution is necessary for discernment of exact physical characteristics of individual aircraft, missiles erected on launch pads, individual industrial plants, and technical intelligence of various types.

6. In reviewing the possible vehicle and photographic system combinations theoretically able to conduct reconnaissance of this nature the list of probables reduces to the following for reasons such as insufficient performance, high physical vulnerability, political unacceptability, etc.

Project DISCOVERER
Project SAMOS
Project TIROS
Project DYNASOAR
B-70

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7. Project OXCART is expected to begin tests as a complete system in the summer of next year and to be operationally ready by the spring of 1962 if not sooner.

8. Although Project DISCOVERER is now in the test phase, the operational capability remains to be demonstrated. It is not now reasonable to look for useful results from this project before early autumn of this year. In any event the photographic resolution expected here is about twenty times poorer than that expected from Project OXCART. This is not to say that such relatively poorer photographic results are not worthwhile. It is not necessary nor feasible to photograph each of the many millions of square miles of denied territory at extremely fine resolution. This would require a uselessly large number of operational passes. Much more gross performance is adequate to provide information on characteristics of cities, large military areas, industrial complexes, transportation networks and to locate places to which a more refined system such as OXCART need be directed.

9. The initial launches of Project SAMOS are scheduled for this fall. In these first instances the camera system was designed to obtain broad coverage at consequent expense in resolution and an electronic data transmission rather than physical recovery of film will be used with further degrading effect. The ground resolution of the early SAMOS systems is estimated to be about one hundred times poorer than OXCART.

10. Later developments including physical recovery are intended to produce higher quality results but ranked against OXCART photography, these are expected to be some five to ten times poorer in resolution.

11. Project TIROS produces data useful for weather analysis and prediction. As such, the emphasis is on extremely broad photographic coverage. Consequently, the resolution of the photographic data transmission system is in the order of one thousand times poorer than Project OXCART.

12. Project DYNASOAR may be equippable with a photographic system comparable to OXCART; however, the feasibility of this is presently unknown. In any event, an operational system cannot be expected to be ready prior to 1966 or 1967.

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13. The B-70 aircraft could no doubt carry camera equipment to produce results equal to OXCART. However, even if this project were re-accelerated, the B-70 could not be operationally ready for at least two or three years following the expected operation of OXCART, and, additionally, use of the B-70 in this role equates to having employed B-52's in place of the U-2.

14. Lastly, there is no known aircraft as close to first flight as the OXCART vehicle which is expected to combine high speed, long range, and high altitude to this degree. This aircraft has been evaluated by the U.S. Air Force in the role of long range interceptor and found satisfactory. The OXCART development will allow the Air Force to procure such a weapon quickly and at minimum cost should a firm need arise in the future.

[redacted]

JOSEPH V. CHARYK
Under Secretary
of the Air Force

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RICHARD M. BISSELL, JR.
Deputy Director (Plans)
Central Intelligence Agency

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