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25 April 1958

MEMORANDUM FOR: Director of Operations

SUBJECT: Operational Procedures and Coordination with
Headquarters USAF and SAC

1. Reference our conversation on 15 April 1958 concerning operational procedures. Operational procedures used in the planning of AQUATONE flights have been reviewed. In addition, the procedures for coordinating AQUATONE mission planning with Headquarters USAF and SAC have been reviewed. The following represents the results of the review.

a. Launching two aircraft simultaneously to insure completion of a mission should the primary aircraft abort, or to serve as a decoy.

(1) It is often considered good operational procedure to have a second aircraft follow or fly with the primary mission aircraft to serve as backup in case of an abort. However, the U-2 has an outstanding record of reliability. This reliability is much greater than that of operational and/or combat type aircraft. In two years of operations, involving approximately twenty-five actual overflight missions, there has been only one abort. This abort was experienced on the latter part of the mission to Baku and resulted in a relatively small loss of coverage. The cause of this abort was an inverter malfunction. Camera malfunctions have occurred during the course of operational missions. However, to minimize the possibility of a pilot continuing on a mission with inoperative or faulty camera equipment, a series of indicator lights is incorporated in the system to indicate proper operation of the camera film transport and shutter; two of the paramount sources of potential trouble in any aerial camera system. In addition, detailed check lists which cover all aspects of camera operation are completed during pre-flight. The in-flight indicator system, comprehensive pre-flight check lists and high experience level of camera maintenance personnel account for the high equipment reliability rates realized to date. Camera reliability is estimated at approximately ninety percent successful on past operational missions. In conjunction with a consideration of reliability of equipment, it should be noted that the quality of AQUATONE reconnaissance photography greatly surpasses that obtained on previous operational reconnaissance programs. Processing of AQUATONE products is accomplished under optimum laboratory conditions, consequently, the high quality obtained in the original negative is retained, which increases the intelligence exploitation potential of this photography.

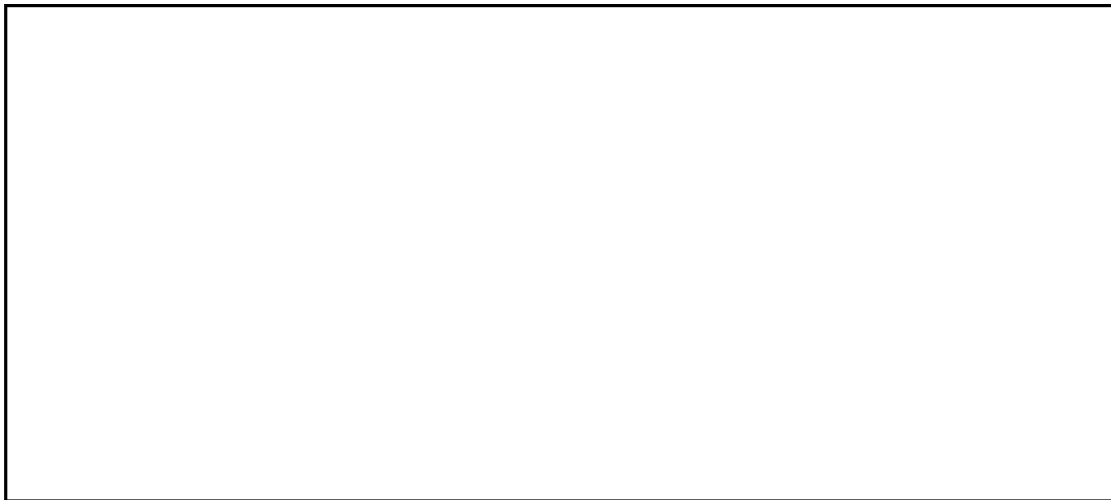
USAF review(s) completed.

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b. Background, malfunctions, and results of Mission 6011.

(1) Mission 6011 was originally planned as a canned mission to cover the primary target of Ukrainia. This mission as originally proposed was routed from Atsugi to the southeast tip of Korea, into China, southwest of Dairen, thence north through China, making penetration into the USSR in the vicinity of Ukrainia. Penetration overflight time was approximately 45 minutes with exit from USSR, back into China and return to Atsugi on approximately the same route as entry.

(2) Based on additional requirements, the proposed mission was altered to return through North Korea on generally a north-south heading from the Yalu River to the northern tip of South Korea.

(3) Later on, the mission plan was changed to exclude entry or exit through either North Korea or China as it was not desired to involve a third country. This was based on the protest which resulted from the first eight missions in the summer of 1956. The decision was made to enter and exit in the Sea of Japan outside the presumed enemy radar on headings which would indicate the aircraft was operating from South Korea, thus disguising the actual operation base in Japan. This is thought to have been successful, since the protest notes do not state or imply that the violating aircraft was operating from Japan.

(4) The mission was planned to obtain maximum photographic coverage consistent with the weather forecast and film available. This explains one reason why the mission was flown over the coast line from a point approximately one hundred miles north of Vladivostok to a point east of Komsomolsk rather than staying off shore a considerable distance. In addition, it was felt that the U-2

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would have provided more radar reflection flying off shore 40 or 50 miles than it would be by flying over the coastline. Mission results indicate that the results would have been the same as regards the Russians' ability to pick us up. In addition, the aircraft would have been under surveillance by both the radar stations on the mainland, as well as those on the Sakhalin peninsula.

(5) Attached as enclosure, is a graphic summary of the route as flown and indicates suitable weather encountered, as well as equipment performance. The tracker malfunctioned early in the mission. This malfunction has been traced to a new operating procedure which was to turn the tracker on approximately thirty minutes after take off to avoid photographing the launch base and surrounding geography. It is believed that the delayed turn on of the tracker and the resultant lack of heat due to equipment operation resulted in freezing of the film and may have contributed to subsequent failure. However, since the tracker camera is utilized primarily for orienting photography obtained with primary cameras, and since primary cameras operated with complete success, there was little loss of any significant intelligence information due to this malfunction.

(6) The malfunction in System III was only a partial failure of two of the three channels and was caused by a break in the antenna lead to channels 2 and 3 which occurred approximately one third of the way through the mission. This is the only known failure of System III on operational missions.

(7) Both the A-2 camera (primary mission capability) and the System I operated 100% and obtained excellent results.

c. Coordinated Mission planning.

(1) Mission 6011 track was reviewed by at least one or more liaison officers from the Reconnaissance Section of Headquarters Air Force at least two or three days before it was flown. No objection to the route was indicated.

(2) An objection was voiced by SAC. This was in regard to our procedure for [redacted] on missions involving RAINBOW aircraft. [redacted]

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d. Procedures for advance notification and coordination with Headquarters USAF and SAC.

(1) On all penetration and peripheral missions, the Reconnaissance Section at Headquarters USAF is notified at least twelve hours in advance. One of the cleared officers from that section personally comes to our Control Room and is briefed on each mission. They are given the route to be flown by coordinates, which includes points of penetration and exit. The reconnaissance Section then passes all of this information to SAC not later than six to eight hours before the mission takes off, usually earlier. If the Reconnaissance Section knows of a SAC mission which may conflict with our proposed mission, they advise SAC immediately.

(2) The reconnaissance Section reviews our proposed routes primarily for glaring errors as they realize minor points of routing are either dictated by requirements or are matters of individual opinion. At no time has USAF or SAC objected to any of our planning. It is understood that Gen. Preston and, in some cases, Gen. Turner or Gen. LeMay, review every mission plan in sufficient time to voice a timely objection. A working arrangement exists that if objection is taken by USAF, they would notify us immediately at the working level through our established liaison people.

(3) At one time, Gen. Terrell, DCSO, SAC, thought that SAC should have a liaison officer physically located in Project Operations to aid in planning. Subsequent discussions with the officers of the Recon Section, Hqs, USAF, satisfied Gen. Terrell that existing procedures for coordination between the Project, Headquarters USAF, and SAC were adequate and, therefore, agreed, that a SAC liaison officer was not necessary.

(4) Close liaison has been maintained with SAC over the past two years, particularly on the subject of ROB. In fact, the Project operates on SAC ROB information which is received through Headquarters USAF. In the case of the first Klyuchi mission, and on the basis of SAC's recommendations, we launched from Eielson rather than Atsugi. This was done in an attempt to avoid radar detection. SOP for all missions is to find soft spots in the radar defenses around the USSR. Except for the missions from [redacted] findings have not been sufficiently consistent to show any soft spots through which an aircraft

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may probably penetrate undetected. Full benefit has been taken of SAC experience in trying to find soft spots. With the increased numbers and types of Russian radars, as well as the obvious increase in efficiency of their operation, it is Operations' opinion that no matter how mission 6011 had been planned, it would have been detected and tracked virtually the same as history now shows it was.

2. Full consideration is given to all aspects of operational planning to include taking advantage of the experience which Headquarters USAF and SAC can provide, as well as effective and timely coordination with both Headquarters. Further, it is felt that the reliability and performance record of our aircraft and collection equipment is probably unequalled in the history of reconnaissance. Therefore, no major change to operating techniques is considered necessary.

3. Although AQUATONE operations have been exceptionally successful to date, efforts to improve reliability and effectiveness are being continued.



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Deputy Director Operations

Att:

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