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History of the Office of Special Activities
Chapters XVIII and XIX

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From Inception to 1969

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~~TOP SECRET~~

CHAPTER XVIII. AMALGAMATION OF AIR ACTIVITIES, 1959-1962

Because of the many and diverse air activities carried on during the period when all Agency air activities were amalgamated under the Development Projects Division, a very broad-brush treatment has been given to this section. It is understood that a full-time historian is writing a comprehensive history of SOD which will include the early history of SOD projects (including STPOLLY).

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DEVELOPMENT PROJECTS DIVISION
Functional Roster - 1 January 1961

Office of the Chief: Col. Stanley W. Beerli, Acting Chief
Mr. John N. McMahon, Executive Officer
Mr. James A. Cunningham, Jr., Asst. Chief
Mr. James Q. Reber, Special Requirements Staff
Mr. Eugene P. Kiefer, Special Asst. for Technical Analysis

Operations Branch: Lt. Col. Charles F. Quinette, Chief
[redacted]
Maj. A. J. Matthias, FE Air Ops
[redacted]

Administrative Branch:
[redacted]
Mr. William J. Cotter, Chief of Security
[redacted]

Materiel Branch: [redacted]
Lt. Col. Thomas Davis, Deputy Chief

Development Branch: Mr. John Parangosky, Chief

Air Proprietary Branch:
[redacted]

Contracts Staff:

* Lt. Col. George Gaines, Chief, on temporary assignment to JMCLEAR.
** [redacted] appointed Chief later in January 1961.

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CHAPTER XVIII. AMALGAMATION OF AIR ACTIVITIES

Early Proposal - 1956

In the fall of 1956, during the stand-down of the U-2 following the Soviet protest of the July overflights, an approach to higher level was being planned in order to seek guidance on the future of the U-2 project. In a memorandum to the DCI, the Project Director called attention to the fact that Agency policy was opposed to maintaining such a capability in being on a contingency basis for an indefinite period. He said, however:

> "Quite apart from /the U-2 program/...I believe a case could be made for reversing this Agency policy and for consolidating all of our air operations into a permanent organization considerably more self-contained than that represented by our Air Sections overseas and the Air Maritime Division at Headquarters. It might well be easier to maintain a capability in being, much of the time on a standby basis but prepared for recurrent situations in which it could be used, with such a consolidated organization which was designed to be permanent, than with the present type of highly temporary arrangement. Were we to move down this road, the case for maintaining the U-2 capability through the useful life of the equipment would be much stronger than stated above." 1/

Mr. Bissell later discussed with General Cabell the matter of having two Headquarters units deploying overseas detachments engaged in essentially the same type of work and the possibility of an amalgamation to avoid duplication of equipment, staff and support costs. The idea was also discussed with the Acting DDP (Mr. Helms) who looked favorably

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1/ ~~TS~~-158408, p. 6, 25 Sept. 1956. Memo to DCI from R. M. Bissell, Jr.

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on such a plan. At the beginning of 1957 these discussions had been closely held within top levels since the control of air assets was a rather sensitive question with the DD/P area divisions concerned.

In March 1957, Mr. James Cunningham set out for Mr. Bissell

some pertinent observations, in view of the possible merger, on some problem areas which should be considered.

"... You should be aware that normally Air Maritime Division works within the framework of the rules and regulations of the Clandestine Service in the administration of its affairs, and these rules are much more restrictive and well defined than those under which we have been operating... especially as applies to procurement of materiel.

"AMD goes by the DD/P book in conduct of their fiscal affairs, in budgeting and expending funds. AMD does not have its own budget or finance shop but relies wholly on the Administrative Branch of the DDP/PP Staff in such matters.

"AMD's table of organization is so set up that a request for their T/O made recently to Mr. Helms produced only 28 positions in Headquarters. The balance of their positions are buried within several area divisions, e.g., EE Division has [redacted] for AMD.

"Travel is handled through Central Processing Branch, subject to full coordination. Communications are through regular channels and subject to interdivisional coordination.

"I do not argue that we should remove AMD from any and all controls now being exercised by DD/P since such coordination and exchange of plans is necessary in the conduct of normal AMD air support missions, but do feel projects and special programs, e.g., JBINCLUDE (the P2V aircraft and equipment

procurement), should be removed from hampering by administrative or operational restrictions that slow them down.

"Whether Mr. Wisner would agree to an arrangement where AMD would be run under the 'double standard' with one set of rules for normal air support and another for projects and programs, I do not know. But unless there is some latitude in the matters I enumerated, I foresee stumbling blocks in the road of close coordination of our several activities, and in implementing some of your plans as rapidly as you may wish." 1/

On 3 April 1957, Mr. Bissell announced to the AQUATONE Project Staff that the absorption by AQUATONE of headquarters support responsibility for the P2V program and possibly some amalgamation in the field was being considered. The first working level meeting within the staff held 15 April 1957 brought out the fact that the DDCI recommended all AMD activities (with the exception of maritime operations) be included. The new division resulting would probably be called the Air Operations Division and be under the direction of Mr. Bissell while he remained Special Assistant to the Director, and subsequently become a major division of the DD/P. Col. Gibbs expressed the hope to General Cabell that the division would not be buried within the DD/P and cut off from direct access to the DDCI. General Cabell replied that with a merger

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1/ SAPC-14123, 22 March 1957. Memo to Proj Director from D/Admin.

such as he contemplated, AQUATONE should operate in a more routine manner and would no longer need high priority treatment.

The Project Director of Operations (Col. Mixson), reported his general conclusion that AMD was doing nothing that could not be immediately assimilated by AQUATONE; that AMD was hamstrung as presently organized. Its responsibilities included: direct supervision of the P2V program; responsibility for a dormant pilot-recruiting program; coordination in a technical advisory capacity of overflight operations; air support units in Germany and Okinawa; a balloon capability; and jurisdiction over a two-aircraft shuttle operation from Washington National Airport to

[redacted] 50X1, E.O.13526

On the materiel side, Lt. Col. William Wilson reported that the proposed amalgamation would probably give no savings in construction or spares handling but a small savings in materiel personnel if the Aircraft Maintenance Support Division, Office of Logistics, were included. The security outlook for a merger appeared to be slightly unfavorable for the short term, but desirable over the long run.

A paper was presented to Mr. Bissell in early May incorporating the views of the AQUATONE staff on the pro's and con's of the proposed merger, and there the matter rested until August 1957. Then, in an effort to obtain a decision to merge or not to merge, the AQUATONE

staff suggested to Mr. Bissell that General Cabell be asked for a directive to perform a full-blown study upon which a decision could be based. Mr. Bissell opposed returning to General Cabell other than with a firm recommendation to him on the course of action to be taken to dispose of the matter. The need to consider an amalgamation for the purpose of preserving the U-2 capability on standby no longer applied, since high-level approval had been obtained for continuing AQUATONE overflights and Detachment B was at that time busily engaged in a series of highly successful overflights of Central Siberia. Mr. Bissell had meanwhile reached a rather negative conclusion regarding the wisdom of a complete merger due to his lack of enthusiasm for the AMD programs and the manner in which they were organized. His specific dislikes were these:

"a. AMD itself, as a rather lowly component of the Clandestine Service, is deeply enmeshed in Agency bureaucracy.

"b. Actual air operations are not controlled by AMD but by Station Chiefs overseas, hence a merger with AMD alone would provide no control over air operations but a merger taking in the Air Sections overseas would raise major issues with the Station Chiefs concerned.

"c. Relationships between the Agency and the Air Force on all matters having to do with non-AQUATONE air operations are murky and unsatisfactory.

"d. I believe that the P2V program is fundamentally ill-conceived on technical grounds. I have no confidence in the

safety of the aircraft from interception and I am convinced that we will never be allowed to use them except perhaps in trifling operations (over such places as Albania) in the present political climate.

"In short, my feeling is that from the selfish point of view of our own operation, we should not wish to be tainted by any involvement in AMD's relationship to the rest of the Agency, its relationship to the Air Force, or its technical programs... I am at least somewhat open-minded on the above matters and your report may serve to change my mind..." 1/

It was more than a year before Mr. Bissell was persuaded that a merger of all air assets could be beneficially effected. Meanwhile the following events had taken place: (1) Effective 7 July 1958 the air operations of AMD were removed from the PP Staff and assigned to the newly established "Operational Services/DDP" for administration and coordination. (2) Mr. Bissell was appointed by the DCI to succeed Mr. Wisner as Deputy Director for Plans effective 1 January 1959. Hence it made more sense now for him to go along with the amalgamation of all Agency air assets since in his new position he would be responsible to the Director for all air operations.

Amalgamation Effected

The merger having been agreed to in principle by all concerned, the "Development Projects Division" was set up within the DD/P area

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1/ SAPC-18580, 20 August 1957. Memo for Chairman, Planning Group, PCS/DCI, from Project Director.

incorporating along with the U-2 project and its ancillary activities the Air Division/OPSER and the Aircraft Maintenance Support Division of the Office of Logistics. The effective date was 16 February 1959; however, the sorting out period and the final agreement on lines of command took the balance of the year to accomplish. The following principal events took place meanwhile:

Tab 6. The relations with Headquarters USAF/AFXPD, the office which administered Air Force support to CIA (other than AQUATONE) under the agreement referred to as "Tab 6", were the subject of meetings and discussions at all levels up to and including the Office of Secretary of Defense/Special Operations (Col. Edwin Lansdale). A beginning was made toward reducing the points of contact (and friction). There had been as many as seventy Agency people cleared to deal directly with the Air Force on support problems, making for much confusion and duplication of effort. There was a slow improvement in the previously most unhappy relations with AFXPD, but as long as Lt. Col. Prouty remained in charge of that office, a little of the built-in friction continued to show itself from time to time.

Organization Guidelines. On 12 May 1959 the DD/P set forth guidelines for the organization and control of CIA air operations and outlined the responsibilities and authorities of DPD and the area divisions concerned.

This memorandum was addressed to the A/DDP, Chiefs of PP, EE, FE and DP Divisions, and the text is included as Annex 115. The control arrangements set forth therein, according to Mr. Bissell, were not intended as an inflexible set of rules from which no appeal might be made, but were based on a substantial body of experience in air operations and other fields of technical endeavor and were not to be changed unless they demonstrably failed to serve the purpose for which designed.

Relocation of the EAOB. Plans for the relocation of the assets of the European Air Operations Base at Wiesbaden to a suitable base in the ZI were pursued with the Air Force. After investigating available sites, Headquarters, USAF, reported that Air Materiel Command did not wish any of their bases to become involved with Agency projects, therefore it was recommended that the detachment be set up in available space at the Air Proving Ground Command at Eglin Air Force Base, Florida, where experienced electronics maintenance and supply were available for servicing the detachment's aircraft and Elint collection systems. When Gen. Cabell was informed of this, his reaction, as described by Mr. Cunningham, was as follows:

> "General Cabell said it sounded to him as though this line of reasoning was not to the point, and that instead of pivoting the eventual location of the U.S. detachment on factors like electronics maintenance, the air transport capability of the

> detachment should in his view govern where it was set down. He envisioned the bulk of our requirements for an air capability to respond to international disturbances would center on our ability to pick up and deliver men and materiel and that it made the best kind of sense to him to have the transport aircraft near the depot where the things to be carried would be located... He felt Kelly Air Force Base (and depot) would be an ideal location. He then said, when told that our next move looked like a survey trip to Eglin, that he would insist that any such survey be accompanied by a like survey of Kelly, unless the Air Force could give him 'about a hundred good Air Force reasons why Kelly should be eliminated from consideration.' I told Gen. Cabell I felt cover would be less of a problem in Eglin than anywhere in Texas, but he did not agree." 1/

With the choice narrowed to Kelly or Eglin, senior Air Force officers of the Operations and Plans Division, Headquarters USAF, reviewed the study which had been made and recommended in a letter to Gen. Cabell that Eglin be accepted. The DPD staff supported the choice and Gen. Cabell finally gave his approval on 25 May 1959. On 5 June, AFXPD was requested to activate a unit at APGC to which the officers and men attached to the EAOB (7405th Support Group) could be assigned. This was accomplished, the EAOB assets were flown or airlifted to the ZI and on 20 August 1959 communications were opened between DPD Headquarters (5th Floor, 1717 H Street) and the 1045th

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1/ DPD-3287-59, 20 May 1959. Memo for Record, James A. Cunningham, Jr.

Operations Evaluation and Training Group, Detachment 1, at Eglin via the HBJAYWALK channel. The first commanding officer of the detachment was Col. Theodore Erb who had moved with the group from Wiesbaden.

Detachment 1 was ostensibly a normal Air Force unit on an Air Force base, and detachment business was conducted in accordance with USAF and/or Agency directives. The Commander, APGC, at Eglin provided base and logistical support normally accorded a tenant unit on a reimbursable basis in accordance with Tab 6. Communications support was furnished by CIA. The Detachment Commander's directive was: (1) To maintain personnel, aircraft and related equipment in a high state of operational readiness; (2) perform clandestine air missions as directed; (3) airlift sensitive cargo and/or personnel as directed by Headquarters or as requested by Chiefs of Stations/Bases within his geographic area of operation; and (4) to accomplish other tasks as directed.

[redacted]

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[redacted]

Stockpiling. A combat air asset stockpiling program was proposed by the DD/P and approved by the DDCI on 22 May 1959, to include: (1) DOD stockpiling of 12 AD's; (2) eight B-26's to be retained temporarily but no more acquired from USAF; (3) P2V stockpiling action to await the achievement of a more acceptable status of that aircraft; and (4) the F-86 to be accepted as the jet component for stockpiling. (Subsequently, when DPD was called on for combat air support in Southeast Asia—Laos—and in the Cuban operations of 1960-1961, it was the B-26 which was leaned on most heavily and as of September 1961 there were 20 of them in the Agency inventory.)

DPD Assumption of Far East Air Support

Take-over by the Development Projects Division of Far East air support was not formalized until 24 November 1959 when a joint agreement

was signed by Chief, FE (then Mr. Desmond FitzGerald), and Acting Chief, DPD, Col. William Burke, and approved by the DD/P. (See Annex 116 for text.) While the negotiations with FE were going on, DPD was slowly phasing into the management of air support for various Far East projects already in being or planned for the future.

Planning for the Tibetan program (STBARNUM) was given the highest priority due to heavy political pressure resulting from the Chicom suppression of the Tibetan revolt in March 1959. Also the joint program with the Chinese Nationalist Air Force (STPOLLY) for Psych/Elint overflights of the China Mainland, was continuing and increasing in number of flights, averaging approximately ten per month and combining leaflet and other drops with collection of Chicom radar order of battle.

In April 1959, the Ad Hoc Requirements Committee came to the tentative conclusion that the frequency of STPOLLY missions primarily for Elint collection was excessive in terms of requirements for Chicom air defense information. On an inspection trip to the Far East between 2 and 17 May 1959, principally in the role of Chief of the DPD Special Requirements Staff, Mr. James Q. Reber reported that the

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placed great emphasis on the continuance of STPOLLY operations at a reasonable rate

because (1) the GRC considered this project a symbol of carrying the fight to the Chinese Communists (even though, Mr. Reber said, there was no way to measure the effect of the drops); (2) the maintenance of the program served as an important, if not critical, element in the status of [redacted] with the GRC, [redacted] and (3) the maintenance, exercise and perfection of this capability provided a vital collection tool for any future crisis situations.

At that moment no P2V aircraft had yet been lost (although there was evidence of increasing air intercept capability by the Chicoms). The CAF pilots of the 34th Squadron were well trained and well motivated. The principal recommendations resulting from the Reber visit to Taiwan related to (1) improved targeting to cover first priority Elint targets, achieving the psychological/political missions while enroute to those targets, and (2) improvement in the read-out capability and concurrent development of read-out equipment along with the collection systems.

On 29 May 1959, the first shoot-down of a P2V7 occurred and DPD recommended, in view of the air intercept hazard, that overflights be discontinued until adequate countermeasures equipment was installed. The Chief, Far East Division, agreed provided the equipment could be

installed in approximately 30 days. He noted at the same time that with regard to priority targets, State had given permission to overfly all of China, including Manchuria.

A visit was made by the Deputy Chief of Operations, DPD, (Lt. Col. C. F. Quinette) in September 1959 to Honolulu, Tokyo, Okinawa, and Taiwan to investigate the ramifications of DPD take-over of Far East air support. PACAF had requested Headquarters USAF to arrange meetings for the purpose of standardizing all Tab 6 support items and procedures and the Chief of AFXPD (Lt. Col. Prouty) accompanied Lt. Col. Quinette to PACAF, 13th Air Force, Fifth Air Force, and Pacific Air Materiel Headquarters in order to familiarize all points of contact in these commands with the Tab 6 procedures and work out means of expediting support to Agency Far East projects as well as safeguarding their security.

As a result of his visit to Taiwan, Lt. Col. Quinette recommended that STPOLLY be made a separate detachment under DPD for a smoother operation, with budgeting and personnel slotting to be the responsibility of DPD rather than FE Division, and support such as housing, cover and common support items (such as vehicles) to be provided by

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(On 4 January 1960

the DD/P approved transferring responsibility for STPOLLY financial management and personnel assignments to Development Projects Division.)

The conversion of the STPOLLY program to P2V aircraft and the phase-out of B-26's and B-17's was discussed by Lt. Col. Quinette with 50X1, E.O.13526 USAF officers during the September 1959 trip to Taiwan. The problem of acquiring spares and maintenance for these types of aircraft had made it advisable to withdraw them from the operational inventory at Hsinchu. There was a question at the time of possibly destroying the aircraft, but instead in January 1960 they were put in storage at the Air Asia facility at Tainan, Taiwan (with the exception of the one dual-control B-26 retained at Hsinchu for training) and, as mentioned previously, they were again put to use in Laos and Cuba in 1960-61.

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On 25 March 1960, P2V7 #7101 crashed into a mountain in South Korea while making a ferry flight from Hsinchu to Kunsan. The accident was due to malfunction of navigation equipment and no enemy action was involved. The aircraft and full crew (including the CAF 34th Squadron Commander) were lost. Flights were temporarily suspended but resumed in April when four successful flights dropped agents, leaflets and rice bags. Twenty-seven overflights were completed by STPOLLY in 1960 before the U.S. presidential election and change of administration brought a lull in these operations.

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On 6 March 1961, a briefing was afforded the new Secretary of State, Mr. Dean Rusk, Under Secretary Bowles, Assistant Secretary (FE) Parsons, and Director of Intelligence and Research, Mr. Roger Hilsman, on the TACKLE and STPOLLY projects by General Cabell and Col. Beerli (AC/DPD). The DDCI stressed the value of the low-level STPOLLY mission profile as it related to current SAC studies for Emergency War Plans where SAC doctrine appeared to be moving toward a low altitude penetration system since the introduction of surface-to-air missiles by the Russians.

If approval to resume was obtained, the plan was for something on the order of two missions per month. Secretary Rusk's only question related to the urgency of reactivating the program. A six-month delay was suggested by Mr. Bowles since the President (Mr. Kennedy) was feeling his way on the international scene and needed time to evaluate the new Sino-Soviet posture. General Cabell indicated that STPOLLY had a greater urgency than TACKLE and he believed it more likely to be approved at high level since it had less political sensitivity. Attribution

in the event of an incident would rest entirely on the GRC. On 23 March 1961 the Special Group approved the reinstitution of STPOLLY flights with a review to be made at the end of a month. On 11 May the Special Group gave approval for flights to continue indefinitely, but under the scrutiny and continual evaluation of the Special Group.

At that time the Hsinchu detachment and [redacted] numbered 27 Americans (CIA, USAF, USN and techrep personnel) with Col. James H. Coats in command. There were three complete CAF crews totalling 46 officers and men and 76 other CAF ground support troops, and 83 Chinese civilian employees at Hsinchu Air Base. Seven aircraft were available to the project: four P2V7's, two with complete reconnaissance systems used in ELINT overflights; [redacted]

cargo and airdrop capability; one at Lockheed receiving limited ELINT modification; one C-46 (CAF-owned with CAF markings) used for support; one C-47 leased from Air Asia for support; and one TB-26 (project-owned) used as an instrument trainer.

For the balance of the time during which Project STPOLLY remained under DPD control, the above-described status held pretty well true. Relations between Project personnel and the GRC/CAF were friendly and cooperative.

Detachment 2 Established

By action of the DCI on 30 July 1959, approval was given for a 45-man detachment to be established at Kadena Air Force Base, Okinawa, under Air Force cover, to serve as a central air operations support base for CIA activities in the Far East area. The unit was designated Detachment 2 of the 1045th Operations Evaluation and Training Group, and was manned principally with Air Force personnel assigned to the Agency for duty, plus CIA Security, Communications and Support personnel. The Operations Order setting out the mission of this unit was almost identical to that of Detachment 1 at Eglin. The inventory of operational aircraft at the outset was only two C-118's; however Detachment 2 had available to it the assets of both the Civil Air Transport, on contract, and of the 21st Troop Carrier Squadron at Naha, Okinawa, under Tab 6. Also logistics support in warehousing, packing and crating, and parachute packing was available

The first Commanding Officer of the unit was Maj. Harry C. (Heinie) Aderholt who was an energetic, experienced and capable air operations officer, and who was credited with being largely instrumental in bringing the new team at Kadena to an efficient operating level. Activities of the detachment included reconnaissance, air transport,

clandestine air operations, and air support of paramilitary operations. Following an inspection visit to the Far East in March 1960, Lt. Col. George Gains, Chief of the Air Support Branch, DPD, reported that Agency officials at various stations had informed him of the vast improvement in Far East air operations since the reorganization. The

had been particularly impressed with the good coordination being effected, and the Civil Air Transport representatives in Taiwan also reported marked improvement in the effectiveness of air operations in which they were involved with Detachment 2.

Operations, 1959-1962

The highest priority operation at the inception of Detachment 2 under DPD control were those in support of the Tibetan infiltration and air resupply program aimed at generating and supporting local resistance and collecting intelligence on the Chinese Communist occupation forces. In November 1959 a successful infiltration flight using CAT crew and aircraft with special door and drop gear installed, delivered 16 agents and supporting supplies and in the ensuing five months 20 missions were flown delivering nine more agents and approximately 400,000 pounds of supplies. Other than some small amounts of breakage in these airdrops, the greatest damage sustained was in the cracking of rifle butts. At the

beginning of 1960 permission was received to use Takhli Air Base for launching the Tibetan airdrops and DPD supplied the funds and supervision by its Engineer to build a BOQ and mess hall and to install generators to power the base communications equipment at Takhli.

The unforeseen and unbudgeted costs for the support of the Tibetan activity required the release from the Agency reserve of additional funds [50X1, E.O.13526] to cover the DPD deficit resulting principally from the excess of flying hours by Detachment 2 and CAT contract aircraft over the number budgeted for. Subsequent to this initial heavy airlift schedule, the project slowed considerably and was subject to a stand-down following the May Day U-2 incident, continuing through the election and change of administration. The Special Group in March 1961 approved the renewal of the program with specific flight approvals to be given on a monthly basis.

Laotian Operations

On 9 December 1960, the Neutralist Lao Government fell and the Soviets were openly supplying the Kong Le forces. While the Royal Lao Forces retook the capital later, U.S. aid was the principal hope for keeping the country from falling to the Communists. On 7 January 1961 the State Department issued a White Paper defending the U.S. position

with regard to aid to Laos, and a Far East Division project was initiated jointly with the Department of Defense to build up the Lao Air Force.

In January and February 1961 the stored B-26's in the Far East (ten USAF and eight CIA) were recommissioned as a nucleus to give air support to the Royal Lao Government against the Pathet Lao. In addition DOD supplied four C-130's, twenty H-34 helicopters and sixteen military helicopter pilots. Additional airlift was made available as required. It was first proposed that Air Asia American contract pilots be used; then consideration was switched to Air Asia Chinese Nationalist [redacted] pilots. The final decision was to use "sheep-dipped" USAF pilots, who were put in civilian clothes and sent TDY [redacted] from their regular assignments at 21st Troop Carrier Squadron at Naha, or the 313th Air Division at Kadena. The cover for the operation was the ostensible purchase by the Phoumi Government of the aircraft [redacted] [redacted] with operation and maintenance by Air Asia under contract to the Laotian Government. [redacted] [redacted]

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To build up a B-26 and C-130 operational capability, personnel were drawn from Detachment 2, [redacted] Taipei (STPOLLY personnel), SEACA and ASCA Communications Centers of

CIA, and the U. S. Air Force. Total personnel involved numbered up to 300. The operation was successfully completed in May 1961 and CINCPAC and the Joint Chiefs agreed with CIA in June 1961 to the phase-out of U. S. assets in view of the convening of a Geneva Conference which was expected to achieve a settlement between the warring factions.

Vietnam Air Operations

Beginning in the spring of 1961, Detachment 2 gave air support to a joint Saigon Station/South Vietnamese operation [redacted] the purpose of which was the infiltration of South Vietnamese teams via C-54 airdrop to reconnoiter, observe, report on and, when directed to take action against Communist supply lines in the vicinity of the Laos/North Vietnam border. Infiltration of the trained teams was accomplished by Vietnamese Air Force military crews who had been civilianized and employed by VIAT (a commercial Vietnamese company). Flights were carried out ostensibly without prior knowledge or concurrence of the U. S. as a unilateral Vietnamese activity.

Because of the high rank of the Vietnamese officers involved in the project, the Detachment 2 air operations officer in charge of these activities in Vietnam had difficulty in enforcing instructions received from Washington and Kadena. It was decided with Saigon Station's concurrence, that DPD would assign an air operations officer to Saigon

to perform liaison between the Chief of Station, the VNAF, Detachment 2, and Washington Headquarters.

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Detachment 1 Activities, 1959-1961

After its activation in August 1959, Detachment 1 at Eglin began to complete the staffing of its approved T/O of 96, and to recruit and train stateless and other pilots and crews and paradispatch officers for operational availability. Testing of new equipment was undertaken on a continuing basis: navigation aids such as the terrain avoidance radar system for the P2V, various types of beacons for use in air drops and for escape and evasion purposes, electronic countermeasures equipment, and ELINT collection devices were among the principal test programs.

On 22 January 1960 Detachment 1 deployed its ELINT-configured P2V to Johnson Island in the Pacific to participate in monitoring Russian ICBM shots (Project BIG ARM). A successful intercept was made on 31 January.

Cuban Operations

On 11 July 1960, a separate unit was set up within the Air Support Branch of DPD to support the Western Hemisphere Division's Project

JMARC (the Cuban counterrevolutionary invasion). This activity was code-named JMCLEAR and was headed by Lt. Col. George Gaines. A control center was set up at Eglin and Detachment 1 was called on for full support of JMCLEAR operations, including air and ground crew recruitment and training, provision of aircraft, black body movement, and black and overt cargo hauling.

At the beginning of the JMCLEAR operation, Detachment 1 had only its own assigned aircraft and crews. A TDY complement of approximately 50 USAF technicians was assigned to Detachment 1 as added support during the Cuban operations. Two additional C-54's and four C-46's were obtained from various Agency sources and moved to Eglin, and eight C-54's were borrowed from the Air Force. During the course of these operations, a total of 19 B-26's were brought out of Agency and Air Force storage to be used as a pre-invasion strike force. The Cuban crews to fly the B-26's were trained at a secret Guatemalan base. Air operations were also set up by DPD at the Opalocka Airport (an unused section of the Greater Miami Airport) and runways and storage facilities there were used through agreement with the FAA, principally for movement of foreign national personnel and cargo.

The first support missions performed by JMCLEAR were for the purpose of dropping leaflets, arms and food to dissident Cuban groups on the islands. Thirteen successful missions (out of 18 planned) were accomplished by the end of 1960 for a total drop of 36,980 pounds. In addition, 99 cargo and passenger flights were flown to deliver Cuban counterrevolutionaries and supplies and equipment to Guatemala and Puerto Rico.

Detachment 1 moved from the main base at Eglin in the fall of 1960 to Auxiliary Field #3, which afforded better security due to its isolation from the Air Proving Ground Command's main base activities. The Detachment could thus carry out black support flights and other activities in a more covert fashion.

In early January 1961 it was decided that in addition to the Cuban air crews, a complement of Air National Guard crews would be recruited to serve as a stand-by U. S. air strike force, even though at the time of their recruitment JMARC did not have authority to use U. S. pilots in its overflight activities.

[redacted]

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Pre-Invasion Air Strike Base

One responsibility placed on DPD in support of JMARC was the construction, operation and maintenance of a large-scale, temporary air strike base (JMTIDE). Agreement was reached with President Somoza of Nicaragua for use of a site at Puerto Cabezas with a landing strip in very poor state of repair. The DPD Engineer, [redacted] was instructed to develop plans for a base facility including improvements to the runway, within budget limits of $200,000. It was to be a tent camp, to accommodate a maximum of 125 personnel, constructed on a temporary basis for a life expectancy of about six months, to be used as a base for the pre-invasion air strikes by the B-26's and a staging base for troops and supplies. The cover for the build-up at Puerto Cabezas was that the

Nicaraguan Government through a contract with an American company was strengthening its coastal defenses against possible Cuban incursions. [redacted] of Personnel Operations was nominated by the DD/S to act as base commander at Puerto Cabezas and served in that capacity between 6 January and 23 May 1961. By March, the base was accommodating 19 B-26's, 2 C-54's and various other transient aircraft, and more than 400 personnel. President Ydigoras of Guatemala had insisted that the five to six hundred Cubans training in his country be removed by 1 March 1961, and therefore Puerto Cabezas had to expand to accept almost the entire invasion force. Due to crowded conditions some of the aircraft had to be held at Eglin and rotated to the strike base as needed. At the end of March as the time approached for the invasion, [redacted] was sent by DPD to Puerto Cabezas to direct air support operations.

D-Day had been set for 19 April, and the agreement with the State Department was that there would be no air strike until D-Day minus one. The B-26 air strike group with Cuban crews had, by evening of 18 April, flown their first series of missions to Cuba without adequate air cover, and experiencing losses from enemy air action, began to refuse to fly further missions. The Castro T-33 and Sea Fury aircraft, even though limited in numbers, had begun to effect an advantage over the B-26's.

During the evening of 18 April seven C-54 loads of ammunition were rigged and launched from Puerto Cabezas to the two beaches chosen for the invasion force landings. Only four loads were delivered, the latter three aircraft being overtaken by morning light and enemy aircraft activity in the area, and having to return to their base.

It was decided during the night of 18-19 April to augment the B-26 crews with volunteer U.S. nationals in order to try to preserve the beachhead. The first pre-dawn strike of four B-26's on 19 April, two of which were manned by Americans, all returned successfully to base. The second strike of five B-26's included three manned by Americans. This latter group had been assured before they took off from Puerto Cabezas that top air cover would be supplied by the Navy for thirty minutes over the beachhead the morning of 19 April, but the top air cover did not materialize. A Cuban B-26 pilot who had been shot down and was waiting for air evacuation, confirmed the fact that the B-26 piloted by Thomas Willard Ray with Leo F. Baker as crewman, was attacked by a T-33, damaged extensively at relatively low altitude, caught fire, and both men bailed out.

A Spanish-language broadcast from Cuba reported that four planes were shot down in the vicinity of the landing beach and that Leo F. Berliss (Baker) and Thomas W. ROSTAN (Ray) were captured and

shot to death. A photograph obtained later from a Cuban source showed both men lying on the floor of a building with bullet holes in their heads. A second B-26 of the same group was hit and fell flaming into the sea with no survivors. That crew was composed of Riley W. Shamburger and Wade C. Gray. All four of the men killed were volunteers from the Alabama Air National Guard, and residents of Birmingham.

DPD Mop-up Operations

Once public revelations concerning the "Bay of Pigs" and Agency sponsorship were known to be unavoidable, DPD's first efforts were directed at suppressing as much as possible any publicity with regard to Americans participating in the invasion attempt.

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Many hours were spent by DPD case officers in briefing, counseling and making financial arrangements for the four "Birmingham Widows". Despite all efforts there were inevitably press stories concerning the role of the Air National Guard members in the affair. The wisdom of the use of aliases was proven in many cases both among the contract air crews and Agency staff at the training area.

The debriefing and release or reassignment of air crews and other contract personnel occupied DPD/JMCLEAR in May and June 1961. Plans were made to regroup and continue training of Cuban air and ground personnel. This Agency program was carried out under cover of an ostensible grant of [redacted] as a philanthropic gesture toward the exiled Cubans, with the cooperation of [redacted] Thus overt assistance was given the Cuban pilots in obtaining the equivalent of FAA licensing, while at the same time maintaining access to a pool of trained pilots for future use. The program was completed in April 1962 and of the initial 57 eligible pilots, 28 received either Airline Transport Ratings or commercial licenses. Some of these Cuban pilots were used later [redacted] 50X1, E.O.13526

An inventory of the base at Puerto Cabezas was made in June 1961 by [redacted] and Maj. Richard Skinner of DPD, and arrangements were made to transfer four B-26's and related maintenance and ordnance equipment and supplies to Nicaragua as compensation promised to President Somoza for his assistance. There remained at the base at the beginning of July approximately $200,000 worth of ordnance and non-expendable equipment weighing about 70 tons which DPD had to airlift out of Nicaragua and return to [redacted] 50X1, E.O.13526 Detachment 1 at Eglin.

The settlement of several long-term problems relating to various aircraft which had landed illegally at Miami Airport, Mexico City, Montego Bay, Jamaica, etc., continued to be a legal headache for many months. Efforts to recover the C-54 impounded by the Mexicans were pursued by the State Department but finally given up.

An estimate made at the end of May 1961 put the cost of DPD's air support to Project JMARC at approximately $10 million.

Establishment of Air Proprietary Branch

In the summer of 1960 preliminary planning was done with a view to bringing together under one central management the various funding organizations, holding companies and current and potential air proprietaries used to support the Agency's covert activities. In November 1960 the Air Proprietary Branch was established under the Development Projects Division with [redacted] (formerly Chief of the Development Branch) as Chief, and [redacted] as Deputy Chief. The question of ultimately assuming the management of the Civil Air Transport operation based in Taiwan was discussed at the time, but it was felt that the time was not ripe for the newly formed branch to assume a project of the magnitude and complexity of CAT. The emphasis of the Air Proprietary Branch was placed on looking into new projects

which held promise for the future. The Branch was particularly active during 1961 its first year of existence, spotting and procuring small commercial air assets and developing indigenous air organizations worldwide in support of Agency purposes.

In January 1961 plans were initiated to provide the Agency through commercial air organizations with a logistic airlift in support of "Deniable Limited Warfare". A domestic air proprietary was to be established in the Southwest as a covert holding company capable of satisfying aircraft procurement, crew training and holding needs. [redacted] Deputy Chief of the Air Support Branch, DPD, drafted a proposal whereby the ZI proprietary would be set up to deal with all the problems of tactical air/ground support for Agency covert operations where cover or security considerations precluded the use of military detachments. This would include provision of the right types of unattributable aircraft and crews, capable of low-level tactics, air drop rigging and delivery, amphibious operations and all other techniques which might be required. [redacted] was able to sell his proposal, which required half a million dollars to underwrite in FY 1962, and he himself was put in charge of the new proprietary when it was set up in November 1961, ostensibly as a commercial aviation venture to

engage in testing of equipment, firefighting, cropdusting and other types of aerial services.

Administrative and fiscal responsibility for the Air Proprietary Branch and its assets was transferred on 1 April 1962 to the Domestic Operations Division, DDP, along with its staff.

Aircraft Inventory

In September 1961, DPD published the first combined inventory of all CIA-owned or controlled aircraft. As a matter of historical curiosity the listing is given here: (List does not include U-2's.)

1	Aero-commander
6	H-34 Helicopters
1	B-17
1	Convair 880
1	Convair 440
1	Lockheed Constellation 1649
3	Piper PA-11
1	Piper Apache
1	Bell 47-G
6	Cessna 180
1	Cessna 182
1	Cessna 310
5	L-20
1	L-21
12	Helio L-28
2	Helio XU-5
3	D-18
1	C-45
21	C-46
7	C-47
1	DC-3
8	C-54

4	DC4
2	C-118
3	DC6A
1	DC6B
3	PBY-5
4	P2V-7 (RB-69A)
20	B-26
122	Total all kinds

Air Support Reverts to SOD/DDP

With the departure from the Agency of Mr. Richard Bissell (DDP) at the beginning of 1962, the Development Projects Division lost its patron and was subsequently separated into its several principal components which were in turn reassigned to other organizational entities. A twice-delayed investigation of DPD was finally conducted in February 1962 by the Inspector General (then Mr. Lyman B. Kirkpatrick), and one of the recommendations resulting from that inspection was that the DDP remove the function of air support of covert operations from the DPD and establish it in a new unit within the Clandestine Services oriented toward the area divisions.

On 16 February 1962, a Deputy Director for Research was established and the U-2 and follow-on manned reconnaissance vehicle projects as well as the satellite projects were assigned thereto. From February until mid-summer 1962 the reorganization of DPD under the

DD/R hung fire. In June 1962 Mr. Cunningham noted to Col. Beerli that they were no closer to a solution to their own internal organizational problems than they had been in February, and that, given the rather indefinite viewpoint of the new DD/P on the role of air support in the Agency, he found it difficult to envision a solution which would make everyone happy. The control of the STPOLLY project was one of the stickiest problems to be settled.

On 5 July 1962 the former I.G., then Executive Director/Comptroller, wrote as follows to the DD/R (Dr. Scoville):

> "In an effort to reach an equitable solution for the current impasse on /STPOLLY/... in which the DD/P is reluctant to yield control over the one P2V in Formosa, and in which the DD/R is anxious to have the full project under his direction, I would like to recommend the following compromise.
>
> "In recommending this, I wish to reconfirm the fact that the Director has indicated that there will be a greatly accelerated program of agent drops on the mainland. This provides the basis for the DD/P desire to maintain direct control over the aircraft. On the other hand, it is a fact that experience of the last several years has shown that the Elint flights outnumber the agent drop flights on a basis of roughly 30 to 1.
>
> "Therefore I recommend that for the time being, and until aircraft suitable for agent drops are available on Formosa, the present P2V remain under the operational control of the DD/P, but that the DD/R be responsible for all technical direction of all Elint flights. Further, in the event of any disagreement between DD/P and DD/R over the utilization

of the aircraft, the matter be referred to the Director's Office. Finally, when aircraft for agent drops are available for Formosa, the STPOLLY project including all personnel presently assigned for Elint purposes will be transferred to the DD/R" 1/

The DD/R replied to the above, drawing attention to the fact that the P2V was not the most desirable aircraft for body drops and would accommodate only four to six, depending on the equipment carried. It therefore appeared that the interests of the U.S. with regard to intelligence collection would be best served by using the P2V solely for Sigint collection and the aircraft should be assigned to the DD/R without delay.

On 27 July 1962, the Special Operations Division (SOD/DDP) was established by CSN 1-494, with [redacted] as the first chief. The air support functions which had been taken over by DPD in 1959 from the former Air Maritime Division reverted to the new Division along with control of Detachments 1 and 2, and the ZI proprietary established by Air Proprietary Branch, DPD.

On 30 July 1962 a statement of the mission of the DD/R was published and the former DPD activities were assigned to the Office of Special Activities (OSA) under the DD/R.

1/ ER-62-4665, 5 July 1962. Memorandum for DD/R and DD/P from Executive Director/Comptroller, Lyman B. Kirkpatrick.

On 7 August 1962, in conformity with the provisions of Headquarters Notice 1-23, transferring air support functions to the line of command of the DD/P, the DD/R instructed all personnel of OSA to cease exercising any command responsibilities for air support activities effective immediately.

A year later, when OSA's reconnaissance activities were blanketed under the National Reconnaissance Program, an effort was made, in view of the in-house capability of DDS&T to manage, develop, maintain and execute the various specialties of the STPOLLY program, to have it reassigned to the DDS&T/OSA. This proposal did not receive the approval of the DDP. OSA did, however, have the responsibility for the remainder of the life of the STPOLLY project (through 1966) for obtaining funds and defending the STPOLLY budget to the NRO.

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ANNEX 115

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DD/P 4-5791
12 May 1959

MEMORANDUM TO: ADDP, C/PP, C/EE, C/FE and C/DPD

SUBJECT: Organization and Control of CIA Air Operations

REFERENCE: DD/P 4-3876, 2 February 1959

1. Recognizing that CIA has responsibilities for at least four different major categories of air activities, it will be useful at the outset to identify and briefly describe these categories:

a. Reconnaissance: Reconnaissance operations include photo-reconnaissance, Elint and Radint, air sampling, and other more specialized sensing techniques. The requirements for such operations usually, though not invariably, arise from outside divisional and even Agency structures, and thus such operations are subject to a relatively high degree of processing and coordination. In these operations the impact of such technical judgments as type of sensing device to be employed, suitability of weather, and vulnerability of vehicles is crucial.

b. Air Transportation: Air transportation includes the movement of both sensitive and non-sensitive cargo and personnel within friendly territory. This category of operations differs from normal military air transport operations only in security requirements. As such, the basic considerations inherent in the conduct of such operations are the normal ones of aircraft maintenance, arranging of schedules, assignment of aircraft and crews, flying training and proficiency, flight planning, and the like.

c. Covert Air Operations: Include the delivery or dropping of supplies to denied areas, infiltration and exfiltration of agents, leaflet drops, and similar activities, in which the covert air operation may usually be conceived of as a single but important part of a larger operation with broader over-all political objectives.

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d. Paramilitary activities: In this category are included those covert air operations which are a part of a larger paramilitary effort. Usually such air operations will grow out of and be greater in scope and complexity than those described in c, above.

2. Although the various types of operations described above have the employment of aircraft as their primary object, the operations are so different in origin, methods, scope, and skills required that their management and control should logically differ somewhat in each case. These variants and the reasons underlying them are discussed in some detail below.

a. Reconnaissance: As defined in paragraph 1, a, above, it is evident that reconnaissance operations more often than not transcend the responsibility of any single area division or group of area divisions, both in terms of the level of policy clearance required and the major technical skills employed. The area division's most useful contribution to such operations will be making arrangements through the local COS with the appropriate foreign government. The area division may also assist in policy clearance discussions with the Department of State. But the over-all considerations involved dictate that the line of command for reconnaissance operations should run from the DD/P to the DPD to the field air detachment commander, with the local COS exercising a veto authority when necessary to prevent political complications.

b. Air Transportation: As defined in para 1, b, above, air transportation is essentially a support function to assist several stations. The skills required are largely those normally associated with any other air transport operations. Station Chiefs in this type of operation should be viewed as customers of the service, the direction of which should flow from the DD/P to the Development Projects Division to the field air detachment commander.

c. Covert Air Operations:

(1) Responsibilities: As defined in para 1, c, above, a covert air operation is typically only one phase of a more inclusive clandestine operation with political or intelligence objectives transcending those of the air operation itself. The covert air

operation is thus not an activity complete in itself like reconnaissance or a separable support activity like air transportation. Clearly, responsibility for the conception, design, and execution of the over-all political or intelligence operation rests with the area division (or station) concerned, and the planning and conduct of any air operations required must be responsive to requirements and guidance emanating from the area division (or station). On the other hand, the technical planning, direction, and conduct of the air operation itself should be performed by the DPD in Headquarters and the appropriate air detachment in the field. In the performance of a covert air operation, the DPD occupies a position analogous to that of the Office of Communications in a project involving special electronic activities (such as unusual communications support, Elint collection, etc.). In this capacity DPD (like O/C) designates personnel and equipment, prescribes technical operational procedures, and conducts technical operations as required to perform the role assigned to it in the over-all operations.

(2) Line of Command: It is evident that over-all control of any political or intelligence operation must be exercised from Headquarters by the appropriate area division on behalf of the DD/P. So far as the air activities included in such an operation are concerned, the line of command normally runs from the chief of the area division, through the DPD, to the air detachment concerned which, as the operational unit in the field, must actually conduct the required operation. Where there is a need for direct coordination in the field between the air detachment and a station which is also playing a part in the operation, the former should accept requirements and guidance from the latter. It is expected that heavy reliance will be placed on the communications facility of the DPD for traffic concerning the technical planning and direction of covert air operations. (This of course does not preclude the passage of information copies to components other than DPD and the clearance of important messages having policy implications with chiefs of area divisions as appropriate.)

d. Paramilitary Activities: As noted above, paramilitary activities typically grow out of situations that have called for what have been classified above as covert air operations. This difference in scope may well become a difference in kind which requires a rather totally different organizational approach. Experience has shown that such operations will be effective only if the several tasks of acquiring, deploying, and maintaining equipment and personnel, providing logistic support,

and directing operations, are performed in a professional and timely manner. This requires that there be a relatively self-contained group containing all the requisite skills under the control of a task force commander. Such a task force may be set up within or without an existing DD/P component, depending on circumstances. The line of command would logically run from the DD/P to the task force commander to the field unit or units. Area divisions and appropriate Chiefs of Station would contribute political background and liaison assistance.

3. Distribution of responsibilities discussed above may be summarized as follows:

a. The DPD will:

(1) Have the responsibility and authority for the management of the Agency's air assets, covering such matters as personnel, finance, maintenance of equipment, logistic support of air operations, training and for operational procedures including those relating to flight safety, proficiency of personnel, flight planning and communications procedures.

(2) Exercise appropriate Headquarters control over air transport operations conducted by the two air detachments, but requirements would in all instances be levied either by field stations or area divisions and the transport operations would insofar as possible be responsive to such requirements.

(3) Control reconnaissance operations performed with Agency assets pursuant to National Intelligence Requirements.

(4) Plan and direct the Agency's air assets' participation in and support of intelligence, political, and paramilitary operations under the guidance and authority of the area divisions having responsibility for these operations.

b. Each Area Division will:

(1) As a part of its planning and direction of any FI and PP operations which involve the use of the Agency's air assets (except for reconnaissance and air transportation as defined above) furnish guidance to DPD and, through DPD, to the air

detachments in their planning and conduct of the required covert air operations. Such air operations will be performed under the ultimate control of the area division concerned but with delegation of technical planning and direction to DPD and the air detachments.

(2) Conduct liaison with other U.S. Government departments and foreign governments relating to covert air operations and with foreign governments concerning training, transport, and reconnaissance operations, except as otherwise directed in individual cases. The Area Division would be supported by DPD personnel in these negotiations as appropriate.

4. The control arrangements discussed above are not intended as an inflexible body of dogma from which no appeal may be made. However, they are based upon a substantial body of experience in both air operations and other fields of similar technical endeavor, and should not be changed unless and until they demonstrably fail to serve the purpose for which they were designed.

(Signed)
Richard M. Bissell, Jr.
Deputy Director (Plans)

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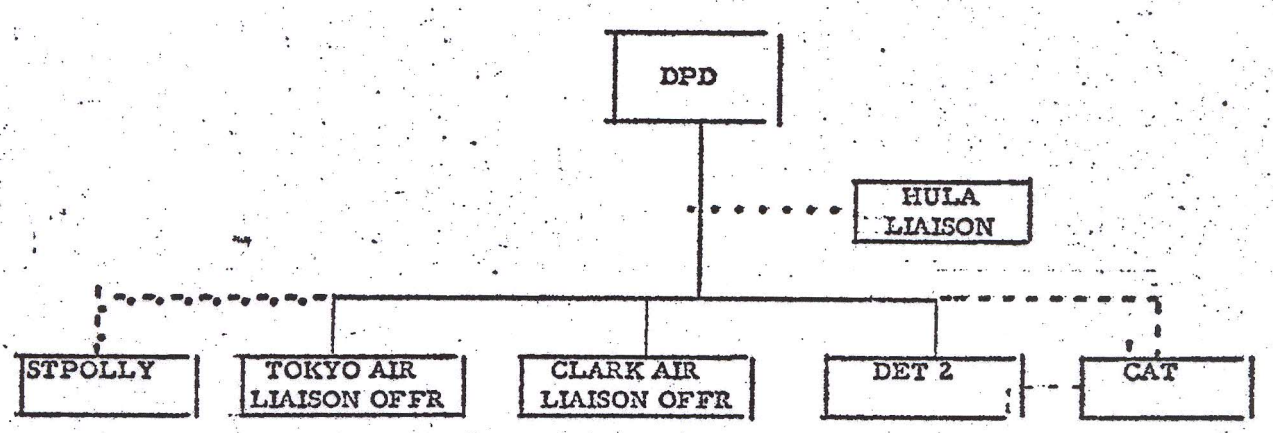

Command _____
Liaison . . . . . .
Opnl Control in support
DPD Clandestine Air-----
Air Tech Opnl control -.-.-.-

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I. GENERAL MISSION:

A. The nature of Agency operations in the Far East area and general arrangements for the organization and control thereof are as set forth in DD/P 4-5791, dated 12 May 1959, subject: Organization and Control of CIA Air Operations.

B. All FE Air Commanders and Air Liaison Officers are responsible to and directly under the control of DPD.

C. As directed by DPD, all Commanders and Liaison Officers are charged with planning, technical direction, liaison, and conducting CIA air operations and air support in their respective areas of responsibility.

D. Field Air Commanders and/or Air Liaison Officers are responsible for the implementation of Headquarters air control procedures (Operations Control Manual).

E. Letters of evaluation will be written by the Chiefs of Station and the Chiefs of Base on Air Commanders and Air Liaison Officers in their respective areas of responsibility. This letter will be the basis for Effectiveness Reports to be written at Headquarters.

II. HEADQUARTERS RESPONSIBILITIES:

A. DPD

1. Direction of all CIA air activities involving reconnaissance, air transportation, clandestine air operations, and air support portions of paramilitary actions.

2. Maintenance of aircraft and equipment.

3. Flight planning and/or flight plan approval.

4. Establishment of standard operating procedures and techniques.

5. Recruitment and training of technical, military and aircrew personnel.

6. Keeping appropriate stations informed (through Chief, FE) of impending operations or support required.

7. Development of procedures for maintenance of the status of CIA air assets.

B. FE Division

1. Approval of projects requiring air support.

2. Obtaining political policy approvals.

3. Obtaining third country clearance for staging operations.

4. Interdepartmental liaison.

5. Direct station support for air operations.

6. Determination of valid mission objectives.

III. FIELD RESPONSIBILITIES - GENERAL INSTRUCTIONS FE AIR COMMANDERS AND AIR LIAISON OFFICERS

A. Tokyo Air Liaison Officer

1. Responsible to Chief, DPD.

2. Serve as Liaison Officer and Air Adviser [redacted] on all liaison with the USFJ. In this capacity, ascertains that all policies of [redacted] are complied with or otherwise notifies him of exceptions prior to any air action. In any area of unresolved conflict, advises [redacted] of the situation prior to Headquarters referral. Keeps [redacted] advised on all air matters in his area of responsibility.

3. Conducts liaison with 5th Air Force, 315th Air Division, and other commands in the Tokyo area as required to effect support of CIA Far East operations.

4. Effects coordination of all Taiwan-based air operations in the 5th Air Force area and arranges staging for overflights from Korea.

5. Supports Detachment 2 Commander liaison requirements with USFJ.

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6. Maintains a file of correspondence [redacted]

B. Clark Liaison Officer

1. Responsible to the Chief, DPD.

2. Serves as Liaison Officer and Air Adviser [redacted] for liaison with 13th Air Force and Clark Air Base. [redacted] advised on all air matters in his area of responsibility. In this capacity, ascertains that all policies [redacted] are complied with or otherwise notifies him of exceptions prior to any air action.

3. Conducts liaison with military commanders, P.I., as required to effect support of Far East air operations.

4. Coordinates all staging operations through Clark Air Force Base.

5. Provides technical assistance as required in support of Far East air operations.

6. Supports CIA activities as required and maintains a file of correspondence [redacted]

C. [redacted]

1. As requested by CIA Headquarters, conducts liaison with military and other government elements in Hawaii and provides or arranges for support of clandestine air movements through Hawaii.

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D. Detachment 2 Commander

1. Responsible to DPD for direction of all Detachment 2 air operations.

2. Maintains aircraft and equipment.

3. Provides airlift support for all FE stations.

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4. Conducts liaison with military commanders, Okinawa, [redacted]

5. Responsible for briefing [redacted] on all air operational matters in his area and coordinates with [redacted] on all support activities.

6. Acts as Air Adviser and ascertains that all policies [redacted] are complied with.

7. Keeps Tokyo Air Liaison Officers informed, as appropriate, for support and coordination.

8. Maintains a file of correspondence [redacted]

E. Taiwan Air Operations Commander (STPOLLY)

1. [redacted] responsible to DPD for planning, crew training, technical direction, and conduct of Taiwan overflight program.

2. Serves as Liaison Officer [redacted] on all Taiwan air operations. Ascertains that all policies of [redacted] are complied with or otherwise notifies him of exceptions prior to any air action. In cases of unresolved conflict [redacted] will advise Far East Division and DPD of the situation.

3. Maintains aircraft and related equipment.

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4. Coordinates and conducts liaison [redacted] with Chinat counterparts.

5. Maintains a file of correspondence [redacted]

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ANNEX 116

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DPD-7675-59
24 November 1959

MEMORANDUM FOR: Deputy Director (Plans)

SUBJECT: Joint Agreement Between Far East Division and Development Projects Division Delineating Functions and Responsibilities for Air Activities in the Far East

1. This memorandum contains recommendations for the Deputy Director (Plans). Said recommendations are set forth in paragraph 9.

2. The purposes of this memorandum are to state the current organization and to clarify the respective responsibilities of the Far East and Development Projects Divisions in relation to air activities in the Far East. As there has been considerable discussion on this subject, it is well to insure that a common understanding prevails. Since the time the Development Projects Division was given the responsibility for conducting air activities in the Far East area, several proposals concerning the proper structure have been advanced. After reviewing all proposals, it is believed that the attached chart (Attachment #1) represents the most effective organization and (when completely implemented) should insure efficient execution of Agency air support. Attachment #2 contains a statement of the mission of the air organization and responsibilities of the Headquarters and field elements.

3. There is only one major change reflected on the attached chart which, admittedly, is different from previous proposals. This is the modification of title and duties of the air officer in Tokyo.

4. It is most desirable to have the officer who is held responsible for the aircraft and the conduct of missions physically located with his aircraft and people. Placing an officer in Tokyo, who would be "the commander of the Kadena commander," introduces a command echelon which is not necessary for providing assurance that operations will be conducted efficiently and in consonance with theater policies. With proper exercise of command by the Chief, DPD, and with CIA policy guidance from the liaison officers and Chiefs of Station at the various key locations, there is no reason why the Kadena unit should be handled

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differently from the Eglin unit or other units which are directly under DPD. This is not to deny the need for a highly qualified air liaison officer in Tokyo. We must maintain good relations with the military in that area and a senior officer (Lt. Colonel or Colonel) is being assigned. However, to assign this officer the additional function of responsibility for the management of the Kadena unit would tend to dilute his attention to his advisory duties to [redacted] and his air liaison work with 5th Air Force.

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5. The political aspects of the Chinat-American coordinated effort with regard to the conduct of the STPOLLY program are most critical to the success of U.S. efforts in the entire Far East area. Therefore, with regard to line of command of the air unit for air operations, it is recognized that the authority vested in the Air Commander on the Taiwan staff comes to him [redacted] and not in a direct line from Chief, DPD. In this instance, [redacted] and he manages the technical aspects of the air operations as a representative of DPD, all of this on behalf of the DCI with the appropriate CIA Headquarters staff division taking action as required on behalf of the Director.

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6. As now constituted, it falls to the Chief, FE [redacted] to budget for STPOLLY. At the same time, the Chief, DPD, is charged in the above-referenced memorandum (DD/P-4-5791 dated 12 May 1959) not only with monitoring of, and establishing of standards for, all technical operations of the Agency's air detachments but also with the management of the Agency's air assets including such matters as personnel and finance. In accordance with this general policy, it is proposed to transfer responsibility for the STPOLLY budget to the Chief, DPD. It is believed to be logical in the case of this activity as with the Agency's other air operations) to place budgetary and technical responsibility in the same hands, since by far the largest part of any air operations budget covers such items as equipment, maintenance, training and proficiency flying, and other items directly related to the technical conduct of the activity. In short, it is desirable to place budgetary responsibility on the Headquarters component charged with maintaining the operating efficiency of the field unit.

7. As HBILKA crews and aircraft are intimately involved in much of our air activities in the Far East, the functional relationship of that organization to the two divisions should also be clear. The intelligence apparatus represented by that organization is clearly an FE responsibility. It also follows that DPD should maintain current records of the aircraft and their configuration capabilities and should direct any DPD clandestine operation wherein HBILKA aircraft and/or crews are used. DPD should also be responsible for maintenance of crew proficiency in such a manner as to assure the availability of at least a minimum number of crews in each type aircraft so as to provide a capability for early reaction to unforeseen requirements.

8. The liaison on air matters in the Honolulu area and the support of black flights through Hawaii should be a responsibility of [redacted] as in the past. In this regard, the Chief, DPD, in coordination with the Chief, FE, should keep [redacted] apprized of applicable DPD concepts, procedures, and requirements.

9. We believe that this document should complete the reorganization of air activities in Headquarters and in the Far East. We recommend:

a. That this memorandum be used by the divisions concerned as the basis for Headquarters' functions and responsibilities with regard to the conduct of air activities in the Far East area; and

b. That FE Division, in coordination with DPD, forward Letters of Instruction to FE field stations which incorporate the points contained in the attached documents as they pertain to each station.

(Signed)
WILLIAM BURKE
Colonel, USAF
Acting Chief,
Development Projects Division

(Signed)
DESMOND FITZGERALD
Chief, FE Division

Recommendation in para. 9 APPROVED:

(Signed)
Richard M. Bissell, Jr.
Deputy Director (Plans)

Date: 22 December 1959

C05492922

CHAPTER XIX. INTELLIGENCE ACQUIRED FROM U-2 PROGRAM & EFFECT ON U.S. POLICY

CHAPTER XIX. INTELLIGENCE ACQUIRED FROM U-2 PROGRAM AND ITS EFFECT ON U.S. NATIONAL POLICY

Requirements for Photo Intelligence

Early work in establishing photographic requirements for the U-2 program was carried out through the joint endeavors of the small photo interpretation group assembled by Mr. Lundahl and the Project Operations Staff, in particular the first Intelligence Officer assigned to the Operations Staff, Lieutenant Commander Francis C. Forsberg, USN. This small group began working with old target lists obtained from the various intelligence services, including AFOIN, SAC, NSA and various branches of CIA. By August 1955 those staff members engaged in targeting reported their dissatisfaction with the available target information which they considered inadequate for use by a project of the importance and magnitude of AQUATONE. The majority of the 1200 targets then listed were either bombing targets or targets for covert collection requiring an agent on the ground. The question of priorities was of great concern to these planners since they had accepted as one assumption that the U-2 overflights might be detected by the USSR early in the operational phase, resulting in diplomatic representations to either the U.S. or the third country whose base was used, thus forcing an

early termination of the project. Therefore they believed that the operational plan should concentrate immediately on the very highest priority targets.

Obtaining the latest and highest priority target lists from the Intelligence Community without making many people aware of the ultimate purpose presented a problem. One proposal (made in October 1955 but disapproved by the Project Director) was to use the President's Advisory Committee on Disarmament (the Stassen Committee) as a front, making reference to the President's Geneva proposal for open aerial inspection. Mr. Bissell's counter-proposal was to advise one senior officer in each intelligence service of the true purpose for the requirements being assembled, and to go forward with the collection in an informal and expeditious manner. He was fearful that if the task were put into the hands of a committee preparing for legal overflights (of possibly unlimited scope with regard to timing and coverage) much time would be lost in debates among the consumers over priorities, and the crucial choices of the very highest priority targets might not be made in time for AQUATONE. He was convinced that the final priority decisions at mission launching time would have to rest with the Project Director and his Director of Operations.

After discussing the matter of requirements with General Cabell, Mr. Bissell and the Project Staff agreed that requirements must be established by staff work which would be reviewed by a joint Agency/ Military committee. Colonel Ritland (Deputy Project Director) obtained the concurrence of responsible Air Force officials to the setting up of a small committee to establish and develop a target priority list tailored to AQUATONE's mission. The terms of reference of this Ad Hoc Requirements Committee (ARC)* as set forth by Mr. Bissell on 1 December 1955 and approved by General Cabell, are appended as Annex 117. Mr. Bissell's Special Assistant, Mr. James Q. Reber, was named Project Intelligence Requirements Officer for AQUATONE, and Chairman of the ARC. During December 1955 and January 1956 work went forward within each agency on targeting and the first full-dress meeting of the ARC was held on 1 February 1956.

Besides priority targeting activities, the ARC spent considerable time in the spring of 1956 in producing a position paper entitled "Intelligence Vital to National Security Obtainable through AQUATONE".

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* The Ad Hoc Requirements Committee became the Committee on Overhead Requirements (COMOR) in August 1960 when targeting for the satellite program was added to its purview, and it was placed under the control of the U.S. Intelligence Board (USIB). A reorganization and enlargement of its scope and membership took place in July 1967 when its name was again changed to Committee on Imagery Requirements and Exploitation (COMIREX), and it was physically moved from the OSA area to space within the DD/I complex.

The purpose of the paper was to assist U.S. political authorities in formulating their decision with regard to proceeding with U-2 operations. Detachment A had then deployed overseas and was awaiting the signal to begin overflights of the Soviet Union. The ARC's position paper expressed the belief that successful AQUATONE operations would achieve intelligence information of the highest priority which would

> "Expand and clarify our knowledge of existing Soviet offensive weapons systems and forces. This will reduce the chance of surprise if these systems and forces were to be employed in the near future, and reduce the probability of successful Soviet attack against objectives in the U.S. or key overseas installations...
>
> "Expand and clarify our knowledge of certain Soviet weapon system research and development programs. This would reduce the chance of future technological surprise.
>
> "Enable us to develop more realistic target priorities lists. By discovering new targets, confirming known targets, and revealing the increase or decrease in importance of other targets, a greater efficiency of U.S. weapon systems application can be achieved.
>
> "Provide the essential information for planning the composition and employment of U.S. military forces and for the conduct of major operations in the event of full-scale war against the USSR." 1/

1/ SAPC-6786, 4 June 1956. Memorandum by Chairman, ARC.

Processing U-2 Photography

As early as March 1955 thought was given to setting up a separate processing plant outside the Agency to handle the exposed film which would be obtained from AQUATONE missions. It was clear that once operations began and exposed film became available for processing, the handling of negatives and prints and the dissemination of information contained therein would become a problem of great magnitude. Boston was first considered as a potential site for the processing activity since there were plausible cover arrangements available in that area, and Drs. Land and Baker were available there to give day-to-day expert guidance on technical problems. The reduction center and library which would become the repository for master negatives and mission data would be established in Washington and would be operated by CIA as executive agent for the intelligence community.

Planning for the processing plant and the internal photo interpretation center was initiated by Mr. Arthur Lundahl (DD/I's chief photogrammetrist) and Dr. Allen Latham, Jr., former Chief Engineer of Polaroid and subsequently Chief Engineer and Vice President of the A. D. Little Company (a CIA consultant). A first contact was made by them with Eastman Kodak Company on 23 April 1955 to explore the prospects for contracting with that company for the film processing.

On 30 April 1955, a meeting of the "Land Panel" (the Project's scientific advisory group) reached the following conclusions regarding arrangements for the exploitation of the AQUATONE photographic product, as reported by Mr. Herbert Miller, Project Executive Officer:

> "On the establishment of a film processing plant and optical rectifying center, the unanimous opinion of the group was that the photographic effort being made on AQUATONE was of such a nature as to be beyond the present technical comprehension of the general run of government personnel involved in photography or photographic reconnaissance. As a consequence, the technical capabilities of existing facilities for processing and rectification are not of the order required to be able to obtain the maximum information return from each exposure made in the field. This leads to the conclusion that, in order to assure singleness of purpose on the part of all participants and a belief in the quality of the end product which can be obtained, a small and compact processing facility to be established under control of CIA and manned by specially trained and indoctrinated personnel would best serve the national interests. Furthermore, because optical rectification methods can be made available which might not be considered orthodox by those presently engaged in the photographic reconnaissance and photo interpretation art, this portion of the work should also be done in a CIA facility manned by specially trained and indoctrinated personnel. It was suggested that in view of the complexity in the interpretation of certain photographs, even these should receive special interpretation treatment under CIA control.
>
> "Upon the indication that we desired to bring Eastman Kodak into this problem, the reaction of the panel was immediately favorable. I noted that Tuttle and Staud of Eastman would be the individuals first involved, and Dr. Land suggested that Dr. Yutzey of Eastman would also be a very useful participant because of his great familiarity with emulsion problems." 1/

1/ ~~TS~~-103558, 6 May 1955. Memo for the Record by H. I. Miller.

Mr. Miller later met with Eastman officials, Mr. Joseph Boone and Dr. Fordyce Tuttle, to discuss terms of a contract for engineering services, processing plant design, and special equipment. Eastman was willing to undertake the operation of the processing plant and recommended that it be established in Rochester where Eastman had good plant security and skilled personnel available in all categories. Letters of intent were signed in June 1955 to cover engineering services and procurement of specialized equipment. A formal contract for the operation and maintenance of the film processing plant at Rochester was signed on 1 October 1955.

The special center began shake-down work in December 1955 and was prepared to support the camera test flights which got underway at Watertown at the beginning of 1956. Film from the test flights was processed at the center, and thus experience was gained in the new processing techniques and procedures while at the same time assistance was rendered in monitoring camera performance during test and training flights. During this early period a security program was established and procedures regarding the couriering and handling of raw and processed film were developed and put into use under the direction of Project Security Staff; a resident security officer was assigned to the

Rochester plant to act in security matters on behalf of Project Headquarters. (This practice has continued down to the present.)

Once overflights began in June 1956, the special center went into all-out production, working 24 hours a day in three shifts, as needed, when there was mission film to be processed. With the stretching out of the U-2 project beyond the short-term, all-out coverage of the Soviet Union originally anticipated, to the more spasmodic operational cycles imposed by political stand-downs, the pace of work at the processing plant varied considerably from time to time. Contracts with Eastman were revised or renewed from year to year for the operation and maintenance of the processing center and for procurement of specialized film and equipment, and personal services of Eastman technicians.

In the spring of 1961 the film processing contract was amended to update requirements for improved equipment and to plan for the inclusion of OXCART and satellite film processing. The amount expended to that time on processing U-2 photography was more than $4-1/2 million. When CORONA became fully operational, the scope of the Rochester facility was much enlarged and continued to grow along with the satellite program. In 1963 after the establishment of the

National Reconnaissance Program, the cost of running the Rochester center was transferred from the CIA budget to the NRO budget; however, Project Headquarters (and subsequently DPD and OSA) continued to be responsible for contractual and security matters with regard to the processing center. Currently the Agency's U-2 program accounts for only about 2% of the total volume of film processed at the Rochester center, the balance coming from the satellite programs and other Department of Defense photo reconnaissance programs.

Photo Interpretation and Exploitation

Project HTAUTOMAT

Planning for a photo interpretation center recommended by the Land Panel to be set up within CIA was begun by two members of Mr. Lundahl's unit, Messrs. [redacted] During the spring of 1955 these gentlemen were in liaison with the Aeronautical Chart and Information Center (ACIC), St. Louis, which was to handle AQUATONE photography on behalf of the Air Force, and the Air Development Center at Wright Patterson Air Force Base. The experience of these facilities with material collected by GRAY BACK (the instrumented balloon project) and the latest technological advances in photographic equipment and procedures were made available to the AQUATONE planners.

On 11 July 1955, [redacted] submitted a plan for the establishment of a "Central Interpretation Unit" outlining the objectives, support required, procedures for receipt and handling of materials (film, prints, and mission data), and method of plotting and reporting by phases according to priority of targets. The plan included the procurement for the interpretation unit of a "Minicard" system for ease of storage and retrieval of information, which had been recommended by Eastman.

After several revisions and rewriting, the proposal (Project HTAUTOMAT) was presented for the Director's approval on 21 October 1955. It called for the establishment and operation of a new office within the DD/I complex to process intelligence information derived from AQUATONE. It set the T/O at approximately 120 to start, with possible increases up to 300 as work progressed; a budget for FY 1956 of approximately half a million dollars; and a requirement for office space of approximately 45,000 square feet.

In view of the sizeable support implications, the DD/S, Col. White, was asked for his views. He questioned whether CIA should undertake the photographic exploitation since, he said, the Air Force must have an elaborate photo intelligence exploitation unit which could do the

job for the whole community. He recommended that assurance be obtained that there was no duplication of effort. An exchange of letters with General Samford, Director of Intelligence of the Air Force, elicited the opinion from him that the setting up of a PI center in CIA for the exploitation of AQUATONE photography was appropriate and would not duplicate current Air Force activities and planning.

The DD/I obtained an option on 60,000 square feet of office space in the Steuart Building at 5th and K Streets, N. W., and a security inspection of the premises was made and no objection found to occupancy of the building. Physical security measures were taken to make the whole building a restricted area, and all personnel assigned to the center required Special Intelligence clearance as a minimum.

The original concept of the new PI center within CIA was the provision of sufficient photographic reproduction facilities to fulfill Agency requirements. As planning progressed, it became apparent that the PI facility would be responsible for furnishing material on a selective basis to agencies other than CIA, which meant an increase in the personnel and budget ceilings originally established and in equipment to do the job. The recommendation of Mr. Bissell with regard to furnishing such extra materials was as follows: Requirements

laid on Eastman visualized that CIA and the Air Force were the only agencies which would desire complete copies of all AQUATONE film. Other agencies (Army, Navy, etc.) would desire only selected items, to be ordered after thay had studied the plots. It was not expected that Eastman would furnish these additional selected prints, since the original negatives would be in CIA's possession. Thus CIA should either establish and maintain a facility equipped to make copies available to qualified consumers, or make arrangements with some other existing facility (or Eastman) to perform this service. Mr. Bissell further recommended that should the CIA laboratory undertake the necessary copying work, initial provision should be on an absolutely minimum basis to avoid making an investment of funds and personnel which might eventually prove to be excessive. He felt the deliberate risk of having a capacity less than that subsequently required was one that could be afforded. The worst result would be the inability to process the entire take of raw intelligence on an immediate basis and that situation could be remedied by expansion of the capacity when the need could be more explicitly forecast.

HTAUTOMAT became active the first of March 1956 at 5th and K Streets with a staff of about 30. Mr. Bissell, while vitally concerned

with the successful establishment and operation of the facility, had endeavored to make a clear separation between it and Project AQUATONE. He had reached agreement in December 1955 with the DD/I that beyond the original procurement of specialized equipment worth $220,000, AQUATONE would not pay for any further HTAUTOMAT expenses. In February 1956 he further spelled out to the DD/I that:

> "For purposes of clarification, I should like to suggest that it be mutually understood that the point of separation between Projects AQUATONE and HTAUTOMAT occurs at the time when the incoming product physically is delivered to you here in Washington, following its processing at an Eastern location.
>
> "While the establishment of such a point of separation may appear slightly academic, I believe that to do so prevents any possible misunderstanding between our respective activities, especially in organizational areas." 1/

Mr. Bissell's efforts to divest Project AQUATONE of further responsibility for the Photo Interpretation Center (PIC) and its procurement problems succeeded after a time, even though officials of PIC on several occasions during the early days (when AQUATONE was the sole customer) privately urged Mr. Bissell to consider blanketing the Center under the special project's organizational structure. The

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1/ SAPC-4015, 17 February 1956. Memorandum to DD/I from R. M. Bissell, Jr.

requirements of PIC (especially its financial needs) were not given the top priority support by the DD/I which AQUATONE commanded Agency-wide.

Field PI Units

During the late 1956 Middle East crisis when both Detachments A and B were flying daily coverage, the decision was made to set up a small PI unit at Giebelstadt for quick processing of the take. About five HTAUTOMAT people were to be assigned TDY. This decision was revised later to incorporate the unit (called ERPIC) into the USAFE theater command at Wiesbaden, and arrangements were made for air-lift of film from both Detachments A and B. Later on 20 November 1945, a smaller unit was put into operation at Adana to do quick tactical read-out from Middle East missions. All film from primary missions over the Soviet/Satellite Bloc was still required to be returned to the Rochester facility for processing.

On deployment of Detachment C to Japan, arrangements were made in April 1957 for overseas handling, processing and reporting of U-2 photographic results at URPIC-Y, which had been set up under Headquarters, Far East Air Force, Yokota, Japan. Participation in that center was open to CIA, the Army and the Navy, as well as the

Air Force. Since most of the intelligence collected by AQUATONE in the Far East was strategic in nature, mission film for the most part had to be transported back to the Rochester facility.

When the joint project with the Chinese became operational in 1962 (Project TACKLE), arrangements were made for the tactical coverage of South China and the Taiwan Straits to be processed and read out at either the Chinese Air Force photo laboratory at Tao Yuan or at OPIC-A (URPIC-Y renamed) by the 67th Recce Tech Squadron. One duplicate positive was immediately furnished to the GRC/CAF for their own exploitation and the original negative was sent to Rochester for further duplication for Washington customers. Strategic mission film was of course returned to Rochester for processing and courier arrangements for expeditious handling were made so as to effect delivery to Rochester usually within 48 hours.

ELINT Requirements

The task of collecting ELINT requirements for AQUATONE missions was first given to the Agency's ELINT Staff Officer, Mr. Ralph Clark. A study of ELINT requirements by an interdepartmental ELINT Advisory Committee had been completed in January 1955 and Mr. Clark and his staff were in close liaison with the supplier of

the Project's electronic systems (Ramo-Wooldridge at that time) with regard to the parameters of the equipment to be carried by the U-2. Mr. Bissell on many occasions during this period reiterated that the primary purpose of AQUATONE was photographic reconnaissance and that missions for the sole purpose of collecting electronic intelligence would only be run in very special cases.

In mid-March 1956, Col Albert M. Welsh, Director of Operations, drew attention to the fact that plans for processing, analyzing and reporting on the take from the U-2's electronic systems needed to be clarified. Mr. Clark at the ARC meeting of 27 March briefed the Committee and its advisers on the nature and capabilities of the systems and explained that initially the material from these systems would be a by-product of photographic missions. Currently available target lists were therefore considered adequate. Exploitation of the mission tapes was expected to be handled by the new inter-agency Technical Processing Center (TPC) when it was completed, and meanwhile a temporary facility in Barton Hall (the Blue Room) would be used. Mr. Clark reported plans well advanced for exploitation at the Barton Hall facility with read-out equipment expected to be installed and ready for business by 1 May 1956.

The procurement of ground read-out and exploitation equipment was monitored by [redacted] on behalf of the OSI ELINT Staff. Early in 1956 he began to submit lists of various kinds of equipment which it was believed would be required for the duplication, play-back and analysis of the raw ELINT take from U-2 missions. Mr. Bissell was not kindly disposed toward ELINT specialists, and insisted on a "tidy and careful" statement of requirements, not only because of the substantial sums proposed to be spent but also because a considerable part of the equipment was to be turned over to other agencies for use, and he felt these other consumers might well pay for the equipment themselves.

On the strength of justifications furnished by the Project Requirements Officer and the ELINT Staff Officer, a recommendation was finally presented to the DCI in May 1956 for the expenditure of approximately $560,000 for research and development and production of ELINT and COMINT read-out equipment, of which about one-quarter would go to NSA and TPC (with CIA retaining title pending final disposition). Approval was given in consideration of the fact that NSA and TPC would use the equipment to exploit intelligence products in which CIA had a direct and primary interest and which would be made available to the entire intelligence community.

The procurement of ELINT exploitation equipment continued to be a problem to Mr. Bissell and almost two years later, in February 1959, he reached an agreement with Dr. Scoville (AD/SI) that the Project would finance the equipment required for collection operations but would not again finance the procurement of read-out equipment. It was Mr. Bissell's desire that the analysts be compelled to justify the need for the costly improvements which they constantly advocated. He expounded at length to Dr. Scoville on the "unpredictability and general shiftlessness of ELINT specialists". Dr. Scoville agreed that the desires of these specialists for more and better equipment was insatiable and often ill-defended, and said satisfactory proof of future needs would be demanded before further expenditures were made.

ELINT Missions

In the early operational missions of the U-2 in 1956, Systems I and IV for ELINT collection and System III for COMINT collection (see Annex 43 for systems description) were carried along with one of the primary camera systems and the mission flight path was planned strictly on the basis of priority photographic targets— electronic collection was incidental. In December 1956 the first mission solely for ELINT collection was flown by Detachment B along the Soviet Border,

using System V (a variation of System I, but weighing about 400 pounds, thus excluding the carrying of any other payload).

Late in 1957 because of the proliferation of Russian missile activities, requirements for more ELINT missions were generated and System IV was carried on approximately 15 missions in the Black Sea and Baltic areas with good results. System VII came into use as a primary ELINT collection system in June 1959 and was used extensively along the Iran and Afghanistan borders of the Soviet Union for collection of telemetry related to missile firings. Subsequent to the stand-down following 1 May 1960, through the end of 1966, no missions were flown solely for ELINT collection by the Agency U-2's, although ELINT receivers were carried on most flights. (In 1968 System XVII became operational and was assigned to Detachment H for peripheral flights along the China Mainland coast.)

COMINT/NSA Support

Liaison was established between AQUATONE and NSA Headquarters at Fort Meade in April 1956 for the purpose of obtaining COMINT

In May 1956 on a visit to Project Headquarters the Vice Director of NSA, Gen. John Ackerman, inquired of Mr. Bissell whether any missions would be flown to obtain specific COMINT coverage. While he had no particular requirement in mind at the time he felt that occasions might arise in which a COMINT mission could have higher priority than any other. Mr. Bissell indicated that if and when specific requirements for COMINT were presented, they would have to be weighed against competing requirements for collection of other types of intelligence. Obviously he did not wish to encourage frequent interruptions to an orderly schedule of photographic reconnaissance.

50X1, E.O.13526

From the early stages of AQUATONE, NSA has continued to render assistance as required by the U-2 program

50X1, E.O.13526

No missions have been flown by Agency U-2's solely for the collection of COMINT. The original U-2 COMINT collection package (System III, built by Ramo-Wooldridge in 1955-56) was carried on photographic missions but gave rather disappointing performance during

the early Soviet and Middle East coverage. The System III tapes were sent to NSA for read-out but were of little value. The system was shelved in 1957. In 1963, on the appointment of Dr. Albert D. Wheelon as DD/S&T, System III was resurrected at his behest (he had formerly worked for Space Technology Laboratories of Thompson Ramo-Wooldridge, the makers of System III). It was sent to Taiwan for Detachment H use against Mainland China, but results were still of no great value.

An improved COMINT collection system (System XXI, built by HRB-Singer and Sylvania) was designed to be carried by the OXCART aircraft. When OXCART was closed out, the system was later redesigned for use by the U-2 and was introduced at Detachment H in 1968. Tapes from System XXI are given in the first instance to [redacted] project for read-out of the Chinese language transmissions, then to the other consumer members of the intelligence community.

Accomplishments of the U-2 Program

A Chief of a DD/P area division made the remark in 1960, subsequent to the May Day incident, that aerial photography such as the U-2 had achieved was all to the good, but since the aircraft could not fly inside the Kremlin and photograph the documents on Khrushchev's

desk, we still needed spies on the ground to obtain intelligence regarding Soviet intentions. This is patently true. It is also true that the men who backed the U-2 project were not putting a spy in the sky as an alternative to an existing capability, but to bridge an acknowledged gap in U.S. intelligence with regard to the industrial and military build-up inside the Soviet Bloc.

The Director of Central Intelligence, Mr. Allen W. Dulles, in August 1960 submitted to the White House the Intelligence Community's summary of the accomplishments of the U-2 program up to that time. That statement is attached hereto as Annex 118, and carries the following postscript by Mr. Dulles:

> "It is extremely difficult for me to sum up in words the significance of this effort to our national security. I do not wish to exaggerate, nor do I wish to belittle other vital intelligence programs. This photographic coverage and the data derived from it are an inseparable part of the whole national intelligence effort. But in terms of reliability, of precision, of access to otherwise inaccessible installations, its contribution has been unique. And in the opinion of the military, of the scientists and of the senior officials responsible for our national security it has been, to put it simply, invaluable." 1/

Since its initial task of photographing targets in the Soviet Union was brought to a close by the Russian development of missiles, the U-2

1/ CHAL-1138/1-60 (Attachment TCS-7519-60-b), 19 August 1960. Memorandum for B/G Andrew J. Goodpaster from the DCI.

reconnaissance system has been modified and updated and has continued to function as an additional clandestine intelligence collection device in the CIA inventory. Accomplishments of the program since May 1960 are reviewed in Chapters XV and XVI, which deal with the overflight reconnaissance activities of the ZI-based Detachment G and the Taiwan-based Detachment H.

While much of the photography resulting from this program has been of great value to the U.S. Intelligence Community in and of itself, in many instances it became much more valuable when fitted into the mosaic along with bits and pieces of intelligence previously or subsequently collected from many sources by the professional intelligence analysts. A classic example of how this worked in locating, pinpointing, and eventually photographing the new Soviet nuclear complex in Central Siberia, is described by OSI's Dr. Henry S. Lowenhaupt in his story entitled "Mission to Birch Woods, Seven Tents, and New Siberia", a copy of which is appended as Annex 119.

Accomplishments of the U-2 program from a statistical point of view will be found in Annex 120, which lists all intelligence collection overflights carried out by Agency U-2's chronologically from June 1956 to May 1968, by date, mission number, detachment, pilot, point of departure, targets covered, principal equipment carried and results.

C05492922

ANNEX 117

C05492922

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SAPC-2699
1 December 1955

MEMORANDUM FOR: Col. Albert M. Welsh
Director of Operations

SUBJECT: Procedure for Determining Intelligence Requirements for AQUATONE

1. AQUATONE is a clandestine intelligence gathering operation. Accordingly, its operations must be designed to meet as fully as possible intelligence requirements emanating from the whole intelligence community and to meet high priority requirements ahead of those carrying lower priority. In order to do so, procedures must be established for (a) accumulating intelligence requirements and (b) assigning relative priorities to them. These procedures must not jeopardize the security of the Project and they should be as simple and informal as possible. The following arrangements are believed to meet these requirements.

2. There is already in existence an informal requirements committee consisting of a representative of A-2, SAC; a representative of the Director of Intelligence, USAF; and the Project Intelligence Requirements Officer (Mr. James Reber). This committee will be expanded to include a representative of the Director of Naval Intelligence and a representative of G-2 (if Admiral Espey and General Gaither both desire such direct representation and do not wish the Air Force to present all their requirements). It is believed that the Project Intelligence Requirements Officer can represent CIA as a consumer of raw intelligence, but if this is not satisfactory to the DDI, he will be asked to name a representative. It is assumed that the representative of the Director of Intelligence, USAF, will speak for the Air Force as a whole and that the SAC representative will function only as an observer. The Project Intelligence Requirements Officer will chair the committee, which, thus constituted, should be able to make the necessary priority judgments.

3. It is proposed that the committee do its work in the following stages:

a. The first task will be to secure intelligence requirements from the several intelligence agencies, together with the judgment of

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each agency as to the relative priorities to be attached to its own requirements. This operation is already in progress and is being carried out through the members of the committee as representatives of their agencies. The Project Director of Operations will indicate the form in which requirements would be most useful for the guidance of operational planning.

b. The second task to be performed will be that of assembling the various requirements in comparable form after their submission and in such a way as to indicate the points on which either further information must be requested of the submitting agencies or priority judgments must be made by the committee. This task will involve staff work rather than deliberation or decision making and will be performed by the intelligence staff under the Project Director of Operations.

c. After requirements have been submitted and assembled in a form suitable for consideration, the committee will be asked to meet for the purpose of resolving questions of priorities and finally putting its approval on a consolidated statement of requirements in a form that will provide useful guidance for operations under this Project.

d. From time to time while operations are in progress the committee will be asked to review the original statement of requirements and to modify it in the light of new intelligence obtained through AQUATONE and through other channels.

4. Assumptions as to the scope of operations under AQUATONE and the operational concept to be employed will be provided to the committee as needed through the Project Intelligence Requirements Officer by the Project Director of Operations. Without prejudging the exact form in which requirements will be stated, it will clearly be desirable to separate out a narrowly limited category of top priority targets, and perhaps to distinguish two other levels of priority as well. Moreover, it will be desirable to establish these categories of requirements for each major region within the whole target area, since the areas accessible at any given time will largely be determined by operational factors.

(Signed)
Richard M. Bissell, Jr.
Project Director

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ANNEX 118

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CHAL-1138/1-60

CENTRAL INTELLIGENCE AGENCY
Washington 25, D. C.
Office of the Director

19 August 1960

MEMORANDUM FOR: Brigadier General Andrew J. Goodpaster

SUBJECT: Statistics Relating to the U-2 Program

1. Total holdings of processed film are 131,047 feet of 70 mm "tracker" film, a strip approximately 25 miles long, and 1,154,251 linear feet of 9" wide basic intelligence film, or a strip 220 miles long.

2. From these photographs 5,425 separate photo-analytical reports have been prepared and disseminated to appropriately cleared officials.

3. Of the 8,602,700 square miles that comprise the USSR, the project has covered one or more times 1,300,000 square miles or 15% of the gross area.

4. The following table gives the aggregate coverage including repetitions:

	Linear Miles		Square Miles	
	70 mm	9 inch	70 mm	9 inch
USSR and Satellites (38 missions)	74,504	2,599,665	46,384	1,752,322
China and Tibet (13 missions)	30,058	1,097,931	16,561	1,061,292
Total (including non-Bloc, 239)	485,901	17,015,825	302,396	12,310,019

5. The Intelligence Community's summary Accomplishments of the U-2 Program which formed the basis for part of my testimony before Congressional Committees last May is attached to show the substantive contribution to our knowledge of the USSR made by the program.

(Signed)
ALLEN W. DULLES
Director

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27 May 1960

ACCOMPLISHMENTS OF THE U-2 PROGRAM

I. Introduction

Five years ago, before the beginning of the U-2 program, the United States had organized against the threat of surprise attack by the Soviet Union every available measure in the classical intelligence bag of tricks. These efforts had given us considerable knowledge concerning the capabilities and intentions of the Soviet Union. But much of this was hard to verify and difficult to interpret. There remained many uncertainties concerning the types of military systems under development, the rate at which they were increasing their power, and their ultimate aims for its use.

This half-knowledge of the Soviet Union and uncertainty of its true power position posed tremendous problems for the United States. We were faced with the constant risk of exposing ourselves to enemy attack or of needlessly expending a great deal of money and effort on misdirected military preparations of our own.

To meet this situation, we determined to embark on the U-2 program to give the United States a firm foundation of hard information on which to make our intelligence judgments. The program has covered a large part of the most important areas in the Soviet Union and has provided information on a great variety of subjects important to our evaluation of the Soviet power position. Our main emphasis, however, has been directed against four critical problems, namely, the Soviet bomber force, the Soviet atomic energy program, the Soviet missile program, and the Soviet Air Defense System.

II. Intelligence of Soviet Offensive Capabilities Against the U.S. and Its Allies

A. Manned Aircraft

The Soviet bomber force has been, and remains today, the main offensive striking force of the Soviet Union. For several years, the status of the Soviet bomber program was a controversial topic in U.S. intelligence.

The U-2 program has confirmed that only a minimum long-range bomber production program is continuing in the Soviet Union. It has shown that some Soviet aircraft plants have probably been converted to the production of transport aircraft and that a few may possibly be engaged in some aspect of the missile program. It has also shown, however, that the Soviet Union has recently developed a new medium-range bomber with supersonic capabilities.

During the life of the U-2 program, we have covered numerous Soviet long-range bomber air fields. From this coverage, we have been able to confirm our estimate of the disposition of Soviet long-range bombers and have acquired data on the nuclear weapons storage facilities associated with them.

B. Ballistic Missiles

Ever since the first Soviet ICBM vehicle was launched in August 1957, Soviet propaganda has claimed that the world power balance was shifting in the direction of the Soviet Union. For several years, we have been aware that the Soviet Union was engaged in a high-priority ballistic missile development program. We have had and continue to have the ability to acquire data of actual Soviet ballistic missile flight tests. (You are all familiar with our radar installations in Turkey and the Aleutians.) The U-2 program, however, has enabled us to look periodically at the actual ground facilities involved in the Soviet missile test program.

One of the most significant items of information acquired by the U-2 was revealed by our coverage of the Tyura Tam rangehead in the fall of 1957, immediately after the first Soviet ICBM firings. The significant fact was that the Soviets had only one launch facility at Tyura Tam.

The photography showed this facility to be a massive concrete structure sufficiently large to permit the launch of even larger vehicles than the relatively heavy Soviet ICBM and space vehicles.

The photography also showed that the Soviets were conducting all of their missile and space firings from a single launcher during the 1957-1959 period, clearly indicating a different concept from that used by the

United States in the pre-launch checkout, erection, and firing of a missile. In fact, when these data were made available to U.S. missile experts, some of whom assisted us in our evaluation of the photography, they immediately embarked on a careful review of our own concepts for the use of launch pads.

This photography also provided us valuable insight into possible Soviet operational doctrine regarding ICBM deployment. It showed a reliance on rail as the major means of logistic support and operations. The rail line actually ran onto the launch pad.

From these data and related information on Soviet transportation systems, we are led to believe that the Soviet operational deployment of ICBMs will be directly associated with their rail system. By this, I mean that the missile and its supporting equipment would be carried on trains and moved from one pre-selected site to another, thus making it difficult for us to determine the precise location of any given missile unit on a continuing basis.

Even though the Soviet Union was able to sustain a considerable testing program from this one launch pad, photography of Tyura Tam during 1959 and 1960 has shown that a second and third launch complex were in varying stages of construction. The third launch complex is of a new type. It is too early to tell its intended purpose, but we have speculated that it may be used for a new type ICBM or that it may be the prototype of operational sites for troop training.

In summary, the photography collected by the U-2 has been a critical factor in our assessment that the Soviet ICBM program has not been and is not now a "crash" program; instead, it is an orderly, well-planned, high-priority program aimed at achieving an early ICBM operational capability.

In addition to our coverage of the ICBM test range at Tyura Tam, we have also had excellent coverage of the Kapustin Yar missile test range where Soviet intermediate and short-range missiles have been tested for the past 13 years. Over 600 ballistic missiles have been fired on this range in recent years.

Our 1957 coverage of Kapustin Yar provided us our first information on the number and type of launch pads being used in this program. It also showed that the Soviets were dovetailing their development of operational equipment and troop training directly into their research and development program.

1959 coverage of the area showed that in two years the Soviets had doubled the number of launch pads and had available quarters for training about 6,000 troops in the operational use of these short- and intermediate-range ballistic missiles. It is apparent that the Soviet ballistic missile program is a dynamic and growing program.

In addition to our coverage of the two major ballistic missile test ranges, we have given top priority during the past year to the problem of detecting the construction of launching sites for operation ICBMs. The U-2 was by far our best system for collecting such information. We have covered a number of the most highly suspect areas in the Soviet Union without having found a single launch site for operational missiles. We were able to prove, however, that a number of sites reported to us by other sources did not actually exist.

We have had no opportunity to cover other large and highly suspect areas in the Soviet Union, and the mission of May 1 was routed to give us the maximum amount of coverage possible in these areas. In view of the Soviet boast about the shifting power position and our estimate that the Soviet Union could have a small number of missiles on launchers for use against the United States, we felt that it was essential that we provide the President with additional assurance of the true state of the Soviet ICBM program before he was to meet Khrushchev in negotiations. This was particularly important in view of the fact that the negotiations were the direct outgrowth of the Berlin crisis generated by the Soviet Union.

C. Atomic Energy

The U-2 program has provided a large body of valuable information on the Soviet atomic emergy program. This information has covered the production of fissionable materials, weapons development and test activities, and the location, type, and size of stockpile sites.

During the past two years, Khrushchev has boasted that the Soviets will soon be able to curtail the production of fissionable materials for weapons purposes. However, evidence from the U-2 program has clearly indicated the contrary. The photography has shown that the Soviets are continuing to expand fissionable materials production capacity.

We have obtained excellent photographs of Soviet weapons development and fabrication facilities which show the magnitude of this effort. It has also shown that the Soviets are continuing a large-scale program for the testing of the non-nuclear components of nuclear weapons. We have no evidence, however, that the Soviet Union has violated the nuclear test moratorium.

On two occasions, we have photographed one of the large Soviet nuclear testing grounds. This photography has given us general insight into their nuclear test practices and has permitted us to identify several very low-yield tests conducted before the test moratorium which were obviously surface bursts and which were missed by our detection system.

The U-2 photograph has also given us our first firm information on the magnitude of native Soviet uranium ore and uranium metal processing activities. This is vital information in estimating Soviet fissionable materials production.

The U-2 program has enabled us to follow accurately the evolution of the Soviet nuclear stockpile program. We have precisely located five national and regional storage sites and over a score of forward nuclear storage facilities at long-range air bases. This has provided us with a good general index of the size and pattern of the Soviet nuclear weapons storage system.

D. Other Soviet Capabilities

The U-2 program has given us important information on other aspects of Soviet capabilities:

Photography has shown that the Soviets have a modest but active chemical warfare program. It has also indicated that they may have a program of biological warfare testing.

The program has provided us with a large amount of information on ground, naval, and air installations and order of battle. It has been particularly useful in confirming naval order of battle in the Murmansk and Black Sea areas.

In general, the program has tended to confirm our estimates of the size, nature, and rate of growth of Soviet industry.

The material has also been used for the correction of military maps and aeronautical charts.

III. Intelligence Affecting the U.S. Deterrent Striking Force

A. Target Location, Definition, and Refinement

Prior to the inauguration of the U-2 program, much of U.S. target information was based on materials captured during and immediately after World War II. Much of this information was becoming obsolete.

As a result of the concrete evidence acquired by the U-2 program on a large number of targets in the Soviet Union, it has now been possible for U.S. commanders to make a more efficient and confident allocation of aircraft, crews and weapons. Crews and aircraft have been assigned to the many new targets discovered in the program. In addition, some targets were found to be more extensive than had been believed previously and thus required the assignment of additional crews and weapons.

U-2 photography has also made it possible to provide new and accurate information to strike crews which will make it easier for them to identify their targets and plan their navigation more precisely.

A major problem in developing targets for U.S. missiles is that of establishing the precise location of the target. This has been particularly difficult in view of the poor geodetic information available to the U.S. on the Soviet Union. The U-2 photography, however, is making it possible for the U.S. to establish much more accurate target location data for many of the areas covered by the overflights.

B. Electronic Defenses and Radar Order of Battle

On nearly all of the overflights of the Soviet Union the U-2 aircraft carried special electronic intercept and recording equipment. The purpose of this equipment was to determine the technical characteristics and locations of Soviet radars and other electronic devices associated with the Soviet air defense system.

The electronic intercepts recorded by the U-2 aircraft permitted us to establish the basic concept, magnitude, operational efficiency, deployment, and rate of development of the Soviet air defense system over the past four years. This in turn has provided operational information for the planning of flight routes by U.S. air strike forces.

Prior to the U-2 program, we had no way to determine that the Soviet Union was in the process of constructing a defense in depth covering the entire area of the Soviet Union with early warning and ground control intercept radars and their related weapons. If we based our estimates on a peripheral defense concept we would have arrived at a figure of about 400 early warning radars and associated equipment. On the basis of the information collected by the U-2, however, we now estimate that the Soviet Union has about 1600 prime radars with associated equipment.

This program has also allowed us to observe dynamic aspects of the Soviet air defense system by watching it in operation against the U-2. During the past four years we have observed the Soviet abandonment of prime heavy radars as height-measuring instruments and have seen the installation of special height-finding radars which give them a considerable improvement in their ground-controlled intercept capability.

We have seen the early deployment of new type radars in the interior of the Soviet Union before they began to be installed along Soviet borders. The U-2 has also permitted us to assess any difference between peripheral and interior defenses.

We have obtained technical information on airborne intercept radars and have observed the use of these radars in combat situations. Technical information also will assist the designers of U.S. electronics countermeasures equipment.

C. Fighter Aircraft Defenses

The U-2 program has obtained photography on over a hundred fighter airfields. This has permitted us to determine the concept employed by the Soviets in their use of fighters as an air defense weapon. Moreover, the only information available to us on the latest Soviet Mach 2 fighters was obtained from one of the U-2 flights.

More important, however, the program has permitted us to observe these fighters in an active air defense capacity. We have photographs of various fighter types attempting to intercept the U-2 and have electronic intercepts of their air defense radars. We can also relate this information to our electronic intercepts of the early warning radars and get some idea of reaction time and efficiency of the Soviet fighter defense system.

D. Surface-to-Air Missile Defenses

Prior to the beginning of the U-2 program we knew that the Soviet Union had established a massive system of surface-to-air missiles in 56 sites located on two concentric circles around Moscow. We had some indication that they intended to employ a similar system around other major cities such as Leningrad but the evidence on this point was inconclusive.

The U-2 program not only permitted us to obtain fuller information on the Moscow SAM system, but it also proved conclusively that this system was not being installed around other cities.

In 1959, we discovered from both photograph and electronic intercept that a new and more flexible SAM system was being deployed around all major centers in the Soviet Union. We have photography on approximately 70 of the new sites and estimate that there are a total of 250 to 300 such sites in the USSR. We believe that this second generation missile is the missile known to the intelligence community as the "Guideline" missile with an estimated altitude capability of 60,000 feet extending up to 80,000 feet with a considerably reduced accuracy.

The data revealed by the U-2 program not only confirmed previous estimates that the Soviets were placing a very high priority on their air defense program but also provided positive evidence of the progress achieved.

The information on the Soviet air defense system, particularly that concerning surface-to-air missiles, has had a direct bearing on the U.S. strike forces' planning. The discovery of the second generation SAM system caused them to greatly increase their emphasis on low level penetration tactics.

Preliminary analysis of the photography collected on one of our most recent flights indicates that the Soviets may be engaged in research concerning anti-ballistic missile radars and tracking. It is too early, however, to determine whether or not these developments include an actual anti-ballistic missile development program.

IV. Evidence of Basic Soviet Intentions

To the extent that Soviet military capabilities and trends in their development constitute evidence of Soviet intentions, the U-2 program has provided us with a great deal of important information.

As a result of the firm information that we have collected, it is our present judgment that the USSR is not engaged in a crash effort to develop an overwhelming nuclear delivery capability. As I mentioned earlier, the Soviet bomber program has been cut back to a minimum effort, and the ICBM development program appears to be an orderly, high-priority but not "crash" program.

We have seen that throughout the period the Soviet Union continued to give great priority to the development of a defensive capability in the form of surface-to-air missiles, fighters, and air defense radars.

By giving us better evidence concerning the Soviet development of specific weapons systems, the U-2 program has enabled the U.S. to tailor its own defenses more precisely to the actual Soviet threat.

The program has also given us increased confidence in our judgments concerning the issue of peace or war in crisis situations. Whenever the international situation becomes tense because of a problem in some particular area, we are concerned whether the situation might get beyond control--that someone on the other side might suddenly and irrationally unleash big war.

For example, at the time of the Suez crisis the Soviet Union threatened the use of rockets. During the Lebanese and the Taiwan Straits crises in 1958, various Kremlin statements led us to wonder whether the Soviets might have misunderstood our intentions and were preparing for war. Again in the various peaks of the Berlin crisis since 1958 the same question has arisen. Our knowledge of Soviet military preparations, however, resulting from the overflight program, has given us an ability to discount or call the bluffs of the Soviets with confidence. We have been able to conclude that Soviet statements were more rhetorical than threatening and that our courses of action could be carried through without serious risk of war and without Soviet interference.

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It is extremely difficult for me to sum up in words the significance of this effort to our national security. I do not wish to exaggerate, nor do I wish to belittle other vital intelligence programs. This photographic coverage and the data derived from it are an inseparable part of the whole national intelligence effort. But in terms of reliability, of precision, of access to otherwise inaccessible installations, its contribution has been unique. And in the opinion of the military, of the scientists and of the senior officials responsible for our national security it has been, to put it simply, invaluable.

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ANNEX 119

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MISSION TO BIRCH WOODS, SEVEN TENTS, AND NEW SIBERIA

by

Henry S. Lowenhaupt, OSI

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I suppose I remember so distinctly working on the nuclear targets for the U-2 missions of late August 1957 to Central Asia and Siberia because this was my first direct experience with reconnaissance operations. First impressions always do seem the most lasting. Besides, I could not help being reminded that in 1944 I had been sent by train from a basic training camp in Alabama to a telephone number in Knoxville, Tennessee, with my destination the "secret" atomic city of Oak Ridge with its 70,000 inhabitants. Here in 1957 my prime target was a "secret" atomic city known as the Post Box, Tomsk, in Central Siberia.

There was also at the time a feeling of position vindicated. In 1945 I had been impressed with the accuracy of the estimate on the wartime uranium output from the famous Joachimsthal uranium mines of Czechoslovakia. Aerial photographs taken a year apart had been used as its basis. In 1949, after the first Soviet nuclear test, I had advocated photoreconnaissance of the nuclear production sites in the Urals. Indeed, in that year, I had persuaded the Air Force member of the Joint Atomic Energy Intelligence Committee (JAEIC) to design and submit a formal proposal for flying the Urals in a B-25, taking off from Iran and ditching the aircraft next to an aircraft carrier to be stationed in the Barents Sea off Novaya Zemlya. We still had in the files Dean Acheson's reply, as Secretary of State, through the DCI to the Chairman of JAEIC, dated 30 December 1949, denying the request for permission to implement.

I thoroughly believed that satisfactory photographic coverage of a U-235 separation plant, or of a plutonium production reactor, would give us "information on electric power consumption, cooling water consumption, plant arrangement and size, new construction, and the physical details which, when analyzed, should enable us to make a much better estimate of Soviet critical material production." *

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* Briefing of Joint Chiefs of Staff by General Charles P. Cabell, DDCI, 28 August 1957.

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Thus, to me, "a picture was worth a thousand words." I would have been shocked at the suggestion that it might take months of steady work by competent photo-interpreters aided by the best procurable consultants to work out the real intelligence meaning of a picture. Yet this was to be the case: the Russians could not copy our atomic facilities; they had had to engineer and design their own from scratch. We, in turn, then faced the cryptographic problem of how to interpret the totally foreign engineering we found evidenced in U-2 photography.

The atomic sites near both Tomsk and Krasnoyarsk, in Central Siberia, and the Semipalatinsk Nuclear Weapon Proving Ground had been selected by interagency agreement through the interagency ARC (Ad Hoc Requirements Committee) on 27 May 1957 as three prime objectives for flights in the Central Asian and Siberian areas. Other major objectives also were emphasized, such as what is now the Tyura Tam Missile Test Range; Stalin's second industrial bastion, the Kuznetsk Basin; and the aircraft industry in Novosibirsk and Omsk. It was the belief in the existence of all these targets with their immediate bearing on the latest weapons systems that had persuaded first the ARC, and then eventually the Project Director, Richard M. Bissell, and the Director, Allen Dulles, to cash in the blue chips necessary to procure take-off bases along the southern periphery of the USSR and China.

In the summer of 1957 the U-2 program was still being conducted with extraordinary security. As an intelligence analyst in CIA's Office of Scientific Intelligence, I did my targeting in the Blue Room, a small, centrally located, secure area away from my normal desk, where I could work without telegraphing to all and sundry within the office what we were doing. Psychologically, we were prepared to be secure and devious: the Blue Room was in fact painted light green.

As an analyst I was directed in July 1957 to work up target briefs by priority for all atomic targets in the enormous geographical area comprising Central Asia and Central Siberia. These targets were then to be used in planning the actual flights or missions by the operational side of the program. The operational methodism was to plan each specific mission around one or two of the highest priority targets selected by ARC, laying out a sensible route to avoid or minimize known defenses, yet endeavoring to cover as many low priority targets along the way as

possible. Normally I became involved in the flight path only to the extent that the best (vertical) photography* occurred in a band only five miles wide: it was desirable to orient this band over the target to maximize coverage of the target if it were oblong-shaped, or should either target location or pilot navigation be off a bit.

When it came to setting up the Semipalatinsk Nuclear Weapon Proving Ground target, I was in a quandary. I knew that some twenty-odd nuclear tests had occurred there, but I did not really know the location of any single test to better than thirty miles. I had no idea how big the area was. Our Nevada atomic test site at Frenchman's Flats was certainly sizeable; compared to a five-mile best swath-width, it was astronomical.

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to average for me the seismic epicenters (locations) of the five largest nuclear detonations in the Semipalatinsk area. The location of this "centroid" turned out to be out in the featureless desert some seventy miles due west of Semipalatinsk, about one-third of the way to Karaganda. Semipalatinsk had been named Seven Tents because seven trading companies had maintained residencies there when Semipalatinsk had been an important crossroads on the caravan trails to China and to the fabled cities of Samarkand and Bukhara to the south. My "centroid" was south of the old trail and the only names on the map in the vicinity were those of seasonally dry salt lakes. Here was a highest priority target whose location was really so poorly known that it could be best defined as a hand-sized blur on a standard aeronautical chart. Such a target was hardly realistic in operational terms.

My difficulties with locating the Semipalatinsk Nuclear Weapon Proving Ground pointed up the real problem: we really needed and wanted flights in the Central Asian and Siberian areas because we knew so little about what was going on there; yet unless we knew of an activity and precisely where it was going on, we would stand little chance of photographing it. General Philip G. Strong, Deputy Director of OSI for Collection Matters, who had had much World War II reconnaissance experience, was on the side of precision in targeting and of detailed justification for the collection need assigned to each target. It was he who questioned the accuracy of the maps and suggested the usefulness of targeting relative to major map features, rather than directly tying to search-centered coordinate systems of longitude and latitude.

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* With the "A" Camera System.

Thus it was with renewed care that I assembled the data on the atomic targets in this vast central area of the USSR. The atomic sites already listed in the 1955 GUARDMOUNT file* were reviewed. The lower priority uranium concentration plants of Combine 6 in the Fergana Valley, such as the ones just south of Leninabad at Ispisar, north of Leninabad near Taboshar, and a good many miles to the east of Leninabad near Andizhan, had been located as well as possible. All were based ultimately on the reporting from a 1947 Jewish refugee who had driven a bread-truck to each of these sites. I remembered that he had been interrogated exhaustively and then had been resettled with appreciation in Brazil. I recalled there had been a problem with the maps he drew: to the east of where the Syr Darya River turned north toward the Aral Sea he had swapped north and south; to the west of this line, north on his maps was the way it was supposed to be. In several instances his reporting had been confirmed by reports from returned prisoners of war.

The location of the uranium concentration plants belonging to Combine 8, to the east of Leninabad toward the Pamir Knot and to the south of Alma Ata, were at best poorly known; targeting was considered doubtful on these.

Ever since we had learned that Krasnoyarsk, Novosibirsk, and Tomsk, in Siberia, were the location of the second generation of Russian atomic sites, we had maintained a special watch on these cities and the countryside nearby. The city of Krasnoyarsk had been made off-limits to foreigners by 1948, and information on the atomic site some 35 miles downstream (north) from Krasnoyarsk on the east bank of the Yenisey River had been especially hard to come by. The defector Icarus, in early 1951, reported that many trainloads of mining equipment had been sent in mid-1950 from Wismut, A.G. (Bismuth, Inc.), the vast Russian uranium enterprise in East Germany, and that he believed the purpose of the new enterprise at Krasnoyarsk was to mine uranium. By 1952 all administrative centers in the peninsula of land south of the confluence of the Kan and Yenisey Rivers and north of the Trans-Siberian Railroad had disappeared from the annual editions of "Deleniye," the published MVD listing of administrative centers in the USSR. A German prisoner of war had been returned to West Germany, who, despite all the Russian rules and regulations, had actually spent several years at the Krasnoyarsk atomic

* The target file for the GENETRIX program of 1955 in which free balloons bearing cameras were allowed to drift across the USSR on predetermined paths.

site where he had been engaged as a construction worker. He reported hearsay information indicating many kilometers of tunnels all lined with concrete. His name for the associated town was Komsomolsk na Yenisey. In early 1957 a GENETRIX balloon had been recovered from the Aleutian Islands which contained a number of aerial photographs of Dodonovo, as the Krasnoyarsk atomic site came to be known after an old village on the site. These photographs showed an enormous construction effort, a new city of apartment houses, laboratories, warehouses and machine shops, and a vast mining effort. There was every reason to believe, however, that higher resolution photography would lead to a determination of the functions at this large, complex, and possibly underground, installation.

The Novosibirsk uranium metal plant had first been identified as such also by the defector Icarus. In 1956 Dr. Nikolaus Riehl and other German scientists formerly engaged at Elektrostal, near Moscow, in research on uranium metal manufacture had confirmed and updated Icarus' testimony. Attachés had photographed it from the Trans-Siberian Railroad in 1952 and 1954 because of its evident size and importance. George Monk* had identified it through comparison of these photographs with the material filed in the old Industrial Register of the Office of Central Reference under the name "Stalin Auto Works", apparently the local cover name for the enterprise. It could be located within half a mile of permanent map features. Across the Trans-Siberian Railroad was the Novosibirsk Airframe Plant, so there were several priority reasons for the U-2 to visit this northeast suburb of Novosibirsk. However, it was also evident that a uranium metal manufacturing facility was basically of second priority as a U-2 mission objective.

The atomic site near Tomsk was a matter of more concern: the amount of information on its function and location was woefully sparse. Furthermore, it was at extreme range so that the aircraft could not, in fact, spend time hunting for it even though we felt we could justify it as a prime target. Although we had indeed placed for years a special collection effort against this site, the 15 January 1952 Soviet Foreign Office order closing Tomsk, Novosibirsk, Omsk, and other specific areas to foreigners had been especially effective in the case of Tomsk,

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* Now State Department representative to JAEIC.

where the town was not accessible to attaché photography from the Trans-Siberian Railway the way Novosibirsk had been. Actually there had been a number of remarks in reporting about something atomic or of a special post box in connection with Tomsk. This had led to the location and interrogation of a few prisoners of war who had at one time or other been in the Tomsk area and had been returned to West Germany in 1954, and of a few ethnic Germans who had been returned in 1956. Evidence one could put one's finger on, however, was comprised in three reports and the analysis of a fur hat.

The latest of these reports was from an ethnic German who claimed to have been employed in 1955 in Tomsk as a blacksmith. He reported to his Army interrogator that local inhabitants had facetiously suggested "Atomsk" would be a better name for the town than Tomsk. He knew of no atomic installation as such, but had heard of an underground secret plant and settlement called "Kolonne (Labor Brigade) 5" located northeast of the Tomsk II railroad station.

Another returned ethnic German had told his British interrogator he had heard of an industrial enterprise engaged "in manufacturing fillings for atomic weapons locally known as the Post Box." In Tomsk II he had seen a large building with barred windows on all floors bearing a large sign saying "Information Office, Personnel Department, Post Box." He knew of two relatively small areas of the enterprise, one east, the other northeast of Tomsk. On reinterrogation he mentioned traveling north from Tomsk II on a bus belonging to the Post Box when going to visit a friend of his in a lunatic asylum located on the southern fringe of a prohibited area. He reported seeing railway trains running into the prohibited area carrying coal, wood, and building materials. He had also heard persons employed there were well paid and received preferential treatment in the matter of distribution of food stuffs, etc. He mentioned seeing three large chimneys six to eight kilometers north of Tomsk II which emitted black smoke. The interrogator noticed the source had a very poor memory, seemed to be suffering from some kind of mental disorder, and was preoccupied with his plans to emigrate to Canada. Clearly, neither of the above reports tended to inspire confidence in either the location or the existence of a major atomic installation in the Tomsk area.

The story of a returned German prisoner of war who had been employed in 1949 as a tailor in a small factory northwest of Beloborodovo some twelve kilometers north of Tomsk City seemed much more

believable. He reported to his Air Force interrogator that within eight days, in April or May 1949, some 12,000 penal workers had passed through the bathing and delousing facilities of his penal camp and were put to work in a secure area, fenced off between his factory and the village of Iglakovo several kilometers to the north and down the Tom River. The returned prisoner of war was clearly proud of his ability and reputation as a tailor and reported that many military officers belonging to the military construction staff in charge of this new construction came to his tailor shop to get their uniforms fitted properly. Reportedly the military construction staff had arrived complete with families from Tallin where they were said to have recently completed another large construction task. In charge was a Soviet general who had arrived in April with his staff. Interestingly, the guard force was of a different subordination, and neither mingled nor lived with the construction staff officers. It was the tailor's Russian supervisor who had told him that the fenced-off area was to be an atomic energy plant.

The U-235 enrichment implied U-235 separation in the Tomsk area. Nuclear weapon component fabrication was also a possibility, but I felt that the apparent size of the atomic operation was much too large for merely such an operation. There appeared no reason to suggest either reactor and associated chemical plant operation, or lithium isotope separation. I centered my location on the spot where the German tailor had seen 12,000 prisoners go to work. The die was cast.

In late August 1957 the missions were flown - rapidly to minimize possible counteraction, and many of them to cover as much useful area as possible.

Illustrating from the flight over the Semipalatinsk Nuclear Weapon Proving Ground, the mission was planned with Stalinsk in the Kuznetsk

Basin and Alma Ata in the Kirgiz, SSR, as prime targets. As confidence in knowing the location of the Semipalatinsk Proving Ground was too low, even though it was a prime target, the cities of Semipalatinsk and Karaganda were made way stations in their own right, and the flight path between them was so adjusted that the flight would pass over the best estimate of where the Nuclear Proving Ground actually was. Mention of the Nuclear Proving Ground was dropped from the flight plan for security reasons ("why give away knowledge if you don't have to"). I doubt that anyone thought there would be any special danger.

The coordinates turned out to be good. The U-2 passed directly over the Nuclear Proving Ground on 22 August 1957; and the pilot got a THRILL. He recognized through the drift meter what he was over, for he had many times flown over Frenchman's Flats, our Nevada Nuclear Test Range. He recognized the shot-zone had been cleared: they were ready to fire.

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The pilot had photographed it and its carrier aircraft on the ground when he had flown over the Semipalatinsk airfield and associated nuclear weapon assembly facility. The nuclear weapon "cab" which the pilot saw on the shot-tower at the Proving Ground was for a low yield device that was not to be detonated until the thirteenth of September.

The mission also photographed a well-planned, modern community of 20,000 people, not otherwise known, on the north shore of Lake Balkhash. This turned out to be the headquarters of the Sary Shagan anti-missile test range, and a real find. It covered the uranium mill at Kadzhi-Say near the west end (not the east end as I had thought) of Lake Issyk Kul, south of Alma Ata, proving that the Russians had large modern uranium mills. The uranium mines of Bystrovka were covered but not found in the film for another year.

Turning to other flights, the Dodonovo site near Krasnoyarsk was not photographed because of heavy cloud-cover during the operational period, an all too familiar situation in the reconnaissance business.

The uranium metal plant at Novosibirsk turned out to be quite a large installation with what probably is a large lithium isotope separation plant then under construction between the raw uranium ore facility and the site thermal power plant.

The Tomsk atomic site was covered on 21 August in vertical, clear photography. The tailor's location proved correct. Allen Dulles was rumored to have said jubilantly, when he heard the news, "You mean you really did know that something atomic was going on way out there in the wilds of Siberia?"

As summarized in the mission report, the Tomsk atomic energy installation "covers an irregular-shaped area of about 40 square miles on the right bank of the Tom River. No single atomic energy complex in the western world includes the range of processes taking place here. The villages of Iglakovo and Beloborodovo are encompassed in the housing and administration area along the river. On the west edge of the area, a large thermal power plant with an estimated capacity of 400 megawatts is undergoing further expansion. Further power is provided by Gres II in Tomsk and by tie-ins to the Kuzbas Grid. East of this plant is located the feed and processing section and gaseous diffusion plants. One gaseous diffusion building is uncompleted. On the east edge is located the reactor area. One of the two* reactors appears to be in the final stages of construction. A maintenance and construction area is just north of these areas. On the northeast edge, a plutonium chemical separation area is uncompleted. A mud lake dump area is on the north edge of the complex outside of the fence which encompasses the whole installation. It is rail served by a spur line from Tomsk."

The photograph, of course, could not tell us within several years of when these installations were finished, nor what the Russians called them. Fortunately, we were able to talk to a defector in the spring of 1958 who had been a soldier in a military construction brigade at the Tomsk site from July 1955 to February 1956. He solved many of our time schedule problems. He reported the general address of the whole installation was Post Box 5, Tomsk. The new city was named Berezki, Birch Woods, and the birch forest was still preserved around the city in February 1956, for the Russians love such forests. Beloborodovo had

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The size of the gaseous diffusion U-235 separation facility with its four operating buildings and a fifth under construction may be judged through comparison with the facility at Oak Ridge which was one of the U-235 facilities in the U. S. drawing about 2000 MW of electric power each.

apparently been expanded to become the construction workers' town of Chekist (Tomsk 19), presumably in honor of their connection with the MVD, and Iglakovo had become Kuzminka (Tomsk 17). The man in charge was Major General Tzarevskiy, who had built the steel town of Nizhniy Tagil in the Urals in the 1930's. We had indeed photographed an important atomic installation.

C05492922

ANNEX 120

TOP SECRET

CIA U-2 MISSIONS FLOWN - 1956-1966 - CHRONOLOGICAL

Date 1956:	Det.	Msn. No.	Pilot	Departed	Targets	Equipment	Results
June 20	A	2003	Overstreet	Wiesbaden	Poland	A-2	Good
July 2	A	2009	Dunaway	Wiesbaden	Bulgaria	A-2	Poor
2	A	2010	Kratt	Wiesbaden	Rumania	A-2	Fair
4	A	2013	Stockman	Wiesbaden	Leningrad, Moscow(cloudy)	A-2	Good
5	A	2014	Vito	Wiesbaden	Moscow	A-2	Exc
9	A	2020	Knutson	Wiesbaden	Poland, Baltic Area	A-2	Exc
9	A	2021	Overstreet	Wiesbaden	Hungary, Kiev, Minsk, Poland, Czechoslovakia	A-2	Good
10	A	2023	Dunaway	Wiesbaden	Crimea	A-2	Exc
Aug 29	A	1104	Carey	Wiesbaden	Greece, N. Africa, Egypt, Israel, Lebanon, Syria, Turkey	A-2	Exc
29	A	1105	Stockman	Wiesbaden	Greece, N. Africa, Egypt, Israel, Lebanon, Syria, Turkey	A-2	Exc
30	A	1106	Vito	Adana	Greece, N. Africa, Egypt, Jordan, Lebanon, Syria, Turkey	A-2	Good
30	A	1107	Overstreet	Adana	Greece, N. Africa, Egypt, Gaza, Lebanon, Syria, Turkey	A-2	Good
Sep 6	A	1108	Knutson	Wiesbaden	Yugoslavia, Albania, Turkey, Cyprus	A-2	Good
7	A	1109	Carey	Wiesbaden	Sicily, Malta, Greece, Rhodes Italy	A-2	Exc
11	A	1110	Kratt	Wiesbaden	France, Sardinia, Sicily, Malta, N. Africa, Egypt, Israel, Turkey	A-2	Exc

TOP SECRET

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1956 cont'd:

Sep	11	A	1111	Overstreet	Wiesbaden	Corsica, Sicily, Italy	A-2	Good
	11	B	1301	Cordes	Adana	Turkey, Cyprus, Rhodes	A-2	Good
	14	A	1112	Kratt	Adana	Corsica, Pantelleria, Malta Rhodes, Cyprus, Wiesbaden	A-2	Exc
	27	B	1304	Powers	Adana	Turkey, Greece, Sicily, Crete Rhodes, Cyprus	A-2	Exc
Oct	3	B	1305	Jones	Adana	Lebanon, Israel, Egypt Suez, Cairo	A-2	Exc
	4	A	1114	Stockman	Wiesbaden	Italy, Sicily, Sardinia, Marseille, Toulon	A-2	Fair
	12	A	1115	Knutson	Wiesbaden	Trieste, Yugoslavia, Italy, Adriatic Sea	A-2	Fair
	12	B	1307	Hall	Adana	Syria, Lebanon, Israel, Gaza, Port Said	B	Poor
	16	B	1308	McMurray	Adana	Turkey, Greece, Albania, Yugoslavia, Rhodes	B	Poor
	19	B	1309	Snider	Adana	Turkey, Greece, Albania, Yugoslavia, Rhodes	B	Fair
	21	B	1310	Birkhead	Adana	Israel, Egypt, Rhodes, Albania, Wiesbaden	A-2	Good
	25	B	1312	Birkhead	Wiesbaden	Adriatic, Cyprus, Aqaba, Syria, Jordan, Adana	A-2	Exc
	29	B	1313	Edens	Adana	Lebanon, Israel, Jordan, Aqaba, Gaza, Suez, Cyprus	A-2	Fair
	30	B	1314	Powers	Adana	Lebanon, Israel, Jordan, Sinai	B	Exc
	31	B	1315	Snider	Adana	Syria, Lebanon, Jordan, Aqaba, Egypt	A-2	Exc

1956 cont'd:

Nov 1	B	1316	Hall	Adana	Cyprus, Egypt	A-2	Exc
5	B	1318	Snider	Adana	Tripoli, Syria	B	Fair
7	B	1321	Powers	Adana	Iraq, Kuwait, Saudi Arabia	A-2	Fair
12	B	1323	Jones	Adana	Syria, Lebanon, Israel, Port Said	A-2	Exc
12	B	1324	Birkhead	Adana	Syria, Turkey Border, Iraq, Persian Gulf	A-2	Fair
13	B	1325	Powers	Adana	Syria, Iraq, Persian Gulf, Saudi Arabia	A-2	Fair
14	B	1326	Jones	Adana	Turkey, Syria Border, Iraq, Kuwait, Iran, Saudi Arabia	A-2	Good
15	B	1328	Edens	Adana	Syria, Israel, Jordan, Egypt	A-2	Exc
16	B	1329	Hall	Adana	Syria, Lebanon, Israel, Jordan, Iraq	A-2	Fair
18	B	1331	Edens	Adana	Syria	B	Poor
18	B	1331A	Jones	Adana	Syria	A-2	Fair
19	B	1332	Birkhead	Adana	Syria, Lebanon, Israel, Sinai, Jordan	A-2	Good
20	B	1334	Hall	Adana	Syria, Lebanon, Israel, Jordan	A-2	Poor
20	B	4016	Powers	Adana	Iran, Baku, Armenia	A-2	Fair
30	B	1340	Birkhead	Adana	Syria, Lebanon, Israel, Jordan, Iraq	A-2	Poor
Dec 4	B	1344	Snider	Adana	Syria, Jordan, Iraq	A-2	Good
10	B	4018	Edens	Adana	Bulgaria	B	Good
10	A	2029	Vito	Giebelstadt	Bulgaria	A-2	Good
18	B	1348	Jones	Adana	Syria, Lebanon, Israel	A-2	Poor
22	B	4019	Birkhead	Adana	Russian Border, Caspian, Black Sea, Afghanistan	Syst V	Good

1957:

Jan 20	B	1351	Powers	Adana	Syria, Turkish Border	A-2	Fair
23	B	1352	McMurray	Adana	Syria, Jordan, Israel, Egypt, Lebanon	A-2	Exc
Feb 11	B	1359	Snider	Adana	Syria, Jordan, Israel	A-2	Good
Mar 17	B	1365	McMurray	Adana	Syria, Israel, Lebanon	A-2	Good
18	B	4020	Cherbonneaux	Adana	Iran, Iraq, Syria, Afghanistan	Syst V	Good
Apr 25	A	2036	Smiley	Giebelstadt	Albania	A-2	Exc
25	B	1370	Edens	Adana	Syria, Jordan	B	Poor
27	B	1371	Birkhead	Adana	Syria, Jordan (camera out)	B	Poor
May 21	B	1375	Jones	Adana	Syria	B	Fair
30	B	1376	Birkhead	Adana	Syria	B	Fair
30	B	1377	Jones	Adana	Syria	B	Exc
Jun 5	B	1379	Hall	Adana	Syria	B	Poor
8	C	6002	Rand	Eielson	Klyuchi/Incomplete WX	B	-
20	C	6005	Rand	Eielson	Klyuchi	B	Good
20	B	1380	Powers	Adana	Syria	B	Fair
21	B	1382	Edens	Adana	Syria	B	Exc
Jul 6	B	1384	Snider	Adana	Syria	B	Exc
21	B	4030	Cherbonneaux	Adana	Iran, Iraq, Syria	B (DB)	Good
31	B	4033	Cherbonneaux	Adana	Black Sea	B (DB)	Good
Aug 4	B	4036	Powers	Lahore	China, Ti Hwa, Mongolia	A-2	Poor
5	B	4035	Edens	Lahore	Novokazalinsk, Kzylorda, Aral Sea	B (DB)	Good

1957 cont'd:

Aug 11	B	4039	McMurray	Lahore	Ust Kamenogorsk (camera out)	B (DB)	Poor
20	B	4045	Snider	Lahore	Tomsk, Novosibirsk	A-2	Good
20	B	4048	Jones	Lahore	Semipalatinsk, Omsk, Balkhash	A-2 (DB)	Fair
21	B	4049	Birkhead	Lahore	Krasnoyarsk	A-2	Poor
21	B	4050	Cherbonneaux	Lahore	Stalinsk, Semipalatinsk, Alma Ata	A-2 (DB)	Exc
21	B	4051	Hall	Lahore	Tibet, Lhasa	B	Poor
28	B	4058	Jones	Lahore	Leninabad, Aralsk	A-2 (DB)	Exc
31	B	1385	Edens	Adana	Syria, Lebanon	B	Poor
Sep 1	B	1386	Birkhead	Adana	Syria, Lebanon	A-2	Exc
10	B	4059	Hall	Adana	Kapustin Yar	A-2 (DB)	Exc
16	C	6008	Baker	Eielson	Klyuchi	A-2 (DB)	Exc
Oct 11	A	2037	Kratt	Giebelstadt	Barents Sea	Syst IV	Good
12	B	1388	Powers	Adana	Syria	A-2	Exc
13	A	2040	Stockman	Giebelstadt	Murmansk	A-2	Exc
27	B	4061	McMurray	Adana	Black Sea	A-1 (DB)	Exc
Nov 6	B	4065	Powers	Adana	Black Sea	Syst IV	Fair
9	B	1390	Birkhead	Adana	Syria	A-2	Exc
14	B	4066	Rand	Adana	Iran, Russian Border	Syst IV	Exc
20	B	1391	Hall	Adana	Syria	A-2	Poor
21	B	4067	Birkhead	Adana	Black Sea	A-1 (DB)	Exc
22	B	1392	Rand	Adana	Syria	A-2	Good

1958:

Jan 9	B	4069	Erickson	Adana	Black Sea	Syst IV	Good

1958 cont'd:

Jan	18	B	1399	Powers	Adana	Black Sea	A-2	Good
	28	B	4075	Shinn	Adana	Albania	A-2	Good
Mar	1	C	6011	Crull	Atsugi	Japan, Ukrania USSR	A-2 (DB)	Good
	15	B	4078	Barnes	Adana	Iran, Soviet Border	Syst IV	Fair
	28	C	1714	Crull	Cubi Point	Celebes	A-2	Good
Apr	1	C	1718	McMurray	Cubi Point	Sumatra	A-2	Good
	2	C	1720	Edens	Cubi Point	Borneo	A-2	Good
	3	C	1721	Jones	Cubi Point	Java	A-2	Good
	4	C	1722	Snider	Cubi Point	Java, Sumatra	B	Poor
	7	C	1724	Crull	Cubi Point	North & Central Sumatra	A-2	Good
	8	C	1725	McMurray	Cubi Point	Java, Sumatra	A-2	Good
	11	C	1727	Jones	Cubi Point	Borneo, Celebes	A-2	Poor
	15	C	1729	Edens	Cubi Point	Sumatra	A-2	Good
	16	C	1730	Snider	Cubi Point	Java	A-2	Good
	18	C	1731	Jones	Cubi Point	Celebes, Borneo	B	Fair
	20	C	1734	Edens	Cubi Point	Borneo, Java	B	Poor
	21	C	1735	Rudd	Cubi Point	Borneo, Java	A-2	Good
	22	C	1737	Crull	Cubi Point	Celebes	A-2	Good
	23	C	1739	Edens	Cubi Point	Java	B	Fair
	27	C	1742	McMurray	Cubi Point	Ceram, Morotai	B	Good
May	4	C	1745	Birkhead	Cubi Point	Java	B	Good
	6	C	1746	Jones	Cubi Point	Molucca, Celebes	B	Good
	7	B	4079	Powers	Adana	Iran, Soviet Border	Syst IV	Good
	9	C	1749	McMurray	Cubi Point	Molucca, Celebes, Ceram	B	Poor
	11	C	1751	Jones	Cubi Point	Celebes, Lesser Sunda	B	Good
	12	C	1752	Crull	Cubi Point	Java, Borneo	B	Poor

1958 cont'd:

May	13	C	1753	Birkhead	Cubi Point	Ambon, Ceram, Celebes	B	Good
	16	C	1754	Crull	Cubi Point	Borneo, Java, Great Natuna	B	Good
	16	B	1406	Barnes	Adana	Egypt	B	Exc
	17	B	1407	Knutson	Adana	Egypt	B	Good
	18	B	1409	Barnes	Adana	Syria	B	Good
	21	C	1760A	Snider	Cubi Point	Borneo, Celebes, Ambon	B	Fair
	22	C	1761A	Edens	Cubi Point	Borneo, Celebes, Ambon	B	Fair
	23	C	1762	Rudd	Cubi Point	Borneo, Java, Great Natuna	B	Good
	25	C	1763	Snider	Cubi Point	Borneo, Celebes, Molucca	B	Poor
	28	B	1411	Rand	Adana	Jordan, Yemen	B	Good
Jun	3	B	102	Shinn	Adana	Black Sea	Syst IV	Good
	4	C	1769	Edens	Cubi Point	Borneo, Java	A-2	Good
	6	C	1772	Rudd	Cubi Point	Celebes, Molucca	A-2	Good
	10	C	1773	Jones	Cubi Point	China Coast to Atsugi	Syst V	Good
	12	B	1414	Knutson	Adana	Saudi Arabia	B	Good
	17	B	1416	Baker	Adana	Syria, Lebanon, Israel	A-2	Exc
	18	C	6012	Rudd	Atsugi	China	B	Exc
	19	B	104	Rand	Adana	Iran, Soviet Border	Syst IV	Good
	21	B	1417	Powers	Adana	Egypt, Israel, Jordan, Lebanon	A-2	Good
	21	C	6013	Birkhead	Atsugi	N. Pacific to Alaska	Syst V	Fair
	22	B	103	Shinn	Adana	Black Sea	Syst IV	Good
	23	B	1418	Barnes	Adana	Syria, Lebanon, Jordan	A-2	Good
	24	B	105	Erickson	Adana	Turkey, Iran	Syst IV	Good
	25	B	1419	Knutson	Adana	Syria, Lebanon, Jordan	A-2	Good
	27	B	1420	Shinn	Adana	Syria, Lebanon, Jordan, Saudi Arabia	A-2	Good
	29	B	1421	Powers	Adana	Egypt, Israel, Lebanon	A-2	Good

1958 cont'd:

Jul	1	B	1422	Erickson	Adana	Syria, Lebanon	A-2	Good
	8	B	1424	Baker	Adana	Syria, Lebanon, Jordan	A-2	Good
	14	C	1774		Atsugi	Typhoon WINNIE	A-1	Good
	15	C	1775		Atsugi	Typhoon WINNIE	A-1	Good
	15	B	1426	Powers	Adana	Syria, Iraq, Jordan	B	Good
	16	B	1427	Erickson	Adana	Syria, Egypt, Israel, Lebanon	A-2	Good
	16	C	1776		Atsugi	Typhoon WINNIE	A-1	Poor
	17	B	1428	Barnes	Adana	Syria, Iraq, Egypt, Israel	B	Good
	18	B	1429	Baker	Adana	Syria, Iraq, Israel, Lebanon	B	Good
	20	B	1432	Rand	Adana	Syria, Egypt, Israel	A-2	Good
	22	B	1433	Powers	Adana	Syria, Iraq	B	Good
	22	B	1434	Erickson	Adana	Egypt, Lebanon, Israel, Syria	A-2	Good
	23	B	1435	Barnes	Adana	Syria, Egypt, Israel, Lebanon	A-2	Good
	23	B	1436	Knutson	Adana	Syria, Iraq, Iran	B	Good
	24	B	1437	Rand	Adana	Egypt, Lebanon, Israel, Syria	A-2	Exc
	25	B	1438	Baker	Adana	Egypt, Lebanon, Jordan, Syria, Israel	A-2	Poor
	25	B	1439	Powers	Adana	Iran, Iraq, Syria	A-2	Exc
	26	B	1440	Erickson	Adana	Egypt, Syria	A-2	Good
	27	B	1441	Barnes	Adana	Egypt, Israel, Lebanon, Syria	A-2	Good
	28	B	1442	Rand	Adana	Egypt, Israel, Lebanon	A-2	Exc
	29	B	1443	Shinn	Adana	Egypt, Jordan, Syria, Saudi Arabia	A-2	Good
	30	B	1444	Knutson	Adana	Iran, Iraq, Syria	B	Good
	30	B	1445	Baker	Adana	Egypt, Israel, Jordan, Lebanon, Syria	A-2	Good
Aug	3	B	1447	Erickson	Adana	Syria, Iraq, Iran, Kuwait	B	Good
	3	B	1448	Barnes	Adana	Egypt, Jordan, Israel	A-2	Good

1958 cont'd:

Aug	6	B	1450	Rand	Adana	Egypt, Israel, Syria, Jordan, Lebanon	A-2	Poor
	7	B	1451	Shinn	Adana	Egypt, Lebanon, Israel, Syria	A-2	Good
	11	B	1453		Adana	6th Fleet (BIG EARS)	Syst IV	Good
	12	B	1454	Barnes	Adana	Egypt, Lebanon, Israel, Jordan, Syria	A-2	Good
	12	B	1455	Rand	Adana	Saudi Arabia, Bahrein, Kuwait, Iraq, Iran, Syria	B	Good
	15	B	1457	Shinn	Adana	Yemen, Aden, Saudi Arabia	A-2	Poor
	19	B	1460	Rand	Adana	Egypt, Saudi Arabia	A-2	Poor
	19	B	1461	Barnes	Adana	Iraq, Syria	B	Poor
	19	C	6017	McMurray	Atsugi	South China Coast	B	Exc
	20	B	1462	Shinn	Adana	Egypt, Israel, Jordan, Syria	B	Good
	21	B	1464	Powers	Adana	Saudi Arabia, Yemen, Aden	B	Fair
	26	B	1466	Baker	Adana	Egypt, Israel, Jordan, Syria	B	Good
	27	B	1467	Knutson	Adana	Syria, Iraq, Israel	B	Poor
	29	B	4087	Powers	Adana	Soviet/Iranian Border	A-1	Good
	29	B	1468	Erickson	Adana	Egypt, Israel, Syria, Iraq	B	Good
Sep	3	B	1469	Barnes	Adana	Egypt, Israel, Syria, Lebanon	B	Exc
	3	C	1778		Atsugi	Typhoon GRACE	A-1	Good
	7	B	1471	Rand	Adana	Egypt, Israel, Syria, Lebanon	B	Good
	9	C	6019	Edens	Atsugi	China, Taiwan Straits	B	Fair
	12	B	1473	Baker	Adana	Egypt, Israel, Syria, Lebanon	A-2	Good
	25	C	1779		Atsugi	Typhoon IDA	A-1	Good
Oct	3	B	1478	Shinn	Adana	Egypt, Syria, Israel, Lebanon	B	Good
	7	B	1480	Knutson	Adana	Persian Gulf, Karachi	B	Good

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	22	C	6023	Jones	Atsugi	South China, Taiwan Straits	B	Poor

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1958 cont'd:

Oct	24	B	1486	Baker	Adana	Egypt, Iraq, Israel, Syria	B	Exc
	25	B	4092	Erickson	Bodo	Kara Sea	Syst IV	Good
Nov	6	B	4093	Shinn	Bodo	Finland, Baltic, to Adana	Syst IV	Good
				50X1, E.O.13526				
	19	B	1493	Baker	Adana	Syria, aborted	B	Poor
	19	B	1494	Rand	Adana	Syria, Israel, Jordan, Iraq	B	Good
	20	B	1495	Erickson	Adana	Syria, Israel, Egypt	B	Good
Dec	4	B	4096	Barnes	Adana	Iran, Afghanistan, Soviet Border	Syst IV	Good
	23	B	1498	Erickson	Adana	Egypt, Israel, Syria	B	Good
	31	B	8603(B)	McArthur	Adana	Egypt, Syria, Jordan	B	Fair

1959:

Jan	2	B	4097	Shinn	Adana	Iran, Afghanistan Border	Syst IV	Good
	10	B	8604(B)	Bradley	Adana	Egypt, Jordan, Iraq	B	Fair
	13	B	8605(B)	Dowling	Adana	Iraq, Syria, Kuwait, Saudi Arabia	B	Good
	20	B	8608(B)	Robinson	Adana	Syria, Egypt, Saudi Arabia	B	Fair
	28	B	4110	Barnes	Adana	Albania, Peripheral	B	Good
Mar	11	B	1499	Barnes	Adana	Iraq, Syria, Israel	B	Good
	21	B	8618(B)	Bradley	Adana	Latakia	B	Exc
	24	B	4112	Shinn	Adana	Albania, Peripheral	B	Exc
	26	B	8620(B)	Dowling	Adana	Egypt (aborted)	B	Good
	27	B	301		Adana	Mediterranean	WX	Poor
	27	C	701		Atsugi	Japan	WX	Good

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1959 cont'd:

Apr	1	C	702		Atsugi	Japan	WX	Good
	1	B	303		Adana	Mediterranean	WX	Good
	2	B	1502	Barnes	Adana	Syria, Egypt	B	Poor
	3	B	1503	Powers	Adana	Egypt, Syria	B	Poor
	8	B	304		Adana	Mediterranean	WX	Good
	10	B	305		Adana	Mediterranean	WX	Good
	11	B	1506	Powers	Adana	Syria, Iraq, Israel	B	Good
	14	B	4114	Barnes	Adana	Albania	B	Good
	15	B	306		Adana	Mediterranean	WX	Good
	15	C	706		Atsugi	Japan	WX	Good
	16	B	8625(B)	Robinson	Adana	Syria, Jordan, Egypt	B	Good
	17	B	307		Adana	Mediterranean	WX	Good
	21	B	4117	Baker	Adana	Iran	B	Good
	22	C	707		Atsugi	Japan	WX	Good
	24	C	709		Atsugi	Japan	WX	Good
May	2	B	1508	Rand	Adana	Syria, Iraq, Iran, Israel	B	Good
	7	B	312(B)		RAF Watton	England	WX	Good
	8	B	313(B)		RAF Watton	England	WX	Good
	12	C	6025	Crull	Cubi Point	SW China, Tibet	B	Fair
	14	C	6028	Rudd	Cubi Point	SW China, Tibet	B	Fair
	15	B	1509	Baker	Adana	Egypt, Saudi Arabia	B	Fair
	20	B	8626(B)	Bradley	Adana	Egypt	B	Good
June	4	B	8627(B)	Bradley	Adana	Egypt	B	Good
	8	B	1512	Knutson	Adana	Syria, Iraq, Lebanon	B	Good
	9	B	4120	Barnes	Adana	Turkey, Iran, Afghanistan, Soviet Border	Syst VII	Good
	12	B	1515	Rand	Adana	Syria, Iraq, Lebanon	B	Good

1959 cont'd:

June 13	B	1516	Shinn	Adana	Egypt	B	Good
18	B	4121	Rand	Adana	Iran, Afghanistan, Soviet Border	Syst VII	Good
18	B	4122	Shinn	Adana	Albania	B	Good
26	B	8630 (B)		Adana	Lebanon (aborted)	B	Poor
27	B	8631 (B)	McArthur	Adana	Lebanon, Syria, Iraq	B	Good
Jul 9	B	4125	Knutson	Peshawar	Urals, Tyura Tam	B	Exc
9	B	110		Adana	Diversionary (Iran)	-	-
16	B	8632 (B)	Robinson	Adana	Syria, Iraq, Saudi Arabia	B	Good
18	B	4131	Dunaway	Adana	Iran, Afghanistan, Soviet Border	Syst VII	Poor
25	B	4132	Shinn	Adana	Iran, Afghanistan, Soviet Border	Syst VII	Good
27	B	4133	Rand	Adana	Iran, Afghanistan Soviet Border	Syst VII	Good
28	B	1519	Powers	Adana	Egypt, Syria, Saudi Arabia	B	Good
Aug 7	B	8634 (B)	Dowling	Adana	Syria, Iraq, Iran, Saudi Arabia	B	Good
21	B	4134	Powers	Adana	Iran, Afghanistan Borders	Syst VII	Good
24	B	4135	Knutson		Soviet Border, Iran, Afghanistan	Syst VII	Fair
25	B	1521	Shinn	Adana	Egypt, Jordan, Syria	B	Good
28	B	8636 (B)	Bradley	Adana	Syria, Iraq, Iran	B	Fair
29	C	6035	Snider	Takhli	N. Vietnam, Laos	B	Good
Sep 3	C	6037	McMurray	Takhli	Tibet, China	B	Good
4	C	6038	Crull	Takhli	Tibet, China	B	Fair

1959 cont'd:

Sep	7	C	6040	Rudd	Takhli	Laos	B	Poor
	9	C	6042	Crull	Takhli	Tibet, China	B	Good
	10	B	8638 (B)	Bradley	Adana	Syria, Iraq, Iran, Saudi Arabia	B	Good
	12	C	6044	Crull	Takhli	Laos, North Vietnam	B	Good
	12	B	4137	Powers	Adana	Iran, Afghanistan Borders	Syst VII	Good
	16	B	1523	Kratt	Adana	Egypt, Saudi Arabia, Syria	B	Good
	21	B	4138	Barnes	Adana	Iran, Afghanistan Border	Syst VII	Good
Oct	3	B	4139	Dunaway	Adana	Iran, Afghanistan Borders	Syst VII	Exc
	5	B	314 (B)		RAF Watton	England	WX	Good
	6	B	315 (B)		RAF Watton	England	WX	Good
	9	B	1525	Erickson	Adana	Iraq, Syria, Jordan, Lebanon	B	Good
	10	B	1526	Kratt	Adana	Lebanon, Syria, Jordan, Egypt	B	Good
	14	B	4140	Dunaway	Adana	Iran, Afghanistan Borders	Syst VII	Fair
	17	B	4142	Kratt	Adana	Iran, Afghanistan Borders	Syst VII	Poor
	18	B	4143	Powers	Adana	Iran, Afghanistan Borders	Syst VII	Poor
	23	B	1528		Adana	ME (aborted)	B	Poor
	30	B	8648 (B)	Dowling	Adana	Iraq, Iran (aborted)	B	Poor
	30	B	8649 (B)	McArthur	Adana	Iraq, Iran, Lebanon, Jordan	B	Good
	31	B	4146	Kratt	Adana	Iran, Afghanistan Borders	Syst VII	Poor
Nov	1	B	4147		Adana	Iran, Afghanistan Borders	Syst VII	Poor
	1	C	6045	Edens	Atsugi	Kuriles	B	Good
	4	C	6046	McMurray	Takhli	West China, Tibet	B	Fair
	19	B	8652 (B)	McArthur	Adana	Syria, Iraq, Israel, Iran	B	Good
	20	B	8004 (B)	Dowling	Adana	Afghanistan Border	Syst VII	Good
	21	B	1536	Shinn	Adana	Egypt, Israel, Saudi Arabia Jordan	B	Good

1959 cont'd:

Dec	6	B	8005 (B)	Robinson	Peshawar	Kuybyshev, Kapustin Yar	B	Exc
	6	B	8007 (B)	Bradley	Adana	Diversionary (Iran)	System IV	Fair

1960:

Jan	27	B	HS501 (B)	Bradley	Adana	Iran Border	Syst VII	Poor
	12	B	1543	Barnes	Adana	Middle East	B	Good
	29	B	1554	Erickson	Adana	Iran, Iraq, Jordan, Kuwait	B	Good
	30	B	HS502	Dunaway	Adana	Iran Border	Syst VII	Good
	31	B	HS503 (B)	Robinson	Adana	Iran Border	Syst VII	Good
Feb	5	B	8009 (B)	McArthur	Peshawar	Tyura Tam, Kazan, Ukraine, to Adana	B	Exc
	5	B	8010 (B)	Dowling	Adana	Diversionary (Iran)	Syst IV	Good
	23	B	1558	Powers	Adana	Iran, Iraq, Israel, Syria	B	Good
	28	B	1560	Dunaway	Adana	Egypt, Israel, Saudi Arabia Syria	B	Good
Mar	23	B	4156	Knutson	Adana	Turkey	Syst VII	Poor
	31	C	6049	Edens	Takhli	Tibet	B	Fair
	31	C	6050	Snider	Takhli	Eastern Tibet	B	Good
Apr	5	C	6054	McMurray	Takhli	Western China	B	Good
	9	B	4155	Erickson	Peshawar	Tyura Tam, Sary Shagan	B	Exc
	9	B	4157	Barnes	Adana	Diversionary (Iran)	Syst VII	Poor
	19	B	HS507	Knutson	Adana	Iran	Syst VII	Good
May	1	B	4154	Powers	Peshawar	Kyshtym, Sverdlovsk, Kola Peninsula	B	LOST
	1	B	4159	Dunaway	Adana	Diversionary (Iran)	Syst VII	Poor

1960 cont'd:

Oct 26	G	3001	Rand	Laughlin	Cuba	B	Poor
27	G	3002	Rand	Laughlin	Cuba	B	Poor
Nov 27	G	3003	Jones	Laughlin	Cuba	B	Good
Dec 5	G	3011	Cherbonneaux	Laughlin	Cuba	B	Good
11	G	3016	Edens	Laughlin	Cuba	B	Good

1961:

Jan 3	G	3018	Baker	Cubi Point	North Vietnam (aborted)	B	Fair
4	G	3019	Cherbonneaux	Cubi Point	Laos (aborted)	B	Fair
5	G	3020	Rand	Cubi Point	Laos, North Vietnam	B	Good
8	G	3023	Jones	Cubi Point	Laos, North Vietnam	B	Good
10	G	3024	Edens	Cubi Point	Laos, North Vietnam	B	Poor
16	G	3025	Baker	Cubi Point	Laos, North Vietnam	B	Exc
18	G	3026	Cherbonneaux	Cubi Point	Laos, North Vietnam	B	Good
Mar 19	G	3028	Barnes	Laughlin	Cuba	B	Good
21	G	3029	Knutson	Laughlin	Cuba	B	Good
Apr 6	G	3030	Kratt	Laughlin	Cuba, Dominican Republic	B	Good
8	G	3032	Rand	Laughlin	Dominican Republic	B	Good
11	G	3033	Jones	Laughlin	Cuba	B	Good
13	G	3034	Edens	Laughlin	Cuba	B	Fair
15	G	3035	Dunaway	Laughlin	Cuba	B	Good
15	G	3036	Baker	Laughlin	Cuba	B	Good
16	G	3037	Cherbonneaux	Laughlin	Cuba	B	Good
17	G	3038	Barnes	Laughlin	Cuba	B	Good
17	G	3039	Knutson	Laughlin	Cuba	B	Good

1961 cont'd:

Apr	18	G	3040	Kratt	Laughlin	Cuba	B	Good
	18	G	3041	Rand	Laughlin	Cuba	B	Good
	19	G	3042	Jones	Laughlin	Cuba	B	Good
	20	G	3043	Edens	Laughlin	Cuba	B	Exc
	23	G	3045	Dunaway	Laughlin	Cuba	B	Good
	29	G	3047	Baker	Laughlin	Cuba	B	Good
May	23	G	3048	Cherbonneaux	Laughlin	Cuba	B	Good
Jun	15	G	3049	Barnes	Laughlin	Cuba	B	Good
	28	G	3051	Knutson	Laughlin	Cuba	B	Good
Jul	27	G	3052		Laughlin	Cuba (aborted)	B	Poor
	28	G	3053		Laughlin	Cuba (aborted)	B	Poor
	29	G	3054	Baker	Laughlin	Cuba	B	Good
Aug	16	G	3055	Rand	Cubi Point	North Vietnam	B	Good
	16	G	3056		Laughlin	Cuba	B	Good
Sep	3	G	3058	Cherbonneaux	Laughlin	Cuba	B	Good
Oct	26	G	3060	Knutson	Edwards	Cuba	B	Good
Dec	6	G	3061	Barnes	Laughlin	Cuba	B	Good

1962:

Jan	12	H	GRC100	Ch'en	Tao Yuan	Missile Test Range	B	Good
	19	G	3062	Cherbonneaux	Laughlin	Cuba	B	Good

[redacted]

1962 cont'd:

Feb 2	G	3065	Rand	Edwards	Cuba	B	Fair
21	G	3066	Erickson	Tao Yuan	North Vietnam	B	Good
23	H	GRC102	Yang	Tao Yuan	Lanchou	B	Good
24	G	3067	Baker	Edwards	Cuba	B	Good
Mar 13	H	GRC104	Hua	Tao Yuan	Kunming	B	Fair
13	G	3069	Erickson	Tao Yuan	North Vietnam	B	Poor
15	G	3071	Edens	Laughlin	Cuba	B	Good
21	G	3072	Erickson	Tao Yuan	North Vietnam	B	Fair
26	H	GRC106	Wang	Tao Yuan	Central China	B	Good
Apr 1	G	3074	Barnes	Laughlin	Cuba	B	Good
6	G	3076	Erickson	Tao Yuan	North Vietnam	B	Good
May 2	G	3078	Rand	Laughlin	Cuba	B	Good
6	G	6056	Knutson	Tao Yuan	North Vietnam	B	Good
22	G	3079	Edens	Laughlin	Cuba	B	Exc
Jun 6	G	3080	Barnes	Laughlin	Cuba	B	Good
15	G	3081	Cherbonneaux	Laughlin	Cuba	B	Good
15	H	GRC112	Yang	Tao Yuan	Harbin	B	Good
18	G	3082	Knutson	Laughlin	Cuba	B	Good
19	H	GRC113	Wang	Tao Yuan	MTR	B	Good
23	G	6058	Baker	Tao Yuan	North Vietnam	B	Fair
25	H	GRC115	Ch'en	Tao Yuan	Taiwan Straits	B	Good
28	H	GRC116	Yang	Tao Yuan	Taiwan Straits	B	Good
29	G	3083	Cherbonneaux	Laughlin	Cuba	B	Good
30	H	GRC117	Hua	Tao Yuan	Nanchang, Taiwan Straits	B	Fair

1962 cont'd:

Jul	5	H	GRC119	Yang	Tao Yuan	Taiwan Straits	B	Fair
	8	G	3084	Knutson	Laughlin	Cuba	B	Fair
	9	H	GRC120	Ch'en	Tao Yuan	Taiwan Straits	B	Good
	12	G	3085	Cherbonneaux	Laughlin	Cuba	B	Good
	22	G	6060	Barnes	Tao Yuan	North Vietnam	B	Poor
	28	H	GRC123	Wang	Tao Yuan	Taiwan Straits	B	Fair
Aug	5	G	3086	Baker	Laughlin	Cuba	B	Good
	11	H	GRC125	Hua	Tao Yuan	Peiping, Manchuria	B	Fair
	29	G	3088	Erickson	Laughlin	Cuba	B	Good
Sep	5	G	3089	Edens	Laughlin	Cuba	B	Good
	8	H	GRC 126	Yang	Tao Yuan	South China	B	Good
	9	H	GRC 127	Ch'en	Tao Yuan	Nanchang	B	LOST
	17	G	3091	Baker	Laughlin	Cuba	B	Fair
	22	G	3092		Laughlin	Cuba	B	Fair
	26	G	3093	Rand	Laughlin	Cuba	B	Good
	29	G	3095	Edens	Laughlin	Cuba	B	Exc
Oct	5	G	3098	Barnes	Laughlin	Cuba	B	Fair
	6	G	3099		Laughlin	Cuba (aborted)	B	Poor
	7	G	3100	Knutson	Laughlin	Cuba	B	Fair
Dec	5	G	3201	Rand	Takhli	Kashmir, Tibet	B	Good
	5	H	GRC 128	Hua	Tao Yuan	North Korea	B	Good
	10	G	3203	Baker	Takhli	NEFA, Tibet	B	Good
	25	H	GRC 134	Wang	Tao Yuan	Szechwan	B	Good
	28	H	GRC 136	Hua	Tao Yuan	South China (aborted)	B	Fair

1962 cont'd:

Dec 27	G	3206	Knutson	Takhli	North Vietnam	B	Good

1963:

Jan 3	G	3210	Baker	Takhli	Kashmir, Tibet	B	Fair
19	G	3213	Cherbonneaux	Takhli	Lhasa, Tibet	B	Good
20	H	GRC 138	Yang	Tao Yuan	Szechwan	B	Good
22	G	3215	Edens	Takhli	Tibet, Changtu, Burma Border	B	Good
Mar 1	G	3218	Cherbonneaux	Takhli	North Vietnam	B	Fair
2	G	3219	Cherbonneaux	Takhli	North Vietnam	B	Good
28	H	GRC 144	Wang	Tao Yuan	MTR Pao Tou	B	Good
30	H	GRC 146	Hua	Tao Yuan	Szechwan	B	Good
Apr 3	H	GRC 147	Yang	Tao Yuan	South China	B	Good
30	G	3221	Knutson	Takhli	China, N. Vietnam, Laos	B	Good
May 3	G	3222	Rand	Takhli	China, N. Vietnam, Laos	B	Good
9	H	GRC 150	Wang	Tao Yuan	North Korea, Manchuria	B	Fair
13	G	3224	Knutson	Takhli	China, N. Vietnam, Laos	B	Fair
14	G	3225	Rand	Takhli	North Vietnam, Laos	B	Fair
15	G	3226	Baker	Takhli	North Vietnam	B	Fair
28	H	GRC 152	Yang	Tao Yuan	North Korea, Manchuria	B	Fair
Jun 3	H	GRC 153	Hua	Tao Yuan	Rivers, Lanchou	B	Fair
4	H	GRC 154	Wang	Tao Yuan	Rivers, Nanchang, Changsha	B	Good
12	H	GRC 156	Hua	Tao Yuan	Sian, Paotou	B	Good

1963 cont'd:

Aug 10	G	6066	Knutson	Takhli	North Vietnam	B	Good
23	H	GRC 169	Lee	Tao Yuan	Manchuria	B	Exc
30	H	GRC 171	Yeh	Tao Yuan	South China	B	Good
Sep 25	H	GRC 176	Lee	Tao Yuan	MTR, Koko Nor	B	Exc
26	H	GRC 178	Yeh	Tao Yuan	Paotou, Peiping	B	Exc
29	G	3227	Barnes	Takhli	Kashmir, Tibet	B	Good
30	H	GRC 180	Hua	Tao Yuan	South China	B	Good
Oct 6	H	GRC 181	Wang	Tao Yuan	North Korea	B	Exc
8	H	GRC 182	Lee	Tao Yuan	North Korea, Manchuria	B	Good
10	G	3230	Barnes	Takhli	Lhasa, Tibet	B	Fair
11	G	3231	Barnes	Takhli	North Vietnam	B	Good
26	G	3235	Baker	Takhli	North Vietnam, Laos	B	Fair
29	G	3236	Rand	Takhli	Lhasa, Tibet, Gartok	B	Good
Nov 1	H	GRC 184	Yeh	Tao Yuan	MTR	B	LOST
10	G	3238	Rand	Takhli	NEFA, China/Burma Border	B	Good
14	G	3239	Edens	Takhli	China/Burma Border, Laos	B	Poor
15	G	3241	Bedford	Takhli	China/Burma Border, Laos	B	Fair
17	G	3243	Edens	Takhli	North Vietnam	B	Exc
Dec 3	G	3250	Barnes	Ramey	Western Venezuela	B	Good
6	G	3252	Erickson	Ramey	Northern Venezuela	B	Good
13	G	3253	Edens	Ramey	British Guiana	B	Good
14	G	3254	Barnes	Ramey	British Guiana	B	Good
18	G	3256	Erickson	Ramey	Venezuela, British Guiana	B	Good
19	G	3257	Edens	Ramey	Venezuela, British Guiana	B	Good
29	G	6070	Rand	Takhli	S. Vietnam, Laos, Cambodia	112A	Exc
30	G	6071	Bedford	Takhli	N. Vietnam, South Vietnam, Laos	112A	Exc

1964:

Jan 7	G	0014E	Rand	Tao Yuan	S. Vietnam, Cambodia	B	Good
Feb 24	G	0034E	Baker	Tao Yuan	S. Vietnam	B	Exc
29	G	0064E	Knutson	Tao Yuan	N. Vietnam, Laos	B	Fair
Mar 1	G	S074E	Baker	Tao Yuan	N. Vietnam, Laos	B	Fair
6	G	S104E	Baker	Tao Yuan	N. Vietnam, Laos	B	Good
11	G	S014A	Erickson	Takhli	N. Vietnam, Laos	B	Fair
12	G	S024A	Knutson	Takhli	N. Vietnam, Laos	B	Fair
14	G	S034A	Erickson	Takhli	N. Vietnam, Laos	B	Good
15	G	S044A	Knutson	Takhli	N. Vietnam, Laos	B	Fair
16	G	S064A	Knutson	Takhli	N. Vietnam, Laos	B	Fair
16	H	C024C	Lee	Tao Yuan	South China	B	Good
17	G	S074A	Edens	Takhli	N. Vietnam, Laos	B	Fair
20	G	S084A	Knutson	Takhli	N. Vietnam, Laos	B	Fair
29	G	S114A	Erickson	Takhli	N. Vietnam, Laos	B	Fair
31	G	T124A	Edens	Takhli	Tibet, NEFA, SW China	B	Good
Apr 4	G	S144A	Knutson	Takhli	N. Vietnam, Laos	B	Good
6	G	S154A	Erickson	Takhli	N. Vietnam, Laos	B	Fair
7	G	S164A	Edens	Takhli	N. Vietnam, Laos	B	Fair
12	G	S184A	Knutson	Takhli	Cambodia	B	Good
15	G	S194A	Erickson	Takhli	N. Vietnam, Laos	B	Fair
24	G	S214A	Rand	Cubi point	N. Vietnam, Laos	B	Exc
May 19	G	W224A	Barnes	USS Ranger	French Atomic Test	112B	Good
22	G	W234A	Edens	USS Ranger	Franch Atomic Test	112B	Good
24	G	T284A	Erickson	Charbatia	Tibet,Lhasa	B	Good

1964 cont'd:

Jun 26	H	C114C	Lee	Tao Yuan	Hainan Island	B	Fair
Jul 5	H	C134C	Lee	Tao Yuan	Hainan Island (aborted)	B	Poor
7	H	C174C	Wang	Tao Yuan	Shanghai, Wuhu	B	Exc
7	H	C184C	Lee	Tao Yuan	Lungchi	B	LOST
Oct 31	H	C224C	Chang	Tao Yuan	Lanchou	B	Good
Nov 7	H	C244C	Wang(Johnny)	Tao Yuan	N. Korea, N. China	B	Good
14	H	C264C	Chang	Tao Yuan	South China	B	Good
15	H	C274C	Wang(Johnny)	Tao Yuan	South and Central China	B	Good
22	H	C284C	Chang	Tao Yuan	Lanchou (aborted)	IR	Poor
25	H	C304C	Wang(Johnny)	Tao Yuan	Lanchou(aborted)	IR	Fair
Dec 9	H	C324C	Wang (Pete)	Tao Yuan	Manchuria	B	Good
16	G	T314A	Knutson	Charbatia	Kashmir	B	Good
17	G	T324A	Baker	Charbatia	Lhasa, NEFA	B	Good
19	H	C344C		Tao Yuan	Lanchou (aborted)	IR	Poor
20	G	T344A	Schmarr	Charbatia	Lhasa, Nagchlu Dzong	B	Good
30	H	C374C	Chang	Tao Yuan	Szechwan Basin	B	Fair

1965:

Jan 8	H	C015C	Wang(Johnny)	Tao Yuan	Lanchou	IR	Good
10	H	C025C	Chang	Tao Yuan	Paotou	IR	LOST
Feb 19	H	C045C	Wang (Pete)	Tao Yuan	South China	B	Good
22	H	C055C	Wang(Johnny)	Tao Yuan	South China (aborted)	B	Fair
24	H	C065C	Wang (Pete)	Tao Yuan	South China	B	Exc

1965 cont'd:

Mar 12	H	C105C	Wu	Tao Yuan	South China (aborted)	B	Poor
14	H	C115C	Wu	Tao Yuan	South China (fired on)	B	Good
Apr 17	H	C215C	Wang(Johnny)	Tao Yuan	Hainan Island	B	Poor
27	H	C225C		Tao Yuan	South China (aborted)	B	Poor
30	H	C245C	Wu	Tao Yuan	East China	B	Good
May 14	H	C285C	Wang (Pete)	Tao Yuan	Ning Ming	112B	Fair
27	H	C335C	Wang (Johnny)	Tao Yuan	Canton, Leiyang	B	Good
28	H	C325C	Wu	Tao Yuan	Swatow, Foochow	B	Good
Jul 2	H	C355C	Wang (Johnny)	Tao Yuan	South China	B	Good
3	H	C365C	Wang (Pete)	Tao Yuan	Taiwan Straits	B	Fair
20	H	C395C	Yu (Mickey)	Tao Yuan	Hainan Island	B	Good
21	H	C405C	Chuang (Spike)	Tao Yuan	Taiwan Straits	B	Good
31	H	C425C	Liu (Terry)	Tao Yuan	North Korea	B	Good
Aug 24	H	C455C	Wu	Tao Yuan	Ning Ming, Nanning	B	Good
25	H	C465C	Wang (Johnny)	Tao Yuan	Hainan Island	112B	Good
26	H	C475C	Wang (Pete)	Tao Yuan	Taiwan Straits, E. China	B	Good
Sep 5	H	C485C	Liu	Tao Yuan	N. Vietnam, China/Laos Border	B	Poor
18	H	C495C	Yu	Tao Yuan	Taiwan Straits	B	Exc
Oct 16	H	C535C	Yu	Tao Yuan	N. China, China Coast	112B	Good
19	H	C555C	Wu	Tao Yuan	S. China, Sub Search	B	Good
20	H	C545C	Liu	Tao Yuan	Laos, Burma, SW China	B	Fair
29	G	S015A	Schmarr	Takhli	Cambodia	B	Poor

1965 cont'd:

Nov 7	G	S025A	Barnes	Takhli	Cambodia	B	Good
8	H	C565C	Liu	Tao Yuan	SW China	B	Poor
14	H	C575C	Yu	Tao Yuan	SW China (aborted)	B	Poor
23	H	C595C	Yu	Tao Yuan	SW China	B	Good
28	H	C605C	Chuang	Tao Yuan	South China	B	Exc

1966:

Feb 3	G	0026H		Takhli	S. Vietnam	112B	Good
Mar 28	H	C036C	Chuang	Tao Yuan	SW China	B	Fair
Apr 7	H	C056C	Liu	Tao Yuan	SW China	B	Poor
19	H	C076C	Yu	Tao Yuan	Shenyang, N. China	112B	Poor
May 4	H	C116C	Liu	Tao Yuan	Taiwan Straits	B	Poor
14	H	C126C	Chuang	Tao Yuan	SW China, Kunming	B	Good
15	H	C136C	Liu	Tao Yuan	SW China (aborted)	B	Poor
Aug 3	H	C146C	Chuang	Tao Yuan	Taiwan Straits	B	Good
16	H	C156C	Liu	Tao Yuan	Hainan Island (aborted)	B	Poor
24	H	C176C	Chuang	Tao Yuan	Canton	B	Fair
Nov 26	H	C216C	Liu	Tao Yuan	Taiwan Straits	B	Good

1967:

Jan 4	H	C027C	Liu	Tao Yuan	South China	B	Exc
Mar 28	H	C117C	Feng	Tao Yuan	Taiwan Straits	B	Poor

1967 cont'd:

Apr 9	H	C147C	Liu	Tao Yuan	South China	B	Exc
13	H	C157C	Feng	Tao Yuan	Manchuria	B	Good
May 7	H	C167C	Chuang	Tao Yuan	[redacted]	Tracker	Exc
16	H	C177C	Chang	Tao Yuan	SW China	B	Exc
25	H	C187C	Feng	Tao Yuan	South China	B	Good
Jul 20	H	C237C	Feng	Tao Yuan	South China	B	Good
Aug 10	H	C257C	Chou	Tao Yuan	Taiwan Straits	B	Fair
20	H	C267C	Chuang	Tao Yuan	Taiwan Straits	H	Good
26	H	C277C	Feng	Tao Yuan	South China	B	Exc
30	H	C287C	Chang	Tao Yuan	[redacted]	Tracker	Poor
Sep 8	H	C297C	Huang (Tom)	Tao Yuan	Shanghai	B	LOST
Dec 13	H	C327C	Chuang	Tao Yuan	NE China	H	Exc

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1968:

Jan 5	H	C018C	Chang	Tao Yuan	Central China	H	Good
Mar 16	H	C058C	Feng	Tao Yuan	SW China	B	Good
27	G	S018E	Hall	Takhli	Cambodia	Delta	Exc
Apr 3	G	S028E	Hall	Takhli	Cambodia	Delta	Exc
May 18	H	C068C	Chang	Tao Yuan	China Coast	Syst XVII	Poor

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IDEALIST MISSION HISTORY

	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	Total
U. S. S. R.	5	16	1	1	3	0	0	0	0	0	0	26
Satellites	8	4	0	0	0	0	0	0	0	0	0	12
Indonesia	0	0	31	0	0	0	0	0	0	0	0	31
Middle East	36	18	58	37	3	0	0	0	0	0	0	152
Laos/VN/Camb.	0	0	0	3	0	8	8	15	19	2	0	55
Cuba	0	0	0	0	5	24	21	0	0	0	0	50
NEFA/Nepal/ Tibet/China	0	0	3	7	3	0	20	20	16	28	8	105
N. Korea/ Manchuria	0	0	0	0	0	0	1	4	2	1	1	9
S. America	0	0	0	0	0	0	0	6	0	0	0	6
Miscellaneous	0	0	0	0	0	0	0	0	2	0	0	2
Elint	1	4	12	17	9	0	0	0	0	0	0	43
Total	50	42	105	65	23	32	50	45	39	31	9	491

As of 31 December 1966

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