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DIRECTORATE OF SCIENCE & TECHNOLOGY HISTORY

(TITLE OF PAPER)
History of the Office of Special Activities
Chapter VIII

(PERIOD)
From Inception to 1969

DO NOT DESTROY

Controlled by : DDS&T
Date prepared : 1 April 1969
Written by : Helen Kleyla
Robert O'Hern

~~TOP SECRET~~

CHAPTER VIII. TEST PROGRAM: WATERTOWN

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Selection of a Test Site

The original contract for production of twenty U-2 aircraft for the special project assumed the flight testing by Lockheed of the first three or four aircraft at a temporary site, after which production aircraft would be delivered direct from Burbank to the project at an agreed point. As planning went on, the decision was made to select a secure, remote site where a semi-permanent base could be built up and where all flight testing, equipment testing and pilot training could be carried out with the greatest possible secrecy.

Between January and April 1955, air surveys were made in the California-Nevada desert area east of Burbank by Kelly Johnson, and Col. Ritland also investigated Air Force real estate holdings which might be suitable. Requirements for the site were:

a. It must have a landing strip of 5,000 feet suitable for all-weather operations. Runway improvements would be made if other conditions were acceptable.

b. The site should be government-owned to facilitate access and avoid negotiations with local authorities.

c. Security, including remoteness to public view and ease of guarding, was of prime importance.

d. Living conditions must be bearable, although heat and dust were to be expected anywhere in the area under consideration.

e. Location with respect to the Air Defense Identification Zone (ADIZ) must be considered to avoid Air Defense Command radar surveillance during test flights.

In April 1955 the choice had narrowed to two locations: the site proposed by Mr. Johnson located near the California-Nevada line northeast of Death Valley, and an area within the Atomic Energy Commission's Nevada Proving Ground near Las Vegas. On 6 April Messrs. Bissell and Herbert Miller briefed the Chairman of AEC, Admiral Lewis Strauss, on the program and received his concurrence on the use of the dry lake bed area known as Groom Lake inside the Proving Ground. The Chairman was pleased that such a project as AQUATONE was being undertaken and promised AEC support for the secret cover story of upper air sampling.

On 13 April Messrs. Bissell and Miller and Col. Ritland inspected the area under consideration, accompanied by Mr. Johnson and his chief test pilot, Mr. Tony Levier, and the AEC local manager, Mr. Seth Woodruff. A site on the west side of the dry lake bed was chosen for

the base. The AEC was willing for its contractors in the area to do the engineering and construction work required, and between 15 and 18 April 1955 estimates were worked out by the Silas Mason Company and the Reynolds Engineering and Electrical Company (REECO) at an estimated figure of $600,000. This was higher than an estimate obtained by Mr. Johnson from a California contractor, but after considering REECO's long local experience, a local work force in being with the necessary AEC clearances, and the advantages of AEC supervision of the contract, it was decided that the REECO proposal was more realistic and would in the long run be more economical, as well as more advantageous from the security standpoint.

On 26 April 1955, the following information was passed to project contractors for their information and action in preparing to support the test and training phase of the project:

> "The test base site has been tentatively located at Groom Lake, Nevada. Groom Lake is a dry lake bed which lies in the northeast portion of the military reservation north of Las Vegas, and it is planned that the Atomic Energy Commission's test area within the military reservation will be extended to encompass Groom Lake.
>
> "Physical security of this site probably cannot be equalled, but the fact that it is so remote raises a number of problems which must be settled well in advance in order properly to plan the base. Building is scheduled to be complete

and equipment installed by 1 July 1955 and it will be extremely difficult to make any major alterations after that date. Therefore, it behooves one and all to have his test requirements well thought out and on the record as soon as possible but by 15 May at the very latest.

"Electric power requirements are most important. The base will generate its own power, and the plant will be designed to near peak load. 110, 220 and 440 volts will be available in alternating current. Any need for direct current will require special equipment.

"Barracks and messhall will be airconditioned, but no provision is made for any airconditioned working space. A need for a small airconditioned work space may be filled by a trailer. Dust palliatives will be applied in the immediate camp area.

"Some bench space will be available in the hangars. Are there requirements for special tools other than hand-operated drill presses and shears?

"In order to keep the number of barracks down to a minimum, it is necessary to have now a good guess as to numbers of personnel...and an estimate of how long each phase of test work will last." 1/

AEC Agreement

On 29 April the Director wrote to Admiral Strauss to formalize the Agency's understanding that AEC would, through contracts already in existence, and through the services of AEC personnel, perform the work required by the special project. Reimbursement by the Agency would be in accordance with Section 686, Title 31, U.S. Code, under

1/ TS-103545, 26 April 1955. Form Letter to Contractors.

appropriate security safeguards. The sum of $650,000 was allocated to cover the initial construction job. On 2 June 1955 a letter to the AEC General Manager, General Kenneth Fields, requested AEC to arrange through REECO for housekeeping and maintenance services at the new facility on a reimbursable basis, and asked for a proposal in writing from AEC. It required two months of drafting and negotiations to reach the final agreement which was signed by Mr. Bissell for CIA on 12 August 1955 and by Col. Alfred D. Starbird for AEC on 16 August 1955. (See Annex 64.)

The Air Force meanwhile put in motion the transfer to the AEC of a ten-mile-square area at the northwest corner of the Proving Ground. The prohibited area required for the Project test site was established by Executive Order 10633 dated 19 August 1955. Authority establishing Watertown Strip as a USAF installation was circulated in a limited distribution letter dated 2 September 1955 from the Chief of Staff, USAF, to the AEC, copy to Flight Service. The area was designated "Watertown Strip (Unclassified), a USAF installation assigned for classified functions" and prior approval of Headquarters, USAF, was required for its use. (See the following two pages for the designation order and a rough sketch of the area.)

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HEADQUARTERS
WATERTOWN AIRSTRIP
NEVADA

GENERAL ORDERS)
NUMBER 1)

1 October 1955

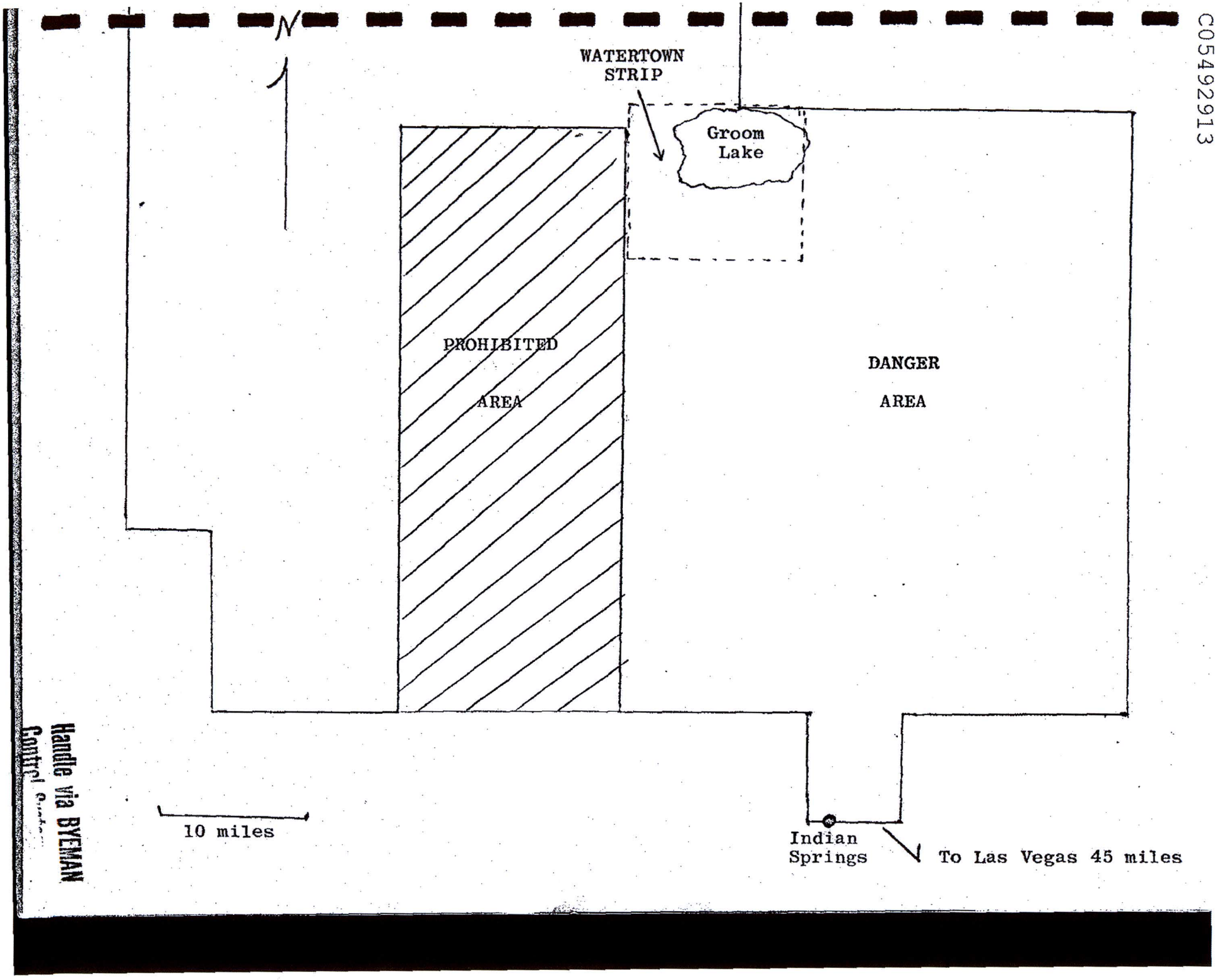
DESIGNATION OF WATERTOWN AIRSTRIP - - - - - - - - - - - - - - 1

1. DESIGNATION OF WATERTOWN AIRSTRIP. Watertown Airstrip is designated and organized under Table of Distribution, Headquarters USAF, 2 September 1955 at Watertown, Nevada and assigned to Headquarters USAF effective 2 September 1955.

2. Authority: Letter Headquarters USAF dated 2 September 1955.

DISTRIBUTION:
A

Frederic E. McCoy
FREDERIC E. MCCOY
Colonel USAF
Commander



The Project Security Officer in May had secured for the test site the unclassified cryptonym "SADDLE SOAP", but Mr. Johnson's Lockheed group were already referring to the area (jokingly) as "Paradise Ranch", later shortened to "the Ranch", and this latter name soon came into general usage among project staff, Air Force and contractor personnel involved in activities at the test site.

Construction at Watertown

At the request of the Project Director, the Agency's Real Estate and Construction Division nominated [redacted] as the engineer to oversee construction of the base, and he proceeded to Las Vegas to work directly with the AEC/REECO construction group. Although the 1 July forecast for completion of work slipped several weeks, by the middle of July the base had taken shape and was on the way to meeting the 25 July deadline set for Lockheed's delivery of the first aircraft.

One of the main problems at the site was water. An old well which had been reopened was delivering about 15 gallons per minute, which was considered adequate for the first month of operations. A second well was started but water had not been reached when the first aircraft arrived. Because of the overriding importance of a water

supply at the base, the Project Director authorized that the work proceed with the uncleared drilling crews working at night or when the U-2 was inside the hangar, and this continued through August and September. Late in September the pump in the first well failed and the base was without a water supply, except for that hauled to the site by truck, until a new pump could be installed. Just at that point the well-diggers hit water-bearing strata in the second well and by 26 October it was in operation, pumping about 17 gallons per minute. By the end of 1955, with periodic checks on rate of production, it was determined that the water supply would support a population of 200 at 200 gallons per person per day, with 20,000 gallons stored in the elevated water tank.

Delivery of the First U-2

On 21 July 1955 Project Headquarters received its first teletype message from Watertown over the newly opened communications net:

> "Operations proceeding according to plan. Lockheed group ETA 0830 July 25 confirmed. All REECO personnel will be evacuated during initial landing and unloading which will be completed by 1100 July 25. General REECO work will be completed evening July 27. Outdoor U-2 run-up and test commences morning July 28... Watertown support will be fully operative 25 July." 1/

1/ CABLE-001 (IN 26986) to ADIC, 21 July 1955.

Support furnished Lockheed prior to the first flight test included a bailed C-47 aircraft for transporting personnel between Burbank and the test site; a USAF C-124 to deliver the U-2 to Watertown; two engine stands and jet fuel prepositioned at Watertown; and a fire truck (crew of firefighters furnished by Lockheed). No medical personnel or facilities were requested and a minimum amount of weather forecasting support.

Because of extensive rainfall, the lake bed was unusable for landing the C-124 bearing the first U-2 and the new runway had to be used although it had not yet had the seal and armoring applied and thereby suffered a minimum amount of damage with its first use.

First Flight

On 1 August taxi trials were run on U-2 No. 1. Results were very good but on a high speed taxi run the aircraft inadvertently left the ground by 30 feet and flew 1200 feet. The transition to flight was very smooth and not noticed by the Pilot. A hard landing resulted when the pilot cut power at low speed. The tires blew on landing due to excess braking and caught fire. "No ill effects except to Tony's ego" (Tony Levier, the test pilot) was the word received at Headquarters from Watertown. 1/ Additional taxi tests were made on 2 August with satisfactory results

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1/ CABLE-048 (IN 31046), to ADIC, 2 August 1955.

and on 5 August a first flight of approximately thirty minutes was successfully and smoothly accomplished. Further low level tests were run on 6 August and on Monday, 8 August, the Project Director and a Headquarters party along with Kelly Johnson happily observed the U-2 perform at 35,000 feet. (See next two pages for side and rear view photographs of U-2 No. 1.) On 16 August the U-2 went to 52,000 feet, on 25 August to 57,000 and on 1 September it reached 60,000 feet. On 8 September Mr. Johnson wired the Project Director as follows:

> "Regret we were unable to obtain altitude record by Labor Day, but have done so by reaching initial design altitude for take-off weight at 10 a.m. today (65,500). Pilot reports this height reached with idle power for that altitude. Everything worked, even airplane fuel boost pump, which prevented our last attempt last week. Sky is not dark up there, aircraft is steady, cockpit comfortable. Will now belabor Pratt & Whitney about fuel control and undertake to find limiting altitude for air starts." 1/

During the first two weeks of November, Maj. Gen. Albert Boyd and Lieut. Col. Frank K. Everest, Jr., of ARDC, were authorized to fly the U-2 for the Air Force phase two (training) evaluation. A report was submitted by Everest through Air Force channels and corrections of discrepancies noted by him were important factors in the Air Force acceptance of the U-2.

1/ CABLE-238 (IN 45803) to ADIC, 8 September 1955.

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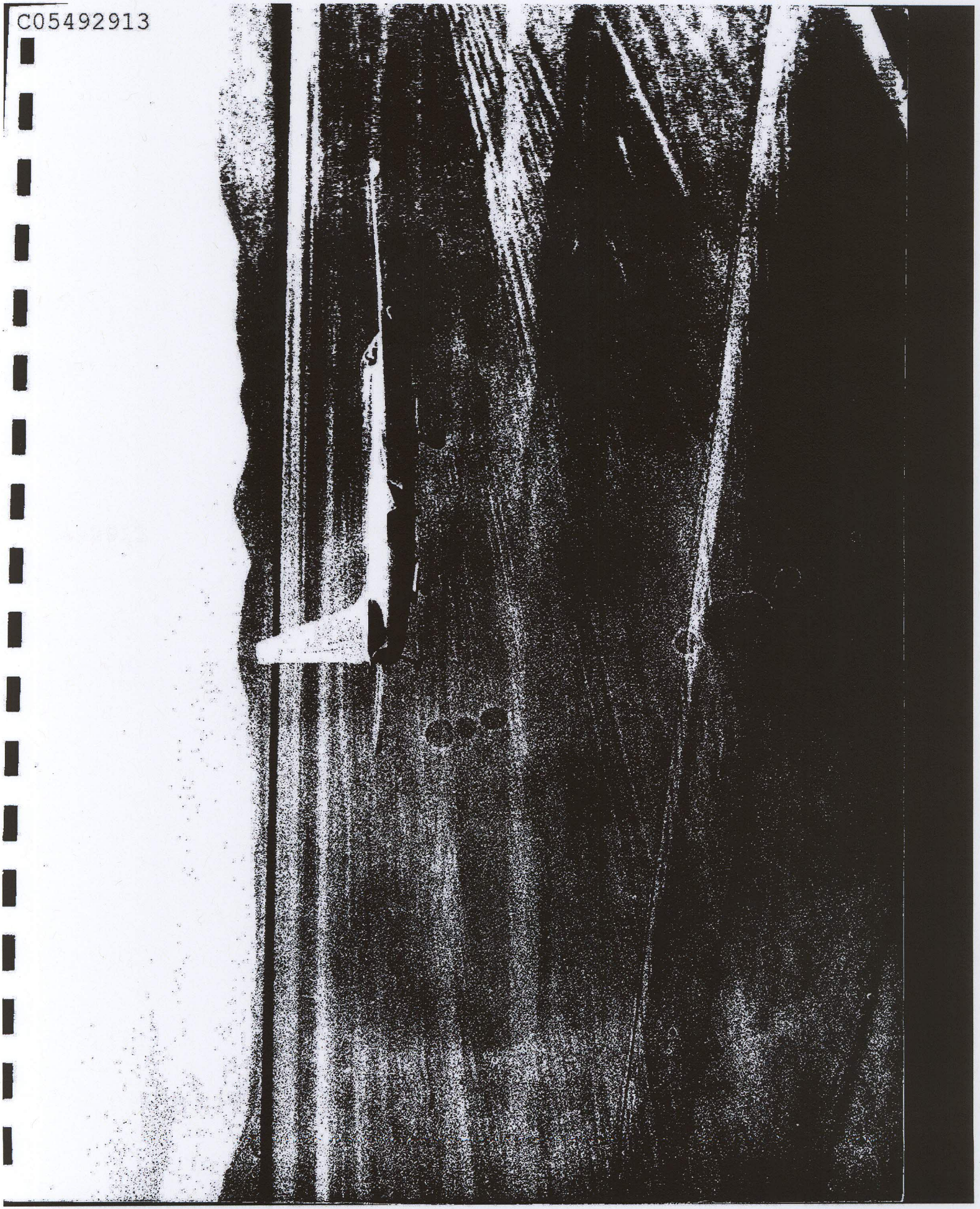

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Handle via BYEMAN
Control System

Additional Construction

Subsequent to the first successful flights of the U-2, the Watertown population increased daily with the addition of company engineers and techreps (preparing their work space and bringing equipment to be tested), firefighters, communicators, security officers, and REECO service people; and an influx of TDY'ers, both VIP and others. Jeeps, sedans and trucks for the motor pool were driven in from Camp Mercury (AEC Nevada Headquarters) on loan from the Air Force Special Weapons Project (AFSWP). Base support aircraft furnished by the Air Force between July 1955 and the following spring included: one L-20 for local flying, two C-47's bailed to Lockheed and later retrieved for use at Watertown; two T-33's for transition training; and a C-54 to be used on the Burbank to Watertown shuttle run, with a Lockheed crew, later being replaced by a regular MATS crew. The MATS service was put into effect upon completion of land line communication between Burbank and Watertown on 3 October 1955. (On 17 November 1955, the shuttle crashed on the side of Mount Charleston, killing all fourteen on board. See Chapter VII, page 18.)

Once operations were in full swing, it was obvious that the limited facilities available would have to be expanded. Money was tight and the

Project Director desired the base to be run on as austere a basis as possible. However, since numbers at the site were expected by mid-November 1955 to reach 133 (the maximum number of billets available) and 175 by January 1956, the decision was made to close down operations for ten days at the end of November 1955 in order to construct the additional essential facilities, including principally:

Two new dormitories (increasing billets to 203)
Control tower
Parking aprons, tie-downs and taxiway
Classroom and office for SAC Training Unit
40' x 100' warehouse
Security post on water tower
Installation of 20 trailers (billets)
Dispensary addition, sinks and cabinets
Photo lab addition, airconditioning and dehumidification
Water line for well #2
Monorails and hoists in Hangars #2 and #3

Shortly after the construction was completed (see following page for aerial view of Watertown at this stage), and the base returned to testing activities, Secretary of Defense Charles E. Wilson paid a one-day visit to the site, witnessed an excellent demonstration of the A-2 camera's performance at 68,000 feet, and departed with a very favorable impression of the operation.

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Engine Development: Fuel Control Problems

The first engine flame-out was experienced on 22 September 1955 when the U-2 reached 64,000 feet and during descent flamed out at 60,000 feet. The pilot's suit functioned properly and no difficulties were experienced during descent. The engine restarted promptly at 35,000 feet. In mid-November the Project Director became gravely concerned over fuel control difficulties repeatedly experienced during the previous few weeks and emergency conferences were held with top level Pratt & Whitney engineers and NACA experts to seek a solution. New settings and techniques were developed and on 6 December Lockheed was requested to test these settings at maximum altitude using Lockheed pilots until favorable results were obtained, then turning over two aircraft to the SAC unit for the training program.

While the flame-out problem was not completely solved, the situation did improve and it was recognized that pilots must operate within the narrow margins prescribed by the airframe and engine manufacturers in order to avoid flame-outs at altitude. In March 1956 the Detachment A Operations Officer, [redacted] reported that during a ten-day period of training flights by Detachment A pilots, only one flame-out was experienced which, he said, was very heartening as it appeared that

the pilots had found the key to flying this aircraft at its maximum altitude.

J-57/P-37 Engine Versus J-57/P-31

From the early planning days of the project it had been hoped to equip the U-2's with Pratt & Whitney's new P-31 series engines but, due to slippage in production date it was April 1956 before the first ones were made available to the Project. Detachment A had already been declared combat ready in aircraft equipped with the P-37 engines, and was preparing to deploy. A comparison of the specifications on the two engines by the maker showed the following:

	P-37	P-31
Length	165"	169"
Diameter	40.375"	40.375"
Weight: Max.	4,096 lbs	3,680 lbs
Min.	4,047 lbs	3,662 lbs
Dry thrust	10,500 lbs	11,200 lbs

A meeting with Colonel Norman Appold of the Power Plant Laboratory at Wright Air Development Center was held the first of May 1956 to consider engine experience to date. It was concluded that the P-37 engine was ready to commit operationally and that if flown as dictated by Lockheed and Pratt & Whitney, the probability of flame-out was slight. A program for improving the reliability of the P-37 was to be instituted, and at the same

an accelerated P-31 program should accumulate time on these engines to a minimum of 500 hours total and 100 hours on one engine for examination. And since no delay in the training program could be tolerated, all this must be geared to the training program and the development of subsystems.

On 19 June 1956, Mr. Bissell reported to Col. Appold that the necessary time had been accumulated on the P-31 and asked his views on the wisdom of employing it operationally (as had been recommended by both Mr. Johnson of Lockheed and [redacted] of Pratt & Whitney). Col. Appold agreed that the P-31 be used on operational missions provided that a hot section inspection was made after every 50 hours of operation and an overhaul every 100 hours, and that new blades were substituted in the first stage of the turbine every 100 hours, until forged blades were available. These recommendations were put into effect and the P-31's after acceptance flights were completed, were withdrawn from training aircraft and used only for operations in the field. This was in accord with USAF policy, in view of the critical supply position with regard to P-31 engines.

In Detachment A's first operational experience with the P-31 equipped aircraft, the pilots on certain flights were unable to reach

top power and altitude flying from a German base where abnormally cold temperatures were encountered at altitude. On the other hand, Detachment B pilots flying from Turkey later the same year were able to reach 66,000 to 70,000 feet before descent with little difficulty. It appeared to Col. Gibbs on investigation of this difference in performance that the P-31 engine was a good temperature indicator and that it would perform in accordance with the ambient temperature.

Organization and Lines of Command at Watertown

The Project Director had anticipated that the operational functions at the test site would be handled by the Commanding Officer and Operations Officer of the detachment currently in training there; i.e., Detachments A, B and C, in turn; and that the civilian in charge of the base would be carried on the T/O as Base Commander but would concern himself mainly with support matters.

In June 1955 [redacted] Agency staff employee, was nominated by the Director of Personnel to fill the position of Resident Base Manager at Watertown and was accepted for this assignment by the Project Director. Reporting to the site, [redacted] with the assistance of a small cadre assigned to the base from Headquarters, worked with the Agency engineer, REECO and AEC, setting up billeting and messing

arrangements, working out bookkeeping procedures with AEC for operation and maintenance, and in general bringing the base up to a state of readiness to support test and training operations. General Orders No. 1 of the 1007th Air Intelligence Service Group (HEDCOM) dated 7 September 1955, designated the Watertown base complement as "Flight D, Project Squadron Provisional" (later changed to "Detachment D, Weather Reconnaissance Squadron, Provisional" to conform with the cover established in the spring of 1956).

Base command relationships at the test site were discussed with the newly appointed SAC Liaison Officer, Colonel Loran D. Briggs, and following up on this discussion, the Project Director on 16 September wrote as follows to Col. Briggs:

> "We had originally contemplated that the Base Commander would be responsible only for the management of the facility and for administrative and support functions and that the Commander of the Detachment currently in training would be responsible for the function of operations officer. You pointed out that the officer charged with operational responsibilities should have continuity of tenure at the base and that the Detachment Commander should not be burdened with local operational duties. Accordingly you suggested that these be assigned to the Commander of the SAC Training Group. Upon reflection we are convinced that your comment on our proposal was entirely valid but we have concluded that the proper solution is to designate a Base Commander competent to discharge all of the responsibilities, operational as well as administrative, that attach to this position.
>
> "Accordingly, we now plan to designate a competent Air Force officer of Colonel or Lieutenant Colonel rank as Base

Commander; the present Acting Base Commander will serve as his deputy and in that capacity will continue to be responsible for performance of support functions at the base." 1/

When the SAC nominee for Commanding Officer of Detachment A, Colonel Frederic E. McCoy, reported for duty at Headquarters, he was hastily briefed and sent to Watertown where on 1 October 1955 he assumed command of the base. He and [redacted] were almost immediately at odds on the running of the base and a situation developed wherein Headquarters was constantly having to intervene and make decisions on matters which should have been quickly and amicably resolved at the local level.

On 12 October 1955, a memorandum entitled "Organization and Lines of Command at Watertown", which had been drafted by Mr. Bissell, was made an official order defining basic responsibilities and authorities at the base. As later amended, it read:

"1. The following organizations are, or will shortly be, active at the Watertown base:

"a. The permanent staff of the base under the Base Commander.

"b. A field detachment in training for overseas operations under a Detachment Commander.

1/ SAPC-1850, 16 Sept 1955. Letter to Col. Briggs from Project Director.

"c. A SAC Training Mission, the Commander of which will be referred to herein as the Training Commander.

"d. Technical staffs of the several suppliers.

"2. The responsibilities of the above-listed components and their lines of command will be as follows:

"a. The Base Commander shall be responsible for the management of the Watertown Base as a facility, for the control of all air operations on the Base, for liaison on operational matters with other USAF installations, and for the support of other components on the Base. He shall also be responsible, as a representative of Project Headquarters, for the coordination of all activities on the Base, and he will report periodically to Project Headquarters on the progress of all activities. He shall monitor test programs at the Base and coordinate proposals for equipment changes which originate at the Base. He will be under the command of the Project Director and his Deputy.

"b. The Detachment Commander shall be responsible for the organization, build-up and administration of his Detachment and the readying of it for active operations. He will participate in training as its Commander. He will be under the command of the Project Director and his Deputy but will receive his guidance on all matters having to do with training from the Training Commander.

"c. The Training Commander will be responsible for the direction and supervision of training. He will be under the command of the Commander, SAC.

"d. Suppliers' representatives will be responsible for their test programs and for the maintenance of equipment undergoing tests. Initially, they will maintain equipment being used for training purposes. In the later stages of unit training, the maintenance of equipment shall become the responsibility of the Detachment on the Base. It shall be the responsibility of the Base Commander to coordinate the different suppliers' test programs and requirements for facilities.

"3. In order to reduce to a minimum the number of persons stationed on the base, personnel of the Detachment currently in training will serve as the staff of the base to the greatest extent possible. For this purpose they will be detailed as appropriate to the Base Commander.

"4. The Deputy Base Commander shall be responsible, subject to the Base Commander, for management of the facilities at the Base and for the performance of support functions." 1/

The new Base Commander supplied by SAC, Col. Landon B. McConnell, arrived and assumed command at Watertown on 22 December 1955. This appointment did not have the immediate harmonizing effect which was hoped for, since Col. McConnell found it difficult to adjust to the terms of reference of this unorthodox command.

In January 1956, the Project Flight Surgeon reported to Mr. Bissell that morale at Watertown was sinking from its earlier high peak and he blamed this largely on factionalism between the permanent base personnel and Detachment A personnel, which he said was fostered by their respective commanding officers. Col. Ritland, after visiting the base in March 1956, felt that conditions had improved in most respects, but said

"...the ill feeling rests in our own personnel, namely Base personnel versus Detachment personnel. This general area was covered thoroughly with Cols. McCoy and McConnell

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1/ SAPC-1617/G, 21 February 1956. Organization and Lines of Command.

> and they agreed to do all possible to prevent the growth of this unsatisfactory condition. In my opinion the Base CO has not been fully cooperative in discharging his responsibilities. In many cases morale problems have arisen unnecessarily since he had the facilities and authority to prevent them..." 1/

Another almost constant problem at Watertown was the relationship between the Project staff and contractor personnel, as well as differences between one contractor group and another. Lockheed, which as Prime Contractor had the responsibility for flight testing and systems integration, was the largest and most aggressive group at the base, and with Kelly Johnson as their leader they were prone to grab the ball and run without waiting for signals.

When Watertown was being reopened as a test site for the successor aircraft in 1959, Mr. Bissell advised the Acting Chief of the Development Projects Division, Col. William Burke, to make arrangements to operate Watertown as an Agency facility with Lockheed as a tenant, rather than, by default, to let it become a Lockheed facility. The basis of this advice would, he said, be clear to those who remembered the early days of the U-2.

1/ ~~TS~~-143306, 30 March 1956. Comments by Col. Ritland upon completion of his tour of duty with the project.

"...At the beginning of the project, Watertown was for many months in fact a Lockheed facility and we never succeeded in recovering effective control of it, and our efforts to do so gave rise to some unnecessary ill will." 1/

One episode which illustrates Mr. Bissell's quotation, above, happened as follows: On 20 March 1956, Mr. Bissell instructed the Base Commander to work out a master schedule of test requirements which would make the best use of available U-2's in order to reach a state of readiness, taking into account both the needs of all suppliers to install, calibrate and test their equipment, and the requirements for pilot training. Col. McConnell sent a memorandum to all suppliers requesting them to submit their schedules of tests required which would be integrated into a master schedule, kept flexible enough to provide for change of emphasis or additional tests that might develop.

On 16 April 1956 at a suppliers' meeting in Los Angeles, Kelly Johnson in an acrimonious vein took strong exception to the Base Commander's memorandum, and especially objected to the implication that the Base Commander would be responsible for the coordination of test programs which were the airframe manufacturer's responsibility. Mr. Johnson was reassured that the conduct of development flight test

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1/ OXC-0155, 8 December 1959. Memo for AC/DPD from the DD/P.

programs was indeed a Lockheed responsibility (as it had been from the start) and Lockheed would necessarily retain responsibility for detailed day-by-day scheduling. However, major priority decisions as to relative emphasis on individual systems or components were the responsibility of the Project Director, whose representative at Watertown would participate on behalf of the Project Director in planning flight test programs to ensure that desired priorities were observed. All suppliers must have the right of appeal through the Base Commander and ultimately to the Project Director on questions of priorities.

Phase-out of Watertown

The formation of field detachments, their training at the test site and deployment to the field, and the phasing in of the Air Force follow-on group (FOG) took place between January 1956 and March 1957, with development testing continuing throughout this period. Beyond the air frame, engine and primary photographic and electronic systems which were declared operationally ready in early spring 1956, other equipment tested through the second year at Watertown included the APQ-56 Side-Looking Radar and associated Radan, the B camera and film, the Baird Sextant, air samplers for collecting nuclear debris (both gaseous and particulate) and improved ELINT collection systems.

The overcrowded conditions at Watertown, due to the influx of the SAC U-2 group in November/December 1956, were relieved with the departure of Detachment C in March 1957. The SAC training of its own U-2 group had been expected to reach completion by the end of March 1957 but was delayed by two months. The SAC U-2 group departed for its operational base (Laughlin Air Force Base at Del Rio, Texas) on 10 June 1957.

Meanwhile the AEC informed the Project Director that plans were being made for approximately 20 nuclear shots between 15 May and 30 September 1957, which would require the evacuation of Watertown for periods up to three days for each shot. In view of the possibility of radioactive fallout, no-one could remain continuously at Watertown during this series. Because of the interruptions in the training program which the numerous evacuations would entail, and because there were requirements for further development and testing of equipment due to the extension of the U-2 program, Project flight test activities were re-established at Edwards Air Force Base (North), California, under the auspices of ARDC, and with the reluctant acquiescence of the Project Security Officer, who did not feel that the relatively open and easily accessible base at Edwards was conducive to maintaining the required secrecy of operations. Watertown Strip was evacuated and mothballed on 21 June 1957.

Preliminary estimates for the one-year mothballing of Watertown from 21 June 1957 came to $15,723, plus $1200 per month ($800 for the caretaker and $400 contingency for special repairs, etc.) Since the Agency's decision to keep or dispose of the property at the end of the year affected AEC and USAF, Mr. Cunningham requested the Project Director to obtain a decision from Gen. Cabell on the retention of the base as a physical asset of the Agency. The decision finally made a year later was to re-open Watertown for the flight testing of the successor aircraft to the U-2, despite arguments then by the Project Security Officer that erosion of security of the U-2 program had branded Watertown as a "spook" base, and that the new program should be kept separate from any connection with the U-2 to the greatest possible degree. The final decision, however, was made, not on the basis of security, but on the basis of fiscal and operational considerations, i.e., to carry out the OXCART program as a completely separate entity would have required unlimited time, unlimited funds, and unlimited personnel resources, which were not available.

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ANNEX 64

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MEMORANDUM OF UNDERSTANDING

14 August 1955

This Memorandum of Understanding made by and between the U.S. Atomic Energy Commission and the Watertown Project, witnesseth:

WHEREAS, the Commission has added an area of approximately six miles by ten miles to the Northeast corner of the Nevada Test Site for the purpose of providing a test area for the Project; and

WHEREAS, the Commission has been authorized to construct certain facilities which are a necessary adjunct to the successful conduct of tests by Project personnel; and

WHEREAS, the Commission operates, maintains and provides certain services related to Nevada Test Site facilities; and

WHEREAS, the Project desires that the Commission extend these services to the Project activities and the Commission is agreeable to extending such services at times which do not conflict with Commission activities;

NOW THEREFORE, in consideration of the foregoing and the provisions hereinafter contained, it is mutually understood and agreed as follows:

~~TS~~-142573
(OA-LXI-3284-1A)

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ARTICLE I - DEFINITIONS

As used in this Agreement, the term, "Commission" means the U.S. Atomic Energy Commission, or the Manager, Santa Fe Operations Office, or his duly authorized representative, hereinafter called the "Commission."

As used in this Agreement the term "Project" means the Watertown Project or the Manager of the Project including his duly authorized representative, hereinafter called the "Project Manager."

ARTICLE II - SCOPE OF WORK

1. Except for items furnished by the Project, the Commission will be responsible for furnishing an adequate complement of competent personnel, equipment, materials and supplies as may be necessary to supply, operate, maintain and/or service the following listed items in the Project's test area on a 24-hour per day, year round basis (if necessary) in accordance with accepted engineering principles:

a. Power plant and entire electrical distribution system consisting of:

(1) Three 100 KW Diesel Generators, including necessary appurtenant equipment and switchgear.

(2) Approximately one mile of underground electrical distribution system.

b. All wells, pumping equipment, water treatment plants and water distribution systems in their entirety.

c. All sewage treatment plants and sewage systems in their entirety.

d. All motor pools, together with appurtenant facilities.

e. Communications facilities, to the extent designated by the Project Manager.

f. Project buildings consisting of, but not limited to:

(1) Three barracks

(2) One mess hall (meals to be comparable to those at Camp Mercury)

(3) One wash house

(4) One dispensary and operations building

(5) One maintenance building

(6) Three hangars together with three tie-down areas

(7) Trailers and facilities for trailer parking

(8) Temporary facilities which may be required

g. All paved or temporary access roads, camp streets, erosion control, and drainage facilities required for the Project.

h. The 100 foot wide by 5000 foot long runway which is paved with a 3-inch roadmix asphaltic pavement and maintain taxi strips, associated drainage areas, etc.

i. Other services or facilities not specifically enumerated above which are requested in writing by the Project Manager.

2. The Commission will perform new construction in the Project test area after receipt of an allocation of funds from the Project. New construction shall be based upon plans and specifications approved by the Project Manager. This work will be accomplished only upon receipt of a work order signed by the Project Manager and approved by the Commission. The Project shall have the right to remove or transfer any buildings or equipment which have been funded by the Project.

3. The Commission will perform remodeling, major plant revision or addition or extraordinary maintenance upon any structure or facility in the Project test area upon receipt of a written request of the Project Manager and approval by the Commission. No changes to existing facilities, other than those minor alterations necessary in the performance of routine maintenance work, will be made without such written request.

4. The Commission will provide miscellaneous support services as requested in writing by the Project Manager to facilitate all aspects of the tests performed by the Project. This work is generally outside the scope of maintenance and operations of facilities or construction of facilities and would consist generally of the following:

a. Assisting Project personnel in assembling, installing, connecting and testing scientific equipment and providing auxiliary needs thereto.

b. Assisting in disconnecting, dismantling, delivering, packing and shipment of scientific and/or test equipment as directed by the Project Manager.

c. Placing test facilities in a stand-by condition adequate to protect for future use.

5. The Commission hereby grants permission for Project personnel to utilize Building No. 127 at Mercury, Nevada and appurtenant facilities at no rental cost, contingent upon their releasing the facilities upon notification from the Commission. All costs for repair and maintenance of Building 127, while being used by the Project, shall be borne by the Project. Facilities such as the mess hall, dormitories, etc., at Camp Mercury which are operated by the Commission are also available for use by Project personnel on the same basis that they are

available to other personnel associated with Commission activities to the extent that such facilities are not required in connection with test activities of the Commission, and subject to the provisions of Article III Finance.

6. The Commission agrees to furnish to the Project non-expendable equipment, such as hutments, temporary buildings and equipment including office equipment, which is not required for current use by the Commission, on a loan or memorandum receipt basis. Such items will be subject to recall by the Commission and shall be returned as soon as practicable, but, in any event not more than sixty days after notice that the items are required by the Commission in the performance of activities under its jurisdiction. All such items shall be returned to the Commission in the same condition as received, normal wear and tear excepted. All costs for repair, replacement and maintenance shall be borne by the Project.

ARTICLE III - FINANCE

1. Basic Financial Policy. All direct costs incurred by the Commission and its contractors in carrying on the work and a proportionate share of Commission contractor indirect costs will be borne by the Project. Such indirect costs will be determined on the same basis as that used by the contractor in accounting for other Commission activities.

2. Funding. Project work will be funded on a reimbursable basis. Prior to the undertaking of any Project work, the Commission will be advised in writing that funds have been earmarked for the Project in an amount sufficient to cover the estimated costs of the work involved. Standard Form 1080, together with an itemized statement of costs incurred, will be submitted quarterly for payment by the Commission to the Project's Washington headquarters.

3. Accounting Records and Reports. The Commission will account for the costs of the Project work in accordance with its established accounting system. Cost reports will be furnished to the Project on a monthly basis in the form and detail consistent with established AEC cost reporting practices on comparable Commission activities.

ARTICLE IV - SECURITY

The Project Manager will be responsible for security within the entire Project addition. The Commission will maintain a guard station, Post 385, which is located on the main access road at the boundary between the Project addition and the Nevada Test Site proper, and will control access through this station on a 24 hour a day basis. Access through this station to and from the Project addition, and beyond, will be allowed on the basis of badges issued by the Commission, to include personnel approved by

the Project Manager for access to the Project camp operations area. The Commission will provide guards with AEC approved equipment and AEC patrol vehicles to perform such security guarding functions as may be requested by the Project Manager. Reasonable advance notice will be given to the Commission of requirements for changes in guard service.

The Project Manager will be responsible for personnel security clearance of persons granted access to the Project and will advise the Commission of security clearance approval of each such person. For this purpose the Commission will advise the Project Manager of the AEC clearance granted persons in question and grant the Project Manager's Security Representative access to the Commission's clearance files.

ARTICLE V - SAFETY AND FIRE PROTECTION

The Project agrees to take all steps and all precautions to protect health and to minimize danger from all hazards to life and property. It is agreed that the Project will abide by all safety regulations prescribed for Nevada Test Site operations including radiological safety regulations prescribed by the Commission, and will establish and enforce any special safety regulations applicable to authorized work of the Project. The Project will be responsible for fire protection within the entire Project

addition. Fire protection at Camp Mercury will be provided at no expense to the Project.

It is mutually understood and agreed that the Project will hold the Commission harmless from any liability to third persons which may arise on the part of the Government out of activities of the Project at the Nevada Test Site proper or at the Project's testing area.

ARTICLE VI - PRESERVATION AND STORAGE OF DOCUMENTS

The Commission agrees to retain and preserve, without charge to the Project, all books, records, correspondence, instructions, receipts, vouchers and other memoranda having a record purpose value pertaining to the work under this Agreement, for the same periods of time for which the Commission is required to retain Commission records. At the option of the Commission, and in lieu of preserving such documents, the Commission may return such documents to the Project for storage.

ARTICLE VII - RELEASE OF INFORMATION

Any public release or dissemination of information connected with activities under this Agreement will be in accordance with policies prescribed by the Commission and all other participating Federal Agencies, as coordinated by the Project Manager, except that information relating to the purpose or accomplishment of tests at the Project will

be released at the discretion of responsible personnel of the Project. In any event, any reference to the Commission, the Nevada Test Site, or the Commission's contractors shall be cleared through AEC channels prior to actual release.

ARTICLE VIII - TERM

This Agreement is effective as of 15 August 1955. It shall remain in effect until terminated by either party hereto upon sixty days' written notice to the other party.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement.

ATOMIC ENERGY COMMISSION

BY: Alfred D. Starbird
Col. Alfred D. Starbird, CE
Director of Military
Application
Atomic Energy Commission

DATE: 16 August 1955

CENTRAL INTELLIGENCE AGENCY

BY: Richard M. Bissell, Jr.
Richard M. Bissell, Jr.
Special Assistant to
the Director for
Planning and Coordination

DATE: 12 August 1955