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The loss of Francis Gary Powers' U-2 over the Soviet Union on 1 May 1960 marked the end of the aircraft's use over the Soviet Bloc. Soon after the May Day incident, President Eisenhower ordered an end to overflights. Similarly, his successor, John F. Kennedy, told a 25 January 1961 press conference, "I have ordered that the flights not be resumed, which is a continuation of the order given by President Eisenhower in May of last year." This was not a binding pledge, as John A. McCone (who became DCI in November 1961) pointed out to President Kennedy's successor, Lyndon B. Johnson, on 15 January 1964 in response to the new President's request for information on U-2 overflight policies:

Contrary to popular assumption, President Kennedy did not make any pledge or give an assurance, at least publicly, that there would be no further overflights. He limited his response to a statement that he had ordered that the flights not be resumed. An order, obviously, is valid only until countermanded.'

Technically, McCone was correct, but no President was likely to order a resumption of overflights of the Soviet Union without very good reason, and such a situation never developed, in part because satellite photography gradually began to fill the gap left by the end of U-2 coverage.

Although there were several proposals to resume overflights of the Soviet Union in the years that followed, none reached the mission planning stage. The Kennedy administration came closest to resuming



Memorandum for President Johnson from DCI McCone, "Response to Query Concerning U-2 Overflight Policy," 15 January 1964, DCI records, job 80-B-1676R, box 17, folder 14 (TS Codeword).

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overflights of the Soviet Union during the Berlin Crisis in the summer and fall of 1961. On 14 September 1961, Kelly Johnson noted in his project log:

Have had request from Mr. Bissell to propose ways and means for increasing safety of the U-2 on probable overflights.... It seems that President Kennedy, who publicly stated that no U-2's would ever be over Russia while he was president, has requested additional flights. Some poetic justice in this.²

One week later Colonel Geary called to order Lockheed to upgrade six older U-2s into U-2Cs with the more powerful engines on a priority basis, even if it meant taking people off the work on the successor aircraft in order to speed up the conversions.

Shortly thereafter, the resumption of overflights became a major topic of discussion within the intelligence community. On 25 September 1961, the Committee on Overhead Reconnaissance prepared a detailed "Justification for U-2 Photography over the USSR," which argued in favor of U-2 missions over selected, high-priority targets such as ICBM complexes. The COMOR paper stated that satellite photography did not provide sufficient detail to answer many critical questions about the Soviet ICBM program. To back up this contention, the report placed U-2 and satellite photography of the same Soviet targets side by side, clearly demonstrating the far superior resolution of the U-2's cameras. Not all members of COMOR supported the resumption of overflights, however. When COMOR formally recommended this course of action to the USIB on I October 1961, the State Department and CIA members dissented, having found "insufficient justification for resuming U-2 overflights of the USSR at this time." 3

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² Johnson, "Log for Project X," 14 September 1961. In preparation for the possible resumption of overflights, Kelly Johnson began thinking about what to do in a worst case scenario like that of 1 May 1960. He noted in the project log on 21 September 1961: One of the greatest technical problems and, of course, a great moral one, is how we insure destroying the aircraft and the pilot should the mission fail. I have proposed a time-altitude fusing setup for multitude bombs, that looks like it should do the trick. Beerli [Col. Stanley Beerli, USAF, Director of the Office of Special Activities] doesn't want anything to do with this, but we will go ahead and develop it in case someone decides it is necessary.

Memorandum for USIB from COMOR, "Justification for U-2 Photography over the USSR," 25 September 1961, IC Staff, COMIREX records, job 33-T-123A, box 10, "COMOR (General)" (TS Codeword); Memorandum for USIB from COMOR, "Requirements for Resumption of U-2 Overflights of the USSR," 1 October 1961, IC Staff, COMIREX records, job 33-B-119A, box 1 (TS Codeword).

Nothing came of the proposal to resume overflights in the fall of 1961, as both the USIB and the Special Group came out against it, but, as long as U-2 photography remained clearly superior to satellite photography, the thought of obtaining U-2 coverage of the Soviet Union remained tempting. In February 1962, the USIB seriously considered a COMOR proposal to send a U-2 over Kamchatka to photograph Soviet antiballistic-missile facilities but finally decided to wait for the results of an Air Force peripheral mission. The board later accepted DCI McCone's recommendation to seek satellite rather than U-2 coverage of the area.⁴

With both the CIA and the State Department strongly opposed to sending the highly vulnerable U-2 over the Soviet Union, prospects for resuming flights remained slight unless the international situation worsened to such a degree that overflights would be worth the risks involved. Since this never happened, Francis Gary Powers' flight on 1 May 1960 proved to be the last CIA overflight of the Soviet Bloc. Yet, the U-2 remained useful, for it could operate successfully in other areas with less developed radar and air defense systems. After May 1960, the main focus of U-2 activity shifted to two new areas: Latin America, where U-2s would play an extremely important role during the early 1960s, and the Far East, where CIA U-2s were active from 1958 until 1974, when the Agency's involvement in manned reconnaissance finally ended.

U-2 OPERATIONS IN LATIN AMERICA

U-2 Support to the Bay of Pigs Invasion

During late summer 1960, the Directorate of Plans was planning a counterrevolutionary invasion of Cuba for the following year. To support this effort, the Agency asked the National Security Council's

Memorandum for the Special Group from COMOR, "Illustrations of Policy Restraints on the Collection of Information through Overflight of Denied Areas during 1962," 14 December 1962, IC Staff, COMIREX records, job 33-B-119A, box 1 (TS Codeword); James S. Lay, "The United States Intelligence Board, 1958-1965," (draft) CIA History Staff MS-2, 1974, p. 385 (TS Codeword). One year later Saryshagan was the topic of US Intelligence Board deliberations. In October 1963 the board asked COMOR to prepare recommendations on the need for an electronic intelligence-gathering mission against the Soviet ABM installations at Saryshagan. The proposed mission would not, however, violate Soviet airspace; instead, the U-2 would fly over the portion of the People's Republic of China closest to Saryshagan. Lay, "USIB History," pp. 393-94 (TS Codeword).

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Special Group to approve U-2 overflights of Cuba. Known as Operation KICK OFF, these flights were designed to obtain intelligence on Cuban air and ground order of battle and to provide geographic data for choosing an invasion site.

To allay fears that mechanical problems could lead to the loss of a U-2 over Cuba, the submission to the Special Group for overflights emphasized that, if a U-2 had a flameout anywhere over Cuba, it could still glide back and make a safe landing in Florida. The Special Group approved Operation KICK OFF but stipulated that only two overflights could be made. Detachment G staged the Cuban missions from Laughlin AFB near Del Rio, Texas, a base used by SAC U-2 aircraft. Agency photointerpreters went to Del Rio to read out the photography after these missions. The two flights, on 26 and 27 October 1960, were very long missions, covering 3,500 miles and lasting over nine hours. Because of cloud cover over Cuba, the results of both missions were poor. The Agency, therefore, asked the Special Group to approve additional missions. After receiving authorization, Detachment G conducted three missions (Operation GREEN EYES) on 27 November and 5 and 11 December 1960 with good results.

Overflights of Cuba continued under the new administration of President Kennedy. Under the codename Operation LONG GREEN, two overflights on 19 and 21 March 1961 photographed Cuba extensively to aid the final preparations for the invasion. Two weeks later Detachment G again deployed from Edwards AFB, California, to Laughlin AFB, Texas. Beginning on 6 April, Detachment G U-2s made 15 flights over Cuba to provide photographic coverage of the ill-fated Bay of Pigs invasion and its aftermath. These flights were known as Operation FLIP TOP.⁵

Aerial Refueling Capability for the U-2

Long missions conducted over Cuba in late 1960 and over Southeast Asia in early 1961 pointed out the need to increase the range of the U-2. In May 1961, Lockheed began modifying Agency U-2s so that they could be refueled in flight to extend their operating range. The six Agency aircraft that were modified to achieve this capability received the designation U-2F. All Agency U-2 pilots then underwent training in the techniques of in-flight refueling.

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OSA History, chap. 16, pp. 13-15 (TS Codeword).

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Aftermath of the Bay of Pigs invasion, 20 April 1961

Refueling a U-2 in flight was a very delicate task. When fully loaded with fuel, KC-135 tankers found it difficult to reduce airspeed to 200 knots, the safest speed for refueling a U-2. As for the U-2s, they were in a very vulnerable position when approaching a tanker at 200 knots because their frail wings could not stand much stress. As a result, U-2 pilots had to approach the KC-135 tankers very carefully in order to avoid the vortexes from the wingtips of the tanker and the turbulence caused by the four large jet engines. During the first few years of refueling operations, two U-2s crashed after their wings broke off as they crossed into the turbulent area behind the tankers; one of the pilots was killed.

The in-flight refueling capability was a useful modification to the U-2, but it could not dramatically extend mission length. The main limiting factor remained pilot fatigue, which prevented missions from lasting longer than approximately 10 hours.

U-2 Coverage During the Cuban Missile Crisis

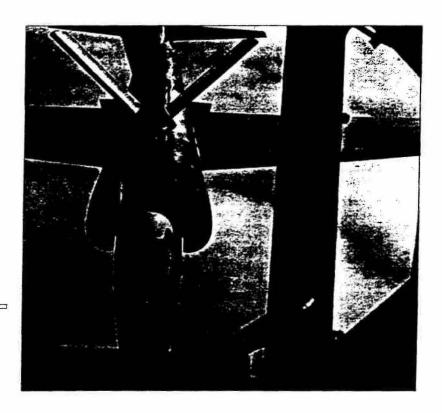
Cuba remained a high-priority target even after the Bay of Pigs invasion failed in April 1961. Soon afterward, Detachment G U-2s began flying monthly missions over Cuba in a program known as Project



¹ lbid., p. 11-12 (TS Codeword).

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In-flight refueling of a U-2

NIMBUS. Most of the flights were staged from Laughlin AFB, Texas, but three were flown from Edwards AFB, California, using in-flight refueling to extend the range of the aircraft. By the spring of 1962, having received reports of increased Soviet activity in Cuba, the CIA requested permission for additional photographic coverage of the island. The Special Group authorized increasing the number of Cuban overflights to at least two per month, beginning in May 1962. At the same time, the National Photographic Interpretation Center began publishing a *Photographic Evaluation of Information on Cuba* series.⁷

By early August 1962, CIA analysts had noted a substantial increase in Soviet arms deliveries to Cuba during the preceding weeks. The first U-2 overflight in August, mission 3086 on the 5th, flew too soon to detect the Soviet construction program just getting under way at various sites in Cuba. A second mission (3088) was originally set for 8 August, but bad weather forced repeated postponements until 29 August. This mission's photography provided the first hard evidence

Ibid., pp. 19-20 (TS Codeword).

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of the nature of the Soviet buildup in Cuba. Two days after the mission, the CIA reported in the *President's Intelligence Checklist* that there were at least eight surface-to-air missile (SA-2) sites in the western half of Cuba.* (The map on page 202 shows the routes taken by the two August overflights.)

On 5 September the next U-2 overflight (mission 3089) provided more evidence of the Soviet buildup. The mission's photography showed three more SAM sites and also revealed a MiG-21, one of the newest Soviet fighter aircraft, at the Santa Clara airfield.

The discovery of SAMs in Cuba had a twofold effect on the US reconnaissance effort over Cuba. First, it added substance to DCI McCone's fears that Cuba might become a base for Soviet medium-range ballistic missiles (he argued that SAM sites would only be set up to protect high-priority facilities such as missile bases). At this time, however, McCone's suspicions were not shared by other officials in the Agency or the administration. The second and most significant effect of the discovery of SAMs in Cuba was to make the administration far more cautious in its use of U-2s for reconnaissance of the island. As the loss of Francis Gary Powers' U-2 in May 1960 had demonstrated, the U-2 was very vulnerable to the SA-2 missile.

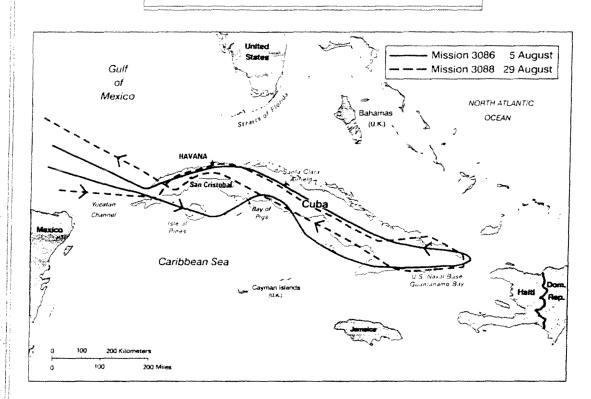
Within the administration, concern mounted about the U-2's vulnerability to SAMs in Cuba and the possibility that a loss could cause a major diplomatic crisis. Such fears increased as the result of two incidents in other parts of the world. On 30 August 1962, a SAC U-2 on a peripheral reconnaissance mission overflew Sakhalin Island in the Far East, prompting a Soviet protest on 4 September. The United States apologized for the intrusion. Then on 8 September, a U-2 with a Nationalist Chinese pilot was shot down over the People's Republic of China (this CIA reconnaissance program is discussed later in this chapter in the section on Asian operations). Increasing concern about U-2 vulnerability led to an impromptu meeting on 10 September 1962 of Secretary of State Dean Rusk, National Security Adviser McGeorge Bundy, and DDCI Marshall S. Carter (in place of the DCI, who was on his honeymoon in France). The Secretary of State objected to the CIA's plans for two extended overflights covering the remaining areas of Cuba not covered by the last two missions. Rusk wanted peripheral flights over international waters kept separate from

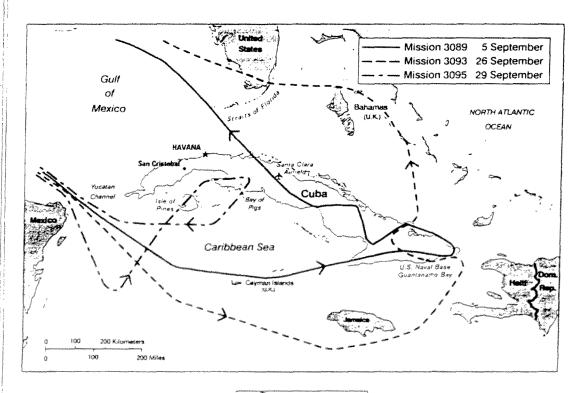


DCI John A. McCone

Richard Lehman, "CIA Handling of the Soviet Buildup in Cuba, 1 July-16 October 1962," 14 November 1962 (Hereafter cited as Lehman Report). DCI records, job 80-B-1676R, box 17, folder 18 (TS Codeword).

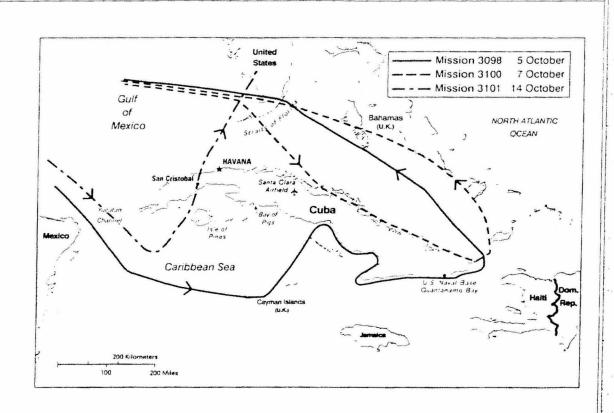
U-2 Overflights of Cuba, August - October 1962

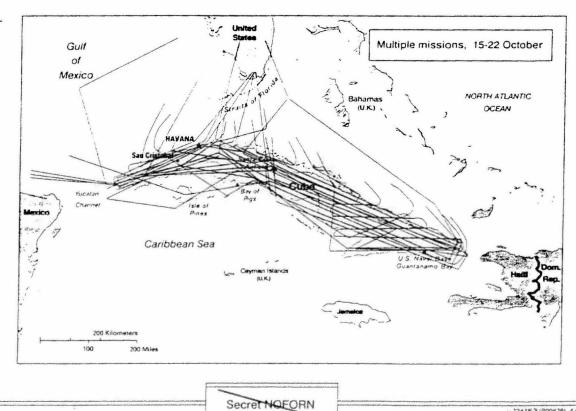


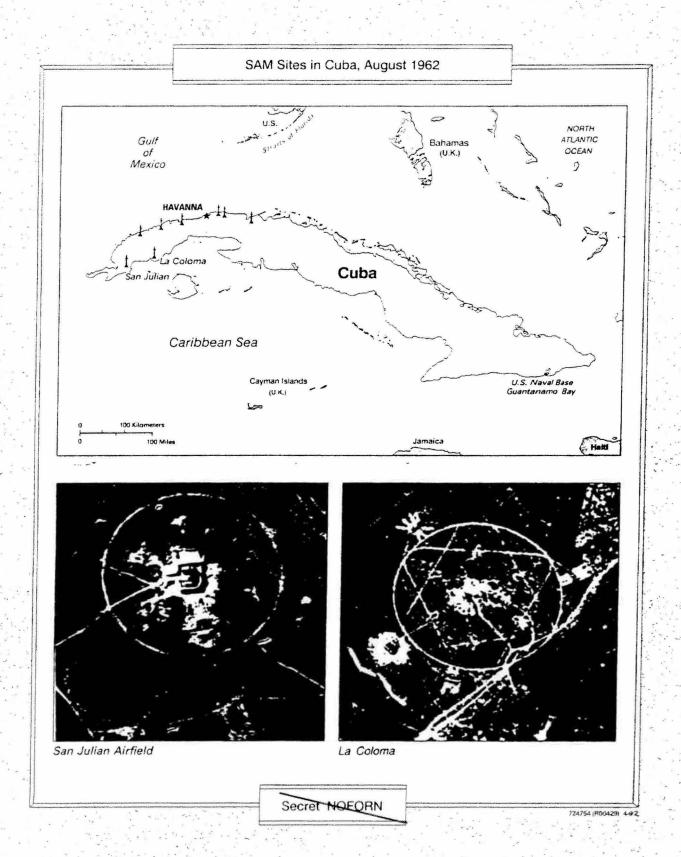


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overflights of Cuban territory. He argued that the loss of an aircraft on a mission that combined both types of flights would make it difficult for the United States to stand on its rights to fly over international waters. Bundy and Carter therefore agreed to split the proposed reconnaissance program into four missions: two overflights and two peripheral flights, all planned for maximum safety. The overflights were thus designed to be quick "in-and-out" operations across the narrow width of the island instead of flights along the entire length of Cuba, as had been the case previously. (As the map on page 202 illustrates, the 5 September mission was the last one to fly along the length of the island.) As an additional precaution, flightpaths would be laid out to avoid known SAM sites. Although these changes greatly reduced the danger to the U-2, they slowed the gathering of information on the Soviet buildup by reducing each mission's coverage."

To ensure that the photographs taken by these missions were of the highest quality, the CIA decided to conduct flights only when the weather along the flight routes was less than 25 percent overcast. Weather proved to be a major problem during the month of September. Unfavorable forecasts (along with a brief standdown of U-2 overflights after the loss of the Nationalist Chinese U-2) prevented the launching of any missions from 6 through 16 September. Moreover, when mission 3091 finally flew on 17 September, the favorable weather forecast proved inaccurate and heavy clouds prevented the mission from obtaining usable photography. Bad weather continued to rule out missions until 26 September, when mission 3093 covered eastern Cuba and found three additional SAM sites. Three days later mission 3095 flew over the Isle of Pines and Bay of Pigs area, finding one more SAM site and a coastal-defense cruise missile site.¹⁰

The cautious series of U-2 flights in September had turned up many more SAM sites but no concrete evidence of the presence of surface-to-surface missiles. Growing impatient with the restrictions

Lehman Report, pp. 12-13 (TS Codeword).

[&]quot;DCI John A. McCone, Memorandum for the Record, "U-2 Overflights of Cuba, 29 August through 14 October 1962," 27 February 1963, DCI records, job 80-B-1676R, box 17, folder 18 (S). Although this DCI memo states that "the delay in completing the photographic coverage was due solely to the unfavorable weather predicted during this period," a more contemporary COMOR memo reported a standdown of U-2 overflights until 16 September as a result of the loss of mission No. GRC-127 over China on 8 September. Memorandum for DDCI Carter from James Q. Reber, Chairman, COMOR, "Historical Analysis of U-2 Overflights of Cuba," 24 October 1962, IC Staff, COMIREX records, job 33-B-122A, box 1, "Cuba Requirements, 1961-63" (TS Codeword).

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that had been placed on U-2 overflights of Cuba, DCI McCone told the Special Group on 4 October 1962 that their policy of avoiding SAM sites had restricted the Agency to using the U-2 only in Cuba's southeastern quadrant. He questioned "whether this was a reasonable restriction at this time, particularly since the SAM's were almost certainly not operational." The Special Group then requested the preparation of an overall program for reconnaissance of Cuba in time for its next meeting on 9 October.

In the meantime, CIA U-2s continued the reconnaissance program that the Special Group had approved in September. In early October two peripheral missions—3098 along the southeastern coast on 5 October and 3100 along the northern coast on 7 October (see map on page 203)—discovered an additional five SAM sites. This brought the total to 19, but there was still no evidence of surface-to-surface missiles.

Evidence was mounting that the portion of Cuba that the September and early October missions had avoided was the most likely location for Soviet medium-range ballistic missiles (MRBMs). On 6 October 1962, the Committee on Overhead Reconnaissance recommended frequent and regular coverage of Cuba, pointing in particular to the need for renewed coverage of western Cuba:

The absence of coverage of the western end since August 29, coupled with the rate of construction we have observed, means that there may well be many more sites now being built of which we are unaware. Ground observers have in several recent instances reported sightings of what they believe to be the SS-4 (SHYSTER) MRBM in Cuba. These reports must be confirmed or denied by photo coverage. Attached to this memorandum was a list of targets, with the area around San Cristobal at the top.

On 9 October the Special Group met to discuss COMOR's recommendations, the most important of which was a U-2 flight over the "suspect MRBM site as soon as weather permits." This mission was also designed to pass over one of the SA-2 sites that was thought to be most nearly operational in order to determine the status of SA-2

[&]quot;Minutes of the Special Group meeting, 4 October 1962, in Memorandum for DCI McCone from J. S. Earman, Inspector General, "Handling of Raw Intelligence Information During the Cuban Arms Buildup," 20 November 1962, DCI records, job 80-B-1676R, box 17 (TS Codeword).

Lehman Report, p. 30 (TS Codeword).

defenses of Cuba. If this overflight did not provoke an SA-2 reaction, the study recommended "maximum coverage of the western end of the island by multiple U-2s simultaneously." ¹³ Because the danger posed by the SA-2 sites was one of the major topics at the Special Group meeting, DCI McCone brought along Col. Jack C. Ledford (USAF), head of the Office of Special Activities, who presented a vulnerability analysis that estimated the odds of losing a U-2 over Cuba at 1 in 6. The Special Group approved the recommended flight over San Cristobal.

As the Special Group meeting was breaking up, Deputy Secretary of Defense Roswell Gilpatric and the Air Force representative questioned the adequacy of the Agency's cover story, which was that its pilots were Lockheed employees on a ferry flight to Puerto Rico. The Air Force and DOD representatives argued that it would be better to use Air Force pilots and state in the event of a mishap that the overflight was a routine Air Force peripheral surveillance mission that had gone off course. McCone then asked Colonel Ledford's opinion of the proposed change. Ledford agreed that the DOD cover story was better but pointed out that the SAC U-2s were much more vulnerable than those of the Agency, which had superior electronic countermeasures and a higher maximum altitude. Ledford then suggested that Air Force pilots use Agency aircraft after receiving familiarization training. After leaving the Special Group meeting. McCone and Gilpatric met with President Kennedy, who approved the San Cristobal mission and the use of Air Force pilots. 4

Two days later (11 October), Air Force and CIA representatives met to discuss the change in cover stories. Herbert Scoville, CIA Deputy Director for Research, agreed that in the long run the Air Force cover story was best but emphasized that an Air Force pilot should not be used until he had received adequate training. The conversation then turned to the issue of who would run the next mission, the CIA or the Air Force. Strongly favoring Air Force control of the U-2 missions over Cuba, the DOD representatives called DCI McCone and obtained his consent. Shortly thereafter, McCone left

[&]quot; Ibid., p. 31 (TS Codeword).

[&]quot;Brig, Gen, Jack C, Ledford, USAF Ret., interview by Gregory W, Pedlow, Washington, DC, 20 February 1987 (S); Memorandum for DCI McCone from Herbert Scoville, Jr., Deputy Director (Research), "The Chronology of Events Leading to the Transfer of Cuban Overflight Responsibility," 28 February 1963, DCI records, job 80-B-1676R, box 17, folder 18 (S).

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DDCI Marshall S. Carter

Washington for California and did not return until 14 October. Air Force control of the Cuban overflights became official on 12 October, when President Kennedy transferred "responsibility, to include command and control and operational decisions, with regard to U-2 reconnaissance overflights of Cuba" from the CIA to the Department of Defense.¹⁵ The Air Force then asked to borrow two of CIA's U-2Cs.

The Acting DCI, Lt. Gen. Marshall S. Carter, US Army, reacted strongly to the Air Force takeover of a major CIA operation. At one point he remarked, "I think it's a hell of a way to run a railroad. It's perfectly obviously a geared operation to get SAC in the act." 16 In a series of conversations with high-ranking Air Force and administration officials, Carter argued against changing command and control of the flights at such a crucial time. The Agency operation, Carter pointed out, was already in place and working well, whereas the Air Force lacked experience in controlling U-2 overflights, particularly with the U-2C, which was not in the Air Force inventory. Carter also emphasized that Air Force pilots lacked experience with the more powerful J75 engines in the U-2C. He told Roswell Gilpatric, "To put in a brand new green pilot just because he happens to have on a blue suit and to completely disrupt the command and control and communication and ground support system on 72 hours' notice to me doesn't make a God damn bit of sense, Mr. Secretary." 17 DDCI Carter admitted that the Air Force's cover story was probably better than the CIA's but suggested at one point, "Let's take one of my boys and put him in a blue suit." 18 Realizing, however, that the pilot would probably have to come from the Air Force, Carter concentrated his efforts on trying to convince DOD and administration officials to conduct an orderly transition by allowing the CIA to continue its operation for a few weeks using an Air Force pilot, and the Air Force gradually taking over command and control. Carter's efforts were in vain. The Air Force insisted on immediate control of the operation, and administration officials were unwilling to become involved in what they

[&]quot;Memorandum for DCI McCone from McGeorge Bundy, "Reconnaissance Overflights of Cuba," 12 October 1962, DCI records, job 80-B-1676R, box 17, folder 18 (TS).

Telephone conversation between DDCI Carter and McGeorge Bundy, 13 October 1962, DCI records, job 80-B-1676R, box 17, folder 18 (TS Codeword).

¹⁷ Telephone conversation between DDCI Carter and Roswell Gilpatric, 12 October 1962, DCI records, job 80-B-1676R, box 17, folder 18 (TS Codeword).

Telephone conversation between DDCI Carter and Gen. William McKee, 12 October 1962, DCI records, job 80-B-1676R, box 17, folder 18 (TS Codeword).

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perceived as a jurisdictional dispute. Presidential Assistant for National Security Affairs McGeorge Bundy told DDCI Carter that "the whole thing looks to me like two quarreling children." ¹⁹ Furthermore, no one wanted to speak out against a decision that the President had already made.

Once the decision was clearly irrevocable, the Agency gave its complete support to the Air Force in preparing for the upcoming overflight. A SAC U-2 pilot had already arrived unannounced at the CIA's U-2 Detachment at Edwards Air Force Base on 11 October, and the CIA U-2 detachment put him through a hasty training program to familiarize him with the U-2C. By Sunday, 14 October 1962, the weather over Cuba had cleared, and the first SAC overflight of the island took place.

When the U-2 returned, its film was rushed to the National Photographic Interpretation Center. By the evening of 15 October, photointerpreters had found evidence of the presence of MRBMs in the San Cristobal area. NPIC Director Arthur Lundahl immediately notified DDI Ray Cline, who in turn notified DDCI Carter (DCI McCone had again left town). As the readout progressed and the evidence became firmer, the DDI notified National Security Adviser Bundy and Roger Hilsman of the Department of State's Bureau of Intelligence and Research, who informed Secretary of State Dean Rusk. On the following morning, 16 October, DDCI Carter briefed the President on the results of the 14 October mission.²⁰

Now that the presence of Soviet medium-range surface-to-surface missiles in Cuba had been confirmed, the rules for U-2 mission approval changed. The Strategic Air Command received blanket approval to fly as many missions as needed to cover Cuba completely, without again consulting the Special Group. During the week that followed the discovery of the missiles, SAC U-2s conducted multiple missions each day (see map on page 203). U-2 photography was supplemented by low-level photography taken by high-performance Navy and Air Force aircraft. Throughout the remainder of the Cuban Missile Crisis, the Agency's U-2 pilots remained idle, but the photointerpreters at NPIC did yeoman service in studying the

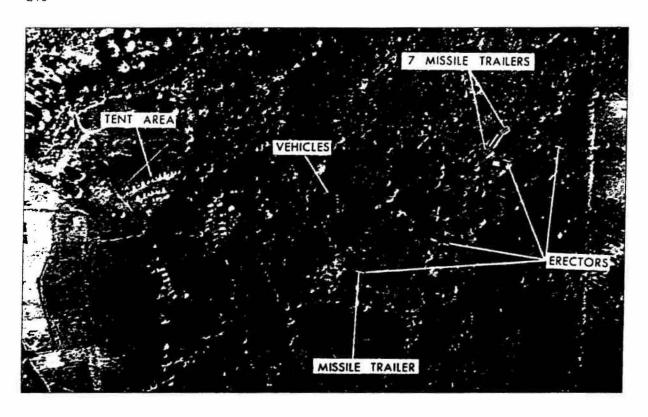


³ Telephone conversation between DDC1 Carter and McGeorge Bundy, 12 October 1962, DC1 records, job 80-B-1676R, box 17, folder 18 (TS Codeword).

³⁹ For a more detailed account of NPIC's discovery of the Soviet missiles in Cuba, see Dino Brugioni, *The Cuban Missile Crisis—Phase I, 29 August–16 October 1962*, DDS&T Historical Series, NPIC-1 (CIA: NPIC, 1971) (S).

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Soviet MRBM site in Cuba, 1 October 1962

thousands of feet of film returned by Air Force and Navy reconnaissance aircraft. President Kennedy used NPIC photographs to illustrate his address to the nation on 22 October 1962, when he revealed the Soviet missile buildup in Cuba and declared his "naval quarantine" to prevent the shipment of offensive weapons to Cuba.

On 27 October, at the height of the crisis, one of the U-2Cs lent by the Agency to the Air Force was shot down over Cuba, killing the pilot, Maj. Rudolph Anderson. This loss again illustrated the U-2's vulnerability to the SA-2 missile. Nevertheless, SAC U-2 overflights continued, both during and after the crisis. Responsibility for photographic coverage of Cuba remained with the Air Force; Agency pilots never flew another mission over the island.

Although SAC carried out most of the U-2 activity during the Cuban Missile Crisis, the Agency's U-2 missions had made vital contributions during the initial stages of the crisis. In all, Project IDEALIST pilots had spent 459 hours overflying Cuba during 1961 and 1962. They had provided concrete evidence of the Soviet buildup on the island, evidence that was simply not available through any

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other means. Although by late 1962 photographic satellites had become an integral part of the overhead collection program, only U-2s could provide the highly detailed photography that photointerpreters needed to spot the early stages of work on missile sites. Attempts had been made to photograph Cuba with satellites, but to no avail because the satellites' normal orbits placed them over Cuba at the wrong time of day, after clouds had formed.

U-2s Over South America

Agency U-2s again conducted operations in the Western Hemisphere in December 1963. The Directorate of Plans had requested photographic coverage of Venezuela and neighboring British Guiana because of guerrilla activities conducted by a pro-Castro movement inside Venezuela. Supplies for this movement appeared to be coming across the border from British Guiana. On 30 November 1963, the NSC Special Group approved overflights of the British Guiana–Venezuela border to determine the scope and rate of buildup of guerrilla forces. The Special Group stipulated that the entire effort was to be conducted without the knowledge of either the British or the Venezuelans.

Within three days, several Detachment G aircraft and pilots deployed to Ramey AFB, Puerto Rico, from which they made six flights over the border areas between 3 and 19 December 1963 in an operation known as SEAFOAM. The results of the effort were inconclusive, and the task force returned to Edwards AFB on 22 December.²¹

U-2 OPERATIONS IN ASIA

Detachment C and the Indonesian Revolt of 1958

U-2 operations in Asia began even before the end of overflights of the Soviet Bloc. By 1958 the Eisenhower administration, although very reluctant to approve U-2 flights over or near Soviet and East European borders, was not averse to using the spyplanes in the Third World, where radar detection was unlikely. Thus, in the spring of 1958, Agency U-2s from Detachment C conducted a major reconnaissance effort over Indonesia, Operation ROBIN HOOD.



³¹ OSA History, chap. 16, pp. 35-36 (TS Codeword).

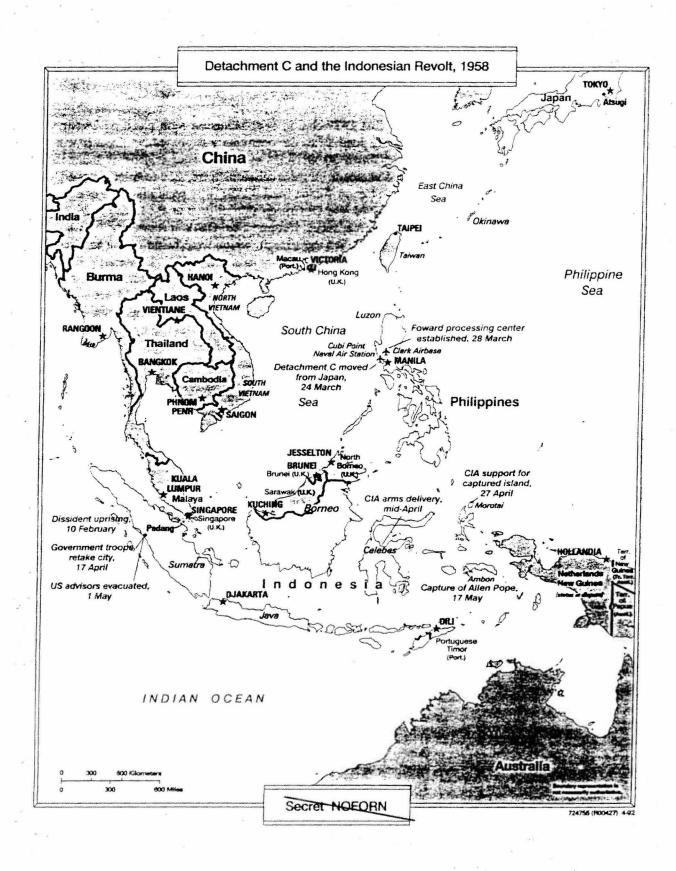
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Long unhappy with President Achmed Sukarno's perceived sympathy to Communism and his institution of "guided democracy" in Indonesia, the CIA, after consultation with the State Department, began in early 1957 to supply financial assistance to a group of dissident Indonesian Army officers on the island of Sumatra. By 25 September 1957, the National Security Council had become concerned with the course of events in Indonesia and on its recommendation President Eisenhower authorized the Agency to "employ all feasible covert means" to support the dissidents. Planning for increased aid of all types began immediately, and in January 1958 a US arms shipment for the dissidents arrived in Sumatra. Then on 10 February, the situation came to a head. While Sukarno was out of the country on a state visit to Japan, the dissident army colonels, without consulting CIA, organized a Revolutionary Council in Padang, West Sumatra, and demanded the abolition of President Sukarno's "guided democracy." Five days later, this council proclaimed itself the new "Revolutionary Government" of Indonesia. President Sukarno's armed forces responded swiftly to this threat. In late February the Indonesian Air Force began bombing dissident strongholds, and by mid-March government forces were conducting an all-out air-sea-land drive against the rebel-held areas in central Sumatra. Although the Sumatran rebels were falling back, additional unrest broke out over 1,800 miles away in the islands of Celebes (Sulawesi), and CIA quickly began supplying weapons to these dissidents, too.22

Increasingly involved in Indonesia, the Agency urgently needed accurate information on the situation there. As in previous crises, U-2s flew reconnaissance missions. On 24 March 1958, the Development Projects Staff moved the entire complement of Detachment C's pilots and planes from Japan to a base more easily accessible to Indonesia: Cubi Point Naval Air Station in the Philippines. Cubi Point was far from any facility that could develop and interpret the U-2 photographs, so two Photo-Intelligence Division employees went to Clark Airfield, just 30 minutes by air from Cubi Point, to establish a forward processing center. They arrived on 28 March and had the photo lab ready to go on the following day.²³

Covert Support to Indonesian Revolutionary Government, 1957-1958, 2 vols., Clandestine Service Historical Series, CSHP-53 (CIA: History Staff, 1970) (S): John Prados, Presidents' Secret Wars: CIA and Pentagon Covert Operations Since World War II (New York, William Morrow: 1986), pp. 133-144.

²³ OSA History, chap. 15, pp. 25-26 (TS Codeword).



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The first U-2 mission over Indonesia took place on 28 March 1958. By 12 June, when the operation was phased out, Detachment C U-2s had flown 30 missions over the major islands of Indonesia. Sanitized photos from these missions were used to brief members of the DDP's Covert Action Staff (CAS), who were in charge of a small force of World War II-vintage aircraft such as P-51s and B-26s used to support the rebel troops. The CIA's proprietary, Civil Air Transport, supplied the aircraft, which were based on the Indonesian island of Morotai and flown by mercenary pilots. Desperately short of pilots, the CAS asked if some of the U-2 pilots with experience in World War II aircraft could be detailed to the Morotai effort. Although such a request represented an improper use of the highly trained U-2 pilots and posed a potential threat to the entire U-2 program if one of them were captured, Richard Bissell agreed to send pilots James Cherbonneaux and Carmine Vito to help. Both were experienced with World War II aircraft, although Vito had never flown the rebels' fighter aircraft, the P-51 Mustang. After arriving on Morotai, Cherbonneaux explained to Vito how to fly the fast and powerful Mustang while the two were sitting at a makeshift bar on the edge of the airfield.

Several days later, when Cherbonneaux was off the island on another mission, a flight of Indonesian twin-engine bombers of Czechoslovak manufacture was spotted making its way toward the island. Exclaiming, "I'm not going to sit around and wait to be bombed," Vito had a Filipino mechanic start up a P-51 sitting on the tarmac. In his first and only flight in a P-51, Vito managed to get the plane off the ground. Once he was airborne and turned in the direction of the lumbering bombers, they all took flight in as many directions as there were aircraft. After firing a few . 50-caliber rounds in the direction of the closest bomber, Vito circled the field and landed the aircraft safely.²⁴

Agency efforts in support of the rebel government proved fruitless. By early May, Central Government forces had taken most of the remaining rebel strongholds, and the Sumatran rebellion was deteriorating into small-scale guerrilla activity. Then on 18 May, an American mercenary pilot, Allen Lawrence Pope, was shot down on a bombing mission over Ambon Island. Pope's capture ended Allen Dulles's enthusiasm for the effort, and President Eisenhower also



¹⁴ Information supplied by Carmine Vito and James Cherbonneaux to Donald E. Welzenbach, May 1986.

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wanted no more part of it. The US Government rapidly withdrew its support, and the remaining remnants of the rebellion collapsed. Four years later, the Indonesians freed Pope after Attorney General Robert Kennedy personally appealed to President Sukarno.

When the revolt ended, the U-2s returned to Atsugi. On the way back, one of the planes, which was equipped with a System-V electronic intelligence unit, flew along the coast of China to gather data on Communist Chinese radars.²⁵

China Offshore Islands Dispute of 1958

During the summer of 1958, tension between the People's Republic of China and Nationalist China (Taiwan) increased to such an extent that on 18 June Detachment C mounted a U-2 mission to film the Chinese mainland coast and adjacent island areas. On 11 August, People's Liberation Army (PLA) artillery began bombarding the offshore islands of Quemoy and Little Quemoy, where the Nationalists had stationed large numbers of troops to ward off any invasion. On 23 August the Communists increased the shelling. After five days of intense bombardment, which made resupply of the islands from Taiwan impossible, the PLA commander ordered the Nationalist garrisons to surrender, intimating that an invasion was imminent. The Nationalists refused to surrender and received support from the United States in the form of warships from the 7th Fleet, which began escorting Nationalist ships carrying supplies to the beleaguered garrisons.

During this period, Detachment C U-2s flew four missions over the mainland, searching for troop movements that would indicate that the PRC was planning to invade the islands. Photos from these missions showed no evidence of a PRC buildup, but the atmosphere in the region remained tense. Detachment C U-2s flew two more missions (9 September and 22 October) to monitor PRC troop movements and again found no indications of preparations for an invasion. The Offshore Islands Crisis receded in late October 1958 after the PRC learned that it would not receive support from the Soviet Union if the crisis escalated into a confrontation with the United States. ²⁶

Mission folder 1773, (10 June 1958), OSA records, job 67-B-328, box 7 (TS Codeword); OSA History, chap. 15, pp. 25-26 (TS Codeword).

OSA History, chap. 15, p. 27 (TS Codeword).

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While the Offshore Islands Crisis was still in progress, Detachment C began conducting flights in support of its weather reconnaissance cover story. On 14, 15, and 16 July 1958, U-2s flew high above Typhoon Winnie, which was causing great damage on Taiwan. These missions provided the first photography ever obtained of such a massive storm system. Photographs of the storm were the subject of articles in the magazine *Weatherwise* and the 21 July edition of *Aviation Week*. In September, Detachment C aircraft photographed two more typhoons.

U-2 Support for DDP Operations in Tibet

The consolidation of all Agency air activities under the DDP in 1959 led to increased involvement of the U-2 program with clandestine efforts against Communist governments. One important area of DDP activity during this period was Tibet. In March 1959, the PLA suppressed an uprising against the Chinese occupation of Tibet, and several thousand Tibetans fled the country along with their spiritual leader, the Dalai Lama. Afterward, Agency operatives from the DDP's Far East Division began training some of these Tibetan refugees for paramilitary operations inside Tibet. Once the Tibetans completed their training, FE Division planned to parachute them back into Tibet. Such missions, however, required detailed maps and aerial photographs of the areas of operation. Richard Bissell, therefore, obtained permission from the President to use Detachment C U-2s to provide the necessary photography.

Operation MILL TOWN, as the reconnaissance missions over Tibet were known, consisted of two missions staged from Cubi Point Naval Air Station on 12 and 14 May 1959. The photography revealed that Communist China had built new roads with supply and defense points. Agency photointerpreters also discovered two large new airfields at elevations above 13,000 feet. Later in the year, the Far East Division needed photographs and maps of another area of Tibet. To conceal the target of this new operation, which was codenamed SOUTH GATE, the Development Projects Division planned and flew a total of six missions covering much of Southeast Asia-Vietnam, -as well as the desired area in Tibet. Laos, Cambodia Only four of the missions involved the area of operational interest. Five of the flights took place between 29 August and 9 September, and one additional flight (Operation QUICK KICK) followed on 4 November. All of these missions were "Fast Move" operations in which necessary supplies and personnel flew to a remote staging area in a C-130, where they rendezvoused with a U-2 that had been ferried

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in. The staging base in this case was Ta Khli, Thailand. These flights did not go unnoticed; on 13 September 1959, Hong Kong's *China Post* published a story headlined "U-2 of USAF Said Reconnoitering Red China at Unreachable Altitude." ²⁷

U-2 photography of Typhoon Winnie, July 1958

U-2Cs for Detachment C

Late in 1958, Lockheed began refitting the Agency's 13 remaining U-2s with the more powerful Pratt & Whitney J75/P-13 jet engine. The first of these U-2Cs arrived at Detachment C in the summer of 1959. During a test flight of this aircraft (article 360) on 24 September 1959, the pilot decided to set a new altitude record.

²⁷ Ibid., chap. 18, pp. 6-7, 12; chap. 15, p. 29 (TS Codeword).

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Lhasa, Tibet, November 1959

Although the plane was equipped with a camera, it carried no film and did not have a full load of fuel, which made it considerably lighter than an operational U-2C. As a result, the plane reached 76,400 feet—the highest altitude achieved by any of the original U-2 aircraft. In the process, however, the aircraft consumed more fuel than was called for in the test flight plan, causing the engine to flame out during the return to base. The pilot then made an emergency wheels-up landing at a glider-club strip near Fujisawa, south of Atsugi.

The crash did not cause any injuries or serious damage to the aircraft, but it did bring unwanted publicity to the U-2 program. Much of the publicity resulted from the actions of Detachment C's security unit, whose conspicuous Hawaian shirts and large pistols drew the

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attention of Japanese reporters. One reporter even flew over the area in a helicopter, taking pictures of the U-2. These photographs appeared in many Japanese newspapers and magazines.²⁸

U-2 Crash in Thailand

Flights by Detachment C U-2s over Tibet and western China continued during the first half of 1960 under Operation TOPPER. The first mission on 30 March was very successful. The second mission on 5 April took good photographs but encountered mechanical problems. At the start of the mission, the landing-gear doors failed to close completely, resulting in increased drag and higher fuel consumption. With no fuel gauge to warn the pilot of the critical fuel situation, the aircraft ran out of fuel far short of Ta Khli, forcing the pilot to make a crash landing in a rice paddy. The area was inaccessible to large vehicles, and the plane, article 349, had to be cut into pieces in order to remove it. With the help of local villagers, the retrieval team dissassembled the aircraft for transport to the base, where the pieces were loaded onto a C-124 under cover of darkness. The crash and subsequent recovery of the U-2 did not attract the attention of the press; there was only one report in a local Thai newspaper, which simply referred to the crash of a jet plane. In appreciation for the assistance provided by the villagers,

gave the headman funds to build a new school."

End of Detachment C Operations

The loss of two aircraft in slightly more than six months left Detachment C with just two aircraft. Fortunately, the level of mission activity remained low because Detachment C was no longer conducting overflights of the Soviet Union.

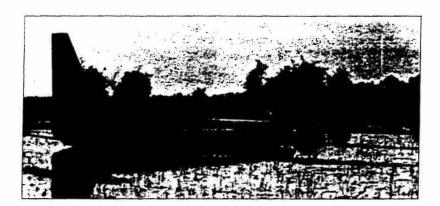
One important remaining mission was high-altitude air sampling (HASP), in which specially equipped U-2s gathered upper-altitude air samples to look for evidence of Soviet nuclear testing. The direction of the prevailing winds made Detachment C ideally situated for this activity, which began in the fall of 1958 and continued in 1959. In late April 1960, Detachment C was preparing to stage to the Philippines to conduct additional air-sampling missions, when the loss of Powers' U-2 temporarily halted all U-2 activities.

¹⁸ Ibid., chap. 15, p. 30 (TS Codeword).

³⁹ Ibid., chap. 15, pp. 32-33 (TS Codeword).

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Recovery of Article 349, April 1960

The publicity generated by the U-2 incident stirred considerable controversy in Japan, and there were soon demonstrations against the continuing presence of U-2s in Japan. On 6 June 1960, project head-quarters decided on a phased-out withdrawal of Detachment C between 15 July and 1 September, but this timetable had to be accelerated when the Japanese Government formally requested the removal of the U-2s on 8 July. 10

[&]quot; Ibid., chap. 15, pp. 33-36 (TS Codeword).

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Detachment G Missions Over Laos and North Vietnam

In the aftermath of the Powers loss, both of the overseas U-2 detachments returned to the United States and their aircraft and personnel were incorporated into Detachment G at Edwards Air Force Base in California. This detachment was now responsible for providing coverage in Asia, and its first mission came in Laos. After the neutralist Laotian Government of Souvanna Phouma collapsed in early December 1960, reports began circulating that leftist antigovernment forces were using Soviet arms. Then on 30 December, a new Laotian Government appealed for UN aid against what it said was an invasion from North Vietnam and possibly Communist China. Alarmed over the possibility of the civil war expanding because of the introduction of foreign troops, the Eisenhower administration ordered Detachment G to gather more information on the events in Southeast Asia.

Five Detachment G pilots and planes were ferried to Cubi Point Naval Air Station in the Philippines to conduct an operation known as POLECAT. During the period 3 to 18 January 1961, these U-2s made seven flights over Laos and North Vietnam. To search for the reported foreign troops, these missions concentrated on the lines of communications leading into Laos from North Vietnam and China. In addition, the U-2s scanned North Vietnamese airfields for Soviet aircraft to determine the magnitude of the airdrop operation allegedly supporting the Pathet Lao troops. NPIC sent photointerpreters to Clark Air Force Base in the Philippines to obtain an immediate readout of the results of each mission. The photography did not substantiate the Laotian claims, and on 26 January the Laotian Government retracted its charges of a foreign invasion. Detachment G's U-2s returned to California in early February 1961.

During the final stages of Operation POLECAT, there was a major threat to the security of the mission. The film from the flights made on 16 and 18 January had been sent to the United States for duplicate processing. Afterward the film was put aboard an Agency C-47 on 14 March to ferry it to Washington. During the flight one of the aircraft's engines failed, forcing the crew to jettison 43 boxes of highly classified film over mountainous terrain around Williamsport, Pennsylvania, to keep the craft airborne. After making an emergency

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[&]quot; Ibid., chap. 16, p. 17 (TS Codeword).

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landing at the Scranton-Wilkes-Barre Airport, the pilot reported the incident to Headquarters. The Office of Security immediately contacted the Pennsylvania State Police, who sealed off the wooded area. Agency security officers soon arrived to search for the boxes. They recovered all 43 containers; not one had broken.³²

Detachment G's only other activity during the summer of 1961 was a solitary overflight of North Vietnam, known as Operation EBONY. In preparation for this mission, a U-2 deployed to Cubi Point on 13 August 1961. Two days later it successfully conducted the overflight and subsequently returned to the United States.³³

New Detachment on Taiwan

Long before the Nationalist Chinese became involved in the U-2 program, they were flying covert reconnaissance missions for the CIA. In 1952 the CIA began recruiting Nationalist Chinese crews to replace US personnel from the proprietary firm Civil Air Transport, who had been flying Agency aircraft to drop leaflets, agents, and supplies over the Chinese mainland. This project (BGMARQUE) also provided photographic coverage of the rail line from Shanghai to the border with French Indochina. CIA-sponsored aerial reconnaissance over the mainland increased substantially in 1955 with the establishment of Project STPOLLY, which used Agency aircraft with Nationalist Chinese crews to gather Signals Intelligence (SIGINT) and conduct psychological warfare against the People's Republic of China. At first the SIGINT equipment was installed in World War II-vintage aircraft such as PB-4Ys and B-17s, but in 1958 the project received a new aircraft procured covertly by the Agency from Lockheed, the P2V7, with an extremely sophisticated airborne SIGINT system. STPOLLY added the more advanced Lockheed P3A in 1963. Between 1955 and 1967, when the CIA terminated the project, STPOLLY conducted 399 overflights of the People's Republic of China, losing a total of eight aircraft and crews.

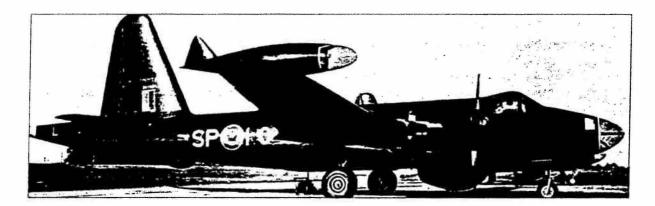
In addition to CIA-sponsored aerial reconnaissance projects, the Nationalist Chinese Air Force had its own reconnaissance capability with US-supplied RB-57 aircraft. In 1958 the US Air Force proposed

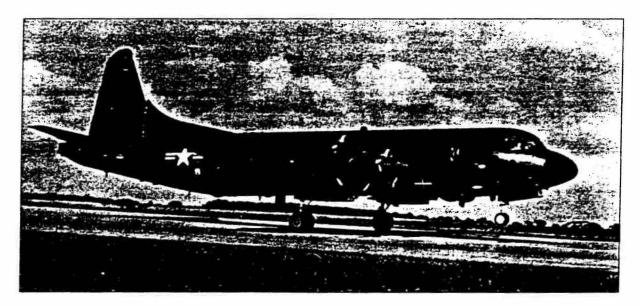
bid., chap. 7, p. 24 (TS Codeword).

[&]quot; Ibid., chap. 16, p. 18 (TS Codeword).

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supplying the Nationalist Chinese Government with the most advanced reconnaissance aircraft available, the U-2. The CIA opposed a Nationalist Chinese U-2 program because such flights would destroy the existing unclassified cover for the U-2. In discussions with the Air Force, DDCI Cabell only consented to having Nationalist pilots trained to fly U-2s so that they would be ready in case they were needed in the future; he opposed any Nationalist overflights. The training of the Nationalist Chinese pilots began in March 1959. By the end of the year, there was a group of trained pilots ready for operations, and DCI Dulles met with the Joint Chiefs of Staff to discuss the program's future. Dulles reaffirmed the Agency's opposition to Nationalist Chinese U-2 missions, and the Air Force, which had

Lockheed P-2V7 and P3A reconnaissance aircraft



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wanted the Nationalists to be allowed to begin operations, reluctantly agreed to wait until conditions were favorable. The situation changed radically in May 1960 after the loss of Powers' U-2 destroyed the existing cover story for U-2 operations. Now there was no longer any reason not to use the Nationalist pilots. In addition, the Agency soon found itself in need of a base of operations in the Far East after Detachment C had to leave Japan.

During discussions with Nationalist o	fficials on 6 May 1960, the
	raised the possibility of
assigning U-2s to the Chinese Air Forc	e. Two weeks later
	approached
informally to propose that the U-2	aircraft based in Japan be
moved to Taiwan. This was followed thre	
offer on	The second secon
President Eisenhower learned o	of Nationalist China's pro-
posal on 18 June. Several weeks later, Rich	
two U-2s be turned over to the Nationalist	
mainland. The project would be conducted	
STPOLLY."	3

On 26 August 1960, President Eisenhower and the State Department approved Bissell's proposal to turn U-2s over to the Nationalist Chinese rather than move an American detachment to Taiwan. Using Nationalist pilots for overflights had the advantage of providing complete deniability for the United States, even if an aircraft was lost over hostile territory. The U-2s would belong to Nationalist China and would have Nationalist pilots, and there was no overt US involvement with the overflights. In reality, however, the United States would maintain strict control over the missions to be flown.³⁶

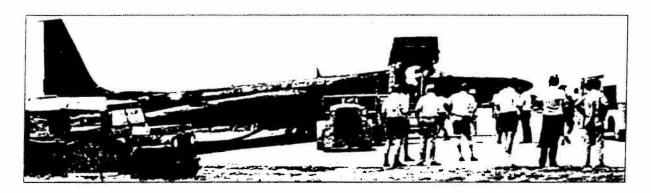
On 7 December 1960, two U-2s were officially licensed for export to Nationalist China as part of a new effort codenamed TACKLE. These planes came from the Agency's U-2 inventory and arrived in

Andrew J. Russo, Low-Level Technical Reconnaissance Over Mainland China (1955-1966) (draft), Clandestine Services Historical Program, CSHP-2.348 (CIA: History Staff, 1972) (S).

[&]quot; OSA History, chap. 17, pp. 1-7 (TS Codeword).

[&]quot; Ibid., chap. 17, pp. 12-13, 44 (TS Codeword).

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Detachment H U-2 at T'ao-yuan Airfield

Taiwan on 14 December. Within the Agency the Nationalist pilots and aircraft were known as Detachment H, and they were based at the Nationalist Chinese Air Force Base at T'ao-yuan. One of the U-2s was painted with the Nationalist Chinese insignia, and the other was left unmarked so that it could also be used by Agency pilots as needed. The planes were maintained by Lockheed mechanics under contract to the CIA. The Agency attempted to maintain at least two U-2s in Detachment H, so lost or damaged aircraft were replaced from the Agency's inventory.

During 1961, Detachment H conducted training missions with both U-2s, and one Nationalist pilot was killed in a crash on 19 March. Although the detachment was ready to begin operations, the new Kennedy administration was not yet ready to authorize overflights of the PRC. In a 3 March 1961 meeting between State Department and CIA officials to discuss the possibility of such overflights, Under Secretary of State Chester Bowles noted that "the President was feeling his way on the international scene, and time was needed to evaluate the new Sino-Soviet posture with relation to the United States." ³⁷ In July 1961 the USIB considered the possibility of conducting overflights of the PRC, but the State Department remained opposed.

By the fall of 1961, interest in overflights of the PRC was growing because of indications that the Chinese were making progress in nuclear energy and missile development. As a result, on 4 October



James A. Cunningham, Jr., Assistant Chief, DPD-DD/P, Memorandum for the Record, "TACKLE STPOLLY Briefing for State Department Officials," 6 March 1961, IC Staff, COMIREX records, job 33-B-119A, box 1, "IDEALIST/TACKLE, 1961" (S).

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1961 PFIAB recommended the initiation of a limited number of U-2 photographic missions over the Chinese mainland. The President approved the board's recommendation.

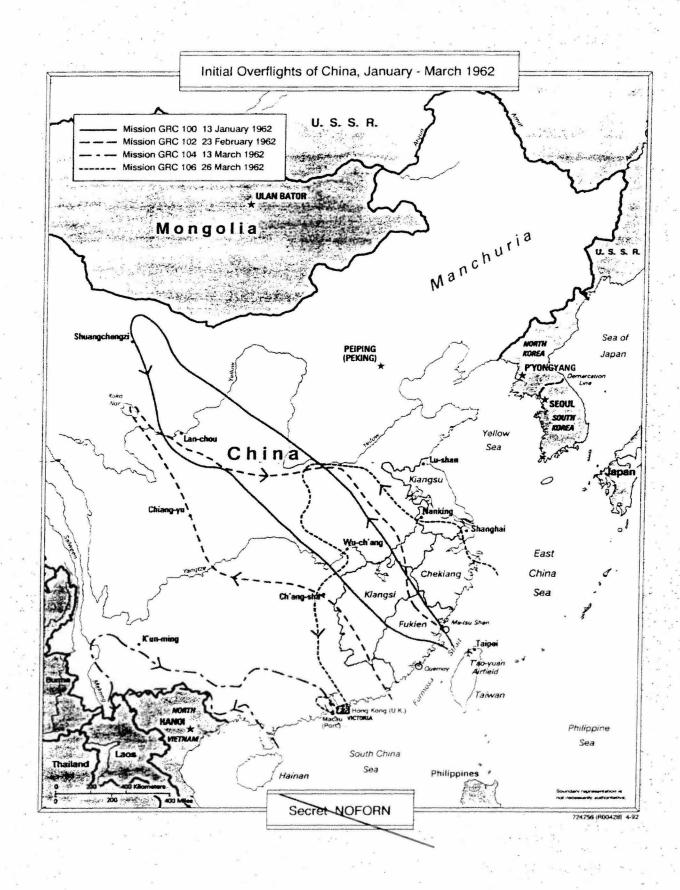
Because the US-Nationalist Chinese overflight program (Project TACKLE) was a joint effort, both countries participated in the approval process and also shared in the results of the missions. The USIB COMOR established the requirements for Detachment H's overflights, which had to be approved by the NSC's Special Group (5412 Committee) and the President. The Nationalist Chinese Government also approved all missions flown by its pilots. Under the terms of an agreement reached with the Nationalist Chinese Government, film from the overflights of the mainland would be processed in the United States, with a duplicate positive copy returned to Nationalist China within 10 days. NPIC was responsible for the initial reporting on these missions.³⁸

Project TACKLE overflights began early in 1962. Following a 5 January Special Group decision to approve three missions, a Detachment H U-2 with a Nationalist Chinese pilot flew its first mission over the PRC's missile-testing range at Shuangchengzi on 12 January 1962. Unfortunately, because of faulty navigation or faulty maps, the aircraft was poorly positioned and obtained only oblique, rather than vertical, photography of the range. En route to and from Shuangchengzi, the U-2 overflew Fukien and Chekiang Provinces looking for suspected deployed missiles, but none could be found in the mission photography. ¹⁹

The second Project TACKLE mission took place on 23 February 1962, when a U-2 overflew the PRC's nuclear weapons establishment at Lan-chou. Photography from this mission revealed that the installation was at least two years away from operational capacity. Two more missions on 13 and 26 March flew over K'un-ming and central China covering numerous airfields that had been discovered in satellite photography. The U-2 photographs showed more detail than the satellite pictures, thereby, providing additional intelligence data, particularly

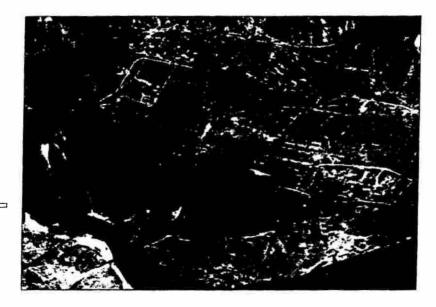
^{*} OSA History, chap. 17, pp. 18-19, annex 107 (TS Codeword).

⁵⁰ Ibid., chap. 17, p. 45 (TS Codeword); Mission folder GRC100 (12 January 1962), OSA records, job 67-B-972, box 19 (TS Codeword). Note: The numbers for missions flown by Nationalist Chinese pilots began with GRC (Government of the Republic of China).



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Lan-chou, PRC, 23 February 1962

for air order of battle. In addition to the primary targets already described, the initial series of Project TACKLE missions obtained photography of the submarine construction facilities at Shanghai and Wu-ch'ang, which showed a low level of activity. Other photographs revealed tremendous expansion of the industrial complexes at Nanking and Ch'ang-sha and the presence of a previously unknown industrial area at Chiang-yu.⁴⁰

Encouraged by the success of the first TACKLE missions, COMOR recommended in May 1962 that Detachment H cover as many as possible of the highest priority industrial and airfield targets in northeast China and the missile test ranges in north China. COMOR noted that, with the exception of the areas around Peiping and the Shuangchengzi missile test range, the chances of a U-2 being downed were low. The USIB concurred with COMOR's recommendations, and Detachment H therefore conducted three more overflights of the PRC during the month of June.

OSA History, chap. 17, p. 45 (TS Codeword); Mission folders GRC102 (23 February 1962), GRC104 (13 March 1962), and GRC106 (26 March 1962), OSA records, job 67-B-972, box 19 (TS Codeword).

[&]quot;Lay, "USIB History," vol. 2. pp. 385-386 (TS Codeword).

Before the month was over, however, another confrontation between Nationalist China and the PRC over the Formosa Strait erupted. The Nationalist Government reported a massive buildup of PRC troops and aircraft in Fukien Province opposite the Nationalist-held Quemoy and Ma-tsu Islands. Secretary of Defense Robert McNamara immediately ordered U-2 coverage of the Strait area to determine the extent of the PRC buildup. In response, Detachment H flew six missions over the Strait between 25 June and 28 July 1962. To speed up the readout of this photography, the films were processed at the Asian Photographic Interpretation Center (ASPIC) at Yokota, Japan, a joint military-CIA endeavor. The U-2 coverage ended in late July when it became apparent that the PRC did not intend to mount an invasion of the offshore islands.⁴²

The pace of Detachment H missions slowed considerably in August 1962; the sole Project TACKLE overflight covered Peiping and Manchuria. The following month the detachment mounted two missions, one over south China on the eighth and the second over Kiangsu Province on the ninth. Unfortunately, mechanical difficulties led to the loss of the latter aircraft near Lu-shan. A flameout forced the U-2 down to an altitude where PRC interceptors were able to hit the U-2 with an air-to-air rocket. The Nationalist Chinese pilot parachuted and was captured. At this point, President Kennedy ordered a standdown of overflights of the PRC.⁴³

Following the capture of the Nationalist Chinese U-2 pilot, the People's Republic of China accused the United States of masterminding the overflights, but the State Department denied any involvement. Nationalist China then revealed that the United States had granted it a license to purchase two U-2 aircraft. In a 13 September 1962 response to the Chinese protest, President Kennedy denied any responsibility for the sale of the U-2s to Taiwan, noting that the sale had occurred under the previous administration. He stated that there were no current plans to sell any more U-2s to Nationalist China. Eight months later, however, the President approved an export license for the delivery of another U-2 to Taiwan. Such licenses were needed only for cover purposes. The Agency continued to maintain two U-2s on Taiwan, bringing new ones in to replace aircraft lost in training or on missions.



¹² OSA History, chap. 17, p. 46 (TS Codeword).

[&]quot;Ibid., pp. 46-47 (TS Codeword); Mission folders GRC125 (11 August 1962), GRC126 (8 September 1962), and GRC127 (9 September 1962), OSA records, job 67-B-972, boxes 20 and 21 (TS Codeword).

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Detachment H resumed overflights of mainland China in December 1962, but its missions now concentrated on the southern portion where there were fewer radars and SAM sites. During December 1962 and January 1963, the detachment conducted two successful overflights of Sichuan, but a mission over south China had to be aborted prematurely. The results of Detachment H's continuing coverage of the People's Republic of China remained of considerable interest to the United States. On 17 December 1962, the Special Group approved plans for fiscal year 1963/64 that included requirements for photo coverage of mainland China and for maintaining at least two operational U-2 aircraft in Detachment H.⁴⁴

Use of Detachment H Aircraft by US Pilots

Detachment H's importance did not lie solely in the missions carried out by its Nationalist Chinese pilots against targets in mainland China; the detachment also provided aircraft for use by American pilots flying missions in other parts of Asia. Indochina was an area of particular interest as American involvement there began growing during the early 1960s. Beginning in February 1962, Detachment G pilots went to T'ao-yuan to use the unmarked Project TACKLE U-2 for overflights of North Vietnam. During the first half of 1962, Detachment G pilots made seven overflights of North Vietnam from the Tao Yuan base. Thereafter, Detachment G pilots could use their own aircraft because the unit began staging teams and aircraft from Edwards AFB to Ta Khli AFB in Thailand.

Between 1962 and 1964, Agency U-2s staged a total of 36 photographic missions over North and South Vietnam. By April 1964, however, photographic requirements were changing from strategic reconnaissance to tactical support as the Viet Cong became more active, taking advantage of the weakness of the South Vietnamese central government following the coup that overthrew President Ngo Dinh Diem in 1963 and subsequent coups by disgruntled army officers. During this period the South Vietnamese "strategic hamlet" concept began breaking down, and the Viet Cong forces stepped up the pace of their attacks. As a result of the increasing level of combat in Indochina, the USIB gave responsibility for aerial reconnaissance of the areas where fighting was taking place to the SAC. Henceforth, SAC U-2s would be used over South Vietnam, parts of Cambodia

OSA History, chap. 17, pp. 48-49 (TS Codeword); Mission folders GRC134 (25 December 1962), GRC136 (28 December 1962), and GRC138 (20 January 1963), OSA records, job 67-B-972, box 21, and job 66-B-664, box 1 (TS Codeword).

within 30 miles of South Vietnam, all of Laos south of Paksane, and all of North Vietnam within 30 miles of South Vietnam or the coast. The remaining portions of Indochina remained the responsibility of the Agency's U-2s. Then in August 1964, following the Gulf of Tonkin Resolution, the Air Force assumed responsibility for all of Indochina.⁴⁵

U-2s in India

In October 1962, the People's Republic of China launched a series of massive surprise attacks against India's frontier forces in the western provinces of Jammu and Kashmir and in the North-East Frontier Agency (NEFA). The Chinese overran all Indian fortifications north of the Brahmaputra Valley before halting their operations.

The Indian Government appealed to the United States for military aid. In the negotiations that followed, it became apparent that Indian claims concerning the extent of the Chinese incursions could not be reliably evaluated. US Ambassador John Kenneth Galbraith, therefore, suggested to the Indian Government that US aerial reconnaissance of the disputed areas would provide both governments with a more accurate picture of the Communist Chinese incursions. On 11 November 1962, Prime Minister Jawaharlal Nehru consented to the proposed operation and gave the United States permission to refuel the reconnaissance aircraft (U-2s) in Indian airspace.⁴⁶

In late November, Detachment G deployed to Ta Khli, Thailand, to carry out the overflights of the Sino-Indian border area. Since the U-2s were not authorized to overfly Burma, they had to reach the target area via the Bay of Bengal and eastern India and, therefore, required midair refueling.

Because of severe winter weather conditions, the first flight did not take place until 5 December. Poor weather and air turbulence hampered the mission, and only 40 percent of the target area could be photographed. A second mission on 10 December was more successful, but the U-2 experienced rough engine performance because of icing of the fuel lines.⁴⁷

[&]quot; OSA History, chap. 16, pp. 18-19 (TS Codeword).

[&]quot; Ibid., chap. 16, pp. 26-27 (TS Codeword).

^a Ibid., p. 28 (TS Codeword); Mission folders 3201 (5 December 1962 and 3203 (10 December 1962), OSA records, job 67-B-972, box 26 (TS Codeword).

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Detachment G U-2s made four more overflights of the Sino-Indian border areas in January 1963, which led to a PRC protest to India. Photography from these missions was used in January and again in March 1963 to brief Prime Minister Nehru, who then informed the Indian Parliament about Communist Chinese troop movements along the border. Although Nehru did not reveal the source of his intelligence, a UPI wire story surmised that the information had been obtained by U-2s.

The United States had provided photographic coverage of the border area to India for two reasons. First of all, US policymakers wanted a clear picture of the area under dispute. In addition, the intelligence community wanted to establish a precedent for overflights from India, which could lead to obtaining a permanent staging base in India for electronic reconnaissance missions against the Soviet ABM site at Saryshagan and photographic missions against those portions of western China that were out of range of Detachment H. In April 1963, Ambassador Galbraith and the Chief of Station at New Delhi made the first official request to India for a base. The following month, President Kennedy agreed to DCI McCone's suggestion to raise the question of a U-2 base in India when he met with India's President Savepalli Radhakrishnan on 3 June. This meeting resulted in an Indian offer of an abandoned World War II base at Charbatia, south of Calcutta.⁴⁸

The Charbatia base was in poor condition and needed considerable renovation before it could be used for U-2 operations. Work on the base by the Indians took much longer than expected, so Detachment G continued to use Ta Khli when it staged four sorties over Tibet from 29 September to 10 November 1963. In addition to the coverage of the Sino-Indian border during this series of flights, the U-2s also photographed all of Thailand to produce a photomap of the border regions as a quid pro quo for the Thai Government. During one of these photomapping missions, a U-2 pilot conducted the Iongest mission ever recorded in this aircraft—11 hours and 45 minutes. At the end of this flight on 10 November 1963, the pilot was in such poor physical condition that project managers prohibited the scheduling of future missions longer than 10 hours.

[&]quot; OSA History, chap. 16, p. 30 (TS Codeword).

[&]quot;Mission folder 3238 (10 November 1963), OSA records, job 67-B-972, box 29 (TS Codeword).

Charbatia was still not ready in early 1964, so on 31 March 1964 Detachment G staged another mission from Ta Khli. The first mission out of Charbatia did not take place until 24 May 1964. Three days later Prime Minister Nehru died, and further operations were postponed. The pilots and aircraft left Charbatia, but other equipment remained in place to save staging costs. In December 1964, when Sino-Indian tensions increased along the border, Detachment G returned to Charbatia and conducted three highly successful missions, satisfying all of COMOR's requirements for the Sino-Indian border region. By this time, however, Ta Khli had become the main base for Detachment G's Asian operations, and Charbatia served merely as a forward staging base. Charbatia was closed out in July 1967. 50

Increasing Responsibilities, Inadequate Resources in Asia

The main focus of Agency U-2 activity in Asia remained the U-2s of Detachment H on Taiwan. In March and April 1963, the USIB met to consider COMOR proposals for aerial reconnaissance of Laos, North Vietnam, North Korea, and the People's Republic of China. All of COMOR's intelligence requirements could best be met by the U-2 because heavy cloud cover made it difficult to obtain satellite photography of the region. At the 28 May 1963 meeting of the Special Group, DCI McCone requested authorization for a series of overflights to meet these requirements and stressed the need for additional intelligence on the atomic energy facilities of the PRC. The Special Group then established a "bank" of four authorizations for overflights of the PRC, subject to monthly review by the Group.

As a result of the increasing intelligence community interest in the Far East, both Agency U-2 detachments became very active in the region. Detachment G conducted a number of missions over the border areas of China, North Vietnam, and Laos during April and May of 1963. At the same time, Detachment H became more adventurous, sending U-2s deeper and deeper into the PRC. These missions included renewed overflights of the missile test range near Baotou and the Lan-chou nuclear facilities, as well as targets in northern China, Manchuria, and west-central China (as far as Koko Nor).

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[&]quot; OSA History, chap. 16, pp. 30-34 (TS Codeword).

[&]quot; Lay, "USIB History," vol. 3, pp. 391-392 (TS Codeword).

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The increased level of U-2 activity in the Far East during the spring of 1963 exposed a serious weakness in Projects IDEALIST and TACKLE, a shortage of aircraft. The Agency only had seven flyable U-2s when the TACKLE overflights of the PRC began in January 1962, and one of these aircraft had already been lost during an overflight in September 1962. To deal with this shortage, DCI McCone asked Defense Secretary McNamara and the Joint Chiefs of Staff on 10 June 1963 to transfer two U-2s from the Air Force to the CIA. The Defense Department quickly approved this request. Before the two Air Force aircraft were placed in service, however, the Agency had them upgraded with J75/P-13A engines and various electronic devices, a process that took more than four months.⁵²

As overflights over the PRC increased, so did concern about the growing number of Chinese surface-to-air missile sites. The Office of Special Activities, therefore, got permission from the Defense Department to equip Project TACKLE aircraft with System-XII SAM-warning units. These devices alerted the pilot that his aircraft was being tracked by the FAN SONG acquisition radar, part of the SA-2's electronic targeting system. The System-XII units also recorded each radar-tracking sequence. Analysis of these recordings revealed changes in the FAN SONG radar's characteristics, information that proved useful in designing electronic-countermeasure (ECM) devices for US aircraft operating over Vietnam during the late 1960s. 51

Despite the addition of System-XII in the spring of 1963, the Nationalist Chinese-piloted U-2s of Project TACKLE had far fewer ECM devices than other Agency U-2s. Project IDEALIST aircraft possessed a complete suite of ECM gear in addition to the previously mentioned System-XII unit. Among this ECM equipment was a device that told the pilot that an SA-2 missile had been launched (nicknamed the "Oscar-Sierra" unit, which was the acronym for the expletive U-2 pilots used when they learned that an SA-2 missile was on the way: "Oh, shit!") and a System-XIII unit that produced false-angle returns to the homing radar aboard the approaching missile in an effort to steer it away from the aircraft. The Defense Department opposed installing such devices aboard Detachment H's U-2s, for fear they could fall into Communist hands.

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¹² OSA History, chap. 16, p. 10 (TS Codeword).

[&]quot; Ibid., chap. 17, p. 50 (TS Codeword).

The danger posed by the growing number of SA-2 sites in the PRC was clearly demonstrated on 1 November 1963, when a second Project TACKLE U-2 was lost near the Kiangsi-Chekiang border on its way back from photographing the PRC's Shuangchengzi missile test range. As was the case after the first operational loss over China in September 1961, President Kennedy ordered a standdown of over-flights of mainland China. This standdown lasted almost five months.

As a result of this second loss over the PRC, the Office of Special Activities began installing a new 30-channel telemetry system aboard Detachment H U-2s to monitor various aircraft functions. Known as BIRDWATCHER, this unit periodically broadcast a burst of data to the airbase that launched the U-2. This data burst contained a status report on all the major systems aboard the plane, such as airspeed, altitude, exhaust temperature, fuel supply, film supply, and oxygen supply. BIRDWATCHER provided project managers with a benchmark of aircraft performance that could be used to determine if a lost plane had been shot down at altitude or had suffered mechanical failure.⁵⁴

BIRDWATCHER's first operational use came on 16 March 1964, when overflights resumed with a mission over southern China. The PRC was now a high-priority target for the U-2 because more data were needed to prepare National Intelligence Estimates due in the autumn. Of particular concern was the PRC's nuclear program. Despite the high priority of its missions, Detachment H's resources remained scarce. It was short of both pilots and planes and never had more than three U-2s or six qualified Nationalist Chinese pilots at any one time. By the spring of 1964, crashes during training and the two losses over the mainland had reduced Detachment H to only two qualified pilots, one of whom suffered from ulcers and a nervous disorder. Indeed, this pilot had every reason to be nervous; he flew three of the next four Detachment H overflights and became the third Nationalist Chinese pilot to be shot down over the mainland.

This loss came on 7 July 1964. The Nationalist Chinese pilot's last transmission was that his System-XII unit had alerted him that he was being tracked by the FAN SONG radar. BIRDWATCHER data revealed that the aircraft was at penetration altitude and all systems

[&]quot; Ibid., p. 51, 53 (TS Codeword).

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were normal when the pilot made this report. Project managers presumed that the U-2 was downed by a direct hit or near miss by an SA-2 missile.⁵⁵

President Johnson ordered a standdown of overflights of the PRC. This standdown was welcomed by the Nationalist Chinese Government, which told the Taiwan Chief of Station that it wanted "to let some time go by" before more overflights were scheduled. The Nationalists pointed out that the only remaining qualified U-2 pilot had "disqualified" himself because of nervous tension. No new pilots could be qualified for U-2 flights before mid-August.

The Nationalists then demanded faster and higher flying aircraft as well as better antimissile equipment for the planes. This request led some CIA personnel to suspect that Nationalist China had learned about Project OXCART, the successor to the U-2 that was still undergoing testing. Despite the Nationalists' request for better ECM equipment, the Defense Department remained reluctant to authorize the use of the System-XIII false-angle radar jammer on Project TACKLE U-2s. The Defense Department feared that the loss of this device with its highly advanced traveling-wave tube (TWT) would enable Communist Bloc technicians to devise countermeasures and also learn how to produce the highly efficient TWT themselves. As an incentive for the Nationalist Chinese to agree to more overflights, the CIA agreed to permit them to process the U-2 film on Taiwan and to use their own photointerpreters to exploit the film along with US photointerpreters.

To counter the shortage of pilots in Detachment H, DCI McCone suggested to the Special Group on 6 August 1964 that civilian CIA pilots be used to fly missions over mainland China. The group agreed that the matter should be taken up with President Johnson. On the following day, however, Presidential National Security Assistant McGeorge Bundy informed McCone that, because Secretary of State Rusk and Secretary of Defense McNamara opposed the idea, he would not take it up with the President. 56



OSA History, chap. 17, pp. 53-55 (TS Codeword): Mission folder C174C (7 July 1964), OSA records, job 66-B-664, box 7 (TS Codeword). Note: beginning in 1964 Nationalist Chinese mission numbers began with "C" instead of "GRC."

[&]quot; OSA History, chap. 17, pp. 58-59 (TS Codeword).

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Advanced ECM Equipment for Detachment H

Demand for overhead photography of the PRC continued to grow, spurred in part by the results of earlier U-2 missions that revealed the presence of Soviet-made MiG-21s in the PRC. In addition, there were indications that Communist China might be producing its own SAMs. Furthermore, satellite photography revealed that preparations for the first Chinese nuclear test were almost complete at the Lop Nor test site.

The need for photographs of the Lop Nor site was considered so urgent that the Defense Department finally relented and permitted the System-XIII false-angle device jammer to be installed in Project TACKLE aircraft, with the proviso that it not be turned on until after the pilot had been alerted by System-XII that he was being tracked by FAN SONG radars. Photographing Lop Nor, however, was not a simple task. Located more than 2,000 miles west-northwest of Taiwan, Lop Nor lay beyond the round trip range of T'ao-yuan-based U-2s and in-flight refueling was not possible. Lop Nor was closer to Ta Khli, Thailand, only 1,650 miles northwest of that base, and much closer to Charbatia, India, which lay only 1,200 miles south of the testing site.

After refusing DCI McCone's suggestion to stage a Lop Nor overflight from Charbatia using a CIA civilian pilot, President Johnson approved a proposal to send a Project TACKLE unit to Ta Khli for the mission to Lop Nor. A Detachment H U-2 with a Nationalist Chinese pilot deployed to Ta Khli in mid-October to prepare for the overflight. Before mission preparations could be completed, however, the Chinese detonated their first nuclear weapon on 16 October 1964, and the mission was canceled.⁵⁷

The first overflight of Communist China since the 7 July 1964 loss was a 31 October mission over Lan-chou. By mid-November, three more overflights had taken place, one over North Korea and northern China and two over southern and central China. An overflight of Manchuria on 9 December 1964 brought back photos of a G-class ballistic-missile submarine. By this time, the mass of data being provided by Project TACKLE overflights was overwhelming the analysts of the Office of Research and Reports (ORR). An ORR memorandum from 11 January 1965 reported that analysis of the "large backlog of unexploited photography on Chinese Communist

[&]quot; Lay, "USIB History," vol. 6, pp. 751, 753-755.

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ground force installations...would require about two man-years work, backed up by a larger expansion of photointerpretation effort." 58

[&]quot; ORR, Memorandum for the Record, 11 January 1965, OSA records (TS Codeword).

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The loss of yet another U-2 and its pilot made Nationalist Chinese officials reluctant to resume overflights of the mainland. They insisted that their U-2 pilots be given permission to turn on the System-XIII false-angle device during the entire time they were over hostile territory, not just after they had been alerted by the System-XII radar-detection device. The Defense Department acceded to these demands in order to keep the TACKLE flights going. In addition, the Project TACKLE U-2s began receiving even more advanced ECM equipment.⁶⁰

³⁹ Mission folders C284C (22 November 1964), C304C (25 November 1964), C344C (19 December 1964), and C015C (8 January 1965), OSA records, job 66-B-664, box 8, job 69-B-404, box 2, and job 66-B-597, box 1; USIB History, vol. 6, p. 758 (TS Codeword).

⁶ Ibid., chap. 17, pp. 59-61 (TS Codeword).

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With their demands met, Nationalist Chinese officials again consented to overflights by Detachment H, and operations resumed in February 1965 with three missions over the mainland. By this time US interest in the People's Republic of China was very high because of the PRC's development of nuclear weapons. The Special Group, therefore, approved an extensive reconnaissance program directed against the PRC. By the end of the year, Detachment H had flown 30 missions, the highest annual total during the entire program.

The level of activity declined during 1966, with only 10 missions flown over the mainland. Detachment H also suffered the loss of two more aircraft and pilots in crashes during training missions in 1966. In the fall of that year, joint US-Nationalist Chinese relations in the field of overhead reconnaissance were further strained by the unilateral US decision to kill the longstanding program of low-altitude nighttime overflights of the mainland (STPOLLY).⁶¹

[&]quot; Ibid., chap. 19, annex 120, pp. 22-24; chap. 17, p. 69 (TS Codeword).

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The entire U-2 overflight program was temporarily halted in early November 1967 after an Air Force U-2 in Vietnam was discovered to have cracks in its wing. All Air Force and CIA U-2s were ordered back to Lockheed for ultrasonic inspection of the wings and other stress points to check on metal fatigue. Upon completion of this inspection, both the Air Force and the Agency resumed their overflight activity.⁶⁴

The End of U-2 Overflights of Mainland China

Project TACKLE mounted a mission over northeastern China on 13 December 1967 and an overflight of central China on 5 January 1968. Later that month the Far East became very tense when North Korea seized the US electronic intelligence ship Pueblo on 23 January. One

tbid., chap. 17, p. 72 (TS Codeword).

Mission folder C297C (8 September 1967), OSA records (TS Codeword).

[&]quot; OSA History, chap. 16, p. 44 (TS Codeword).

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week later the Viet Cong and North Vietnamese launched their Tet offensive in South Vietnam. The 303 Committee (the new name for the Special Group after 1964) decided on 1 February 1968 to suspend a group of overflights scheduled for February and called for mission-by-mission approval "during this period of tension." The committee approved one additional overflight of southern China, which was flown by Detachment H on 16 March 1968, and two overflights of Cambodia, carried out on 27 March and 3 April 1968 by Detachment G in its first operations since early 1966. These three missions turned out to be the last overflights by U-2s in the Far East. By this time U-2 flights over the PRC had become so dangerous that the State Department opposed further overflights, and on 10 April 1968 the 303 Committee decided not to approve any mission that would fly closer than 20 miles from the coast of China.

One reason why Detachment H's overflights were stopped was the steady increase in the PRC's ability to track and engage U-2s, as evidenced by its success in downing five U-2s. By 1968 PRC radars along the coast opposite Taiwan were keeping a close watch on U-2 activity from the T'ao-yuan base and actively tracked U-2s as soon as they became airborne. The U-2s then had to face a growing PRC air defense system that not only consisted of SA-2 missiles but also the fast and high-flying MiG-21. The PRC's MiG-21 pilots had become adept at the power-zoom technique and were threatening almost every U-2 mission. The risks to U-2s now seemed too great.⁶⁵

The decision to end Asian overflights was also rooted in the Johnson administration's change in its whole approach to the war in Indochina in the spring of 1968. On 31 March 1968, the President limited the bombing of North Vietnam in order to improve the chances for peace talks. The end of flights over the People's Republic of China was viewed as another way to improve the peace process.

During its six years of overflight operations, Project TACKLE had been extremely active, staging a total of 104 flights over the People's Republic of China (see table, page 244). These missions had brought back huge amounts of data about the PRC but not without a price: five Project TACKLE aircraft had been downed by the PRC, with two of the pilots killed and the other three captured (although later returned). In addition, five other Nationalist Chinese pilots had been killed in training accidents.

OSA, "Chronology of Events Leading to Present Impasse on Resumption of TACKLE Overflights of Mainland China," December 1968, OSA records (TS).

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Overflights by Project TACKLE

Fiscal Year	Overflights	
Total	104	
1962	18	
1963	17	
1964	13	
1965	30	
1966	10	
1967	14	
1968	2	

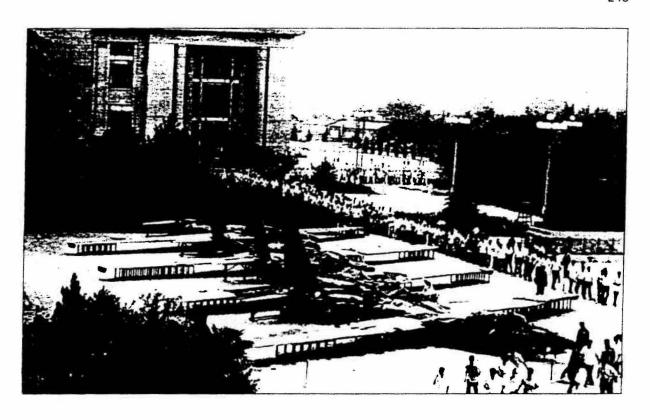
Peripheral Missions by Detachment H

Detachment H did not cease its activities following the termination of overflights of mainland China. Its next U-2 mission took place on 18 May 1968. This was an electronic intelligence mission that, in accordance with the new guidelines, never came closer than 20 miles to the Chinese coast. All future Detachment H missions against the PRC also conformed with this restriction but were still the target of interception attempts by PRC MiG-21s or hastily erected SAM sites on offshore islands. The use of peripheral missions prevented any further losses, although one aircraft crashed into the sea from unknown causes shortly after taking off to start a mission on 5 January 1969. Another pilot was killed on 24 November 1970 in a crash during a routine training mission.⁶⁶

The level of activity gradually increased during the remaining years of Project TACKLE, as can be seen in the table on page 245.

The U-2s flying these missions were generally equipped with the B or the newly designed 48-inch H cameras to obtain oblique photography and with various signal-intelligence-gathering systems. Beginning in May 1971, Project TACKLE began using a new communications-intelligence collection package known as LONG SHAFT. This system was used on 32 occasions through 12 December 1973, when the LONG SHAFT collection program ended.

[&]quot;" "Office of Special Activities History, April 1969 to Phase-Out," (draft; hereafter cited as "OSA History-2") (CIA: DS&T, 1974), chap. 3, pp. 36-42 (TS Codeword).



Project TACKLE Peripheral Missions, 1969-1974

Display of downed detachment H U-2s in Peiping

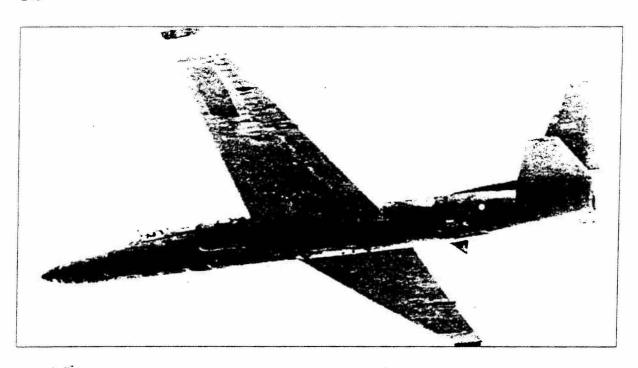
Fiscal Year	Missions	
1969	9	
1970	1.4	anning the second secon
1971	19	DOCK Mensors
1972	ensistemente de la composition della composition	and the second s
1973	3 I	Omining the state of the state
1974	17	artini di Antonio ang Lanco (A. Tiri di Antonio ang basar ang akin 46 660 ang atau antonio

Once the United States began seeking a rapprochement with the People's Republic of China, Detachment H U-2s came under more and more restrictions. Soon after the impending visit of President Richard M. Nixon to the PRC was announced, U-2 missions were ordered to stay even farther away from the mainland: 25 nautical miles instead of the previous 20. During the months of February and



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Nationalist Chinese U-2R

March 1972, when the President's visit took place, Detachment H ceased all operational missions.⁶⁷

In March 1973, the TACKLE agreement with the Nationalist Chinese was renegotiated. Although no end date was set, the agreement contained a termination clause that would become effective three months after notification by either party. This clause provided more flexibility to the United States, which could now end the Nationalist Chinese U-2 program whenever US foreign policy considerations made such a step desirable.

Operation SCOPE SHIELD Over North Vietnam

In addition to the Project TACKLE peripheral missions against the PRC, Detachment H (with Agency rather than Nationalist Chinese pilots) flew a series of missions known as Operation SCOPE SHIELD to gather intelligence on activities in North Vietnam. The Indochina area had become the responsibility of the Air Force in 1964, but, under the terms of the cease-fire agreement negotiated with North

[&]quot; Ibid., pp. 44-45 (TS Codeword).

Vietnam in January 1973, US military flights in the area were forbidden. The Nixon administration, therefore, tasked the CIA with monitoring North Vietnam's compliance with the cease-fire accords.

The Agency dispatched several pilots to Taiwan under the cover of Lockheed employees working on a government contract to check weather conditions. Their highly sensitive missions had to remain at least 15 nautical miles away from the North Vietnamese coast, and they initially flew at low altitude in a deceptive direction in order to avoid PRC radars. These constraints made the missions difficult because at low altitude the U-2 consumed more fuel and encountered more turbulence and the pilots' pressure suits tended to overheat.

The first mission on 30 March 1973 was only marginally successful because of cloud cover and haze, which prevented it from photographing most of its targets. A second mission on the following day had somewhat better luck with the weather, but problems with the film processing reduced the mission's coverage. Afterward, the monsoon season prevented any further missions until 21 July 1973. This mission obtained usable photography of SAM sites and North Vietnamese supply operations, although the resolution was not as high as it should have been because the H camera lens had not been properly focused. The last SCOPE SHIELD mission, on 6 January 1974, finally succeeded in obtaining high-quality photography. The mission provided complete coverage of shipping in Haiphong Harbor, SAM defenses, and North Vietnamese naval order of battle.⁶⁴

IMPROVEMENTS IN U-2 TECHNOLOGY

Modification of U-2s for Aircraft Carrier Deployment

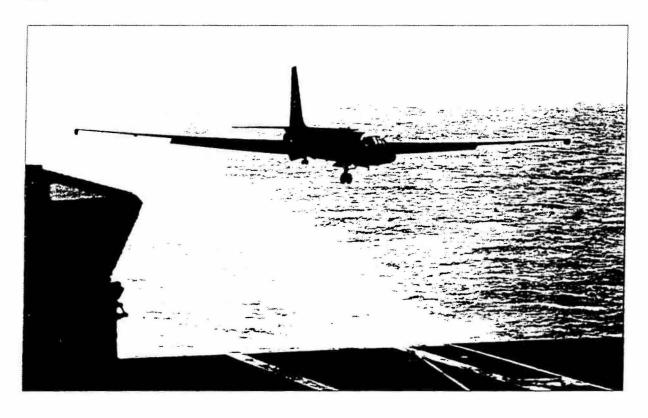
In mid-1963, the Office of Special Activities set in motion Project WHALE TALE to examine the possibility of adapting the U-2 aircraft for operations from an aircraft carrier. In the past, protest notes from the Soviet Union to Turkey and Pakistan and from Communist China to India had been responsible for interrupting overflight operations. CIA planners believed that, if U-2s could be modified to operate from aircraft carriers, the United States could avoid the political problems

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^{**} Ibid., pp. 48-51 (TS Codeword).

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U-2 on the USS Kitty Hawk, 5 August 1963

involved in seeking permission to base U-2s in other nations. Kelly Johnson began working on changes to the aircraft, and Office of Special Activities Deputy Director James A. Cunningham, Jr., a former Marine Corps aviator, asked the Navy for assistance.

The first test of the U-2's capability for carrier operations took place in August 1963 from the USS Kitty Hawk operating in the Pacific Ocean off San Diego, California. A U-2C, which had been loaded aboard the carrier at North Island Naval Base, took off from the flight deck with a full load of fuel and was airborne within 321 feet. No assistance from catapults was necessary. Although the takeoff was very successful, the attempted landing was not. The aircraft bounced, hit hard on one wing tip, and then just barely managed to become airborne again before reaching the end of the deck. Kelly Johnson realized that the airframe would have to be altered in order to make carrier landings possible. These alterations involved strengthening the landing gear, installing an arresting hook at the rear of the fuselage, and fitting "spoilers" on the wings to cancel the aerodynamic lift once the aircraft was over the flight deck. Aircraft thus modified were designated U-2G. While several aircraft



underwent these modifications, Detachment G pilots began undergoing training in landing on aircraft carriers. The first successful carrier landing took place on 2 March 1964.⁶⁹

U-2 on the USS Kitty Hawk, 5 August 1963

Use of Carrier-Based U-2 To Film a French Nuclear Test Site

Within a few months after the completion of carrier testing, one of the carrier-modified U-2s conducted an operation in the Pacific. Its mission was to gather information on the activities of an ally. In

[&]quot;"U-2 Aircraft Carrier Operations: Project 'WHALE TALE,' Operation FISH HAWK," DS&T, 1964, pp. 1-13 (TS Codeword): Johnson, "Log for Project X," 5 August 1963 and 2 March 1964.

December 1963, France had announced its intention to detonate a hydrogen device over Mururoa Atoll in the Tuamotu Archipelago area of French Polynesia but had given no specific date for the event. The Committee on Overhead Reconnaissance had been following French nuclear developments since September 1963, when it had apprised the USIB of the need for overflights of this South Pacific area. At that time the USIB decided against recommending such overflights because of State Department concern about potential political difficulties with France in the event the mission was discovered.

Following reports of a buildup of French troops and technical personnel in neighboring Tahiti, the Special Group on 24 April 1964 approved a mission to overfly the atoll to check for activity. This required photography with a resolution better than the 3 to 5 feet possible with the standard B-model camera that had been in use since October 1956. Work on a very-high-resolution camera had begun in early 1963, when the Agency contracted with the Itek Corporation to modify for placement in the U-2 a camera that had been developed for the satellite program. Known as the Delta-II, or the 112A, this device could photograph a 28-kilometer swath with 26° convergent stereoscopic lenses, resulting in a 70° lateral coverage and a ground resolution of 10 inches. This camera was installed in a Detachment H U-2 and used on two missions conducted over Indochina in late December 1963. Resolution was not as high as had been expected, and the unit was returned to Itek for modifications. By early 1964, the 112A had been reworked and was now known as the 112B. In tests it had proved capable of providing photography with resolution in the 10- to 12-inch range.

Detachment G conducted Operation FISH HAWK in May 1964 by sending two pilots, an NPIC photointerpreter, and a U-2G equipped with the Itek 112B camera to make the first operational U-2 flights from an aircraft carrier. On 19 May the U-2 took off from the USS Ranger and overflew the French atomic test area. As soon as the aircraft returned to the Ranger, the film was developed in the carrier's photo lab, and the NPIC photointerpreter then read out the film to see if the photography met the requirements for resolution and quality. A second U-2 flight carried out a similar mission on 22 May. The photography provided all the detail needed to identify the preparations for the nuclear test that occurred later that year.

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[&]quot;"-"U-2 Aircraft Carrier Operations: Project 'WHALE TALE,' Operation FISH HAWK," DS&T, 1964, pp. 17-25.

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There was never another Agency U-2 mission from an aircraft carrier. Although the idea of using a floating airbase to avoid political sensitivity proved feasible, the cost did not. Aircraft carriers are enormously expensive to operate and require an entire flotilla of vessels to protect and service them. The movement of large numbers of big ships is difficult to conceal and cannot be hastily accomplished, while the deployment of a solitary U-2 to a remote airfield can take place overnight.

A New Version of the U-2

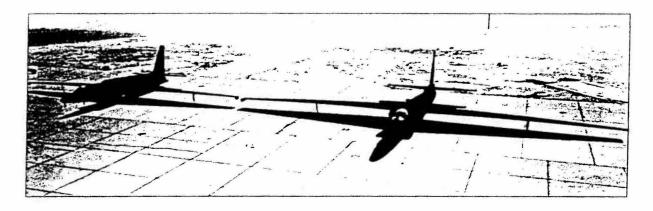
By the summer of 1966, the number of flyable Agency U-2s had dwindled to six—two at Detachment H in Taiwan and four at Detachment G in California—with three more at Lockheed undergoing repair. The Agency had originally ordered 20 U-2s in 1954-55 (the Air Force had purchased another 31 of these planes), and Kelly Johnson's crew at the Skunk Works had managed to assemble four additional craft for the Agency from leftover spare parts and usable sections of crashed aircraft. This brought the total number of U-2s acquired by the Agency to 24, for an average cost of \$812,500 each.

At this point, the DCI and the Secretary of Defense on I August 1966 decided to place an order with Lockheed for eight more aircraft to be used in the Agency and Air Force U-2 programs—a completely new version of the aircraft. Kelly Johnson had been working on ways to improve the performance of the U-2 since early 1965 because he was concerned that all the modifications and additions to the aircraft over the years had made it so heavy that it had lost almost half of its range and several thousand feet in cruising altitude.71 The new model, known as the U-2R, had a longer fuselage and a wider wingspan than the original U-2. The U-2R's wings were 103 feet long with 1,000 square feet of lifting surface, in contrast to the U-2C's 80-foot wings with only 600 square feet. The longer fuselage of the U-2R made it possible to provide two pressurized bays with an additional 2.2 cubic meters of equipment space and also achieve a better weight distribution. The net result of all these improvements was a much better performing aircraft. No longer did the U-2 pilot have to worry about keeping the aircraft's speed at altitude within a 6-knot window in the stall/buffet corner of the flight envelope. The envelope was now extended to 20 knots, which greatly improved flyability.

Johnson, "Log for Project X," 2 February 1965, June to October 1965, 20 October 1965; Johnson, "U-2R Log," January to August 1966.

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U-2C and U-2R

The U-2R used the upgraded Pratt & Whitney J75/P-13B engine and was able to fly higher—in excess of 74,000 feet—and faster—Mach 0.72 (410 knots), which is 12 knots faster than the U-2C. When flying at the higher altitude, however, the U-2R's range was less than the U-2C's. The restart capability of the P-13B engine was significantly better than the P-13A power plant. As a result, the U-2R could be restarted at 54,000 feet, which was 10,000 feet higher than the U-2C. Francis Gary Powers was one of the Lockheed test pilots who checked out this new aircraft when it first took to the air on 28 August 1967. The last of the U-2Rs was delivered on 11 December 1968.

The increased performance of the U-2R did not come cheaply. At \$7.1 million per aircraft, the new models cost almost 10 times as much as the original U-2s. Much of the increased cost was due to inflation, but some was the result of technological advances. The initial order for eight of the new version of the U-2 was followed on 23 November 1966 by an order from the DCI and the Secretary of Defense for four more. This brought the total number of U-2Rs purchased by the CIA and the Air Force to 12.72

In addition to a new aircraft, the U-2 program received a new camera. Agency managers felt that, because the B camera was now 10 years old, the U-2R needed a camera that incorporated the many important advances that had occurred in recent years. The 112B—the modified version of the satellite program's stereo camera that had been used in the U-2G—had not proved totally successful. Despite its stereo capability, this camera's shorter focal length could not provide

OSA History, chap. 5, pp. 34-36 (TS Codeword); "OSA History-2," chap. 5, pp. 1-2 (TS Codeword).

the scale of imagery needed to obtain the highly technical data desired by analysts. As a result, the Office of Special Activities asked the Hycon Manufacturing Company of Pasadena, California, to adapt its successful high-resolution 48-inch 9- by 9-inch format camera developed for the OXCART aircraft for use in the U-2R. This camera was actually a very advanced version of the original B camera with a new lens designed by James Baker. The new camera was designed to resolve objects smaller than 4 inches.

Hycon began work on the HR-333 camera in 1966. Unlike the OXCART camera, the new unit was to use the split 18- by 18-inch format of the B camera, so the lens had to be redesigned. James Baker's contribution to this effort was a 48-inch f/5.6 system that provided remarkably sharp imagery. Hycon completed the camera in time for it to be installed in the first U-2Rs delivered to the Agency in 1968; it is known as the H camera.⁷¹

Replacement of the Original U-2s With U-2Rs

As the new U-2Rs began coming off the production line at Lockheed in the autumn of 1968, CIA and the Department of Defense had to decide who would get the new aircraft. At a meeting on 13 November, DCI Richard Helms and Secretary of Defense Robert McNamara agreed that the Air Force and the Agency would each get six U-2Rs. The six older U-2s remaining from the original 1954-55 production were to be kept in flyable condition and be used as replacements if newer models were lost.

Despite the greatly increased capabilities of the new model of the U-2, the era of overflights of hostile territory was over. The U-2R would have six years of useful service with the Agency, but its missions did not include penetration flights over hostile territory.

THE FINAL YEARS OF THE U-2

When the OXCART's brief operational career with the Agency ended in 1968, the U-2 was once again the center of the Agency's manned reconnaissance program. But by this time, reconnaissance aircraft had declined in importance as collection systems. Overflights were a thing of the past. Although Project TACKLE U-2s with Nationalist Chinese

[&]quot; "OSA History-2," chap. 5, pp. 10-12.

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pilots were still flying missions targeted against the People's Republic of China, these missions did not overfly PRC territory. Increasingly, Agency U-2s flew missions that did not involve intelligence collection requirements.

Support to Other Agencies

Beginning in 1964, the Agency conducted a program known as RED DOT for the Department of Defense. RED DOT involved the development and testing of various color, black and white, and infrared films, emulsions, and processing techniques for use in manned and unmanned high-altitude reconnaissance systems. From 1968 until 1974, Detachment G U-2s photographed areas within the United States that were analogous to portions of the Soviet Union in order to test films and techniques for spotting certain targets. This analogous filming was particularly valuable in connection with agricultural areas and nuclear test sites.

Some U-2 missions supported agencies outside the intelligence community. In 1968 and 1969, Detachment G U-2s flew high-altitude photographic missions in conjunction with the Apollo VII and IX spaceflights in response to a NASA request. These flights provided photography of the western United States for comparison with the photography taken by the Apollo crews. The Department of the Interior also requested U-2 support in early 1969 to help determine the extent of damage caused by a leak in an offshore oil well in California's Santa Barbara Channel. After preliminary assessment of the film at NPIC, the mission photography was given to the US Geological Survey for further study.

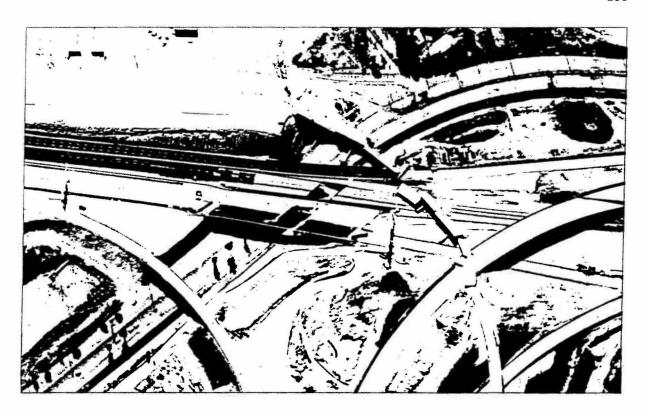
Also in early 1969, Detachment G began providing coverage of the western United States at the request of the Department of Commerce. U-2s filmed the Sierra snowfield to aid hydrologists in forecasting snowmelt and flooding potentials. Later that year, Detachment G supported the Office of Emergency Preparedness by photographing 61,000 square miles of the southern United States as part of a Hurricane Baseline Survey. These photographs could be used for future damage assessment following a major hurricane. A subsequent mission in fiscal year 1971 continued the Hurricane Baseline Survey by photographing the Gulf Coast. When a major earthquake struck the Los Angeles area on 9 February 1971, Detachment G U-2s flew four sorties to obtain damage-assessment photos.⁷⁴

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¹ Ibid., chap. 3, pp. 3-29 (TS Codeword)

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Subsequent missions in support of Federal agencies included COMPASS TRIP in fiscal year 1973, when Agency U-2s photographed poppy fields that had been planted by the Bureau of Narcotics in order to provide a standard for comparison with satellite imagery. In the following year, U-2s assisted the Corps of Engineers in conducting a geological survey.

Earthquake damage, San Fernando Valley, 1971

Overseas Deployment Exercises and Missions

With the exception of the Chinese Nationalist-piloted U-2s of Detachment H, all of the Agency's U-2 assets were concentrated in Detachment G in California. To test the ability of Detachment G to respond to a crisis in Europe or the Middle East, the Agency staged an overseas deployment exercise known as SCOPE SAINT each year (unless there was an actual operational deployment, as was the case in 1970, 1973, and 1974). The first of these exercises, SCOPE SAINT-I, took place on 9 October 1968, when Detachment G deployed a U-2G to the

The U-2 conducted several training flights and then returned to California. SCOPE SAINT-II followed in April 1969 and demonstrated the feasibility of employing a C-141 aircraft to accompany a

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U-2 in flight to its destinat	ion. The C-141 carried support equipment
to the	In October 1969, the third of these
exercises took_place_at_a	different location.

No overseas deployment exercise was necessary in 1970, for elements of Detachment G actually deployed overseas to provide photography of the Middle East. At the time, President Nixon's National Security Adviser, Henry A. Kissinger, was mediating between the Arabs and Israelis in order to obtain a cease-fire along the Suez Canal, where a virtual undeclared war was taking place. Once agreement was reached in August, Kissinger promised both sides that the United States would monitor the agreed upon 32-mile pullback from the waterway. Originally, Kissinger intended for photosatellites to do the monitoring. One satellite was tasked to photograph the Suez Canal area on 10 August, but the quality of its imagery lacked the detail needed to discover such small targets as gun emplacements and jeeps.

The Middle East was again the cause of a Detachment G deployment in October 1973, when another Arab-Israeli war broke out. Two U-2s deployed to the on 7 and 8 October 1973, to be ready for possible coverage of the conflict. Detachment G received no such tasking, however, and the last of the aircraft returned to California on 13 November. The 1973 war did

^{&#}x27; Ibid . pp. 5-6, 10-11 (TS Codeword).

^{*} Ibid., pp. 15-20 (TS Codeword)

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lead to the overseas deployment of Detachment G U-2s in 1974, when the CIA was tasked to monitor the Israeli-Egyptian and later the Israeli-Syrian disengagement areas. On 21 April 1974, a Detachment G U-2 with appropriate support elements arrived at Akrotiri, Cyprus, to conduct Operation OLIVE HARVEST. Between 12 May and 28 July, the detachment conducted six overflights of the disengagement areas. During these missions the electronic warning systems of the U-2 registered numerous radar lockons, but no surface-to-air missiles were fired. On 1 August 1974, responsibility for the OLIVE HARVEST missions as well as the aircraft itself came into the hands of the Air Force as part of the transfer of the entire Agency U-2 program at that time.¹⁷

The Phaseout of the Office of Special Activities

The Agency's U-2 program had been under review since the autumn of 1969 to determine if it should be continued along with the larger Air Force U-2 program. In December 1969, President Nixon decided to keep the Agency's program in existence through 1971 and asked for a formal review by the 40 Committee (the new name for the 303 Committee/Special Group). In August 1970, the committee recommended continuing the program through fiscal year 1972. On 12 August 1972, the 40 Committee again favored continuation of the CIA U-2 program. This recommendation was motivated primarily by a desire not to alienate the Nationalist Chinese Government by eliminating Project TACKLE. In June 1973, however, DCI James R. Schlesinger informed the 40 Committee that this project could be terminated without causing major difficulties with the Nationalist Chinese. On 30 August 1973, the 40 Committee approved the CIA's plans to terminate the U-2 program effective 1 August 1974. The Air Force would assume funding responsibility for the four U-2R aircraft assigned to the Agency and would take physical possession of them then or shortly thereafter. On 1 April 1974, Ambassador Walter P. McConaughy informed the Nationalist Chinese Government of the US intention to end the U-2 project, and the two countries then worked out a schedule for phasing out Project TACKLE.'8

The transfer of all Agency U-2s to the Air Force eliminated Detachments G and H. Their parent organization, the Office of Special Activities, began its phaseout immediately thereafter. The 20-year career of the U-2 with the CIA had come to an end.



[&]quot; Ibid., pp. 31-34 (TS Codeword).

[&]quot; Ibid., chap. 10, pp. 1-4 (TS Codeword)

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