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10 Jul 09
RSA/U/2009-1867/64657/mtg

AFHRA
600 Chennault Circle
Maxwell AFB AL 36112-6424

John Greenewald, Jr.
[REDACTED]

Dear Mr. Greenewald:

This letter is in reply to your Freedom of Information Act request of 7 July 2009. The request was received by the AFHRA on 7 July 2009 and was assigned the FOIA case number 2009-1867. After researching your request, AFHRA was able to locate a copy of IRIS #1111461. Enclosed is a complete copy of this document. Please note that it is the best copy available. Thank you for your request.

Sincerely,

A handwritten signature in black ink, appearing to be "MTG", with a long horizontal line extending to the right.

Mrs. Marcie T. Green
Archivist

Attachments:

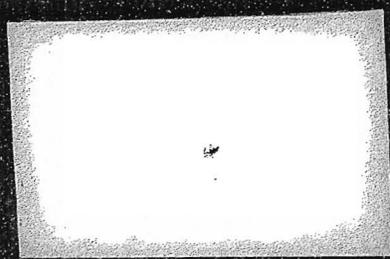
1. IRIS #1111461 copy

ATIC,
THE 1950's,
AND NATIONAL SECURITY POLICY

Author: Bruce Ashcroft
NAIC Historian

The views expressed in this paper are those of the author and do not reflect the official policy or position of the Department of Defense or the US Government.

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DEDICATION

More than any other individual, Major General Harold E. Watson guided, shaped, and built the Air Technical Intelligence Center (ATIC). He was ATIC's first commander and directed the unit's transition from Air Materiel Command's Technical Intelligence Department to an independent center reporting directly to Air Staff Intelligence. ATIC was small when first established, with only 411 people assigned.

In 1954, Watson, newly promoted to Brigadier General, returned to ATIC. Under General Watson's guidance, the next 4 years saw the wholesale integration of automated data processing into the scientific and technical intelligence (S&TI) discipline. The Center installed its first computer during these years and began work on missile trajectory analysis and aircraft engagement analysis—US versus Russian systems. The Center also began working with Rome Air Development Center and International Business Machines to develop a computer capable of translating Russian into English.

General Watson was also a skillful advocate for Center programs. He successfully fought for the construction of Building 828, the beginning of an extensive S&TI complex. As the ATIC mission grew and its analytic capabilities matured, the number of assigned personnel more than doubled and exceeded 1,000 by the time General Watson left a second time.

In 1958, Watson received his second star and went to Washington as the Deputy Assistant Chief of Staff for Intelligence. In that capacity, he championed the creation of an integrated Air Force intelligence command 30 years before such an organization was created in 1991. During Major General Watson's last tour of duty in 1960-1962, he managed the incorporation of ATIC into the newly established Air Force Systems Command. This union would last 30 years.

In many ways, the story of ATIC is a reflection of the vision, personal drive, and skilled leadership of General Watson.



Colonel (Later, Major General) Harold E. Watson. T-2/ATIC Commander 1949-1951 and ATIC Commander 1954-1958

ATIC, THE 1950's, AND NATIONAL SECURITY POLICY

On 21 May 1951, the United States Air Force established the Air Technical Intelligence Center (ATIC) as a field activity of the Assistant Chief of Staff for Intelligence, HQ USAF. Charged with the intelligence assessment of Soviet military aerospace systems during an era of rapid arms buildup and technological change, ATIC played a significant role in the formulation of defense strategy and national security policy. From 1951 to 1961, the Center more than doubled its manpower; meanwhile, the Air Force grew by slightly more than 4 percent. This trend reflected the growing mission of ATIC and the importance attached to its work.¹ On 1 July 1961, the organization was transferred to Air Force Systems Command (AFSC) and renamed the Foreign Technology Division (FTD).²

The contributions by the Central Intelligence Agency (CIA) and the Air Staff Chief of Intelligence (ACS/I) to national security policy in the 1950's have been documented; however, the work of individual lower echelon units, upon whose expertise the CIA and Air Staff depended, has not been recounted. This paper examines ATIC's role as one such unit.

ORGANIZING AIR FORCE SCIENTIFIC AND TECHNICAL INTELLIGENCE

The roots of an Air Force mission to evaluate foreign scientific and technical advances in air power date to 1917 when the air service was assigned to the Army. As the nation readied itself to help its European allies in World War I, the national security establishment realized that American aerospace technology was years behind that of the other industrial nations.

It was said that prior to America's entry into the war, "the Army had practically no material, personnel, nor experience in the designing, producing, or using of aeronautical equipment." Although the air forces had grown from less than 200 men assigned in August 1914 to 1,400 men in April 1917, military and industrial expertise was lacking. Consequently, in 1917, Major General George O. Squier, head of the Army's Aviation

Section, invited engineers from England, France, and Italy to visit the United States and organized the first air technical intelligence mission, the Bolling Commission. Under the direction of Colonel Raynal C. Bolling, military and industrial experts traveled to Europe in June 1917 to investigate European technology and recommend the types of aircraft and equipment the United States should produce. In July, the first foreign aircraft, a British de Havilland (DH)-4, arrived in New York for study.³

In October 1917, the Army relocated its aviation engineering mission from Washington, DC, to McCook Field in Dayton, Ohio. By doing so, the Army placed the Airplane Engineering Department, complete with a Foreign Data Section, "within a night's [train] ride of Indianapolis, Detroit, Buffalo, Cleveland, Chicago, Pittsburgh, Washington, and the East."⁴ The engineers had ready access to the main industrial centers of the nation. The DH-4 received in July moved with the engineering department and first flew at Dayton on 29 October 1917.⁵

As the Foreign Data Section⁶ changed and evolved over the years prior to World War II, it became the clearinghouse for technical data and information both internally for the engineering department and externally for business, research universities, and other military organizations. The section procured, cross-indexed, and made available European and American aviation-related technical data. The unit also prepared a weekly summary of technical articles appearing in aeronautical publications and translated foreign documents into English. By 1920, the section had obtained approximately 5,000 foreign and domestic technical reports, books, and other documents. During the 1920's and 1930's, the section developed significant still-photo and motion-picture capabilities, especially under the leadership of Major Albert Stevens, an internationally recognized pioneer in high-altitude photography.⁷

In the years prior to 1941, therefore, the precedents evolved for many of the scientific and technical intelligence (S&TI) functions in existence today. Active photographic interpretation, publication, foreign translation, exploitation of foreign equipment, and technical library missions all were established in these early days. The air technical

organization at McCook, and later at Wright Field, was small, probably never exceeding 100 people.⁸

During World War II and for a brief period afterward, the section grew dramatically as the S&TI function expanded. Frontline troops sent literally tons of materiel and captured documents to Dayton for analysis. The most famous of the programs, PROJECT LUSTY, brought captured German aircraft, equipment, and documents to the United States. The translation of German documents added over 100,000 technical terms to the English language and advanced America's knowledge of aircraft, missile, magnetic tape, night vision, and food preservation technologies. PROJECT PAPERCLIP brought German scientists to the United States to help the American military and businesses. Two hundred scientists came to Dayton following the war. The technical intelligence section managed the program that utilized the Germans' assistance with equipment exploitation and document translation projects. The German scientists were also assigned to the engineering laboratories on the base to assist their American counterparts. By the end of 1945, nearly 750 people worked in what was then known as Air Materiel Command's T-2 directorate.⁹

As World War II related materiel exploitation and document translation programs closed, technical intelligence activity slowed at Wright Field. The mission also shifted to analysis of Soviet aerospace programs. Reorganization between 1945 and 1951 resulted in the May 1951 creation of the Air Technical Intelligence Center (ATIC) with 411 people assigned. Directly responsible to the Air Staff's Director of Intelligence, the organization consisted of three divisions: Technical Requirements, Technical Analysis, and Technical Services.¹⁰ Technical Requirements identified and tasked intelligence collection needs for the organization and managed the Air Technical Liaison Officer (ATLO) program¹¹ and the Foreign Scientist program (in part a remnant of PROJECT PAPERCLIP). Within the Analysis Division, ATIC established sections for aircraft and propulsion, electronics, and associated equipment. Technical Services included support operations such as document services, training, and materiel services. Among the staff functions, ATIC created comptroller, personnel and administration, and inspector general offices.¹²

ATIC CONTRIBUTIONS TO MILITARY STRATEGY AND NATIONAL SECURITY POLICY



SIGNIFICANCE

The theme of our emblem symbolizes our mission, "Aerospace Technical Intelligence, Worldwide." The polar projection of the Earth's surface represents the worldwide scope of our activities. The Sphinx is the established symbol of intelligence. The aerospace symbol on the upper left represents the interest of ATIC in aerospace equipment, manned and unmanned, vehicles, etc. The symbol (intersecting orbits) on the upper right represents ATIC's broad interests in scientific and technological disciplines.

The 1950's were a time of international turmoil, a time when the "Russian threat" seemed ever more dangerous. Under President Harry Truman, US policymakers attempted to contain communism and keep it from spreading beyond established geographic boundaries. President Dwight D. Eisenhower continued the Truman doctrine, institutionalizing it in a series of international treaties. In 1953, Soviet leader Josef Stalin died and British Prime Minister Winston Churchill proclaimed, "The Great Khan is dead." While his successor, Nikita Khrushchev, initially appeared more conciliatory toward the West, by the end of 1960 the Russian leader had demonstrated his willingness to sponsor and promote "wars of national liberation." In a 6 January 1961 speech, Khrushchev stated that it was "the epoch of the triumph of Marxism-Leninism," and that "Communism has become the invincible force of our century."¹³

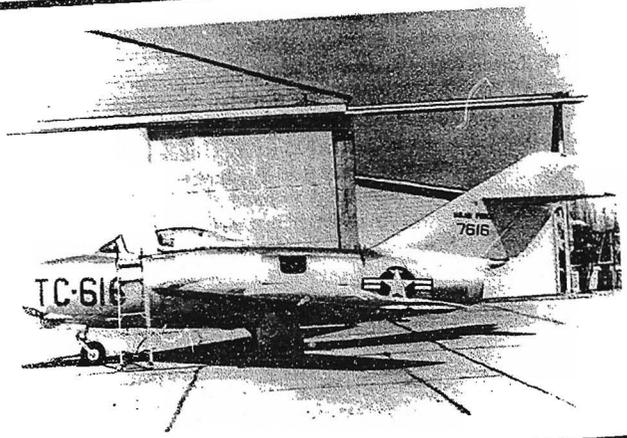
MILITARY STRATEGY

The Korean War gave ATIC its first major opportunity to directly influence Air Force operational strategy. In the late 1940's, the British sold the Russians their state-of-the-art Nene aircraft engine. Coupled with a Soviet airframe, this became the MiG-15 jet. Even prior to the creation of ATIC, technical intelligence analysts in Dayton had begun examining Soviet military systems and had developed estimated performance characteristics for several new Soviet aircraft, including the MiG-15.¹⁴

Early in 1951, ATIC analysts obtained engine parts and the tail section of a crashed MiG-15 from the Korean theater. Later, in July, Center personnel visited the crash site of a MiG-15, recovering additional vital parts for analysis. The acquisition of key aircraft components allowed the Center to revise its engineering estimates of the MiG's performance. In addition to conducting its own assessment, ATIC invited 14 major aircraft companies to view the MiG-15 materiel to provide technical assessments and to become more familiar with the Russian aircraft and the attendant technology. ATIC sent the Far East Air Force (FEAF) charts depicting performance characteristics of the MiG-15, allowing FEAF to develop

effective engagement tactics for its F-86 fighters. By the end of the Korean War, ATIC manpower had increased to 634 personnel, a 50-percent increase since its activation in 1951. In fact, Center manning would not decrease following the Korean War but would steadily increase throughout the 1950's.¹⁵

Early in the Korean conflict, ATLOs shipped a treasure of Russian equipment fresh off the battlefield to Dayton for study. Material acquired included aircraft parts and engines as well as operational IL-10 and Yak-9 aircraft. In September 1953, shortly following the conclusion of the war, a North Korean defector delivered a MiG-15 to Kimpo Air Base near Seoul. A team of ATIC analysts monitored the MiG flight-test program at Kadena Air Force Base, Okinawa. Major Charles E. "Chuck" Yeager from the Air Force Flight Test Center at Edwards AFB, California, was one of the test pilots. Because of the large amount of materiel and documents



MiG-15 Flown Out by North Korean Defector

gathered during the war, ATIC awarded a contract to Battelle Memorial Institute of Columbus, Ohio, for analytical work and document translation. This was the start of a relationship that has lasted over 40 years.¹⁶

Because there were no wartime conditions during the remainder of the 1950's for testing combat performance estimates, ATIC analysts pioneered the use of the computer for aircraft analysis. In May 1957, the Center employed its Readix computer to help prepare a study entitled "The Vulnerability of BISON, BADGER, and BEAR to Current and Future US Interceptor Weapons." In the latter half of the year, analysts used the computer to perform fighter-bomber air duel analysis. By the end of the decade, ATIC analysis was considered "an essential ingredient in the evaluation of air strategies and tactics . . ."¹⁷

THE BOMBER GAP

Three other programs directly related to national security policy received widespread publicity and involved ATIC—the "bomber gap," the "missile gap," and Sputnik. As early as 1950, the organization had begun study of the Tu-4 bomber, a copy of the American B-29. In 1954, evidence pointed to the Russian development of longer range bomber aircraft comparable to American B-52's. To mask the true strength of their bomber fleet, the Soviet military allowed the US Air Attaché in Moscow to view the air show rehearsals for the upcoming Armed Forces Day. The attaché reported two waves of BISON bombers, totalling 28 aircraft. Unbeknownst to the American, the second wave of Soviet aircraft included those from the first. The first group of aircraft simply circled and joined the second flight. US estimates for Soviet bomber aircraft increased dramatically, creating an illusory "bomber gap." American intercontinental bomber strength seemed to be less than that of the Soviet Air Force.¹⁸

With the information gained from the May 1954 air show (and April rehearsals), ATIC completed a study on BISON and BADGER bombers, as well as a separate analysis of their engines, by the end of the year. Analysts estimated that the aircraft would not be delivered to operational units until 1957. The following year, again based on air-show-related

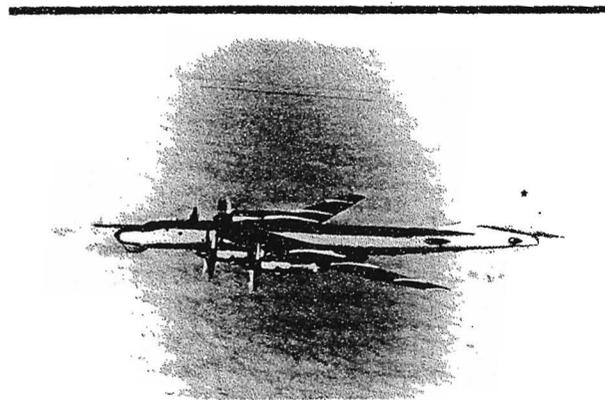
activities. ATIC began study of a third strategic bomber, the BEAR. Because of the number of BISON observed in April and May 1955, analysts estimated that 20 of these aircraft had been delivered to Russian units.¹⁹

U-2 flights over Russia in June 1956 gathered data on bomber production facilities and aircraft in the field. Resultant analysis brought lowered ATIC estimates on aircraft production capabilities. With numbers projected by the Air Staff and CIA, the 1957 National Intelligence Estimate (NIE) expected the Russians to have 150-250 BISON and BEAR bombers in operational status in 1958, with as many as 600 in the field by 1960. By June 1958, only 135 bombers had been detected, and that year's NIE brought a downward revision of bomber deployment estimates. The 1958 NIE expressed a belief that the Russians would produce a maximum of 240 bombers. While the estimates of bomber production fell, the Soviet military seemed to turn its efforts toward the development of intercontinental missiles (ICBMs). The "bomber gap" was replaced by a "missile gap."²⁰

THE MISSILE GAP

As with the "bomber gap," the "missile gap" later in the decade was partially a result of Soviet artifice. Premier Khrushchev and other Soviet leaders skillfully manipulated media announcement of space-related triumphs to create the illusion of missile superiority. Khrushchev talked about missiles coming off production lines "like sausages," though the inventory of long-range missiles remained low.²¹

Air Materiel Command Intelligence established a missiles office as early as 1946, and in October 1951, ATIC published its first Soviet missile study. During the first half of 1956, analytic work on ICBMs began receiving priority attention. Under contract with ATIC, the Convair Astronautics Division of General Dynamics prepared a study entitled "ICBM Manufacturing Analysis Related to Soviet Capabilities." This work allowed Center analysts to determine ICBM production lead times, showed the possible acceleration of the production schedule by the Soviets, and pointed toward operational availability dates.²²



BEAR "D" Bomber

During the last half of 1957, especially following the Sputnik launches (discussed later), the demand for ATIC products and services outstripped the Center's ability to respond. In technical intelligence areas, Center personnel identified a new family of telemetry signals which could be used to study Soviet ballistic missiles, and gas dynamics analysis conducted from photographs of rocket exhaust patterns helped determine rocket performance data.²³

Information from ATIC's "Semiannual Offensive Missile Study" and from other products relating to Soviet science and technology capabilities and trends found its way into the NIE regarding missiles. In 1959, ATIC began studying Chinese trends in offensive missiles and space vehicles.²⁴

As the indications increased that the Russians were achieving ICBM capability, Soviet satellite and missile programs received increased attention from national policymakers. The 10 May 1957 National Security Council (NSC) meeting addressed the issue. The fall 1957 NIE projected

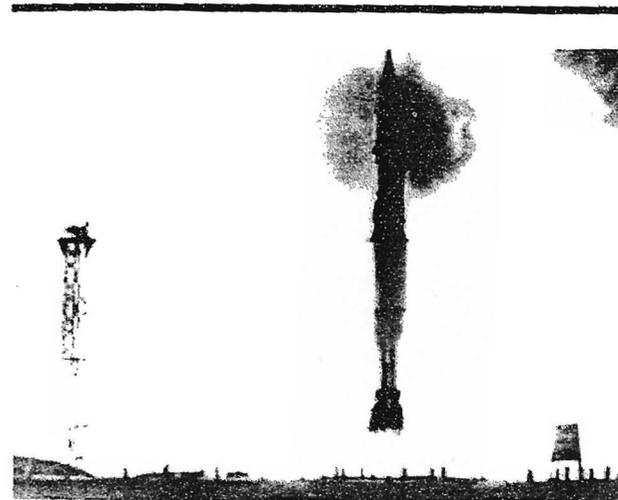
that the Russians might field as many as 10 ICBMs by the end of 1959 and that they would achieve success with an intermediate-range ballistic missile in 1958.²⁵

In the May 1958 NIE, the ACS/I predicted a massive Soviet missile buildup. The estimated ICBM count rose by an order of magnitude to 100 expected by the end of 1959. The May NIE also anticipated 500 missiles by the end of 1960 and 1,000 by the end of 1961. The American inventory could not keep pace; there would be a "missile gap." In response to the perceived Soviet threat, President Eisenhower expanded the Atlas missile program, accelerated the development of the Polaris Class missile-capable submarine fleet, placed more Strategic Air Command bombers on 15-minute alert, and advanced the construction timetable for ballistic missile warning radars in Alaska, Scotland, and Greenland.²⁶

As intelligence gathering continued, evidence of the expected Soviet buildup could not be found. Further, it became apparent that the Soviets were experiencing technical difficulties with their ICBM program. Recognizing these facts, ATIC revised its missile production assessment. The fall 1958 NIE accordingly projected a 1960 date for the Russians to field 100 ICBMs, a 1-year delay from the May schedule. The NIE also scaled back the "out year" numbers. By 1961, the Russians were expected to have 300 missiles in their arsenal, down from the 1,000 projected in the May NIE. When analysts noted further delays in the ICBM testing program, estimates again decreased. As a result of a 7 January 1960 briefing to the NSC by CIA Director Allen Dulles, national leaders concluded that the missile gap was not serious.²⁷

SPUTNIK

Despite the fact that the Russians were first in space, Sputnik, the world's first successful satellite, was not a technological surprise. In the 1956 NIE, in fact, intelligence analysts had predicted that the Soviets would achieve satellite launch capability during 1957. This analysis proved accurate, and in the spring of 1957, the preparation for a launch was detected. On 4 October, the Russians successfully launched the first Earth-orbiting satellite, Sputnik I.



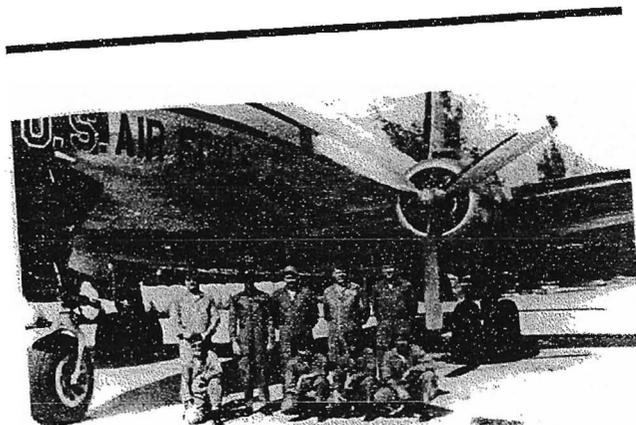
Early Photograph of the SS-7, "SADDLER," ICBM that Entered Operational Service in 1961

ATIC unit histories indicate that Center analysts began formally studying the Soviet capability to launch an Earth satellite in March 1956. By the end of the year, they concluded that such an achievement was imminent. Immediately following the Sputnik launches in October and November 1957, the Air Staff increased Center manning from 723 manpower authorizations to 1,062. In recognition of the importance of the Center's space-related mission, the Air Force renamed ATIC in 1959. Instead of Air Technical Intelligence Center, on 21 September, the unit became the Aerospace Technical Intelligence Center.²⁹

In addition to providing the Air Force's scientific input to NIEs and National Intelligence Studies (NISs), ATIC analyzed a wide range of Soviet technological and industrial developments. Center personnel produced a series of reference works relating to foreign aerospace systems and developed a Soviet technological threat briefing that was presented to civic, industrial, and military audiences. The technological threat presentation reviewed Soviet industrial, scientific, and military advances, emphasizing the need for a vigorous American response. The Center also hosted a steady stream of high-ranking intelligence community visitors. During the "missile gap," for instance, General C. Pearce Cabell, the Deputy Director of the CIA; Major General John M. Willems, the Army Assistant Chief of Staff for Intelligence; and Mr. Patrick Coynes, the White House Advisor to the President on Intelligence, visited the Center.³⁰

AUTOMATED AND TECHNICAL SYSTEMS

Finally, although this paper has focused on ATIC's analytic efforts, mention needs to be made of Center contributions in the development of automated and technical systems. In full partnership with American industry and Air Force research and development centers, ATIC championed the use of automated systems. Aircraft flight performance and ballistic missile analyses were tremendously enhanced using emerging computer technology. With the Rome Air Development Center, Griffiss AFB, New York, ATIC performed pioneering work in the machine translation of foreign language documents. IBM demonstrated the ability to translate Russian documents for the Center in 1959, and in 1963, an IBM Mark II Translating Device was permanently installed. Center engineers and scientists also helped develop new intelligence collection systems. Research during the 1950's included the principles that would lead to the development of "over-the-horizon" radars in the following decade. The Center had its own C-54 aircraft which could be equipped with data collection systems and also a C-47 aircraft with photographic systems installed.³¹



ATIC's C-54 Aircraft and Crew

UNIDENTIFIED FLYING OBJECTS

While the analytic work performed by ATIC personnel on Russian aircraft, missiles, and space programs remained largely unknown to the public, the Center gained national recognition for its study of unidentified flying objects (UFOs). In July 1947, a small cell of T-2 analysts under the leadership of Lieutenant Colonel Miles Goll began investigating reported sightings of UFOs, also known as flying saucers. In September, Air Materiel Command (AMC) asked the Air Staff for authority to establish a format project for the study. The director of Intelligence and Director of Research and Development both concurred, and AMC established PROJECT SIGN on 11 February 1948. The study was redesignated PROJECT GRUDGE on 16 December 1948.³²

The 1950's saw the continuing study of UFOs.³³ Articles in *Life*, *Look*, and *Time* magazines in the early months of 1952 helped increase the number of sightings reported to ATIC. To handle the extra work, ATIC established the Aerial Phenomena Group to study these reports in March 1952. The program was also renamed and became PROJECT BLUE BOOK. Captain Edward Ruppelt had been named head of the UFO study group the previous summer, and he became the first BLUE BOOK project officer. Probably the most highly publicized UFO events of the ATIC years were a series of sightings in Washington, DC, in 1952. A large contingent from ATIC, including Colonel Donald L. Bower, the Chief of Technical Analysis at ATIC; Captain Roy L. James, a radar expert; Mr. Burgoyne L. Griffing, from the electronics branch; and Captain Ruppelt travelled to Washington. Supported by the ATIC investigators, on 29 July, Major General John Samford, the Air Force ACS/I, and Major General Roger M. Ramey, the Director of Operations, held a press conference to explain the Washington sightings. Captain James was also a featured guest on the national radio talk show *Crossfire*. Because of the publicity the Washington, DC, sightings received, ATIC received a record number of UFO reports during 1952, a total of 1,501. (See table.)³⁴

In January 1953, CIA Director General Walter Bedell Smith created a special advisory group, known as the Robertson panel, to review the UFO situation. The panel concluded that the evidence collected to date did not indicate any threat to national security. This group of military and

scientific leaders suggested that national security agencies should take immediate steps to eliminate the aura of mystery surrounding the sightings. Because 35 percent of all UFO reports were coming from Air Defense Command (ADC) pilots and observers by 1953, ATIC analysts set up a special training program for ADC so that more detailed reports would be received at the Center for study.³⁵

The Center asked Battelle to run a computer analysis of the reported sightings. The results of this study were incorporated in ATIC's May 1955 publication, *PROJECT BLUE BOOK Special Report #14*. To help diffuse criticism that the Air Force was "hiding" UFO findings from the public, Secretary of the Air Force Donald A. Quarles made *PROJECT BLUE BOOK Special Report #14* part of the public domain and allowed the Department of Commerce to sell copies to the public for a minimal charge. At virtually the same time, Edward Ruppelt, having separated from the Air Force, attained prominence with the publication of his book, *The Report on Unidentified Flying Objects*, in 1956.³⁶

In November 1957, the Air Force released a fact sheet detailing 10 years of UFO study. After investigating approximately 5,700 reports, the service conceded that there was a small percentage of reports (less than 2 percent) that could not be attributed to any known object or physical phenomena. The fact sheet listed five conclusions:

- There was no evidence that the "unknown" sightings represented a hostile threat.
- There was no evidence that the "unknowns" represented interplanetary spacecraft.
- There was no evidence that the "unknowns" represented technological advances outside the range of currently existing scientific knowledge.
- There was no evidence that the "unknowns" were a threat to national security.
- No physical or material evidence of a bona fide UFO had ever been found.

The Air Force emphasized that if it had been supplied with more detailed and objective data in the reports that were filed, the "unknowns" could

have been identified. Indeed, by January 1959, the number of UFO cases falling into the "unknown" category had decreased to less than 1 percent.³⁷

From 1947, when the first UFO reports reached T-2, to 1960, the last full year ATIC remained assigned to the ACS/I, analysts at Wright-Patterson investigated 6,523 reported sightings. Yearly statistics (see table) ranged from 79 reports during the last few months of 1947 to 1,501 in 1952. In 1957, ATIC received 1,178 reports, 701 of which were received during the months following the Sputnik launch.³⁸

UFO Reports Received By T-2 and ATIC

Year	Reports
1947	79
1948	143
1949	186
1950	169
1951	121
1952	1,501
1953	425

Year	Reports
1954	429
1955	404
1956	778
1957	1,178
1958	573
1959	364
1960	173

ADAPTING TO CHANGING TIMES

Events on a small island triggered a wholesale reorganization of the American intelligence community in 1961. The disastrous Bay of Pigs invasion in April, organized by the CIA to overthrow Cuba's revolutionary leader Fidel Castro, prompted President John F. Kennedy to establish the Defense Intelligence Agency (DIA). The 1 August Department of Defense Directive establishing DIA specified that the new agency would "more clearly align DoD intelligence channels with the military chain of command."³⁹

At the same time, the Air Force realigned ATIC. Instead of being assigned to the Air Staff, the technical intelligence unit in Dayton became part of the newly established Air Force Systems Command (AFSC). General Bernard A. Schriever, AFSC commander from April 1959 through August 1966, noted that the United States was engaged in "technological conflict" with the Soviet Union. To win that war, S&TI had to be integrated with system development. In addition to direct application of intelligence information, AFSC expected the investigation of foreign technology to provide a yardstick against which American research and development (R&D) could be measured. Analysis of foreign technology would also allow for a cross-fertilization of ideas in the R&D community. AFSC discontinued ATIC effective 1 July 1961, concurrently establishing the Foreign Technology Division (FTD). At each of its other engineering centers, AFSC established a Foreign Technology Directorate to incorporate foreign technology and threat assessments in product design.⁴⁰

Insofar as a relationship between ATIC activities and national security policy can be measured or indicated,⁴¹ it is clear that ATIC made the Air Force scientific contribution to the Soviet Union related NIEs and NISs throughout the 1950's. These assessments directly shaped the intelligence community's input into national policymaking. Addressing the value of NIEs, Senator Frank Church, Chairman of the Senate Select Committee on Intelligence, stated in 1975 that, "In the last 25 years, no important new Soviet weapon system, from their H-bomb to their most recent missiles, has appeared which had not been heralded in advance by NIEs."⁴² In addition to the contributions to formal intelligence products, Center personnel briefed a wide audience both within the Department of Defense and without on the growing Soviet technologic and aerospace capabilities and thus directly influenced national decisionmaking.⁴³

The Cold War was largely a technological war, and ATIC was at the leading edge of that combat zone. Initially a small organization, the unit grew throughout the decade of the 1950's as its role in national security policy formulation gained increasing importance. Center analysts provided national policymakers key insights into the developing Soviet aircraft, missile, and space programs. Further, as the center of excellence for the study of foreign aerospace systems, ATIC took the lead

in analyzing UFOs for the security establishment. Technical advances, especially in the area of automated data processing, supplemented and enhanced ATIC's performance. As a result of the core competencies developed during the 1950's, many of those programs pioneered by ATIC are continued by today's HQ National Air Intelligence Agency and remain crucial to national security.

NOTES

1. ATIC manpower figures used herein come from semiannual histories on file in the National Air Intelligence Center (NAIC) History Office, Wright-Patterson AFB, Dayton, Ohio; USAF personnel strength from Tamar A. McHuron, ed., "The US Air Force in Facts and Figures," *Air Force Magazine*, Vol. 76, No. 5 (May 1993), 28. Technically, ATIC was inactivated and FTD activated.
2. There was no redesignation insofar as Air Force lineage and honors were concerned.
3. G. W. Mixer and H. H. Emmons, *United States Army Aircraft Production Facts* (Washington, DC: GPO, 1919). The quoted material may be found on page 5.
4. H. H. Blee, *History of Organization and Activities of Airplane Engineering Division* (Dayton: McCook Field, 15 August 1919), 4-5.
5. Ibid.
6. The Foreign Data Section went through a number of name changes between 1917 and 1941. It was known as the Technical Publications and Library Department (1918), Technical Data Section (1920), Technical Data Branch (1926), Army Aeronautical Museum (1935), Technical Data Branch (1940), and Technical Data Section (1941). Names compiled from histories and organization charts in the Air Force Materiel Command History Office, Dayton.
7. Foreign Technology Division, *FTD: 1917-1967* (Dayton: FTD, 1967); National Geographic Society, *The National Geographic Society—U. S. Army Air Corps Stratosphere Flight of 1935 in the Balloon "Explorer II,"* Contributed Technical Paper Stratosphere Series Number 2 (Washington, DC: National Geographic Society, 1936).
8. Air Materiel Command (AMC), *History of Air Materiel Command Intelligence, T-2*, Historical Study Number 228 (Dayton: AMC, 1948), hereinafter referred to as "History of T-2"; the total number of personnel assigned came from information in the Air Force Materiel Command History Office, Dayton.
9. *FTD: 1917-1967: History of T-2*; information about PAPERCLIP is detailed in Harriet Buyer, et. al., *History of AAF Participation in PROJECT PAPERCLIP* (Dayton: AMC, August 1948). Part II describes the project at Wright Field.
10. ATIC was composed of the 1125th Field Activities Group and the 1126th Air Intelligence Service Squadron, both at Wright-Patterson AFB. The 1126th was inactivated in 1953. In 1956, ATIC established six deputies to replace the original three-division organization. The 1956 structure with deputies for Acquisition, Material

in analyzing UFOs for the security establishment. Technical advances, especially in the area of automated data processing, supplemented and enhanced ATIC's performance. As a result of the core competencies developed during the 1950's, many of those programs pioneered by ATIC are continued by today's HQ National Air Intelligence Agency and remain crucial to national security.

NOTES

1. ATIC manpower figures used herein come from semiannual histories on file in the National Air Intelligence Center (NAIC) History Office, Wright-Patterson AFB, Dayton, Ohio; USAF personnel strength from Tamar A. Mehuron, ed., "The US Air Force in Facts and Figures," *Air Force Magazine*, Vol. 76, No. 5 (May 1993), 28. Technically, ATIC was inactivated and FTD activated.
2. There was no redesignation insofar as Air Force lineage and honors were concerned.
3. G. W. Mixter and H. H. Emmons, *United States Army Aircraft Production Facts* (Washington, DC: GPO, 1919). The quoted material may be found on page 5.
4. H. H. Blee, *History of Organization and Activities of Airplane Engineering Division* (Dayton: McCook Field, 15 August 1919), 4-5.
5. *Ibid.*
6. The Foreign Data Section went through a number of name changes between 1917 and 1941. It was known as the Technical Publications and Library Department (1918), Technical Data Section (1920), Technical Data Branch (1926), Army Aeronautical Museum (1935), Technical Data Branch (1940), and Technical Data Section (1941). Names compiled from histories and organization charts in the Air Force Materiel Command History Office, Dayton.
7. Foreign Technology Division, *FTD: 1917-1967* (Dayton: FTD, 1967); National Geographic Society, *The National Geographic Society—U. S. Army Air Corps Stratosphere Flight of 1935 in the Balloon "Explorer II."* Contributed Technical Paper Stratosphere Series Number 2 (Washington, DC: National Geographic Society, 1935).
8. Air Materiel Command (AMC), *History of Air Materiel Command Intelligence, T-2*, Historical Study Number 228 (Dayton: AMC, 1948), hereinafter referred to as "History of T-2"; the total number of personnel assigned came from information in the Air Force Materiel Command History Office, Dayton.
9. *FTD: 1917-1967; History of T-2*; information about PAPERCLIP is detailed in Harriet Buyer, et. al., *History of AAF Participation in PROJECT PAPERCLIP* (Dayton: AMC, August 1948). Part II describes the project at Wright Field.
10. ATIC was composed of the 1125th Field Activities Group and the 1126th Air Intelligence Service Squadron, both at Wright-Patterson AFB. The 1126th was inactivated in 1953. In 1956, ATIC established six deputies to replace the original, three-division organization. The 1956 structure with deputies for Acquisition, Material

Support, Electronic Intelligence, Engineering Support, Science and Components, and Air Weapon Systems was carried forward when FTD was established in 1961, though some of the names changed. Information from unit organizational charts.

11. T-2 established the Air Technical Liaison Officer (ATLO) program in 1947. ATLOs served as in-theater S&TI assets and provided technical assistance to overseas US military headquarters. Depending on their background, some collected documents and equipment. Others gathered information from foreign scientists, especially German scientists who had been gathered up by the Russians following World War II and were returning from the Soviet Union. Some attended technical conferences and trade fairs; others established relationships with industrialists and foreign military personnel. Some ran or were involved with refuge camps for people fleeing to the West as the Soviet Union tightened its grip over its satellites in the 1950's. All attended photographic intelligence training at ATIC. Information from Oral History Interviews (OHI), Major General Harold E. Watson with John Brownlee, 26 September 1991, Palm Beach Gardens, Florida, and Nyle Neumann, one of ATIC's ATLOs, with Bruce Ashcroft, 4 November 1993, Dayton; also, Center histories.
12. *History of T-2*; ATIC, History, 1 January-30 June 1952 (Dayton: ATIC, 1952). All semiannual histories cited are unclassified unless specifically noted; ATIC Organization Chart, 2 July 1951.
13. James A. Nathan and James K. Oliver, *United States Foreign Policy and World Order*, 4th ed. (Glenview, IL: Scott, Foresman, 1989), chapters 2-5 *passim*. The Churchill quote is found on page 161; Allen Dulles, *The Craft of Intelligence* (New York: Harper & Row, 1963), 222-223.
14. OHI, Major General Harold E. Watson.
15. Information from 1952 and 1953 ATIC Histories; Concepts Division, Aerospace Studies Institute, *Guerrilla Warfare and Airpower in Korea, 1950-1953* (Montgomery, AL: Air University, Jan 1964), 228-232. Manpower figures from ATIC histories. In contrast to Center manning, Air Force end strength dropped from 977,000 personnel at the end of FY 1953 to 840,000 by the end of FY 1959. Mehuron, 28.
16. Concepts Division, *Guerrilla Warfare and Airpower in Korea, 1950-53*, 228-232; USAF Motion Picture, "We Flew the MiG," [1953], on file in the NAIC History Office; OHI, Vic Bilek, longtime ATIC/FTD employee and manager, and Gus Simpson, who moved from ATIC to Battelle Memorial Institute in 1953, with Ashcroft, 19 November 1993, Columbus, Ohio.
17. ATIC, Histories, 1 January-30 June 1957, p. 41 and 1 July-31 December 1957, p. 33; USAF ACS/I, Legion of Merit citation for Major General Harold E. Watson, ATIC commander, 1 July 1958.
18. Intelligence Department, History, 1 January-30 June 1950 (Dayton: TID, 1950); Dulles, 162-163; Douglas C. Guiler, "Deceptive Deterrence: What Western Experts May Have Missed in Evaluating Soviet Military Strength," reprint in class readings for History of Scientific and Technical Intelligence, Joint Military Intelligence College (JMJC), NAIC, fall 1993, 12-13.
19. ATIC Histories, 1954 and 1955.
20. Walter Laqueur, *A World of Secrets* (New York: Basic Books, 1985), 145; John Prados, *The Soviet Estimate* (New York: Dial Press, 1982), 48-50.
21. Dulles, 163-166; Guiler, 13.
22. Information from a 15 April 1946 organization chart, ATIC, Histories, 1957-1958.
23. ATIC, Histories, 1958-1959.
24. ATIC, Histories, 1958-1959.
25. Prados, 62-65.
26. *Ibid.*, 79-82.
27. *Ibid.*, 82-88.
28. Mark M. Lowenthal, "The Burdensome Concept of Failure," ed. Alfred C. Maurer, et. al. in *Intelligence: Policy and Process* (Boulder, CO: Westview Press, 1985), 45.
29. ATIC, Histories, 1956-1959. see the 1 July-31 December 1956 History, p. 44, for the statement that launch capability would be achieved imminently.
30. ATIC, Histories for the 1950s describe Center contributions to NIEs and NISs, publications and studies produced, and notable visitors; information about the technological threat briefing from Oral History Interview, Bilek with Ashcroft, 28 October 1993, Dayton. For a discussion of NIEs and their place in the national security process, see Dulles, 157-162.
31. ATIC histories detail the developments in computer usage and the modification and use of Center aircraft. Information Processing Laboratory, *USAF Automatic Language Translation*, (Rome, NY: Rome Air Development Center, September 1962).

Information on over-the-horizon radars from OHI, Elmond Decker with Ashcroft, 8 October 1993, Dayton; OHI, James Currie with Ashcroft, 8 October 1993, Dayton, for details on the use of Center aircraft.

32. Edward J. Ruppelt, *The Report on Unidentified Flying Objects* (Garden City, NY: Doubleday, 1956) details the early history of PROJECT SIGN/GRUDGE/BLUE BOOK from an insider's perspective; OHI, Bilek and Simpson with Ashcroft, 19 November 1993; AMC, Technical Report No. 102-AC 49/15-100, *Unidentified Flying Objects PROJECT "GRUDGE"* (Dayton: AMC, August 1949).
33. In 1969, as the war in Southeast Asia drew an ever-increasing effort from the United States, the Air Force closed PROJECT BLUE BOOK. When the program ended, 12,618 reported sightings had been investigated. The Sign/Grudge/Blue Book collection moved to the National Archives in Washington, DC, in 1975 and were made available to the public the following year.
34. ATIC, History, 1 January-30 June 1952; Ruppelt, 223; Lawrence J. Tacker, *Flying Saucers and the U.S. Air Force* (Princeton: D. Van Nostrand, 1960), 82-83; OHI, Roy James with Ashcroft, 29 September 1993, Dayton. Mr. James provided the NAIC History Office a copy of the *Crossfire* interview. A photograph of General Samford and the ATIC analysts appears on page 32 of *UFO Encounters* published by Publications International, Lincolnwood, IL, in 1992.
35. ATIC, History, 1 January-30 June 1953; see David Michael Jacobs, *The UFO Controversy in America* (Bloomington: Indiana University Press, 1975), 89-106.
36. The decision to publish the ATIC study is detailed in the unit histories; Ruppelt, *The Report on Unidentified Flying Objects*; OHI, Bilek and Simpson with Ashcroft, 19 November 1993.
37. Department of Defense (DoD), News Release—Fact Sheet—No. 1083-57 (Washington, DC: Office of Public Information, 5 Nov 57); DoD, News Release No. 63-59 (Washington, DC: Office of Public Information, 22 January 1959).
38. Tacker, 82.
39. Lyman B. Kirkpatrick, Jr., *The United States Intelligence Community* (New York: Hill and Wang, 1973), 35; DoD Directive 5105.21, "Defense Intelligence Agency" (Washington, DC: DoD, 1 August 1961).

40. DoD Directive 5105.21; FTD, History (Secret), 1 July-31 December 1961 (Dayton: FTD, 1962). Information used is unclassified; Air Force Systems Command (AFSC), History, 1 July-31 December 1961 (Dayton: AFSC, 1962).

41. For a discussion of the intelligence-strategy relationship, see, for example, Alfred C. Maurer, et. al., eds., *Intelligence: Policy and Process* (Boulder, CO: Westview Press, 1985); Hans Heymann, Jr., "The Intelligence-Policy Relationship" and Neal H. Peterson, "Intelligence and US Foreign Policy, 1945-1954," both in the Winter 1984 issue of *Studies in Intelligence*; and Bruce D. Berkowitz and Allan E. Goodman, *Strategic Intelligence for American National Security* (Princeton, NJ: Princeton University Press, 1989).
42. Senator Church quoted in Harold P. Ford, "The Development of National Estimating since the Korean War," included in class readings for Indications and Warnings and Collections Intelligence, JMJC, NAIC, Winter 1993, 72.
43. ATIC histories detail the most prominent visitors to the Center and noteworthy presentations made by Center personnel.

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