

Lessons from Four North Korean Shootdown Attempts, 1959–81

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Over the past decade, newly declassified records and published accounts of aircrew members shed light on four North Korean attempts to shoot down US reconnaissance aircraft. These records provided lessons learned for military and IC personnel orchestrating such operations during the Cold War.

This article is dedicated to the 31 crewmen of a U.S. Navy EC-121 (PR-21) who were killed while flying a signals intelligence mission on 15 April 1969 when a North Korean MiG-21 shot them down approximately 80 nautical miles (nm) off the North Korean coast.

Over the past decade, newly declassified records and published accounts of aircrew members shed light on four North Korean attempts to shoot down US reconnaissance aircraft. These records provided lessons learned for military and IC personnel orchestrating such operations during the Cold War. Previously released material revealing the broad outlines of each incident along with the more recent evidence reveal the long-term challenges in warning against low-signature, tactical episodes such as shootdown attempts, but the material also shows the ways in which the military and IC tweaked the Cold War programs to reduce the risks to airborne collectors.

Although Soviet, Warsaw Pact, Chinese, and North Korean forces attacked dozens of US intelligence collection aircraft during the Cold War, I will focus on only four incidents involving North Korea between 1959 and 1981 because they were highly publicized, deliberate, and methodical attacks against platforms unques-

tionably in international airspace. The incidents include attacks against

- a Navy P4M-1Q Mercator (16 June 1959),
- an Air Force RB-47 (27 April 1965),
- an Air Force SR-71 (26 August 1981),
- and the catastrophic shootdown of the Navy EC-121 with 31 people aboard (15 April 1969) to whom this study is dedicated.

CONTEXT

US Collection Requirements and PARPRO Missions.

The publicly released material offers context for the incidents, including details on the incentives driving collection, the methodology in their conduct, guidance for self-protective measures, and heightened North Korean sensitivity and ability to attack aircraft operating off its coasts. According to a 1989 National Security Agency (NSA) history of the EC-121 shootdown (hereafter referred to as “NSA history”), the United States increasingly used aircraft for communications intelligence collection in the 1950s as it responded to increasing Soviet use of line-of-site VHF signals, best intercepted within 50 to 70 nm of the transmitter.¹

The views, opinions, and findings of the author expressed in this article should not be construed as asserting or implying US government endorsement of its factual statements and interpretations or representing the official positions of any component of the United States government.

Four Attempts by North Korea to Shoot Down American Aircraft, 1959-81



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MPG 19-5883 6-19

As for North Korea, an Intelligence Community assessment noted in 1969 that peripheral reconnaissance missions were essential because of the priority the IC accorded to the North Korean threat, the need for updates on Pyongyang's military posture, and major intelligence gaps on the North. The IC relied on "repetitive missions" to incrementally provide indications and warning, detect military buildups, monitor general military activity, and gain insight into North Korean weapons systems.² Such requirements probably accounted for the large number of missions flown within 80 nm of the North Korean coast and establishment of guidelines that typically allowed collectors to approach within 40 nm of North Korea.

For example, between January 1968 and April 1969, the United States flew 976 reconnaissance missions within a zone extending north of the DMZ and within 60 nm of the North Korean east coast, and flew 190 such missions in the Sea of Japan during January through March 1969, according to an internal Joint Chiefs of Staff (JCS) document and a congressional report on the EC-121 incident.³ To put it differently, 130 approved reconnaissance tracks covered Korea in 1969, according to the JCS, suggesting an extensive collection effort.⁴

Defense Department (DoD) coordinated aircraft on missions in the 1960s using the Peacetime Aerial Reconnaissance Program (PARPRO), which stipulated procedures for mission approval and command and control. Support for the flights off North Korea entailed US radar tracking of the reconnaissance aircraft and—when the collector was out of

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friendly radar range—monitoring signals intelligence on foreign radars and air defense systems to determine reactions to the reconnaissance aircraft, according to the NSA history, congressional accounts, and President Richard Nixon's public account of the EC-121 shootdown.⁵ SIGINT sites monitoring radar networks would warn the aircraft of potentially dangerous conditions, such as approaching enemy aircraft.⁶

North Korean motivations

The worst of the attacks occurred during the so-called "second Korean war" between 1966 and 1969, during which Kim Il Sung pushed to encourage an uprising in South Korea by sending commando teams into the Republic of Korea (ROK) to engage in unconventional warfare attacks. Pyongyang judged that US targets were fair game during this period when, for example, North Korean commandos attacked two US barracks in May 1967, killing or wounding 21 US personnel.⁷ The context was thus one in which the North had become more willing to cause US casualties.

Pyongyang defended its airspace more fiercely during this period than it had before and insisted publicly and privately that it would shoot down US aircraft violating its airspace. In discussions with Soviet Ambassador to North Korea Nikolai Sudarikov on 16 April 1969, just after the EC-121 shootdown, Deputy Foreign Minister Heo Dam said the North was "ready to respond to retaliation with retaliation, and total war

with total war." He added that the Americans had not drawn the "proper lessons" from the *USS Pueblo* seizure in 1968.⁸

North Korean Foreign Minister Pak Seong-Cheol the same day told the ambassador that shootdowns of aircraft violating its airspace over water were not dissimilar to the North's history of attacking aircraft violating its border along the DMZ, according to a Soviet record of the conversation. The foreign minister downplayed the shootdown, saying, "We have this ordinary matter. We've shot down US planes before, and similar incidents are possible in the future. He elaborated by sharing a philosophy that attacks on intruding US reconnaissance planes helped the North Koreans avert a larger war:

If we sit with folded arms when a violator intrudes into our spaces, two planes will appear tomorrow, then four, five, etc. This would lead to an increase of the danger of war. But if a firm rebuff is given, then this will diminish the danger of an outbreak of war. When the Americans understand there is a weak enemy before them, they will start a war right away. If, however, they see that there is a strong partner before them, this delays the beginning of war.⁹

Pyongyang improves air defense capability

The North Korean Air Force (NKAFF) faced significant limitations in the mid-1960s, although it was modernizing rapidly. The Defense

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Intelligence Agency (DIA) noted in 1967 that NKAF's "circumscribed night and foul-weather intercept capability" confined much of the force—notably the MiG-17 fleet—to a daytime, clear air mass intercept environment, although its MiG-19s and growing fleet of MiG-21s could intercept reconnaissance aircraft at other times.¹⁰ The US Pacific Command (PACOM) judged that the NKAF relied heavily on a ground control intercept (GCI) system, so it assessed that the North Korean threat to PARPRO aircraft extended only out to 200 nm, rather than the aircraft's full combat radius.¹¹

However, between 1965 and 1969, the NKAF intensified training in skills that would threaten airborne intelligence collectors. It developed intercept techniques against intruding—notably US reconnaissance—aircraft along its coasts and began conducting live launches of air-to-air missiles, the weapon used in the EC-121 shootdown.¹² Meeting with the National Security Council (NSC) *Pueblo* working group on 24 January 1968, Gen. Earle Wheeler, chairman of the JCS, also said the North had practiced with surface-to-air missiles (SAMs) against targets flying at the same altitude as the A-12, CIA's precursor to the Air Force's SR-71.¹³

NSA highlighted these trends in warning messages sent before US Navy shipboard intelligence collection patrols sailed off the North Korean coast at least twice in the 1960s. A message sent in December 1967, just before USS *Pueblo*'s patrol, commented, "The NKAF has been extremely sensitive to peripheral reconnaissance flights in this area (east

coast of North Korea) since early 1965. . . . Internationally recognized boundaries as they relate to airborne activities are generally not honored by North Korea on the east coast of Korea."¹⁴

However, DIA concluded in an internal memo that "despite incipient indications to the contrary, actual North Korean air defense reactions to US reconnaissance flights in 1966 and 1967 were limited and restrained."¹⁵ In a separate memo for the JCS Joint Reconnaissance Center (JRC) produced in December 1967, DIA assessed that North Korean reactions to daytime electronic intelligence (ELINT) collection flights probably would be minimal, providing collection aircraft stay an unspecified "reasonable distance" from sovereign North Korean airspace, which Pyongyang then declared was 12 nm from the coastline.¹⁶ The pace of North Korean fighter reactions had dropped in the latter part of 1967, with only five seen against the 172 reconnaissance missions flown between April and December 1967. This compared to the much higher rate of six fighter reactions to 35 missions between January and March 1967, according to another DIA memo.¹⁷

Appearing before Congress, BGen. Ralph Steakley, director of JRC, testified that since 1965 there had been only one instance of an NKAF fighter coming close to a US reconnaissance aircraft.¹⁸ He commented on one incident in which a North Korean fighter approached "really close" to a US aircraft but evidently was flying at 25,000 feet, too low to intercept it.¹⁹

P4M-1Q Mercator Attack

Two North Korean MiG fighters attacked a P4M-1Q Mercator signals intelligence aircraft belonging to the Navy's Fleet Air Reconnaissance Squadron One (VQ-1) flying at 7,000 feet, some 50 nm east of the DMZ on 16 June 1959, according to several sources including the unit's command history.²⁰ None of the sources suggest the aircraft received any warning before the attack. Rather, the MiGs approached and at 1315 local began their strafing runs. The Mercator turned to orient its tail cannon on the MiGs, but the gunner was wounded and the cannon damaged, according to a DOD press release.²¹ The Mercator dived to approximately 50 feet above the water. After conducting six strafing runs, the MiGs probably ran low on fuel and broke off the engagement after repeatedly attacking the aircraft over another 20 nm. The Mercator sustained serious damage to engines, wings, and rudders. With two engines and the rudders shot away, the plane barely made it back to Japan for a safe landing at Miho Air Base.²²

A lengthy and detailed CIA human intelligence report published about the NKAF in 1969 provides additional information about this incident. Although information about the report's provenance was redacted, it tells a story partially consistent with crew reports. The NKAF ordered two MiG-15s based at Wonsan to intercept the Mercator because it was flying on a track associated with US intelligence collection missions against the North Korean coast. The MiG pilots initially planned to attack the Mercator simultaneously from different sides but shifted to a sequential attack to avoid a mid-air

collision. The MiG pilots initially were flying at 8,000 meters (26,246 feet)—too high for the proposed intercept—and did not see their prey until they dove to a lower altitude. They intercepted the P4M-1Q between 70 to 80 km (approximately 43 to 49 nm) from offshore, and chased it out to some 150 km (93 nm) from the North Korean coast. The NKAF commander reprimanded the pilots for not downing the Mercator.²³

RB-47 Attack

The second incident occurred on 27 April 1965, when two MiG-17s from Sondok, an east coast fighter base, attacked a USAF RB-47 flying over water some 40 nm east of the North Korean coast. The flight took place after the NKAF had for several days demonstrated growing edginess about foreign aircraft over the Sea of Japan, according to a CIA *President's Daily Brief* (PDB) article summarizing the incident and NSA reporting. The intercept was the fifth time in nine days that North Korean fighters had scrambled in response to reconnaissance aircraft offshore, according to the PDB.²⁴

This time, however, the RB-47 crew also received a warning over HF radio that bogeys were airborne near Wonsan, and it briefly acquired a weak ELINT cut of a MiG air-intercept radar. However, the crew would not realize they were being attacked until cannon fire struck the aircraft. The MiGs approached from behind and below—the RB-47's blind spot—and made at least three firing passes in sequence.²⁵

The RB-47 fired its tail cannon, released chaff, and dived from 27,000 to 14,000 feet to complicate

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the attack.²⁶ Only two of six engines remained undamaged, and the RB-47 sustained a ruptured fuel tank, leading to a severe nose-heavy imbalance that would require a difficult no-flaps landing, according to US press reports. Despite the severe damage, Lt. Col. "Matt" Mattison, the pilot, successfully landed the aircraft at Yokota Air Base, Japan, without incurring casualties. The Air Force ultimately declared the RB-47 to be a constructive loss, i.e., not worth the cost of repair.²⁷

EC-121 Shootdown

An NKAF MiG-21 ambushed the VQ-1 EC-121 SIGINT aircraft on 15 April while it was on a mission some 80 nm offshore. The fighter was one of two the North Koreans had relocated to a MiG-15/MiG-17 training base in northeastern North Korea the month before. In describing the incident in a telephone call to President Richard Nixon, National Security Advisor Henry Kissinger said the North had deliberately planned to shoot down the EC-121. He added, "They were moving two MiG-21s, which would not signal anything in particular to us about their intentions."²⁸ The shootdown killed 31 personnel—to this day, the costliest operational disaster involving US SIGINT aircraft.

PACOM had approached the mission cautiously by adjusting the EC-121's flight track to reduce its vulnerability to attack, but a different interpretation of the evidence probably would have justified postponing the flight or at least providing fighter escort. Gen. Charles Bonesteel, the

commander of US Forces Korea, advised PACOM in April 1969 that in recent Military Armistice Commission meetings, "the North Koreans have been particularly vehement and vicious in warning UN forces about provocative actions."²⁹ USFK on 11 April warned, "aircrews should be especially alert and prepared to abort at the first indication of any North Korean reaction." PACOM responded with a message advising component commanders to exercise all caution during PARPRO operations near North Korea and raising the required standoff distance from the Korean coastline from 40 to 50 nm.

Theater intelligence collectors, however, had misinterpreted the initial deployment on 28 March of the two MiG-21s—the NKAF's most capable fighter—to the training base at Hoemun. The Joint SIGINT processing center on Okinawa on 30 March 1969 concluded that the NKAF had deployed the MiGs to facilitate fighter transition training because a MiG-21 transition training unit was located at another east coast base, Pukch'ang-ni, and could have deployed the MiG-21s to Hoemun as part of their training syllabus. The deployment put the MiG-21s at the base nearest the EC-121's collection orbit and positioned them to conduct a shootdown after flying only 80–90 nm and thus reducing the EC-121's warning time.

NSA's detailed study of the event, indicates that the MiG-21s launched to intercept the EC-121 at about 1330 local time as the EC-121 reached the extreme northern end of its orbit—the point at which it would reach its

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closest point of approach to Hoemun. One Fishbed flew a defensive patrol and approached no closer than 65 nm from the EC-121, while the other shot it down at approximately 1347 as it flew about 80 nm off the North Korean coast, and immediately returned to North Korean airspace.

The EC-121 did not acknowledge warnings transmitted to it immediately before the shootdown, and the crew's actions in their final minutes are unknown. The Seventh Fleet operations order called for aircrews in this situation to turn directly away from North Korean territory and prepare for defense against hostile attacks under certain warning conditions. A joint US Navy-Air Force team investigating the EC-121's wreckage concluded that the EC-121 sustained major structural damage from the detonation of a fragmenting warhead of one (or possibly two) air-to-air missiles.

Although there is no evidence that conclusively shows why Pyongyang attacked the EC-121, the CIA on 16 April judged that it was a deliberate act driven by Kim Il Sung's desire to offset his failed attempts to foment an armed struggle in South Korea and to demonstrate to the new Nixon administration that the North would not abandon its unconventional warfare campaign.³⁰ State Department analysts added that "it is probably more than coincidence that the downing occurred on Kim Il Sung's birthday," judging that the "most likely North Korean motivation, then, is self gratification and increased prestige for Kim Il Sung at the expense of the

United States following a plan based on Pyongyang's *Pueblo* experience."³¹

SR-71 Blackbird Attack

The North launched two SA-2 surface-to-air missiles (SAM) against an SR-71 from a site located on an island off the west coast of North Korea on 26 August 1981 after several weeks of growing tension between the two Koreas, according to CIA reporting on the incident and accounts from Blackbird aircrews. The CIA reported that several months before the shootdown the North had been particularly sensitive to activity near its southwest coastal area and had built a SAM site there, a target SR-71 crews had been tasked to collect against. The agency also noted other unusual activity, including an increase in the number of incidents involving North and South Korean fishing boats and a spike in ground force activity along the DMZ.³²

The SR-71s began collecting ELINT cuts on the suspected SA-2 site in April 1981, according to interviews with participating SR-71 crews. The site was on an island in an estuary near the western end of the DMZ. While approaching the western side of Korea at Mach 3 and 77,000 feet on 26 August, the aircrew noted defensive system activity and the reconnaissance systems officer reported a probable launch. He spotted a contrail, and the pilot turned the aircraft slightly to the south to get away from the SA-2. The SA-2 missed the Blackbird by at least 2 nm and exploded harmlessly behind and

to the right of the aircraft at 80,000 feet.³³

CIA later commented in an internal warning memo on 28 September 1981 that the meaning of the firing, its significance for future flights in the area, and for Pyongyang's posture against the United States and South Korea remained unclear but judged that the launch might have been a response to what Pyongyang viewed as a breach of its sovereignty or to demonstrate new determination to act against hostile intelligence collection activity. The memo warned that Pyongyang's attitude increased the possibility of additional hostile incidents, including the prospect of another firing on US reconnaissance aircraft.³⁴

The incident angered President Ronald Reagan, and the United States made arrangements to re-fly the original track in October 1981, this time with the SR-71 accompanied by supporting aircraft ready to strike back if the Blackbird came under fire again.³⁵ Deputy Secretary of Defense Frank Carlucci visited the SR-71 detachment in Okinawa in September and told its members that President Reagan would not tolerate a second such incident. Lt. Gen. Robert Mathis, the assistant vice chief of staff, advised the unit that it would fly four, special category, precisely timed, missions using the 26 August track. He explained that Wild Weasel aircraft would be poised to launch anti-radar, air-to-surface missiles against any offending SA-2 site within 60 seconds of another attack on an SR-71, according to Crickmore's account, but the missions did not provoke another launch.³⁶

Observations and Lessons

Numerous boards were convened to review lessons from the EC-121 shutdown. These had common themes; they evaluated the value of the missions, ascertained whether all the tracks were required, and eliminated low priority missions.³⁷ In addition, the team managing the PARPRO program derived a number of lessons in managing sensitive airborne collection, particularly during its high level of activity during heightened tensions on the Korean Peninsula during the 1960s. Some of the lessons are explicitly identified in formerly classified message traffic; others may be inferred by observing the challenges such operations face. A few such observations—at least as they apply to the Cold War era—follow.

PARPRO mission guidance changed frequently to reduce threats to collectors. JRC, DIA, and several other organizations routinely reviewed PARPRO missions and tweaked the rules of engagement to respond to North Korean behavior; adjustments would be made to mission parameters such as time of day, allowable closest points of approach to North Korea, and requirements for airstrip or airborne alerts, according to congressional testimony by DoD leaders, formerly classified DIA documents, and message traffic from JCS to subordinate commands.³⁸

For two years after the RB-47 incident in April 1965, for example, the Strategic Air Command flew reconnaissance missions over the Sea of Japan only during darkness, according to General Wheeler's testimony before Congress in 1969. The NKAF demonstrated no hostile intent during this period. Consequently, the United

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States resumed normal day and night missions over the sea in late 1967. Fighters escorted these missions for an unspecified period after the 1965 shutdown attempt, but the escorts stopped when flights were not challenged.³⁹

Other actions taken at various times included imposing strip alerts to support aircraft flying near the DMZ, briefly requiring fighter escorts after the *Pueblo* seizure, imposing an 80-mile stand-off distance from North Korea, reducing the closest point of approach to 40 nm, and then raising it to 50 nm.⁴⁰ When MiG-21s reappeared at Hoemun in May 1971, PACOM moved the flight track for an impending PARPRO mission beyond the range of North Korean ground control radars, according to the NSA history.⁴¹ After North Korea fired SA-2s at the SR-71 in August 1981, commanders readjusted the track for future such missions still farther south to move them away from the SA-2 threat.⁴²

PACOM considered other procedural changes after the EC-121 shutdown but concluded it lacked enough land-based fighters in theater to provide four-ship fighter escort for each PARPRO mission. The command instead considered alternatives such as stationing a carrier strike group in the Sea of Japan indefinitely; reducing the number of PARPRO tracks near Korea to reduce exposure to the NKAF; decreasing from four to two the number of fighters that might be assigned to escort mission aircraft; using only aircraft on ground alert to protect reconnaissance aircraft flying south of the DMZ; and using barrier combat air patrols to protect a broad

area in which reconnaissance aircraft were operating rather than trying to escort each individual platform.⁴³

NKAF might get through. In reviewing the threat to PARPRO collectors in 1969, PACOM concluded that enough NKAF fighters making a determined effort might be able to shoot down a reconnaissance aircraft even if escorted by four fighters. The assessment stated:

Neither fighter CAP protection nor fighter escort can assure the safety of the reconnaissance platform. If the enemy makes careful plans through observation of tracks and related operations and makes a concerted effort to destroy a reconnaissance aircraft, chances are good that he may succeed even though he may lose some of his force. The protection provided must be considered a deterrent rather than a positive shield.⁴⁴

C3 shortfalls; C3 improvements. Investigations into the EC-121 shutdown revealed shortfalls in command, control, and communications (C3) in PACOM. These were particularly evident in faulty connections between, on the one hand, VQ-1, the EC-121's squadron, and USN-39, the SIGINT element directly supporting the squadron and, on the other hand, other SIGINT sites following the mission.⁴⁵ VQ-1 and USN-39 were inadvertently left off distribution for SIGINT message traffic warning of the MiG-21 activity, including a SPOT report sent at 1345 local highlighting North Korean reaction to the EC-121, which suggested an attack was occurring.

Although some of the incidents discussed above occurred half a century ago, they are worth remembering because Pyongyang might still consider harassing, if not attacking, US aircraft in another crisis.

Consequently, VQ-1 did not have an opportunity to request search and rescue (SAR) support for the EC-121 until after it received a lateral CRIT-IC (a top priority message) at 1458 local, when it immediately requested SAR support. As a result an SAR aircraft did not arrive until almost two hours after the shutdown.⁴⁶ The congressional subcommittee investigating the event concluded that VQ-1 “lost all effective operational control of the aircraft.” The subcommittee added, “When units monitoring the EC-121 directed warning messages to the aircraft, VQ-1 was never included as an addressee on any of the messages.”⁴⁷

These shortfalls would spark theater and national interest in developing fusion centers capable of processing operational and intelligence information faster and more coherently before and during a crisis. The NSA history highlights the shutdown as one of the factors that contributed to the creation of NSA’s

National SIGINT Operation Center four years later.⁴⁸

More interest in SIGINT drones.

The NSA history noted that the shutdown sparked community-wide interest in the use of unmanned collection platforms to reduce the risk of casualties associated with manned aircraft. The USAF soon began using drones and mini-manned aircraft (flight crews only) with palletized intercept receivers remotely tuned by operators at ground stations in high-risk areas. However, this drone program was phased out in 1975 due to cost and high loss rates in Vietnam.⁴⁹

Increased NSA involvement in PARPRO reviews. The EC-121 shutdown encouraged a more comprehensive NSA role in monitoring PARPRO flights, including those of ELINT collectors. In particular, the agency began to methodically evaluate the “take” from the missions and to more actively participate in monthly PARPRO planning sessions.⁵⁰



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Still Watching

Although some of the incidents discussed above occurred half a century ago, they are worth remembering because Pyongyang might still consider harassing, if not attacking, US aircraft in another crisis. On 4 March 2003, for example, a time when US policymakers would have focused on Iraq, two NCAF MiG-29s and two MiG-23s intercepted an RC-135S Cobra Ball aircraft approximately 150 nm off the Korean coast, according to a Pentagon spokesman. They accompanied it for 22 minutes and approached to within 50 to 400 feet of the aircraft at the same altitude. After the fighters turned away, the RC-135S aborted its mission and returned safely to Okinawa.⁵¹

North Korean media continues to refer to this and other incidents, such as the EC-121 shutdown, as demonstrations of military prowess, claiming, for example, to have “resolutely repelled” and “driven back” the RC-135.⁵² The attitude betrayed by such North Korean commentary still bears watching.

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37. CINCPAC 220213Z April 1969, "Plan for Protection of Reconnaissance Aircraft in Korean Area," in Wheeler Records, Box 31, RG 218, National Archives; NSA History, 41–48.
38. House Armed Services Committee, Special Subcommittee on the USS Pueblo and EC-121 Plane Incidents, 91-12 (1969); DIA Memo containing director's statement summarizing DIA support to review of DOD monthly reconnaissance schedule, 20 March 1969, DIA FOIA document #126535; CINCPAC 220213Z April 1969, "Plan for Protection of Reconnaissance Aircraft in Korean Area," in Wheeler Records, Box 31, RG 218, National Archives; JCS, "Fact Book: EC-121 Shoot Down in Sea of Japan," undated, Wheeler, "091 Korea (BP) EC-121 Shootdown," RG 218, National Archives (see attachments JCS 232309Z January 1968, JCS 021550Z July 98, and JCS 071821Z February 1969).
39. General Wheeler's testimony, HASC Hearings, 907, 919–20.
40. House Armed Services Committee, Special Subcommittee on the USS Pueblo and EC-121 Plane Incidents, 91-12 (1969), p. 1677; JCS, "Fact Book: EC-121 Shoot Down in Sea of Japan," undated, Wheeler, "091 Korea (BP) EC-121 Shootdown," RG 218, National Archives.
41. NSA History, 46.
42. Crickmore, *Lockheed SR-71 Operations in the Far East*, 78.
43. CINCPAC 220213Z April 1969, "Plan for Protection of Reconnaissance Aircraft in Korean Area," in Wheeler Records, Box 31, RG 218, National Archives.
44. *Ibid.*
45. NSA History, 21.
46. *Ibid.*, 23–24.
47. House Armed Services Committee, Special Subcommittee on the USS Pueblo and EC-121 Plane Incidents, 91-12 (1969), 1675.
48. NSA History, 47–48.
49. *Ibid.*, 44.
50. *Ibid.*, 46–47.
51. Eric Schmitt, "North Korea MiGs Intercept US Jet on Spying Mission," *New York Times*, 4 March 2003; Bradley Graham, "N. Korea Tails US Spy Plane," *Washington Post*, 4 March 2003.
52. Korean Central Broadcasting Station, "Kim Jong Un Inspects Air, Anti-Air Force Command," 3 May 2012; KCNA, "Great Feats Performed by KPA Air Force," 29 November 2017.

