

“A hammer on a gigantic pistol being pulled back”: SAC, Nuclear Forces, and the Hungarian-Suez Crisis of 1956



SAC's workhorse during this time consisted of B-47 bombers capable of carrying Mk 15 and Mk 21 thermonuclear weapons. Operation ROAD BLOCK consisted of seventy-two B-47s launching from Barksdale AFB and Portsmouth (later Pease) AFB. Half of these aircraft were loaded with nuclear weapons. (U.S. National Archives)

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We can prevent war only by letting potential enemies know what we can do, only by making a prospective war so horrible that they will seek other means of solving difficulties. But peace is our profession.

-Lt Gen Francis H. Griswold
interview with Nick Lamberto of the *Des Moines Register*,
November 17, 1957

I had this experience that stamped itself upon my memory during the Suez crisis in 1956...I went into the control room of the 8th Air Force to watch as symbols were moved across this gigantic map, and one after another the B-47s and B-52s were announced: combat ready, cruising aircraft ready for take-off. The tanker units were flown to the far bases, some of the B-47s also, until finally all the symbols were up and ready to start. It was like that, a hammer on a gigantic pistol being pulled back, and the end of the world, at most, a good part of it, was very, very near. It would have happened in the next few hours if they had ever gotten the order to go. I thought that was an impressive sight.

-George McFarland, SAC 1950-1958¹

We are conditioned to view Cold War nuclear crises through the lens of the gold standard, the dramatic Caribbean Crisis where the fate of the world hung by a thread in October 1962. But what happened when the United States and its President were confronted with an ambiguous Soviet threat coupled with ambiguous nuclear force signalling half a decade before the familiar Strangelovian trappings of the DEFCON system, the hot line, and airborne alert were in place?

The narrative of the 1956 crises is familiar to all of us. Egyptian leader Gamal Abdul Nasser flirts with both the United States and Soviet Union in what amounts to a grand souk negotiation for development and military aid, then nationalizes the Suez Canal prompting Great Britain, France, and Israel to collude in an invasion to topple the regime and restore control over that vital waterway. At the same time, Soviet leader Nikita Khrushchev, faced with the possibility of a collapsing Warsaw Pact after his anti-Stalinist 'secret speech' triggers dissent in the Soviet empire, cracks down on Hungary on the eve of the Anglo-French/Israeli operation in October 1956. He issues,

through Bulganin, a series of threats implying nuclear weapons use against Britain and France if they do not withdraw their forces. The Eisenhower administration refuses to support its allies and Canadian foreign minister Pearson supposedly invents UN peacekeeping to give the allies a way out of the situation. The French, British, and Israelis withdraw their forces and stability is returned to the Cold War system.

The existing literature depicting the Hungary and Suez crises, however, has virtually no detailed discussion of Soviet or American nuclear forces, their activities or the role they played in the lead up to and during the crises.² There is cursory mention of the vague Soviet rocket threats and that this was a grand bluff on Khrushchev's part that paid off spectacularly at the time but established a dangerous precedent that led to the Caribbean Crisis of 1962.³ Indeed the Hungarian-Suez Crisis barely makes it into Cold War-era analytical literature that attempted to address crisis signalling.⁴ The operational literature has only cursory, vague or inaccurate information.⁵ What has never been explained is this: in addition to other military activities mounted during the crises, why, exactly, did seventy two Strategic Air Command B-47 bombers loaded with nuclear weapons conduct a major operation in the Arctic at the height of the crises? Was this rogue activity on the part of SAC commander-in-chief General Curtis LeMay? Or was it part of something more sophisticated and precise directed by President Dwight D. Eisenhower in response to the activities of the Soviet nuclear forces? A new perspective based on newly-declassified intelligence and operational material confirms that the crisis extended into early December 1956 and that American and Soviet nuclear forces played a role in resolving it.

Preliminaries: February-August 1956

On February 2, 1956, twenty days before Soviet Premier Nikita Khrushchev made the "secret speech" denouncing Stalinism, the Soviet Union launched an R-5M (SS-3 SHYSTER) ballistic missile from Kapustin Yar missile test range. This particular R-5M was the first Soviet missile to carry a nuclear warhead, a modified RDS-4 gravity bomb, which detonated in the Aral Desert with a yield of less than a kiloton (the standard warhead for the R-5M when deployed later yielded 300 kt and later there was a 1 Mt version).⁶ There are no in-

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dications that President Eisenhower was briefed on this test. His daily Current Intelligence Bulletin, which usually had sections on Soviet nuclear tests and other strategically-important exercises, has no mention of it and he was usually briefed on Soviet nuclear tests.⁷ To what extent the details of Op BAIKAL were known to the intelligence community in the West are unclear. The United States would not conduct a live full-up nuclear-tipped ballistic missile test until 1958, which put the Soviets ahead in this capability at this phase of the Cold War.

During the course of protracted public diplomacy over Nasser's "anti-colonial" endeavours in the Middle East in the spring of 1956, Khrushchev and Bulganin made a state visit to Great Britain in April. In a series of discussions, "Eden took the occasion to administer a heavy dose of British concerns over Soviet moves in the Middle East. He bore down heavily on the British need for a continuing flow of oil" and bluntly stated that they would "fight for it" if pushed into that corner.⁸ Khrushchev then casually threatened his hosts. "Eden, Lloyd, Macmillan, Butler and other British statemen. We told them frankly that we had rockets of various ranges."⁹ Indeed, the idea that the Soviets might introduce Korean War-style Communist "volunteers" for internationalist duty if Egypt were attacked by France and Britain was also mooted at this point.¹⁰ In essence, both threats were repeated as the crises took more acute form in November but the ability to carry out nuclear bombardment, specifically the use of nuclear-tipped missiles, was ambiguous to Western leaders. Indeed, the threats were extremely subtle and appear to have had no immediate deterrent effect on British action. This exchange was likely not crisis diplomacy and should perhaps be couched within Khrushchev's larger effort of the day to compete with the Western bloc in the developing, decolonizing Third World which was designed to "verify in practise whose system is better."¹¹

However, the view from the American Joint Chiefs of Staff at this time was focused on the expanding Arab-Israeli hostilities in the region. Chairman of the Joint Chiefs of Staff, Admiral Arthur Radford, informed the unified and specified commanders that "In view of the tense situation in the Middle East, the JCS have taken certain preparatory actions to improve readiness for military action."¹² This activity was to support a phased plan that had an escalating series of "deterrent actions to prevent hostilities" between the Arab states and Israel. These included alerting of forces; ostentatious deployment of naval and air forces to Middle East bases and at sea; the mass overflight of Israel and the Arab states by those aircraft while naval forces cruised off the coasts. The air intervention plan included Strategic Air Command (SAC): "These forces would gain control of the air, then warn both sides to ground their remaining aircraft and withdraw ground forces....If the warning were not heeded air attacks against the aggressor would be launched."¹³ The planning did not take into account possible Soviet intervention in the situation, nor Anglo-

French intervention and was solely focused on the Middle East belligerents. There was no movement of forces in support of this contingency plan but it is indicative of how seriously the JCS viewed the situation earlier in 1956.

Another indicator of how serious the JCS viewed the situation was exercise GAS HOUSE, held in June 1956. At this point in history American nuclear weapons were owned by the Atomic Energy Commission, not the armed services. Weapons were stored in AEC-controlled National Stockpile Sites and Operational Storage Sites and, by mid-1956, increasingly in Special Service Facilities at SAC bomber bases (dubbed the “Bombs-on-Base” program). AEC Custodians held legal custody of the cores for the primaries of both atomic and thermonuclear weapons as well as the bomb casings and their pits. In the event of war, AEC Chairman Lewis Strauss had to release the special nuclear materials in consultation with the President of the United States. GAS HOUSE was a communications exercise between the JCS Joint War Room Annex, the Joint Coordination Center and the storage sites to test the communications network and the release procedures.¹⁴

Notably, SAC also conducted an exercise dubbed BIRDS EYE in July 1956 which involved the temporary deployment of five B-47 jet bombers and three KC-97 tankers to Adana Air Base in Turkey. BIRDS EYE was designed to familiarize the base with recovering B-47 aircraft after a strike against the Soviet Union had been made using nuclear weapons as part of the Emergency War Plan (EWP). BIRDS EYE was not designed as crisis signalling but it appears to have been a predecessor of the later BIG HORN rotational B-47 deployments which permitted SAC to strike targets deeper in the Soviet Union as part of the EWP in the event of war.¹⁵ If the Soviets knew about or were concerned about BIRDS EYE, they made no public mention of it.

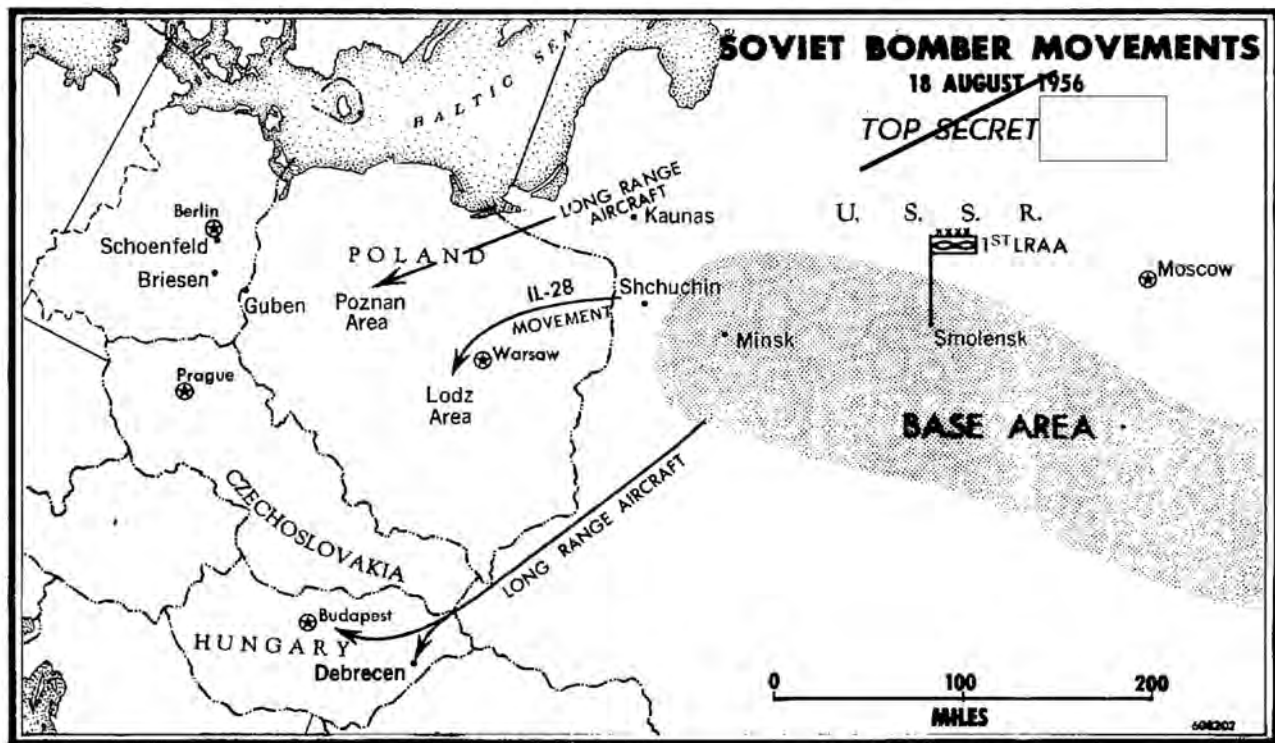
The crisis in the Middle East receded temporarily into the smoke-filled rooms of diplomacy for several months but Nasser’s nationalization of the Suez Canal in July and the failure of Anglo-French-Egyptian diplomatic efforts afterwards prompted Admiral Radford to report to Secretary of Defense Charles Wilson that the JCS considered this move “to be so seriously detrimental to the United States and its allies from a military point of view as to require action.” At a subsequent National Security Council meeting, Chief of Naval Operations Admiral Arleigh Burke opined that “The JCS are of the view that Nasser must be broken.” Eisenhower, however, disagreed and instructed that all possible contingencies be studied. Out of this planning emerged preparations for non-combatant evacuation operations and sending a brigade to protect oil production in Dhahran.¹⁶ The possibility of Soviet intervention in the Middle East, however, emerged on 23 August with the failure of the London talks, which were aimed at gaining an amicable solution to the Canal’s nationalization. Khrushchev lectured the French and British ambassadors in Moscow and warned them that “The Arabs will not stand alone” and repeated the threat to send “volunteers” in if there were a military intervention in the re-

gion.¹⁷ Eisenhower was seriously concerned with this threat and suspended all American peripheral “ferret” reconnaissance flights on August 25, to ensure there were no “incidents” that could aggravate the situation. These missions were permitted to gradually continue again six days later.¹⁸ The JCS, however, warned the unified and specified commands at the end of August that the “possibility exists that situation in Middle East could deteriorate rapidly.”¹⁹

Khrushchev and Crushing the Satellites: June-October 1956

It was in the fall of 1956 that Soviet issues in maintaining control of its eastern European colonies overlapped with the ongoing Middle East situation. Khrushchev’s February 25 speech denouncing Stalin and his works produced substantially increased public dissent in Poland, Bulgaria, Hungary and Czechoslovakia in March. In June a demonstration in Poznan, Poland was crushed by the state with extreme violence and there were concerns on Khrushchev’s part that the flow of cheap coal from Polish mines would be slowed which in turn would negatively affect the Soviet economy and its military buildup. Khrushchev was increasingly concerned that something similar was brewing in Hungary and dispatched Anastas Mikoyan to Budapest in July: his reports confirmed Khrushchev’s fears that there was something existentially wrong with Soviet relations in Eastern Europe.²⁰ This put Khrushchev in the quandary of having to deal with not one, not two, but multiple crises at once, including unrest in the Soviet Union proper while the Suez situation bubbled away.²¹ At some point in July Defence Minister Marshal Georgy Zhukov was instructed to initiate contingency planning for Red Army interventions in Eastern Europe if the situation deteriorated.²²

This may or may not have accounted for the “unprecedented” large scale deployment of 60 medium bombers (either TU-4 or TU-16 or both) and 35 Il-28 light bombers to Hungary, Poland, and East Germany on the morning of August 18, 1956. The American intelligence apparatus detected unusual TU-4 bomber flights to East German bases on August 6, but the later move was so large it warranted briefing Eisenhower on the details.²³ All three aircraft types were nuclear-capable and had demonstrated that capability with live test drops of weapons yielding between 28 kt and 250 kt at the Semipalatinsk test site in 1954 and 1955. The American intelligence apparatus, however, was generally unable to distinguish between the nuclear-capable *Atomnyy* versions of the aircraft from the conventional versions because they were externally similar.²⁴ But if this was a signal then what was the message? And to whom was it directed? Was it to France and Britain to underscore the “volunteers” threat vis-à-vis the Middle East? Was it designed to overawe the Warsaw Pact nations and their leadership in a time of internal crisis? Was it to message NATO to stay out of Eastern European affairs? Indeed, SAC had been particularly concerned with the potential for a pre-emptive strike against B-47 bases in Great



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Figure 1. The deployment of 60 Soviet nuclear-capable medium bombers to forward bases in the Warsaw Pact in August 1956 was significant enough to brief President Eisenhower as they constituted a potential threat to SAC bases in the United Kingdom. Forward-based bombers in East Germany could also reach eastern North America with refuelling support. (CIA)

Britain going back to 1953 when Il-28s were deployed to East Germany and Soviet-occupied Austria. And the use of East German airfields expanded the range and variety of targets that refuelled TU-4 and TU-16s could reach in northeastern North America.²⁵ (Figure 1)

On September 7, 1956, Eisenhower's daily intelligence briefing noted that the entire Soviet armed forces had its leave cancelled. This was a massive undertaking given the gargantuan size of the Soviet armed forces and could only be understood as a preliminary move before mobilization. That, of course, greatly concerned NATO because of the possibility of an invasion of Western Europe was predicated on Soviet mobilization. But what did the leave cancellation mean? CIA analysis suggested that this move was deliberate signalling to the French and British over Suez.²⁶ There appears to have been no connection made between the leave cancellation and the deteriorating situation in Poland, where a combination of limited liberalization introduced in the summer and the trials of the Poznan revolutionaries in September acted like "a lightning rod for dissent."²⁷ At the same time, Khrushchev responded to developments in the Middle East. Increased Jordanian-Israeli tensions in September produced another ambiguous Soviet warning that Israel would face "serious consequences" if it continued to aggravate the situation.

Khrushchev's primary problem, however, was Poland. Rehabilitated Polish leader, Wladyslaw Gomulka initiated a "Polacization" policy to reduce the Soviet security presence in the Polish secret police and the armed forces and possibly to remove Soviet divisions from Poland. Marshal Konstantin Rokossovsky, the Soviet-imposed defence minister, was dismissed and "concerned that Poland...might be about to break from the Warsaw Pact, Khrushchev decided to act."²⁹ On October 18, lead elements of between four to six Soviet armoured and mechanized divisions stationed in East Germany as part of the Group of Soviet Forces Germany opposite NATO, moved to assembly areas west of Stettin. All bridges over the Oder River were guarded by Soviet troops. The next day, Polish army and security forces went on alert as the two Poland-based Soviet divisions moved out of their barracks to assembly areas outside of Warsaw.³⁰ These land moves were accompanied by more than 20 Soviet warships appearing off Gdansk covered by air support.³¹ On October 19, a high-powered Soviet delegation consisting of Mikoyan, Molotov, and Marshals Zhukov and Ivan Konev arrived by plane to discuss matters with Gomulka. Despite the Soviet force moves, there were widespread demonstrations throughout the country. Somehow Gomulka was able to appease the Soviet delegation and Khrushchev ordered the

troops back to barracks on October 24. Another view is that “The Soviets were deterred by intelligence reports that significant numbers of Polish troops would [fight back] and unnerved by rumours of weapons being handed out in Warsaw factories.”³²

Right on the heels of the Polish situation came the initial stages of the Hungarian revolution. Anti-Soviet demonstrations escalated throughout October, fed off the situation in Poland and culminated in a mass demonstration in Budapest on October 23. By October 28, Zhukov deployed four Soviet divisions from Ukraine to Hungary, and preparations were made to move in additional divisions from Romania.³³ The American intelligence apparatus picked up on all of these moves and others that were of concern to NATO. Zhukov then increased the Soviet fighter strength of the 24th Air Army in East Germany by a whole MiG fighter division while at the same time withdrew a light bomber division and two ground attack divisions to the Soviet Union. This was assessed by CIA as “a reorganization....necessitated by a switch to nuclear warfare.”³⁴

From a NATO perspective these moves would have been of exceptional concern. The deployment of an additional four or more divisions to Hungary could have been used to outflank weak West German defences via Austria, for example. Preliminary steps towards mobilization, of course, are a prime indicator of war. The shifting of large numbers of potentially nuclear capable aircraft, however, was interesting and in contrast to the activities in August. It seemed that the new posture was designed to defend against a possible NATO strike while the ground divisions were temporarily engaged in Poland and Hungary and have the bombers out of the way inside the USSR to strike back instead of to pre-empt. Or was it to get them out of the way in case East Germany revolted as it had done in 1953, and potentially could following the events in Poland and Hungary? In the 1953 case all Soviet Il-28 units and their ground support were evacuated to the Soviet Union through Poland.³⁵

There were further indicators of concern. Communications intelligence detected “a resumption of Long Range Air Force operations in the Arctic [with] impending operations extending as far east as Cape Schmidt on the Chukotsk peninsula.”³⁶ This was strategically significant. Given the more limited range of Soviet bomber aircraft, they needed to move from their bases in the western Soviet Union and then stage from the Arctic and the eastern Soviet Union to reach North American targets. If they were preparing for operations in these isolated locations, that was a potential problem. Other intercepted communications confirmed that on two occasions Moscow-based M-4 BISON nuclear bombers conducted aerial-refuelled crossings of the entire Soviet land mass and back to Moscow, clearly demonstrating an intercontinental capability to whoever was paying attention, in this case the NSA.³⁷ To top it off, an intelligence source warned that Khrushchev planned to detonate a nuclear weapon as a message and that this “statement was made in connection with an exposition

on Soviet desire to ban atomic tests. He added that in the absence of an agreement to ban tests, the USSR had no choice but to continue its tests.”³⁸

On October 29, Israel attacked Egyptian forces in the Sinai. This prompted Khrushchev to assert publicly and vocally on October 31, that the United States was in collusion with Great Britain and France. There was no specific threat at this time and thus American moves remained limited. SAC mounted exercise BEAVERBROOK which deployed twelve B-36 heavy bombers to Adana, Turkey. They were followed by six C-124 transport aircraft from Evreux Air Base, France, two of which conducted a classified mission which probably involved the extraction of non-combatants or intelligence personnel somewhere in the conflict area on October 29.³⁹ The purpose of the B-36 deployment is unclear but was probably related to the summertime JCS contingency planning or flight training, though prepositioning B-36 in Turkey gave them deeper reach into the Soviet Union if the EWP were activated. At this point, these B-36 aircraft probably were not equipped with nuclear weapons on this deployment but SAC had the ability to move nuclear weapons from storage sites in the United States to forward-deployed aircraft in an emergency using its four Strategic Support Squadrons equipped with modified C-124 transport aircraft.

Then on October 31, there was an exchange of messages between LeMay and Chief of Staff US Air Force, General Nathan Twining. In the first, LeMay railed against instructions to modify forward-deployed SAC bombers with conventional bomb racks to support the Middle East contingency plans. He did so reluctantly “recognizing the reluctance of certain political and even military elements to consider atomic bombing, we could be forced to revert to archaic conventional techniques.” In this redacted Top Secret message, LeMay appears to suggest requesting immediate access to the national stockpile “to preclude such distorted views from catching hold and clouding realistic thinking.”⁴⁰ Twining firmly told LeMay no and to do what he was told: “It is considered essential that the air force achieve maximum flexibility for limited military actions such as those envisaged in CINCNELM’s OPLAN,”⁴¹ that is, conventional bombing. When he couldn’t gain movement on that issue, LeMay requested permission to disperse SAC tankers to overseas sites in case he had to implement the Emergency War Plan. Again Twining turned him down and told him to hold tight.⁴² Which LeMay did.

Drifting Towards the Abyss: November 1956

The initial deployment of Soviet forces into Hungary stimulated unrest throughout the country but the Hungarian government asserted they could handle it in their own. Consequently, Zhukov recommended that Soviet troops in Hungary should be withdrawn. Indeed, Khrushchev held a high-level meeting to examine how the Soviets “reduce its military and security presence in each of the socialist countries” to preserve the Warsaw Pact.⁴³ However, the revolutionary violence and partic-

ularly the growing number of brutal revenge killings directed specifically at the Hungarian secret police, the AVH, gave Khrushchev pause. By October 31, "The Soviet leader had barely slept for days. Budapest, was, he said, 'like a nail being driven into my head.'" The leaders in East Germany, Czechoslovakia, and Romania all expressed their alarm chorus-like to Khrushchev. Faced with the fact that the "instability in Hungary was threatening to spill over into the rest of its Eastern European empire" he changed his mind and ordered Zhukov to go back into Hungary.⁴⁴

After inviting the Hungarian military leadership to a meeting on November 3, KGB personnel arrested all of them. The following day, Marshal Konev issued the code-word THUNDER-444 initiating Operation WHILRLWIND. Soviet forces launched into Hungary and for the next 72 hours engaged in a pitched battle with Hungarian revolutionary forces.⁴⁵ While WHIRLWIND was in play, Franco-British forces launched Operation MUSKETEER, the airborne and seaborne invasion of Egypt on November 5.

Several letters were delivered by Soviet ambassadors to France, Great Britain, Israel and the United States that day. These letters were followed up with a similar message on Radio Moscow. Dictated by Khrushchev but signed by Bulganin, the wording of the French and British messages implied that Soviet rocket forces would be employed if Op MUSKETEER were not called off.⁴⁶

In what situation would Britain [or France] find herself if she were attacked by stronger states, possessing all types of modern destructive weapons?...Were rocket weapons used against Britain and France you would most probably, call off this barbarous action?...We are fully determined to crush the aggressors by the use of force and restore peace in the East.

What was Khrushchev's motive for making this threat? There are several views on this. The first is that the threat was in support of a larger Soviet strategy to use the situation in Egypt in an attempt to prevent the Middle Eastern countries from coalescing around the West in the larger Cold War game with the even larger purpose of weakening American influence globally.⁴⁷ A second was that, given the Soviet position in Eastern Europe and in the Middle East, "Without any real military options, Khrushchev believed he had no choice but to exploit Western fears of Soviet nuclear capabilities" to extricate himself from the situation.⁴⁸ A third is that Khrushchev was exhausted and desperate and saw this as a means to distract his opponents from exploiting Soviet weakness vis-à-vis his position in Europe. East Germany was the linchpin for Soviet domination in Europe. If it were plunged into revolution like Poland and Hungary the Soviet strategic position would be completely untenable.

Eisenhower immediately sought and received advice from State, CIA, and the JCS. Ambassador Chip Bohlen in Moscow opined that he didn't see "the Soviet Union

deliberately starting World War III and reference to atomic and hydrogen weapons in communication may be merely designed to enhance dramatic effect...."⁴⁹ Eisenhower met with a small group of officials and expressed his concern that "the Soviets, seeing their position and policy failing so badly that the satellites, are ready to take any wild adventure," that "the Soviets are scared and furious, and there is nothing more dangerous than a dictatorship in this state of mind. He referred to Hitler's last days in this connection" and he wanted a fuller analysis before he made any decisions.⁵⁰

CIA produced a Special Intelligence National Estimate the next day. Agency analysts firmly believed that the Soviets had objectives related to distracting the situation in the satellites, damaging "the interests and prestige of the UK and France and divide and weaken the Western Alliances" but wished "to avoid general war." The new missile system, which they credited with having an 800 nautical mile range, could only reach Britain and France if they were deployed forward to the satellites. "Air to surface missiles and probably submarine launched missiles are also within current Soviet capabilities and could pose a threat to all areas." That said, they did not "believe that the USSR would employ guided missiles with nuclear warheads in the Egyptian-Israeli conflict."⁵¹

The Joint Intelligence Committee disagreed with CIA, specifically on the Soviet potential to use other forms of airpower in the crisis.⁵² And this was valid criticism. The Soviets possessed at least 1300 TU-4 BULL bombers similar to the B-29, 300 TU-16 BADGER jet bombers, and hundreds of Il-28 light jet bombers. Though not all of these aircraft were *Atomnyy*, they had already drop tested nuclear weapons from all three types, and the TU-16 was capable of delivering 250 kt yield weapons. They had plans to stage these aircraft from Arctic bases against North America. Indeed, what the American intelligence apparatus did not know was that the 13th bomber division with its three regiments of TU-16 bombers and associated aerial tankers based at Poltava and Migorod in Ukraine were already standing ground alert with nuclear weapons. Indeed, almost all of the TU-16s thus far produced were *Atomnyy*.⁵³ Simply put, the Soviets did not need R-5M ballistic missiles to make good on nuclear threats. This was not covered in CIA's special national intelligence estimates, which generally played down the bomber threat.

Under Admiral Arthur Radford's leadership, the JCS recommended 13 activities to improve American readiness. These included increasing the alert state for Continental Air Defense Command and augment North American surveillance; load and sail two nuclear weapons-equipped aircraft carriers to the mid-Atlantic; deploy all anti-submarine forces and reconnaissance submarines; reinforce the Pacific with two other aircraft carriers; alert all strategic airlift; warn all American commands; station an air task force at Adana Air Base in Turkey; and deploy SAC's tankers to their forward bases. Eisenhower approved all of these measures except the SAC tanker deployment.⁵⁴ It is evident that

Eisenhower saw activation of SAC in any form as a signal or card to hold back in this poker game with Khrushchev.

The JCS message that went out to all commands on November 6 stated that the diplomatic notes indicated “at a minimum a very disturbed situation in Moscow and may indicate serious indent on the part of the Soviets. JCS considers situation requires special vigilance on your part...This is not intended to extend to a general alerting of your command.”⁵⁵ LeMay repeated the message to his subordinate commands and instructed them to review the Emergency War Plan in its variants. Ongoing flight training could continue as long as the bomber wings retained the ability to carry out the EWP.⁵⁶

This is where the written record gets murky. Eisenhower’s Current Intelligence Bulletin for November 7, remains partially redacted and it appears as though the JCS all of sudden altered the American military posture that day.⁵⁷ The reason for that may lay in a phone call between Eisenhower and Eden: “Eden...put a great deal of emphasis on the Russian threat, on NATO involvement, etc. he had, for instance, said that he had information that two unmistakably Russian planes had attacked UK air facilities, presumably in the Suez area.”⁵⁸ An RAF Canberra reconnaissance aircraft was, in fact, shot down over Syria and British air defence forces on Cyprus detected a “large unidentified jet...flying over Cyprus. The inference was that this was a Soviet aircraft with a performance superior to the MiG-15 or Il-28....The purpose of this visit is obscure but it could not have been for visual or photographic reconnaissance.”⁵⁹

Another reason may lay in CIA’s analysis as conveyed through Allen Dulles at the White House. A number of important points can be drawn from it. First, Dulles asserted that “The USSR is quite ready to help break down the cease-fire in the Suez area and turn to further trouble-making in the area, short of general war.” As part of these moves, “the USSR is also ready to make a show of force with naval units from the Black Sea.” Such a move would involve Turkey, a NATO member. Second, “Moscow is already giving strong covert support to extremist elements” in Syria, Jordan, and Iraq with the purpose of “supporting a leftist coup in Syria to gain a base there.” The expansion of the crisis throughout the rest of the Middle East could lead to something larger and more dangerous.⁶⁰

The commander of United States Air Forces in Europe (USAFE), General William H. Tunner, contacted General Nathan Twining to confirm that his readiness measures were acceptable given the present situation. Twining told him that he was “advised to exercise extreme caution with regard to your readiness measures to avoid unduly alarming other National authorities.”⁶¹ This likely related to moving the nuclear-tipped Matorador cruise missiles stationed in West Germany to a higher level of readiness as they played a crucial role in the overall Atomic Strike Plan supporting NATO and in turn the EWP itself.⁶² A currently unavailable JCS mes-

sage to LeMay dated November 7, entitled “Improve State of Readiness” was also sent.⁶³

The following day, November 8, USAF Operations contacted the State Department to request Canadian clearance for Operation ROAD BLOCK, a SAC operation that involved a large number of bomber aircraft that would operate in Canadian air space. The movement of nuclear weapons or components by air in or through Canadian airspace was subject to a highly classified agreement called the XYZ Procedures, Another operation, PINE GROVE, was tentatively scheduled for early January 1957.⁶⁴ The November 8 request involved the movement of 72 B-47 aircraft, “thirty of the B-47s will carry both nuclear components and non-nuclear; six will carry only nuclear.” PINE GROVE was projected to involve 180 B-47s with 69 of them carrying nuclear and non-nuclear components, and three carrying nuclear only. The ROAD BLOCK date for planning purposes was November 29-30, with an expected return date of December 3-5. There was no destination given to the State officials handling this. It is clear from the Air Force-State discussion that ROAD BLOCK was relatively open ended, that is, it was not the routine wing rotation to bases in the United Kingdom. It is equally clear that both the USAF and State did not want at this time to “give the impression of greatly heightened SAC activity.”⁶⁵ In effect the ROAD BLOCK and PINE GROVE request was a form of contingency request originating with SAC headquarters then passed to USAF Headquarters and not the other way around.⁶⁶ That is, USAF headquarters approved SAC’s request for the operations and State prepared the bureaucratic ground for it. Due to the operation’s size and geographical extent, LeMay had to have either come up with the plan himself, or it came from his staff and he approved it before sending it up the chain of command. The fact that the operation was approved by USAF headquarters demonstrates that USAF Chief of Staff General Nathan Twining was aware of ROAD BLOCK and PINE GROVE, the relationship between the two, and the purposes underpinning them.

The events of November 10, however, moved the crisis to a new level. Another Soviet threat to deploy “volunteers” to the region was received after British and French troop withdrawal deadlines were not met.⁶⁷ Communications intelligence picked up the movement of 25 Soviet transport aircraft from a base east of the Urals to Proskurov air base in Ukraine, the home station of a regiment belonging to the 39th Guards Airborne Corps.⁶⁸ The movement of significant transport resources to augment those already in Ukraine would have been of some concern. Were they to be used to augment Soviet operations in Eastern Europe, or used to intervene in the Middle East? Another indicator was the detection of the accelerated evacuation of Soviet dependents in East Germany.⁶⁹

The situation plateaued from November 10 to 13 and here we enter a period of documentary obscurity. U.S. State Department records depict White House dis-

cussions on the generalized concerns that the Soviets were fomenting a coup in Syria to use it as a base; the possibility that Nasser was dragging his heels on permitting the UN Emergency Force to deploy so that Soviet elements in the form of “volunteers” could get to Egypt first; and the larger issue of expanded Soviet influence in the region interfering with the Western oil supply.⁷⁰ The President’s Current Intelligence Bulletin for November 10, reported that Soviet embassies in the Middle East were burning their files and evacuating dependents.⁷¹ Another issue of concern was the sudden mobilization of Israeli forces on November 11-12, in response to the Syrian situation.⁷² Throughout this period, however, American and other NATO naval forces made “multiple submarine contacts in the Atlantic, the Mediterranean, and the Black Sea.” This was believed at the time to be one aspect of the larger alerting of the Soviet armed forces.⁷³

None of this explains, however, why on November 14, the JCS “in a decision cleared with the Secretary of Defense, directed the Chief of Staff of the USAF to place SAC in a state of increased readiness and deploy tanker aircraft to Labrador, Newfoundland, and Greenland.”⁷⁴ The SAC staff at USAF headquarters also submitted a request for a specific increased readiness measure that remains classified but had “verbal approval of the Chairman of the JCS.” SAC was told that “No airlift beyond SAC resources can be made available for this purpose” though the headquarters took action to notify an entity that also remains classified.⁷⁵ Though the documents have not been declassified, their titles are: “Dispersal and Custody of Atomic Weapons” and “Emergency Transfer of AEC weapons to the DOD.”⁷⁶ So by November 15, 1956 the deployment of nuclear weapons was clearly under consideration and Secretary of Defense Charles Wilson was knowledgeable of that course of action as it evolved.

Two Soviet events likely contributed to the decision to do so. On November 18, Eisenhower was briefed that the previous day the Soviets detonated a 900 kt thermonuclear weapon at the Semipalatinsk test site and then announced they had done so after the fact.⁷⁷ Was a signal? It was a single shot held outside of the usual Soviet test period which tended to be from August to September. The previous test series, which consisted of four shots and concluded with a 900 kt shot, wrapped up back on September 9.⁷⁸ Khrushchev announced internally back in late October he planned to do this singular shot. And the previous test series had not been announced or commented upon at the time or after. The second event involved communications intelligence that Tiksi airfield in the Soviet Union was reporting to its higher headquarters that it was serviceable and capable of taking TU-4, TU-16, M-4 and TU-95 aircraft. Eisenhower was also briefed on this.⁷⁹ Tiksi airfield is located mid-way along the Soviet Union’s Arctic coast and was a staging airfield that allowed bomber aircraft the ability to hit targets in North America.

It is equally possible that developments between Syria and NATO ally Turkey also played a role. Eisen-

hower was briefed on November 18, that a rightist coup in Syria was thwarted by pro-Soviet leftists. At the same time, the Turkish armed forces cancelled its leave, brought its forces on the Syrian border to an increased state of readiness, deployed additional armoured forces to the Syrian border, and put the entire air force on standby alert.⁸⁰ This new tense stand off involved Turkish air force Sabre reconnaissance aircraft overflying Syria looking for Soviet aircraft after the Soviets offered military personnel to Syria for training and technical support. Indeed, Eisenhower was warned that Turkey had plans to warn the Soviets not to “establish a base in Syria.” While the Americans expressed concern that the Turks might invade Syria, the Soviet propaganda apparatus shrilly claimed there was a British-French-Israeli plan to invade from the south.⁸¹

What were the cumulative effects of these developments on Eisenhower? He says absolutely nothing about them in his memoirs and does not even discuss events after November 11.⁸² Yet on November 17, SAC sent a message to Air Material Command regarding increased readiness levels.⁸³ Air Material Command was responsible for the 3079th Aviation Depot Group, the U.S. Air Force nuclear weapons storage and maintenance formation whose purpose was “to receive weapons from the AEC for training exercises, manoeuvres, execution of the EWP or as directed by higher authority.”⁸⁴ Then on November 19, SAC asked the U.S. Air Force to request authority for the dispersal of nuclear weapons.⁸⁵ The use of the word “dispersal” is important. This related to Presidential authorization to provide the JCS’s unified and specified commanders with a specific number of weapons for a particular purpose, not just the spreading of nuclear weapons around to various sites to prevent generating concentrated targets.⁸⁶

The actions and activities of November 19 vis-à-vis American nuclear forces were likely related to the movements of Soviet nuclear forces. The American and Canadian communications intelligence collection system was in high gear covering the Arctic approaches throughout the crisis with its perfectly positioned station at Alert, North West Territories and one of its primary targets was the Soviet long-range direction finding (DF) network. On November 19-20, surveillance of that network produced something disturbing. The first were the DF communications reporting on a single TU-95 BEAR long range bomber as it departed Uzin, Ukraine and flew a “14 hour round-robin flight” from there to a point north of Franz Josef Land in the Arctic, over to Novaya Zemlya, and back to Uzin. The aircraft was tracked by the DF network for the whole flight. This flight, however, demonstrated that it could reach North American targets over the Arctic unrefuelled and strongly suggests this was a signal from the Soviet leadership. Eisenhower was briefed on the event on November 21.⁸⁷ (Figure 2)

But that was not all. During the same period November 19-20, communications from another aerial event were intercepted. The same Soviet DF network reported on more than 20 aircraft flying from Moscow to

Novaya Zemlya. When the aircraft passed the 80th Parallel north of Franz Josef Land, the DF network stopped their reports for the rest of bombers' flight. The analysts noted that "The length of the flight suggests that the aircraft were medium or heavy bombers rather than transports."⁸⁸ Post-Cold War Russian sources note that these were Tu-95 BEAR bombers, and they flew all the way to the North Pole and back.⁸⁹ Again, Eisenhower was informed on the progress of the flight. No Soviet bombers were based at the Moscow airfields with the exception of a handful being used for tests at Ramenskoye. The analysts noted that "Although long-range bombers have been observed in isolated flights above the 80th parallel since March, this is the first time aircraft are known to have operated in the area in strength."⁹⁰ Notably, the bases on Franz Joseph Land permitted the shorter-ranged TU-16s to stage against targets, especially SAC targets in Northern Canada, or to stage from ice runways at the three Soviet drift ice stations to reach targets in the United States.⁹¹ This Soviet flight was an even clearer signal. Having it originate from Moscow rather than Ukraine and then having it apparently disappear electronically over the Arctic was subtle and sophisticated all at once.

The Nuclear Dimensions of Operation ROAD BLOCK: November 1956

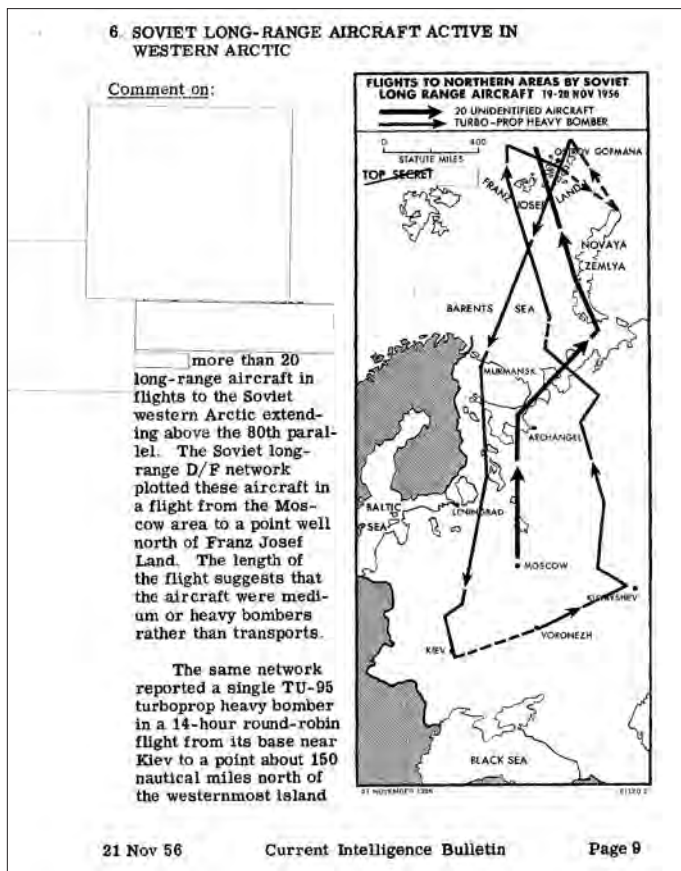


Figure 2. On November 19-20, 1956, SIGINT detected a flight of 20 Soviet strategic bombers flying from Moscow to the Arctic. The intelligence apparatus lost track of them when they stopped communicating in the vicinity of Franz Joseph Land (CIA).

Having been given the go ahead by the operations staff at the USAF, Burke Elbrick of the State Department met with Canadian ambassador A.D.P. Heeney on November 19, and briefed him on ROAD BLOCK, specifically the nuclear component of the operation. No destination for the aircraft was given, but this did not appear to have deterred Heeney who referred the matter to Ottawa. On November 23, overflight clearance was given. Internal State discussion on ROAD BLOCK noted that "such large operations apparently constituted a change from past practise" and there was "the possibility that Soviet intelligence was sufficiently good to permit them to be aware of these operations with the possibility of reactions on their part." Given the large numbers of aircraft involved, "Mr Murphy...told me that he would see that the President was made aware of these...operations."⁹²

Despite having high level access to the President, Robert D. Murphy, Deputy Undersecretary of State of Political Affairs was likely not read-in on the specifics of how nuclear weapons were handled between the AEC, JCS, the USAF and the President as these were some of the closest-held secrets in the U.S. Government at the time. As noted earlier, both atomic and thermonuclear weapons employed cores that were inserted into pits, that is, the implosion system. The cores remained in AEC custody, though the bomb casings containing the pits and in the case of thermonuclear weapons, secondaries, could shift to the custody of the U.S. Air Force under certain conditions. The formal process in 1951 was that the JCS requested that "complete weapons or nuclear cores" for be transferred to DOD. Then the President and the Secretary of Defense met with a special National Security Council committee where the President "gave appropriate instructions" to the AEC Chairman and Secretary of Defense. In practice, the President consulted directly with the AEC Chairman and it appears as though both men had to agree to the proposition before it could move forward regardless of whether the transfer was for training, deployment, or emergency use.⁹³ When Eisenhower took over, a more sophisticated system was established for emergency authorization involving an authenticated conference call that included the AEC Chairman, Lewis Strauss, the Secretary of Defense and the Joint Chiefs. Automated messages requesting and authorizing the transfer of nuclear weapons between the AEC and DOD, and finally a separate message from the President authorizing nuclear weapons use were employed. This process was for emergency use and did not address the release of components for manoeuvres short of war.⁹⁴

In 1955 capsules for high-yield weapons could only be transferred "in accordance with [a] Presidential Directive Implementing the Emergency Transfer Plan." Even then, "No active capsule will be inserted into any high yield weapon under AEC custody except with the expressed approval of the AEC custodian and in the custodian's presence." As for the casings, "components other than capsules containing [special nuclear material] will remain stored in AEC-controlled structures and accom-

panied by AEC custodians” except when the President implemented the Emergency Transfer Plan or when the casing was being used by on-base personnel inspection, maintenance, modification or readiness exercises.⁹⁵

After several tests in 1956, Eisenhower approved an AEC-DOD memo of understanding whereby the AEC could transfer custody of casings and cores to DOD without higher authority under specific conditions. Those conditions were if Defense Emergency or Air Defense Readiness Red or Yellow were declared. Defense Emergency, which explicit criteria that had to be met before it was called, could be declared by any of the CinC’s, including CinCSAC.⁹⁶ This included “a major attack by a member of the Sino-Soviet Bloc is made upon [US or allied forces] overseas” or the United States and “is confirmed either by the commander [of a JCS command] or by higher authority” or if a “condition of Air Defense Readiness or Air Defense Emergency is declared by CINCCONAD or CINCNORAD or higher authority.”⁹⁷

In 1957 another arrangement was implemented between AEC, Air Material Command, SAC, and the Armed Forces Special Weapons Project. A number of weapons were designated to be dispersed to SAC immediately “upon the declaration of ‘Dispersal Emergency’ or ‘SAC Alert’ by Commander-in-Chief SAC. This eliminated the requirement for AEC authority for release of weapons during periods of tension or emergency.”⁹⁸ In other words, that arrangement was not in effect in 1956, so AEC still had to authorize the custody change during the period of tension known as the Hungarian-Suez crises.

Thus if the AEC had to authorize the custody transfer of nuclear weapons for ROAD BLOCK, who authorized the it to do so if there was no Defense Emergency or Air Defense Readiness situation? It appears as though the AEC did, in fact, have the authority to transfer bomb casings and cores for atomic weapons and thermonuclear casings without cores to DOD for manoeuvre purposes on demand without specific Presidential authorization, with the thermonuclear primary cores remaining in AEC custody subject to the President authorizing nuclear weapons use.

The JCS message to LeMay on November 7, to improve readiness and the November 14 authorization for the JCS to increase readiness which led to ROAD BLOCK were approved by the Secretary of Defense, but there is no available primary or secondary source making the link from the Secretary of Defense to Eisenhower. That said, we must conclude the following. The Chairman of the Joint Chiefs of Staff and the Chief of Staff US Air Force were aware of ROAD BLOCK. The State Department and the Canadian government were aware of ROAD BLOCK and Murphy told his staff he would make the President aware of the operation. The Secretary of Defense had approved the JCS request to increase SAC readiness, which included ROAD BLOCK. All of these entities were aware the manoeuvre involved a large number of nuclear weapons. The AEC transferred the weapons and weapons components to DOD,

so the AEC was obviously aware of ROAD BLOCK. Is it really logical to suggest that President Eisenhower was completely unaware of ROAD BLOCK?

Collaterally, this technical and procedural digression provides insight into the role of Curtis LeMay, a man accused by journalists, politicians, political advisors, and historians of overreaching his authority to dangerous levels so beautifully mocked in the film *Dr. Strangelove*.⁹⁹ ROAD BLOCK and the other SAC activities during the crisis were not rogue operations by any stretch of the imagination and there is no indication that responsible civilian authorities were not informed of these specific SAC activities. Yes, LeMay leaned forward and yes, LeMay disagreed with many on how airpower should be employed. But he remained obedient to both military and civilian authority during this crisis.

Climax: SAC Operations, November-December 1956

The day after the Soviet Arctic bomber flights, a mini-Berlin crisis presented itself. In this case “five of the seven regularly scheduled Allied military trains passing between Berlin and West Germany were subjected to unusual controls and delays by Soviet authorities. Three American, one British, and one French train were detained in train sheds where an unusual number of armed Soviet soldiers were on hand.”¹⁰⁰ The movement of these troop trains back and forth to West Berlin were a regular event guaranteed under treaty. The idea that a mere Soviet colonel who was the acting commandant for Berlin acted on his own initiative to openly interfere with West Berlin transit arrangements on this scale beggars belief. The harassment continued throughout late November.¹⁰¹ And again, these events were not mentioned in Eisenhower’s 1965 memoir, *Waging Peace*, or Khrushchev’s memoir *Khrushchev Remembers*.

There was significant and varying SAC activity at this time but the question is, how much of it was signalling in response to the increasingly complex crisis environment and, if so, by whom and for what purpose? SAC conducted pre-Emergency War Plan reconnaissance operations in November and December 1956. A pair of RB-47 reconnaissance aircraft deployed to Incirlik, Turkey on November 24, for a special project operation dubbed SAM SPADE, involved “high priority unprogrammed missions.”¹⁰² SAM SPADE probably was designed so that SAC could update the Soviet air defence’s electronic order of battle in the Caucasus and Black Sea regions in the event the Emergency War Plan was implemented. This was ferreting as opposed to signalling. Similarly, SAC also conducted Operation POWER HOUSE out of Thule Air Base from mid-November to December 15. POWER HOUSE involved five RB-47 from the 26th and 55th Strategic Reconnaissance Wings and 37 KC-97 tankers from two separate squadrons. These aircraft were collectively “conducting classified reconnaissance missions as directed by SAC Headquarters.”¹⁰³ They were likely collecting on the Soviet air defence electronic order of battle in case the EWP

had to be activated. The numbers of ferreting aircraft appears to have been deliberately kept small. Earlier in March- through May 1956, SAC conducted Project HOME RUN, which involved the sustained probing of the Soviet air defence system with pairs of RB-47s followed by the mass overflight of Eastern Siberia with six aircraft.¹⁰⁴ The POWER HOUSE flights were much more limited, less intrusive and likely did not constitute crisis signalling.

That cannot be said about Operation QUICK KICK. QUICK KICK started off as a SAC public relations exercise in response to media criticism of the reliability of the newly-deployed B-52 Stratofortress bombers in the summer and fall of 1956. To disprove the critics, LeMay wanted several flights of B-52s were to conduct simultaneous endurance missions using aerial refueling to Japan, North Africa, the United Kingdom, and Hawaii. The fact that the Soviets also would be taking notes was not purely coincidental to QUICK KICK. That said, the game suddenly changed in November when the units engaging in planning QUICK KICK were instructed by SAC Headquarters to alter the operation. The missions that were flown by the B-52s on November 24, had rather different flight plans.¹⁰⁵ (Figure 3)

Eight B-52s from the 93rd Bomb Wing departed Castle AFB, California, refueled over Lockbourne AFB in Ohio, and then four returned to Castle. The other four passed Chicago, and turned northeast towards a point east of Loring AFB, Maine over New Brunswick, Canada. They then to flew to Thule Air Base, Greenland, where a simulated bomb run was made followed by a second aerial refuelling. From there, “two B-52s continued their flight over the North Pole,” then turned southwest to Elmendorf AFB, Alaska where a third aerial refuelling took place, then to Abilene, Texas for a fourth refueling. The aircraft split and landed at Baltimore international airport and Loring AFB, Maine. Four more B-52s from the 42nd Bombardment Wing at Loring AFB, Maine also took off on a route that took them over the North Pole to a point near Franz Joseph Land, then to Elmendorf Alaska, down the west coast then over the Florida and back to Loring on November 25.¹⁰⁶ Of note, this route is similar to that used by B-52s of the CHROME DOME Airborne Alert Force in the 1960s. Route maps from 1956 clearly show that the aircraft were at the top of the world on November 24-25. Were these B-52s carrying nuclear weapons? The situation suggests they were not. There was no XYZ clearance requested for them so they could operate in Canadian air space.

But why send in QUICK KICK before ROAD BLOCK when its 72 B-47s were about to start a mass flight into the north? This was probably LeMay’s crafty opportunism. QUICK KICK served multiple concurrent objectives and there may have been one more. The Soviet intelligence apparatus at this time included GRU detachments stationed on Soviet drift ice stations in the Arctic, in addition to stations at Franz Josef Land and in the Soviet Union proper. One such station, “North Pole 4,” had drifted past the North Pole throughout 1956

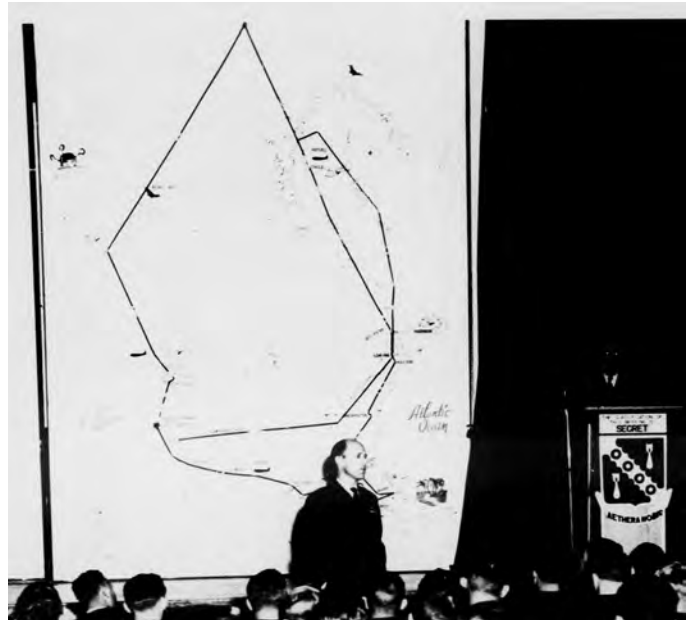


Figure 3. Operation QUICK KICK involved a force of B-52's that flew into the Arctic inside the detection envelope of Soviet detection stations located on drift ice stations near the North Pole. This photo depicts the QUICK KICK flight track provided during a classified briefing given to the 42nd Bombardment Wing (Heavy) in November 1956. (U.S. Air Force, *History of the 42nd Bomb Wing (H)*).

and was on a trajectory towards Greenland. Initially established to investigate DEW Line emissions, “American strategic aviation flights” became a top priority target. The drift stations also had early warning radar systems and these had been photographed by the Royal Canadian Air Force. LeMay knew about the Soviet intelligence collections stations, specifically the one at Ostrov Rudolfa in Franz Joseph Land, because they had been photographed by SAC aircraft during Project HOME RUN earlier in 1956.¹⁰⁷ In areas the Soviet Arctic stations’ sensors could not reach, there were the ubiquitous Soviet “trawlers” ready to scoop up any transmissions or emissions from American aircraft and track them by radar.¹⁰⁸ If ROAD BLOCK was a signal, it would have been a good idea to ensure the Soviets were listening first and QUICK KICK was a means to do so.

With the ‘Polyarki GRU’ now paying attention, ROAD BLOCK commenced on November 29, with the departure of 72 B-47 aircraft. The units selected for the operation were the 100th Bombardment Wing (Medium) at the still under construction Portsmouth Air Force Base in New Hampshire; and the 301st Bombardment Wing (Medium) at Barksdale, Louisiana.¹⁰⁹ The 100th Bomb Wing conducted the operation without weapons: it was a brand-new formation and their Special Service Facility was not completed yet. As the wing was not fully integrated into the Emergency War Plan, SAC could afford to use it for a signalling operation like ROAD BLOCK while more experienced units remained on ground alert. The 301st, on the other hand, was stationed right next to the AEC National Stockpile Site Bossier Base. Bossier Base consisted of over 60 nuclear weapons storage ‘igloos’ and had a special loading ramp

between the storage base and the main runway to facilitate rapid aircraft loading. The 301st B-47s were loaded with casings and pits for either Mk 15s (1.8 to 3.8 megatons), Mk 21s (18 megatons), or both, and possibly a handful of complete improved Mk 6 atomic weapons (variable yield up to 180 kt) that could be flown with their cores in.¹¹⁰ As there was no Presidential direction to do so, no cores were loaded into the thermonuclear primaries. This begs the question. Why were nuclear weapons without their cores being flown on ROAD BLOCK? At this point in the Cold War B-47 crews rarely had the opportunity to fly with a nuclear weapon on board. The weight of the weapon alters the flight characteristics of the aircraft and the more comfortable a crew is with those characteristics, the more effective they would be in the event they had to execute their Emergency War Orders. The operation also permitted a test of mass load techniques from Bossier Base, which, incidentally, were found deficient and changed in 1957.¹¹¹

The 301st Bombardment Wing's 30-plus B-47s departed Barksdale, flew northeast to a point over the Atlantic where they were refuelled by KC-97 tankers. (Figure 3) Normally, a single KC-97 squadron, in this case, the 55th Air Refuelling Squadron, was based at Ernest Harmon Air Base in Newfoundland. Three other KC-97 refuelling squadrons—the 99th, 91st, and 98th—arrived between November 15 and 16, prior to ROAD BLOCK.¹¹² Additional tankers were likely stationed at Goose and Thule. (Figure 4)

A second refuelling took place near Greenland where the force turned northwest “to a geographic point near the Arctic Circle.” At this point the aircraft were between 32,000 and 40,000 feet, and thus more readily detectable by Soviet systems. The flight broke up into cells of four aircraft each and proceeded southwest over Canada, “to make simulated bomb runs as we penetrated the border and hit selected targets in the U.S.”¹¹³ The 100th Bombardment Wing's flight path is unavailable at this time but its 30-plus B-47s probably conducted a similar manoeuvre.

The Soviet surveillance apparatus would essentially have seen a steady stream of B-47s proceeding parade-like in the direction of the North Pole from the Labrador Sea-Greenland area and then altering course over the Davis Strait to head south over Canada. A manoeuvre on this scale, 72 aircraft, had never been done before and it would have been as unprecedented to the Soviet analysts as much as the Soviet bomber flight on November 19-20, was to American analysts. Unfortunately, one of the 301st B-47s had a mechanical failure and crashed near Ray Lake, Ontario killing three of its four crew members. A massive joint Canadian-American search and rescue effort was launched to recover the downed pilot, Major Robert Slane, the remains of 2nd Lt's Richard Martin, Donald Petty, and 1st Lt Max Workman, and what was left of B-47 serial number 523360.¹¹⁴

So how do we know that Khrushchev received the message? Nothing appears in his memoirs, nor in the lost Khrushchev tapes, nor in his son's memoir.¹¹⁵ That

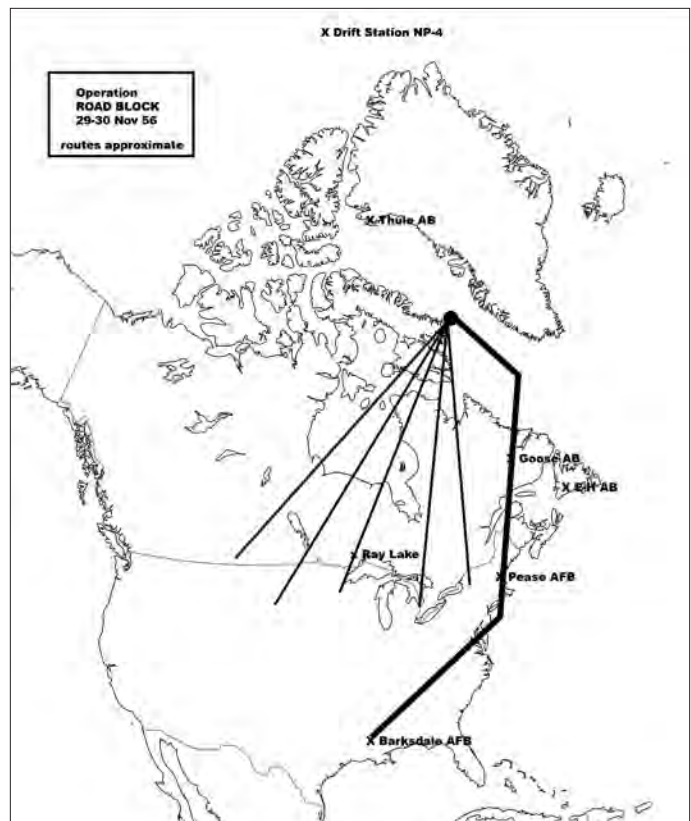


Figure 4. Operation ROAD BLOCK route map.

said there were no further Soviet aerial demonstrations, small or large, reported in December 1956 or January 1957: the next BISON aerial refuelling exercise did not take place until late February 1957.¹¹⁶ Nuclear detonations at Semipalatinsk did not resume until the March-April 1957 test series, and the largest device tested only yielded 680 kilotons.¹¹⁷ There were no more demands to pass naval forces through the Dardanelles. The Soviet airborne forces concentrating in Ukraine did not deploy. There was episodic but unsystematic small scale harassment of Berlin access routes.

What we do know on the American side is that on December 3, United States Air Force Headquarters authorized SAC to “redeploy tanker squadrons from advanced bases to home bases on 14 Dec subject to review of the international situation about 10 December. The foregoing prompted primarily by requirements to resume operation training and improve overall readiness posture and is not interpreted as reflecting a relaxed international situation.”¹¹⁸ On December 8, the JCS ordered SAC to “revert to normal readiness and training.”¹¹⁹ The POWER HOUSE reconnaissance operations wrapped up on December 15.¹²⁰ Eisenhower did, however, authorize the use of atomic weapons for air defence operations on December 14.¹²¹ PINE GROVE, the planned follow-on to ROAD BLOCK using an astonishing 180 B-47s, was cancelled. In other words, Eisenhower was convinced that the message had been received and the American posture deliberately shifted from signalling to strictly defence. There are some clues as to why this was so. One lies in the December 1, 1956 Current Intelligence Bul-

letin. The pattern of Soviet harassment directed at Western military movements in and out of Berlin abruptly changed. A U.S. Army truck convoy transiting from West Germany to Berlin cleared the Marienborn checkpoint in East Germany but was stopped temporarily at the Berlin end. A Soviet lieutenant colonel demanded to inspect the vehicles. The convoy commander predictably refused. The convoy proceeded after the Soviet officer verbally admonished the convoy commander.¹²² The December 7 Current Intelligence Bulletin noted that “Tensions over the Suez Canal Problem have been reduced as a result of the announced intention of the British and French to withdraw their troops.”¹²³

Recapitulation

What does it all mean? The Hungary-Suez crisis extended into late November 1956 as opposed to the accepted denouement established in the historiography which is usually early to mid-November, and during that time there was a period of intense signalling between the superpowers using nuclear forces. The movements of Soviet and American nuclear forces were deliberately used by both sides as signalling devices to indicate their concerns over courses of action during the crisis period (One must recall these actions occurred during the pre-“Hot Line” years). The whole situation shifted from ambiguous Soviet nuclear threats against Britain and France to an escalating series of Soviet military activities directed at the United States to remind the Americans that the Soviet Union had clout and their diplomatic actions needed to be taken seriously. These moves were met with an overwhelming American response that demonstrated qualitative and quantitative nuclear force superiority. Soviet action in the wake of that demonstration was to disengage and return to pre-crisis levels of activity almost immediately after the final American demonstration.

What of Khrushchev and signalling? The rocket threat in the Bulganin letters is almost as casual or impulsive as it is ambiguous. The movements of Soviet nuclear forces and their accompanying threats correlating to the slow Anglo-French progress on withdrawal come across as impatient, demanding, and petulant, that is, reflective of Khrushchev’s personality when he was under stress. The 900 kt detonation on November 17, seems almost impulsive. Yet the Soviet bomber flights of November 18, and the Berlin corridor harassment are subtle and calculated, almost as if another was directing events, possibly even Zhukov. And what did Khrushchev gain with his signalling methods? The Anglo-French force withdrew, but it would have anyway. Eisenhower did not support the Anglo-French Suez enterprise and took steps to express his displeasure to his allies and that is what they responded to, not the rocket threat.¹²⁴ If Khrushchev believed there was specific American meddling in the Eastern European situation, meddling that warranted a nuclear threat, there is no discussion of it anywhere. NATO was not postured to intervene in

Eastern Europe, NATO had no intention on intervening in Eastern Europe at this time, so it wasn’t being deterred by Soviet activities or threats. Indeed, Soviet military movements in Eastern Europe were alarming and potentially destabilizing. Berlin corridor harassment is easier to explain: Khrushchev reportedly said that “Berlin is the testicles of the West. Every time I want the West to scream, I squeeze on Berlin.” There is, however, no adequate explanation for the large-scale Long Range Air Force exercise in the Arctic on November 19-20, or what the Soviets hoped to achieve with it. It appears as though Khrushchev calmed down (or perhaps got more sleep) and started moving chess pieces again after fits of impulsivity. The most likely scenario was that it was a test to see how far the Eisenhower and the United States would go to respond to more blatant military activity and thus establish a notional red line. Indeed, the recent alarming Russian military movements around Ukraine in March 2021 seem to be designed for exactly the same purpose, to test the adversary’s leadership and their limits to see how much room to manoeuvre there is in other spheres of competition. The calculated, overwhelming American response that the November 19-20, exercise and the nuclear test established that red line...which Khrushchev would proceed to push again and again until Cuba in 1962.

The crucial role of communications intelligence and how it was presented and handled by Eisenhower is notable. Without it, Soviet signalling would, perhaps, have been much coarser or subject to misinterpretation. This COMINT material was presented in such a way that Eisenhower could interpret its meaning for himself. These were not “canned” assessments by Agency analysts. Making the direct connection between that intelligence and specifically how he used it, however, is more murky as not everything was written down. Eisenhower’s thought processes on these matters went to the grave with him so we are left to infer how this mechanism operated. That said, the correlations between information and action are not gratuitous and there is a convergence of evidence that rests within tolerable and logical norms. Eisenhower’s careful yet resolute responses during the crisis ensured that the American position was not compromised, particularly when it came to Khrushchev’s flirtation with nuclear-backed diplomacy.

Then there are the pressing matters of civil-military relations and command and control. General Curtis LeMay was not a rogue actor during the course of events: one could legitimately argue that Nathan Twining had him firmly under control. Strategic Air Command activities were consonant with the crisis situation and were in no means overly provocative in that aggressive, active ferreting did not take place, nor did SAC aircraft overfly the Soviet Union. There is no evidence that LeMay attempted to provoke war at any stage of the crisis. Indeed, he could not because the nuclear weapons stockpile was not configured to do so and the force was not on a “hair trigger.” The vast majority of the American aircraft engaged in signalling were incapable of de-

livering a weapon that would detonate with a nuclear yield in any event. Civilian control over American nuclear forces was evident, especially at the AEC-DOD level regarding stockpile controls and release. The JCS was also demonstrably responsive to civilian control throughout the crisis. At no point did Admiral Arthur Radford or others push anything resembling preventive war. Of note, and for comparative purposes, the deliberate use of the SAC Airborne Alert Force during the Cuban Missile Crisis of 1962 to signal Khrushchev and facilitate a resolution to that crisis may have had its origins in the events of 1956, specifically the ROAD BLOCK and PINE GROVE operations that employed the presence of increased numbers of SAC bomber aircraft in the Arctic to demonstrate capability to the Soviet leadership in Moscow.¹²⁵

Of equal interest is the contrast between John Foster Dulles's declaratory Massive Retaliation policy and

the more flexible response-like moves recommended by the JCS and made by the United States during the crisis. Initial JCS planning in the Middle East region had an escalating series of deterrent actions, then conventional bombing. The debate between Twining and LeMay on the use of SAC aircraft for conventional operations and possibly the BEAVERBROOK B-36 deployment underscore the fact that there was contention on the issue, but recognition at the JCS level and ultimately by LeMay that conventional activities or nuclear activities short of mass nuclear weapons use were desirable in crisis situations. Perhaps American nuclear weapons policy in the 1950s was more flexible than we have previously understood. In the final measure, we should consider the possibility that the final stages of the Hungary-Suez crisis were resolved in the freezing air of the Arctic and not in the smoke-filled rooms of the United Nations in New York. ■

NOTES

1. Association for Diplomatic Studies and Training, Foreign Affairs Oral History Project, interview with George McFarland, 2 Aug 99.
2. See for example David A. Nichols, *Eisenhower 1956: The President's Year of Crisis Suez and the Brink of War* (New York: Simon and Schuster, 2011); Dwight D. Eisenhower, *Waging Peace: The White House Years, a Personal Account 1956-1961* (New York: Doubleday Books, 1965); Keith Kyle, *Suez* (New York: St. Martin's Press, 1991); Terrence Robertson, *Suez: The Inside Story of the Suez Conspiracy* (New York: Atheneum Books, 1965); Selwyn Lloyd, *Suez 1956: A Personal Account* (New York: Mayflower books, 1978); Chester L. Cooper, *The Lion's Last Roar: Suez, 1956* (New York: Harper and Row, 1978); Stephen Z. Freiberger, *Dawn Over Suez: The Rise of American Power in the Middle East 1953-1957* (Chicago: Ivan R. Dee, 1992); Evan Thomas, *Ike's Bluff: President Eisenhower's Secret Battle to Save the World* (New York: Little, Brown and Co., 2012). None of these works reference the use of nuclear forces for signalling during the 1956 crises other than the Bulganin letters.
3. See Aleksandr Fursenko and Timothy Naftali, *Khrushchev's Cold War: The Inside Story of an American Adversary* (New York: W.W. Norton, 2005) and Vladislav Zubok and Constantine Pleshakov, *Inside the Kremlin's Cold War: From Stalin to Khrushchev* (Cambridge: Harvard University Press, 1996).
4. See for example, Stephen S. Kaplan, *Diplomacy of Power: Soviet Armed Forces as a Political Instrument* (Washington DC: The Brookings Institution, 1981); Barry M. Blechman and Stephen S. Kaplan, *Force Without War: U.S. Armed Forces as a Political Instrument* (Washington DC: The Brookings Institution, 1978); Francis Fukuyama, *Soviet Threats to Intervene in the Middle East 1956-1973* (Santa Monica: Rand Corporation, 1980).
5. David A. Anderton, *Strategic Air Command* (London: Ian Allen, 1975), 51-52; Norman Polmar (ed) *Strategic Air Command: People, Aircraft, and Missiles* (Annapolis: Nautical and Aviation Publishing, 1979), 45.
6. A.I. Aidin and S.A. Zelentsov, "Warming up the Nuclear Force for forging a Nuclear Sword," a conference paper from the Second Public National Forum-Dialogue Atomic Energy Society, St. Petersburg, 21-22 April 2008. As Aidin and Zelentsov make clear, the 80 kt yield that features in so many Soviet publications was "populist action."
7. CIA Research Search Tool [hereafter CREST], CIA Office of Current Intelligence, "Current Intelligence Bulletin [hereafter

- CIB] 2 Feb 56"; "CIB, 3 Feb 56"; "CIB, 4 Feb 56"; "CIB, 5 Feb 56."
8. Cooper, *The Lion's Last Roar*, 87. Another version of events is depicted in Robertson, *Suez: The Inside Story of the Suez Conspiracy*, 91, where Robertson depicts the Soviet delegation recognizing "the logic" of the British position but not threatening them.
9. Nikita Khrushchev, *Khrushchev Remembers*, trans. by Strobe Talbott (London; Andre Deutsche, 1971), 435. Khrushchev is disingenuous in his memoir. On page 405 he goes out of his way to explain that "We certainly didn't mean to threaten anyone" after a previous interchange during a state dinner where he was asked about Soviet ballistic missile ranges.
10. Kyle, *Suez*, 105.
11. Fursenko and Naftali, *Khrushchev's Cold War*, 57.
12. Library of Congress Manuscript Division (hereafter LCMD) LeMay Papers, box B-203, message JCS to LeMay, 18 Apr 56.
13. Kenneth W. Condit, *History of the Joint Chiefs of Staff Volume VI: The Joint Chiefs of Staff and National Policy, 1955-1956* (Washington DC: Historical Office of the Joint Staff, 1998) p. 169-170.
14. FOIA USAF "History of the 3079th Aviation Depot Group, January 1956-June 1956."
15. FOIA USAF "History of Detachment 10 TUSLOG 7216th Air Base Squadron, 1 July 1956 to 31 December 1956"; see also Sean M. Maloney, *Emergency War Plan: The American Domsday Machine, 1945-1960* (Lincoln: Potomac Books, 2021).
16. Condit, *JCS 1955-56*, 178-83.
17. Fursenko and Naftali, *Khrushchev's Cold War*, 105-6
18. LCMC LeMay Papers, box B-203, message JCS to unified and specified commanders, 31 Aug 56.
19. LCMC LeMay Papers, box B-203, message JCS to unified and specified commanders, 31 Aug 56
20. Simon Hall, *1956: The World in Revolt* (London; Pegasus Books, 2015). Hall's work, which is to a significant part derived from newly-opened information from the former Soviet regimes, captures this situation in some detail in chapters 5, 9, and 10.
21. There were also protests in Lithuania. See CIA CREST "CIB 15 Nov 56" and "CIB 13 Dec 56."
22. Fursenko and Naftali, *Khrushchev's Cold War*, 122-3.
23. CIA CREST, "CIB 21 Aug 56."
24. Serafim Mikhailovich Kulikov, *Aviation and Nuclear Tests*, (Moscow: TsNIIatominform, 1998), 13-14, 42-43, 49, 61-64; Maloney, *Emergency War Plan*, 43-79
25. Maloney, *Emergency War Plan*, 95-97.
26. CIA CREST, "CIB 7 Sep 56."
27. Hall, *1956*, 276.

28. CIA CREST, "CIB 30 Sep 56."
29. Hall, 1956, 279.
30. CIA CREST: Information Report "Survey of Recent Events, 18 December 1956."
31. Hall, 1956, 280.
32. Hall, 1956, 286-287.
33. CIA CREST: Information Report "Survey of Recent Events, 18 December 1956."
34. CIA CREST: Information Report "Survey of Recent Events, 18 December 1956."
35. Maloney, *Emergency War Plan*, 95-97.
36. CIA CREST, "CIB 18 Nov 56."
37. CIA CREST, "CIB 6 Oct 56"; CIA CREST, "CIB 17 Feb 57."
38. CIA CREST, "CIB 27 Oct 56." The analysts believed that the test would occur "on the periphery of the Barents Sea" that is, the Novoya Zemlya nuclear test site as opposed to Semipalatinsk in Kazakhstan.
39. USAF FOIA "History of Detachment 10 TUSLOG 7216th Air Base Squadron, 1 July 1956 to 31 December 1956."
40. LCMD Twining Papers, box 101, message CinCSAC to COFS USAF, 31 Oct 56.
41. LCMD Twining Papers, box 101, message COFS USAF to CINCSAC, 31 Oct 56.
42. LCMD Twining Papers, box 101, message CinCSAC to COFS USAF, 31 Oct 56.
43. Fursenko and Naftali, *Khrushchev's Cold War*, 128.
44. Hall, 1956, 343-349.
45. Hall, 1956, 343-499.
46. Kyle, *Suez*, 456-457.
47. Vladislav Zubok and Constantine Pleshakov, *Inside the Kremlin's Cold War: From Stalin to Khrushchev* (Cambridge: Harvard University Press, 1996), 190-191.
48. Fursenko and Naftali, *Khrushchev's Cold War*, 33.
49. *Foreign Relations of the United States, 1955-1957*, Volume XVI Suez Crisis July 26-December 1956 (Washington DC: GPO, 1990) [hereafter *FRUS*], message Bohlen to Department of State, 5 Nov 56, p. 995
50. *FRUS* Suez Crisis, memo of conference, 5 Nov 56, 1000.
51. *FRUS* Suez Crisis, "SNIE 11-9-56, "Sino-Soviet Intentions in the Suez Crisis," 6 Nov 56, 1018-1019.
52. Condit, *JCS 1955-56*, 182-183.
53. Yefrim Gordon, *Soviet Strategic Aviation in the Cold War* (Manchester: Hikoki Publications, 2009), 51-2; Yefrim Gordon et al., *Tupolev TU-16: Versatile Cold War Bomber* (Atglen: Schiffer Publishing, 2017), 70.
54. Condit, *JCS 1955-56*, 189-90.
55. LCMD LeMay Papers box B-203, message JCS to all CINCS, 6 Nov 56.
56. LCMD LeMay Papers, box B-203, message CINCSAC to numbered air forces, 6 Nov 56.
57. CIA CREST "CIB 7 Nov 56."
58. *FRUS* Suez Crisis, memo "Acting Secretary's Talk with the President," 7 Nov 56, 1047. Note that in the 7 November CIB there were reports of Syria that relocated Egyptian MiG-15 fighters allegedly shot down a pair of British Canberra reconnaissance aircraft. In reality, Syrian Meteor fighters intercepted an RAF Canberra reconnaissance flight transiting from Iraq to Cyprus and shot the aircraft down; Brian Cull et al., *Wings Over Suez* (London: Grub Street, 1996), 336-337.
59. Cull et al., *Wings Over Suez*, 338. Cull discounts the possibility this was a U-2 overflight.
60. CIA CREST, Letter Dulles to Higgs, "Status Report on the Near East given by the Director at the White House to a bipartisan Congressional Group, 9 November 1956." The Turkish government later denied that there was a Soviet request for naval force movement through the Dardanelles. See CIA CREST "CIB 10 Nov 56."
61. LCMD Twining Papers, box 101, message COSAF to CINCSAC, 7 Nov 56.
62. Maloney, *Emergency War Plan*, 156; Richard Boverie, "First USAF Missile Alert?" *Association of Air Force Missiles Newsletter* 13, no. 4 (December 2005): 1-2.
63. LCMD LeMay Papers, box B-205. The title was found in a list of Top Secret document control numbers. The message itself does not appear to be in the LeMay Papers, nor the Twining Papers.
64. Sean Maloney, *Learning to Love the Bomb: Canada's Nuclear Weapons During the Cold War* (Lincoln: Potomac Books, 2007), 52-53.
65. USNARA RG 59, box 3219, memo "Canadian XZY Procedures-Operations ROADBLOCK and PINEGROVE," 8 Nov 56.
66. SAC operation code names in the 1950s and early 1960s had a pattern in that they consisted of two easily pronounceable one-syllable words, usually but not always nouns: HARD ROCK, PINE GROVE, STEEL TRAP, SWITCH BLADE, GLASS BRICK. In contrast, non-SAC USAF code names at this time were generally singular like JUDO or SKYHAWK, or multisyllabic, ie: BUCKSKIN RIDER, PALACE LIGHTNING.
67. Condit, *JCS 1955-56*, 190-1.
68. CIA CREST "CIB 10 Nov 56."
69. CIA CREST "CIB 12 Nov 56."
70. *FRUS* Suez Crisis, 1101-1123.
71. CIA CREST "CIB 10 Nov 56."
72. CIA CREST "CIB 14 Nov 56."
73. CIA CREST "CIB 16 Nov 56."
74. Condit, *JCS 1955-56*, 190-1.
75. LCMD LeMay Papers, box B-203, message HQ USAF to CINCSAC.
76. LCMD LeMay Papers, box B-205. The title was found in a list of Top Secret document control numbers. The messages themselves do not appear to be in the LeMay Papers, nor in the Twining Papers.
77. CIA CREST "CIB 18 Nov 56."
78. Podvig, *Russian Strategic Nuclear Forces*, 487-488.
79. CIA CREST "CIB 18 Nov 56."
80. CIA CREST "CIB 18 Nov 56."
81. CIA CREST "CIB 24 Nov 56", CIA CREST "CIB 25 Nov 56."
82. See Eisenhower, *Waging Peace*, Ch III.
83. LCMD LeMay Papers, box B-205. The title was found in a list of dated Top Secret document control numbers.
84. FOIA USAF "History of the 3079th Aviation Depot Group, January 1956-June 1956."
85. LCMD LeMay Papers, box B-205. The title was found in a list of Top Secret document control numbers.
86. Generally, there was an "annual atomic weapons dispersal authority issues by the Joint Chiefs of Staff to commanders of unified and specified commands." LCMD Twining Papers, box 112, memo for SECDEF, "Withdrawal of DOD Memorandum, 29 Mar 60." See also FOIA DOD Office of the Assistant to the Secretary of Defense (Atomic Energy), "History of the Custody and Deployment of Nuclear Weapons July 1945 Through September 1977", specifically, "The numbers of weapons to be transferred were to be directed by the President in separate actions from time to time."
87. CIA CREST "CIB 21 Nov 56." Uzin airfield was known to be a TU-95 base by the intelligence apparatus at the time.
88. CIA CREST "CIB 21 Nov 56."
89. "Long Range Flights of Military Aviation," *Polar Mail* 4 March 2012, <http://www.polarpost.ru/forum/viewtopic.php?f=16&t=2479&hilit=%D0%BB%D0%B5%D0%B2%D0%B0%D0%BD%D0%B5%D0%B2%D1%81%D0%BA%D0%B8%D0%B9&start=0>; V.I. Saperov, *Soviet Long-Range Aviation During the Cold War*, (Moscow: Vechev Publications, 2023); excerpt on Tu-95 operations at <https://www.litres.ru/book/v-i-saperov/sovetskaya-dalnyaya-aviaciya-v-gody-holodnoy-voyny-68885253/chitat-onlayn/?page=3>
90. CIA CREST "CIB 21 Nov 56." Ramenskoye air base was known to the intelligence apparatus as a Soviet research and development facility.

91. Sean M. Maloney, "Arctic Sky Spies: The Director's Cut," *Canadian Military Journal* 9, no. 1 (2008), <http://www.journal.forces.gc.ca/vo9/no1/11-maloney-eng.asp>; Gordon, *Soviet Strategic Aviation in the Cold War*, 75-82.
92. USNARA RG 59, box 3219, memo, "Canada-Overflight," 19 Nov 56; "Operation ROADBLOCK and Operation PINE-GROVE," 20 Nov 56.
93. Roger M. Anders (ed), *Forging the Atomic Shield: Excerpts from the Office Diary of Gordon E. Dean* (Chapel Hill: UNC Press, 1987), 135, 137-138.
94. USNARA RG 218 CCS 354.2 US (4-12-57) (22 Apr 57) "Results Obtained from Ex DODEP, 12 April 1957"; US Navy Operational Archive, Strategic Plans Division Box 315 file A-5, Op ALERT message traffic.
95. FOIA DOD Office of the Assistant to the Secretary of Defense (Atomic Energy), "History of the Custody and Deployment of Nuclear Weapons July 1945 Through September 1977."
96. FOIA DOD Office of the Assistant to the Secretary of Defense (Atomic Energy), "History of the Custody and Deployment of Nuclear Weapons July 1945 Through September 1977."
97. LCMD Twining Papers, box 110, "Proposed Revision to Atomic Energy Commission-Department of Defense Memorandum of Understanding for the Transfer of Atomic Weapons." Note that the proposal references the 1956 version of the MOU regarding Defense Emergency and its criteria.
98. FOIA USAF "History of the 3079th Aviation Depot Group, January 1957-June 1957."
99. As discussed in the author's *Deconstructing Dr. Strangelove: The Secret History of Nuclear War Films* (Lincoln: Potomac Books, 2020) chapters 2 and 3.
100. CIA CREST "CIB 22 Nov 56."
101. CIA CREST "CIB 27 Nov 56."
102. FOIA USAF "History of TUSLOG Det 10 (7216th Air Base Squadron) July-December 1956."
103. FOIA USAF "History of the 6607th Air Base Wing, January-March 1957."
104. Robert S. Hopkins III, *Spyflights and Overflights: US Strategic Aerial Reconnaissance, Volume 1 1945-1960* (Manchester: Hikoki Publications, 2016), 110.
105. FOIA USAF "History of the Strategic Air Command 1 July-31 December 1956 Volume I."
106. FOIA USAF "History of the Strategic Air Command 1 July-31 December 1956 Volume I"; FOIA USAF "History of the 42nd Bombardment Wing, Heavy, 1 November-31 December 1956."
107. Fradkov Boltunov, *Golden Ear of Military Intelligence*, (Moscow: Veche EAN publishing, 2014), 91-92; Public Archive of Canada (PAC) MG 32 b1a Vol. 11 file 15-90, memo Chief of the Air Staff to Minister of National Defence, "RCAF Reconnaissance Mission," 2 Sep 58; CIA CREST PIR "Franz Joseph Land," 15 Aug 58. Assuming Soviet radar on the drift ice stations operated at less than 3 MHz frequency, the radar was capable of refracting off the ionosphere under certain conditions and could detect aircraft at distances beyond line of sight.
108. The Soviet trawlers started operating off the Canadian coast in 1954. A study examining the development of Soviet Trawler capabilities noted that they carried out "COMINT functions involving the intercepting and recording of radar and radio communications...including on the spot analysis of tactical methods and procedures...[and] are known to be specially fitted out for electronic intercept functions of a wide variety."
- See Directorate of History and Heritage (DHH) File 79/246 Folder 29, VCNS to CCoS, "The Threat Posed by the Soviet Fishing Fleet, 15 Jan 53."
109. Tom Hildreth, "Pease Air Force Base: The Stratojet Years," <http://www.tomhildrethphotos.com/AIRCRAFT/AIRPORTS/Pease.html>
110. See FOIA USAF "History of the 4th Air Division, April 1957." Though the weapons types have been redacted from this document, the remaining language, "capsule installation", "capsule containers", "trap door plug", "guide tube during capsule preparation", "spreading the E-1 ring" around the "capsule and trap door plug", exhortation to "never handle the core charges with bare hands" and that crews with use rubber surgical gloves "when performing capsule insertions" clearly indicates that the base was equipped with non-sealed pit thermonuclear weapons that required in-flight insertion of the core. Only two such weapon types were allocated for USAF B-47 service at this time, the Mk 15 and Mk 21. See Maloney, *Emergency War Plan*, 115.
111. FOIA USAF "History of the 4th Air Division, April 1957."
112. FOIA USAF "History of the Ernest Harmon Air Force Base APO 864, New York, NY, 1 July-31 Dec 45."
113. See Robert M. Slane, *Journey to Freedom and Beyond* (Bloomington: Trafford Publishing 2004).
114. I am indebted to Katerina Feisthauer and Christine Green for bringing the details of the Ray Lake B-47 crash and the SAR effort to my attention when they were conducting research into it for a class project. Interestingly, the B-47 crash does not appear on the BROKEN ARROW nuclear accident lists. See Michael H. Maggelet and James C. Oskins, *Broken Arrow: The Declassified History of U.S. Nuclear Weapons Accidents* (Lulu Press, 2007).
115. Khrushchev, *Khrushchev Remembers*; Jerrold Schecter and Vyacheslav V. Luckov (eds) *Khrushchev Remembers: The Glasnost Tapes* (London: Little, Brown and Co, 1990); Sergei Khrushchev, *Khrushchev on Khrushchev: An Inside Account of the Man and His Era* (London: Little, Brown and Co, 1990).
116. CIA CREST "CIB, 17 Feb 57."
117. Podvig, *Russian Strategic Nuclear Forces*, 487-488.
118. LCMD LeMay Papers, box B-203, message HQ USAF to SAC, 3 Dec 56.
119. LCMD LeMay Papers, box B-203, message HQ USAF to SAC, 8 Dec 56.
120. FOIA USAF "History of the 6607th Air Base Wing, January-March 1957."
121. LCMD LeMay Papers, box B-203, message HQ USAF to CINCCONAD, 14 Dec 56.
122. CIA CREST "CIB, 1 Dec 56."
123. CIA CREST "CIB, 7 Dec 56."
124. Nichols captures this in *Eisenhower 1956*, 262-263. Cooper, *The Lion's Last Roar*, 200 notes the British and French relaxed attitude during a CIA briefing that asserted that the missile threat was chimeric.
125. See Maloney, *Deconstructing Dr. Strangelove*, chap 5 for details. CinCSAC General Thomas Power openly threatened the bald Khrushchev in public speeches, ensured that there was substantial public information about the low-level flight capabilities of and training conducted by the B-52 and B-58 force, and SAC Airborne Alert movements in the Arctic were code-named CHROME DOME. The Airborne Alert Force used routes similar to those used by QUICK KICK in 1956.