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SAC History Study #129

THE SAC ALERT SYSTEM, 1956-1970 (U)

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Table of Contents

WORKING PAPERS

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THE SAC ALERT SYSTEM, 1956-1970 (U)

(U) After the conclusion of the Second World War, United States military planning continued to rest on the traditional policy that this country would not initiate an attack against a foreign power. Knowing in the mid-1950s that the Soviet Union already had sufficient intercontinental jet bombers to launch a successful attack against this nation, SAC planners calculated that our adversary would possess enough highly developed Intercontinental Ballestic Missiles by 1961 to strike targets in the continental United States. However, it was some comfort ~~tomorrow~~ that by this date the American Ballestic Missile Early Warning System headquartered at Thule, Greenland,[1] would be able to detect a missile roughly midway in its trajectory and furnish a warning time of approximately fifteen minutes.[2] As early as 1956, Headquarters SAC began developing a system of strategic deterrence to meet the Russians' long-range bomber and missile ~~threat for~~ the projected period 1958-1970.[3]

(U) A carefully balanced alert program emerged as SAC's answer to a possible Soviet surprise attack, and it hinged upon three defensive concepts. These

[1] The Thule radar monitor attained an initial operational capability on 30 September 1960, and a completely operational status on 1 February 1961. A second site at Clear, Alaska, became operational in 1961, and a third site came into being at Flyingdales, England, in 1963.

[2] [redacted] SAC Historical Study No. 79, "The SAC Alert Program 1956-1959," Hq SAC (HO), 25 Jan 61, p 2; Hist of BAF, 64, p64.

[3] Hist of SAC, FY 59, p94.

WORKING PAPERS

were ground alert which called for a fixed percentage of SAC bombers to remain in a constant state of readiness at designated bases; airborne alert, whereby aircraft actually in the sky would fly daily sorties on fixed routes while awaiting orders to divert to enemy targets; and missile alert which defined the criteria for the immediate launch of SAC's ICBM force after receipt of warning that Soviet missiles were on their way to the American mainland. The aircraft and missiles in all three conditions carried Emergency War Plan weapons.

(U) Ground alert was the first and the most basic tenet of SAC's alert strategy. Essentially it was a defensive maneuver. A certain percentage of SAC's B-47/B-52 bomber fleet, supported by KC-97/KC-135 tanker forces, was loaded with EWP weapons and poised beside the runway ready to launch at a moment's notice. Pilots and maintenance crews lived in the closest possible proximity to both the aircraft and runway. After receiving warning of an impending Soviet attack, these bombers would become airborne immediately and proceed to targets in the Soviet Union. On the other hand, SAC's ground alert system contained a built-in offensive feature. If the command received sufficient warning of a nuclear assault, at least a portion of its aircraft could become airborne in time to retaliate.

(U) (S) Prior to 1954, SAC's strategy for war operations centered upon deploying a portion of its forces to bases overseas for prestrike staging. In this year, however, the command began testing a new operational technique whereby bombers stationed in the United States would fly directly to their targets and use overseas bases for post-strike purposes. In 1955, SAC planners concentrated on creating a special SAC "quick strike" operations plan.

General Curtis E. LeMay, SAC's Commander-in-Chief, approved the plan later that year and his decision marked the official beginning of the SAC alert program.[1]

(U) (S) The Strategic Air Command first petitioned Headquarters USAF to authorize the creation of a ground alert system on 3 October 1955, and General Nathan F. Twining, the United States Air Force Chief of Staff, endorsed the plan "in principle" on 14 December. The Air Staff 20-7 decision confirmed Twining's action in March 1956, but alert remained approved only "in principle" until December 1957 when the Air Staff officially sanctioned the recommendation.[2]

(S) The Strategic Air Command conducted three initial service tests between November 1956 and December 1957, to determine whether the ground alert concept was practicable. A four-months' test at Hunter AFB, Georgia, proved the program feasible. The test at Hunter also revealed that facilities must be located as near as possible to the end of the runway to launch aircraft within 15 minutes, which was calculated as the maximum warning time the BMEWS would allow, and, that approximately one-fourth of SAC's wing aircraft could be maintained on 24-hour alert with the 1.6 to 1 crew-to-aircraft manning ratio then in effect at all SAC bases. Two additional tests at Little Rock AFB, Arkansas, and at Mountain Home AFB, Idaho, developed the organizational structure best suited for this type of alert.[3]

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[1] SAC Historical Study No. 79, "The SAC Alert Program 1956-1959," Hq SAC (HO), 25 Jan 61, p 1.

[2] Hist of SAC, FY 59, p 97.

[3] Ibid., pp 97-98.

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(S) When SAC began ground alert in 1957, its primary delivery vehicle was the B-47 Stratojet bomber, but this aircraft required at least one air refueling to strike targets when based in the continental United States. The command, however, lacked sufficient tankers to refuel the entire B-47 force. As a result, SAC decided to position a portion of its B-47 alert aircraft at overseas bases. From these, the B-47s could strike targets in the Soviet Union and return without refueling.[1]

(S) Although SAC's overseas nuclear deterrent before 1957 involved the rotation of bomber wings at 90-day intervals, the command now planned to rotate units of aircraft and crews to forward bases for shorter periods of time. The Strategic Air Command believed this policy would provide a defensive posture equaling or surpassing that previously realized by the deployment of complete bomber wings for three month cycles. Full field maintenance facilities would no longer be required. Command planners calculated that a cutback would also result in a considerable monetary savings for the Air Force.[2] To test the concept of moving units to overseas bases for brief periods of time, SAC inaugurated operation REFLEX ACTION on 1 July 1957 DOS (b)(1) [redacted] DOS

[1] Hist of SAF, 64, p 121.

[2] [redacted] SAC Historical Study No. 79, "The SAC Alert Program 1956-1959," Hq SAC (HO), 25 Jan 61, p 43.

(U) On 1 July 1958, exactly one year after the beginning of the REFLEX test, the command extended the program to eight overseas bases and to three bases in the continental United States. The Strategic Air Command now increased its commitments to ground alert at forward bases by sending detachments to the United Kingdom, [redacted] British air bases [redacted] Bridge Norton, Fairford, and Greenham Common each received six B-47s. DOS (b)(1) [redacted]

[redacted]

[redacted] The 22nd, 43rd, and 320th Bomb Wings sent detachments to Eielson AFB, Alaska. Early in 1959, SAC further expanded its REFLEX operations in England by sending one bomb wing to the Royal Air Force's bases at Chelveston, Upper Heyford, and Bruntingthrope, while the strategically placed facility at Greenham Common, DOS (b)(1) [redacted] accepted its second wing.[1] Although REFLEX rotated some aircraft from southern to northern bases in the United States, the operation was concerned primarily with the overseas deployment of B-47 and KC-97 aircraft.

(S)(U) In the continental United States, units of the Fifteenth and Second Air Forces went on ground alert at northern bases of the Eighth Air Force. The 509th Bomb Wing at Walker AFB, New Mexico, sent five aircraft to Pease AFB, New Hampshire; the 97th Bomb Wing, Biggs AFB, Texas, sent aircraft to Plattsburg

[1] Hist of SAC, FY 59, p 99.

AFB, New York; and the 44th Bomb Wing, Pinecastle AFB, Florida, each maintained three aircraft at Loring AFB, Maine.[1] Thus, with the expansion of REFLEX in July 1958, SAC had 194 B-47 bombers, 47 KC-97 tankers, and four EMC aircraft on ground alert in the continental United States and at overseas bases.[2]

(S) Planners at Headquarters SAC had originally intended for the [redacted] operation to be a six months' operation. However, due to the program's success, the command extended the new rotation concept for an indefinite period.[3] Until SAC developed sufficient long-range bombers, tankers, and ICBMs to negate the importance of overseas bases to its defensive posture, REFLEX continued to provide the framework for ground alert.[4] Operation REFLEX terminated completely six and a half years later on 31 December 1965, when the last aircraft were withdrawn from Elmendorf AFB, Alaska. This was the same date that the command removed all B-47s and KC-97s from its active inventory and posted its entire ground alert force at bases in the continental United States, except for 30 B-52s which remained in Guam.[5]

(S) While REFLEX furnished a practical and economical defensive tactic for protecting the continental United States and western Europe from missile and long-range bomber attack, an operation known as AIRMAIL, based at Andersen AFB, Guam, provided a similar B-47 alert function in the western Pacific. Due to

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[1] SAC Historical Study No. 79, "The SAC Alert Program 1956-1959," Hq SAC (HO), 25 Jan 61, p 50.

[2] Ibid., p 54.

[3] Ibid., p 57.

[4] Ibid., p 54.

[5] Hist of SAC, Jul-Dec 65, p 194.

Guam's distance from the [redacted] mainland, SAC met the rotational requirement for bombers and crews by placing 15 bomber aircraft of the Fifteenth Air Force on the island. Ten B-47s were maintained in a constant state of readiness, while the remaining five aircraft conducted normal training operations. The major operational difference between REFLEX and AIRMAIL involved crew rotations at Guam, maintenance chiefs and a portion of the crew rotated every 30 days while SAC alternated support personnel and aircraft every 90 days.[1]

(S) From the standpoint of both economy and feasibility, it was SAC's goal to place one-third of its bomber and tanker forces on ground alert by July 1960. At this time the first aircraft at any alert base would take off within 15 minutes after receiving warning of a Soviet attack, and the last would follow within one hour; by the end of 1961, the command planned for no less than one-third of each bomber and tanker unit on alert to have the capability of becoming airborne within the 15 minute time criteria.[2]

(S) With the advent of ground alert in October 1957, Headquarters SAC established reaction times of two hours for alert bomber/tanker units in the continental United States and of 30 minutes for those at overseas bases. In January 1958, the command reduced this to 30 minutes in all cases.[3] However, the 15 minute reaction requirement hoped for SAC at the inauguration of ground alert

[1] Hist of SAC, FY 59, p 105.

[2] Hist of 8AF, Jul-Dec 57, p 246.

[3] ~~(Unclass)~~ SAC Historical Study No. 79, "The SAC Alert Program 1956-1959," Hq SAC (HO), 25 Jan 61, pp 26-27.

was not specified until more than two years later when the command promulgated the principle in the 50-61 Emergency War Order on 31 August 1960.

(U) (S) Now SAC established a procedure known as Minimum Interval Take Off (MITO) which enabled all a unit's aircraft on ground alert to launch in the least possible time. Prior to the creation of MITO, SAC plans had simply called for the first bomber to take off as soon as possible. General Power reviewed the alert system with an eye to launching the last aircraft in the shortest possible time after receipt of tactical warning, and created the principle of Minimum Interval Take Off when he ordered that the last bomber would launch no later than fifteen minutes when notified of attack. The Strategic Air Command set 1 September 1960 as the date for all combat-ready B-47 crews and, 15 November 1960 for all B-52 and KC-97 crews to complete MITO flight indoctrination. However, several KC-97 tanker units of the Eighth Air Force failed to meet the suspense, and SAC did not require all its combat-ready tanker crews to complete the training until January 1960.[1] Minimum Interval Take Off, emphasizing the most rapid possible launch of the last aircraft, continues to be a fundamental principle of the ground phase of SAC's alert program. However, the time allowed for take off is even more specific today: bombers must follow the first B-52 off the hold line at 15 second intervals.

[1] Hist of SAF, Jul-Dec 60, pp 74-75.

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(S) Although the command had set July 1960 as the date for realizing the placement of one-third of its bombers on ground alert, an unforeseen international event necessitated an earlier implementation. In May 1960, Nikita Khrushchev, the Premier of the Union of Soviet Socialist Republics, abruptly withdrew from the Paris summit conference after reporting to the gathering that Russian fighters had downed an American U-2 photoreconnaissance aircraft over the Soviet Union on 1 May. The command at once put one-third of its bomber and tanker forces on ground alert as East-West tensions continued to mount.[1]

(TS) One year later SAC intelligence indicated that the Soviet's ICBM system had reached a level of sophistication which now made the one-third alert posture inadequate. Planners at Headquarters SAC reckoned that two-thirds of the bomber forces were vulnerable to missile attack and might not survive the fifteen minute warning previously considered sufficient. General White, the Air Force Chief of Staff, favored placing at least one-half of the command's B-47s and B-52s on ground alert. On 1 February 1961, he directed SAC to study the problem in this light. At once General Power confidently informed Secretary of Defense Robert S. McNamara that the Strategic Air Command could assume a fifty percent ground alert posture with little difficulty; ten days later SAC notified the Air Staff that it could implement such a program. The command followed this declaration four days later with specific requirements for achieving the goal. The White House also supported the Air Force position. President John F. Kennedy, in a special message to Congress on defense expenditure on 28 March, gave executive

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[1] Hist of SAC, FY 59, 105.

endorsement to the action called for by SAC and the Air Force chief. With the President, the Air Staff, and the command in unanimous agreement, Headquarters USAF authorized SAC to expand the ground alert force to the 50 percent posture no later than 15 July 1961.[1] The increase became effective on this date and remained the allocated percentage for ground alert until July 1967.

(U) To make sure that ground alert units could become airborne within minutes after receiving warning of an impending attack from the BMEWS mon at Thule and Clear, SAC began a system of operational readiness inspectio no notice basis late in 1961.[2] These tests employed exercises nicknamed BRAVO and COCO. Crews participating in the BRAVO test proceeded to the alert aircraft and automatically started their engines; then after contacting the control tower, they reported ready to taxi. In the more thorough COCO exercise the crew actually taxied their aircraft to the runway, held the brakes, applied take-off power, reduced power, and then taxied back to the parking area. A COCO exercise required physical movement of each aircraft beyond the runway holding line, and it proved to be a realistic indicator of a unit's ability to respond to a BMEWS warning.[3]

(S)(U) Potentially the most serious problem created by the increased alert posture was its impact upon crew duty time. The command readily recognized this fact.[4] When it had promulgated a 50 percent ground alert posture in

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[1] Hist of SAC, Jul-Dec 61, P75.

[2] Hist of SAC, FY 63, P144.

[3] Ibid., P152.

[4] Hist of SAC, Jan-Jun 62, P77.

July 1961, SAC expected to inactivate certain medium B-47/B-52 bomber units and KC-97/KC-135 tanker units in order to achieve a 1.8:1 crew to aircraft ratio for those aircraft participating in alert. This surpassed the 1.6:1 ratio which Headquarters USAF had approved in 1956, and which was still in effect when the President and the Air Staff made their commitments to a 50 percent alert posture. Headquarters USAF readily sanctioned the 1.8:1 crew-to-aircraft ratio requested by SAC and authorized it to become effective on 1 July 1961.[1] (S) (U) In order to maintain the new alert posture with existing manpower resources, SAC established a 74-hour work week for the aircrews taking part in ground alert in October 1961. Duty time for the bomber crews amounted to 60 hours on alert, six hours flying time, and eight hours of assignment not compatible with alert. An order from General Power set the maximum duty week at 74 hours and the length of assignment at four months.[2] Although SAC had not intended for the 74-hour week to become an inflexible standard, it did believe the policy would compel individual units to exercise good management and to strive continuously for more efficient manpower utilization. But several units participating in ground alert found it impossible to equalize work loads among all crews within the narrow limits of the four month assignment period outlined by the command. Accordingly, in 1962, General Power altered his first directive and authorized the computation of crew duty twice a year. By the end of June 1962, the 74-hour maximum duty week for combat aircrews was firmly established as an "inviolate SAC policy,"[3] and it remained so for the rest of the decade.

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[1] Msg, AFCVC 60262, Hq USAF to SAC and AFLC, "Increased Alert Posture for B-52/47 and KC-135/97 Force," 07/1601Z Apr 61, Exhibit 10, Chapter III, Hist of SAC, Jan-Jun 61.

[2] Hist of SAC, Jan-Jun 62, p 103.

[3] Ibid., pp 104-105.

(U) (S) At the advent of ground alert, crews participating in REFLEX served 28 days: the tour began with 14 days on alert; seven days followed for rest and recovery away from the duty station; and finally, the crewmen returned to the alert base before redeploying. The command believed this criteria would continue to furnish efficient use of manpower and aircraft in maintaining the 50 percent posture. But, as might be suspected, the more demanding schedule was not popular with the crews. Morale was greatly affected when the Department of Defense decided in February 1962 to cut per diem payments for Fiscal Year 1963. Citing the determental effect on the morale of the REFLEX bomber crews, General Power, always willing to fight doggedly for the interests of his men, immediately urged Secretary McNamara to reconsider his decision. McNamara reaffirmed his position in April, and REFLEX pilots and support crews became ineligible for per diem payments beginning 1 July 1962, if Air Force quarters and Air Force mess were provided without charge.[1]

(S) (U) In an effort to mollify the REFLEX crews, SAC directed midway in 1962 that crews would spend no more than seven consecutive days on alert. To implement this policy it divided the 28-day tour into three one-week duty periods, separated by two rest periods of three and one-half days each. Because the Department of Defense seemed unlikely to reverse its decision to cut per diem payments, SAC decided late in July 1962 to reduce the B-47/B-52 cycle from 28 to 21 days at all REFLEX stations except Elmendorf, Alaska. It advised all units participating in REFLEX that the new policy would become effective on 2 September.[2]

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[1] Hist of SAC, FY 63, p 133.

[2] Ibid., pp 134-135.

WORKING PAPERS

(TS) In August 1963, improvements to the Ballistic Missile Early Warning System enabled SAC to provide a specific warning time in minutes and seconds for each base in the United States. Called Available Crew Reaction Time, this new technique furnished a unit the exact time elapsing between the launch of a Soviet ICBM and its detonation at the selected American target. Now it became possible for SAC planners to determine precisely the number of aircraft which could be launched from a particular base within a specified number of minutes.[1] Calculated from the moment the klaxon horn sounded until the last aircraft had crossed the hold line for take-off, [redacted] A unit's entire alert force was required to launch as soon as possible but within the BMEWS reaction time assigned to that base, and Headquarters SAC periodically tested their capability by means of ground alert exercises.[2]

(TS) With varying launch times now specified in minutes and seconds, the take-off of alert aircraft from a base's non-optimum or alternate runway presented a new problem to SAC's ground alert program late in 1963. Unit commanders poised their B-47/B-52 aircraft as close as possible to their primary runway since it was the bombers which actually carried the weapons of nuclear destruction. Bomber crews lived in the billets closest to their base's main runway. Tanker personnel, on the other hand, lived in quarters located a further distance from the primary runway than did the crews who actually manned

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[1] Hist of SAC, Jan-Jun 67, P115...

[2] Hist of SAC, Jul-Dec 67, p103.

the bombers.[1]

(U) (S) On rare occasions, generally during periods of inclement weather, it became necessary for alert aircraft to use alternate or non-optimum runways. Such a deviation from the general alert pattern often resulted in a failure to launch the entire unit within the reaction time assigned by Headquarters SAC in August 1963. The command was anxious to obtain complete information on the launch capability of an alert force taking off from an alternate runway and ordered a careful examination of the problem. Accordingly, Lieutenant-General Hunter Harris, SAC's Vice Commander-in-Chief, received the results of a non-optimum runway timing evaluation on 11 December 1963. The study indicated that alert forces at eight bases were unable to launch within the limits imposed by the BMEWS timing criteria. For the moment, this inadequacy did not particularly disturb SAC planners who noted there was little chance that weather conditions would necessitate using non-optimum runways at all eight bases at any given time.[2]

(U) (S) General Power, however, saw no logic in this hypothesis and did not consider it unreasonable to expect a unit on ground alert to meet the BMEWS launch time from the alternate runway. In Power's opinion such a deficiency cast doubt on SAC's ability to carry out its primary mission, which was, of course to launch its entire fleet of alert aircraft within the warning times assigned by SAC.[3] Construction projects for expanding runway facilities and for building new billets closer to them were simple but, because of their cost, impossible

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[1] Hist of BAF, 64, p 61.

[2] Hist of SAC, Jul-Dec 63, p 100.

[3] Hist of BAF, 1964, p. 64.

solutions. Rather, SAC met the difficulty by defining and publishing EWO instructions for launching both bombers and tankers from opposite ends of existing runways (bombers downwind and tankers upwind) when weather conditions permitted. In addition, the relocation of crews and aircraft from northern bases to those in less severe climates improved the situation somewhat. These uncomplicated solutions did not solve the difficulty completely; rather, they defined the problem in clearer terms and focused more attention upon the hardships presented by the use of alternate runways.[1]

(S) As the American missile capability became more sophisticated, the Department of Defense with Presidential approval, directed a comprehensive series of redeployment actions for the European REFLEX program in 1963-1964. Prior to this period, the command had maintained all its B-52, B-58, and KC-135 ground alert aircraft only at bases in the continental United States. Until this time approximately one-half of all the B-47s on alert, and even a greater percentage of KC-97s, were located in forward areas as participants in REFLEX and AIRMAIL operations.[2] Anticipating Presidential sanction of operation CLEARWATER which called for a comprehensive reduction of all U. S. military forces overseas, SAC implemented some alterations in REFLEX during 1964. In official phraseology, CLEARWATER's mission called for the "updating of overseas deployments." During July 1963, Headquarters USAF outlined SAC's responsibility for Phase I of CLEARWATER, which specified both a reduction of the European REFLEX commitment

[1] Hist of SAC, Jul-Dec 63, pp 99-100.

[2] Ibid., 101.

and consolidation of forces [DOS (b)(1)] and two British bases by 1 July 1964. DOS Fairford and Greenham Common were returned to the United Kingdom, [redacted] DOS [redacted] DOS (b)(1) [redacted] The Strategic Air Command reduced the total number of B-47 aircraft participating in European REFLEX from 103 to 80; [DOS (b)(1)] [redacted] DOS [redacted] The termination of REFLEX followed in 1965.

(S)(U) The Strategic Air Command's alert program faced the constant threat of being downgraded by Defense Secretary Robert S. McNamara, who in 1964 was expressing increasing confidence in the country's rapidly improving strategic missile system. He believed that the Minuteman and Polaris especially could assure maximum retaliatory destruction. Late in 1964 McNamara took his first steps to reduce SAC's entire force of aircraft on ground alert.[2]

(S)(U) Since the advent of ground alert it had been SAC's policy to disperse its B-52 bomber force over as many bases Original spacing no redaction as possible because these bombers, greater in size than the B-47s and fully jet-powered, presented numerous difficulties for survivability, completion of enemy targeting, and implementation of a quick launch. During the second half of 1964, SAC had maintained 42 B-52 squadrons of 15 bombers each at 38 bases. The command's planners programed this force to inhabit 41 bases in 1966. However, on 19 November 1964, the office of the Secretary of Defense announced a plan for B-52 dispersal which would eventually consolidate a heavy force of 40 squadrons

[1]Hist of SAC, Jan-Jun 64, p 109.

[2]Hist of SAC, Jul-Dec 64, p 88.

on only 34 bases. General Power again found himself in opposition to Department of Defense policy, and his earlier testimony to Headquarters USAF, which predicted that consolidation "[would decrease] SAC's capability to protect its bomber/tanker force and to react to BMEWS tactical warning," came readily to mind.[1] (S)(U) The composition of SAC's manned bomber fleet and its air refueling squadrons changed significantly during the last six months of 1965 due to the phase out of the B-47/KC-97 medium bomber force. These two aircraft had been stalwarts of the subsonic medium fleet since the early 1950s, and they had rendered long years of service to the command. Yet, as they became obsolete, SAC did not object to their retirement. The B-47 bomber contingency, which was the largest ever assembled in the world, left the active inventory late in 1965 for retirement to Davis-Monthan AFB, near Tucson, Arizona. By 31 December there were no B-47 bombers on alert, and only 114 of these historic Boeing Stratojets remained in the SAC inventory: 56 at the 9th SAW, Mountain Home AFB, Idaho; 56 at the 100th BW, Pease AFB, New Hampshire; and two as command support aircraft with the Third Air Division, Andersen AFB, Guam. In addition to the 114 bombers, 18 E/R/B-47s were retained in the 55th SRW, Forbes AFB, Kansas. These raised the total for all models of the B-47 still operational at SAC bases to 132, but the command programed their retirement for the early weeks of 1966.[2]

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[1] Ibid.

[2] Ibid., pp 108-109.

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(S) The phase out of the KC-97 tanker was even more abrupt. The total number in active service was only 127 on 30 June 1965, and by 21 December of the same year, all of them had been retired. The KC-97 was the last of the piston-engined aircraft in SAC's inventory, and now the command's entire strike force, including both bombers and tankers, became completely jet-powered.[1]

(S)(U) The retirement of the oldest series of the B-52 heavy bomber "B" models took place currently with the B-47/KC-97 phase out. A lack of funds for modifications relegated this oldest series of the eight-engined jet bombers to the Arizona "boneyard." Although only those which had exceeded the maximum number of flying hours entered retirement in October 1965, final withdrawal ~~of SAC's scant 31 B-52B force~~ was scheduled for January-February 1966. Of the remaining 19 originally manufactured, eight were previously lost to attrition and the remainder had already gone into extended storage, to museums, and to the Air Training Command.[2]

(S)(U) The decision of the Department of Defense to reduce the number of bases hosting alert aircraft preceded an even more drastic measure in the next year which restricted the percentage of aircraft actually on alert. Late in 1966

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[1] Ibid.

[2] Ibid., pp 112-113.

SAC's B-52 support to the conflict in Southeast Asia began to have an appreciable effect upon the command's ground alert program for the first time. The Asian commitment was still a small one, but the number of B-52 aircraft involved in air support operations there had increased from 30 to 50 by the end of the year. While only a relatively small percentage of the strategic bombardment force was directly involved in contingency operations, the war in Vietnam had repercussions for the entire alert program. It was impossible for SAC to support increased conventional contingency commitments in Southeast Asia without degrading its nuclear deterrent forces in the continental United States. These troublesome circumstances appeared late in 1966 at the same time Secretary McNamara had expressed increasing confidence in the ability of strategic missiles to provide a sufficient retaliatory capability.[1]

(S)(U) The Strategic Air Command sincerely believed that those who doggedly dwelt upon the economics of reducing ground alert, the ability of the BMEWS alone to guarantee alert aircraft adequate warning time, and the improbability of a general war were placing the future of the strategic forces in serious jeopardy.[2] Now, on 5 December 1966, a program change decision from Secretary McNamara reduced the crew-to-aircraft ratio and the percentage of bombers and tankers on alert, and further increased SAC's anxieties.

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[1] Hist of SAC, Jul-Dec 66, PIII.

[2] Ibid., p 127.

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(S) Calling for a reduction in the alert rate from 50 to 40 percent for all SAC bombers and tankers participating in ground alert and an associated reduction in the crew ratio from 1.8:1 to 1.5:1, the new policy drastically altered the command's deterrent capability.[1] The decision, ~~however~~, was irreversible and machinery was created immediately to carry it out. In the same month that McNamara announced his program change decision, Headquarters USAF provided the command with appropriate guidelines for achieving the reduced posture and set 1 July 1967 as the date for its full implementation. Although directed to assume a 40 percent alert posture on this date, SAC obtained permission from Headquarters USAF to begin the reduced 1.5:1 ratio during the July-September quarter. B-52 units were hardest hit, but KC-135 squadrons also suffered from the crew cutbacks. However, 11 B-52 C and D units, responsible for supporting contingency operations in the Vietnam conflict, were exempted from the crew ratio reduction as the result of a joint appeal by SAC and Headquarters USAF.[2]

(S)(U) Although Headquarters USAF had assured SAC late in 1966 that the projected alterations in manpower and aircraft would not begin until mid-1967, the Air Staff notified SAC in March that General McConnell had decided to implement the 1.5:1 ratio on 1 May 1967. In the opinion of the Air Staff, this policy would furnish better overall utilization of pilots eligible for assignment in Southeast Asia, ~~as well as~~ minimize personnel relocation

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[1] Ibid., pp 136-37.

[2] Hist of SAC, Jan-Jun 67, p 104.

difficulties in the major commands.[1]

(S)(U) Early in 1967 circumstances again forced SAC to review its ground alert program. By this date the Soviet Union's arsenal of Sea Launched Ballistic Missiles had reached an advanced stage of development. Intelligence indicated that 80 percent of the Soviet submarines equipped to carry SLBMs could be maintained within firing range of the U. S. for as long as 45 days at a time.[2] Several prominent spokesmen within the command believed the new SLBMs presented a greater danger than their ICBM counterparts, and these authorities generally cited the SLBM's rapid mobility as both its greatest strength and danger. Major General Alvan C. Gillem II, SAC's Director of Operations, and Lieutenant General Keith K. Compton, USAF's Inspector General, contended that more emphasis should be given to interior basing to enhance the survivability of aircraft on ground alert. They even went so far as to suggest that the SLBM, with its associated reduction in tactical warning time, could completely negate the validity of maintaining a high continuous level of aircraft on ground alert.[3]

(S) U The Strategic Air Command possessed no system for detecting missiles launched from submarines. Therefore, it worked closely with the United States Navy to develop a reliable method for detecting missiles launched from Soviet submarines. The new procedure devised by SAC and the Navy provided for the

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[1] Ibid., p 105.

[2] Hist of SAC, Jul-Dec 67, p 109.

[3] Ibid., pp 126-27.

latter to notify the command whenever it observed either an SLBM missile launch or an enemy submarine negotiating a surfacing maneuver. Headquarters SAC believed that Navy ships on patrol were capable of monitoring submarine movements before any significant number of enemy craft could maneuver into their launch positions. This type of Naval observation would provide sufficient time for the generation and dispersal of the ground alert forces on the American mainland, and in SAC's opinion, it would actually constitute a form of strategic warning. Although the BMEWS furnished a 15-minute warning time for ground-to-air missiles launched from Soviet territory, [redacted] ACC/DON [redacted][1]

(S)(U) Revision A of SAC's Single Integrated Operations Plan-4 (SIOP-4) anticipated having 348 strategic bombers (308 B-52s and 40 B-58s) on ground alert by the end of 1966. However, early in 1967, the conflict in Southeast Asia had prompted the command to inactiviate three B-52 squadrons (two of the 6th Wing at Walker and one of the 484th Wing at Turner); this action, when coupled with an earlier decision to deploy a third cadre unit at Andersen AFB in January 1967, reduced the Revision A commitment by 32 B-52s. Therefore, in mid-1967 SAC's bombers on ground alert totaled 316--276 B-52s and 40 B-58s.[2] Only two years after SAC's initial participation in the Vietnam conflict, the total

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[1] Ibid., p 109.

[2] Hist of SAC, Jan-Jun 67, pp 98-99.

number of strategic bombers guarding the American homeland stood at approximately 300.[1]

(U) As previously indicated, SAC calculated that by 1967 only six minutes would elapse between the firing of a hostile SLBM and weapon detonation at a base hosting MM strategic forces. The question now facing SAC planners was how to develop a tactical launch posture which would enable the alert forces to launch within the more limited SLBM warning time. However, the command realized that its forces on ground alert could not become airborne within the six minute criteria, since its existing alert posture was designed only for responding to BMEWS warning. Alert tests had proven AF (b)(1) [redacted] Acc/Dow [redacted] after the sounding of the klaxon.[2]

(U) The Strategic Air Command developed a new defense posture known as DEFCON 1S to counter the six minute danger. This was a modified form of DEFCON 1, which was the command's maximum configuration for ground alert short of actual launch. AF (b)(1) [redacted] Acc/Dow [redacted]

[1] The number of SAC aircraft directly supporting conventional operations in Southeast Asia increased sharply in 1968.

[2] Hist of SAC, Jul-Dec 67, pp 108-109.

AF (b)(1) [redacted] Acc/DoN

[redacted][1]

(U) (TS) The Strategic Air Command instructed all its alert units (except reconnaissance units and elements under the Third Air Division) to adopt a DEFCON 1S posture on 1 January 1967.[2] The procedures used in DEFCON 1S were less severe than those of DEFCON 1; AF (b)(1) [redacted] Acc/DoN

[redacted][3] The revised posture permitted a wing to conduct additional operations such as airborne alert and tactical dispersal. At SAC's direction each wing developed a DEFCON 1S plan during the first three months of 1967. The parent air division, the numbered air forces, and Headquarters SAC revised these when necessary. In addition, each wing on alert checked their DEFCON 1S configuration in actual tests, and SAC evaluated these during the second half of the year.[4]

(U) (S) In a DEFCON 1S AF (b)(1) [redacted] Acc/DoN

[redacted]

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[1] Hist of BAF, FY 1969, p 84.

[2] Hist of SAC, Jul-Dec 67, pp 108-109.

[3] Hist of BAF, Jan-Jun 68, p 82.

[4] Ibid., pp 82-83.

A portion of the alert force positioned AF (b)(1) [redacted] Acc/Do

[redacted] In rare instances, weather conditions could shorten the shift. [redacted] Acc/Do

[redacted] after the first blast of the klaxon horn. To maintain these crews in such close proximity to the aircraft, SAC secured large numbers of house trailers to billet the crews participating in DEFCON 1S.[1]

(S) In January 1968, SAC improved the DEFCON 1S posture to make it less strenuous for the crews, but the command still insisted that the strategic forces at home and at overseas bases be launched AF (b)(1) [redacted] Acc/Do

[redacted] Known as Sustained Reaction Posture (SRP), the new tactic operated on a principle similar to that of DEFCON 1S. In a SRP configuration, aircraft with engines shut down positioned as close as possible to the runway for immediate takeoff. At least the first four alert aircraft, or Alfa Force, configured with power on; two pilots and one other control crewman lived in the cockpit of the aircraft, while additional crewmen, generally rotating on 12-hour shifts, remained sufficiently close to the aircraft for entry into the cockpit AF (b)(1) [redacted] The remaining bombers on ground alert continued in a power off configuration. As with DEFCON 1S, crews quartered as close as possible to the primary runway and within the sound of the klaxon.[2] Acc/Do

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[1] Ibid., pp 83-84.

[2] Hist of SAF, Jan-Jun 68, p 65.

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(S) From January 1967 until the spring of 1969, Sustained Reaction Posture and the six minute warning governed SAC's ground alert program. Then, in April 1969, the command informed its alert bases that the six minute warning time was no longer valid due to the development and testing of new surveillance sensors, which in the not too distant future could detect and report SLBM launches in a lesser number of minutes. When the sensors became fully operational, the command would again assign specific reaction times to each base; but, until then, the six minute warning could no longer be accepted as valid.[1] Accordingly, SAC devised yet another concept to guarantee the survivability of the strategic ground forces.

(S)(U) By mid-1967, SAC concluded that the dangers presented by the improved Soviet ICBMs and SLBMs had made it necessary to expand the policy of dispersing strategic aircraft. The policy was not a new one for SAC ~~which~~ had scattered its aircraft at various bases since 1954.[2] Two kinds of dispersal had existed since the command's earliest days. One was a permanent basing program which placed a fixed number of aircraft on a specified base; the other was an emergency operational procedure which, in times of crisis, quickly put the strategic forces at an extensive number of bases in order to improve their chances for survival. The Strategic Air Command had always favored the first concept and had shown little enthusiasm for the latter principle. ~~This~~ position rested upon the knowledge that permanently dispersed aircraft could remain reponsive to

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[1] Hist of SAF, FY 68, p 85.

[2] B-52 dispersal had reached its high point in late 1963 when SAC's 42 B-52 squadrons (15 UE) were located on 38 bases. Almost simultaneously, McNamara began consolidating the heavy force to save money. On 30 June 1967, SAC had 37 B-52 squadrons located on 33 bases.

tactical warning, whereas emergency dispersal depended largely upon strategic warning time for implementation.[1]

(S)(U) Late in 1968, SAC designed a new program for improving the survivability of the bomber fleets by a more extensive dispersal of its alert forces. Known as satellite basing, this technique simply placed bomber and tanker units of not more than four aircraft each on permanent ground alert at non-SAC bases. The command planned to complete its full satellite basing program in three phases or options, and it was a major objective of SAC to realize the third and final option by the end of fiscal year 1972. If the goal were achieved, 70 bases would host alert aircraft, while 30 additional bases would maintain supporting personnel and materiel. Detachments of permanently assigned SAC personnel, augumented by crews and maintenance personnel on temporary ~~TDY~~, furnished the manpower for those bases where aircraft were actually stationed. Normal host-tenant support agreements defined general operational procedures, while the satellite bases concerned only with logistics received manpower increases directly from SAC.[2] When the program was fully implemented, each base would host a total of four alert aircraft--ideally two bombers and two KC-135 tankers.[3]

(S)(U) General McConnell, the Air Force Chief of Staff, approved Option I of the satellite basing program in June 1968. Option I originally envisioned

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[1] Hist of SAC, Jan-Jun 67, p 113.

[2] Hist of BAF, FY 69, pp 21-22, 24.

[3] Hist of SAC, FY 69, p 122.

the creation of 26 satellite bases during FY 1969, and another 42 ~~satellite bases~~ two years later. Even though the Secretary of Defense had not approved SAC's proposal, the Air Staff authorized the command to take preliminary action short of actually expending funds.[1]

(S)(U) Once again the Department of Defense refused to approve SAC's plans. The command had submitted a program change request for satellite basing to the Office of the Secretary of Defense in August 1968, but the latter did not act upon the matter until 10 December 1968, when Deputy Secretary of Defense, Paul H. Nitze told the Air Staff that satellite basing should not be undertaken in either FY 1969 or 1970. That the Russians possessed only a few missile-carrying submarines; that the U. S. lacked an effective SLBM warning system; and, that the nation's missile capability alone provided a sufficient nuclear deterrent were the reasons for Nitze's decision, ~~not to recommend SAC's satellite basing program.~~[2]

(S)(U) A few days later, however, the Department authorized approximately $12 million to begin a limited satellite basing program. After careful coordination with the Air Staff, SAC submitted a revised program to the Defense Secretary in January 1969. The command's recommendation called for the operation of a satellite base at Homestead AFB (TAC) as soon as possible,[3] and the activation

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[1] Ibid.

[2] Ibid.

[3] Homestead AFB officially became a SAC satellite base on 20 February 1969.

of eight additional satellite bases at Sheppard (ATC), Bergstrom (TAC), Whiteman (SAC), Columbus (ATC), Otis (ADC), Albany (NAVY), MacDill (TAC), and Mt. Home (TAC) on 1 July 1969.[1] By 1 July 1970 SAC had added three more satellite bases at McGuire (MAC), Little Rock (TAC), and Malstrom (SAC). Pending the allocation of sufficient funds by the Department of Defense, SAC's current plans project a total of 35 satellite bases to host 140 bombers and tankers by 1 January 1973.[2]

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[1] Ibid., p 123.

[2] SAC Programming Plan 3-70, HQ SAC (XPYP), "Phase-In Of Satellite Bases (U)," 1 July 1970, A-I-3, GP-4, Secret, NOFORN.

UNCLASSIFIED

Chapter II

AIRBORNE ALERT

(S)(U) In 1958, only one year after the implementation of ground alert, the Strategic Air Command created an airborne alert system which was a giant step forward in its plans for insuring the maximum survivability of our retaliatory forces. While ground alert called for the deployment of bomber aircraft at SAC bases ready to launch on a moment's notice, airborne alert would maintain a specified number of B-52s flying a fixed number of sorties on specified routes--24 hours a day, seven days a week, 365 days a year. When fully developed, the bombers flying this configuration would remain ready to divert from their standard flying pattern and attack enemy targets with nuclear weapons. As seen by SAC the essential purpose of an airborne alert system was to provide a secure airborne deterrent during a period of "no guaranteed warning."[1]

(U) Inaugurated by SAC in January 1959 and nicknamed CURTAIN RAISER, the first airborne alert test was a small one. B-36 aircraft carrying only conventional weapons flew daily routes from Ramey AFB, Puerto Rico to Nouasseur AB, Morocco, and proved capable of diverting to an enemy target during a portion of their flight.

Denied by State Dept DOS

DOS (b)(1) [redacted] DOS

[redacted]. CURTAIN RAISER extended for 139 consecutive days (from 13 January to 1 June 1958), and B-36s from the 72nd Bomb Wing at Ramey AFB made 278 sorties.[2] Because the Ballistic Missile Early Warning System was not completely operative in 1958, General Thomas S. Power, SAC's Commander-in-Chief, had asked that Headquarters USAF take a "candid view" toward

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[1]Hist of SAF, Jan-Jun 60, p 172.

[2]Hist of SAC, FY 59, p 110.

implementing airborne alert. That such a policy would maintain a satisfactory deterrent in spite of Russian missile supremacy from 1961-1964 was the basis of Power's strong endorsement of an airborne alert program. In November, the CINCSAC reaffirmed his conviction that if the U. S. was to maintain a position of strength at least equal to that of the Soviets', SAC had "no alternative" but to achieve a maximum state of airborne alert by July 1961.[1]

(S)(U) The command's time table for implementing an airborne alert program was a three phase one: an initial program by 1 January 1960; a maximum practical capability by 1 July 1961; and a further increase through the 1962-64 period. However, both the rate and degree of implementation depended upon SAC's ability to convince Headquarters USAF that there was a pressing need for airborne alert and then to receive sufficient funds from it to implement the program.[2]

(S)(U) Major General C. B. Westover, Director of Plans, headed the SAC team which presented the command's program to Air Staff on 16 December 1958. The Strategic Air Command judged that airborne alert would have maximum effect only when flown continuously for 24 hours a day.[3] Reemphasizing the CINCSAC's position publicized just a few weeks before, the team contended the BMEWS could not be fully operational by 1962. Therefore, SAC believed a maximum system of airborne alert would be necessary until the day when the BMEWS could guarantee a specific warning time.[4]

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[1] Ibid., p. 10.

[2] Ibid., p. 12.

[3] Ibid., p. 16.

[4] Ibid., p. 12.

(S)(U) However, General Curtis LeMay, the Air Force Vice Chief of Staff and himself a former CINCSAC, considered flexibility the most attractive feature of airborne alert: it should be an emergency posture assumed only at times of international crisis. In LeMay's opinion SAC should continue its airborne alert tests using two wings and one B-52 squadron during the period March through June 1959, and then submit a "limited and variable" airborne alert program to Air Staff. Declaring that the command would have to forget about beginning the program on 1 July 1960, LeMay advised SAC to "stop beating the drum so loudly for airborne alert." General Thomas D. White, the Air Force Chief of Staff, agreed.[1]

(S)(U) General Power proved to be an extremely articulate spokesman for airborne alert. The need for this kind of deterrence was two fold as he saw it. Although the command's arsenal represented the world's strongest nuclear strike force in 1958, the absense of a Ballistic Missile Early Warning System and continually advancing Soviet missile strength made the United States's position less secure each year. In light of these conditions, airborne alert represented the only sufficient safeguard against surprise attack. From a political standpoint, Power believed airborne alert was the only strategic posture then available which would permit the United States to face the Soviets at international conferences from a position of strength and thus avoid nuclear blackmail. Anything less for the CINCSAC was impractical and unsound. To maintain one fourth of the B-52 fleet in the sky 24 hours a day emerged as SAC's goal for 1960.[2]

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[1] Ibid., p115.

[2] Ibid., p33.

(S)(U) To test the reliability of airborne alert, SAC conducted two tests known as HEAD START I and II during fiscal year 1959. The command's history for FY 1959 reported that no test program in SAC's brief existence had received as much attention as these two operations.[1] With its purpose being solely to determine the extent to which airborne alert was possible, SAC scheduled HEAD START I to begin 15 September 1958 and extend through 15 December. Although SAC had planned to begin the test in mid-September, it did not receive Presidential approval for carrying nuclear weapons on participating aircraft by this date. Authorization was forthcoming on 2 October, and on the following day the 42nd B-52 Bomb Wing, stationed at Loring AFB, Maine, and singularly responsible for executing HEAD START I, began flying the first airborne alert exercise. Divided into three stages, the first phase of HEADSTART I required the 42nd Bomb Wing to launch a combat ready B-52 at six hour intervals around the clock; phase two constituted a stand down period which enabled SAC to evaluate the results of the initial test; while the last phase simply began the six hour daily sortie cycle all over again.[2]

(S)(U) Throughout its three months' life, manpower and materiel shortages plagued HEAD START I. Loring AFB, however, made the most of existing resources. Air crews and maintenance men worked seven days a week and logged approximately 3,800 flying hours during each month of the test. In an effort to determine the practicality of airborne alert, every other consideration was sacrificed to this goal. Inadequate AN/ARC-65 radio equipment, antenna coupler problems, a weak

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[1] Ibid., pp 119-143.

[2] (S) SAC Historical Study No. 79, "The SAC Alert Program 1956-1959." Hq SAC (HO), 25 Jan 61, p 100.

bombing-navigation system, bulky flight gear, and a lack of general comforts in the B-52 cockpit were the major difficulties associated with the initial phase of HEADSTART I.[1]

(S)(U) Although HEADSTART I was a test of short duration which left many questions unanswered, SAC considered the exercise a success. It proved conclusively that airborne alert was a practical strategic maneuver; that a KC-135 tanker squadron could fly nearly 200 sorties a month; that existing communications were sufficient to control the aircraft participating in the test; that current manning resources were adequate to support the sorties required during the test; and that an around the clock program was possible, although then impractical.[2]

(S)(U) HEADSTART II, SAC's second alert test began 2 March 1959 and continued through 30 June. The 92nd bomb wing at Fairchild AFB, Washington, and the 28th bomb wing, Ellsworth AFB, South Dakota, each flew four daily B-52 sorties in March, five daily in April, and six daily during May and June. The most general statistics for HEADSTART II readily indicated the enlarged scope of the second test. The two wings of B-52s flew a total of 1,384 sorties, while participating KC-135s completed 2,133 refueling missions. The B-52s actually spent 29,274 hours flying the airborne alert exercise.[3] The Strategic Air Command judged the performance of these units outstanding.

(S)(U) Many of the problems associated with the first HEADSTART exercise became even more evident in HEADSTART II, which shed considerable light upon mission scheduling, the mental and physical condition of flight crews, manning equipment ratios, and the cost of logistic support for air alert. Even though the scheduling

[1] Ibid., p 105.

[2] Ibid., pp 106-107.

[3] Ibid., p 110, p 107.

of missions was again rigid. Duty tosters were irreversible once assigned. This produced considerably higher morale in HEADSTART II than in its predecessor. Although HEADSTART II reaffirmed the feasibility of airborne alert for the second time, its greatest significance was a negative one. The Strategic Air Command had hoped to achieve a SAC-wide airborne alert by 1 January 1960, but the intricate logistic requirements and long lead time needed for procurements, indicated by HEADSTART II, convinced the command that implementation of adequate materiel support for an airborne alert program was doubtful before FY-61.[1]

(S)(U) The Strategic Air Command continued to study airborne alert by undertaking four indoctrination training programs known as STEEL TARP I and II, and HIGH TRIP I and II, between 6 October 1959 and 14 July 1960. In these four training operations five strategic wings, four bomb wings, and eight refueling squadrons flew from two to eight daily sorties.[2] The objectives of all four operations were the same: training additional units to fly continuous airborne alert sorties; the acquisition of data for an expanded airborne alert program; and the careful analysis of existing manning ratios to determine if they were sufficient to support an airborne alert system flown 24 hours a day.[3]

(S)(U) Although the Air Staff and SAC both agreed on the need for airborne alert, opinion differed within their ranks over the extent the new posture should take. At the end of 1959 Headquarters USAF officially supported a program for the FY-61 budget that would enable 10 wings (45 UE) with sufficient supporting air tankers to conduct six sorties per day for one year, beginning 1 March 1961.

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[1] Ibid., pp 113-117.

[2] Hist of SAC, Jan-Jun 60, pp 142-143.

[3] Hist of RAF, Jul-Dec 60, p 173.

This amounted roughly to a one-eighth airborne alert posture. The Strategic Air Command still believed that anything short of continuous airborne alert was impractical and unsound. General Power was anxious to place no less than one fourth of SAC's B-52 bomber fleet on airborne alert as soon as possible, and he urged the Air Staff to procure funds for achieving this capability by 1 July 1960.[1]

(S) (U) Although the Defense Department favored a limited airborne alert, it differed with SAC over the dimensions and the date for implementing such an operation. In January 1960, the newly appointed Secretary of Defense, Thomas Gates, candidly told the House Subcommittee on DOD appropriations that no extensive air alert program then existed because the Department did not believe continuous airborne alert was necessary. Only General Power among the nation's leading authorities on air power saw a need for placing one fourth of SAC's strategic bombers on airborne alert in FY-61. In the previous year the Department of Defense had estimated SAC's one-fourth plan would add $571 million to the FY-61 budget and approximately $800 million each year thereafter.[2] Such a cost was much too great. Accordingly, the JCS on 4 March 1960 officially informed General Power to make no decision on the actual date and requirements for implementing a one-fourth airborne alert posture.[3]

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[1] Hist of SAC, Jan-Jun 60, p 137.

[2] Ibid., p 140.

[3] Ibid., p 138.

(S)(U) Nevertheless, throughout 1960 and until November 1961, SAC B-52s flew daily airborne alert indoctrination flights[1] along "ladder-type" routes which resembled giant north-south loops stretching from the United States north into the Canadian Artic. Aircraft from SAC flew six daily sorties along these routes until January 1961 when Headquarters USAF doubled the number to twelve. There were seven ladder-type routes, and all but two required SAC aircraft to fly over Canadian territory. Each route was almost a separate geographical entity, the limits of which the proximity of supporting KC-135 tankers largely determined. The ladder routes required extensive traffic coordination, and SAC anticipated difficulties with the system in the event of an expanded airborne alert. AF (b)(1)

[redacted] Although this would not be difficult to obtain for flying only 12 daily sorties, the command feared that it would greatly impair the efficiency of airborne alert at the one-eighth or the one-sixteenth level.[2]

(U) A significant advance in the young airborne alert program came on 6 November 1961, when Headquarters USAF approved SAC's first regular program of airborne alert indoctrination. Known as Chrome Dome, this operation made it possible for combat-ready B-52s carrying nuclear weapons to fly sorties on two fixed routes for 21 hours each day by employing a bomber-stream routing technique.[3]

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[1]These amounted to six daily B-52 sorties on 31 December 1960 and ten sorties on 31 December 1961. SACM 114-3, "SAC Statistical Data From 1946," 8 Sept 1970, p. 15.

[2]Hist of SAC, Jul-Dec 61, p. 79.

[3]The bomber-stream routing technique employed a movement of bomber aircraft one directly behind another.

A northern route completely circumvented Canada, while a southern route traversed the Atlantic Ocean, Spain, and finally the western Mediterrean before returning to the United States. Supporting KC-135 tanker forces at Griffis, Loring, and Westover Air Force bases in the northeastern United States, at Eielson AFB, Alaska, and at Torrejon AB, Spain, serviced the aircraft. Six sorties daily would fly the northern route and four the southern route, while two monitored the BMEWS site at Thule, Greenland.[1] The command forwarded its plans for the new operation to Headquarters USAF at the end of June 1961, and Air Staff approved Chrome Dome on 15 August.

(S)(U) The Strategic Air Command received instructions to fly the Chrome Dome routes beginning 6 November. From this date until 30 November 1967, many changes occurred in routes flown and the number and types of aircraft participating, but during the period all airborne alert indoctrination (AAI) flights continued to be named Chrome Dome. During a normal peacetime posture, only a limited number of SAC wings participated in scheduled airborne alert indoctrination flights, but all wings were vulnerable for such flights on a cyclical basis. Each wing launched one bomber daily when on alert.[2]

(S) In July 1961, SAC informed Headquarters USAF that within a month it would be prepared to launch in time of crisis 60 sorties daily on the Chrome Dome routes (30 on the northern and 30 on the southern), assuming it were provided with a 72-hour lead time to configure its B-52s and deploy additional tanker personnel at its Alaskan and Spanish bases. Even on 48 hours' notice, SAC could still complete 60 sorties daily, even though target coverage would be less complete. In 1961, the implementation of 60 B-52 sorties daily amounted to a one-eighth airborne alert.

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[1] Hist of SAC, Jan-Jun 62, p 86.

[2] Hist of SAC, Jul-Dec 61, pp 79-80.

posture for SAC's B-52 force. On 15 August, the same day it approved Chrome Dome, Headquarters USAF instructed the command to create an "on the shelf capability" sufficient to expand air alert to either one sixteenth or one eighth of SAC's B-52 force on a 72 hour notice in time of national emergency. Accordingly, the command's directive for the implementation of Chrome Dome included provision for such a progression.[1]

(U TS) The Strategic Air Command added still another dimension to airborne alert with its decision to monitor continuously the BMEWS radar at Thule, Greenland. Needing to know immediately if any interruption in communications with the radar site was the result of mechanical malfunction or enemy attack, the command had begun to monitor Thule with airborne B-52 bombers from Westover AFB, Massachusetts, in August 1961. Still the best surveillance SAC could provide amounted to approximately 21 of every 24 hours. Although the initial Thule monitoring route avoided the Canadian overflight, it increased the distance from the bomber launch base at Westover AFB to the Greenland radar. KC-135 tanker aircraft from Westover flew to Goose AB, Laborador to take on fuel before encountering the B-52 monitor; even then, the tanker could not refuel the bomber sufficiently to maintain continuous surveillance of the Thule site.[2]

(U TS) At the advent of Chrome Dome, the 99th bomb wing at Westover was responsible for supporting the Thule monitoring program, but it was unable to provide continuous coverage of the site with its two B-52 sorties which flew the circuitous Chrome Dome route. To monitor the Thule site continuously AF (b)(1) [redacted]

[redacted]

[1] Hist of SAC, Jul-Dec 61, p 85; Hist of SAC, Jan-Jun 62, p 94.

[2] Hist of SAC, FY 63, p 118.

alert.[1]

(U) The need for a positive and continuous BMEWS monitor became clear to the command on 24 November 1961, when the Thule site lost contact simultaneously with both Headquarters SAC and the North American Defense Command. Immediately, SAC put its alert forces in a minimum reaction posture: all aircraft on alert taxied to locally selected positions from which all could become airborne in three minutes using MITC procedures. Four days after the incident SAC appealed to the Joint Chiefs of Staff to establish [redacted] AF (b)(1) monitoring route of the Thule site but, to achieve this, the aircraft would have to pass over Canadian territory. The command hoped to receive permission for such an action by 15 December. However, time was needed for coordination between the American and Canadian governments, and the JCS did not approve the modified route until 15 January 1962.[2] The command next negotiated with the Canadian government for the right to fly six basic monitor routes because it anticipated the need to assign the Thule route to B-52 units stationed at bases other than Westover. The Strategic Air Command had received authorization from Ottawa for all six of the routes by 1 April. Given the separate nickname of HARD HEAD, because the Canadian government had asked that the monitor be disassociated from Chrome Dome, the monitoring route used at any given time depended upon the B-52 organization then responsible for surveilling the radar at Greenland. This did not upgrade the command's ability to launch an expanded airborne alert force in time of crisis since the number of sorties flying the monitor did not increase.[3]

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[1] Hist of SAC, FY 63, p 116.

[2] Hist of SAC, Jan-Jun 62, p 90.

[3] Hist of SAC, FY 63, p 116.

(U) To achieve effective 24-hour surveillence of the BMEWS in Greenland, SAC revised its air refueling program on the HARD HEAD route. Since August 1961, the KC-135 force based at Westover flew a Westover-Coast-Westover pattern, but this had proven extremely strenuous on both aircraft and crews. Strategic Air Command calculated that if tankers from Eielson AFB, Alaska, were also used, the refueling mission could be reduced from 11 to seven hours while also increasing the offload. As a result, beginning 4 January 1962, the Eielson tanker force relieved the 4050th Air Refueling Wing and began supporting the B-52 monitor flying from Westover AFB. The command then increased Eielson's commitment by four KC-135 sorties daily, since each monitor required two aerial refuelings on its way to the BMEWS site.[1]

(S)(U) Early in 1962 Secretary of Defense McNamara recognized the need for reducing the 72-hour lead time then required by SAC for escalating its air alert force to a one-eighth or a one-sixteenth posture, and he instructed General Power to investigate the matter. However, any reduction in the lead time required the immediate incorporation of a portion of the ground alert fleet into the air alert contingency if the one-eighth or one-sixteenth commitment were to be achieved. To implement successfully either of these levels, SAC prepared for an emergency escalation by designating one EWO sortie in each B-52 (15 UE) squadron equivalent to the one-sixteenth level and a second sortie equivalent to the one-eighth posture--either of which could be mounted in the event a nuclear attack appeared probable.[2]

(U)(S) To expedite further the implemention of air alert at these levels, SAC assigned a specific launch time to each participating unit. The command staggered these over a 24 hour period to insure a continuous coverage and an even flow of

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[1] Hist of SAC, Jan-Jun 62, p 60.

[2] Ibid., p 94.

aircraft on the Chrome Dome routes. A unit on the northern leg could be the first in the air during a crisis, and its launch time would equal the implementation time (1 hour) plus 15 minutes. The units at Spanish bases required more time to build up their task forces, and the first would not take off until four and one-half hours after I hour. Nevertheless, the command calculated that a full posture could be achieved within 24 hours [redacted] AF (b)(1) Acc/Dom

(S)(U) Initially SAC's program for a one-eighth airborne alert posture equaled two B-52 sorties daily for every 15 UE squadron participating in airborne alert. This ratio amounted to an on-the-shelf capability of 60 B-52 sorties each day, with the command calling for 36 sorties to fly the northern route and 24 the southern route. By 1962, additional bombers were becoming combat ready and SAC had to determine the best method of incorporating them into the airborne alert program. Accordingly, the command decided to assign additional combat-ready crews to the southern route since this placed the B-52s on air alert closer to prime targets; in addition, the refueling squadrons at Ellsworth AFB, which serviced bomber aircraft on the northern route, were already extended to their full limits.[2]

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(S) In March 1962, SAC sent to Europe representatives from its Operations and Materiel Directorate to obtain approval from the Spanish government for both the command's reduced notification times and for an expanded air alert program which necessitated additional traffic on the southern route. Because an increased number of B-52s had become available for airborne alert, SAC planners calculated that the number of air refuelings from the Spanish bases would increase from DOS

[1] Ibid., p. 95.

[2] Ibid., p. 96.

48 (for 24 sorties) to 88 (for 44 sorties) at a one-eighth posture by mid-1963. Strategic Air Command wanted to create a second base at Moron AB and then divide the tanker force equally between Torrejon AB and Moron. These task forces would support all airborne sorties flying the southern route beginning 1 May. The Spanish government approved the request and the change became effective on the date SAC had scheduled. This new posture required the Second Air Force to maintain three KC-135s at each of the Spanish bases; the total of six aircraft was one more than had previously operated from Torrejon alone.[1]

[redacted]. It will be recalled that the northern Chrome Dome route avoided traversing Canadian territory, and the supporting tanker units were stationed in the northeastern United States. [redacted]

[redacted][2]

Ottawa's insistence that future Chrome Dome operations over Canada be confined to one flight level became a major problem for the Strategic Command which had planned to fly two cell formations at two different altitudes when

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[1] Ibid., pp 96-97.

[2] Ibid., p 97.

employing the emergency one-eighth posture. After extensive consideration, SAC agreed to fly its aircraft at only one flight level; however, this applied only to a 900 mile section of [redacted] (AF (b)(1)) In order to maintain single level flight, SAC developed a flat cell structure which was contrary to the command's accepted tactical doctrine. A unit's second aircraft would fly one mile to the right and two miles behind the lead bomber. The command devised this tactic for use only at a one-eighth Chrome Dome posture on [redacted] (AF (b)(1)) In April 1962, SAC issued instructions for implementing this procedure should the need for mounting a one-eighth alert level arise.[1]

(S) (U) As with ground alert, the airborne alert program presented SAC with several logistic problems. The inauguration of Chrome Dome in November 1961 witnessed the continuation of the 12 daily airborne sorties originally authorized in January. Strategic Air Command's standard policy was to replace approximately one half of the participating B-52s each quarter at the advent of Chrome Dome. Generally a unit's aircraft served in the program for two cycles, each of three months' duration. By 31 December 1961 seven of the original 11 Chrome Dome bomber units had been withdrawn from the operation, while the remaining four, whose participation accounted for five daily sorties, terminated their service at the end of the January-March 1962 cycle.[2]

(S) (U) It was of considerable importance to the program that the majority of units now flying Chrome Dome employed B-52G bomber aircraft. Having both a

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[1] Ibid., p 9F.

[2] Ibid., p 86.

greater range than the original B-52 and a capacity to carry guided air missiles (GAM), the G model significantly increased SAC's air alert deterrent. By the end of the April-July quarter 1962, B-52 aircraft were flying nine of the 12 daily airborne alert indoctrination sorties.[1]

(S)(U) The 4038th Strategic Wing, stationed at Dow AFB, Maine, was the first unit to fly airborne alert with GAM-77 Hound Dog missiles. The command had initially commissioned it to carry the most powerful guided air missiles beginning 1 January 1962. But its first GAM-77 sortie did not occur until 17 January, because the missiles were late in arriving from the Oklahoma City Air Materiel Area and additional time was needed to complete a flight control modification once they reached Dow. The 4038th Strategic Wing was the only unit to carry GAM-77s on Chrome Dome during the first half of 1962. Five units (the 42th BW, 97th BW, 4038th SW, 4039th SW, and the 413th SW) began flying air alert with the less powerful GAM-72 (Green Quail) on 1 January. By the end of June 1962, eight units, which collectively flew nine sorties daily, carried GAM-72s on airborne alert.[2]

(S) (U) Both air and missile alert received their baptism of fire during the Cuban missile crisis late in 1962. To appraise the accuracy of airborne alert at this critical juncture of SAC's history it must be remembered that the air alert forces then operated under stringent peacetime conditions and still at the indoctrination level. In October 1962, SAC photo-reconnaissance aircraft detected large numbers of Soviet missiles in Cuba, and on the evening

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[1] Ibid.

[2] Ibid., pp 93-94.

of 22 October, President Kennedy reported the tense situation to the American people. Only hours before the historic address, the Joint Chiefs of Staff ordered SAC to assume immediately a one-eighth airborne alert posture. General Power, the CINCSAC, designated 1700Z as "I" hour for the command to begin this level of alert. Thus, only 29 hours after General Power had received the order from Washington, SAC had one eighth of its forces flying airborne alert. The command continued to maintain this posture for 30 days.[1]

~~(TS)~~ The degree of readiness achieved during the Cuban crisis was unprecedented. Five years of carefully planned airborne alert indoctrination sorties now yielded significant results. With each B-52 unit fully aware of its route assignment, the operation progressed smoothly and efficiently. At the beginning of the one-eighth alert posture, SAC launched 66 B-52s daily and by 5 November a total of 75 B-52 aircraft, 31 on the northern route, 42 on the southern, and 2 on the Thule monitor route.[2] Strategic Air Command achieved its highest state of alert during the first week of November. On 19 October the command operated with a 50 percent alert posture (less adjusted and degraded sorties and deviations) and had 652 strike aircraft and 358 supporting tankers on alert; but on 4 November, which was the day of greatest escalation, SAC deployed 1,479 B-52 bombers and 1,003 KC-135 tankers on airborne alert.[3] When the one-eighth posture ended on 21 November and SAC returned to its normal

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[1] SAC Historical Study, No. 90, "Strategic Air Command Operations in the Cuban Crisis of 1962," Top Secret, HA-1162, p 36.

[2] Ibid., p 39.

[3] Ibid., p 58.

WORKING PAPERS

indoctrination program, the command had launched 2,088 B-52s during the four weeks' operation and hours actually in the air totaled 47,168.[1]

(U) ~~(TS)~~ The emergency condition also placed additional requirements upon SAC's tanker forces. Because the refueling capability of the task force at Fielson AFB, Alaska, was a limited one, the greatest increase in B-52 traffic took place on Chrome Dome's southern route. The number of KC-135s required at each tanker base increased as follows: Spanish task force (equally divided between Moron and Torrejon) from 6 to 28; Alaskan task force (Fielson) from 7 to 10; and northeastern United States (Westover, Griffiss, and Loring) from 6 to 13.[2]

(U) ~~(S)~~ ~~(TS)~~ During the one month operation maintenance support was over 97 percent effective. Considering airborne B-52s carried over 7,500 nuclear weapons without an incident, the safety record maintained by the command during the crisis was outstanding. Of even greater significance, SAC had proven the secure, continuous, and immediate strike capability of airborne alert. When operating at peak strength during the crisis, approximately 65 airborne B-52s and 240 nuclear weapons were "target effective" at any given time.[3]

(U) ~~(S)~~ On 28 October President Kennedy and Premier Khruschev agreed on a formula for ending the crisis. Then on 2 November, the President informed the nation that the danger of nuclear war had subsided. But the possibility of an atomic war had not totally passed, and the JCS decided to maintain one eighth of the strategic forces on alert for 19 more days. At the direction of the Joint Chiefs,

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[1] Ibid., p 48.

[2] Ibid., p 37.

[3] Ibid., p 48.

General Power terminated the one-eighth airborne alert posture effective 0600Z, 21 November, and the command resumed its normal indoctrination program. Although SAC had instructed its numbered air forces to assume no other force degradation, it permitted them to recall support aircraft, personnel, and equipment at their discretion.[1]

(U) Since the beginning of the airborne alert program, SAC had devoted special attention to creating an alert cycle which, in addition to guaranteeing maximum retaliation to surprise attack, would also provide maximum convenience for its crews. Before the Cuban missile crisis, the command normally assigned B-52 units to airborne alert indoctrination for six months' periods, although some changes in unit commitments appeared quarterly. In scheduling units for airborne alert sorties, the Strategic Command gave particular attention to both a unit's role in the Single Integrated Operational Plan and to a fair balancing of alert commitments among the numbered air forces. The command's use of northern based B-52 G and H units on the Thule route; the desire to train new units as soon as possible; and the complications always presented by runway construction were criteria which influenced SAC's selection of units to fly airborne alert sorties on the Chrome Dome routes.[2]

(S)(U) Early in 1963, the numbered air forces began to question the length and frequency of SAC's indoctrination schedules for the first time. This dissatisfaction surfaced at the Chrome Dome operations review conference meeting at Headquarters SAC in January 1963. The numbered air forces objected to the partial changeover of participating units every quarter rather than to the actual

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[1] Ibid., p 47.

[2] Hist of SAC, FY 63, pp 119-120.

six months' alert cycle. The major recommendation of the conference was that a complete rotation of participating units should occur only twice each year on 1 January and on 1 July.[1]

(S)(U) The command never acted upon this recommendation. A proposal from Colonel F. B. Elliott, commander of the 423th Strategic Wing at Barksdale AFB, Louisiana, rendered the suggestion of the Offutt meeting obsolete. Procosing a three months' cycle for a unit on airborne alert be created as an official SAC policy, Colonel Elliott objected to the Chrome Dome cycles as then constituted. Although this promrted considerable discussion within the Air Force, SAC was already studying the advantages of reduced cycles for airborne alert. A shorter cycle would obviously increase the number of units participating annually: for example, a 90 day AAI would make it necessary for all B-52 organizations to take part in Chrome Dome at least once a year. The enthusiasm and support of SAC's three numbered air forces for the change was unequivocal. They favored three months' cycles and believed these would distribute the AAI commitments more evenly among the forces and furnish a smoother yearly training program for all B-52 crews. Thus, in mid-April 1963, SAC officially announced that three months' cycles for AAI training would take effect in FY 1964.[2]

(S)(U) Strategic Air Command soon reduced the indoctrination cycle still further. The second reduction resulted from the discussions at a tactical aircraft squadron commanders' conference, nicknamed United Effort, which met at SAC Headquarters on 21-22 May 1963. The commanders recommended flying airborne

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[1] Ibid., p 120.

[2] Ibid., p 121.

alert indoctrination flights with two B-52s in cell formation instead of a single B-52 sortie from each participating unit (15 UE equivalent). The cell formation was an accepted tactic for the one-eighth level air alert, but Headquarters SAC was reluctant to approve cell tactics for the more routine indoctrination program. Also included in the commanders' recommendations was a proposal to shorten the training cycles from three months to 45 days. General Power tentatively approved the recommendation during the session and instructed SAC planners to evaluate its feasibility. The command officially approved the recommendation in mid-June and implemented cell tactics and the 45-day cycle beginning 1 October 1963.[1] This policy remained in force until SAC ceased flying airborne alert sorties in 1968.

(S) (U) The alert system changed radically in 1964 when SAC's ICBM program assumed new importance as the second generation Titan II and Minuteman missiles became more sophisticated and available in greater numbers. No additional bomber aircraft had joined the command's inventory since 1962. The B-52 and B-58 forces remained static, with SAC having received the last of these aircraft in 1962. The B-47 fleet was steadily reduced. Manned bombers could still carry weapons of generally higher yields, and SAC aircraft were able to provide a greater target coverage and a more powerful nuclear delivery.[2]

(TS) ~~However,~~ by 1964 the number of bomber aircraft in the SAC force had increased considerably since the advent of airborne alert. The number of B-52s participating in a one-eighth or a one-sixteenth posture had increased proportionally. The one-eighth posture, which equaled 60 B-52 sorties a day in 1962, now consisted Dec

[1] Hist of SAC, Jul-Dec 63, pp 86-87.

[2] Hist of SAC, Jan-Jun 64, p 93.

of 80 such sorties: 44 on the southern route, 34 on the northern route, and two on the Thule monitor route. In addition, Emergency War Operations planning revealed distinct flaws in the Chrome Dome operation, and Soviet missile hardware had reached new levels of sophistication.[1]

(U) A new Chrome Dome triple-routing system nicknamed TRIDENT was SAC's answer to these circumstances at the beginning of 1964. AF (b)(1) [redacted] The Strategic Air Command's projected sortie assignments on the Trident routes were as follows:[2]

	One Eighth	One Sixteenth	Indoctrination
Northern Route	28	14	4
Western Route	16	8	2
Eastern Route	36	18	6
	80	40	12

(U) The command expected the new system to have several advantages over the Chrome Dome routes. Most significantly, SAC believed AF (b)(1) [redacted] Increased flexibility afforded by the triple-routing procedures

[1] Ibid., p 97.

[2] Ibid., p 101.

AF (b)(1)

allowed the command to [redacted] cy shifting route assignments. Although there were [redacted] ACC/DoN

[redacted] to both areas. After the substitution of [redacted]

(S)(U) Considerable delays preceded the implementation of the Trident patterns. General Power officially proposed the plan to the Joint Chiefs of Staff and Air Staff late in February 1964. But the State Department, which would coordinate the program with the Canadian government, did not receive it until June. In the JCS's opinion these negotiations would take another five months. Accordingly, the command estimated that Trident could not be initiated before 1 June 1965. Canadian approval came in April 1965 and SAC began the program in August.[2]

(S)(U) Although SAC continued to favor flying airborne indoctrination sorties 24 hours a day, the program suffered a major setback late in 1965. Secretary of Defense Robert S. McNamara's confidence in the singular ability of the Minuteman and Polaris missiles to guarantee adequate retaliation was well known. Still it was a surprise to SAC when Headquarters USAF received the Secretary's Subject/Issue Number 408, discontinuing airborne alert indoctrination sorties effective 1 July 1966, and reducing the support manning crews by 1,800 spaces.

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[1] Ibid., p 98.

[2] Ibid., p 101.

Air Staff sent a reclame to the Secretary on 3 December, requesting the retention of six of the 12 B-52 sorties then flying Chrome Dome. It also protested the manpower cut on the grounds that no reduction in the overall number of sorties had been made. Not unexpectedly, McNamara rejected the reclame on 16 December, contending that the basis for his decision was the need to provide further resources to support B-52 training. Since airborne alert was destined to terminate, McNamara announced that special funds would no longer be provided to stockpile spare materiel for airborne alert operations.[1] However, of greater significance was a condition in McNamara's reply that SAC could continue to fly any number of air alert indoctrination flights which the Joint Chiefs of Staff considered optimum so long as they were financed by the funds provided for the normal flying program.[2]

(S)(U) A fatal crash of two aircraft participating in airborne alert occurred almost simultaneously with the McNamara order and further hindered SAC's efforts to retain air alert as one of the triple pillars of this nation's strategic forces. On 17 January 1966, a B-52G, which was the second of a two-ship cell from the 60th Bombardment Wing, Seymour Johnson AFB, North Carolina, flying the eastern Trident route (or the original southern route of Chrome Dome), underran and collided with a tanker from the 97th Bombardment Wing, Blytheville AFB, Arkansas, during a refueling mission over the southeastern coast of Spain. Not only were seven crewmen killed when the two aircraft collided, but four unused hydrogen bombs landed near Palomares on Spain's Mediterrean coast.

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[1] Under this condition Air Staff estimated a one-eighth posture could only be maintained for 30 days after 1 July 1966.

[2] Hist of SAC, Jan-Jun 66, pp 90-91.

The command quickly located three of the weapons but did not recover the fourth from the ocean until 7 April, following an intensive search of land and sea.[1]

(U) Spain's justifable concern over radiation exposure in the Palomares area prompted a thorough review of the existing airborne alert indoctrination flights and put a serious strain upon our relations with friendly foreign nations. On 22 January the Spanish government informed the JUSMG MAAG in Madrid that flights carrying nuclear weapons over Spanish territory would no longer be permitted. At 1145Z that same day SAC suspended airborne alert indoctrination flights on the eastern route for an indefinite period. The command hoped this condition would be only a temrorary one and that the Franco government would soon reapprove the Spanish overflight. Even though the Spanish Minister of Tourism and Information had stated publicly on 29 January that the ban on overflight with nuclear weapons was permanent, he qualified the pronouncement by suggesting the prohibition might be lifted in the event of an international crisis.[2] Strategic Air Command briefly considered flying the eastern route without nuclear weapons; however, when General John D. Ryan, the CINCSAC since December 1964, objected to such an arrangement, the command's original decision to cancel the eastern Trident route remained in effect indefinitely. The suspension reduced the number of daily AAI sorties from 12 to eight.[3]

(S)(U) In April 1966, the Joint Chiefs of Staff approved a revised program for air alert drafted by Headquarters USAF and endorsed by SAC. This program

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[1] Ibid., pp 83, 85.

[2] Ibid., p 89.

[3] Ibid., pp 87, 89.

was in accord with McNamara's authorization permitting the JCS to maintain air alert indoctrination within the limits of SAC's regular flying program. The Strategic Air Command received the Air Staff's proposals for future alert on 17 February 1966. The draft's major provisions suggested four daily indoctrination sorties through fiscal year 1967; a Defense Department allocation of 1,350 manpower spaces if the reduction of 1,800 spaces actually occurred; and maintaining a capability of sustaining a one-eighth program after the Defense Department had made a definite decision on the manpower issue. The command endorsed this plan on 1 March. By the end of April the Joint Chiefs of Staff had approved this Air Staff-SAC program for one year, and it became effective on 1 July 1966.[1]

(U) To insure that it could immediately escalade to a one-eighth airborne alert posture, SAC decided to maintain 38 of its 40 B-52 squadrons (15 UE) in an on-the-shelf capability for fiscal year 1967. The command drafted a year's schedule based upon the 45 day cycle then operating for all units participating in AAI exercises. In most cases these sorties would negotiate the routes where they had previously flown indoctrination sorties. The most feasible program for the four daily indoctrination exercises consisted of two on the eastern route and one each on the western and northern routes. However, SAC had not yet resolved the question of the Spanish overflight which was an absolute corollary to implementing AAI flights on the eastern route. Rather than transfer the two sorties regularly flying this pattern to the northern and western routes, SAC suspended the sorties on the eastern one altogether until some agreement

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[1] Ibid., p 99.

could be reached with Spain on the overflight question.[1] The command decided to begin a continuous monitor of the Thule site with KC-135 tanker units stationed at Elelson AFB, except during July when runway repairs at the Alaskan base shifted this responsibility to the Goose task force.[2]

(U) The reduced program took effect on 1 July 1966 at the level of four daily B-52 sorties: one each on the northern and western routes and two flying the Thule monitor. The level of Chrome Dome operations in FY 1967 remained the same as in FY 1966. But effective 1 July 1966, SAC changed the name for airborne alert indoctrination from Chrome Dome to Giant Wheel and created the separate appellation of Butter Knife to denote the continuous monitor of the BMEWS site at Thule, Greenland.[3]

(U) The termination of the Spanish overflight and the termination of AAI sorties on Chrome Dome's eastern Trident route greatly impaired SAC's airborne alert program. By late 1966 the command felt certain that the Spanish government would not lift the restrictions on the overflight, and it began to develop a program which placed renewed emphasis upon ground alert. Early in March 1967, SAC appointed a study group to investigate the merits of stepping up the air dispersal program. Shortly thereafter its recommendations were implemented, and the new program became known as Selective Employment of Air and Ground Alert (SEAGA).[4]

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[1] Ibid., pp 101-102.

[2] However, SAC was reluctant to fly tankers on the Thule monitoring route. Beginning in October 1966, the command reassigned B-52s to survey continuously the BMEWS radar and allotted two daily AAI sorties to that route. Hist of SAC, Jul-Dec 66, p 119.

[3] Hist of SAC, Jan-Jun 66, pp 101-102.

[4] Hist of SAC, Jan-Jun 67, p 112.

(U) (S) A greater dispersion of SAC's alert forces was the basic tenet of the SEAGA program. The study group further recommended implementing a universal sortie for each of SAC's 17 B-52 G and H units. When this was done SAC planners hoped to incorporate Hound Dog missiles into the air dispersal program and to expand the number of sorties for the G and H units. Although General J. J. Nazarro, who had succeeded General Ryan as CINCSAC on 1 February 1967, favored the plan, the command had long contended that the air disrersal plan could not be incorporated into the SIOP by the beginning of FY 1968. Therefore, the Strategic Air Command requested the Joint Chiefs of Staff to approve the continuation of air alert for another year beginring 1 July at the existing level of four daily sorties. Approval for this limited alert program came from the JCS in April 1967.[1]

(S) ~~(TS)~~ The SEAGA concept combined the best features of ground and air alert. Instant response to tactical warning and compatability with the SIOP were the concept's strongest features. When the plan went into effect on 1 July 1968, the primary SEAGA force consisted of 34 B-52 G and H sorties plus 16 B-52 D ~~Ace~~ ~~Dom~~ sorties at Andersen AFB, Guam.[2] Nicknamed Giant Lance, SEAGA enabled the CINCSAC to employ a portion of the alert forces in three different options, either separately or simultaneously. Any one of the three conditions made continuous coverage of carefully determined SIOP targets possible: all B-52 sorties assigned to the SEAGA force constantly remained in a full combat configuration. At the lowest level of SEAGA operations, the forces committed to ground alert possessed the responsibility of covering predetermined targets according to the requirements of the Single Integrated Operations Plan. Under the second option, SAC would escalade to airborne alert and launch the SEAGA sorties immediately ("Flush Launch") or, in a less critical condition, in accordance with a precisely timed schedule of minimum interval take-off. This maneuver constituted a

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[1] Ibid., pp 112-113. [2] Hist of SAC, FY 69, p 117

"visual deterrent" of SAC's retaliatory posture and this, the command believed, would demonstrate to an enemy launching an attack against the United States the national determination to resist with every available resource. The "ending survival" option was the final alert posture, and it provided continuous airborne surveillence by the SEAGA forces of targets sufficient to destroy a vital portion [redacted] With the third posture bombers would take-off periodically and approximately 20 hours would lapse between unit sorties.[1]

(S) Although SAC's 24-hour monitoring of the Thule radar site remained in full operation at the advent of SEAGA, unforeseen circumstances soon determined its demise. On 21 January 1968, a B-52 flying the Greenland BMEWS route and carrying four unarmed MK-28 nuclear weapons crashed near Thule AFB. The following day the JCS directed SAC to cease carrying nuclear weapons at once. Immediately, General A. G. Gillem II, SAC DCS/Operations, suggested the continuation of air alert indoctrination by flying the four daily sorties without weapons, but General Nazarro on 24 January took the position that there was little merit in flying unarmed sorties. As a result, SAC terminated all its sorties on the northern and western routes. B-52s from Westover AFB flew the last AAI flights on 25 January. The B-52 monitor of the BMEWS site at Thule, Greenland, continued until May 1968.[2]

(S) While preparation of the SEAGA study was in progress, SAC questioned the practicality of continually monitoring the Greenland facility due to changes

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[1] Hist of SAC, FY 69, pp 116-117; Hist of BAF, FY 69, pp 101-103.

[2] Hist of SAC, Jan-Jun 68, pp 77-78.

in Soviet ICBM deployment. With the two other BMEWS sites now as reliable as the original one at Thule, the command reckoned that continuous surveillence of the site at Clear, Alaska, would be an equally effective alternative to the Greenland monitor and less costly than the original operation. [redacted]

[redacted]

It will be recalled that during the July-September 1966 quarter SAC monitored the Thule BMEWS site with tankers based at Goose AB and Elelson AFB; however, the excessive distance from these to the Greenland station had rendered this experiment unsatisfactory. The command now considered monitoring the Clear BMEWS site with KC-135 tankers. This technique was quite feasible if these aircraft operated from a base reasonably close to the radar site. A series of tests conducted by the command in February 1968, convinced SAC that tanker surveillence of the Alaskan outpost would provide an economical and efficient monitor of the Clear radar. Accordingly, General Nazarro approved the change in monitoring procedure and in early April, SAC notified all affected Air Force agencies that on 1 May the Thule monitor would terminate and surveillence of the Alaskan radar by the tanker force based at Elelson would begin.[1]

(U) (TS) Selective Employment of Air and Ground Alert [redacted] AF (b)(1)

[redacted]

Since the JCS had prohibited

[1] Hist of SAC, Jan-Jun 68, pp 79-80. The BMEWS monitor site at Cl[redacted] a force of five KC-135s flying from Elelson. Three aircraft each [redacted] eight-hour shift completed the monitor each day.

AF (b)(1)

[redacted]

posture. Four bases hosted the KC-135 tankers supporting SEAGA bombers, but the use of these involved no significant negotiations with foreign governments. Eielson AFB was on United States soil, while there were no restrictions on the number of KC-135s stationed at Goose AB, Labrador, and existing agreements justified the operation of the SAC tanker force at Torrejon AB, Spain. The State Department's notification to the Canadian and Spanish governments regarding the new alert system was sufficient to insure adequate tanker support for SEAGA.[1]

(S)(U) Selective Employment of Air and Ground Alert, characterized by alert aircraft remaining in full combat configuration and ready to respond instantly to one of three tactical options, replaced the four daily B-52 indoctrination sorties flown by SAC on 1 July 1968. After this date, the command no longer flew regularly scheduled AAI sorties on any of the three airborne alert routes. As far as bomber and tanker aircraft are concerned, the Strategic Air Command's alert program currently rests upon the SEAGA technique.

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[1] Hist of SAC, FY 69, p 119.

Chapter III

MISSILE ALERT

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(S) In 1964 General Bernard A. Schriever, then Commander of the Air Force System Command and the officer who had directed the nation's ballistic-missile program since its inception, confidently asserted that the ICBM force had already established for the United States "a position of strategic superiority."[1] Five years later General Bruce K. Holloway, CINCSAC since 29 July 1968, confidently summed up the command's confidence in its missile capability when he spoke of Minuteman, the solid-fueled ICBM which then comprised over 90 percent of SAC's missiles on alert. Said the General: "I consider the Minuteman the most important element of the strategic forces. We have 1,000 of them, they are in their silos, they work, and an average of 98 percent of them are on alert 24 hours a day."[2]

(S)(U) As technological advances continually sophisticated SAC's missile force during the 1960s, the ICBM emerged as the backbone of the command's alert program. Theoretically, 100 percent of the ICBM force was required for alert. Although the SEAGA posture in 1969 called for only 40 percent of SAC's B-52/B-58 bomber and KC-135 tanker forces to be poised on ground alert, practically all the command's intercontinental ballistic missiles remained on continuous alert at SAC's nine missile bases,[3] housed in concrete silos and hardened[4] to survive anything but a direct nuclear hit.

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[1] Ernest G. Schwiebert, A History of the U. S. Air Force Ballistic Missiles (New York, 1965), p 21.

[2] Hist of SAC, FY 69, p 247a.

[3] These bases are Davis-Monthan, Ellsworth, Grand Forks, Little Rock, McConnell, Malmstrom, Minot, Warren, and Whiteman. Vandenberg AFB only supports ICBM testing.

[4] To harden a missile site or installation is to reinforce it with concrete or earth to withstand the overpressures of excessive heat or of a nuclear blast.

(U) The increasing role played by the ICBM in SAC's alert program is directly associated with the additional technological sophistication of the missiles available to the command. To appreciate fully the role of the missile in SAC's alert system, there follows a brief description of the three ICBMs which the command has used on alert: the Atlas, the Titan, and the Minuteman.

(U) Fueled by a highly volatile and explosive cryogenic propellant that required an immaculate propellant-loading system, the Atlas was the United States's initial ICBM. Although the first test of the Atlas took place in June 1957, it was not until 17 December the same year that the missile hit near the target the designated impact area with all systems performing satisfactorily. Between 1957 and late 1962 both the Air Force Systems Command and SAC tested six models of the Atlas designated simply as Atlas' A, B, C, D, E, F. When operational each exhibited a significant advance over the previous model. The series' initial model, the Atlas A, employed a booster and vernier engines but not the sustainer engine, while the guidance system's autopilot was nonfunctional even though it was aboard the vehicle. By the time tests for Atlas C began in December 1958, Air Force engineers had achieved further improvements in the system. Although the propulsion system of Atlas B also powered Atlas C, the latter's propellant utilization system now operated as a complete flight unit. This missile carried an operational re-entry vehicle and an improved and refined guidance system which made possible increased altitude and range.[1]

(U) The series E and F missiles, tested from October 1960 until late in 1962, continued the Atlas' evolution to greater sophistication. The E and F were the still

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[1] Schwiebert, pp 107-108.

the last Atlas models. The perfection of the Atlas E carried ICBM development to the point where the vehicle could be installed in semi-hardened sites, thus hastening the day when the missile force could be housed in underground installations. A more powerful propulsion system, an all-inertial guidance system, and an operational re-entry vehicle further characterized these last two models of the Atlas program. Atlas F was greater in length than the previous models and could be fired from an underground silo with liquid fuel stored aboard the missile.[1]

(U) By the end of 1962 AFSC had completed all its scheduled Atlas tests. Now it began a second program which developed and made available for alert two new models of intercontinental ballistic missile. Named the Mark I Titan and the Mark II Titan, these vehicles offered several technical and operational improvements over the Atlas series. For example, the Titans deployed in a tandem configuration which was more compatible with hardened operational sites and the installation of missile silos than the Atlas, of which the most sophisticated model could only be installed in semi-hardened sites. The use of an improved all-inertial guidance system made dispersal less difficult and increased the chances for survivability from surprise attack. Furthermore, the use of an ablation-type nose cone reduced overall missile weight and made the installation of a larger warhead possible. A stronger single-booster first stage engine permitted complete separation of the first stage as a complete unit. The development of non-cryogenic propellants for the Titan II, which could be stored aboard the missile simplified maintenance of this vehicle when on alert and

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[1] Ibid., pp 111-112.

reduced critical reaction time.[1]

(U) The Titan I, which was this country's first two-stage ballistic missile, received its initial flight-test on 6 February 1959 and became fully operational in late 1961. With a length of 48 feet and a speed approaching 16,000 mph, the range of the first Titan was nearly 6,300. An advanced version of Titan I, Titan II was ready to join the missile force in the closing weeks of 1963. When fully operational this vehicle made it possible for SAC to switch from aircraft coverage of priority targets to ICBM coverage. The second model of the Titan series carried either a 9,000 pound, nine megaton (MT) warhead or a 4,500 warhead with a four and a half megaton payload. Its range was 8,500 NM. Because it could be fired directly from its underground silo, the Titan II was capable of instant launch. Only five feet longer than Titan I, its fuel of nitrogen tetroxide and UDMH could be stored in the missile when housed in the silo. This further reduced launch time and brought an attendant gain in weapon system reliability.[2]

(U) (S) 15 September 1959 was a historic day for the United States's missile program as the first solid-propellant missile of intercontinental range loomed skyward from its underground silo at Edwards AFB, California. By May 1960, the Air Force Flight Test Center at Edwards had gathered sufficient data to warrant terminating the "captive tests" of the solid-propellant missiles or the Minuteman, which was the name the AFSC assigned to its third ICBM series. By the end of 1959, the perfection of the Minuteman became the top priority in the United States's missile program.[3] Minuteman testing received an even greater

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[1] Ibid., p 119.

[2] Hist of SAC, Jan-Jun 60, p 189.

[3] Hist of SAC, Jan-Jun 61, p 181.

impetus on 1 February 1961 with the first successful firing of Minuteman I, 4,000 miles south of Cape Canaveral on the Atlantic Missile Test Range. For the first time the Air Force Systems Command tested a complete weapon system rather than simply the ICBM booster alone. Three stages, the guidance system, and the nose cone were all studied in this initial exercise launched from the Florida coast.

(U) Fulfilling SAC's requirement for a quick reaction solid-propellant ICBM system, Minuteman I, the first model of the three model series, became operational in February 1962. It was designed to deploy either the Mark 5 or the Mark 11/11A Reentry System,[1] and its warhead carried a yield of approximately one megaton. To extend Minuteman's range and payload, improve its accuracy, allow multiple target selection, and provide a greater penetration capability, the AFSC authorized development of a second, more sophisticated model of the series to begin in 1961. Minuteman II was the result of this program, and it became operational late in 1965. It employed a larger second stage engine controlled by liquid injection into a single nozzle and was capable of carrying warheads of a higher yield than its predecessor.

(S) The advantages presented by these two Minutemen over the most advanced ICBMs to date (Atlas F and Titan II) were numerous. Not only was the Minuteman less expensive to produce and operate than the earlier missiles, but tests indicated that it would be easier to disperse and harden in underground silos.[2]

(S) Currently United States missile development has reached its highest degree of sophistication with Minuteman III, which has been operational since

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[1] The Mark 5 Reentry System is no longer operational.

[2] Hist of JSAF, Jan-Jun 60, p 226.

early in 1967. It carries multiple independent targetable re-entry vehicles; that is to say, a system of multiple warheads which can be maneuvered on independent courses to separate targets. Minuteman III is presently the last model of the quick-reaction solid-propellant ICBM system which the Air Force began to develop in 1958. Employing a third-stage booster more powerful than those of the earlier ICBMs, the range of Minuteman III is [redacted] as compared, for example, with Titan I's range of 6,300 miles and 5,500 miles for Minuteman I. The third-stage booster enabled Minuteman III to carry General Electric's MIRV with three nuclear warheads. Although only one percent of the command's 1,000 missiles on alert in FY 1970 were Minuteman IIIs, SAC has programed this ICBM to become the nucleus of the entire missile alert force by 1975. With plans calling for approximately 1,000 missiles to be on alert throughout the 1970s, the command projects 580 Minuteman IIIs to achieve alert status by the middle of the decade.[1]

(S)(U) The Strategic Air Command presently deploys all three series of the Minuteman on alert in its unmanned hardened and dispersed underground launch facilities at the nine bases which host the strategic missile force. A hardened underground launch control facility directs launch control and continuously monitors the missiles, 98 percent of which are on alert 24 hours a day. This hardened and dispersed weapon system is organized into squadrons of 50 missiles each, with two or more squadrons constituting a missile wing. There are now six missile wings in the Strategic Air Command. All launch control and monitoring activities are limited to the squadron level.[2]

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[1] SACM M-2, "Minuteman," Secret, 1 July 1970, p 13-10.

[2] Ibid., 1-4, 12-4. Currently the command's ICBM force of approximately 1,000 missiles is apportioned among six missile wings.

(U)
(S) The unprecedented ability of the Soviet Union to launch ICBMs with startling accuracy in the period 1957-1959 caused the command serious anxiety at the end of the decade. Planners at Headquarters SAC knew the Soviets had launched several missiles down range in the Pacific at a distance of over 4,700 NM, and intelligence indicated they were, on the average, 80 percent successful. It was not surprising, therefore, that General Power commented that the progress made by the United States in missile development was "too little and too late."[1]

(S)(U) When a SAC operational squadron (576th SMS) at Vandenberg successfully fired an operational launch of an Atlas D on 1 September, SAC considered the time ripe to begin a missile alert program even though it would be on an initially. extremely small scale. The first ICBM now joined the command's strategic forces. The Vandenberg launch was the first ICBM to be fired by an all-SAC crew. It signaled the integration of the 576th SMS at the California base into SAC's emergency war order, thus signifying a landmark in the evolution of the strategic missile forces. Nevertheless, the missile alert force in 1959 was hardly discernible, and only one Atlas missile was actually on alert at the end of the year. The command assigned this lone ICBM to the 576th SMS at Vandenberg.[2]

(S)(U) No sooner had SAC placed its first missile on alert than repeated malfunctions in the Atlas tests suggested a general lack of reliability in the liquid-fuel missiles. In early October 1960, General Power candidly expressed his opinion to Headquarters USAF that the Atlas had "demonstrated almost a zero probability of being successfully launched in an operational countdown and arriving at the target area." The evidence clearly supported the CINCSAC's

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[1] Hist of SAC, Jul-Dec 59, pp 261-263.

[2] Ibid., p 286.

position. During 1960 the Air Force Systems Command had attempted 16 launches of the Atlas D from Vandenberg; seven were fired and three impacted within the target area; two were destroyed shortly after liftoff; two more had malfunctions in flight and fell 500 to 1,000 miles short of the target area. System malfunctions prevented the nine remaining missiles from ever getting off the launch pad.[1]

(S)(U) These circumstances significantly affected the command's plans for future operations. Planners at Headquarters SAC had hoped the SM-65 (or Atlas program) would form an essential part of the missile inventory in the period 1961-1963, but realistically they knew the Atlas' high cost and intricate maintainence problems prevented including this ICBM in SAC's long-range war plans at that time. By the end of 1959, it was SAC's position that the solid-fuel Minuteman was the ICBM most suitable for alert because it had demonstrated the greatest efficiency, reliability, and quickest reaction time.[2] With justification the Strategic Air Command in the early 1960s looked to the Minuteman to close the missile gap with the Soviet Union.

(S)(U) In 1960, SAC's alert missile force continued to be a small one. On 31 December 1960, five Atlas D missiles were the only ICBMs on alert. Three of these were assigned to the 564th SMS at Francis E. Warren AFB, Wyoming and the remainder to the 576th SMS at Vandenberg AFB, California.[3] Now, to counter the Soviet Union's rapid advances in missile technology, SAC planners called for

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[1] Hist of SAC, Jul-Dec 60, p 175.

[2] Ibid., p 174.

[3] Ibid., p 175.

a rapid increase in the number of missiles on alert. In 1960 planners at Headquarters SAC now advocated maintaining a missile alert sufficient to implement the "strategy of counterforce." This doctrine called for the Strategic Air Command to possess a second strike capability which could totally destroy the enemy's nuclear offensive force.[1]

(U) The command's missile alert force continued to increase steadily. As of 31 December 1961, the missile alert force consisted entirely of Atlas ICBMs, but it had increased considerably over the previous year. Now, 26 missiles out of the 62 assigned to SAC were on alert.[2]

(TS) (U) The circumstances surrounding the Cuban missile crisis have been previously discussed. However, the events of 22 October to 27 November afforded SAC an unprecedented opportunity to test its command and control apparatus as well as the force generation ability of its missile fleet under stress. Strategic Air Command was able to see for the first time how far it had progressed toward realizing an adequate missile deterrent capability. The performance of missile alert during this critical juncture of the cold war was extremely encouraging to SAC. During the four week period, the largest number of missiles to date appeared on alert. Total ICBMs on alert had already increased substantially from the summer of 1962 to October of the same year. By 19 October, SAC had 112 ICBMs capable of launching at a moment's notice with this inventory including 74 Atlas D, E, and F and 35 Titan I missiles. A minimum of 85 percent of these missiles were usually maintained on alert.[3] That the command could quickly reactivate

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[1] Ibid.

[2] Hist of SAC, Jul-Dec 61, p 168.

[3] Hist of SAF, Jan-Jun 62, p 173.

missiles off alert for mechanical malfunctions could be readily seen. On 27 October, the day of President Kennedy's historic broadcast on the Cuban situation, 20 more missiles were on alert than there had been two days before. The total was now 132 (as compared with 112 on 19 October): 91 Atlas and 41 Titan I missiles.[1]

(S) (~~TS~~) (U) Even though the overall missile capability was impressive and unprecedented, the performance of the Titan I was especially significant. As the crisis began SAC had 56 two-stage Titan I ballistic missiles in its inventory, and all 56 of these were actually on alert by 29 October. It was a landmark in missile alert when SAC maintained its Titan I force 100 percent on alert during the critical days of October-November 1962.[2]

(S) (~~TS~~) (U) Strategic Air Command spared no effort in placing its entire missile force on alert during the Cuban missile crisis. Minuteman, the completely new generation of solid fuel missile, came on alert for the first time as a result of the command's commitment to a maximum alert posture. Two Minutemen assigned to the 341st SMS at Malmstrom AFB, Montana, assumed alert status on 27 October. Two hours later the 394th SMS at Vandenberg AFB put another Minuteman on alert. Nine was the largest number of Minutemen on alert during the Cuban crisis, and SAC realized this total on 30 October. By 21 November, the day before the command returned to its normal airborne indoctrination program, SAC was maintaining eight Minutemen on alert.[3]

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[1] SAC Hist Study No. 90, "Strategic Air Command Operations in the Cuban Crisis of 1962," Top Secret, HA-1162, p 62.

[2] Ibid., p 78.

[3] Ibid., p 66.

(U)
(S) Following the events of October-November 1962 technology combined with a greater awareness of the missile's place in the strategic forces. The total number of ICBMs on alert continued to rise steadily for the remainder of the decade. A total of 143 missiles were on alert as of 31 December 1962 and, at the end of FY 1962 (30 June 1963) the aggregate number of ICBMs on alert had increased to 208 (22 more than at the maximum state of alert during the Cuban crisis). This figure included 22 Atlas D, 21 Atlas E, 42 Atlas F, 43 Titan I, 12 Titan II, and 68 Minuteman missiles.[1]

(S) (U) The Strategic Air Command's missile force upgraded constantly during the 1960s with the addition of more sophisticated ICBMs to its arsenal and by the retirement of earlier vehicles from the inventory. Defense Secretary Robert S. McNamara's desire to achieve economies in defense spending ~~per se~~ became greatly manifested in his department's decision to curtail the missile program at various times during the decade. Although SAC's vision of missile alert had always been an expansive one, pressure from the Army and Navy forced limits upon its Minuteman program from the latter's earliest days. Since 1959, SAC recognized that the sophistication and reliability of the solid-fuel Minuteman had determined that this booster would become the mainstay of missile alert. Since the first successful launch of the Minuteman in 1961, the command had consistently advocated a more rapid production of this missile. Its goal was an 800 operational Minuteman force by the end of FY 1964 and 2,000 of them by 1967-1968. However, the Army, Navy, and factions within the Department of Defense opposed creating so large a strategic missile force on the grounds

[1] Hist of SAC, FY 62, p 208.

that such a doctrine of counterforce, always subject to technological advance and further sophistication, committed too much money to a single type of deterrent. Mindful of this opposition, Air Staff forwarded a memorandum to the Secretary of Defense on 16 December 1960; consenting to a reduction in the projected force structure of the Minuteman. At the end of December 1960, SAC's projection for its Minuteman force was 540 missiles by the end of FY 1964. This was 265 less than the command's original goal, first defined in 1959.[1]

(S)(U) Confidence in the Minuteman, warranted by the success of numerous operational tests, prompted both SAC and Air Staff to encourage the phase out of the Atlas ICBM series and the Titan I missile. General Power expressed concisely the reason for retiring the entire Atlas system at the earliest opportunity. Although he recognized the Atlas was essential for an initial missile capability, the CINCSAC believed that because of its complexity, high cost, and unreliability, the command could not rely upon this missile for the long term. In April 1963, Headquarters USAF gave serious consideration to the early termination of Atlas D, E, and Titan I, contending that money saved from the retirement of the earlier missiles could be used to build a larger Minuteman force.[2]

(S)(U) These initial speculations by Air Staff took more substance in May when an Ad Hoc Group, appointed by Headquarters USAF, suggested terminating the Atlas D program as soon as possible and phasing out Atlas E by the end of FY 1967.

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[1] Hist of SAC, Jul-Dec 60, pp 188-189.

[2] Hist of SAC, Jan-Jun 61, p 189.

The retirement of Titan I from the inventory at the close of FY 1968 would depend upon the strategic situation at that time. Air Force Chief of Staff, General Curtis LeMay approved the Ad Hoc Group's recommendation on 24 May, but with the proviso that the Atlas D be retired by the end of FY 1965 rather than at an unspecified time in the future. The Joint Chiefs received these recommendations in June and, for a brief time, they became the guideline for upgrading the strategic missile force.[1]

(S) (U) The Department of Defense issued definite time tables to SAC for deactivating Atlas D, E, and Titan I missiles. No sooner had the initial phase out of the Atlas D begun in May 1964, than Secretary of Defense Robert S. McNamara ordered the complete phase out of Atlas E and Titan I units by the end of FY 1965. While the Atlas D would be retired during the first half of 1964, the Secretary's program change proposals 64-60 and 64-61 of 20 May 1964 called for accelerating the Atlas E and Titan Is retirement. Instead of deactivating these missiles in 1968, the phase out of the Atlas E would take place at the end of FY 1965, and the Atlas F would leave the inventory by the close of FY 1968.[2]

(S) (U) Only six months later, in November 1964, OSD announced an even more rapid deactivation schedule for the three missiles already slated for retirement. In July 1964, Headquarters USAF had suggested to the Secretary of Defense that plans be made for missile phase out during the third and fourth quarter of FY 1965. McNamara was already committed to this course of action. Since rifs would result from such an action, the issue was an extremely sensitive one, and the Air Staff

[1] Hist of SAC, FY 1962, pp 220-221.

[2] Hist of SAC, Jul-Dec 64, p 184.

notified the commands that no announcement would be made until after the November Presidential election. Rumors, however, were rife, and their effect upon the morale of officers and airmen was especially noticeable at 15th Air Force which commanded a preponderance of SAC's ICBM fleet.[1]

(S) (U) Speculation continued until McNamara made the reduction official and public on 19 November. At a news conference in Washington on this date, the Defense Secretary announced the closing of 95 military facilities and the attendant phase out during the last half of FY 1965 of all Atlas E, F, and Titan I units. Although DOD had cited obsolescence as the reason for deactivating the three ICBMs, economy was the real motive for this action. The savings resulting from deactivation was projected to be $116,900,000 annually. Acting in accord with the McNamara guideline, Headquarters USAF issued a new system program directive for both the Atlas and the Titan programs on 21 November 1964.[2] By 25 June 1965, SAC had inactivated all its Atlas and Titan units and, with the exception of Titan II, SAC's missile alert force was made up entirely of Minuteman.[3]

(S) (U) Although DOD had announced an early phase out of Titan I, an extensive program to modernize the entire Titan system began in 1964. Titan I update modifications were in progress during the first half of the year, while Titan II modernization began in early July. Air Force Systems Command engineers hastened to improve the Titan I's guidance system since it had been responsible for

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[1] Ibid., p 185.

[2] Ibid.

[3] Hist of SAC, Jan-Jun 65, p 130.

approximately 20 percent of the Titan I countdown failures. Because Titan I would completely leave SAC's missile arsenal by the end of FY 1965, the significance of its modernization program on missile alert was only marginal. The Strategic Air Command had no Titan Is on alert in December 1965.[1]

(~~S~~) (U) The next program, which further increased the reliability of the Titan II, was of greater significance to missile alert. Scheduled to begin early in July 1964 and destined for completion in August 1965, the Titan II modernization program included 85 modification changes at a cost of $20 million. Of these, 26 were scheduled to be flight test modifications, nine in the guidance system, four in aerospace ground equipment, while 46 involved basic equipment changes. Still, the sophisticated Titan II occupied a numerically static position in SAC's operational missile inventory between December 1965 and June 1969, while the number of Atlas E and F and Minutemen on alert grew substantially.[2] The number of Titan II missiles which SAC deployed on alert varied from a low of 47 in December 1965 to a high of 56 on 30 June 1969. This was during a period when the size of the command's total ICBM alert force fluctuated between 829 and 975 for the respective years.[3]

(~~S~~) (U) In terms of the number of vehicles on alert, the traditional predominance of manned aircraft in the Strategic Air Command came to an end during the first half of 1964 and gave way to the missile forces. The B-52 and B-58 forces were

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[1] Hist of SAC, Jul-Dec 65, pp 239-240.

[2] Hist of SAC, Jul-Dec 64, p 183.

[3] Hist of SAC, Jan-Jun 64, p 183; Hist of SAC, Jul-Dec 65, pp 240-241; Hist of SAC, Jul-Dec 66, p 329; Hist of SAC, Jul-Dec 67, p 373; Hist of SAC, Jul-Dec 67, p 269; and Hist of SAC, FY 69, p 247a.

static by this date and the B-47 inventory was diminishing. The command had received no additional bombardment aircraft since 1962. On 31 December 1964, the number of ICBMs on alert exceeded for the first time, but only by one, the number of alert aircraft committed to the SIOP--864 to 863. The command's airborne alert force now consisted entirely of B-52/B-58 bombers, KC-135 tankers, and miscellaneous EMC aircraft.[1]

(S) (U) The Strategic Air Command's ICBM inventory continued to expand in 1966, as the total number of missiles on alert increased by 16 during the second half of that calender year. On 31 December the total reached 887, which was the largest number to date. Of even more significance to the command's overall alert posture was the addition of seven flights of Minuteman F to its ICBM arsenal. As the most sophisticated prototype of the Minuteman II series, the "F" model possessed greater range and accuracy than the earlier models of the Minuteman.[2] The command placed these on alert at Grand Forks AFB (Wing VI, 321st Strategic Missile Wing), Montana early in the summer of 1966. With the number of Minuteman Fs on alert now reaching 70 at the end of FY 1965, the build-up of the most sophisticated ICBM in SAC's missile force was substantial. There were 130 of them on alert on 31 December 1966.[3] Minuteman F really came of age in 1967 when increased production and the availability of a sufficient number of spare guidance systems enabled more of them to join the inventory. As of 30 June

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[1]Hist of SAC, Jan-Jun 64, p 93.

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[redacted] was also larger in size: 1,600 pounds as compared with 1,368 pounds for the Minuteman F B model of Minuteman I. SACM M-2, "Minuteman," SECRET, 1 July 1970, pp 1-4, 2-3.

[3]Hist of SAC, Jul-Dec 66, pp 372-373.

1967, SAC planners called for 245 of 310 operational Minuteman Fs to poise for alert but, because of minor malfunctions, only 181 were actually on alert at this time. However, on the last day of the year, 336 of 360 operational Minuteman Fs were committed to the EWO plan and 330 actually enjoyed alert status.[1]

(U) Although maintaining as many missiles as possible on alert has always been the first responsibility of SAC's ICBM program, the command also conducts operational flight tests which insure that the highest possible percentage of the alert force could launch if called upon to face the ultimate test. Only a little over two years after the first ICBM joined SAC's arsenal, the 3901st Strategic Missile Evaluation Squadron (SMEWS) located at Vandenberg AFB, began to evaluate and standardize the subordinate units of the command's ICBM force. Today the squadron's greatest responsibility involves semiannual evaluations of SAC's three Titan II and six Minuteman wings stationed at nine bases in the western United States. The evaluation covers every aspect of a wing's operations, including its combat crews, missiles, re-entry vehicles, communications, and civil engineering programs, as well as the status of personnel training and proficiency in each. Activiated as the 3901st Strategic Standardization Squadron (Missiles) on 1 July 1961,[2] two and one-half years after the first missile launch from Vandenberg, its work has constituted an "independent audit" of SAC's missile squadrons. The 3901st currently determines each unit's state of combat readiness and is the sole judge of whether a unit's missiles and crews can perform their mission as well as their counterparts who participate in airborne alert. In 1970,

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[1] Hist of SAC, Jul-Dec 67, p 268.

[2] In September 1961 this squadron received its present designation, the 3901st Strategic Missile Evaluation Squadron.

the 3901st consisted of 233 assigned personnel.[1]

(U) In 1967, at a time when the ICBM force committed to the SIOP was larger than the force of bombardment aircraft on alert, combat crew performances were extremely high. When the 3901st squadron evaluated 2,832 individual Titan and Minuteman crew members during the first half of 1967, only 174 scored less than 93.8 percent, which was the minimum performance necessary for successful completion of their operational readiness inspection tests.[2]

(S)(U) The total number of all missiles on alert rose gradually in 1967 and during the first half of 1968. In October 1968, SAC's alert requirement reached 1,000 sorties for the first time. Substantial improvements in the Minuteman F made this condition possible, but the figure fell slightly during the last two months of the year as 955 ICBMs were actually on alert on 31 December.

Twenty additional sorties were available on two hours' notice. Minuteman I (models A and B) and Minuteman II (model F) now comprised over 90 percent of the missile force. The phase out of Minuteman A (the first prototype of the Minuteman I series) was proceeding rapidly and, of 899 Minutemen on alert on 31 December 1967, only 66 were "A" models of the first Minuteman series. Five hundred three Minuteman I "B" models comprised the greatest percentage of the alert force, while the more sophisticated Minuteman II--model "F"--now totaled 330 ICBMs. Fifty-six Titan IIs rounded out the force of 955 missiles on alert at the end of 1967.[3]

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[1] "Abbreviated History of the 3901st Strategic Missile Evaluation Squadron, 1961-1970," Vandenberg Air Force Base, Unclassified, 1970.

[2] Hist of SAC, Jul-Dec 67, p 296.

[3] Ibid., pp 268-269.

(U) (S) Although the number of ICBMs on alert increased only slightly during the first half of 1968 (975 vehicles actually on alert on 30 June 1968), the composition of SAC's missile force continued to benefit from force modernization. The size of the Minuteman A contingency again fell sharply and now totaled a mere 50 missiles at the end of this period. The Minuteman B force decreased from 503 actually on alert to 491. Conversely, the Minuteman F force continued to rise, increasing from 330 on alert at the end of 1967 to 382 ready for immediate launch at the end of June 1968. The Titan II force remained constant at 56 missiles.[1]

(S) (U) Currently, the number of ICBMs employed by SAC on alert remains at slightly over 1,000 vehicles. The command built no new launch facilities in FY 1970 and, as the decade began, it had a total of 1,071 Minuteman and Titan II launch facilities at its nine missile bases (ten bases if the Vandenberg test range is included). From August 1968 through February 1969, SAC's ICBM force remained almost constant, with an average of 995 missiles required for alert and with 975 actually ready to launch at a moment's notice. Ninety-eight percent of SAC's total missile contingency is always deployed on alert.[2]

4 (S) The command's future plans for missile alert project a total of 1,000 ICBMs to remain in its arsenal through the mid-1970s. However, current emphasis is focused upon Minuteman III (model "G"). Having first become operational in 1967, ten of them went on alert in 1970. Employing a more powerful third-stage booster which has enabled it to carry the General Electric Mark 12 MIRV (Multiple Independently Targeted Reentry Vehicle) with three nuclear warheads, the range

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[1] Hist of SAC, Jan-Jun 68, p 71.

[2] Hist of SAC, FY 69, p 247a.

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the growth of the command's missile force has caused the size of the bomber fleet on ground alert to decrease during the 1960s, 82 B-52s and 18 B-58s, armed with nuclear weapons and scattered at bases in the United States, were on alert at the end of FY 1969. Today the command's alert system rests upon a balanced contingent of ICBMs and strategic bomber forces of B-52s and B-58s, supported by KC-135 tankers. Armed with nuclear weapons, all SAC's bombardment aircraft on alert [redacted] and proceeding to predetermined targets in the Soviet Union. Once the crews are in the cockpits aircraft can take off at 15 second intervals. Currently an operation known as Selective Employment of Air and Ground Alert governs alert so far as aircraft are concerned. It requires a specific number of aircraft to remain in full combat configuration and ready to respond instantly to one of three tactical options, depending upon the severity of the threat confronting the nation.

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(TS) Between 1961 and 1967, before the command considered its missile force to be of adequate strength to assume its full place in the strategic arsenal, SAC flew daily airborne alert indoctrination flights along three clearly defined routes, one which monitored the BMEWS facility at Thule, Greenland. At the height of this operation, between November 1961 and January 1966, airborne alert indoctrination sorties amounted to only twelve flights daily, but these aircraft, carrying nuclear weapons, were in the sky 24 hours a day. These indoctrination flights insured that the command could escalade within 72 hours to a posture in which either one-sixteenth or one-eighth of its entire bomber force could become airborne and capable of flying sorties 24 hours a day. An improved ICBM capability

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and the difficulty of negotiating overflight rights to traverse foreign territories with nuclear weapons resulted in the termination of all airborne alert indoctrination sorties in May 1968.

(U) Only once has SAC's alert force been put to the test, but the Cuban missile crisis was truly a baptism of fire. At the height of the crisis on 4 November 1962, the command operated in a Defcon 2 posture. Ninety-two and one-half percent of its weapons system was ready to launch within one hour: 1,479 strike aircraft and 1,003 supporting KC-135 tankers were on alert. The Cuban crisis validated the command's efforts over the years to maintain its units in a high state of readiness and vindicated the importance of the alert program.[1]

(U) Throughout the 1960s the ICBM assumed increasing importance in the command's alert force. Thus in 1969, General Holloway stated confidently that he considered the ICBM to be the "most important element in the strategic forces." Today there are approximately 1,000 missiles in SAC's arsenal, and all but 56 of them are Minutemen with ranges varying from AF (b)(1) [redacted] They are all capable of striking a target halfway around the world in less than 30 minutes. Theoretically the missile force is always 100 percent on alert, but due to regular systems malfunctions, 98 percent of them are combat-ready at all times. The command's ICBM contingent is today the strongest arm of the strategic forces, and its importance will continue to increase in the current decade. By the end of FY 1973, the missile force will consist entirely of Minuteman IIIs and IIIs while during

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[1] SAC Historical Study, No. 90, "Strategic Air Command Operations in the Cuban Crisis of 1962," Top Secret, HA-1162, pp 58-59.

FY 1978, the sophisticated Minuteman III, with its [redacted] AF (b)(1)

[redacted] of the command's alert missile force.

(U) Throughout the brief 13 year life of SAC's alert system, the command has successfully maintained a mixed weapons force, always ready to respond to a variety of options. Although having at its disposal the world's largest nuclear strike force, SAC has always been mindful that its first responsibility was to prevent war. Therefore, the Strategic Air Command will continue to maintain an alert system sufficient to insure any would-be enemy that an attack against this nation would bring massive retaliation of a degree which would render such a venture suicidal.