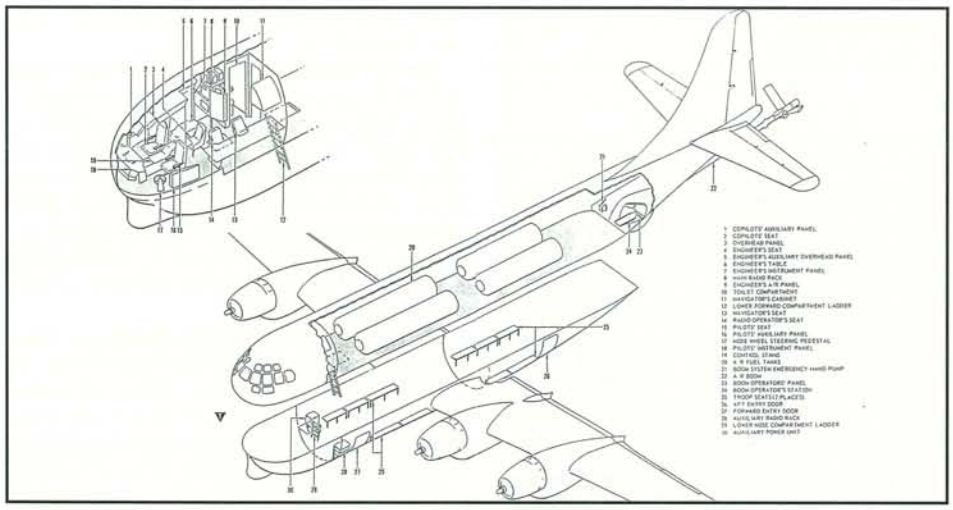


This general arrangement drawing of the KC-97F reveals the various crew positions, major equipment locations, and air refueling tanks located in the main cabin.

T/Sgt. Thomas "Obie" O'Brien inspected the working end of the KC-97 boom when he came to Boeing in Seattle for a delivery flight. A pair of boom lights may be seen at the top of the boom shroud. (Courtesy of Thomas "Obie" O'Brien)

boom operator much easier. Instead of riding on a seat as in the KB-29P, the refueling operator lay prone on an *ironing board*. A set of pilot director lights was installed on the lower portion of the forward fuselage, and a large yellow alignment stripe was painted on the belly of the KC-97 to assist the receiver in aligning with the tanker. The lights directed the receiver pilot to fly UP, DWN, FWD, AFT.

With the arrival of the KC-97s in the Wing, the abbreviation for the 2d Air Refueling Squadron changed from ARS to ARefS. This may have been done to preclude confusion with the Air Rescue Service.

Markings on SAC aircraft in general were rather sparse during this period. The 2d Bombardment Wing's B-47s and KC-97s were no exception. Basically, the B-47s were natural metal on the upper surfaces and had white anti-radiation paint applied to all lower surfaces. The USAF and national insignia were carried only on the wing upper surfaces. The national insignia on the waist was only applied to B-47s with the partial white anti-radiation paint which extended up to the gear and bomb bay door hinge lines. On B-47s with the full white anti-radiation paint, the national insignia was deleted from the waist. U.S. AIR FORCE was placed on the forward fuselage below the cockpit. For a brief period, the last three digits of the tail number were carried in large numerals below the tail number. A SAC *Milky Way* band was applied to the forward fuselage. The SAC insignia was almost always placed on the SAC band on the left side. Occasionally, the 2d Bomb Wing insignia was carried on the right side of the nose centered on the SAC band. Some B-47s had names like *City of Savannah* painted on the nose.

The KC-97s also were sparsely marked. They had the standard USAF and national insignias placed on the wings and the national insignia located on the waist. U.S. AIR FORCE was located on the forward fuselage. A SAC *Milky Way* band was wrapped around the waist. No unit insignia were applied. A single diagonal black band was placed on the upper portion of the vertical tail.

The B-47 jet era required new tactics, new methods, and new forms of overseas operations. The Wing undertook all of these tasks with high motivation and earnest accomplishments. The Wing service tested various forms of overseas deployments, alert configurations, and assisted in the development of post-strike stratagems. To the credit of the commanders and men assigned during this decade, the Wing suffered only two major aircraft accidents and the loss of only one crew. The training and operating pace in maintaining readiness and the ability to launch a strike in less than 15 minutes notice was a significant achievement that demanded much from all personnel. Yet, the 2d Bombardment Wing, true in its tradition of Second to None, pursued its mission of nuclear deterrence with a high standard of excellence. (See Appendix 23 for a summary of the Wing's major deployments.)

1954 [6]

Conversion to the B-47s began late in 1953 and accelerated during the first half of 1954, resulting in a combat readiness ahead of schedule. This was immediately followed by a deployment to North Africa in August, where the 2d was assigned to the 5th Air Division between August 4 and September 20. Twenty KC-97 tanker crews were combat ready by January beating the schedule set by higher headquarters by two-and-a-half months.

Crews began returning from the Combat Crew Training School at McConnell AFB near Wichita, Kansas in February. By the end of the month, the Wing had received 10 B-47s. The last of these sleek jets arrived in early May. On May 31, the Wing had 36 combat-ready crews, several months ahead of schedule.

Manning for the Wing was not complete and stood at 85% of its authorized strength. Officer positions were 93.8% filled while the airmen slots were only 82.6% filled. The largest shortage in officers was the lack of 13 pilots. The highest deficiencies in enlisted positions were for 19 Aircraft Instrument Repairmen, 11K-Bombing System Specialists, 16 Inflight Refueling Specialists, 8 Senior Aircraft and Jet Engine Repairmen, and 10 Aircraft Electricians.

Wing manning by squadron in August was as follows:

Lt. Col. Edmund A. Rafalko, commander of the 2nd ArefS, presented M/Sgt. Thomas J. "Obie" O'Brien with his membership into the Clancey Club *after "Obie" had transferred his first two million gallons of fuel. "Obie" off-loaded more than 16 million gallons of fuel and logged over 14,000 hours during 17 years of tanker operations. (Courtesy of Thomas J. "Obie" O'Brien)*

Unit	Assigned Officers	Airmen
• Hq. Squadron	48	121
• 20th BS	63	139
• 49th BS	60	138
• 96th BS	63	136
• 2d ARefS	92	256
• 2d A&E Mtce. Sq.	13	381
• 2d FMS	7	412
• 2d PMS	6	150
• 2d Tactical Hospital	22	92
Total	374	1,825

During August, the Wing had 15 airmen on TDY at various bases to attend technical courses which lasted from 14 to 60 days.

The Wing had a large, on-going internal on-the-job training (OJT) program for enlisted personnel working to attain higher skill levels in their career fields. During August there were 690 men in OJT training.

Working in SAC was not easy because of the long work hours, extensive and lengthy deployments, and alert requirements. The effects of SAC's arduous regimen is reflected in the reinlistment rates for the month of August. Only six of the 31 eligible airmen reinlisted, for a rate of 19.4%. High losses were experienced that month in the 2d Armament & Electronics Maintenance Squadron where only two of twelve eligible, re-inlisted. None of the seven eligible airmen in the 2d Field Maintenance Squadron re-inlisted.

Operation LEAP FROG & Another Deployment

U. S. relationships with French Morocco extended back to the 1787 Treaty of Marrakech, when the Moroccans were one of the signers of this document of peace and friendship. During WW II, Allied forces operated from bases in French Morocco in the drive to route the Axis forces from Africa. In January 1943 leaders from the Allied nations met for the Casablanca Conference to discuss plans for the war effort. During the last few days of this conference, both President Roosevelt and Prime Minister Churchill met with Sultan Sidi Mohammed Ben Youssef without the French being present. The Sultan believed that the United States and Britain would support the Moroccan demands for independence after WW II came to a conclusion.

In 1947, President Truman presented the United States Congress a policy which became known as the Truman Doctrine. In essence, this doctrine called for the support of free people resisting attempted takeover by internal minority factions or outside pressures (i.e. Soviet-supported subversion or insurrection). This doctrine was part of the U.S. strategy for containing Soviet expansionism, and became the spring board for U.S. bases in French Morocco. The agreement for use of these bases was negotiated with France, and, in retrospect, improperly omitted Moroccan representation.

Operation LEAP-FROG was a new post-strike operational concept developed by SAC and placed into operation in August 1954. The two B-47 wings, 2d and 308th, from Hunter flew non-stop on a simulated bombing mission to targets in the Mediterranean, refueled and rearmed at a Sidi Slimane to fly a second strike mission or to return to their home base. The first two units to participate in these operations was the 2d Bomb Wing, commanded by Col. Austin J. Russell and the 308th Bomb Wing led by Col. John F. Batjier. Col. Russell was another 2d Bombardment Group/Wing officer to achieve flag rank. (See Appendix 6.)

Two B-47s made a round-trip, non-stop flight back to Hunter with refueling support from the 2d Air Refueling Squadron which was TDY at Ben Guerir Air Base. These aircraft made the trip in 24 hours, 4 minutes and 25 hours, 23 minutes, respectively. They each made four refuelings with the KC-97s. The 2nd ARefS arrived at Ben Guerir on August 7, marking the first 45-day deployment of the 2d Wing to Morocco. (See Annex 23.)

In Operation LEAP FROG, the 38th Air Division ordered the 2d and 308th Bomb Wings to launch 90 B-47s in two waves – 60 aircraft on the first day and the remaining 30 on the following day. The 49th Squadron was successful on the first day by launching 14 of its scheduled 15 aircraft on time. One B-47 was delayed because of a last minute fuel leak. The 14 aircraft in the wave made successful bomb runs on a strange target in North Africa where the crews scored a 4,030-foot CEA.

On August 16, the 49th Squadron began evaluations of the Marrakech Bomb Plot (a bombing range in Morocco). The 49th put 14 of its scheduled 15 B-47s over the target and scored a 1,452-foot CEA. This was a record for the Wing and the 49th received a personal commendation from Col. Russell.

49th Squadron maintenance personnel also distinguished themselves during August when the unit flew 600:30 hours without an abort. Maj. George H. McKee was commander of the 49th Squadron during this period. He too went on to become a general officer. (See Appendix 6.)

Daily flying schedules were made for 12 B-47s and six KC-97s. No flying time was lost in September due to inclement weather; however scheduled runs over the Marrakech Bomb Plot could not be flown during the heat of the day, because a lack of air conditioned facilities played havoc with the ground-based RBS electronics, making its scoring unreliable.

Jet penetrations and GCA landings were difficult to perform at Sidi Slimane because of the lack of suitable navigational equipment. Arrangements were made with the U.S. Navy at NAS Port Lyautey (now Kenitra), Morocco for jet penetration and GCA training.

Every effort was made to complete one-third of the SAC-required special weapons training before redeploying to Hunter. With the help of the 5th, 6th, and 10th Aviation Field Depot Squadrons in French Morocco, training was conducted in practice loadings of Mk. 6 nuclear bombs, inspections, release system checks, and wiring check-outs. Special weapons training included 108 in-flight insertions and extractions (IFI/IFE), 38 Mk.6 bomb refresher courses, 39 bomb loadings, and 45 operational missions. Insertions and extractions involved inserting and removing the core of enriched unranium and the wedges of TNT and their initiators which armed and unarmed the nuclear bomb.

During the deployment, 25 of the scheduled 27 gunnery missions were flown successfully at 100%. Another 32 of the 49 scheduled combat-load gunnery missions fired at 100%. Firing failures were caused primarily by ammunition rounds jamming in the guns due to loss of torque in the ammunition feed mechanisms.

Training at Sidi Slimane ceased on Septem-

ber 17, and preparations were made for the Wing's redeployment to Hunter. The KC-97s from the 2d ARefS were positioned at Lajes Field in the Azores along with other tankers from the 26th ArefS, of the 26th Strategic Reconnaissance Wing. The B-47s were scheduled to depart on September 20, 21, and 22. On the first day, early morning fog reduced visibility to below minimums forcing the take offs to be rescheduled later in the morning. The B-47s flew non-stop back to Hunter, taking on fuel from the tankers at Lajes and overflying Kindley AB, Bermuda. This exercise revealed a lack of adequate ground refueling facilities at Lajes, which precluded larger air refueling operations. During the redeployment, the B-47s logged 420 hours; while the KC-97s flew a total of 427 hours, which included the Lajes air refuelings.

Airlift for the deployment and redeployment was furnished by KC-97s from the 2d ARefS and MATS aircraft. The last MATS transport arrived at Hunter on October 5.

Aircraft were routinely gained and lost by units because of depot maintenance requirements and inter-unit transfers. By way of example, the Wing had an average 5 B-47Bs, 43.4 B-47Es, 1 KC-97F, and 18.8 KC-97Gs for a total of 68.2 aircraft assigned during October.

Because of a threatening hurricane, the 2d ARefS evacuated 20 KC-97s, crews and maintenance personnel to MacDill AFB on October 14.

Emergency Dispersal Plan

During the Cold War, SAC bases were considered to be prime targets for the Soviet Union and as a consequence an emergency dispersal plan was developed for each base. At Hunter AFB the following dispersal plan was made:

- All flyable aircraft would get airborne and orbit in specified areas until directed by the command post to either return to base or fly to the dispersal base.
- The off-base dispersal area for mobility personnel (those personnel required for unit operations) and equipment was in the vicinity of Pooler, Georgia. Local civil defense authorities would be alerted and provide clear passage for the convoy.
- Robins AFB, Georgia would take up to 20 KC-97s and have fuel and lubricant capability to service these aircraft with 7,500 gallons of 115/145 octane aviation gasoline and 4,000 gallons of JP-4 jet fuel.
- Shaw AFB, South Carolina would receive up to 45 B-47s and have the fuel and lubricant capability to service each aircraft with up to 11,000 gallons of JP-4 jet fuel.
- The Base Public Affairs Officer would have a canned statement that this was a routine mobility training exercise if asked by the press.

This plan was established on October 1, 1954 and tested on December 17.

KC-97s from the 2d ARefS were scheduled to support the 321st Bombardment Wing between December 6 and 8 for an exercise named Operation SILVER CUP. The mission called for 45 B-47s from the 321st, stationed at Pinecastle AFB near Orlando, FL, to be refueled over the Charleston, South Carolina area. A total of 19 tankers were scheduled for each of the three days with one as a weather scout and the remainder in three cells of six aircraft each — Alpha, Bravo, and Coco cells. (A cell is a loose formation. Tanker cells flew to a refueling track and orbited while waiting for receiver aircraft. Both tankers and bombers fly within the track during refueling.)

The *Alpha* and *Bravo Cells* were backed up by one taxi and one ground spare; whereas *Coco Cell* was backed up by a single ground spare. The refueling tracks are shown in the accompanying map. Second Air Force delayed the mission on the first day because of inclement weather. On the first mission flown the next day, 19 tankers were airborne to refuel 15 receivers. The two spares were used to replace two ground-aborted tankers — one suffered propeller electrical problems and the other low torque oil pressure. All tankers took off on schedule.

On the second mission, 19 tankers were airborne and effectively refueled 15 receivers. When one tanker experienced low oil torque pressure on the ground, a spare aircraft took its place. All tankers were off on time.

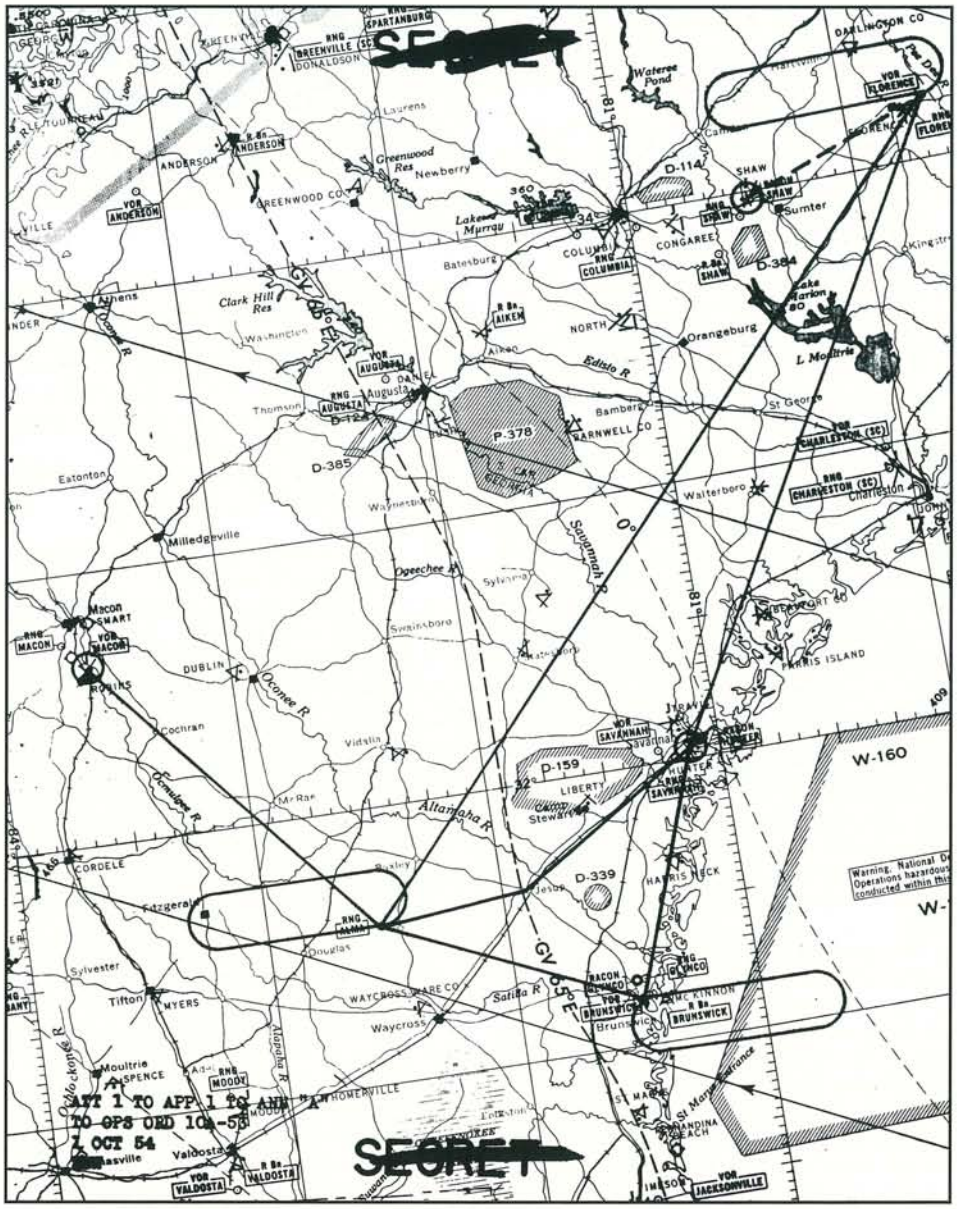
Second Air Force again postponed the third day's mission due to foul weather. When launched, 19 tankers were airborne to refuel only 13 bombers. Two receivers did not arrive in the refueling area. Two ground spare tankers were launched to replace ground-aborted tankers in which one experienced a flap failure and the other loss of two torque meters. No late tanker takeoffs occurred.

Three KC-97s were launched on the following day and were effective refueling the two remaining receivers. No spare tankers were required.

Tankers from the 2d ARS flew a total of 195 hours in Operation SILVER CUP.

1955[7]

During 1955, the Wing participated in Project BUSY BEAVER II, a Unit Simulated Combat



These three refueling areas were used by the KC-97s of the 2d Air Refueling Squadron during Operation SILVER CUP. Two refueling tracks were located south of Hunter AFB and the third was over Florence, South Carolina.

Mission, validated a 24-hour ground alert concept, flew Globetrotter missions, and made a deployment to Morocco under Exercise POOR SHOT.

During January, the Wing provided aircraft and crews for Project BUSY BEAVER II in which crews were to practice in-flight-insertions simultaneously with heavy weight refueling to determine the maximum practical altitude at which this operation could be performed. It is extremely difficult to fly a heavily loaded airplane at *the edge of the envelope* (lines on an airplane performance chart which define its limitations for maneuvering, approach to stall, resiliance to turbulence, etc.). The Wing provided five crews which flew one day and one night mission to prove the concept.

In January, the Wing flew a successful Unit Simulated Combat Mission (USCM). All of the scheduled aircraft were airborne on time. Only one B-47 aborted prior to refueling, and a second receiver failed to take on the briefed fuel load because the tanker developed a hydraulic leak in the refueling boom. The receiver, did however, take on sufficient fuel to complete the mission as briefed. Excellent bombing results were achieved by the Wing, with the CEA being 475 feet. The USCM proved the feasibility of mass day and night refuelings.

Airfield security was also tested as part of the USCM. Penetrators attempted to sabotage equipment and aircraft as part of the exercise. As a testament to the abilities of the air police, no aircraft or flyaway kits were sabotaged, and all of the penetrators were apprehended.

During the first week of February, the Wing placed six B-47 and six KC-97 crews on a 24-hour continuous alert under a Second Air Force exercise known as Operation OPEN MIND. The bomber crews were permitted to go home, but had to remain by a telephone because the bombers were not to launch for four hours and fifty minutes after receiving the alert. The tanker crews, however, had to remain in the alert barracks and were authorized absences only for preflighting the aircraft, briefing, and dining. The tankers were to launch early so as to be in place for bomber refueling rendezvous. One tanker and one bomber were cycled through the alert status on a 24-hour basis to assure their mission capability.

Base munitions personnel, under the direction of the 2d Armament & Electronics Squadron's loading supervisors, loaded three of the B-47s with Mk. 6 training weapons and the other three bombers with T-59 training bombs. Daily checks of the training weapons was made by these crews. Unloading and reloading the bombers took approximately one and a half hours.

The execution message for this exercise was received by the Wing at 7:07 P.M. on February 7. The tankers taxied out within 30 minutes of the Wing receiving the message. The KC-97s lined up on the runway ready for takeoff when they were notified that the exercise was terminated. The bomber crews assembled for their briefing within 30 minutes of the alert. The briefing was completed in one hour and eight minutes; then the crews were notified that the exercise had been terminated. However, the B-47s had to start engines, taxi out, do a 100% power run-up and check out the K-4 bomb/nav system at the end of the runway. Combat crews, on aircraft loaded with the Mk. 6 training bombs, performed IFI/IFE cycles during the taxi out and return to the flight line. All of the bombers taxied on schedule and completed this phase of the exercise in an in-commission status.

This is the boom operator's station on a KC-97. A B-47 was tucked into position taking on fuel. (Boeing Photo 45565)

The final mission report for Operation OPEN MIND had the following conclusions:

- The operational concept of Operation OPEN MIND is feasible.
- Alert periods for any one crew should not exceed seven days.
- No additional aircraft and crews should be required for an operation of this type without a corresponding reduction in normal training.
- All crews were well prepared for the mission and ready to go. The psychological effect most evident in the B-47 crews was one of let-down and disappointment when informed the mission had been canceled.
- Last minute cancelation of such missions should be avoided.
- The concept of Operation OPEN MIND should not be adopted for more than six bombers and six tankers per wing because of a corresponding reduction in normal training.

The Wing was scheduled to lose all of its existing B-47s between February and May and replace them with upgraded B-47E aircraft which had the latest systems modifications installed (i.e. armament systems, K-bombing system, ECM equipment, etc.) Delivery of the forty-five new aircraft was spread over the four months of February through May. Among the new aircraft were four that had the up-graded Phase III ECM, two had Phase IV ECM, and one had Phase IVA ECM. Electronic countermeasures was an ever evolving technology.

When one side developed improved radar detection capability, the other side developed a counter to that threat. Subsequently, the first side developed an even better radar which again must be countered. This cycle usually occured in three-to-six-year ranges. Hence, the various phases of ECM. B-47s with Phase III ECM were identifiable by added wing tip antennas and a blister fairing on the aft portion of the belly.

White paint was applied to the lower surfaces of the B-47s as nuclear-blast protection. The national insignia, formerly on lower surfaces of the wings and on the waist, was removed to preclude burning-in from a nuclear blast.

The Wing scheduled 19 sorties to accomplish the required 15 missions for Phase I of the Globetrotter Missions. Four aircraft aborted in the air because of radar failures. Air Traffic Control clearances were obtained well in advance for all of the missions; however, two minor problems developed when Wing formations conflicted with aircraft of other wings flying simulated combat missions in the same area. Minor adjustments were made in the Globetrotter routes and altitudes. The other problem was that adverse weather forced use of alternative air refueling tracks.

The 38th Air Division ordered both the 2d and 308th Wings to perform Exercise POOR SHOT, an overseas unit simulated combat mission that was flown between March 31 and April

This is the view of a KC-97 boom operator while servicing a B-47. (Boeing Photo)

16. While deployed, the two wings were under the operational control of the 5th Air Division in Morocco. A total of 70 bombers were scheduled to depart Hunter. One bomber ground aborted on the runway and a second aborted in the air and returned to base. Sixty-eight B-47s entered the refueling area over Lajes, but one aircraft aborted after it lost an engine. One of the receivers was unable to take on fuel in its center tank but had enough to proceed to the Moroccan refueling area. There were four aborts in Morocco that resulted in early landings at Sidi Slimane — one for inoperative radar, one unable to take on fuel in the center tank, one with inoperative airspeed indicators and radar, and one unable to open the refueling slipway door.

The refueled bomber force of 63 B-47s continued to their assigned targets in France and Italy. One of the bombers was unable to take on fuel in the bomb bay tank, but continued on the bombing mission and altered its withdrawal route to conform to its reduced fuel load.

The refuelings over Lajes was furnished by 42 KC-97 tankers from the 2d and 308th ARefSs. In the Moroccan area, the refueling service was provided by tankers from the 308th and 305th AReFSs. The latter was based at Ben Guerir.

The strike phase of the exercise was comprised of four waves of B-47s in cells of four or five bombers, at intervals of 10, 14, and 10 hours, respectively. The formation for each wave was line abreast. Designated target areas were in France and Italy. The post-strike recovery base was Sidi Slimane.

For the redeployment to Hunter, the bombers were launched in three main elements. Air refueling was accomplished over Lajes. One B-47, in the first wave, was directed to deliver a duplicate package of strike photographs and logs to Headquarters Second Air Force at Barksdale AFB. Weather caused the crew to divert into MacDill AFB, FL.

The possibility of fog developing in the Mascot, French Morocco refueling area caused con-

Belching fire and smoke from its belly, this B-47E was making a RATO takeoff. These bottles would be dropped in a clearway at the end of the runway. (Boeing Photo)

A B-47 takes fuel from a KC-97. Note how the wings on both aircraft are bent upwards under normal 1-g flight loads. The B-47 has added a bit of flaps to slow down behind the lumbering tanker. (Courtesy of the United States Air Force)

cern because the tankers would not have sufficient fuel to divert to an alternate base and still off-load sufficient fuel to the bombers for a long-range mission. Consideration was given to a fog dispersal system at the bases in Morocco. The FIDO fog dispersal system was subsequently installed at the three SAC bases at Sidi Slimane, Ben Guirer, and Nouasseur. FIDO, for Fog Intensity Dispersal Operation, was basically a heating system used to disperse fog.

Another concern was the designation of alternate refueling areas which were within range of the tankers.

In the interest of flying safety, it was recommended that the refueling orbit areas either be larger or that the refueling altitudes be staggered.

MATS C-54s provided airlift for the support personnel of the 2d and 308th. Additional airlift was provided by 14 KC-97s from the 2d ARefS which carried a total of 95,658 lbs. of cargo.

Sultan Ben Youssef was exiled by the French Government in August 1953, resulting in considerable unrest in French Morocco. Supporters of the Sultan conducted a campaign of terror, primarily against the pro-French elements of the native population. The situation became extremely volatile in August 1954, and several French officials were assasinated. Martial law was imposed and the French sent in 60,000 troops to maintain order. The political situation was considered to be critical at the time of Exercise FREE THROW, and was expected to become particularly tense on July 28, 1955 marking the second anniversary of the Sultan's exile. U.S. personnel were warned of the potential dangers in the cities, such as Casablanca. Aircrews were briefed on survival and what identification to carry with them. The intelligence documents normally given to the 2d ARefS at Hunter AFB were held at the base while the unit was deployed. Any intelligence briefs in Morocco would be provided by the 5th Air Division.

The 2d ARefS deployed to Sidi Slimane with 22 KC-97s on July 16, under Exercise FREE THROW. This was another 90-day deployment. Additional support personnel were provided from the 2d Field Maintenance Squadron, 2d Periodic Maintenance Squadron, and the 2d Armament & Electronic Squadron. Headquarters SAC directed the 1st Strategic Support Squadron from March AFB, CA to provide two C-124 *Globemaster IIs* to support this deployment. The C-124s remained at Lajes to provide spare engines as required.

The tanker deployment schedule called for the launch of one, eleven , and ten, KC-97s per day, respectively. Despite local political unrest, the deployment was conluded without incident.

A cadre of personnel from the 2d Wing was sent to be the nucleus of the newly formed 384th Bombardment Wing at Little Rock AFB, Arkansas.

Mid-Air Near Mayhem[8]

On November 18, 1955, crew R-34, in B-47E, number 53-2304, with aircraft commander Maj. Thomas W. Greenwood, copilot 1st Lt. Robert T. Smith and navigator Capt. Roger Rawlins, from the 49th Bomb Squadron, were on a training flight out of Hunter.

The crew took off at 8 A.M. into clear skies and unlimited visibility. They climbed to 10,000 feet where Lt. Smith and Capt. Rawlins took turns crawling through the *hell hole* into the bomb bay to practice arming and disarming the dummy nuclear weapon. This operation took about an hour. The crew then climbed to an altitude of 25,000 feet and cruised up and down the Atlantic coastline for their navigational legs.

Maj. Greenwood called back to Lt. Smith and requested him to tune the radio for the Brunswick ADF and Greenwood then intercept the southeast leg of the low-frequency radio range. Lt. Smith was looking down and to the right as he adjusted the volume on his interphone panel, when out of the corner of his eye, he caught something moving. He looked up and directly ahead he saw a dark sea blue Navy Douglas F3D *Skyknight* towing a target sleeve about a quarter of a mile away. Lt. Smith looked to the left and saw two F3Ds. Farther to the left, at a range of about 100 yards, he saw another F3D heading straight for him. The latter fighter was banking and pulling up at the same altitude. Smith was certain the F3D would hit them amid ships. Smith wrenched his head as far left as he could and figured that the F3D was going either just over or just under the B-47.

Lt. Smith quickly turned to look to the right, when he felt a thump almost like the forward landing gear being extended into the down and locked position. He never saw the fighter again, but as he turned around he saw that the top portion of the vertical fin and rudder on his airplane were missing – approximately three feet in length. He looked at his watch and it read precisely 10 A.M. Their heading was 191 degrees.

Capt. Rawlins called on the interphone asking what had happened. Smith replied that they had just been struck by a Navy fighter and that everything was O.K. Apparently Maj. Greenwood was looking at something inside the cockpit and had not seen any of the events.

Lt. Smith asked navigator Rawlins if he had any film in his radar scope camera and to take some scope pictures to record their position at the time of the collision. Smith then tuned his radio to 243.0 Megacycles (the *Guard* frequency) and called the other aircraft. The F3D involved in the collision was O.K.

The B-47 headed back towards Savannah and was approached by one of the *Skyknights*. It was then they realized that the encounter was with Marine, not Navy aircraft.

Normally B-47s flew single-ship missions. When the details of the mid-air collision were sorted out, it was determined that the Marine flight leader had spotted another B-47 which was near the gunnery range and he called off the firing run. Had the other B-47 not been in the area, Maj. Greenwood's aircraft could have been shot down.

A jurisdictional dispute followed with the Marine flight leader claiming an incursion into the gunnery range by the B-47 and the Air Force countering with photographic proof from the radar scope camera that the bomber was not infringing on the range. The whole incident was classified for many years.

1956 and 1957 — Alert Operations[9]

Wing histories for the years 1956 and 1957 remain classified, but one development, reflective of the times can be told.

For almost 10 years Strategic Air Command had the luxury of conducting operations from its bases without fear of outside threat. However, by the mid 1950s the Soviet Union had developed its own thermonuclear weapons, amassed a huge fleet of intercontinental bombers, and

developed a family of intercontinental ballistic missiles. With such an arsenal, the Soviets were capable of striking SAC bases using the element of surprise. Gen. LeMay realized the potential threat and ordered his staff to develop a means of neutralizing the threat of a surprise attack. After assessing the command's training, manpower, and logistics requirements, SAC planners arrived at the conclusion that one-third of the force could be placed on ground alert without severely impacting daily operations and still mitigate the threat of a surprise attack.

SAC conducted three tests to prove the feasibility of the alert force concept. The first test, Operation TRY OUT, was supervised by the 38th Air Division at Hunter AFB. Between November 1956 and March 1957 the 2d and 308th Bombardment Wings kept one-third of their bombers and tankers on continuous 24-hour alert. The tests proved the concept. Problems encountered were studied and a final report for Operation TRY OUT was prepared for SAC by the 38th Air Division. Two follow-on tests were conducted by the 825th Air Division at Little Rock AFB, AR, and the 9th Bombardment Wing at Mountain Home AB, ID. In July 1957 SAC began rotating its B-47 wings through bases in Morocco where they were placed on alert status. Typical TDY tours to North Africa were 90 days in duration.

Col. Seth J. McKee was transferred to Hunter AFB in July 1956 where he served as Deputy Commander of the 308th Bombardment Wing. He then commanded the 2nd Bombardment Wing between December 15, 1956 and August 26, 1958. He was ultimately promoted to brigadier general and CO and retired as a full general. (See Appendix 6.)

1958[10]

The Wing was re-identified as the 428th Strategic Wing (SW) on March 1, as part of the USAF's major air command restructuring, and carried this designation until April 1, 1963.

On October 1, the 2d Wing (428th SW) regained its fourth WW II squadron, the 429th Bomb Squadron. This was in preparation for the Wing's service testing of SAC's *super wing* concept. The 429th Bomb Squadron remained on operational status with the Wing until November 5, 1962, and was inactivated on January 1, 1962.

The Wing flew numerous REFLEX ACTION operations to bases in England during the year. The Wing also suffered the loss of a B-47 and its crew on one of these deployments.

Between 1949 and 1957, SAC relied on the overseas deployment of entire wings to bring pressure to bear on the Soviet Union. By deploying the wings, SAC placed its aircraft within closer range of potential targets; thereby reducing the strike time. These deployments had severe affects on crew families which remained at the home bases. Consequently, SAC developed a new program called REFLEX ACTIONS, in which flights of three aircraft from various wings would deploy for two-week periods. These aircraft and crews would stand ground alert at the TDY base and return home at the end of their rotation period. The operating plan called for combat-quipped Emergency War Plan aircraft to rotate to forward operating locations on a weekly basis from selected units within the United States.

On January 1, the Wing, together with two other wings, began a series of REFLEX ACTIONS to RAF Fairford and RAF Brize Norton. During these deployments, the No. 19 Squadron, RAF Regiment, at RAF Brize Norton, was responsible for the security of SAC assets at the three British bases — RAF Brize Norton, Fairford, and Upper Heyford. This unit performed outstandingly during all of the SAC deployments and allowed no security breaches throughout the REFLEX ACTION deployments. In terms of manpower, the unit remains the largest squadron in the RAF, with 188 personnel, including 11 officers and 25 senior enlisted personnel. The unit took on special interest during 1963 when as many as 1,000 peace activists protested the stationing of nuclear weapons on British soil.

During January the Wing experienced high AOCP rates for the deployed aircraft due to a lack of spares, which resulted in the aircraft being pulled from alert status. The REFLEX chief of maintenance presented a staff study to higher headquarters and within 10 days, the 7th Air Division at RAF High Wycombe modified the spares procedures. This resulted in a 50% reduction in the AOCP rates for the Wing.

Loss of *Oatmeal 51*

Three Wing B-47s were scheduled for REFLEX ACTION deployment to RAF Brize Norton June 11. The three aircraft call signs were *Oatmeal 51*, *Oatmeal 59*, and *Oatmeal 60*. The lead aircraft, *Oatmeal 59*, was scheduled to depart Hunter at 6:52 P.M., June 11, followed by *Oatmeal 60* and *Oatmeal 51* at 2-minute intervals. The three aircraft joined to fly the route to Loring AFB, Maine as briefed. A special weather report was received by the flight leader while over a VOR station in Maine. The reported weather at Loring was a measured 200-foot broken ceiling, 1,500 feet overcast, five miles visibility, with light rain and drizzle and deteriorating rapidly. The flight leader elected to fly south and land at Plattsburgh AFB, NY.

Oatmeal 59 and *Oatmeal 60* arrived over the Plattsburgh VOR and made a jet penetration and GCA approach to the base without any reported difficulties.

Oatmeal 51. B-47E, s/n 51-1931A, from the 96th Bomb Squadron was being flown by 49th Bomb Squadron crew R-28, under the command of Capt. Arthur Craven. At 10:56 P.M., *Oatmeal 51* contacted Burlington Approach Control and reported they were over the Plattsburgh VOR at 31,000 feet. At 11:10 P.M. the aircraft was cleared to descend to 20,000 feet, the jet penetration altitude. Six minutes later *Oatmeal 51* reported being over hi-station and starting the approach, but failed to report the procedure turn as requested by Burlington Approach Control. The aircraft reported descending to 4,000 feet after a request for altitude confirmation from Approach Control. At 11:21 P.M. Burlington Approach Control called: "You are well off penetration. (Jet penetration to the base.) Turn, then contact Plattsburgh GCA on Channel 1-6 at this time."

(Note: Jet aircraft operate most efficiently at high altitudes. It the aircraft descends in marginal weather and the pilot determines that the field is below minimums, he risks burning large amounts of fuel which could preclude his reaching an alternate field. For a *jet penetration* under instrument flight rules, the inbound aircraft maintains cruise altitude until he knows that the landing can be achieved. The pilot flies to what is known as *hi-station*, obtains a clearance to descend to approximately 20,000 to 25,000 feet of altitude. The pilot then obtains a clearance to descend, flies an outbound heading on the radio beam, reverses course, descends inbound to the field, and obtains a GCA clearance. This entire procedure can be accomplished in about 10 minutes.)

When *Oatmeal 51* contacted the GCA, the weather was 3,500 feet scattered and an estimated ceiling of 8,000 feet broken clouds, with an altimeter setting of 29.81. GCA had difficulty establishing positive contact with *Oatmeal 51*. The GCA controller had several targets in his penetration area and proceeded to vector one of the targets through a GCA penetration pattern. Unsure of his position, Capt. Craven asked to hold in a turn at 4,000 feet until GCA could get positive identification. GCA stated that he had identified *Oatmeal 51* at seven nautical miles from the station at 3,000 feet; however, Capt. Craven called back that his navigator indicated they were 30 miles out. GCA immediately directed the aircraft to climb to 5,000 feet, turn left, and roll out on a heading of 170°. *Oatmeal 51* acknowledged with the following reply, "Climbing to 5,000 feet, turning left to 170°." When the aircraft failed to respond to the next transmission from GCA, the controller initiated a radio search through both Burlington Approach Control and the Plattsburgh tower. It was assumed that the aircraft ran out of fuel and crashed. The following day the wreckage was found in the Cold Hollow Mountains. The crew of *Oatmeal 51,* in addition to Capt Craven was 1st Lt. Frank J. Jannarone, pilot; 2nd Lt. William G. Culbertson, navigator; and S/Sgt. John R. Willis, crew chief, all perished.

In April 1959, a 30-inch high winged gold trophy, in memory of the crew was presented to the 49th Bomb Squadron by Mrs. Arthur Craven, widow of the aircraft commander. This rotating trophy would be presented at the end of each subsequent four-month training period to the crew that demonstrated the best professional abilities and standards during that period.

The Wing flew REFLEX ACTION *Wild Cat Alpha* in September.. The mission called for movement of both bombers and tankers to England. ECM activity from other wings in the refueling areas created problems. It was determined that ECM activities should not be conducted in the vicinity of air refueling tracks because of the interference with communications and the rendezvous electronics. Several of the tankers experienced mechanical malfunctions and in some instances the KC-97s did not maintain formation, course, or air speeds. Because of the refueling problems, three of the B-47s were forced to divert into Loring AFB.

Departure times which coincided with twilight interfered with celestial navigation. This was only a problem during the summer months.

While deployed, the bombers only scored

30% on their 129 scheduled RBS runs. There were seveal reasons for the poor performance, including: 3 for aircrew errors; 3 because of weather; 6 experienced fuel shortages on deployment, and 13 on redeployment; 20 suffered inoperative radars; and 40 because RBS sites were closed on the weekend of redeployment.

1959[11]

During 1959, the Wing flew several REFLEX ACTION missions, learned the art of toss bombing, and had its B-47s modified under Project MILK BOTTLE. The Wing experienced its second major B-47 accident during the year, however, this one did not have the tragic loss of life as occurred in the 1958 accident. The Wing was also given a performance inspection on a unit simulated mission

The *Cold War* and the Soviet Union's continued belligerent international attitude meant a continuation of SAC's REFLEX ACTION operations. The Wing's alert forces were deployed to Nouasseur AB, Morocco in early 1959.

During January 1959, planes and crews flew weekly REFLEX ACTION missions to England. Five aircraft participated in Operation BIG BLAST, and three aircraft flew in Operation GRAY FOX. Two aircraft and crews stood 24-hour alert, seven days per week during the month.

While maintenance contributed to a number of flight cancelations, weather was the greatest factor in missions lost during the month of January. In addition, aircraft were not available for daily training operations because they were committed to other missions, such as reflex rotations, depot inspections, standby alert, and Project MILK BOTTLE. Of the 48 B-47s assigned, 33 were available, and of the 19 KC-97s, 13 were available.

Soviet radar improved over the years, and the B-47, which was designed as a high-level bomber now had to fly low to penetrate potential hostile radar. Then, the aircraft had to be able to deliver a nuclear weapon precisely on target, and rapidly depart the target area without becoming a victim of its own weapon.

Two maneuvers were developed for low altitude penetrations to get below enemy radar defenses and deliver a nuclear weapon. One maneuver was the *Pop-Up* and the other was the *Low Altitude Bombing System (LABS).* In the *Pop-Up* maneuver, the B-47 was flown on the deck, then a rapid pull-up to 18,000 feet was initiated. At the top of the maneuver, the weapon was released, the aircraft was rolled out of the pull up and into a dive back down to the deck to withdraw from the area. Meanwhile, the bomb continued up to its maximum altitude and plummeted back to earth, allowing time for the bomber to escape.

In the *LABS* maneuver, the B-47 was flown through an Immelman turn (rapid directional reversal in which the airplane climbs through half a loop and performs a half roll at the top of the half loop, and exits in the reverse direction). The *LABS* maneuver permitted the bomber to literally toss the bomb out on the way up; thereby permitting the aircraft to escape.

SAC lost six B-47s between March 13 and April 15, 1958 and the fleet of bombers was grounded for investigation. It was determined that stress corrosion had developed in the *milk bottle pins* (large bolts)used to attach the wing spars to the fuselage bulkhead fittings. This rash of stress-induced fatigue problems was traced to the low-altitude penetration maneuvers. While neither maneuver was difficult to execute, pilots often exceeded the *G* limits of the airplane, which in turn induced fatigue in the wing structure.

An extensive modification program, under Project MILK BOTTLE, was initiated to strengthen the wing joint. Project MILK BOTTLE was a six-year modification program which extended the operational life of the B-47. Needless to say, the low-altitude penetration maneuvers were limited. Only 21 hours were expended by the Wing in *Pop-Up* training during the month. By the end of January the Wing had 44 crews with experience in the *Pop-Up* maneuver:

In May, Lt. Col. Samuel B. McGowan, Deputy Commander for Operations of the Wing, became the unit's first recipient of the *Master Navigator's* award. This is equivalent to the *Command Pilot* rating, and is identified by the application of a wreath to the star atop of the *Senior Navigator's* wings.

Aircraft Loss

A major aircraft accident occurred on May 8, when B-47E-30-DT, s/n 52-179A, from the 429th Bomb Squadron was scheduled for a routine training mission. An instructor pilot was in command of the mission. The navigator and two student copilots were going up for training. Power was brought up to 100% and the engines were stabilized prior to initiating the takeoff roll. When the tower cleared the aircraft for takeoff, water-alcohol injection (WAI) was initiated as observed by the heavy black exhaust smoke. Personnel in the tower and several observers on the ground witnessed the aircraft's progress down the runway. As the aircraft passed the 5,000-foot marker on the runway, the black exhaust plumes suddenly cut out. As the aircraft passed the 6,000-foot marker, power was heard to be cut back, and the brake parachute fully deployed after the aircraft had traveled approximately 6,500-6,800 feet down the runway. The crew radioed the tower during this period, advising them of an abort.

On early jet engines, takeoff power could be increased through injection of a water-alcohol mixture into the burner section. WAI increases the mass flow of gases through the engine by vaporizing the water. The alcohol provides the additional heat to vaporize the water. This mixture for jet engine applications is typically between 22.5% to 25% alcohol. A similar anti-detonation system was employed on high-performance reciprocating engines such as the R-4360s on the B-50s and KC-97s where the water reduces the cylinder head temperatures to prevent fuel detonation at higher power settings. The ADI mixture of water and alcohol is 50% of each component. Maintenance crews had to be thoroughly schooled in the differences between these two power-enhancing fluids, lest the aircraft be serviced with the wrong mixture.

The tower alerted the crash crew when they observed the WAI cut out. As the aircraft came to rest 1,100 feet beyond the end of the runway, smoke was coming from the No. 2 and 3 engines. The crash crew arrived at the scene shortly after the aircraft came to a stop and quickly extinguished the fire.

An unsuccessful attempt to open the canopy was abandoned and all four crewmen escaped through the navigators escape hatch. While the crew suffered no visible injuries, they were taken to the base hospital for examination and observation.

An accident investigation team was on site shortly after the accident. They found the aircraft extensively damaged including: the forward main landing gear broke and collapsed into the bomb bay; both outrigger gear collapsed; engine pods 2, 3, 4, and 5 tore loose from the wings; the lower fuselage skin from the nose section to the aft wheel well area were severely damaged; extreme fire damage to the wing above the inboard engine nacelle; and the right external fuel tank ruptured, but the fuel drained down into the drainage ditch; thereby precluding a major fire.

Boeing was asked to do a performance analysis of the takeoff and the abort action. It was determined that the aircraft could have been successfully flown off with the loss of one engine and the loss of WAI at the 5,300-foot mark. In addition, the aircraft could have been stopped in the remaining runway if the brakes had been fully applied at the 6,000-foot mark and the brake chute fully deployed at the 6,800-foot mark. Failure of the approach chute to deploy only added an additional 80 feet to the stopping distance.

The Accident Investigation Board found that the instructor pilot in command had used faulty judgment in initiating the abort and in not using all available braking means to their fullest. In addition, there was some suspicion that the WAI system had not been completely serviced after a test hop which was flown earlier in the morning and the aircraft maintenance forms were not up to date.

In June, the 38th Air Division evaluated the Wing's performance in a simulated combat mission. The 38th Air Division gave the Wing an overall 92.3% score. For the Preparation Phase, the Wing was awarded 100% of the possible points; while the Execution Phase was given a score of 88.9%. Eighteen B-47s were launched with the following results:

- Fourteen B-47s flew the mission as briefed.
- One B-47 completed the first air refueling and aborted due to an inoperative radar and smoke in the cockpit.
- One B-47 did not complete the air refueling phase because of a pressure system failure in a KC-97s air refueling system; however the bomber managed to fly the route as briefed as far as the synchronous RBS and landed at Little Rock AFB, Arkansas.
- One B-47 ground aborted due to a canopy lock malfunction.
- One B-47 flew the mission as briefed through the synchronous RBS run and made a precautionary landing at Little Rock AFB due to an engine flame out and an inoperative wing fuel tank.

This unusual photograph shows two 2d Bomb Wing aircraft performing a low- level refueling demonstartion during deployment to Ramey AFB, Puerto Rico in February 1961, as part of Exercise BLUE BANNER. To perform such an operation at low level required the crews to be very experienced, and the aircraft extremely light. Usually little or no fuel was transferred. (2d Bomb Wing History)

- Two of the sorties were rescheduled.
- Five weather scouts were launched for the exercise and all of these aircraft experienced difficulties flying the directed route due to Air Route Traffic Control clearance problems in the refueling areas. These problems resulted in last-minute schedule changes.
- One weather scout experienced HF radio failure after becoming airborne, aborted, and was replaced by another weather scout.
- One gross bombing error was experienced due to a tone malfunction in the bombing system.

On July 15, the 308th Bombardment Wing left Hunter AFB for Plattsburgh AFB, New York, making Hunter a single bomb wing base equipped with 45 B-47s. On November 1, the Wing was reassigned from the 38th Air Division to the 6th Air Division, based at Homestead AFB, FL. The Wing tested the super wing concept between July 1959 and April 1969, when the number of assigned aircraft was increased from 45 to 70.

1960[12]

Most of the operations during 1960 remain classified.

Conditions in the *Cold War* caused SAC to place one-third of its bomber force on a 15-minute ground alert status. This level of alert status was finally achieved in July 1960. This meant that the alert aircraft had to be *cocked* and ready to takeoff within 15 minutes of the alert order. (A *cocked* aircraft was fully loaded and fueled. All systems were preflighted and switches were set so all that was required for start was ground power.) At the time, SAC had 12 heavy bombardment wings equipped with a total of 538 B-52s and another 25 medium bombardment wings with 1,178 B-47s.

During combat operations it may be required to refuel and rearm returning aircraft for a second strike. These types of operations were designated *Yo-Yo* missions. Wing bombers participated in *Yo-Yo* missions during July 1960. For these missions, the Deputy Commander for Maintenance selected certain aircraft to be scheduled to fly before 5 P.M., and earlier if possible. This time was set to permit the require maintenance to be performed during a normal duty day. The flight crew was responsible for alerting the Wing Command Post of the maintenance status of their aircraft. Any maintenance write-ups which might affect the second sortie were reported by the Command Post to Maintenance Job Control at least 45 minutes prior to the aircraft landing. Maintenance would have the Command Post query the flight crew as required for additional information.

Bombers crews flew a prescribed mission and returned to base within 10 minutes of the planned schedule then taxied to a refueling pit, where they were met and a maintenance debriefing was conducted on the spot. The bomber was given required maintenance, serviced, preflighted, and launched on a second sortie.

The Wing was judged the best B-47 Wing in the SAC annual Bombing and Navigation Competition, and the 2nd Combat Support Group (Base Flight) received the USAF Flying Safety Plaque.

1961[13]

The unclassified Wing history for the period records the Wing's performance in the SAC Bombing & Navigation Competition, a VIP demonstration, REFLEX ACTION operations, and the effect of another potential Berlin crisis. During 1961, SAC inactivated its three strategic support squadrons and the C-124s were transferred to MATS. On June 15, SAC's 3d Strategic Support Squadron, then assigned directly to the 823d Air Division, was inactivated. As a result, greater pressure was placed on the Wing's Base Flight to perform much of the routine transport operations.

The Cold War continued to impact operations, and SAC was ordered by President Kennedy to place one-half of its force on 15-minute ground alert.. This level was achieved by July 1961. At that time SAC had 571 B-52s in 14 heavy bombardment wings and 22 heavy strategic wings, and 889 B-47s in 21 medium bombardment wings.

During the SAC Annual Bombing & Navigation Competition each SAC wing flew its own training missions to meet SAC's War Plan. The best crews and aircraft then competed within the Second, Eighth and Fifteenth Air Forces during Phase I of the competition. At the end of Phase I in February, Wing B-47 crews were first overall and individual crews took first and third places. During May, the Wing flew 43 missions in the competition, and placed third for B-47s within the Eighth Air Force. When the competion was over for 1961, the Wing was the top B-47 unit, and placed first in bomber crew navigation. The crews representing the Wing were crew S-94, (Score 917.8) with aircraft commander Lt. Col. William G. Nelmes, copilot 1st Lt. Charles W. McBride, and navigator Capt. Maj. Richard G. Haag, and crew S-06, (Score 837.8), commanded by Maj. Arthur L. Herman, copilot Capt. William L. Reimsnider, and navigator Maj. Ray T. Henderson.

Four B-47s from the Wing departed Hunter on February 22, to participate in an aerial demonstration over Peurto Rico. The aircraft staged out of Ramey AFB, Puerto Rico. In addition, three B-52s and the KC-135s from the 72d Bombardment Wing participated in the fly-over that included low-level fly-bys, and mass low-level refuelings, for Puerto Rican dignitaries.

On April 1, the Wing was transferred from control of the 6th Air Division to the 823d Air Division, which had replaced the 6th Air Division at Homestead AFB, FL, and became part of the Eighth Air Force.

REFLEX ACTION Operations[14]

SAC continued REFLEX ACTION rotations to Morocco. The French had about 20,000 troops guarding the SAC bases in Morocco until April 1, 1959. Thereafter, the U.S. had enough forces in place for self-sufficient security. The Wing again deployed to Nouasseur AB in January and July 1961. For these REFLEX ACTION operations, the Wing deployed six B-47s and nine crews. This force was maintained by deploying

and redeploying three aircraft and crews each week. The average tour of duty for each crew was two weeks. In addition, the 2d ARefS maintained a force of six KC-97s and seven crews at Harmon AB, Newfoundland. Rotations were staggered so that crews rotated each week after two weeks of TDY. Refueling for the deployments was furnished by KC-97s over a low altitude track known as Salty Spray off of Kindley AFB, Bermuda. For the return redeployment refuelings, two low altitude tracks were used — an area off Lajes, Azores known as Pen Picker and the Salty Spray track off Bermuda.

A new forward operating location was established in Spain for SAC in the early 1960s. The Wing provided 7 B-47 crews at Moron AB, 10 at Zaragosa, and 3 at Torrejon to support REFLEX ACTION alert operations from these bases.

After the KC-135 Stratotankers came into the inventory they replaced the propeller-driven KC-97s for more efficient refueling of the Spanish REFLEX ACTION deployments. KC-135s from the 911th ARefS, 72nd Bombardment Wing, Turner AFB, Georgia; and the 915th ARefS, 4241st Strategic Wing, Seymour Johnson AFB, South Carolina provided high-altitude jet refueling service along a refueling area, Sea Scape, over the mid-Atlantic.

The emergency alternate base used when deploying from Hunter AFB was Pease AFB, New Hampshire. On redeployments, the aircraft could use either Lajes or Pease.

The Wing was among the units who were to shut down its B-47 operations in 1961 as part of Secretary of Defense Robert S. McNamara's program for rapid phase-out of the B-47 bomber. On July 25, 1961, the United States and the Soviet Union appeared to be headed towards another showdown over Berlin. Six bombardment wings and six air refueling squadrons were spared the ax.

SAC committed 50% of its bomber force to a 15-minute ground alert status. This goal was achieved by July. At that time SAC had 14 heavy bombardment wings and 22 heavy strategic wings equipped with 571 B-52s, and another 21 medium bombardment wings equipped with 889 B-47s.

1962[15]

On January 1, the 429th Bomb Squadron was inactivated.The Wing continued to support the Eighth Air Force's REFLEX ACTIONS in Morocco, Newfoundland, and Spain. It deployed to Noausseur AB, in July, and to Ben Guerir AB in December. Col. John W. Kline, Wing commander, paid a visit to his deployed personnel on December 5. The Wing's training was put to the test in October and November during the *Cuban Crisis.*.

Cuban Crisis

Discovery of the Soviet covert attempt to put offensive missiles in Cuba brought the U.S. and the USSR closer to the brink of war than any other crisis in the post-WW II era. The Joint Chiefs of Staff ordered a reconnaissance overflight of Cuba, and on October 14 a U-2 from the 4080th Strategic Wing brought back irrefutable photographic evidence of the installation of intermediate range ballistic missiles (IRBMs). On October 22, President Kennedy revealed the missle build-up to the American people. ordered an air and naval quarantine on shipment of offensive military equipment to the island, and demanded removal of the missiles. Even as the U.S. Navy and Coast Guard set up a naval blockade, Russian ships were sailing toward the island. Tensions mounted. U.S. armed forces went on a full wartime footing. Fifty-seven SAC nuclear bombers were on continuous airborne alert. SAC ordered its bomber fleet to dispersal areas around the country. Soon commercial airports had airline ramp space lined with B-47s and KC-97s, replete with air police security supported by dogs. SAC placed its battle staffs on 24-hour alert duty, all leaves were canceled, and personnel were recalled to duty. Additional bombers and tankers were placed on ground alert. Florida became an arsenal of poised American forces.

Flightline security was a priority requirement on any SAC base. Here an air policeman and his K-9 go into an offensive stance. The B-52 behind them was loaded with an AGM-28 Hound Dog *missile. (Courtesy of the United States Air Force)*

The standoff continued until October 28, when President Kennedy and Soviet Premier Khrushchev reached agreement on a formula to end the crisis. The Soviet Union agreed to remove its offensive missiles from Cuba. The removal was subject to verification by the United Nations. On November 2, Kennedy announced that the missile bases in Cuba were being dismantled. SAC reconnaissance aircraft monitored the dismantling of the missiles, their crating, and shipboard loading. On November 20, the Russians also agreed to remove their medium-range Tu-16 *Badger* bombers from Cuban air bases. The Tu-16 was roughly equivalent to the B-47.

During the crisis the Wing B-47s were dispersed to Charleston AFB, South Carolina; and the KC-97s were deployed to Lajes AB, Azores. A major problem confronting the units which were deployed to non-SAC bases, was communications. SAC's command structure required secure communications between various headquarters levels, and wing command posts and operational crews. Only part of the requirement could be met by commercial land-line telephone. The most effective means of communications was found in the single-side-band (SSB) radio, developed by the Emerson Electric Company in Cedar Rapids, Iowa. The SSB radios required crystals to lock in the requisite frequencies. A U-3A *Blue Canoe* from Hunter's Base Flight was dispatched to Cedar Rapids to obtain a supply of crystals. The U-3A also proved to be a very satisfactory liaison aircraft for staff personnel to fly between Hunter and Charleston.

Another major problem encountered during the dispersal was a shortage of non-tactical airlift. The Wing used its C-123 *Providers* for this purpose. SAC base flight units used the C-123 as a logistics support aircraft to haul personnel and materiel for its deployed operations.

Strict safety and security requirements were imposed for all nuclear bombers returning from dispersal deployment. The nuclear weapons were to be disarmed and carried in the ferry configuration. There was to be no in-flight training on the return route and populated areas were to be avoided.

Preparations for the return to Hunter were completed on November 7, and preflights were initiated on November 24. All necessary maintenance actions were completed between 3:35 and 10:30 P.M. On the following morning, supplies and equipment were loaded onto Base Flight C-123 *Providers*. Three loads of cargo and personnel were flown back to Hunter.

The dispersed B-47s were fully-loaded and equipped with external RATO racks. Flying and landing with these racks is not in the best interest of flying safety, even if they are wired and safetied. As a consequence, the RATO bottles were removed from the bombers, the racks were wired, and the bottles were returned to Hunter via commercial ground transportation.

Returning crews were placed on telephone alert at their quarters.

Following the crisis the Wing resumed its SAC training program between November 10 and December 2, 1962. The planning staff worked on *RBS Express Route* bomber training missions during this period, but the Wing was relieved of meeting these requirements.

A number of the Wing's B-47s were scheduled for maintenance and two B-47s were loaned to the Wing by the 384th Bombardment Wing at McConnell AFB, Kansas. Because these aircraft did not have the requisite ECM equipment, chaff dispensers, or the clip-in bomb capability for the weapons in stock at Hunter, these aircraft were relegated to crew proficiency flying. Another three B-47s from the 310th Bombardment Wing at Schilling AFB, Kansas also supplemented the Wing during this period.

As a way of thanking the men and women of the Strategic Air Command, President Kennedy flew into Offutt AFB, Nebraska and a number

of other SAC bases to personally express his appreciation for their efforts in the *Cuban Crisis*. His tour brought him to Hunter for a brief visit on November 26. At 8 A.M. security forces were in place. Army helicopters, which were to ferry the White House Press Corps to Ft. Stewart, Georgia arrived at that time. A chartered Pan American World Airways DC-8 arrived with 40 members of the press at 8:53 A.M. The press corps boarded the helicopters, and departed immediately for Ft. Stewart.

Air Force One, VC-137C s/n 62-6000, arrived promptly at 10:00 A.M. President Kennedy was greeted by Wing Commander Col. John W. Kline. Others in the greeting party included:

- General Curtis E. LeMay – USAF Chief of Staff
- Admiral Robert L. Dennison – Commander-in-Chief-Atlantic
- General Herbert Powell – Commander Army Continental Command
- Lt. Gen. Joseph J. Nazzaro – Eighth Air Force Commander
- Maj. Gen. Ralph E. Haines – Commanding General 1st Armored Division
- Col. Thomas W. Ferebee – 2d Bombardment Wing Deputy Commander for Maintenance (he had been the bombardier aboard the B-29 *Enola Gay* for the bombing of Hiroshima)

Bomber Production Ends[16]

Secretary of Defense McNamara wanted to rely more on missiles than manned bombers and ordered a reduction in the B-47 bomber force. The last B-52H was delivered to SAC on October 26, 1962, marking the end of bomber production for SAC for the first time since the Command's inception in 1946, and the first time since the YB-17s were delivered to the 2nd Bombardment Group at Langley Field in 1937.

The Air Force had proposed the North American XB-70 *Valkyrie* as the next generation strategic bomber; however, it was rejected by Secretary McNamara. Instead, it was suggested that the Air Force "consider an alternative bombing system," as a follow-on to the B-52. McNamara was looking for an airborne missile-launching platform which could serve into the next century.

1963[17]

This was another year of major change for the Wing. The unit stood down on April 1, and lost its B-47s and KC-97s. More importantly, it lost the component squadrons which had served it so well from WW I and through WW II. The Wing was moved to its new home at Barksdale AFB and became a heavy strategic bombardment unit equipped with B-52s.

As departure of the B-47s accelerated during February; training continued at a reduced rate. The Wing flew a total of 59 training sorties, accruing 210 hours of flying time; an hour's worth of test hops; and 11:05 hours of ferry flights. The 2d ARefS flew a total of 43 training sorties during February, accruing a total of 202:55 hours of flying time. Another 15 ferry missions accounted for 59:55 hours of flying.

RBS Express Missions & *Oil Burner* Routes

The Wing flew five high altitude *RBS Express* missions for a score of 100% during February. Another 32 low altitude missions were flown along *Oil Burner* Routes. One of the low altitude missions was unreliable due to a PDI reversal within 15 seconds of the target. As a result, the Wing scored 96.9% for the month on *Oil Burner* missions. SAC used the high altitude airspace above the United States for its training. Certain high altitude routes were designated as *RBS Express Routes*. For low altitude training, SAC used restricted airspaces below about 1,000 feet above ground level for *Oil Burner Routes*. These routes were located in unpopulated areas of the United States and were generally 20 miles wide and up to 500 miles in length.

The American presence in Morocco came to a close in 1963. While the United States wanted to maintain a presence there, negotiations to that end were unsuccessful. Plans were made for the American pullout and for assistance to the Moroccans in converting the bases to civilian use. American war reserve materiel was removed. SAC completed closing down its operations in the theater by June 1963. More than 3,800 American military personnnel and their dependants awaited transfer to bases in Spain, England, and the United States. The final, quiet transfer of the bases in Morocco occurred on December 16, 1963, ending 13 years of intense operations.

The last of the Wing's REFLEX ACTION missions to North Africa were flown in February 1963. The last B-47s deployed to Nouasseur AB, Morocco on February 4, and the last redeployment was flown on February 18, 1963. The last of the Wing's KC-97 REFLEX ACTION deployments was flown on January 28, and the last redeployment was accomplished on February 1.

The Wing flew its last B-47 training sortie on March 12.. The synthetic training devices were being selectively dismantled for shipment; however certain training requirements could still be met through the use of this equipment. As a result, when the Wing stood down it was able to transfer combat-ready crews to other B-47 wings.

The last B-47 departed Hunter AFB on March 31, 1963, marking the end of a 10-year era of operations in this aircraft type. The 2d Bombardment Wing, Medium (4228th SW) was scheduled for phase-out. Its facilities at Hunter were transferred to the 63rd Troop Carrier Wing, a C-124 unit from MATS, which had been stationed at Donaldson AFB, South Carolina.

The 2d Wing (4228th SW) was to be placed on the inactive list of Air Force Units. Gen LeMay, the Air Force Chief of Staff, came to the units rescue. In a move that was to preserve the unit's lineage, Gen LeMay directed that the 4228th Strategic Wing be redesignated as the 2d Bombardment Wing, Heavy, and that it be transferred, along with its 20th Bomb Squadron, to Barksdale AFB, Louisiana. There it would assume the assets of the 4238th Strategic Wing which was being inactivated. This was history repeating itself as in 1942 when the 2nd Bombardment Group exchanged designations with the 304th Bombardment Group.

Headquarters Strategic Air Command issued General Orders G-22 dated March 21, 1963, directing inactivation of the 804th Medical Group, 49th Bomb Squadron, 96th Bomb Squadron, 2d Air Refueling Squadron, and the 30th Munitions Squadron, as of April 1, 1963.

Promptly at 8 A.M., April 1, 1963, an official transfer ceremony was conducted in front of the Hunter AFB Headquarters. Col. Frank B. Elliott, Commander of the 4238th Strategic Wing accepted command of the 2d from Col. Harrison P. Christy, Jr. The Wing flag, along with all of its Battle Streamers, was also transferred. Col. Christy then transferred command of the base to Col. Roland J. Barnick, Commander of the 62nd Troop Carrier Wing. Present at the ceremony were the following key personnel:

- Maj. Gen. Horace M. Walsh – Commander Eighth Air Force
- Maj. Gen. William P. Fisher – Commander Eastern Air Transport Air Force (MATS)
- Brig. Gen. Jack J. Catton – Commander 823rd Air Division

At the end of the transfer ceremony, the troops passed in review, thus ending a 10-year era of nuclear deterrence presence at Hunter AFB, Georgia. With the loss of one crew and only two bombers in this period, the men and women of the 2d Bombardment Wing distinguished themselves in developing new tactics and operational procedures to better preserve the peace during a tenuous period in the *Cold War.* (See Appendix 23 for summary of the Wing's deployments during this decade.)

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CHAPTER XXI

THE BARKSDALE YEARS — FROM TURMOIL TO END OF COLD WAR

(THE B-52 ERA)

The U.S. nuclear force operations throughout the *Cold War* era were cloaked in heavy secrecy and tight security and much of the strategic air operations remain so today. Thus, this history is deprived of substantial information about the 2d Bombardment Wing's most vital contributions to national security, and a detailed insight into the grueling years of air alert operations and training through which those contributions were accomplished. (See Appendix 23.) This void in historical data was compounded by the practice of using temporary, provisional units during the long conflict in Southeast Asia and during part of Operation DESERT STORM. So while the Wing supplied trained crews and aircraft to these units, the Wing received no credit, or recognition for its crew's contribution to the war effort. Crew combat records must be gleaned from histories of these temporary, provisional units or directly from the crews involved. Some first-hand bombing mission accounts have been included to provide insight into near-modern aerial warfare.

Establishment of the 2d Bomb Wing at Barksdale AFB, Louisiana on April 1, 1963, ushered in an unprecedented period of over three decades that the Wing would be assigned to this one base, with the B-52 *Stratofortresses* as its principle bomber. While the Wing benefitted from the stability of long association with a single home base, a principle bomber, and a singular strategic mission, the U.S. suffered through a lengthy period of disillusionment and social upheaval while much of the world in its sphere of influence was also in turmoil.

One U.S. president was assassinated, another was wounded in an assassination attempt, and a would-be assassin was caught and disarmed within view of a third president. One campaigning presidential candidate was murdered and another was crippled for life by assailant's bullets. One president chose not to run for reelection because of failed national policy, another resigned in disgrace, and a vice president pleaded "nolo contendere" to income tax evasion, and resigned.

The black protest for civil rights and the end to segregation started on the principle of nonviolence, but its charismatic leader was murdered and the movement met harsh reprisal from ardent racists and segregationists. Civil rights protestors, marchers, and workers were brutally set upon by citizens and police. Some were murdered in cold blood, black churches and homes were bombed and burned. But courageous leaders passed legislation outlawing racial segregation and a determined administration enforced the new law, desegregating the first schools through threat of force of arms.

Disaffected blacks rioted in the inner cities, smashing, looting and burning indiscriminately. Businesses were destroyed, many died, and thousands more were injured or left homeless.

For nearly a decade of the period, the nation was embroiled in the ill-conceived and badly managed war in Southeast Asia. Thousands of young men fled the country and the draft. Antiwar sentiment and demonstrations turned violent and reached such intensity as to tear at the fabric of a civilized society, and ultimately forced an end to U.S. involvement in Vietnam. Vietnam veterans came home disenchanted and unheralded by a nation that failed to differentiate between these patriotic and valiant veterans, and the unpopular war in which they fought. The over 50,000, who didn't come home, had their names engraved in the granite of a stark memorial in the nation's capital that became a powerful magnet that drew people toward reconciliation, and a place where the public could pay pastdue homage to fallen victims of a dreadful war not of their doing.

The Vietnam war, scandals in government — Watergate and Iran-Contra — and felonious wrong doings by institutions and individuals on Wall Street, were among the causes of spreading disillusionment with and mistrust of the establishment and big government.

Abuse of illegal drugs became a plague across the land as large segments of the population, morally adrift, succumbed to this form of escapism. Dealing in illegal drugs developed into a vast and lucrative industry, corrupting individuals and governments. It was and is a major enterprise in the poverty stricken areas of the inner cities, so much so that turf wars have been fought repeatedly, with deadly consequences, between competing drug gangs.

Only a few examples have been drawn to illustrate that much of the rest of the world was not immune to turmoil. There were riots against the U.S. presence in Panama. In 1978, the U.S. approved turning over the Panama Canal to Panama on December 31, 1999.

Unrest continued to flare in the Middle East. An old fashion religious war (Christian vs Moslem) raged in Lebanon. The Shah of Iran was overthrown, and Iran sank into militant Moslem fundamentalism under the Ayatollah Khomeini. Public vilification of the U.S. was encouraged and practiced. A dispute with Iraq over the sovereignty of the Shatt al-Arab waterway that separates the two countries started an eight-year, Iraq-Iran war that killed millions.

State-sponsored terrorism became the political protest tactic of choice. Indiscriminate bombings, aircraft and ship hijackings and hostage taking became commonplace. In October 1983, two hundred forty-one U.S. marines and sailors, members of the multi-national peacekeeping force in Lebanon, were killed when a TNT-laden terrorist blew up the Marine headquarters at Beirut International Airport.

Terrorism abated somewhat after U.S. war planes intercepted an Egyptian airplane flying the terrorists to safety who had hijacked the Italian cruise ship, Achille Lauro, and killed an American passenger, and other U.S. war planes retaliated against Libyan-sponsored terrorism by attacking Tripoli and Benghazi. Trade with and travel to Libya were banned and all Libyan government assets in U.S. banks, and U.S. banks abroad were frozen. But the threat of terrorism still holds travelers hostage to the security systems installed to thwart the indiscriminant and cowardly deeds of terrorists.

Revelations of Soviet government crimes by one of its own — Solzhenitsyn's *Gulag Archipelago,* 1974 — and interventions abroad, including the covert attempt to put missiles in Cuba, supply arms to Middle East Arab countries, expand communism in Africa, often with the aid of Cuban troops, and the invasion of Afghanistan, intensified anti-communist sentiment. Frustration over decades of oppression at home, aggression abroad, and duplcity in foreign affairs, finally led one president to breach diplomatic niceties and label the USSR the *Evil Empire*.

Yet, not all of these three decades were heavy laden with tragedy and discouragement. The U.S. put the first man on the moon and launched the first space shuttle mission.

The U.S. faced down the Soviet Union over installation of missiles in Cuba and negotiated their withdrawal. The U.S. extracted itself from the Vietnam war in January 1973 and while it was an ignominious end (the communists took over South Vietnam in April 1975 as U.S. civilians were evacuated from Saigon, and, starting in May, 140,000 South Vietnamese refugees were flown to the U.S.), it stopped the carnage in American lives.

The nation recounted and celebrated its glorious past during bicentennial celebrations in 1976.

A Marxist regime was deposed on the island of Grenada. General Manuel Noriega was removed from power in Panama by U.S. military intervention, and found guilty of protecting and assisting the Bolivian Medillin drug cartel linked to 80% of the cocaine smuggled into the U.S.

But by far the most historic events of the period were the collapse of communism in Europe, the disintegration of the Soviet empire, the end of the Cold War, and the resurgence of democracy.

After the leaders of the old communist guard died, the new Communist Party General Secretary, Mikhail Gorbachev, (1985), promoted economic and social reform (glasnost and perestroika), cut the Soviet military budget, and withdrew Soviet forces from Afghanistan. These reforms, coupled with the failure of Marxist economies in Hungary, East Germany, Czechoslovakia, Bulgaria, and Rumania brought the fall of communist political monopoly, and demands for democracy. The democratization of Poland and Hungary was allowed to proceed unhindered. The forces released by these dramatic changes and the pent up desire for liberty, led to the remaking of the Soviet state and the disintegration of the Soviet empire. Gorbachev is generally acknowledged to be responsible for ending the Cold War in 1989. The most dramatic symbol of the end to the Cold War was opening of the Berlin wall in November 1989. The Cold

War did not end officially until President Bush and Russian President Boris Yeltsin signed a joint statement in 1992 declaring an end to the adversarial relationship between the two countries. A series of summit meetings between President Reagan and Gorbachev led to signing of the INF treaty, agreement on banning intermediate-range missiles, and the dismantling of all existing such missiles. Finally, for the first time in almost 45 years there was a marked easing of tensions and a genuine warming of relations between the U.S. and the USSR.

In January and February 1991, the U.S. and its Allies liberated Kuwait from Iraqi forces that had quickly overrun the country in August 1990, and had been pillaging it ever since. In a brief ground war, and before President Bush unilaterally ordered a cease fire, U.S.-led attackers captured or killed thousands of Iraqi soldiers and routed the rest, who fled, leaving the shattered remains of their equipment behind.[1]

This mini-war provided a showcase for impressive U.S. military technology and professionalism. It gave a sorely needed boost to national pride and to confidence in the U.S. armed forces following the debacle of Vietnam.

Throughout the period, the 2d Wing steadfastly trained and plied the skies in diligent performance of its mission.

Barksdale Air Force Base[2]

Barksdale AFB is located one mile west of Bossier City, Louisiana, which in turn is located about 10 miles east of Shreveport. The base was named in honor of 2nd Lt. Eugene Hoy Barksdale who earned his wings in England in 1918 and flew with the British during WW I. On August 11, 1926, Lt. Barksdale was performing a test flight on a Douglas O-2 biplane at McCook Field near Dayton, Ohio, when it went into an uncontrollable spin. He attempted to bail out, but his parachute snagged on the wing struts. Lt. Barksdale died in the crash.

The base was established on November 18, 1930 and construction began on January 19 the following year. Many of the permanent buildings were constructed during the *Great* Depression. The field was dedicated on February 2, 1933. Over the years facilities were upgraded and expanded to meet the needs of assigned units. Facilities were upgraded in 1948. Major dormitory construction was accomplished in 1951 (this was one of Gen. LeMay's legacies to the hard-working single airmen in SAC). The ramp areas were expanded in 1953 to support the B-47s and KC-97s. The first B-52s began operating from the base in March 1958, when the 4238th Strategic Wing, a major SAC wing, operated from the base with B-52Fs between March 1, 1958 until April 1, 1963. A new runway was completed in 1959. The alert facility was completed in February 1960, followed by the alert apron in the fall. By April 1968, Barksdale was one of the few SAC bases capable of handling a four-squadron *super wing*.

With the redesignation of the 4238th Wing to the 2d Bombardment Wing, the 2d assumed the personnel and assets of the 4238th, including 539 officers, 3,531 airmen (among which were 26 combat-ready bomber crews and 34 combat-ready tanker crews), 16 B-52Fs, 20 KC-135s and 21 GAM-17 *Hound Dog* missiles. The 2d then reported through the 4th Air Division to the Second Air Force, also headquartered at Barksdale. The 2d's subordinate units were:

- 20th Bomb Squadron (formerly the 436th Bomb Squadron with the 4238th Strategic Wing)
- 913th Air Refueling Squadron
- 2d Airborne Missile Maintenance Squadron
- 2d Armament & Electronics Maintenance Squadron
- 2d Combat Support Group
- 2d Combat Defense (later 2d Security Police) Squadron
- 2d Civil Engineering Squadron
- 2d Field Maintenance Squadron
- 2d Food Services Squadron
- 2d Organizational Maintenance Squadron
- 2d Supply Squadron
- 2d Transportation Squadron

Col. Frank B. Elliott was the first commander of the Wing at Barksdale from April 1, 1963 to May 15, 1964. He retired as a brigadier general (see Appendix 6).

With the assumption of B-52s, the 2d Wing acquired the durable workhorse that would serve the nation's need for an intercontinental strategic bomber for over 40 years.

These stable mates were assigned to the 2nd Bomb Wing at Barksdale AFB during the mid- and late 1960s - The Corogard*-finished B-52F-110-BO, s/n 57-053 in yellow, with its white anti-radiation lower surfaces, a pylon-mounted GAM-77/AGM-28* Hound Dog *missiles, and the KC-135A-23-BN, s/n 62-3570, also in the* Corogard *finish. This photograph was taken in front of Barksdale Base Operations. Note the ornate scallops on the 2nd Bomb Wing insignia. (Courtesy of the United States Air Force)*

These permanent quarters were as they appeared during the opening days of Barksdale. Today these same structures remain as part of the base housing for senior NCOs and officers. (Courtesy of the United States Air Force)

The Intercontinental Strategic Bomber

During a meeting between President Roosevelt and Prime Minister Churchill off the coast of Newfoundland in August 1941 they discussed the consequences of losing bases in North Africa and Great Britain. These concerns became the genesis of the requirement for a bomber with a 10,000-mile range. The Army Air Force requirement for such an intercontinental bombardment aircraft was issued in 1946. [3]

The first airplane to meet the requirement was the Convair B-36 *Peacemaker.* During a major program review in December 1946, the then CINCSAC, Gen. George C. Kenney believed that the B-36 was not the answer and argued for another airplane. On the other side was Gen. Nathan B. Twining, Commanding General of the Air Materiel Command, who did not wish to abandon the program. The B-36 was not one of General LeMay's favorite aircraft either.[4]

While Boeing was promoting the B-52, Convair was proposing an updated B-36 and later the B-60, a swept-winged, eight-engine derivative of the B-36.

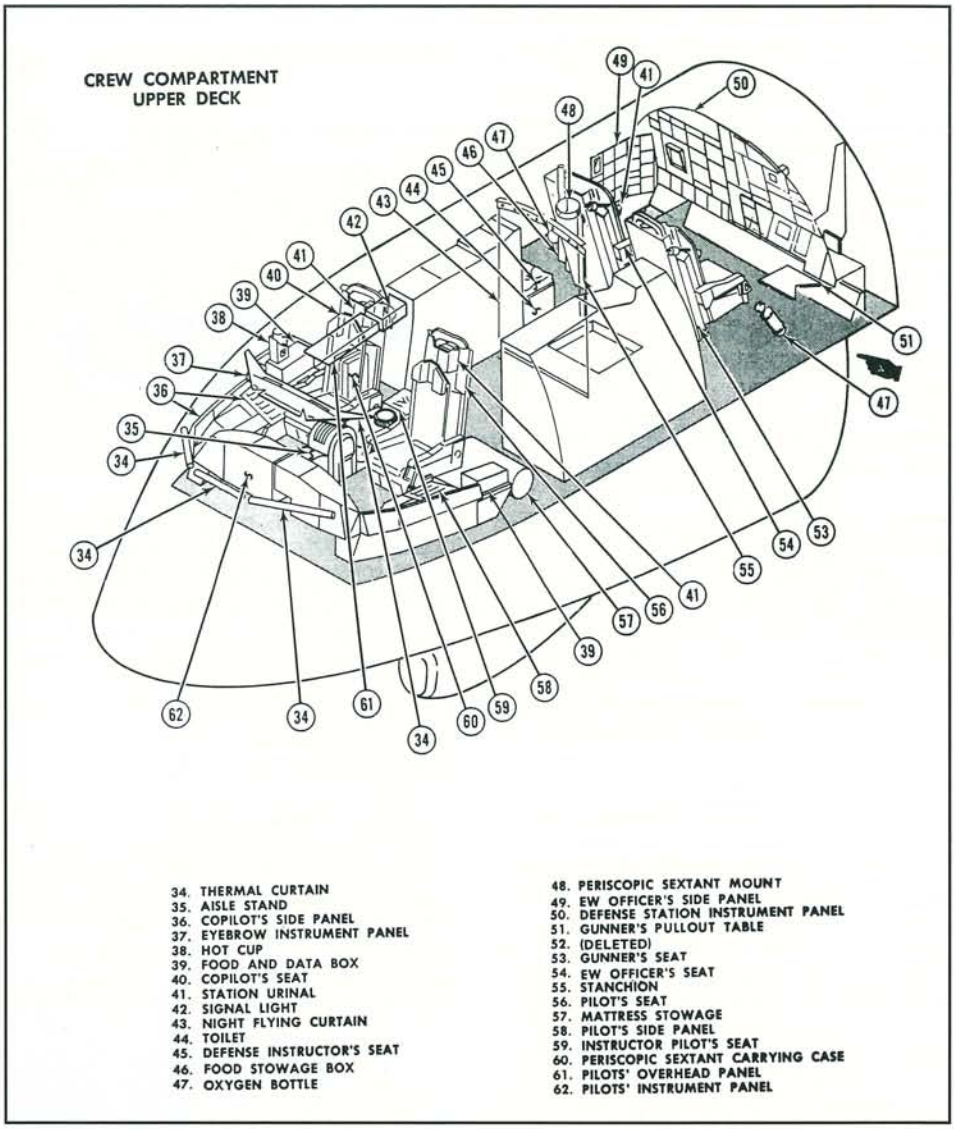
Boeing B-52 *Stratofortress*[5]

Boeing was awarded an engineering concept and preliminary design contract for an intercontinental bomber in June 1946. During the latter half of the 1940s, numerous changes were made in the design concept to meet the fluid Air Force criteria. There was a delicate balance which had to be achieved between the existing state-of-the-art limitations and the calculated risks required to capitalize on the potential future developments in airframe and components. At one point the USAF considered abandoning the B-52 program in favor of the Northrop B-49 Flying Wing; however, stability and control problems with the B-49 resulted in the demise of this program.

During the late 1940s Boeing went through three major design concepts based on four and six engine turboprop airframes. Boeing took its four-engine turboprop design to Dayton, Ohio for a meeting with the Air Materiel Command (AMC) during the week of October 22, 1948.

The Boeing team met with Col. Henry E. "Pete" Warden, AMC's Chief of Bomber Development. Earlier, Col. Warden was responsible for encouraging AMC's commander, Maj. Gen. Kenneth B. Wolfe, of the need for the B-47. When the Boeing team presented their turboprop design to Col. Warden, he suggested that Boeing consider a new design around a new 8,000 lb.-class turbojet engine then being developed by Pratt & Whitney.

The Boeing team went back to the Van Cleve Hotel in Dayton, Ohio and went to work on a new design concept. The telephone lines to Seattle buzzed with data transfer as the home team did the heavy number crunching. This effort produced a simple 33-page design proposal and a balsa wood model. The result of this weekend effort was a proposal for an eight-engine, turbojet-powered, swept-wing, intercontinental



This cutaway drawing reveals the salient features of the B-52G upper deck of the crew compartments.

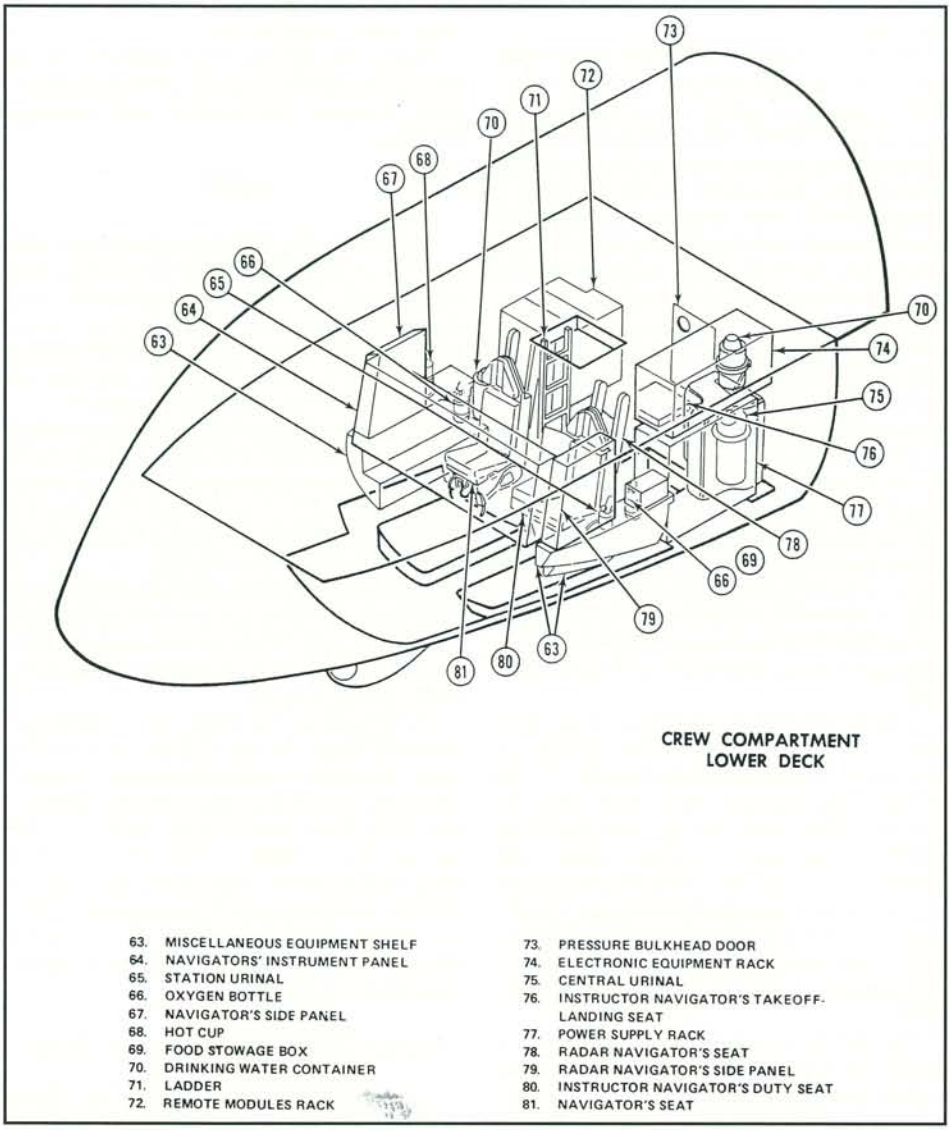
bomber. Subsequently the design was refined and became the XB-52 and YB-52, tandem-seat prototypes. The XB-52 rolled out of the factory on the night of November 29, 1951. The first flight, made by the YB-52, was accomplished on April 15, 1952. The design was again revised to provide for side-by-side seating for the pilots, thereby enhancing crew coordination. This design carried the designation of B-52A.

Airplane development is no simple undertaking. The maximum gross weight of the YB-17s was 42,600 lbs. The XB-52 had a maximum gross weight of 390,000 lbs.! Between June 1946 and April 1952, Boeing expended more than 3,000,000 engineering hours on the B-52; as compared to 153,000 which went into the B-17 design. More than three years of flight testing went into the XB-52, YB-52, three B-52As, and ten B-52Bs before the airplanes were ready for delivery to SAC. A total of 9.5 years elapsed from when the basic requirement was established by the USAF and the first operational airplane was delivered. The balance of the 744 total B-52s, all produced by Boeing, was delivered during the following 7.33 years.

The B-52 has an 185-foot wing span and is powered by eight jet engines paired in pods hung from the wings. The fuselage is 9' 10" wide and 12' 4" high. Almost any weapon in the U.S. arsenal can be carried in the capacious 28-foot long bomb bay located between the four fuselage-mounted main landing gear. The main landing gear consists of four fuselage-mounted struts, each with a pair of 32" diameter tires. The main gear is steerable for ground operations and is certified for crosswind landings. The gear can traverse up to 20° to either side of the centerline. Small tip protection gear are mounted outboard on the wings. These gear are off the ground until the wings are bent under the load of fuel and external stores at which time they serve to support the outboard wing.

The normal crew on the B-52 consists of six personnel — aircraft commander, copilot, radar navigator, navigator, a defensive systems officer, and a gunner. Additional seats are available for a pilots' observer, instructor defensive systems officer, instructor navigator, and a hammock for a tenth crew member. Each of the six main crew members is supplied with an ejection seat.The additional crew members must find their own way out, usually through an open navigator hatch in the event of a bailout.

On the tall-tailed B-52B, B-52C, B-52D, and B-52F, the gunner was located in the extreme tail of the airplane; whereas the rest of the crew



This cutaway drawing reveals the salient features of the B-52G lower deck of the crew compartments.

was housed in the forward fuselage. The crew in the forward compartment had to call the tail gunner at regular intervals to ensure his welfare. On occasion, one of the crewmen in the forward fuselage had to wend their way back to the tail to provide assistance to an ailing gunner. With the short-tailed B-52G and B-52H series airplanes, the gunner was moved into the forward fuselage and was seated next to the defensive systems officer.

All but the B-52Hs were powered by some variant of the original J57-PW turbojet engine. Over the production life of these engines, the thrust was increased from 10,000 lbs. dry (11,000 lbs. wet) to 11,200 lbs. dry (13,750 lbs. wet). These engines produced the tell-tale black exhaust plumes during water-injected takeoffs. The B-52Hs are powered by 17,000 lb. static thrust TF33-PW turbofan engines which have a marked reduction in specific fuel consumption (SFC). As a result of this lowered SFC, the unrefueled range of the B-52H is 4,510 nautical miles as compared to 3,785 for the B-52G.

A refueling receptacle is located behind the pilots. A slipway door opens, allowing the tanker's refueling boom to enter the receptacle. With inflight refueling, the range of the B-52 is limited only by engine oil and crew fatigue.

Defensive armament on most the B-52s consisted of four .50 caliber machine guns mounted in a tail turret. The B-52Cs, Ds, Es and Fs were equipped with an MD-9 fire control system. This was superseded by the AN/ASG-15 fire control system on the B-52Gs. With the B-52H came the AN/ASG-21 fire control system and its 20-mm Gatling gun.

The capacious B-52 bomb bay is capable of carrying a wide variety of conventional stores including, cluster bombs, the Mk. 82 *Snakeye* (high drag bombs), the Mk. 84 general purpose bombs, fire bombs, mines, and M129E leaflet dispensers. Up to 27 x 1,000-lb. bombs can be carried internally. In addition, another 24 x 500 or 750 lb. bombs can be carried on the wing-mounted heavy beam stores adaptors.

The B-52s also carried a variety of Ground Attack Missiles (GAM), and Air-to-Ground Missiles (AGM), referred to as "stand-off" weapons. These included the GAM-77 and AGM-28B *Hound Dog* missiles (operational 1961-1976), the AGM-69A Short-Range Attack Missile (SRAM), (operational since 1972), the AGM-89B/C Air-Launched Cruise Missile (ALCM) , (operational since 1982), and the AGM-84A *Harpoon* (operational since 1985).

Special weapons (nuclear bombs) which the B-52 can carry include the Mk. 28 family of 20+ megaton yield nuclear weapons, and the Mk. 41, 53, and 57 thermonuclear weapons.

Overall, B-52s are capable of carrying a combination of internal and external stores weighing up to 50,000 pounds.

The B-52 was originally designed as a high-level strategic bomber. As the Soviet air defense systems improved, the aircraft was modified to carry a variety of ECM jamming equipment, chaff, and the Aerial Decoy Missile (ADM) -20 *Quail* missile. The ADM-20s were carried in the bomb bay and when launched could confuse, dilute, saturate, or reduce the effectiveness of enemy radar-controlled air defense and infrared detection systems. The *Quail* was in service between 1960 and 1978. In 1965, the AN/ALE-25 pod was developed. Each pod contained 20 x 2.5" forward-firing, folding-fin rockets filled with chaff. These close-range rockets were launched to confuse the Soviet-made surface-to-air-missiles (SAMs) encountered during the war in Southeast Asia. By 1970, the AN/ALE-25 system was deleted from the B-52 inventory.

As the Soviet defenses improved over the years, the B-52 mission profile was changed from that of a high-altitude bomber to that of a low-level penetrator. As systems improved and the advanced capability radar (ACR) was incorporated, the aircraft were initially capable of flying at 500 feet. In 1973, the AN/ASQ-151 electro-optical viewing system (EVS) coupled with the AN/ASQ-38 terrain avoidance radar permitted the B-52s to fly at altitudes as low as 200 feet and at speeds approaching 400 knots. The installation of a forward-looking infrared (IFR) system permitted such operations at night and in all types of weather. During these types of operations, the radar navigator, backed up by the navigator, guides the pilot through interphone commands and the EVS display in the cockpit. The copilot looks out the window as a safety observer. The 2d Bombardment Wing B-52 crews trained in all phases of both high and low altitude tactical operations.

The Wing has been equipped with B-52Fs, Gs and Hs.

2d Bombardment Wing B-52 Markings

The color schemes and markings on the B-52s assigned to the Wing changed over time as SAC changed its airplane finishes to meet the needs of the day. The tall-tailed B-52Fs obtained from the 4238th Bombardment Wing at Barksdale in April 1963 were overall natural metal, with white lower surfaces, for protection against nuclear blasts, extending up the sides along a wavy line above the main landing gear doors. Subsequently the upper surfaces were painted an overall silver with a 3M paint known as *Corogard* for corrosion protection. The aircraft carried the national insignia on both sides of the waist and on top of the wing only. USAF was applied on the top right wing only. U.S. AIR FORCE was applied on both sides of the forward fuselage. The tail number, an abbreviation of the serial number was applied on both sides of the vertical tail A short SAC *Milky Way* band extended from the top of the white belly paint to the anti-glare panel on the nose. A SAC insignia was ap-

plied to the left side of the nose centered on the SAC band; whereas the 2d Bombardment Wing insignia was centered on the SAC band on the right side.

In June 1965, the 2d replaced its B-52Fs with short-tailed B-52Gs. These aircraft were given the SIOP (for Strategic Integrated Operating Plan) marking scheme with white, anti-radiation, lower surfaces and a patterned two-tone green and tan upper surface scheme. The SAC band was deleted and only the SAC insignia was carried on the left side of the nose and the 2d Bombardment Wing insignia was placed on the right side of the nose.

During the early 1970s, the Wing's B-52s were decorated with the Second Air Force insignia - a giant *Flying 2* on both sides of the vertical tail when the Wing participated in the SAC Bombing & Navigation Competitions and for special events such as base open houses. The color schemes change over time.

Boeing KC-135 *Stratotanker*[6]

The KC-97 refueling altitude was between 17,000 and 19,000 feet. The jet bombers — B-47 or B-52 — had to descend from their optimum operating altitudes around 30,000 feet to the KC-97 refueling altitude. Refueling took place in a shallow formation dive with the two planes connected via the refueling boom. As the bomber became heavier with more fuel, it had to fly faster to preclude going into a stall. The tanker would accelerate as it descended to keep from being undershot by the bomber. The refueling usually terminated at an altitude of about 12,000 feet. Then the bomber had to climb back to its optimum cruise altitude. SAC's experience with the performance mismatch between the piston-powered KC-97 *Stratofreighter* and the B-47s and B-52s resulted in many nervous refuelings, including some with mid-air contacts which were not intended, i.e., undershoots with the bomber tearing across the belly of the tanker, pieces of one aircraft left imbedded in the other, etc. As a consequence, in a private venture, Boeing set out to develop a jet tanker which had comparable performance to the jet bombers.

The first flight of the KC-135A was on August 31, 1956. The first production delivery to the 93rd Bombardment Wing at Castle AFB, California occurred on April 30, 1957. The 2d Bomb Wing first took possession of KC-135s through the move to Barksdale on April 1, 1963.

The normal crew of a KC-135 consists of the aircraft commander, copilot, navigator, and boom operator/loadmaster. For long flights the crew may be augmented by a third pilot and a second navigator. In addition, the crew chief and two or three maintenance specialists will accompany the flight crew for a deployment.

There are no cabin windows on the KC -135s, except for those in the two over-wing escape hatches and the aft right waist. The large 72 x 144" cargo door is standard on all KC -135 series aircraft. Crew access is provided through a forward entry hatch in which a crew entry ladder is hung. This hatchway also has a spoiler which may be lowered for crew bailout – a sporty proposition which has only rarely been used. There is a high probability that a crewmember bailing out of this hatch will bounce along the bottom of the aircraft, sustaining severe or even fatal injury.

The boom operator's station is located within a pod which is common to all of the KC -135s. Either standard or high-speed ruddevators may be installed on the KC-135 refueling boom. During operations in Southeast Asia, it was not uncommon for the tankers to literally drag a crippled USAF fighter, with the standard USAF boom/receptacle refueling system, back to a suitable air base where the tanker would release the fighter at hi-station so that it could dead-stick to a landing. A hose adaptor was installed on the end of the flying boom to service TAC fighters early in the Southeast Asian war, but was replaced by the SAC-standard boom/receptacle system which was more efficient.

While the boom operator controls the operation of the refueling boom and the actual boom/receptacle connection, the KC-135 pilots control the fuel transfer operation through use of the fuel panel on the cockpit aisle stand. In addition to a broad yellow alignment stripe on the belly of the tanker, a set of pilot director lights are installed aft of the nose gear wheel well which instruct the receiver pilot to move UP, DN, FWD, AFT.

Initially, the power plant used on the KC-135A was the J57 turbojet with11,200 lbs of static thrust (which could be increased to 13,750 lbs with water injection). In the late 1970s, the SAC KC-135A tanker fleet was retrofitted with CMF56-2 high-bypass turbofan engines with 20,000 lbs. of static thrust. This change increased the fuel off-load capacity by 50%, and the aircraft maximun gross weight from 297,000 to 322,500 lbs. The TF33 turbofan engine, capable of 18,000 lbs of static thrust, is used on the KC-135B.

The KC-135 serves the USAF as both a tanker and a transport. To aid in transporting engines and heavy cargo, a ball-mat roller pallet was developed for the area of the main cargo door, and a transportable lift was provided. The latter hooks into an overhead traversing rail system. In addition, a hoist could be installed in the cargo door area. This cargo system made the KC-135 self-sufficient for cargo operations.

Several variants of the KC-135 were produced for other missions. One was an electronic countermeasures aircraft, the EC-135C *Looking Glass*; three of which were operated by the 2d Bomb Wing during the 1970s.

2d Bombardment Wing KC-135 Markings

When the 2d Bomb Wing inherited the KC-135As from the 4238th Bombardment Wing in April 1963, the aircraft were overall natural metal. A SAC *Milky Way* band was placed either on the nose or waist – this was a period of transition. The SAC insigina was applied to the left side of the airplane centered on the SAC band; whereas the 2d Bombardment Wing insignia was located on the right side. For special events, these tankers carried the Second Air Force's *Flying 2* within a blue shield on the vertical tails during the early 1970s. The *Flying 2* was smaller than those painted on the B-52s. As with the bombers, the Second Air Force markings were usually applied only for the SAC Bombing & Navigaion Competitions and base open houses during this era.

Later, the airplanes were painted with an overall silver 3M *Corogard* corrosion resistance finish. Changes were made in these markings over time.

1963[7]

In the first year of its long association with the B-52 at Barksdale, the 2d Bomb Wing was the recipient of three awards, improved the operational reliability of the *Hound Dog* missle, supported major troop and aircraft deployments, started airborne alert operations, and was the unexpected host to two airline emergencies.

Among its awards and recognitions, the Wing was awarded the 4th Air Division's Golden Journey Trophy for operational effectiveness during most quarters of 1962 and for actions during the Cuban Missile Crisis. The award became a permanent possession of the Wing.

During April and June 1963, the Wing scored 100% during a Bar None exercise which evaluated the mission effectiveness of each combat-ready B-52 crew and each airplane on a realistic EWO training mission.

In September, the Wing was awarded the Fairchild Trophy by the Air Force Association at the Association's national convention in Washington DC. The trophy was awarded in recognition of the Wing's outstanding performance for the year July 1, 1962 — June 30, 1963. The Wing was judged to be the best bomber unit in SAC for meeting its training requirements, flying safety record, fulfilling SAC operational commitments, and higher headquarters inspection results. (See Appendix 5.)

GAM-77/AGM-28 *Hound Dogs*

The GAM-77 *Hound Dog* missile (later changed to Air-to Ground Missile [AGM-28]) was introduced into SAC in 1959. It was an air-to-surface missile powered by a single 7,500-lb. static thrust J52-6 turbojet and had a Mach 2.1 speed. The *Hound Dog* was equipped with an inertial guidance system and nuclear warhead. The warhead was a W.28, a variation of the Mk. 28 building block nuclear bomb with a 1-megaton yield. When launched at high altitude it could strike a target 500 nautical miles away; whereas at low altitude its range was reduced to 200 nautical miles. One missile was slung from a pylon on each wing of a B-52. A computer within the B-52 provided targeting information prior to launch. In addition, the missiles could be used to augment thrust for high gross-weight takeoffs; then the missile could be refueled from the bomber's internal fuel system.

The poor performance of the *Hound Dogs* was a point of concern during a SAC Operational Readiness Inspection Test (ORIT) of the Wing between June 5 and 7, 1963 (a weapons system developmental problem throughout the command). In early July, the 2d Airborne Missile Maintenance Squadron was given a marginal rating by a Second Air Force Inspector General team. The 2d Bomb Wing was equipped with Block II GAM-77s, which were field modified and were not as reliable as those which came new from the factory.

Revised operational procedures, enhanced crew training, and reduced radar bomb scoring (RBS) missions all contributed to an improvement in *Hound Dog* reliability from 72.4% in June to 90% in July.

Ground Alert

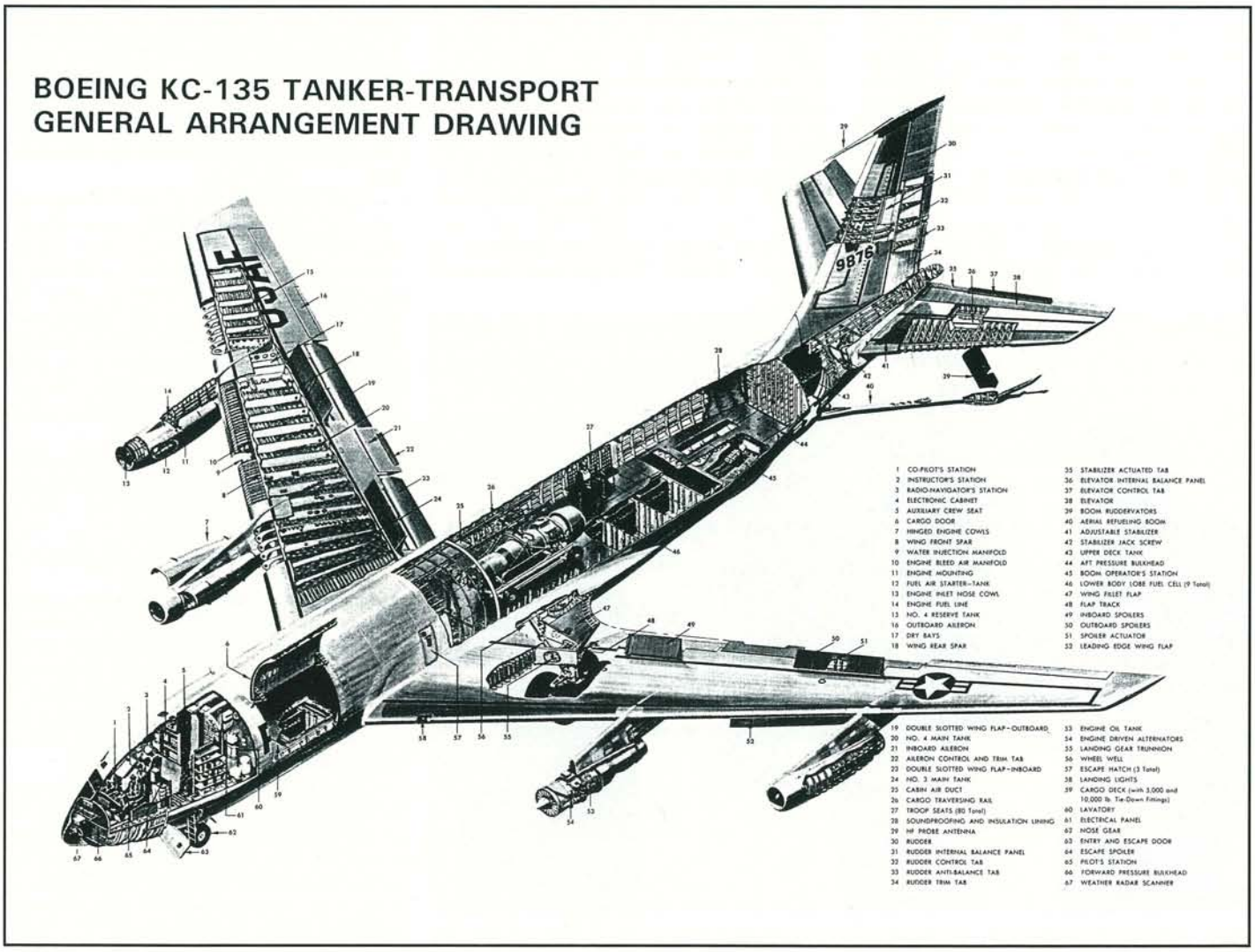
The Wing had eight B-52Fs and eight KC-135As on ground alert during the month of September. The aircraft were configured for the Emergency War Order (EWO) mission; i.e. they were armed, fueled, and with switches *cocked* for rapid start. When the crew boarded the aircraft, all they had to do was throw the Master Switch and all requisite electrical power was provided to the various systems. In addition the crews were briefed for specific targets within the Soviet Union and carried mission orders and target information in their flight kits.

A toast to winning the Fairfield Trophy. L to R: Capt. Forest L. Nations, Capt. Norman Walsh, 1st Lt. Louis Green, and Capt. James P. Pheney. All 20th Squadron. (Courtesy of Eighth Air Force Museum)

Boeing *Sky Speed* Office[8, 12]

A Boeing *Sky Speed* office was located in Hangar No. 1. This unit had been assigned at Barksdale since October 18, 1958. The team consisted of supervisors, quality control inspectors, engineers, tool control specialists, parts control specialists, and modification and electronics technicians. The purpose of these offices was to assist in installation of aircraft modifications and technical order (TO) compliance and inspections of the B-52s and KC-135s.

On September 9, B-52F, s/n 57-176, was on a routine training mission. On approach into Barksdale AFB the aircraft struck a bird which resulted in a hole in the right wing. More than 24 hours was expended by maintenance personnel from the Wing with assistance from the Boeing *SKY SPEED* shop to effect the repair on a duct and ribs in the wing leading edge.



This cutaway view of the KC-135A reveals its major components.

CHROME DOME Operations

Because of growing concerns about the ever increasing Soviet intercontinental ballistic missile (ICBM) capabilities in 1958, SAC began a B-52 continuous airborne alert program. The alerts were maintained by various SAC wings under a variety of names. These unpublicized missions were flown without separate or specific Congressional funding. Then, on January 18, 1961, CINCSAC, General Thomas S. Power announced that SAC crews had flown over 6,000 airborne alert sorties. Several months later these operations were christened CHROME DOME - aptly named for the grueling 24-hour missions during which crewman's flight helmets created hot spots on the head. CHROME DOME operations underwent a number of changes during its seven years of existence.

The 2d Wing's B-52 crews started participation in CHROME DOME operations November 16, 1963, and continued uninterrupted participation for approximately two years.

CHROME DOME missions were flown on two basic routes — the southern route across the Atlantic, on into the Mediterranean, where refueling was conducted, and then return to the U.S.; and the northern route, which went up the eastern coast of Canada, then westbound across Canada to about 84° north latitude (with 90° being the geogaphic north pole), to a point north of Alaska where the route turned south, and continued down the west coast of the United States. The Wing's 913th ARefS provided refueling support, as part of the Spanish Tanker Task Force, for the southern route operations of CHROME DOME. The 913th deployed one KC-135A, two flight crews, and three crew chiefs to Spain on a rotational basis every two weeks. During the July-September 1963 quarter, the 913th supported the Spanish Tanker Task Force from Torrejon AB. Prior to July the Squadron had flown from Moron AB, Spain.

Four major events occurred for the 2d Bomb Wing during the latter part of 1963 — Operation BIG LIFT, Operation DIAMOND LIL, and two commercial airliner emergencies.

Operation BIG LIFT was a major exercise involving the deployment of an entire armored division from the United States to Europe and have them ready to participate in a major NATO exercise within five days. This was the largest transoceanic Army-Air Force deployment ever made by air to date. MATS C-124s and C-135s provided the airlift for the men and materiel. TAC also deployed a composite strike force of 115 aircraft to provide reconnaissance and strike cover for the NATO exercise. SAC provided 50 KC-135As which staged out of Dow and Loring AFBs in Maine to refuel the TAC force. Between October 20 and 25, a pair of 913th ARefS KC-135s supported the deployment. Between November 4 and 9, one of the 913th ARefS's tankers supported the redeployment of the armored division.

The 913th KC-135s also supported the deployment of TAC F-100 *Super Sabres*. While over the Atlantic, en route to Spain, one of the F-100s experienced a problem with its cranked refueling probe. The probe had rotated about 120° out of position and would not take on fuel. The tanker boom operator, M/Sgt. Thomas A. Thomas, used his boom, with the drogue basket attached, as a wrench, and cranked the fighter's refueling probe back into position allowing the fighter to take on fuel. In the absence of this innovative solution on the part of M/Sgt. Thomas, the fighter, and possibly the pilot, would have been lost. It was a first for this type of action. The crew was cited by command levels from the Vice Chief of Staff of the Air Force down to the Second Air Force at Barksdale. In addition to Thomas, the tanker crew consisted of Maj. Arthur B. Klein, aircraft commander, 1st Lt. William G. Davidson, copilot, and 1st Lt. David Zehrung, navigator.[9]

Between November 12 and 15, a KC-135 from the 913th ARefS flew a classified mission known as Operation DIAMOND LIL.

Two in-flight airline emergencies occurred in the area of Barksdale AFB in late September and early November requiring diversion of two commercial airliners into the base. On September 29, a chartered American Flyer DC-3, carrying the McMurray College football team of Abiline, Texas, made a wheels up landing at the base. The team had been playing at Monroe, Louisiana. On departure, the airplane failed to gain altitude. Two unsuccessful landing attempts were made at Monroe, including one which damaged the landing gear. After the airplane landed at Barksdale, the base crash crew foamed the aircraft to prevent a fire. Aboard were 25 football players and three coaches, all of whom got out safely.

On November 9, an Eastern Air Lines DC-8 was climbing out of Houston, Texas en route to Mexico City. At 20,000 feet the aircraft suddenly went into a dive and lost 14,000 feet of altitude. During the descent one of the aircraft's inboard engines fell off and a number of passengers were thrown about the cabin. Because of weather conditions, the DC-8 diverted to Barksdale where it made a normal landing about 4:35 P.M. Base emergency crash equipment and medical personnel were standing by. The 855th Medical Group provided 10 doctors and 30 corpsmen, including x-ray technicians, who cared for 26 of the passengers and crew. Three of those aboard the aircraft were taken to a local hospital in Shreveport.

The Wing Public Information Office personnel established a media center at the Officers' Club and fielded numerous calls from newspapers around the United States and as far away as London and Mexico City. Personnel from this office also assisted passengers in making long distance telephone calls both from the club and base operations. Major Eugene J. Kelly, Base Public Information Officer, and his staff performed admirably in their support of the passengers and the media.

A replacement airliner picked up most of the passengers and departed about 9:00 P.M. that same day.

In April 1964, this mission preflight was interrupted for some official business. *LTC Thomas P. Conlin (R), Aircraft Commander, reinlists his Gunner, TSgt. Roscoe D. Morgan (C), as M/Sgt. Paul Paliko (L), from another crew, served as the witness. (Courtesy of the United States Air Force)*

1964[10]

In addition to performing numerous routine training exercises, the Wing continued its support of Operation CHROME DOME during 1964. In March, the 2d Armament & Electronics Maintenance Squadron out-performed 60 other similar units and was recognized as the *Outstanding Armament & Electronics Unit in SAC for 1963*.

On April 11, 1964, a KC-135 crew and maintenance personnel from the 913th ARefS departed on this 13-day mission to support the overseas deployment of TAC fighters known as Operation FOX ABLE. Maintaining the alert force, performing Unit Simulated Combat Missions (USCMs), flying missions directed by higher headquarters (air divisions, numbered air forces, and SAC), and going TDY for REFLEX opera-

tions took a significant amount of time and Wing resources to accomplish. Finding available tankers to support major deployments from other commands placed an added demand on the Wing; therefore a number of wings would dispatch single tankers to support these additional missions.

1965[11]

Escalation of U.S. involvment in Vietnam brought 2d Bomb Wing crews into the Southeast Asian War. On January 1, the 2d Combat Support Group was reassigned from the 2d Bomb Wing to the Second Air Force – something big was about to happen. SAC went to war in Southeast Asia, and crews from the Wing would be there. In the meantime, a Wing member was cited for a life-saving.

Thursday January 15, 1965 was a non-flying day for Maj. Arthur B. Klein, an instructor pilot with the 913th ARefS, so he was at home offbase in Shreveport that afternoon. Two four-year-old boys had been playing in a neighbor's back yard pool when one began to drown. The other boy came running to his mother for help. She saw Maj. Klein on the way to get to her son, he having already told his wife to call the local police. Maj. Klein then vaulted the fence into the neighbor's yard with the pool, where he found the drowning boy lying face down in the water. Maj. Klein used a stick to push the victim to the side of the pool where he was able to pull the boy out of the water. Between 1956 and 1957, Maj. Klein had been a survival instructor for SAC where he learned about and taught mouth-to-mouth resuscitation. He put his knowledge to work and revived the child. For his efforts, Maj. Klein was awarded a plaque from the Woodsmen of the World, a certificate from the Red Cross, and the Air Force Commendation Medal.[12, 16]

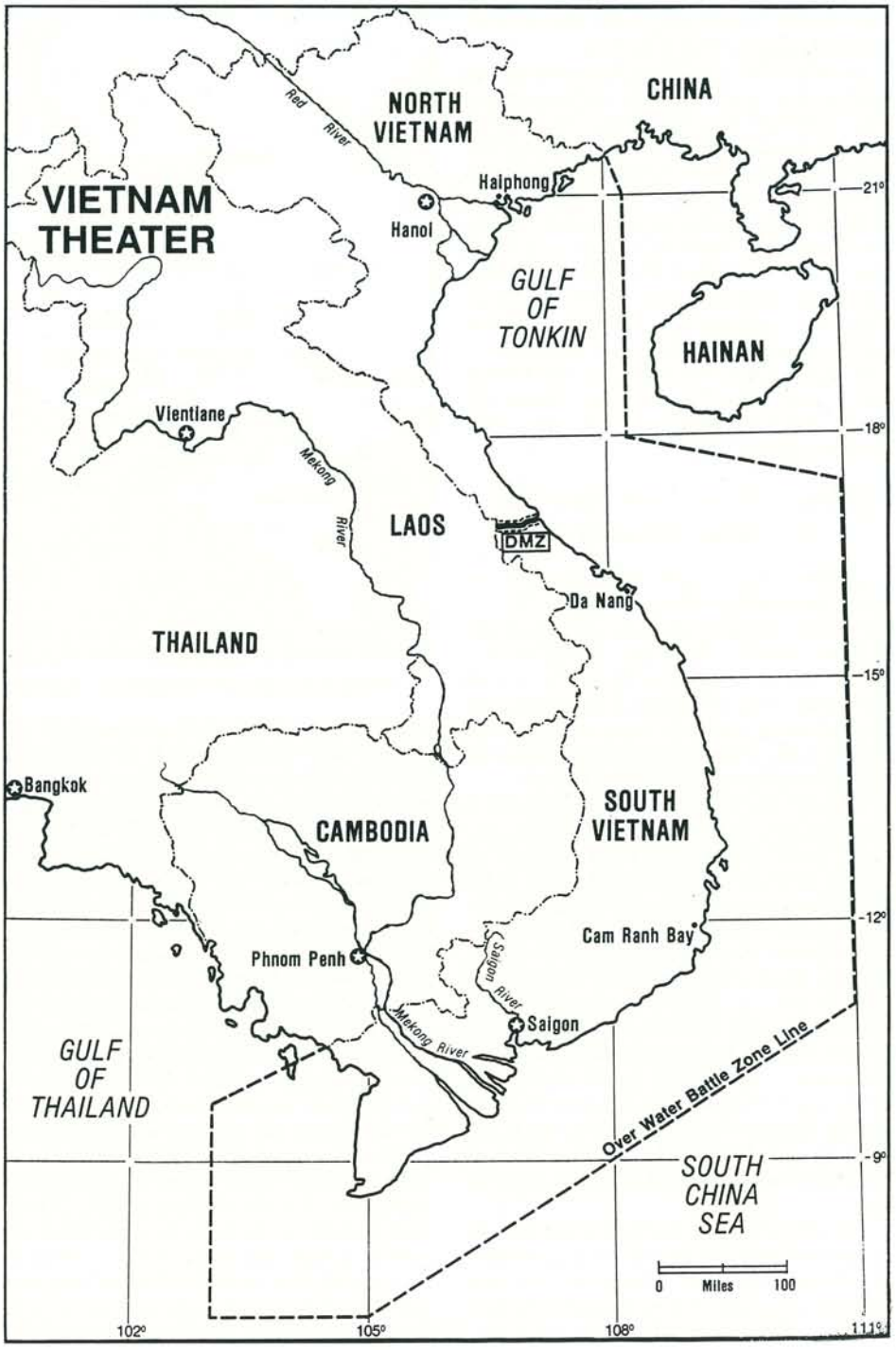
Between January 1 and March 9, KC-135 crews from the 913th ARefS participated in the REFLEX operations as part of the Spanish Tanker Task Force.

On February 5, the 2d Bombardment Wing was presented the SAC's *Wing of the Year Flying Safety Trophy* in recognition of its million-plus miles of accident-free flying in 1964. On June 4, the wing was awarded the SAC *Hall of Fame* certificate for seven consecutive years of accident-free flying!! (See Appendix 5.)

The War in Southeast Asia[13]

Between 1946 and 1954, the French Foreign Legion fought a joyless war against Ho Chi Min's Communist Vietminh (Viet Cong) forces in French Indochina. In 1950 President Truman sent a 35-man military advisory group to aid the French maintain their colonial power in Vietnam. The Communist Vietminh won the hearts of the peasantry as they roamed the countryside picking only those battles that they knew that could win. Despite limited assistance from the United States which also came to include loaned aircraft and the use of American airmen flying as civilians with the Civil Air Transport, the beleaguered French forces were unable to hold on. The downfall of the French came with the fall of Dien Bien Phu where the Vietminh decimated the French. Some of the French troops who were not killed, were taken captive and never heard from again; while others escaped to fight during the Algerian Civil War. After the French defeat, a peace accord, the Geneva Agreements signed in July 1954, provided for the withdrawal of the French and Vietminh to either side of a demarcation zone (DMZ) pending general unification elections, which were never held.

In September 1954, the Southeast Treaty Organization, SEATO, was formed in Geneva, Switzerland, to provide for the collective security of the non-communist part of the region and to prevent it from becoming economically dependent upon the ever-expanding Communist Bloc. From that time forward, Presidents Eisenhower and Kennedy sent civilian advisors and, later, military personnel to help train the South Vietnamese army. The general poverty in the region provided a golden opportunity for the Soviet Union to continue in its role of global expansion by playing on the disunity of the local population. Guerilla warfare, insurgency, subversion, propaganda, and terror were the weapons of the Soviet- supported Communists. In 1959, Soviet Premier Nikita I. Kruschev pronounced that he "would bury the West." On January 6, 1961, Kruschev spoke before the Communist Party Congress in Moscow where he reaffirmed his support for wars of national liberation. Later that year at meeting in the United Nations, Kruschev became so enraged at allegations levied against him and the Soviet Union, that he took off his shoe and pounded it on the table!



At the behest of SEATO, the U.S. and other Pacific rim nations began offering limited support to the anti-communist government of South Vietnam. In 1960, the Communists formed the National Liberation Front (NLF) in the South and by the fall of 1961, Communist NLF forces were killing several hundred village leaders per month in a war of terror and intimidation. President Kennedy ordered a limited number of American military advisors to assist South Vietnam. Between 1961 and 1963, the number U.S. military advisors rose from 2,000 to 15,000. North Vietnamese torpedo boats reportedly attacked the American destroyers *USS Maddox* and *Turner Joy* in Tonkin Gulf on August 2, apparently in response to U.S.-sponsored South Vietnamese raids along the North Vietnamese coast. President Johnson ordered retaliatory air strikes, and Congress approved the Gulf of Tonkin resolution August 7 authorizing the President to take necessary steps to "maintain peace."

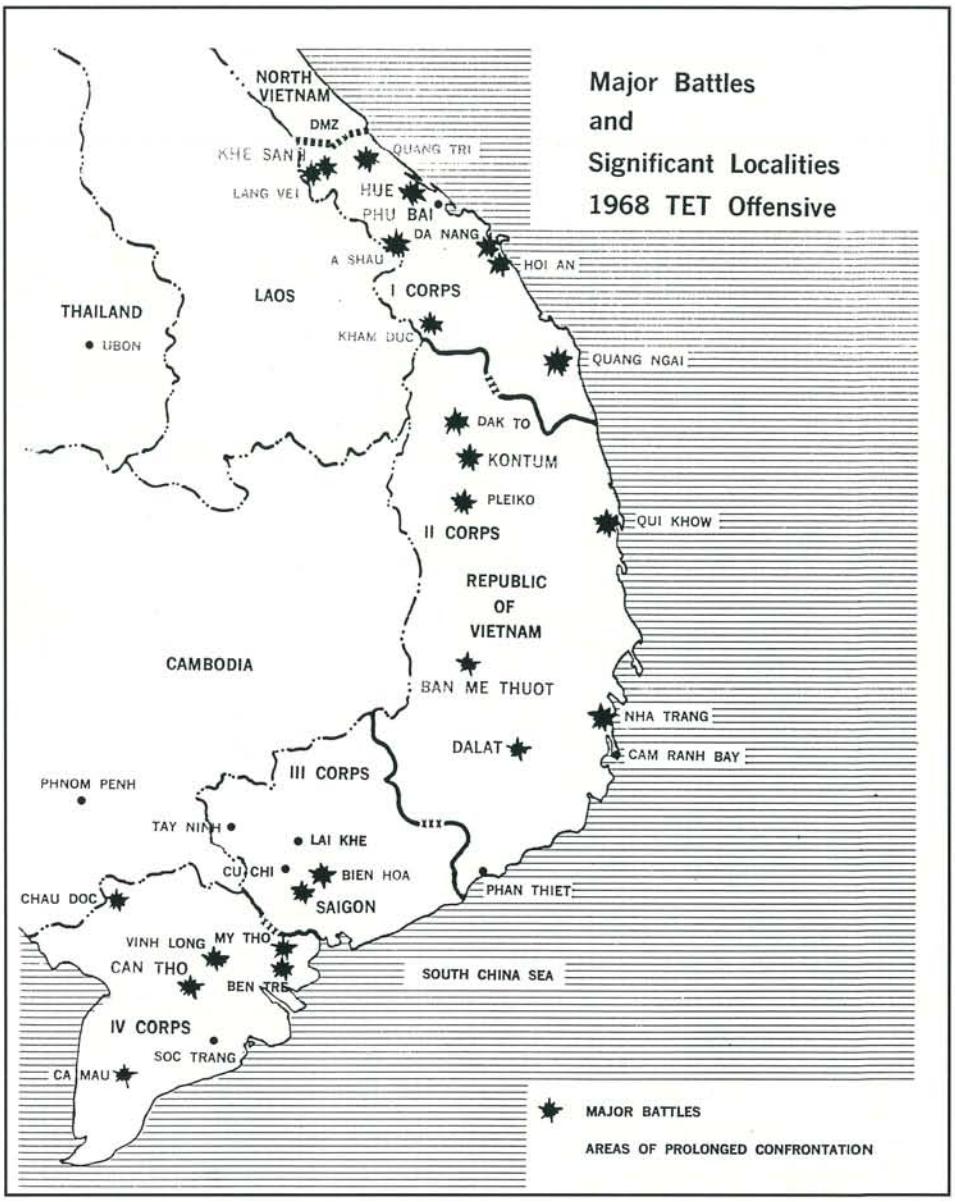
In early 1965, U.S. planes began combat operations over South Vietnam. Tactical aircraft from the South Vietnamese Air Force, South Vietnam-based USAF, and carrier-borne USN/USMC aircraft struck targets on February 7, 1965. In June 1965, the 23,000 U.S. military advisors were committed to combat, and by year's end over 184,000 U.S. troops were in the area. On July 31, 1966, B-52s bombed the DMZ, supposedly because it was used by the North Vietnamese for entry into the South. The U.S. military commitment to the area steadily escalated with military aid and direct involvement of U.S. Army, Navy, Marine and Air Forces. The number of U.S. troops in South Vietnam reached almost 525,000 in 1968.

2d Bomb Wing Crews Enter the Southeast Asian War

On February 11, 1965, 15 B-52s from the 320th Bombardment Wing at Mather AFB, CA, and the 2d Bomb Wing flew to Kadena AB, Okinawa. Within a few hours, 32 KC-135s — 20 from Mather and 12 from Barksdale — were also on their way to Kadena. This contingency force was ready in case they were needed. Three weeks went by while high level discussions were held on how these assets were to be used.

SAC did not want the B-52s to be based in South Vietnam thereby diluting its EWO alert force. Pacific Air Force (PACAF) planners at Hickam AFB, Hawaii, believed that the B-52s should be used on targets over North Vietnam. At a conference in Honolulu in April 1965, General William C. Westmoreland argued for the use of B-52s against Viet Cong base camps in the south. In May, the Joint Chiefs of Staff (JCS) approved Gen. Westmoreland's request and authorized B-52 strikes on four target complexes in the south — the Kontum Province in the U.S. II Corps area; War Zone D, northeast of Saigon; Military Region 5 Headquarters in the U.S. I Corps area; and War Zone C northwest of Saigon along the Cambodian border in the U.S. III Corps area.

The precision bombardment capability developed by SAC bomber crews is predicated on good radar film files. In Southeast Asia, there were few man-made reference points and much of the ground was covered by dense, multi-layered jungle. As an expedient, an Army helicopter called *SKY SPOT*, equipped with a small beacon, could be electronically interrogated by the bomber crews to establish the required offsets for precision bombing. Hopefully *SKY SPOT* remained as the IP vs. becoming the target! Subsequently, *SKY SPOT* was replaced by a ground-based beacon installed on a mountain top. As the bomber crews gained experience and the radar film files grew, they reverted to their normal, on-board radar synchronous bombing.



The Southeast Asia air campaign area was divided into the four target complexes shown on this map.

The maximum bomb load on a B-52 of any series was 51 x 750 lb. bombs, with 27 carried internally and another 24 loaded on the two external wing pylons. During 1965, all available B-52Ds were retrofitted under Project BIG BELLY to carry clip-mounted bombs internally. These clips increased the internal 500 lb. bomb quantity from 27 to 84, or the 750 lb. bomb capacity from 27 to 41. As many as 108 x 500 lb. bombs could be carried on these modified aircraft for a total load of 60,000 lbs. or 30 tons! Not only did crews from the 2d Bomb Wing take their own B-52Gs into combat, many of them went to Castle AFB, California for transition training into the B-52D and flew with other provisional wings in Southeast Asia.

While designed as a high altitude nuclear bomber, the B-52's conventional capabilities were formidible. The B-52 formations rained iron bombs on suspected enemy targets, wreaking havoc on their fortifications built 10-15 feet underground. Like a *giant rototiller in the sky*, the B-52s carpeted the area with precision pattern bombing, thus destroying a number of enemy buildups and disrupting plans for major ground assaults against allied forces. Unfortunately there was never any bomb damage assesssments (BDAs) of these missions. It was not realistic to expect definitive bomb damage assessments of a stand of jungle. U.S. and South Vietnamese Army reconnaissance of some of these four target complexes did reveal the presence of dead North Vietnmese troops. A hint of the B-52 bombing effectivenes can be found in a Rand Corporation report which stated: "Fear of B-52 attack seems to be widespread and not confined only to the areas that have experienced them. The B-52s were described as being the most devastating and frightening weapon used

so far against the Viet Cong and were said to have great effect on Viet Cong morale."[14] It was not unusual for field commanders to request B-52 strikes to support their troops; however, these commanders obviously had no idea of the planning and logistics necessary to mount such a strike as opposed to having orbiting tactical fighters in the area which could provide air support on a moment's notice. (See Appendix 23 for Wing deployments to Southeast Asia.)

Aerial Refueling Planning for the War in Southeast Asia

On January 28, 1965 Maj. Klein was TDY to Hickam AFB, Hawaii, as part of a team being briefed on the refueling requirements of the 2d Bomb Wing. He was accompanied by Maj. Roscoe E. Sprinkel and Capt. Owen L. Greenblat. Suddenly the plans changed and the team was told to return immediately to Barksdale. The commercial flight on a Pan American 707 jetliner from Honolulu to Travis AFB, California was uneventful. Three military dependents were bumped to make room for the trio. The three officers took a cab from Travis AFB to San Francisco International Airport. When they attempted to present their military tickets to American Airlines, they were denied boarding. The trio spent the night in a local motel and flew back the next day. They arrived at Barksdale to see the last few planes leaving. A war had started and they were not invited! After a bit of negotiating, Maj. Klein was finally sent to Kadena AB, Okinawa to rejoin the unit. Together they would be part of a new program called Operation YOUNG TIGER (tanker operations in Southeast Asia).[15]

2d Wing personnel are being processed for deployment to Southeast Asia. (Courtesy of the United States Air Force)

Many support personnel deployed to Southeast Asia by commercial airliners. Such deployment separations were hard on dependent families. (Courtesy of the United States Air Force)

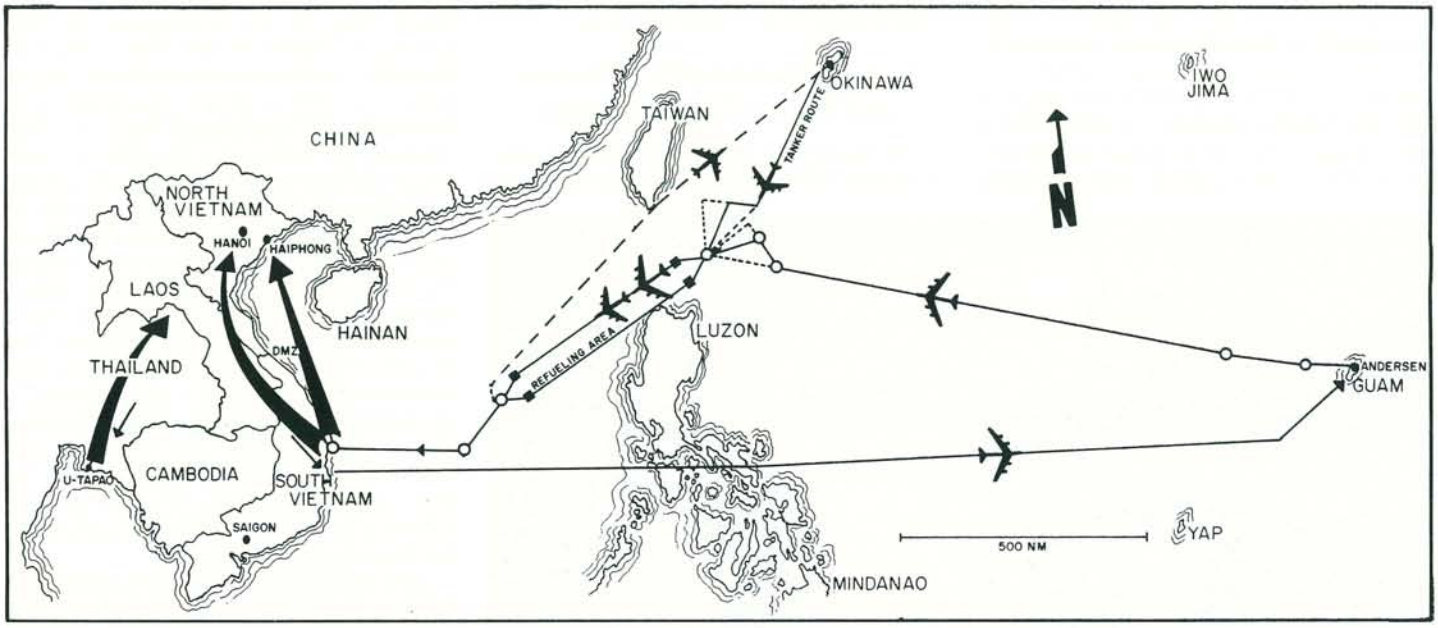
SAC had developed a massive aerial refueling plan for the war in Southeast Asia, codenamed Operation YOUNG TIGER. KC-135 crews and tankers were deployed from SAC bases within the United States to bases in the Pacific under control of the Pacific Air Forces (PACAF). The tanker units used the resources of the PACAF bases, however, they remained under operational management of SAC. TDY periods normally ranged between 73 and 77 days. Three to six tanker crews from the 2d Bomb Wing joined similar numbers from other SAC units to form the provisional tanker wings in Southeast Asia.

Between 1964 and 1968, Operation YOUNG TIGER missions were flown from the following forward operating locations, each with its own unique code name:

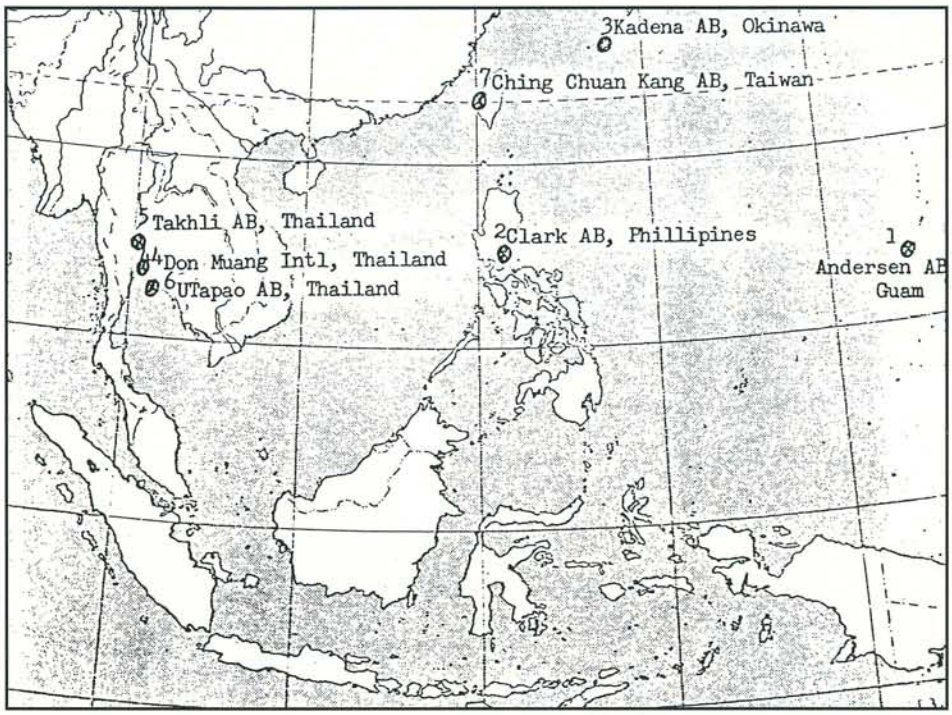
- Andersen AFB, Guam – Hq. 3d Air Division (Typhoon Evacuation Base); Strip Alert Tankers (fully loaded tankers with alert crews that could scramble within minutes to meet urgent refueling needs).
- Clark AB, Philippine Islands – YANKEE TEAM; FOREIGN LEGION; Typhoon Evacuation base
- Kadena AB, Okinawa – 4252d Strategic Wing; ARC LIGHT and YOUNG TIGER
- Don Mung International Airport, Thailand - TIGER CUB
- Takhli AB, Thailand – Det. 1, 4252d Strategic Wing; KING COBRA
- U-Tapao AB, Thailand – 4258th Strategic Wing; GIANT COBRA
- Ching Chuan AB, Taiwan – 4220th Air Refueling Squadron

YOUNG TIGER Tanker Tactics[16]

Maj. Klein remained behind at Kadena AB, Okinawa with the 916th ARefS when the bomber force from the 2d returned to Barksdale from Andersen AFB, Guam. He put his training as an instructor tanker aircraft commander to use in developing new air refueling tactics for the YOUNG TIGER team. He had over 4,000 hours of tanker experience which he gained in the 2d Air Refueling Squadron flying KC-97s and KC-135s.



During the war in Southeast Asia, the Young Tiger refueling operations were flown from these bases.



On June 18, 1965, the first ARC LIGHT mission was launched from Andersen AFB using B-52s from the 7th and 320th Bombardment Wings. Two B-52s were lost in a mid-air collision prior to refueling while en route to the target. No 2d Wing aircraft were involved in this accident.

The next strike was launched on July 3. Maj. Klein was the airborne tanker task force leader on this mission. The B-52s took off from Andersen AFB, Guam and were met by tankers from Kadena AB. As a result of the June 18 mid-air collision, higher headquarters staff officers took a keen interest in the briefings for this mission. The tanker crews were briefed by one of these staff colonels. The plan called for the tankers to refuel and then climb to their assigned altitudes of 40,000-to-42,000 feet, proceed to the end of the refueling track, then retrace their track at the same altitudes. Junior tanker officers argued against these tactics, stating that the procedure placed the returning tankers at the same altitudes as those in the next wave, but were overruled.

When airborne, Maj. Klein broke radio silence and rebriefed the tanker crews to maintain lower altitudes on the outbound track, then climb and turn 180° and fly back at their higher assigned altitudes to avoid potential mid-air collisions.

During the mission debriefing, Maj. Klein explained his rationale for changing the mission plan. His concept was accepted by his superiors and became part of the future YOUNG TIGER refueling operational doctrine.

Tanker crews on YOUNG TIGER were briefed for three sequential mission sorties. In the event a crew could not get an aircraft moving, it was shut down, the crew was met by a station wagon from Operations, and was taken to another tanker. The next crew flew the aborted sortie, and the aborting crew took the following sortie. As a result of this planning, the YOUNG TIGER tanker crews never missed making a scheduled sortie throughout the war.

Typhoon Alerts

Typhoons in the Pacific can be devastating to aircraft on the ground. On several occasions, the YOUNG TIGER KC-135s had to be flown out of Kadena AB to Clark AB in the Philippines. When this happened, tanker operations were flown out of Clark instead, without interrupting the bombing schedules.

On one occasion, Maj. Klein directed the departure of all of the tankers from Kadena. He took the last KC-135 which had 24 *red line* maintenance items (uncorrected malfunctions) in its log book. One engine instrument in each vertical row was inoperative for all four engines, so the crew merely cross-checked the instruments and accepted the fact that each of the parameters for all four engines was in sync. The cabin pressurization system was inoperative and only hot engine bleed air could be provided to the cabin. As a result, the crew flew unpressurized at 10,000 feet. The cockpit was so hot that they stripped down to their underwear. The center fuel tank fuel gauge was inoperative, so they used fuel from the tank until the engine low fuel pressure lights came on, then switched the fuel feed to "direct tank-to-engine," thereby utilizing the wing tanks. It was this type of ingenuity which allowed the YOUNG TIGER team to excel in its mission throughout the war.

On February 7, 1965 the Wing began preparations to deploy to Southeast Asia for Operation ARC LIGHT. ARC LIGHT was the code

name for overall B-52 operations in Southeast Asia from bases at Utapao, and Andersen AFB, Guam. The B-52 and KC-135 crews were ready on the 9th and began deploying on the 11th. The Wing deployed a force of 15 B-52s from the 20th Bomb Squadron to Andersen AFB and 12 KC-135s to Kadena AB. While high level staff planning was going on regarding the proper employment of the B-52s, the EWO alert mission was being compromised and SAC ordered some of the aircraft and crews rotated back to their stateside bases. The Wing's crews redeployed to Barksdale AFB, with the last B-52 and last KC-135 arriving on May 20, and May 9, 1965, respectively. The first B-52 strike occurred on June 18, 1965, after the return of the Wing's aircraft and crews.

The day after the last bomber arrived at Barksdale, the Wing participated in a joint training exercise with Strategic Air Command and the North American Air Defense Command.

During June 1965, SAC realigned its assets and the Wing lost its B-52Fs and the 20th Bomb Squadron to the 7th Bombardment Wing at Carswell AFB, Texas, between June 15 and 20. The 62nd Bomb Squadron, equipped with B-52Gs, was reassigned from the 39th Bombardment Wing at Eglin AFB to the 2d Wing. Lt. Col. Eugene A. Filpowicz, 62nd Bomb Squadron commander, flew the first B-52G into Barksdale on June 20.

The 2d Bomb Wing was reassigned from the 19th Air Division to the 42d Air Division on July 1, 1965. This move completed the the loss of all of the original 2d Bombardment Wing squadrons–the 11th in the 1930s, and the 20th, 49th and 96th in the 1960s. It would be over 15 years before a return of the original squadrons would be accomplished.

Alert standy, alert operations, and alert exercises and readiness tests and inspections were vertually a continuous part of an operational unit airman's life during the Cold War. These were extremely grueling years of air operations that went on largely out of sight and out of the public's conscience. Aircrews literally lived together for a week at a time. They traveled to medical/dental appointments, made trips to the BX, and had meals at the Officers' Club, always together. Alert operations were akin to wartime operations at a deployed overseas base, and were especially stressful to the crews and their families. The crews were located on base in an isolated, chain link fence-surrounded alert facility. Families could not visit. Life was either monotonous or filled with blood chilling stress. This was all part of the *Cold War* scenario. In a show of appreciation, the citizens of Bossier City and Shreveport presented an outdoor family pavilion for the Wing's alert crews and their families.

1966[17]

The Wing had an eventful 1966. There were some organizational changes, an ORIT, a continuation of CHROME DOME operations, recognition for combat operations, a major aircraft accident, and an additional mission.

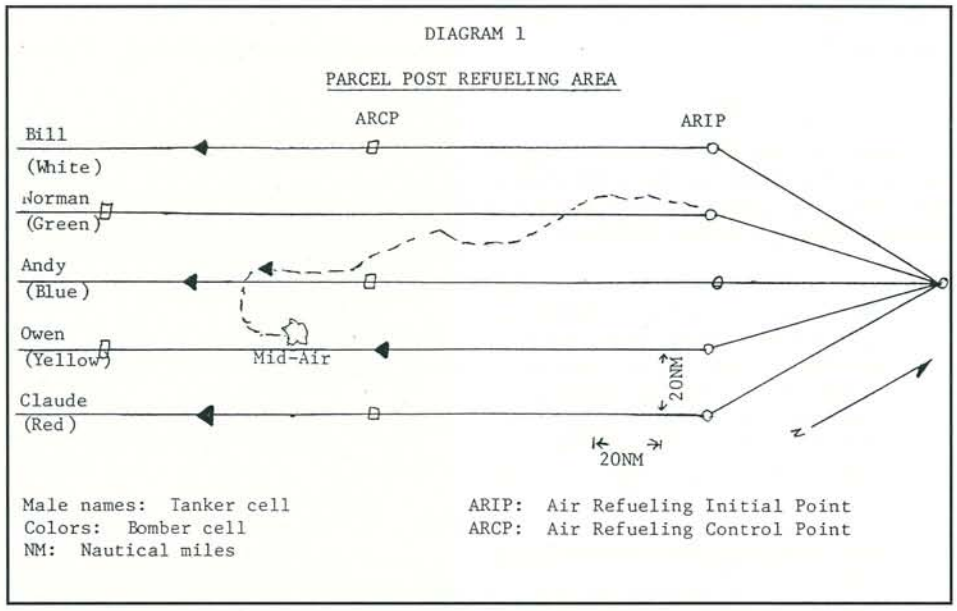
The Wing was given an Operational Inspection Readiness Test (ORIT) by an Inspector General team from the Fifteenth Air Force on January 17. The Wing passed the ORIT.

Starting on February 2, the Wing began another 90-day tour of Operation CHROME DOME tanker deployments.

The 2d Combat Support Group was reassigned from Headquarters Second Air Force to the Wing on March 30.

On April 24, Barksdale threw another of its annual *Holiday in Dixie* open houses. One B-52G and one KC-135A were on display for the public. An estimated crowd of 150,000 attended the event.

On May 27, 56 crewmen from the 913th ARefS received Air Medals for their participation in Operation ARC LIGHT.



The original refueling tracks caused conflicting air traffic, resulting in a mid-air collision and the loss of a B-52. Maj. Arthur Klein made an in-flight change in the refueling pattern on the next mission. His procedure was adopted for future refueling operations.

B-52 Crew Lost[18]

Capt. Curtis E. Robertson and his crew in a B-52G from the 62d Bomb Squadron were on a training mission near Stone Lake, Wisconsin, about 60 miles southeast of Duluth, Minnesota on November 18, 1966. Shortly after taking on fuel from a KC-135, the plane crashed into a densely wooded area at 6:35 P.M. The ambient temperatures on the ground were near 0° Fahrenheit. The aircraft slammed into a hillside and burned, killing the entire crew of eight. Besides Capt. Robertson, the crew was 1st Lt. Darrick R. Negron, copilot; Capt. Edward E. Kamph, radar navigator; 1st Lt. Jerome P. Callegari Jr., navigator; Capt. Michael J. Dunlap, electronic warfare officer; A1c Gerald D. Turney, gunner; Lt. Col. Jack Atherton, instructor pilot; Maj. James H. Crook, instructor navigator; and M/Sgt. Lonnie B. Woodward, electronic maintenance.

The accident investigation board was headed by Lt. Col. Fred Sherman, Vice Commander of the 410th Bombardment Wing from K.I. Sawyer AFB, Michigan. The cause of the crash was not made public.

Post-Attack Command and Control System (PACCS)

After the *Cold War* entered the missile era the United States was only 30 minutes away from a Soviet nuclear intercontinenal ballistic missile (ICBM) attack. It was logical that the Soviet targets would include America's retaliatory capability – its strategic missile complexes and strategic bomber bases, and command and control centers – among its highest target priorities. As a result of this threat, SAC developed an airborne command post system called the Post-Attack Command and Control System (PACCS) in which an airborne EC-135C could stand in for the SAC command post and missile launch sites in the event they were disabled during a missile attack. In such an event, the PACCS aircraft could control missile launches from the air. These aircraft always carried a general officer and a 10-man battle staff on operational sorties. During the missile era of the *Cold War*, one of these aircraft was airborne 24-hours a day, every day of the year.

A total of 14 KC-135B aircraft powered by 18,000-lb. static thrust TF33 turbofan engines, were delivered to SAC in October 1964. For security reasons, these aircraft carried the designation of KC-135Bs at the time of delivery. Subsequently they were redesignated as EC-135C *Looking Glass*.

The EC-135Cs are equipped with both the boom for refueling, and a refueling receiver system. Crews of *Looking Glass* airplanes had to be well versed in both transferring fuel to another aircraft, and receiving fuel from another tanker. Night refueling was particularly challenging.

2nd Wing PACCS EC-135Cs were operational between April 1, 1966 and April 1, 1970 in support of Second Air Force. Subsequently, operations were consolidated and these aircraft were sent to other SAC bases.

Col. Arthur W. Holderness, Jr. commanded the Wing between December 19, 1966 and Oc-

tober 13, 1967. He retired as a brigadier general (see Appendix 6).

1967[19]

During 1967, the Wing continued to support the war effort in Southeast Asia, maintained its SAC EWO alert mission, and participated in a number of training exercises, including:

- Exercise GREAT EFFORT–a simulated disaster control exercise at Barksdale on January 6 designed to test the unit's capabilities to cope with an attack by an aggressor using a nuclear weapon;
- Exercise TOP RUNG–a joint SAC/ NORAD mission flown on February 10 with four B-52s and one KC-135. It was designed to test NORAD's air defense system. (NORAD is the acronym for North American Air Defense Command); and
- Exercise BUCKSKIN RIDER–designed to test the Wing's capabilities to conduct its primary mission under radiological fallout conditions resulting from a near miss and covert nuclear attacks. It was conducted on November 17.

This photo shows F-100Ds, with their cranked refueling probes, being refueled. They are similar to the one from the 31st Tactical Fighter Wing on which T/Sgt. Isas Arraga, of the 913th ArefS, used his boom with the refueling drogue to rotate the errant refueling probe back into position so the fighter could take on badly needed fuel. (Courtesy of Norman Taylor)

On January 19, the 913th ARefS dispatched another KC-135A and crew for a 59-day TDY to Operation YOUNG TIGER.

History repeated itself for the Wing when a KC-135 from the 913th was supporting a TAC F-100 *Super Sabre* deployment to Southeast Asia on February 12, 1967. The fighter had a cranked refueling probe on its right wing. Refueling was accomplished with the drogue which can be attached to the end of the standard refueling boom. The tanker's astute boom operator, T/Sgt. Isas G. Arriaga, noticed that the fighter's refueling boom had rotated out of position and was incapable of taking in fuel. Faced with the possibility of going into the ocean, the fighter pilot followed Arriaga's instructions, who coaxed him into position. Then, using the boom and drogue like a huge wrench, Arriaga swung the errant refueling boom into its proper position thus allowing the fighter to take on fuel. The 913th ARefS was cited for this action by Col. Douglas M. Conlan, Task Force Commander; Col. Warren R. Lewis, 31st Tactical Fighter Wing Commander; and Maj. Gen. Alvin C. Gillean, II, Deputy Chief of Staff SAC. The citation, in part, stated: "...the mission ...was flown, as briefed, with all aircraft arriving safely at destination without incident. The unusually fine success of this deployment is attributed in great measure to the outstanding performance of crew E-132." In addition to T/Sgt. Arriaga, the tanker crew included Maj. Donald L. Kipe, aircraft commander, Capt. Ernest L. Young III, copilot, and 1st Lt. Frederick W. Diehl, navigator.

On March 19, another 913th ARefS tanker crew was dispatched to Southeast Asia for a 63-day tour with the YOUNG TIGER team.

On March 20, a tanker crew under the command of Maj. Robert W. Utterback, from the 913th, was cited for saving an F-4C *Phantom* over the Western Pacific. The F-4C had declared an emergency when it was down to 300 lbs. of fuel remaining. The tanker crew, which had been orbiting the refueling area, received the call, and moved in for the save. The rescuers, crew R-117, were Maj. Robert W. Utterback, commander; 1st Lt. J. D. Hauger, copilot; Capt. W. G. Davison, navigator; and A1C D. L. Grice, boom operator.

The 913th ARefS had the privilege of giving tanker support for the USAF *Thunderbirds,* the USAF precision flying demonstration team, on April 24.

By the end of September the Wing had 20 combat-ready bomber crews, 26 combat-ready tanker crews, 17 B-52Gs, 16 KC-135As, 3 EC-135Cs and 33 AGM-28 *Hound Dogs.*

Col. Edmund A. Rafalko assumed command of the Wing on October 13, 1967, and departed on November 12, 1968 when he became commander of the 425th Bombardment Wing (Provisional) at U-Tapao, Thailand. Col. Rafalko had been an aircraft commander of a select crew in 96th Bomb Squadron when they were flying B-50As. He commanded the 2d ARefS between November 1954 and May 1956.. He retired from the Air Force a a major general (see Appendix 6).

1968[20]

The war in Southeast Asia continued to spread and intensify. By December 1967, 475,000 U.S. troops were in South Vietnam, and all of North Vietnam was subject to bombing. Protests against the war mounted in the U.S. The intelligence ship *USS Pueblo*, and its 83-man crew were siezed in the Sea of Japan on January 23, 1968 by the North Koreans. Eighty two crew members were released December 22. Some glimmer of hope for ending the war emerged when peace talks started in Paris on May 10. President Johnson curbed bombing of North Vietnam on March 31 to support the peace process. All bombing of the North was halted by President Johnson on October 31.[21]

On January 2, the 913th ARefS deployed its first crews of the year in support of Operation YOUNG TIGER.

Starting in October 1966, the North Korean government infiltrated numerous agents into South Korea, provoking firefights along the demarkation zone. When the *USS Pueblo* was seized by the North Koreans, YOUNG TIGER tankers provided support to the tactical fighters employed in the attempted rescue operation. The 2d Bomb Wing also dispatched personnel to Osan AB, South Korea to support the mission. The personnel from the 2d were eligible for the Korea Campaign Ribbon (October 1, 1966-June 30, 1974).

The 2d again became a SAC *Super Wing* on April 15, 1968 when it gained a second B-52 squadron – the 596th Bomb Squadron – and another KC-135 squadron – the 71st ARefS. By becoming a *Super Wing* with four operational squadrons, the 2d was capable of doing its SAC EWO mission, performing higher headquarters – directed missions, and supporting the war in Southeast Asia.

The emblem for the 2d Bombardment Wing, which had been in existence since 1951, was modified on April 25, 1968. The 1951 emblem included the shield dating from April 15, 1940, replete with all of its pointed scroll work. Experience had shown that these corners were not conducive to jet operations because the slip stream peeled them up. The insignia was modified to be the shape of the USAF standard for emblems with a flat top, beveled top corners, and compound curves on the bottom which ended in a single point at the base. The redesigned insignia retained the words *LIBERTATEM DEFENDIMUS* in the scroll at the bottom of the emblem.

The Wing participated in a number of exercises during the year including:

Exercise BUY NONE designed to assess the

Wing's capability to strike unfamiliar targets, which was flown on March 3.

Exercise TOP RUNG, a joint SAC/NORAD operation in which the Wing provided four B-52s that penetrated the Eastern NORAD Region after exercising a Minimum Interval Take Off (MITO). MITO operations were required by SAC to assure getting the largest number of aircraft off the ground in the briefest period. In case of a Soviet missile attack, the warning time could be as little as 30 minutes. This exercise was flown on August 9.

Dispersals were flown to Sheppard AFB, Texas on September 7 with one B-52 and one KC-135; and another on September 11 to Forbes AFB, Kansas with a KC-135.

1969[22]

Expanded Vietnam peace talks started on January 18, 1969, and U.S. forces in Vietnam peaked at 534,000 in April. Troop withdrawals started on July 8 and continued under President Nixon's policy of *Vietnamizing* the war. Anti-war demonstrations peaked in the U.S., and 250,000 protesters marched on Washington, DC on November 15.[23]

The Wing continued to support the war effort in Southeast Asia and participated in a number of exercises including:

A dispersal exercise to Eglin AFB, Florida, was flown on June 6. The purpose of these dispersal exercises was to assure safety of our nuclear retaliatory force in the event of a preemptive strike by the Soviet Union.

Exercise TOP RUNG was another SAC/NORAD penetration exercise which was conducted over the western United States and Canada on June 12.

Exercise BUY NONE was a SAC-generated operational readiness mission in which the Wing garnered an outstanding rating in three of the four rated areas. This exercise was flown on November 14.

Exercise BUCKSKIN RIDER was an exercise conducted by the 19th Air Division to test the 2d's capabilities for continued operation after sustaining a nuclear attack. The Wing scored a good rating in this exercise, conducted on December 12.

The Wing received a satisfactory rating on a no-notice ORIT which was conducted by Headquarters Eighth Air Force on February 27. The Combat Evaluation Group (CEG) conducted another no-notice ORIT on May 19, when the Wing also received a satisfactory rating.

MATS had a no-notice program of its own in which it evaluated various USAF bases for their transient maintenance capabilities. As a result of one of these pop-in visits, the Wing received the MATS *Rex Riley Award* on September 1.

Wing B-52 crews were deployed to Southeast Asia to support Operation ARC LIGHT while the KC-135s participated in Operation YOUNG TIGER missions throughout the year.

1970[24]

During 1970, the Wing continued to support the war effort in Southeast Asia, and participated in several exercises and the RAF Bombing Competition.

The Wing participated in five joint SAC/NORAD air defense penetration exercises. Exercise SNOW TIME was flown on February 10, May 12, August 4, and December 1, 1970; while Exercise MUTE BAR was flown on March 3 and August 25. In addition, the Wing participated in at least four other exercises.

On May 8, 1970, four B-52 crews from the 2d, 310th, 320th, and 379th Bombardment Wings represented SAC at the RAF Bombing Competition. These wings were chosen for the mission based on their standings in the 1969 SAC Annual Bombing and Navigation Competition. While the other three wings took the *Blue Steel Trophy* for the best combined score in bombing and navigation, the 2d performed best overall, second in bombing, and fourth in navigation.

A phased-out B-47 was flown into Barksdale AFB on June 3, to become part of the base museum.

1971[25]

During 1971, the Wing continued to support the war effort in Southeast Asia by deploying both B-52s and KC-135s, with crews, on a rotational basis.

The 2d was awarded the coveted *Golden Bomber* award for its outstanding evaluation results in 1970. The award was given for outstanding operational capabilities and performance.

With the realignments of numbered air forces within SAC, the Eighth Air Force headquarters at Westover AFB, Massachusetts was moved to Anderson AFB, Guam. Northeast Air Command (NEAC) was disbanded and its C-118 *Liftmasters* were dispersed into the USAF inventory as staff transports. On February 15, 1971, the Wing gained the first of its three aircraft of this type. The C-118 was an unusual aircraft in the SAC inventory.

The C-118, (equivalent to the commercial DC-6 commercial airliner) was a follow-on to the C-54 (DC-4) *Skymaster*. The aircraft were powered by four 2,500 R-2800-52 engines, had a gross weight of 107,000 lbs., and cruised at 307 mph.. It had a wing span of 117' 6" and was 106' 10" long.

During 1971, the Wing inventory included B-52G, KC-135A, C-118, T-29 and T-39 aircraft.

Typical SAC Bomb Competition Crew[26]

Giant Voice was the name given to the SAC Annual Bombing and Navigation Competition. The 1971 Bomb Competition involved 23 B-52 and 28 KC-135 crews who were tops in each of their respective wings. While the tanker crews flew out of their home bases, the bomber crews convened at McCoy AFB. Each bomber crew flew a high altitude, long-range navigation mission from its home station to McCoy. Three Avro B.I *Vulcan* bomber crews from the RAF also competed for the first time in this SAC marathon. In another first, crews in the two-place, swing-wing FB-111A *Aardvark* made their debut at these competitions.

The SAC Bombing & Navigation Competitions were not like some sporting event. They were serious tests of crew professionalism and were indicative of military preparedness. Crews worked hard and diligently to qualify for the competition. Commanders at all levels took exceptional interest in the results because they were indirectly reflective of their leadership. Winning a competition gave a tremendous boost in morale and the trophies were tangible symbols of the best of the best.

The best crews from each wing competed for the *Fairchild Trophy* – the top prize. This trophy was awarded to the crew with the best combined scores for all three missions. Neither the FB-111A nor the *Vulcan* crews were eligible for the *Fairchild Trophy* because they were not paired with KC-135s. The *Saunders Trophy* was awarded to the top KC-135 tanker crew. During the 1971 Bomb Competition, the *Mathis Trophy*, sponsored by the Air Force Association was awarded for the first time. Lastly, a Bombing Trophy and a Navigation Trophy was awarded to the winning crews.

Crew E-62, under the command of Capt. Leroy Schroeder, from the 2d Bomb Wing 596th Bomb Squadron was featured in the March 1971 edition of the AIRMAN magazine about the life of a Bomb Comp crew. Like every other Bomb Competition crew, the crew from the 2d Bomb Wing expected to win the competition; however, the odds were 21-to-1.

Crew E-62, consisted of the following personnel:

- Capt. Leroy B. Schroeder, aircraft commander, was a 1965 Air Force Academy graduate who had flown 114 combat missions in Southeast Asia in C-130 *Hercules*. He became an instructor copilot on the 2d Bombardment Wing's Chief Standardization Crew before becoming a combat-ready B-52 aircraft commander.
- 1st Lt. Donald L. Ringer, copilot, was the youngest member of the crew. He was a 1968 USAF pilot school graduate, took combat crew training with the 93d Bombardment Wing at Castle AFB, and joined the 2d Bomb Wing in March 1970. His being placed on this crew was a testament to his abilities.
- Capt. Jerry L. Partridge, radar navigator, was an instructor radar navigator and had served two ARC LIGHT tours in Southeast Asia, accruing 102 combat missions.
- Capt. Charles D. Martin, navigator, joined the Air Force in 1964 and served on one ARC LIGHT tour where he logged 79 combat missions.
- Capt. Richard S. Watt, electronic warfare officer (EWO), was considered to be an old veteran, having joined the USAF in 1963. He had flown 81 combat missions in Southeast Asia.
- TSgt. Louis G. Virden, gunner, was a 16-year USAF veteran who had cross-trained from his former specialty as an aircraft electrician to a B-52 gunner. He had logged 81 ARC LIGHT missions.

T/Sgt. Virden was anxious to win the *Fairchild Trophy* on this mission. If they did, both he and the crew chief would be awarded another stripe. The crew was all pulling for them.

This was the first mission in the competition which called for the crew to fly a specific mission profile and land at McCoy AFB, Florida.

The crew started off its day preflighting their tried and true B-52G in which they knew every characteristic. However, it was broken! They took a backup aircraft, B-52G-120-BW s/n 59-2593, about whose characteristics they knew nothing. The crew arrived at McCoy after placing sixth in the navigation mission – not bad, and the 2d Bomb Wing was still a contender.

On day two, the mission included a low-altitude run at approximately 1,000 feet, and two high altitude, 28,000-33,000 feet, bomb runs. A drawing was made for the takeoff schedules. Capt. Partridge explained that this can be critical, because if the airplane arrives over the target when the sun is at its zenith, one cannot get a good navigational fix. Early morning or late evening is the best time when the sun angles are more measurable.

For evauation, the crew of a B-52 is divided into three elements:

- *Command and Control Element* - the pilots
- *Offensive Element* - navigator and radar navigator
- *Defensive Element* - electronic warfare and gunner

Two crewmembers whose duties are not directly required for the competition are the gunner and EWO. However, they do not sit idly by. During the Bomb Competition the gunner backs up the navigator and radar navigator on timing — an all too critical element to successful bombing. The EWO backs up the radar navigator because of the similarity in their training and normal crew duties.

An interesting side light was pointed out by TSgt. Virden. During the war in Southeast Asia, the U.S. had control of the air and the gunners acted like airborne controllers for the B-52s behind them in the cell, and as an onboard radar/navigation equipment maintenance technician. Sgt. Virden recalled one raid over Vietnam, when a trailing B-52 lost its bombing radar and he used his gun-laying radar to guide the bomber, and tell the crew when to release its bombs.

At 6:40 A.M., the crews assembled for the second-day's mission briefing. The pressure was on! The lights dimmed and the projection screen was filled with a myriad of maps, charts, and other salient data accompanied by the briefing. The briefers sounded much like college professors just before finals. The weather looked good with light clouds for the low-level bomb run and clear and unlimited visibility for the high altitude runs.

The crews piled into busses and headed out for their aircraft. The flightline was bustling with activity as the maintenance crews worked on last-minute problems with their aircraft. Vehicles of all sorts were moving about; including those with nervous wing commanders giving last minute words of encouragement to their crews. A lot was at stake for the crews and the wings.

The relative silence was shattered at 10-minute intervals as the competing aircraft launched into the Florida skies. The 2d Bomb Wing crew was scheduled to launch at 9:30 A.M. and land at 2:30 P.M. They arrived at their aircraft a full two hours prior to launch to preflight their charge. After triple checking everything, the crew emerged to watch the other aircraft depart.

Two individuals approached the crew – Gen. Bruce K. Holloway, Commander-in-Chief of SAC, and Brig. Gen. Woodrow A. Abbot, 823d Air Division Commander and host of the Bomb Competition. The generals greeted the crew and wished them well before shaking hands with each member of the ground crew.

The crew took off at 9:30 A.M. as scheduled. Their route took them north to Montgomery, Alabama, over central Louisiana, along the Texas border, north to Arkansas and Tennessee, southeast to Alabama, and back to McCoy. The B-52 approached the IP for the first bomb run. Capt. Partridge began his final computer update.

"NAV, RADAR, the cross hairs are tracking the FGPI, the counters are good and destination, #1 is set to target F coordinates."

"Roger, RADAR, target F coordinates are cross-checked, and the before IP checklist is complete."

"CREW, RADAR. We're approaching the timing initiation point. Standby for the T1 hack. On no! Take a look, NAV, we won't be rolled out in time to get a good timing run!"

"CREW, NAV, we're IP inbound at this time."

"NAV, RADAR, target acquisition now, selecting offset number one...it checks going to offset number two. Looks good! PILOT, check your bomb released light to be out."

"It is out, RADAR."

"Roger, PILOT, I am in bomb function at this time. Center the FCI and keep it centered. Ready for the bomb run checklist, NAV."

After bombs away on target F, target G was easily acquired and a smooth bomb run was in progress. Then there was an aircraft system error combined with a preflight planning error, resulting in the B-52 being a half mile to the right of its required track. The pilot tried to compensate with a tight turn and rolled out for bombs away. They were only half through – the high-altitude run was to follow.

For the third bomb run, 14 farm grain bins had been selected as the offset aiming point, but they did not appear for the crew. Fortunately, careful mission planning had permitted use of three offsets instead of only two. Number 1 was too large and too far away to be of use, so Capt. Partridge selected Number 3, a small group of farm buildings. There was 40 seconds to go before bomb release, so the crew used the farm buildings for the offset aiming point.

The crew had one more high level bomb run to complete. It went well, although it too was accomplished a bit too quickly.

In wartime, the crew would have successfully performed its mission; however in this tight competition between the best crews from each wing, things were different. The crew from the 2d Bomb Wing came in 14th. While they did not take home any trophies, they did go home with the words of Lt. Gen. Glen O. Martin, Vice CINSAC, when he opened the competition:

> "Every man here has been chosen from among the finest professionals to compete this year. It is a tribute to each of you as a member of a team and as individuals...you are an effective element in the free world's deterrent force."

When the B-52s were being upgraded with a new series of electronic counter measures (ECM) devices under Program RIVET ACE, the 2d was chosen to test the equipment.

Exercises performed by the Wing during 1971 included the following:

Exercise GIANT LANCE involved the Goose Tanker Task Force stationed at Goose Bay, Labrador. For this exercise, the 2d provided three B-52 and six KC-135 crews between April 6 and 10.

Exercise SNOW TIME was another of the SAC/NORAD penetration exercises to test the North American air defense system. It was flown on June 15.

In Exercise GIANT LANCE, two tanker and four bomber crews from the 2d participated in an exercise which was conducted from Thule AB, Greenland between August 16 and 20.

Exercise BUCKSKIN RIDER was an exercise conducted on October 5, to test the Wing's wartime mission under attack conditions.

On April 22, 1971, four B-52 crews, one each from the 2d, 310th, 320th, and 379th Bombardment Wings again represented SAC at the RAF Bombing Competition. This B-52 team once again took the *Blue Steel* Trophy.

1972[27]

1972 was the most notable year of the long Southeast Assian War in which the 2d's crews participated. North Vietnamese forces launched the biggest attack in 4 years across the DMZ on March 30. The U.S. responded April 15 by bombing the Hanoi-Haiphong area after a four-year lull and in May, by mining North Vietnam ports. Finally, in December, U.S. bombers struck massively in North Vietnam for 5 days in retaliation for alleged violations of agreement reached prior to the 1968 bombing halt. This air action was credited with bringing the peace talks to conclusion. As more and more of the U.S. war effort was shifted to air power, ground forces were steadily withdrawn. The last U.S. combat troops left August 11, and by year-end U. S. forces were down to 140,000.[28]

In many other respects, 1972 was a repetition of recent years for the 2d during the Cold War. Air and ground crews honed their individual and team skills. They practiced and were tested on assigned emergency war plan missions. They continued to maintain their part of the nuclear deterrent force, and repeatedly practiced strategic global mobility. Part of the operations and training came via completion of 16 code-named exercises directed by higher headquarters. Wing tanker crews continued their rotational deployments to the Spanish Tanker Task Force for refueling support of CHROME DOME B-52 airborne alert opeations over the southern route. In addition, busy tanker crews furnished refueling support for two overseas deployments, one of which was a deployment of F-4s to Terrejon AB, Spain, and of course continued deployments in support of the Southeast Asian war.

Operating statistics during the first quarter were indicative of the demands on the Wing. The Wing's 54 combat-ready bomber crews flew 420 sorties, and 49 combat-ready tanker crews flew 515 sorties.

On February 15, a 2d Wing B-52 crew, which had flown to Sheppard AFB, Texas, suffered a ground mishap. While undergoing engine run up, a piece of the parking apron broke loose from

the engine exhaust blast and fell back onto the airplane, causing extensive damage.

On March 1, the 596th Bomb Squadron was presented the *Golden Bomber Award* for demonstrating outstanding air crew professionalism for the period July through December 1971. During the Second Air Force award banquet held this same day, the Wing received more awards than any other unit in the Second Air Force. On October 6, the Wing was awarded the *SAC Hall of Fame* certificate for 5 consecutive years of accident-free flying!(See Appendix 5.)

The Wing was repeatedly tapped for bomber and tanker airplanes and crews in support of the war in Southeast Asia. On these deployments, the crews were assigned to the 72nd Strategic Wing (Provisional), based at Andersen AFB, Guam. The 72nd Wing was opereational with B-52s between June 1972 and November 1973, and was assigned to the Eighth Air Force. Early in 1972, 19 tanker crews were deployed as part of YOUNG TIGER; the aerial refueling plan for support of the Southeast Asia combat operations. Another 11 KC-135 crews were sent to Clark AB, the Philippines for Operation CONSTANT GUARD to augment YOUNG TIGER operations.

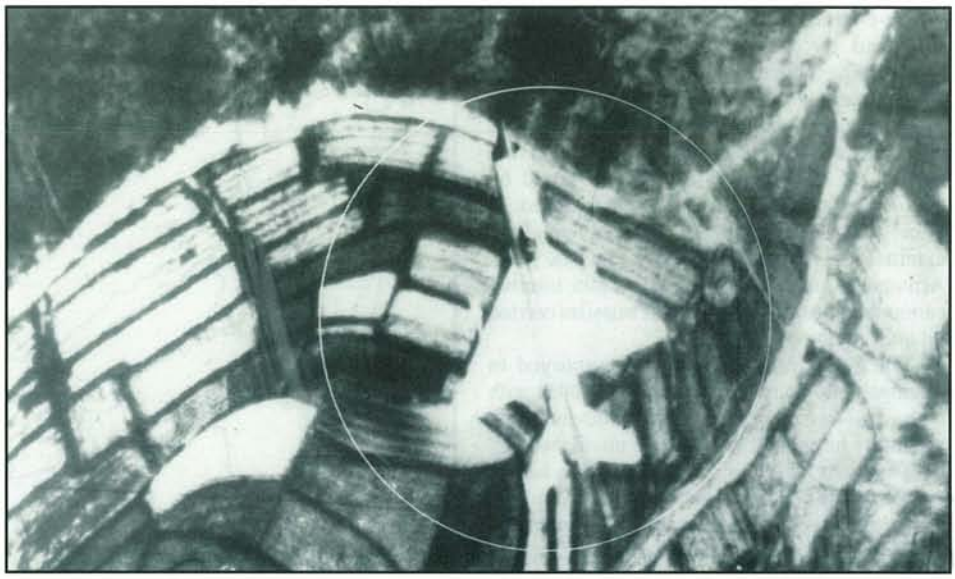
When the North Vietnamese launched their biggest attacks across the Demilitarized Zone (DMZ) in four years, on March 30, the U.S. retaliated by bombing Hanoi and Haiphong in North Vietnam after a four-year lull. The B-52s did not participate in these raids, but the bombing south of the 20th parallel was intensified under Operation BULLET SHOT. The 2d sent 1,461 personnel and 23 B-52s to various bases for BULLET SHOT. The operation was carried out in five phases between February 8 and May 27. Elements of the Wing participated in each of these phases.

Sufficient B-52s and KC-135s from throughout SAC were deployed to Andersen AFB to fill all the revetments. Maintenance, refueling, engine run-ups, and rearming on the crowded base went on around the clock. The noise was so incessant that maintenance personnel could not sleep. As a consequence, many of them boarded tankers on combat refueling missions just to get some sleep.

One of the anomalies of the war was a source of considerable frustration to combat crews. Throughout most of the combat operations from Andersen AFB, a Soviet trawler was stationed three to six miles off the runway, in international waters. Taking advantage of its politically safe haven, this picket ship radioed to the North Vietnamese continuing and important intelligence about operations from Andersen, including aircraft counts, take off times, etc.

The Christmas Bombing, 1972

The most significant event in the Wing's history during this period was its contribution to bringing the Vietnam peace agreement to closure. The U.S. started its direct military involvement in Vietnam when President Truman sent 35 advisors to South Vietnam in June 1950, and agreed to provide military and economic aid to the anti-Communist government. From this modest beginning, involvement steadily escalated until the U.S. was heavily embroiled in the increasingly complex Vietnam War. As the war dragged on, public protests and Congressional opposition to it mounted, together with the pressure to get out.



This North Vietnamese Air Force MiG-21, Fishbed *was captured on film whizing across the North Vietnamese countryside. U.S. air supremacy kept these aircraft from becoming a major threat later on the war; however, they were employed uniquely during Operation LINEBACKER II when they flew formation with the B-52s to get heading, airspeed, and altitude information for the North Vietnamese antiaircraft defenses. (Courtesy of the United States Air Force via Air Force Association)*

On March 31, 1968, President Johnson curbed bombing of North Vietnam as a prelude to the first peace talks that began in Paris on May 10th of that year. As talks continued, all bombing of the North was halted October 31, 1968. Four years of periodic negotiations followed without a peace agreement being reach. Then in October 1972, talks progressed to the point of sufficient promise for successful conclusion that Henry Kissinger, Assistant to President Nixon for National Security Affairs, stated at an October 26 press conference that, " peace was at hand." Subsequent events proved this assessment to be premature, and as Kissinger later acknowledged, the use of these words was ill-advised. November negotiations recessed without agreement.[29]

Kissinger returned to Paris in early December to exert maximun effort to conclude the agreement that proved so promising at the end of October. To show goodwill, the U.S. sent a message to Hanoi saying that air operations over North Vietnam were being reduced. The talks resumed on December 4. Kissinger's plan and hope were to settle the very nominal remaining difference in two days. Instead, Le Duc Tho, the North Vietnamese representative, withdrew 9 of 12 changes he had accepted during previous sessions. Instead of two days, the negotiations dragged out to ten days, the longest session ever between Kissinger and Tho. Each day they were further from agreement as the North Vietnamese became more intransigent and contemptuous of U.S. positions.[30]

Kissinger reported there was no intractable substantive issue separating the two sides, but rather an apparent North Vietnamese determination not to allow agreement to be completed. The North Vietnamese were stalling, seemingly in the hope that public and Congressional opposition to the war, and the growing rift with President Thieu of South Vietnam, who steadfastly refused to agree with the peace proposals, would force the Nixon administration into an agreement considerably less favorable than had already been tentatively agreed to, or face the onus for breaking off the negotiations.

Kissinger summed up the alternatives in a cable to the President. There were essentially two strategic options. The first was to increase pressure on Hanoi by bombing and other military measures. Secondly, to maintain appearances by scheduling another session of negotiations with the Vietnamese in January 1973, (which Kissinger thought probably meant letting matters drift into a series of inconclusive discussions). Later, at a strategy session in the White House, and at the urging of Alexander Haig, Kissinger's assistant, President Nixon chose resumption of heavy bombing using B-52s on a sustained basis for the first time over North Vietnam. The choice of B-52s was for shock value and because they had the all-weather capability to assure sustained operations. There were no illusions about the public and Congressional outburst this would bring. The bombing was to resume December 18 – timing that would surely intensify the outcry. Nixon reasoned he could stand the pressure if the bombing forced a favorable outcome.[31]

December 18—Bomber Offensive Begins

The military code name for the bomber offensive was Operation LINEBACKER II.[32] On the first mission the night of December 18, the bomber force of 129 B-52s attacked in three waves, with four to five hour intervals between each wave. The enemy air defense forces were comprised mainly of Russian-built MiG-21 fighters and SA-2 surface-to-air missiles (SAMs). A mission priority was to neutralize or suppress this potentially formidable opposition to successful bombing. The North Vietnamese did have antiaircraft artillery, but its effectiveness was usually below the B-52 bombing altitude.

The MiG-21, *Fishbed,* was a single-seat,

single-engine, mid-delta winged interceptor. Powered by 12,125-pound static thrust, afterburning Tumanski R-37F turbojet engine, the interceptor was capable of Mach 2 flight speed at altitudes up to 65,610 feet. It had an operating radius of 98 miles with its internal fuel tank of 515 imperial gallons. Its range could be augmented by a centerline external fuel tank of either 140 or 165 imperial gallons. In lieu of the external fuel tank, it could carry a missile pack. Armament included a pair of 30 mm internal cannons and two K-13 air-to-air missiles carried on under-wing pylons.

The SA-2 SAMs commonly employed in Southeast Asia were radar-guided missiles with high-explosive war heads that were detonated by proximity fuses. With booster, the missile was 35' long and had a 5'7" fin. The SA-2 had a launch weight of 5,000 pounds, and a range of 22 nautical miles. The SA-2 was usually deployed in batteries of four. It was transported on a Zil 157 eight-wheeled, articulated truck. Air crews likened an approaching SA-2 to a huge telephone pole boring in on them atop an intense flame.

For reasons that were not explained, and to the considerable consternation of combat crews, the SA-2 sites under construction in Vietnam were off limits to attack. It was only after they became a highly capable threat that the White House put them on the target list!

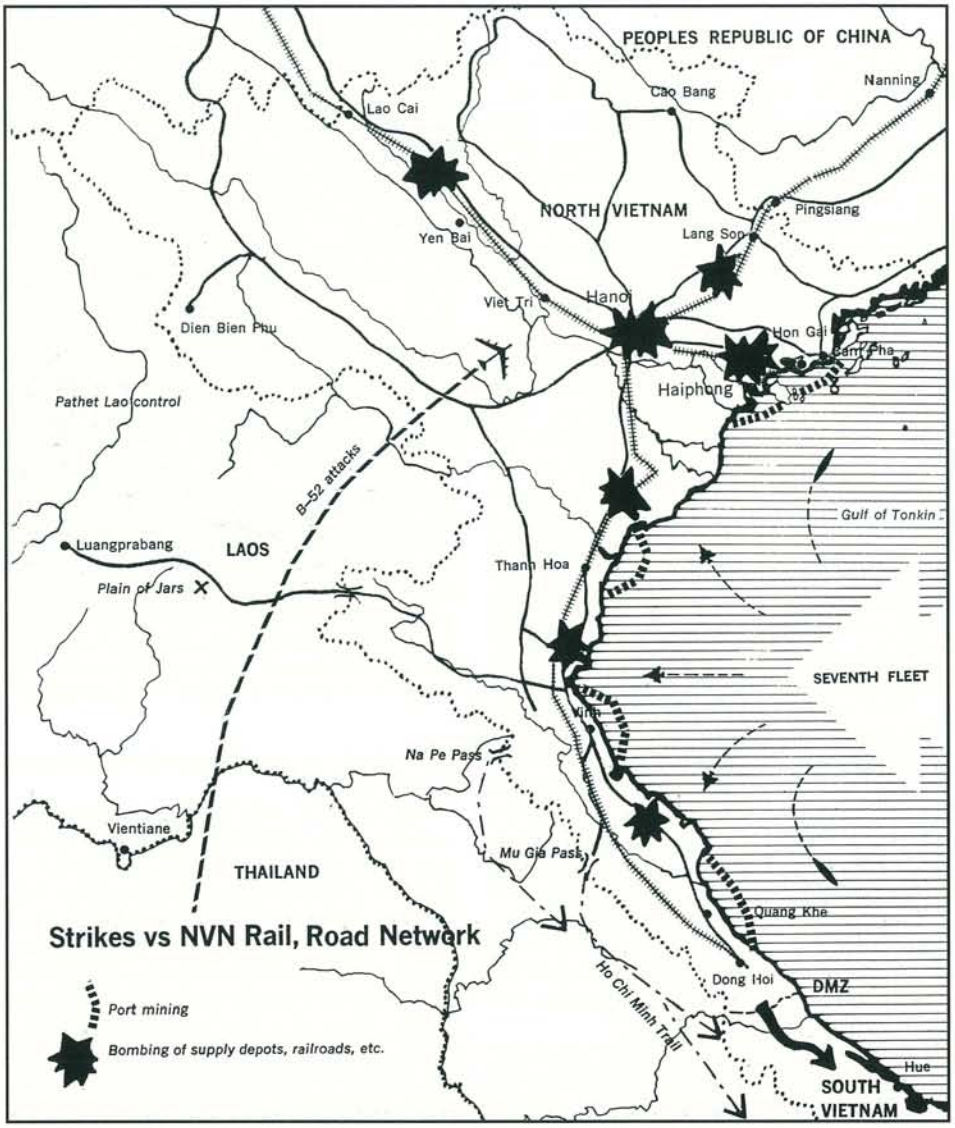
Supporting the first wave of B-52s was a total of 39 EB-66s, F-4s, and F-105s. The EB-66s provided ECM defense. The F-4s dispensed chaff and furnished fighter escort, and the F-105s were to attack SAM sites using *Bullpup* and *Shrike* anti-radiation missiles.

The first wave of 48 B-52s included 27 bombers from Guam and 21 from Utapao, Thailand. The latter attacked MiG-21 bases at Hoa Lac, Kep, and Phuc Yen, while the Guam-based bombers attacked the Kinh Ho Complex and the Yen Vien railroad in the Hanoi area. The attackers struck their targets at 2 minute intervals between 7:45 and 8:18 in the evening. This wave lost one bomber, (not from the 2d Wing). It was the second B-52 bomber to go down in seven years of combat operations. Three of the six crewmen perished. The other three survived to become POWs.

The second wave of 30 B-52s, all from Andersen AFB, arrived over their targets between midnight and 12:24 A.M. They were supported by 39 chaff, ECM and escort aircraft, virtually the same support as provided to the first wave. Eighteen of the bombers struck the Yen Vein railroad, six the Hanoi railroad and six the Kinh Ho complex.

Peach 2 Lost

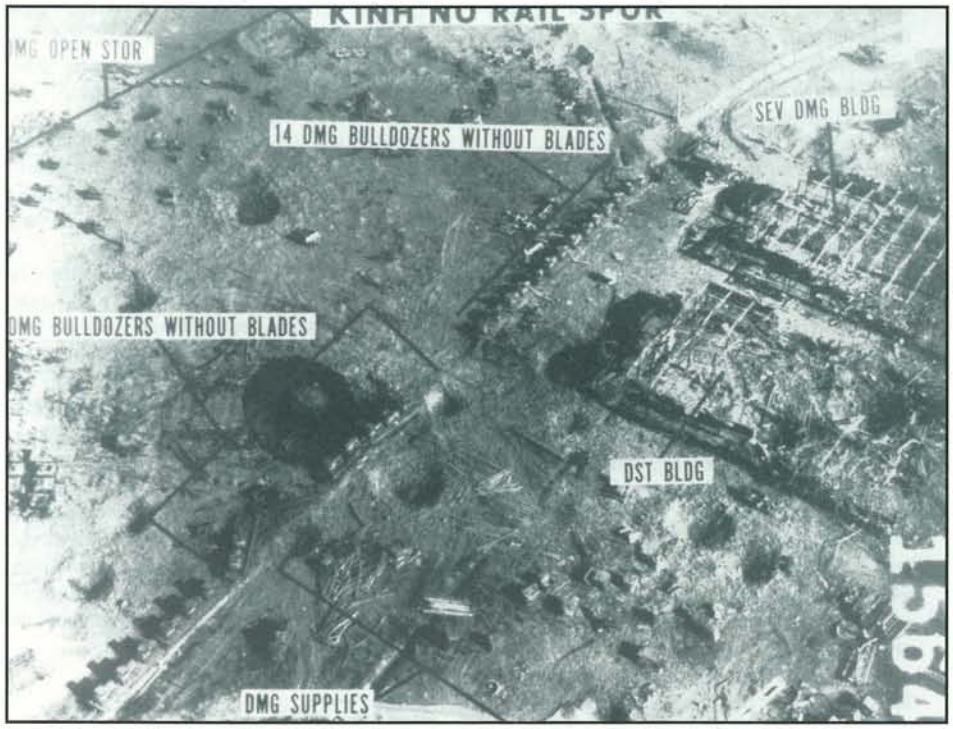
Maj. Clifford B. Ashley, and crew from the 2d Bomb Wing, in aircraft number 58-0246, *Peach 2*, in wave two, were blasted out of the sky by a SAM. Aboard the aircraft was Lt. Col. Hensley R. Connor, Deputy Airborne Commander for the mission. Lt. Col. Connor had chosen this crew from the 2d Wing because of his previous observations of their professionalism. Besides Maj. Ashley, the crew included Capt. Gary L.Vickers, copilot; Maj. Archie C. Myers, radar navigator; 1st Lt. Forrest E. Stegelin, navigator; Capt. James T. Tramel, EWO; and M/Sgt. Kenneth E. Conner,



The overall plan for Operation LINEBACKER II is shown on this map.

This SA-2 Guideline *missile on its launcher was being used in a Russian training exercise. (Courtesy of the Air Force Association)*

Four SA-2 Guideline *missiles may be seen in this photograph of a SAM site in North Vietnam. This picture was taken by an RF-101C* Voodoo *from the 20th Tactical reconnaissance Squadron. (Courtesy of Norman Taylor)*



A force of 18 B-52s were employed against the Kinh Ho Rail Yards on the opening night of Operation LINEBACKER II, with these results at one of the targets. (Courtesy of the United States Air Force)

gunner. Lt. Col. Connor gave this account of the mission:

> Each squadron was given the responsibility for one wave of each raid. The staff and I worked almost around the clock getting things ready for the first raid. The schedule was prepared, crews were notified, transportation ordered, flying equipment prepared, meals ordered, and all the myriad of things that must be done to prepare 3 crews and airplanes for a combat mission.
>
> Each wave would have a senior officer along as an Airborne Mission Commander (ABC). The wing commander would be the ABC on the lead wave and I was assigned as Deputy ABC to the second wave. I would not fly in a crew position, but would go along in the instructor pilot's seat as the seventh man on the aircraft. By not having any crew duties, I could concentrate on how the mission was progressing and be aware of any problems the wave might encounter.
>
> The planning was complete, the briefings were finally over, and we arrived at the aircraft to preflight the bombs and equipment. Wave II was scheduled to begin taking off at 1900. Every 90 seconds after the first takeoff another fully loaded B-52 would roll down the runway. Anyone who has ever witnessed such an event could never forget it.
>
> After we leveled off, I tried to get some sleep. I had gotten very little rest the night before because of the many problems that had come up during mission planning. I slept three hours before the copilot woke me up for our inflight refueling. Since the mission was scheduled to last over 14 hours, refueling was necessary in order to complete the mission and land back at Guam.
>
> When the refueling was over, I turned on the radio to hear how the lead wave was doing. They should then be in the target area, and we should be able to hear how the enemy was reacting. The first report I heard was when Col. Rew made his call-in after they exited the target area. They had had a tough experience. One airplane was known to be shot down by SAMs, two were not presently accounted for, and one had received heavy battle damage. He initially estimated that the North Vietnamese had fired over 200 SAMs at them. There were no reports of MiG fighter attacks. The aircraft artillery was heavy, but well below their flight level. For us, the worst part was now they knew we were coming, and things would probably be even worse when we got there.
>
> I saw the SAMs as we came in closer to the target area. They made white streaks of light as they climbed into the night sky. As they left the ground, they would move slowly, pick up speed as they climbed, and end their flight, finally, in a cascade of sparkles. There were so many of them it reminded me of a Fourth of July fireworks display. A beautiful sight to watch if I hadn't known how lethal they could be. I had flown over 200 missions in B-57s and I thought I knew what was in store for us, but I had never seen so many SAMs. I did not feel nearly as secure in the big, lumbering bomber as I had in my B-57 *Canberra* that could maneuver so much better.
>
> Just before we started our bomb run, we checked our emergency gear to make sure everything was all right in case we were hit. We would be most vulnerable on the bomb run, since we would be within lethal range of the SAMs and would be flying straight and level. We had been briefed not to make any evasive maneuvers on the bomb run so that the radar navigator would be positive he was

aiming at the right target. If he was not absolutely sure he had the right target, we were to withhold our bombs and then jettison them into the ocean on our way back to Guam. We did not want to hit anything but military targets. Precision bombing was the object of our mission. The crews were briefed this way and they followed their instructions.

About half way down the bomb run, the electronic warfare officer on our crew began to call over the interphone that SAMs had been fired at us. One, two, three, now four missiles had been fired. We flew straight and level.

"How far out from the target are we, Radar?"

"We're ten seconds out. Five. Four. Three, Two, One. BOMBS AWAY!" Start your . . . turn, pilot."

We began a right turn to exit the target area.

KABOOM! We were hit.

It felt like we had been in the center of a clap of thunder. The noise was deafening. Everything went really bright for an instant, then dark again. I could smell ozone from burnt powder, and had felt a slight jerk on my right shoulder.

I quickly checked the flight instruments and over the interphone said, "Pilot, we're still flying. Are you OK?"

"Yes, I'm fine, but the airplane is in bad shape. Let's check it over and see if we can keep it airborne. Everybody check in and let me know how they are."

"Navigator and Radar are OK. We' don't have any equipment operating, but I'll give you a heading to Thailand any time you want it."

"EW is OK, but the Gunner has been hit. We have about two more minutes in lethal SAM range, so continue to make evasive maneuvers if you can."

"Gunner is OK. I have some shrapnel in my right arm, but nothing bad. The left side of the airplane is full of holes."

I called the lead aircraft to let them know we had been hit. He said he could tell we had been hit because our left wing was on fire and we were slowing down. I asked to call some escort fighters for us.

The airplane continued to fly all right, so the pilot resumed making evasive maneuvers. We flew out of the range of the missiles, finally, and began taking stock of the airplane.

The SAM had exploded right off our left wing. The fuel tank on the wing was missing along with part of the wing tip. We had lost #1 and #2 engines. Fire was streaming out of the wreckage they had left. Fuel was coming out of the holes all throughout the left wing. Most of our flight instruments were not working. We had lost cabin pressurization. We were at 30,000 feet altitude. Our oxygen supply must have been hit, because the quantity gauge was slowly decreasing. I took out two walkaround bottles for the pilot and copilot. If we ran out, they, at least, would have enough emergency oxygen to get us down to an altitude where we could breathe.

We turned to a heading that would take us to U-Tapao, Thailand. I called again for the fighter escort to take us toward friendly territory.

"We're here, buddy."

Two F-4s had joined us and would stay with us as long as they were needed. One stayed high, and the other stayed on our wing, as we descended to a lower altitude and to oxygen. They called to alert rescue service in case we had to abandon the aircraft. Our first concern was to get out of North Vietnam and Laos. We did not want to end up as POWs. We knew they did not take many prisoners in Laos.

Thailand looked beautiful when we finally crossed the border. Since Thailand was not subject to bombing attacked, they still had their lights on at night. We flew for about thirty minutes after we had descended to a lower altitude, and began to think we would be able to get the airplane on the ground safely. The fire in the left pod was still burning, but it didn't seem to be getting any worse. One F-4 left us. The other one said he would take one more close look at us before he, too, would have to leave. His fuel reserve was running low. He flew down and joined on our left wing.

"I'd better stay with you, friend. The fire is getting worse and I don't think you'll make it."

I unfastened my lap belt and leaned over between the pilot and copilot to take another look at the fire. It had now spread to the fuel leaking out of the wing, and the whole left wing was burning. It was a wall of red flame starting just outside the cockpit and as high as I could see.

I said, "I think I'll head downstairs."

"Good idea," said the pilot.

The six crew members in the B-52G have ejection seats that they fire to abandon the aircraft. Anyone else on board has to go down to the lower compartment and manually bail out of the hole the navigator or radar navigator leaves when their seat is ejected. I quickly climbed down the ladder and started to plug in my interphone cord to see what our situation was.

The red ABANDON light came on.

BAM! The navigator fired his ejection seat and was gone.

The radar turned toward me and pointed to the hole the navigator had left and motioned for me to jump. I climbed over some debris and stood on the edge of the hole. I looked at the ground far below. Did I want to jump? The airplane began to shudder and shake, and I heard other explosions as the other crew members ejected. I heard another louder blast - the wing was exploding. Yes, I wanted to jump! I rolled through the opening, and as soon as I thought I was free of the plane, I pulled the ripcord on my parachute.

I felt a sharp jerk and looked to see the parachute canopy open above me. The opening shock felt good even though it had hurt more than I expected. Everything was quiet and eerie. There was a full moon, the weather was clear, and I could see things very well. I looked for other parachutes. One, two, three, that's all I saw. Then I saw the airplane. It was flying in a descending turn to the left and the whole fuselage was now burning and parts of the left wing had left the airplane. It was exploding as it hit the ground.

I saw I was getting close to the ground, so I got ready to land. I was floating backwards, but I could see I was going to land in a little village. I raised my legs to keep from getting into a hooch. I certainly didn't want to land in someone's bedroom. I got my feet down, hit the ground, and rolled over on my backside. I got up on one knee and began to feel around to see if I was all right. Everything seemed to be fine. There was a little blood on my right shoulder from where a piece of shrapnel had hit, but otherwise, just bruises. It felt good to be alive.

About twenty or twenty-five Thai villagers came out of their homes and stood watching me. They were very quiet and friendly and brought water for me to drink. None of them spoke English, so we spent our time waiting for rescue, trying to communicate with sign language. They kept pointing to the sky and showing me what must have been an airplane crashing and burning. I tried to describe a helicopter to let them know one would be coming soon to pick me up. I hoped.

In about twenty minutes a Marine helicopter did come, and I was picked up. We had bailed out near the Marine base at Nam Phong. All six of the crew had already been rescued, and none had serious injuries. We were flown to U-Tapao, and then on back to Guam the next day. Our particular ordeal in the bombing raids was over. The crew had performed well; I was proud of them. The reason I had decided to fly with them on the mission was because I thought they were one of my most professional crews. The outstanding way they handled our emergency showed how competent and courageous they were.

The crew I had flown with, along with two survivors from other aircraft, were flown back to the States for rest and leave. They were short of squadron commanders on Guam, so I had to stay and help prepare other raids that were continuing each night.

Wave III met the heaviest opposition with over 50 SAMs being launched at them, heavy AAA fire, and attempted MiG-21 intercepts. No results of this attack were learned and there were no known losses from 2d Bomb Wing.

Predictions that the bombing would destroy all prospects for negotiations proved false as the exact opposite happened. Coincident with resumption of bombing on December 18, the U.S. sent a message to Hanoi accusing North Vietnam of deliberately and frivolously delaying talks, and proposing a solution to the negotiating impasse, and stating that Kissinger was prepared to meet with Le Duc Tho anytime after December 26. The first North Vietnam reaction to the resumed bombing occured at a technical meeting in Paris on December 20, when Hanoi's representative rejected the allegation of frivolity and adjourned the meeting to December 23 — a mild protest considering the circumstances.[33] In the meantime the bombing continued.

December 19 and 20 Raids

On the nights of December 19 and 20, ninety-three and 99 B-52s respectively, returned to pound targets in the North. Concurrently with the resumption of bombing on the 18th, the 2d Wing started deployment of 16 KC-135s to the theater—9 to Utapao and 7 to the 4102nd ARefS (Provisional) at Clark AB in the Philippines. All of these tankers were in place by December 20.

Gold 2 Survives Close Encounters

On the night of December 20, a 2d Wing crew in aircraft *Gold 2,* commanded by Capt. Rolland A. Scott, was in the first wave of the attacking force. Capt. Scott described the mission:

> I flew in *Gold 2* with another crew as a substitute pilot. The time, track, and target locations were nearly the same as my mission on the 18th. Shortly after takeoff, we lost one engine and flew the mission on seven. That wasn't too serious a problem in the "G" model (Common usage, but technically incorrect designation. The military designation system specifies: Mission-Design-Series, where, in case of a B-52G, Mission = B [Bomber], Design = 52, and Series = G.), but I would have felt better if it hadn't happened.
>
> On the northbound leg over NVN (North Vietnam/Vietnamese) we heard a good deal of fighter activity and numerous sightings were made of aircraft with lights on, presumably friendly fighters. There appeared to be no SAM activity.
>
> On the southeast leg approaching the IP, my copilot stated he saw a MiG-21 on the right wing of our aircraft. In mild disbelief, I stretched to see out his window, and sure enough a MiG-21 with lights off was flying tight formation with us. I believe we could actually see the pilot. The approach of the fighter had not been detected by onboard systems. Shortly, two or three minutes, the copilot reported the MiG had departed. Almost immediately, I saw the same, or another, enemy aircraft flying formation on the left side of us. After a brief period, less than a minute, it departed.
>
> Our sighs of relief were short-lived, and we quickly learned what the MiGs had been up to. We visually detected missiles approaching from our eleven and one o'clock positions. Several pairs of missiles were simultaneously launched from these directions. I was extremely worried that the missiles were also approaching from the rear that we could not see. The EWO reported no UPLINK or DOWNLINK signals (ECM terms for electronic tracking by SAMs and by B-52s) with the missiles on this mission as were reported on the night of the 18th. However, these missiles appeared to be a lot more accurate than on the 18th. They seemed to readjust their track as I made small turns. I waited for each to get as close as I dared, and then we would make a hard, although relatively small, maneuver in hopes of avoiding them.
>
> They arrived in pairs, just a few seconds apart. Some, as they passed, would explode– a few close enough to shake my aircraft. In fact, one exploded so close and caused such a loud noise and violent shock that I stated to the crew that I thought we had been hit. In a very few seconds, after assessing engine instruments and control responses, and having received an OK from downstairs, I determined we had not been hit, or at least we were under minimal control, and we continued the bomb run. Apparently the MiG-21 we saw was flying with us to report our heading, altitude, and airspeed to the missile sites.
>
> The missiles were no longer directed towards us in the latter half of the bomb run; however, I could see SAM activity ahead in the vicinity of the target. In fact, while on the run we saw a large ball of fire erupt some few miles ahead of us and slowly turn to the right and descend. I thought it was a BUFF (crew nickname for B-52) and was sure no one could survive what appeared to have been a direct hit. I learned later what I saw was *Quill 3* going down in flames. Amazingly, four crewmembers successfully ejected.
>
> We completed our bomb run and were in the middle of our post-target right turn when we again became an item of interest to the missiles. From our left and below were at least three missiles, perhaps four, approaching rapidly. I felt I had no chance to avoid them by either maintaining or rolling out of the right turn, so I increased the planned bank angle drastically...and lowered the nose. The SAM passed above us from our left. I lost some altitude in the maneuver, and in the attempt to climb and accelerate on seven engines I lagged behind lead and somewhat out of position. There were no further SAMs directed at our aircraft; however, there was apparently a lot of enemy fighter activity on our withdrawal, according to radio transmissions. We could see numerous fighters with lights on, and the gunner reported numerous targets on the radar, one of which appeared to follow us, but not in the cone of fire. We saw no aircraft which appeared to be hostile, nor any hostile maneuvers.
>
> As we passed east of NKP (Nakhom Phanom Air Base, Thailand) on a southerly heading, we heard what was apparently a B-52 crew abandoning their aircraft over friendly territory. In the distance, toward NKP, we saw a fireball which we assumed to be the BUFF impacting the ground. It might have been *Brass 2*, and Capt. John Ellinger and his crew were mighty lucky.

A cruel lesson was learned from the Wave III raid on the night of December 20. Half of the B-52Gs deployed to Andersen AFB were equipped with the latest-generation ECM equipment and the other half were not. Thus the unmodified aircraft were deprived of adequate protection from SAMs, increasing their own vulnerability, and that of their cells, to attack. As a consequence the battle plan for Wave II was altered. Six unmodified B-52Gs were recalled from Wave II on the night of December 20. The raid bomb tonnage lost by the recall was not considered to be crucial to the success of the mission. A similar reprieve was not accorded the unmodified aircraft in Wave III, because of the significance of their targets.

A force of 12 B-52Gs was tasked with striking the Kinh No Complex, an extensive area which contained four targets. The loss of these unmodified B-52Gs would have negated over half of the combined efforts of Waves II and III. The decision not to recall, and the coincident loss of onboard radar on one unmodified airplane, cost the lives of a crew and the loss of an airplane.

Tan 3 Goes Down

One B-52G, *Tan 3,*commanded by Capt. Randall Craddock from 97th Bombardment Wing (the co-unit that operated with the 2nd through much of WW II),whose home station was Blytheville AFB, Arkansas, was lost on Wave III the night of December 20. During the mission, *Tan 3* lost its bombing and navigation radar. Capt. Craddock and his crew tried to compensate for this loss by using the radar signal from the preceding aircraft to compute an accurate release point. Unfortunately *Tan 3* wavered off course and became the victim of a SAM.

Capt. Chris Quill, and his crew from the 2d Bomb Wing, were driving their ship, *Aqua 3*, into the heart of Hanoi behind *Olive 3* and *Tan 3*. *Aqua 3* would be the last B-52 to go to *downtown* Hanoi during the entire LINEBACKER II campaign. The radar navigator, Maj. Dick Parrish, aboard *Aqua 3* told this story:

> As we made our turn north of *Thud Ridge* (nickname for mountain range northwest of Hanoi used as a radar feature for navigation and target orientation), both the pilot and copilot saw a burning aircraft at a lower altitude heading back to the northwest. We were an item of interest to a SAM at the time, and were having problems enough of our own. However, they were able to look at the burning aircraft long enough to be satisfied that it was a BUFF. (Note: This was most probably the sighting of *Straw 2*, a B-52 that made it back to Laos.)
>
> As we pressed on, I heard Chris and Joe Grinder, our copilot, exchange the following remarks: "Good Lord, what was that?" "Must have been a direct hit." "My God, what a fireball!" (Note: Due to the violence of the explosion, this was most probably *Tan 3*.) Right after that the EWO yanked us back to our own situation by stating that his scope was covered with threats.
>
> I couldn't worry with the EWO's threats, or fireballs, or anything else. I had only one job — to get the bombs on the target with no mistakes. I had half seriously told Bill Stillwell (navigator) earlier that if he sat over there in the navigator's position and let me forget to open the doors, I'd kill him. He didn't forget, and neither did I. I wasn't about to be on a crew of six people, going all the way up there and risking our lives, only not to get the bombs out. We made it through release and the big turn back to the west on autopilot, because it had become so quiet around us. This procedure would allow both pilots more time to concentrate outside the aircraft. Both he and Joe decided to take one more good look beforehand, though. As Chris looked as far back and down to the left as he could, he spotted two white streaks coming at us. The next thing I knew, we were in a steep, descending right turn. Almost instantly, Leo Languirand (gunner) saw two traces come into his gunnery scope. While we continued the maneuver, the traces continued to climb, and we were closing. Then the two blips disappeared. We did a little mental gymnastics and figured they went off just about where we would have been.

It got quieter as we headed for Laos. Then, as we were nearing the border, Chris and Joe saw a large explosion on the ground out ahead of us. It was an airplane, which they were sure it was, it had to have been a big one. (Note: This could have very possibly been another sighting of *Straw 2*.)

All of the sightings the pilots had made, plus what we had experienced on our own sort of got to us. I think. As we headed on down-country and towards the water, I tried to break the ice with some weak joke. Dick Engkjer, our EWO, had been staring at all that wild stuff on his scope, and didn't think I was very funny. He promptly chewed on me for trying to act happy at a time like that. I understood how he was feeling. But then I got to thinking, and said, "What the heck. We did the job and we're out in one piece. I think there's plenty to be happy about." The flight back home went better for me after that.

Enthusiasm for LINEBACKER II ran high at the outset of the operation. Crewmen grounded by the flight surgeon worked to get back on flying status.Three of those who did were later cited for heroism. Despite this enthusiasm, plans for the fourth mission resulted in considerable staff disucussions about adequate rest for both air and ground crews. A scheduled strike on the fourth consecutive night would have resulted in too many 18-hour days for the personnel.

Christmas Break

Yes, sometimes even warriors get a Christmas break. The chaplains provided formal services and walked the flight line from revetment-to-revetment listening and giving words of encouragement. For those who became POWs, these moments would help provide the hope and guidance to persevere.

December 26

A massive LINEBACKER II strike was flown on December 26. Seven waves totalling 120 *Stratofortresses* — 78 from Guam and 42 from Utapao AB, Thailand — struck a variety of targets in the Hanoi-Haiphong area, including railroads, petroleum storage, vehicle parks, SAM sites, electrical facilities and industrial complexes. One hundred thirteen support aircraft, drawn from the Air Force, the Navy and the Marines, provided ECM, chaff, SAM site suppression, and bomber escort services.

Maj. Glenn Robertson from the 2d Bomb Wing led the B-52Gs in Wave VII. Waves VI and VII made a double-barreled strike on the Haiphong railroad yards and transformer station from the northeast and southeast. There were 15 targets in each of these complexes. The targets were struck in three-minute intervals beginning at 10:30 P.M. There were a lot of B-52s within a small airspace at the same time that night.

The stress of combat does different things to different people. A captain, who was a B-52 aircraft commander from the 2d on TDY at U-Tapao AB, Thailand, refused to fly any more combat missions over Vietnam for personal moral and conscientious reasons. On December 26, he was relieved of duty and discharged from the Air Force under less than honorable conditions.

The U.S. heard directly from Hanoi on December 26. The North Vietnamese rejected the "ultimatum language" of the U.S. previous message, but accepted the terms for resuming negotiations. Kissinger observed, "We had not heard such a polite tone from the North Vietnamese since the middle of October."[34]

December 27

For the first time crews got to see good post-strike reconnaissance photographs on December 27. These photographs were taken by drones, SR-71s, and U-2s. The crews matched the strike photographs with their own radar photographs and discussed the two with photo interpreters. They could see the results of their own bombs. They had hit their marks and hit them hard.

So good was the intelligence, mission planning, and crew execution, followed by a marked lack of rebuilding on the part of the stunned North Vietnamese, new targets were becoming scarce. Once again strategic bombardment was proving exceptionally effective.

Bombing resumed with another strike launched on December 27. This time a force of 60 B-52s — 30 from Guam and 30 from Utapao — struck seven target complexes, including the Lang Dang marshalling yards. The target complexes at Haiphong had been destroyed the night before and would not appear on the target list again. The bomber strike force of 60 aircraft enjoyed the very high ratio of 101 support aircraft services for ECM, chaff, SAM suppression, escort, and MiG CAP. The latter being the code name for friendly fighter patrols deployed between the bombers and any MiG interceptor threat.

A crew from the 2d led the *Opal Cell* against the Lang Dang marshaling yards. A total of 21 B-52s struck this target that night. The story of this crew, told by Phillip R. Blaufuss, the radar navigator follows:

I flew in LINEBACKER II with one of the most fantastic pilots I've ever known – Capt. Dick Martin. In fact, I had the good luck to be teamed up with five tremendous people. I would have flown anywhere — absolutely anywhere — with those guys. Our home station was Barksdale AFB, Louisiana, but we were doing most of our living as a crew family on the Rock in those days. Our ability to work smoothly as a crew was what made the difference between having a good tour or a so-so one, and it was a key to our success on December 27th.

That was my third mission as an RN during the campaign; in many ways, it was the toughest. That might sound surprising, considering that we had less thrown at us in the way of defenses that night. However, my job was to bomb. Worrying about defenses was, from my downstairs position, an evil I had to ignore. I can't think of anything more useless than to worry about missiles when you're an RN or a NAV, stuck in the belly of an airplane with no windows to see all the hell that's breaking loose, no guns to shoot, no ECM equipment to jam with, and no control column or throttles to maneuver the plane. Talk about a waste of time; worrying about enemy defenses is sure one of them under those conditions.

The toughness of this mission came from the target we were fragged (a portion or "fragment" of the total Air Tasking Order for the entire operation) against. We were leading *Opal Cell* in the middle of a wave of Gs, all headed for the Lang Dang railroad yards. The marshaling yards and rolling stock were important targets, but Lang Dang is up in the hill country northeast of Hanoi. That's in the boondocks, and our radar aiming points were some of the toughest I ever had to use. If the mission was going to be a success, I simply had to put my full attention to my own special job. That was to make sure the checklist for releasing armed bombs was completed with no omissions, to make sure the equipment was working properly to solve the bombing problem, and to make sure I was on the aiming point. Anything else would have detracted from that, and that's where Dick Martin showed one of the many talents he had. Dick kept the crew informed. No theatrics – just good, solid information. He reacted to a SAM launch with a quiet, running advisory on where it was and what it meant to us. He was relaxed and self-disciplined, and it rubbed off on the whole crew. Each one knew his job, kept the rest of the crew advised – it they needed to know – and we all calmly went about our business. I counted it a pleasure to fly with them.

We did have a situation that night which wasn't in the frag order, and caused us some aggravation. After we had coasted in from the Gulf, we temporarily became a four-ship cell. At least that's what the guys in the *Gray Cell* behind us observed. It seems that a MiG had decided to come up and play tag-along by flying loose formation off our wing. It was probably another case of being up there as a traffic cop for the SAM batteries. Anyhow, somebody called for MiG CAP, and when the F-4 headed our way I'm told that our fourth aircraft left the scene about as urgently as anybody had ever seen before.

Hanoi's genuine eagerness to have the bombing stop and and renew negotiations came on December 27, when a message was received expressing readiness to resume talks as soon as the bombing halted, and reaffirming Le Duc Tho's willingness to meet with Kissinger on January 8, 1973. Kissinger's offer to meet anytime after December 26 has been declined earlier because Tho was reported to be ill. The U.S. insisted on a time limit for the talks and offered to stop bombing within 36 hours of receiving Hanoi's confirmation of the terms for resuming the talks.[35]

December 28 and 29

Follow-on raids were made over the North on the nights of December 28 and 29, but the course for concluding a peace agreement had been set. Bombing of the North ceased. Talks between Kissinger and Le Duc Tho resumed in Paris on January 8, and on January 23 they initialled the texts of the agreement. For

America the Vietnam war was officially over.[36]

Despite this favorable outcome, the Christmas Bombing loosed a firestorm of outrage and moral indignation from the public, the press and the Congress. Some foreign governments joined in, and as expected China and the Soviet Union were quick to add their condemnation. At home the castigation was expressed in such exaggerated terms as "madness," "terror from the skies," "rain of death," and contrary to facts, the accusation of "indiscriminate carpet bombing of heavily populated areas." The North Vietnamese at the time claimed between 1,300 and 1,600 civilian fatalities, a number hardly indicative of the charges. On March 25, 1973, Peter Ward, of the *Baltimore Sun,* wrote after a visit to Hanoi, "Hanoi has certainly been damaged, but evidence on the ground disproves charges of indescriminate bombing. Several bomb loads obviously went astray into civilian residential areas, but damage there was minor, compared to the total destruction of selected targets." The civilian toll, even as it was, no doubt included some fatalities from falling debris of approximately 1,000 SAMs that fell back into populated areas.[37]

In a calm post-war study, British analyst Sir Robert Thompson, in his book *The Lessons of Vietnam* stated:

> In my view, on December 30, 1972, after eleven days of those B-52 attacks on the Hanoi area, *you had won the war. It was over!* They had fired 1,242 SAMs; they had none left, and what could come in overland from China would be a mere trickle. They had their whole rear base at that point at your mercy. They would have taken any terms. And that is why, of course, you actually got a peace agreement in January, which you had not been able to get in October.

Once again precision strategic bombing by courageous, highly trained, and professional airmen, had attained the intended political ends. The sacrifice of those lost in the campaign had not been in vain.

Damage Assessment

During the eleven-day Christmas Bombing campaign, the B-52s flew 729 sorties against 34 target complexes that included rail, electrical, communications and petroleum storage facitities, vehicle yards, ship yards, and such counter-air targets as MiG-21 bases, SAM sites, and air defense radars. More than 15,000 tons of ordnance was expended during these 11 days resulting in the destruction or damage of 1,600 military structures; 500 rail interdictions with 372 pieces of rolling stock destroyed or damaged; 3 million gallons of petroleum products destroyed (estimated to have been 25% of North Vietnam's reserves); 10 airfield interdictions which damaged runways and ramps; destruction of about 80% of the North's electrical power production capabilities; and the destruction of numerous open storage items such as ordnance and missile launchers.

Combined, the B-52s, TAC fighters, and Navy and Marine aircraft dropped 20,770 tons of bombs. The 15,000 tons dropped by the B-52s represented over 72% of the total. The KC-135s flew more than 1,300 refueling sorties in support of these operations.

Three different sources state that 884, 914, or 1,242 SAMs were launched against the B-52s. Using the conservative figure of 884 SAMs, only 24 achieved hits, resulting in a 2.7% success rate of launches to hits. SAMs downed 15 B-52s, which equates to a 1.7% kill rate. Of the 729 bomber sorties, 498 penetrated highly defended target areas around Hanoi and Haiphong Harbor. These aircraft experienced a 4% loss rate. Of the 91 crewmen aboard the downed B-52s, 4 died in a B-52 that crashed, 29 were missing in action, 33 bailed out over North Vietnam and were captured, and another 25 who bailed out were recovered by rescue teams.

Recognition for a Job Well Done

U.S. Army Air Force units deployed to the various theaters of operation during WW II and as such were given credit for battle streamers and campaign decorations. After WW II it was found to be more practical for the USAF heavy bombardment units to remain stationed at their bases within the United States and deploy the necessary aircraft and crews to a theater of operation to fly the missions from a forward operating location for short durations; or be temporarily reassigned to a Provisional Wing for extended operations. U.S. Army regulations governing the awarding of unit and individual campaign decorations specify that only those units and individuals participating are eligible to receive the decorations. These same regulations apply to the USAF. Hence, under these regulations, SAC units not directly participating in post-WW II combat operations, but who trained and provided the crews, aircraft and support personnel for such operations did not receive these decorations. For all of the effort exerted by the 2d Bomb Wing during the war in Southeast Asia, only the individuals and the provisional wings to which they were assigned were eligible to receive the decorations. Decorations authorized for those members of the 2d Bomb Wing who participated in the war in Southeast Asia consist of the following:[38]

- Vietnam Defensive Campaign (March 2, 1965-January 30, 1966)
- Vietnam Air Campaign (January 31-June 28, 1966)
- Vietnam Air Offensive Campaign (June 19, 1966-March 8, 1967)
- Vietnam Air Offensive, Phase II Campaign (March 9, 1967-March 31, 1968)
- Vietnam Air Offensive, Phase IV Campaign (November 1, 1968-February 22 1969)
- Tet 69/Counteroffensive Campaign (February 23-June 8, 1969)
- Vietnam Summer/Fall 1969 Campaign (June 8-October 31, 1969)
- Vietnam Air Offensive, Phase II Campaign (March 9, 1967-March 31, 1968)
- Vietnam Air/Ground Campaign (January 22-July 7, 1968)
- Vietnam Air Offensive, Phase III Campaign (April 1-October 31, 1969)
- Vietnam Winter/Spring 1970 Campaign (November 1, 1979-April 30, 1970)
- Sanctuary Counteroffensive Campaign (May 1-June 30, 1970)
- Southwest Monsoon Campaign (July 1-November 30, 1970).
- Commando Hunt V Campaign (December 1, 1970-May 14,1971)
- Commando Hunt VI Campaign (May 15-October 31, 1971)
- Commando Hunt VII Campaign (November 1, 1971-March 29, 1972)
- Vietnam Cease Fire Campaign (March 30, 1972-January 28, 1973)

1973[39]

Violations of the peace accord by the North Vietnamese resulted in a brief flurry of combat activity in Southeast Asia and Wing's crews had to return to combat to help stamp out the fire. Enforcing the peace kept Wing crews deployed for most of the year. When they all finally returned, the aircraft were in dire need of repair which severely impacted the Wing's operations. Returning crews came home in the midst of a major energy crisis.

Home Front Help

The Wing's long and repeated deployments to Southeast Asia imposed burdens on the families who remained behind. A 24-hour telephone counseling service, called HELP, was instituted on October 28, 1970. During the first two weeks of January 1973, HELP service received 24 calls for assistance. A total of 846 calls had been received since April 1972. Many of the calls related to family finances and need for medical attention. In most instances the problems were resolved through the use of the Military Affiliate Radio System (MARS), an amateur radio network operated by military personnel for such purposes as: telephone calls; chaplain support; and Red Cross assistance. The assistance program was expanded through an *Arc Light People Center Newsletter,* which contained a number of helpful hints for dependents. One wife prevented serious damage to her automobile through the maintenance tips in the newsletter.

MARS was an important adjunct to long-range family communications. The primary mission of MARS is to supplement normal Air Force communications for all Air Force Communications circuits, and provide communications for use in implementing domestic emergency plans for Air Force commands. The secondary mission of MARS is to create interest and training in military communications, promote study and experimentation in military communications, and provide a system-in-being for *quasi-official* communications (such as chaplain's service, Red Cross, and other special services activities). MARS will also provide communications to Civil Defense forces that can be effected without interference with the military mission. During wartime (or any period of hostilities), MARS operations will be limited to Air Force installations. Operational control will be exercised by the commander of the appropriate major air command during such periods.[40, 37]

Peace Violations

The "Christmas Bombing" campaign was followed by renewed attacks on logistics centers in North Vietnam between January 8 and 15. Elements of the Wing were among those who

flew these missions intended to show U.S. resolve that there should be no wavering in the peace process. The peace accord was finally signed January 27.

Violations of the peace accords by the North Vietnamese brought retaliatory strikes by B-52s on February 23, and April 16 and 17. Rebel Cambodians and North Vietnamese and Viet Cong forces advancing on Phnom Penh, Cambodia were repeatedly bombed by B-52s. The last bomber mission was flown August 15. Crews paticipating in these operations were eligible for the Cambodian Campaign Ribbon, (March 29-August 15, 1973).[41]

The Crews and Aircraft Return from War

The B-52s began arriving from Southeast Asia at 7 A.M. on October 26. The first to arrive was crew E-70 commanded by Capt. Melvin L. Westerfield of the 596th Bomb Squadron. The last crews arrived on October 30. This was also the date of the first bomber training mission flown from Barksdale since April 1972.

Immediately upon return of crews, the Wing was subjected to a SAC ORI. The Wing passed the inspection and was promptly certified to nuclear alert status and the SAC EWO plan. Col. Stanely C. Beck, wing commander from April 2, 1973 to June 30, 1974, stated, " . . .was the greatest Wing I ever commanded." Beck retired as a major general (see Appendix 6).

The Wing was faced with a number of onerous tasks upon the return of aircraft and crews. The greatest impact was caused by the fuel shortages, and the effects of prolonged combat on equipment. There were energy shortages of crisis proportions, corrosion of the war-weary aircraft and ground vehicles needed attention. Barksdale was hit with an early winter. Manning shortages occurred and by the end of 1973, the Wing was in the midst of reconstituting its forces — all of which effected performance. During November alone, 25 of 126 scheduled B-52 training sorties had to be canceled due to low fuel reserves, inflight equipment failures, poor weather along the low-level routes and air refueling areas, and the effects of crew requalification requirements.

A world-wide energy crisis hit in middle of 1973 as the result of an Arab oil embargo. The crisis effected the economy, the private sector and military operations. Base commanders issued orders and suggestions for conservation that included reduction of flying hours through increased reliance on flight simulators, repair and maintenance of energy distribution systems, shut-down of unneeded water and space heaters, and conservation tips for family housing.

Several Wing tankers crews enjoyed a noncombat interlude when they were given the opportunity to support the *Thunderbirds*, the USAF precision flight demonstation team, on a South American tour between September 1 and October 9.

The Wing was put on alert by SAC on October 24 and 25 in response to unilateral Soviet movements against Israel during the 1973 Arab-Israeli War.

1974[42]

Very little about the Wing during 1974 can be told at this time because of continuing security classifications for this period. There were shifts in the satellite basing for the Wing, several known exercises were flown, the Wing began testing the new Short Range Attack Missile (SRAM), and hosted the 1974 Bomb & Navigation Competition.

On January 1, changes were made in the satellite bases for the Wing. These bases were used as part of the SAC dispersal plan for its retaliatory forces. Detachment 2 moved from Ellsworth AFB, SD to Amarillo Air Terminal, TX. Detachment 9 moved from Whiteman AFB, MO to Clinton-Sherman Industrial Air Park, OK.

Exercise CORONET BLACK HAWK III was a tanker deployment mission flown March 24-29. Exercise SNOW TIME 75-1 was a SAC/NORAD air defense penetration mission involving six B-52s on July 1. Exercise BUCKSKIN RIDER was another test of the Wing's capability to operate while under a simulated nuclear attack which was conducted on December 4.

In one of the most significant developments of the year the Wing was selected to support testing of the new AGM-69A Short Range Attack Missile (SRAM). Maj. Farrell Lewallen was appointed the Wing Project Officer on August 12. The 4201st Test Squadron moved from Pease AFB, NH, to Barksdale on September 15 to conduct operational tests and evaluation of the SRAM. On October 4, the Wing received its first B-52G which had been modified to accept the SRAM. Activation of the SRAM program at Barksdale began on November 1. The Wing's first operational SRAM mission was successfully flown on December 16, when the system performed without malfunction and the ground scoring of the simulated SRAM launches indicated satisfactory accuracy.

The SRAM is a 2,230-lb., 14' long and 17.5" diameter missile. It is powered by a 2-stage ASR-75-LP-1 solid fuel rocket motor and has a range of about 100 miles. It has a W-69 nuclear warhead with a yield of approximately 20 kilotons. A total of 20 SRAMs may be carried on a B-52; eight internally on a rotary rack in the bomb bay and another 12 externally on the two under wing stub pylons.

Barksdale AFB hosted the 1974 SAC Bombing & Navigation Competition between November 10 and 16. While the Wing did not win the competition, it was recognized for achieving the best overall B-52 score within the Second Air Force, fourth B-52 crew in competition for the *Fairchild Trophy*, best maintained B-52 and fourth best maintained KC-135.

1975[43]

The Second Air Force was inactivated on January 1, and SAC's assets were redistributed between the Eighth and Fifteenth Air Forces. The 2d Wing was reassigned to the Eighth Air Force which assumed the former Second Air Force headquarters at Barksdale AFB.

Detachment 2 at Amarillo Air Terminal was relinquished by the Wing on January 1 and turned over to the 7th Bombardment Wing at Carswell AFB, TX. Detachment 3 at Clinton-Sherman Industrial Air Park, OK, was inactivated on March 30. During July two more satellite bases for the Wing were inactivated — Detachment 1, Sheppard AFB, TX, and Detachment 2, Whiteman AFB, MO. Detachment 3, 1401st Military Airlift Squadron, Military Airlift Command, became a new tenant at Barksdale April 1, where it provided logistics support. On June 20, the unit assumed operational control of the T-39. This marked the end of the traditional base flight as a unit integral to the Wing.

The Wing flew several exercises during the year, including three SNOW TIME SAC/NORAD air defense penetrations. Other exercises included: HIGH NOON, a bombing/navigation competition flown between September 30 and October 2; BUSY LUGGAGE VIII, a gravity nuclear weapons test performed by a B-52G in October; and BUY NONE, a SAC-generated operational readiness test mission flown on December 5.

An Eighth Air Force Inspector General team conducted a SRAM initial operational capability inspection of the Wing between February 10 and 14.. The AGM-28 missiles were phased out of the inventory on June 30, 1975. They had been replaced by the SRAMs on May 28. With the phase-out of the AGM-28 *Hound Dog* missiles, the 2d Airborne Missile Maintenance Squadron at Barksdale was inactivated on September 1, 1975.

In March, the North Vietnamese launched a full-scale attack into South Vietnam which resulted in the collapse and retreat of the South Vietnamese forces. During the latter part of April, Saigon was under siege and the U.S. government began airlifting U.S. citizens and refugees out of Vietnam. On April 29, U.S. civilians were evacuated from Saigon, and in May a massive evacuation of 140,000 South Vietnamese refugees started.[44] Wing KC-135s Wing supported this evacuation. These aircrews were eligible for the Vietnam Campaign Ribbon.[45, 41]

In the fall of 1975, a 71st ARefS crew was recognized for saving a damaged U.S. Navy F-14 *Tomcat* during refueling support of the aircraft carrier *U.S.S. Saratoga's* operational readiness inspection.

During 1975, the Wing and its subordinate units were recognized for outstanding achievements and received the following awards:

- George M. Broutas Trophy–71st ARefS recognized as SAC's outstanding air refueling squadron
- Air Force Outstanding Unit Award–71st ARefS for operations between July 1, 1973 and June 30, 1975
- SAC Dillard Memorial Award for Transportation Excellence–2d Transportation Squadron (October 23)
- National Safety Council Award of Merit for 1974–2d Bombardment Wing Safety Division
- Best Commissary in SAC–(July)
- Best Commissary in the Air Force–(November)

1976[46]

1976 brought in a new copilot upgrade program, transfer of KC-135As to the Air National Guard, and several exercises.

Col. Jerome R. Barnes, Jr was commander of the Wing between June 1, 1976 and May 27, 1977. Col. Barnes served as the Vice Commander of the 72d Bombardment Wing (Provisional), and had the distinction of leading the last three-ship cell sortie in Southeast Asia on August 15, 1973. He retired as a brigadier general (see Appendix 6).

Traditionally, SAC copilots received training and experience to become aircraft commanders through time flown as copilots in SAC operational aircraft. In 1975, SAC sought to accelerate and reduce the cost of copilot qualification as aircraft commanders. The accelerated training was to be accomplished by copilots flying solo in jet trainers under a program initiated on a test basis in 1975, titled The Low Cost Aircraft Test Program. In 1976 this test program was redesignated the Accelerated Copilot Enhancement Program (ACE).

Through ACE, junior copilots were encouraged to take the T-37 *Tweety Bird* or the T-38 *Talon*, assigned to Air Training Command detachments at SAC bases, on solo cross country training flights to hone their skills as aircraft commanders because they had to do it all — flight planning, fly the airplane, do all of the navigation and communications, and land at remote airfields. Because of inherent icing problems with the T-37, these aircraft were generally based at southern SAC bases; while the T-38 could be found at northern bases. On February 4, the first copilot was upgraded to pilot at Barksdale under the Low Cost Aircraft Test Program. The ACE program replaced the Test Program at Barksdale on March 1, 1976.

Another major innovation during 1976 was the transfer of a SAC mission to Air National Guard and Air Force Reserve units. As a cost savings measure for the active duty forces, 128 KC-135As were transferred from SAC to reserve components. The Wing lost four tankers in this program and became an advisor to the gaining unit. The first aircraft went to the 134th Air Refueling Group, Tennessee ANG, at McGhee-Tyson Airport in November 1976. The next tanker departed in March 1977. The Wing lost a third tanker to the 161st ARefG, Arizona ANG, Phoenix, Arizona on November 3, 1977. The fourth tanker went to the 161st on December 1, 1977.

During 1976 the Wing participated in 11 exercises, and RED FLAG 77-2 – a new innovation whereby SAC units participated in TAC's war game exercises staged out of Nellis AFB, Nevada. Part of this exercise involved the exhilarating experience of flying the 400,000-lb. B-52 just 200 feet above the desert at 400 knots. The Wing participated in RED FLAG for the first time on November 29. RED FLAG was a simulated war exercise, carried out periodically, over the most sophisticated target range in the world. The instrumented skies over the Nellis AFB range recorded, measured, and displayed crew performance with computer accuracy. RED FLAG exercises are credited with being a major factor in the success of the air war during Desert Storm.

Exercise BRAVE SHIELD '76 was a Joint Chiefs of Staff exercise held in late October. It was a U.S. Readiness Command test involving components of the USAF, Army, Navy, National Guard, and Reserve. During the exercise, the 913th ARefS had responsibility for the planning, directing, briefing, launching and recovering refueling missions. The magnitude of this exercise is apparent from the operating statistics. A total of 107 tanker sorties, 24 per day, were flown out of Barksdale, with an average daily transfer of 800,000 pounds of fuel to 60 to 100 TAC and ADC fighters.

Between August 5 and 10, B-52s from the 2d flew in support of the evaluation of the new AN/ALR-46 ECM equipment.

1977[47]

It was a most active year for the Wing, because of having two bomb and two refueling squadrons assigned, and because of co-location with headquarters Eighth Air Force. The Wing began 1977 with 2,807 military personnel. By the end of the year, this number had grown to 4,064.

The Wing engaged in a number of exercises, including three RED FLAG missions, two SAC/NORAD air defense prenetrations, a Joint Chiefs of Staff exercise, and supported three overseas fighter deployments.

On February 4, Wing tankers furnished air refueling support for the 4th Tactical Fighter Wing which was returning from an exercise at Nellis AFB. NV, to Seymour-Johnson AFB, NC.

Exercise SALTY BEE was a test of TAC's dual-basing concept which was conducted on May 25. In addition to providing squadron staffs to serve as the Deputy Commander of Orbit Forces and the Air Operations Officer, crews of the 913th ARefS flew five of the seven tanker sorties during the first refueling cycle for 11 RF-4Cs from the 67th Tactical Reconnaissance Wing (TRW) which deployed from its home station at Bergstrom AFB, TX., to Aviano AB, Italy.

In a repeat performance on September 8, 1977, the 913th ARefS provided the same staff officers for Exercise CORONET FLUSH. Squadron aircrews refueled 18 RF-4Cs from the 67th TRW which were en route from Bergstrom AFB to Sollengin AB, West Germany.

A Wing B-52G was flown to RAF Greenham Common and placed on static display from June 22 to 27 as part of the *Queen's 25th Jubilee.* This bomber, s/n 59-2584, had been TDY to RAF Marham between June and July 1977.

Exercise BOLD EAGLE '78 was a Joint Chiefs of Staff exercise conducted during the latter part of October. All available aircrews and tankers from the 913th ARefS participated in the refueling support which off-loaded over 2.6 million pounds of fuel to 415 TAC and ADC receivers. The crews had a 100% sortie effectiveness rate during this exercise.

Crested Dove

Of special interest was the *Crested Dove* program in which SAC saved 66 tall-tailed B-52Ds and B-52Fs, that were destined for the boneyard, and inserted them into the inventories of various SAC wings as part of a deception program for the Strategic Arms Reduction Treaty (START) negotiations. Soviet satellites orbiting over the United States were unable to distinguish one type B-52 from another, thereby confusing the count. The Wing received one B-52F and five B-52Ds as part of the *Crested Dove* program. The first B-52D arrived at Barksdale from the 7th Bombardment Wing at Carswell AFB, TX on March 14. A second B-52D arrived on June 24, followed by a third aircraft on the 29th. These aircraft were not flown; however, they were towed around the ramp periodically to give the impression they were operational.

By December 1978, all 66 *Crested Dove* B-52Ds and B-52Fs were retired to Davis-Monthan AFB, AZ or turned into ground trainers or museum displays. The last *Crested Dove* aircraft to leave Barksdale on December 7, 1978 was B-52F s/n 57-0171.

The 71st ARefS was singled out again for excellence when it received the Air Force Outsanding Unit Award.

1978[48]

Wing crews flew numerous Wing, Eighth Air Force and SAC -generated missions, and went TDY in support of the various tanker task forces and unit deployments.

The Wing flew in 11 exercises as part of its overall operation, including three RED FLAG exercises in March, July, and September. Five separate exercises were tanker support operations flown between June and November. B-52s were involved in a classified BUSY ROUNDUP II exercise in May and again in providing support for a test program over the Eglin AFB range in October.

Severe winter weather at Barksdale in January forced cancellation of 17 bomber, 10 tanker, and 169 ACE sorties.

Wing tankers supported the Alaskan, European and Pacific Tanker Task Forces throughout the year.

The 913th ARefS was recognized for exceptionally meritorious service for operations between April 1, 1976 and March 31, 1978. For their professionalism, the Squadron was awarded the Air Force Outstanding Unit Award.

1979[49]

During 1979, the Wing completed ordered missions and supported the various tanker task forces at forward operating locations. Little unclassified information is available for the Wing's operations during this period. Crews completed a number of exercises during the year. Primairly these involved KC-135 tanker support for missions flown beteween July and December. Four separate tanker exercises were flown in this period, including the deployment of ground support equipment for the SAC-directed Exercise GLOBAL SHIELD 79.

Col. Jack K. Farris commanded the Wing between March 15, 1979 and February 23, 1981. He retired as a major general (see Appendix 6).

1980[50]

Wing aircraft and crews flew in a combined total of 159 exercises during 1980. The tankers flew in 111 exercises; while the bombers flew another 48. The Wing's B-52s participated in 12 RED FLAG exercises and seven MAPLE FLAG exercises. B-52s from the 62nd Bomb Squadron flew three separate classified missions in July,

August, and September. The 596th Bomb Squadron's B-52s test fired a SRAM missile on September 10, as part of Exercise BULLET BLITZ. Three of the Wing's B-52s participated in Exercise MAPLE FLAG over the Cold Lake Weapon Range on October 14.

As part of a major reorganization, the 913th ARefS and Detachment 2 of the 4200th Test and Evaluation Squadron were disbanded on October 31. The 32nd ARefS, 78th ARefS, and 2d Consolidated Aircraft Maintenance Squadron were all activated on November 1,1980, to support the new KC-10 mission which was assigned to the Wing.

1981[51]

1981 proved to be another active period for the Wing. Its crews and aircraft continued to support the various tanker task forces and exercises. In addition, the new KC-10A *Extender* came into the Wing's inventory. However, the constant heavy usage of the Wing's aircraft took its toll this year when many of them were plagued with major fuel leaks.

KC-10 *Extender*[52]

By 1976 SAC was in need of a larger tanker to meet the burgeoning demands on its tanker fleet and issued requests for proposal under the Advanced Cargo Tanker Aircraft (ACTA) Program. Boeing offered its Model 747 freighter with the KC-135 flying boom system; whereas McDonnell Douglas presented a derivative of the commercial DC-10-30 series airliner, equipped with a higher capacity refueling boom. McDonnell Douglas won the ACTA contract with their airplane which was designated the KC-10A *Extender*. The similarity between the tanker and the commercial DC-10 permits the USAF to capitalize on 88% of the common components which are available from stocks of world-wide airlines.

The basic crew on the KC-10 is two pilots and a boom operator/loadmaster. The new internal navigation system precludes the requirement for a navigator.

The KC-10A carries almost twice the fuel of a KC-135A. The KC-10A is capable of refueling with either the new McDonnell Douglas high-capacity refueling boom or a hose and drogue system. The boom on the KC-10 is 10' longer than that on the KC-135; thereby reducing the effects of tanker downwash and receiver bow wave. Fly-by-wire controls are employed in the boom system. The high-capacity refueling boom has a 1,500-gallon-per-minute transfer rate. An air refueling receptacle is standard on the KC-10, so when used as a transport, it can be refueled by another tanker to extend its range. While the KC-135s require the boom operator to work in a prone position; the KC-10 has three bench seats for an instructor, an observer, and the boom operator to view the refueling operations through a panoramic 26 x 54" window. The capacious cabin has cargo space for many spare parts and ground equipment required to support deploying units.

Power is provided by three 52,000-lb. static thrust CF6-50C2 high-bypass turbofan engines. The maximum gross weight of the KC-10A is 590,000 pounds. With maximum cargo, its unrefueled range is restricted to 4,370 nautical miles. Its unrefueled ferry range is 11,500 nautical miles. In the cargo configuration, the KC-10A can carry up to 27 standard 463L cargo pallets, more than twice the 13 carried aboard the C-141B *Starlifter*.

The first operational SAC KC-10As were delivered to the 2d Bomb Wing's 32nd ARefS at Barksdale on March 17, 1981. These tankers were flown and jointly maintained by the associated Air Force Reserve unit, the 78th ARefS at Barksdale. On March 23, 1981 the first KC-10A accomplished a refueling of a 2d Bomb Wing B-52G. The tanker off-loaded 12,000 lbs. of fuel. The 32nd ARefS was 77.8% mission-capable by December 31, 1981.

Fuel leaks on both the bombers and KC-135 tankers became critical to the Wing in 1981. Heavy flying schedules resulted in significant fuel leaks which had a major impact on the Wing's operational capabilities. A summary of these problems follows:

- Jan 29 – Nine KC-135As grounded for fuel leaks
- Feb 18 – Manning in the fuel system area was at an all-time low
- Feb 27 – KC-135A s/n 57-1488 was prepared for a ferry flight to the depot at Robins AFB, Georgia for fuel cell repairs.
- Mar 1 – Six B-52Gs grounded for fuel leaks
- Mar 2 – All local flying was canceled because of fuel leaks

Operational flying included tanker deployments, exercises, and training on new terrain avoidance equipment. The Wing's tanker task force crews deployed on nine occasions during 1981: six for European Tanker Task Force operations; two for Pacific Tanker Task Force operations; and one for Alaskan Tanker Task Force operation. Exercises flown included SAC-wide maneuver, RED FLAG missions, and the Paris Air Show. By April 20, the Wing had 30 of its mission-ready bomber crews certified for night mountainous operations using the terrain avoidance electro-optical viewing system (EVS). The EVS permitted flight at altitudes as low as 200 feet at speeds of 400 knots at night.

On November 1, the 913th ARefS was inactivated. It was replaced by the 32nd ARefS. The 2nd Consolidated Maintenance Squadron was also activated. The Wing then had two bomb squadrons with B-52Gs, the 62nd and the 596th, and two tanker squadrons, the 32nd with KC-10s, and the 71st with KC-135As.

1982[53]

Except for work with the KC-10, operational flying closely paralleled that of recent years with tanker deployments and directed exercise missions, one of which was a SAC-wide Global Shield exercise flown between July 15 and 23. The Wing underwent an ORIT between March 26 and April 6. The new KC-10s were wrung out in a number of exercises and tests. An organizational change on December 1, 1982 resulted in the replacement of the 19th Air Division with the 45th Air Division as the reporting headquarters for the 2d Bombardment Wing.

Col. Loring R. Astorino was Wing commander from February 16, 1982 to June 13, 1983. He retired as a major general (see Appendix 6).

The 32nd ARefS's KC-10As were put through several tests and shake-down missions. Aircraft s/n79-0433 was deployed to Eielson AFB, Alaska between January 15 and 21, for cold soak tests to determine the aircraft's operational/maintainability characteristics under extremely cold climactic conditions. Two KC-10s participated in a RED FLAG exercise on May 29. One KC-10 deployed for Operation DEEP FREEZE, the aerial resupply of scientific bases in Antarctica. The tanker departed June 21 and off-loaded 67,400 lbs. of JP-4 fuel for MAC C-141s when they were 750 nautical miles from the South Pole. The new KC-10 flight simulator facility was completed on December 23, 1983[54]

1983

The Wing spent a busy year in 1983. Only some of its achievements may now be revealed because of the classified nature of most of the activities. During 1983, the Wing participated in a number of exercises, continued to improve the operational capability of its new KC-10s, and took part in a small war.

Col. Larry D. Fortner commanded the Wing between June 13, 1983 and May 22, 1984. Col. Fortner was promoted to brigadier general and assumed command of the 42d Air Division at Blytheville AFB, AK. He retired as a major general (see Appendix 6).

The number of aircraft assigned changed during 1983. The number of B-52s decreased from 28 to 20, the number of KC-135s remained at 18, and the KC-10s increased from 7 to 10.

On March 9, Wing tankers supported a fighter deployment from Hickam AFB, Hawaii to Wake Island, a distance of 2,200 miles. KC-10s from the 32nd ARefS provided the requisite fuel for the deployment of 24 F-15 *Eagles* of the 4th Tactical Fighter Wing from Seymour Johnson AFB, NC to Ramstein AB, West Germany. As part of Exercise BUSY ROAD B, three KC-135s from the Wing augmented the 7th Bombardment Wing's tankers at Carswell AFB, Texas in support of their annual ORI. Between March 13 and 17, three Wing B-52s participated in Exercise TEAM SPIRIT, an annual deployment of U.S. forces to Korea. A KC-10A from the 32nd flew its first operational refueling mission with a Lockheed SR-71 *Blackbird* on May 27. As part of Exercise CORONET MOAT, five KC-10s from the 32nd refueled 18 F-4Es on an overwater deployment on September 21.

The 71st ARefS was awarded the *Albert L. Evans Trophy* for having the best boom section in SAC.

March 31, 1983 was a great day for the Eighth Air Force Museum at Barksdale. It was on this date that the Internal Revenue Service granted the Museum Foundation 501C3 tax exemption status under the Federal Tax Code. The museum has an extensive display of 2d Bombardment Group/Wing memorabilia, artifacts, and historical records dating from WW I to the present. Several display aircraft at the museum are painted in the Wing's markings.

The Eighth Air Force Museum at Barksdale AFB houses memorabilia and historical records of the 1st Day Bombardment Group/2nd Bombardment Group/Wing. Outside are a number of significant aircraft from the Eighth Air Force and the 2d Bombardment Wing. Harold D."Buck" Rigg is its curator. (Courtesy of "Buck" Rigg)

A Little War[53]

Intelligence reports during the latter half of 1983 indicated a Communist threat on the small Caribbean island of Grenada. Cuba had been secretly building an arms cache in preparation for an armed overthrow of the local government. Of additional concern to the U.S. were the number of American tourists and retirees on the island, and the many medical school students who were attending school there.

President Ronald Reagan, backed by the British Governor General of Grenada and the Organization of Eastern Caribbean States, ordered Operation URGENT FURY – a two-pronged military assault on the island. A wide variety of USAF aircraft participated in this mission which inserted Marines and Army Rangers on the night of October 24/25. They were joined by a small force from six carribean states.

Wing tankers supported the operation which involved a number of tactical fighters, C-141s, AC-130s, EC-130s, and E-3 AWACSs – all hungry for fuel.

The combined forces quickly overwhelmed and quelled light resistance from the Cubans and some Grenada militia personnel. By November 21, when the operation was over, more than 700 Americans had been safely evacuated, over 755 Cubans had been airlifted to Barbados where they were placed aboard commercial airliners for return to Cuba, and a Grenadian Marxist regime had been deposed.

Participating 2d Bombardment Wing tanker crews were awarded the Grenada Campaign Ribbon (October 23-November 21, 1983).[55]

Overview

In over two decades of operations from Barksdale AFB, the men and women of the 2d Bombardment Wing worked tirelessly to hone their skills in the ever-changing arena of world tensions, fought in a protracted war which was terminated only after application of strategic airpower, and ended this period of their history by participating in the eradication of a Marxist investation in the Caribbean.

It was a period of high tensions in the Cold War and the U.S. deterrent forces were compelled to operate at wartime readiness. When the alert siren sounded, all ground activity at Barksdale stopped while the alert crews careened toward the flight line in their station wagons. No crewmember or ground support person knew whether or not it was an exercise or the real thing. All the training, all the deployments and all the countless hours in the air were aimed at one objective – the ability to put bombs on the target! For this very extensive period, the 2d Bomb Wing was part of the ever-ready presence and shield against the ever-growing might and menace of Soviet nuclear power.

It was also a period of family sacrifice, separations, and stress and whose conseqences probably can never be adequately told. How many divorces, how many resignations, how many requests for separation from the service, how many non-reenlistments were the result of the demands for full commitment to intense training and operations are not known. There were those who became disallusioned and succumbed to the widespread anti-war and anti-military sentiment of the times. Still these impediments and the call for sacrifice did not deter the men and women, and yes, their understanding and loyal families of the Wing from fulfilling their duty as *Defenders of Liberty* through this very critical period of the Cold War.

Endnotes:

[1] This summary for three decade period, 1963-1993, drawn in part from the chronology and events in "The World Almanac 1993, Editor: Mark S. Hoffman," (An Imprint of Pharos Books, a Scripps Howard Co. N.Y., N.Y.) pp

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[3] Alwyn T. Lloyd, "The B-52 . . . 35 Years Young," (Combat Crew Magazine, Strategic Air Command, Offutt AFB, NE, April 1987) pg 22

[4] Marcelle S. Knaack, "Post World War II Bombers," (Office of Air Force History, USAF, Wash DC, 1986) pp 205, 294

[5] Alwyn T. Lloyd, "B-52 Stratofortress in Detail & Scale," Vol 27, (TAB Books, Blue Ridge Summit, PA, C. 1988) pp 4-8, 16-18

Walter J. Boyne, "B-52 - A Documentary History," (Jane's Publishing Company Ltd, London C. 1981. Republished by Schiffer Publishing Ltd., Atglen, PA, C. 1994)

[6] Alwyn T. Lloyd, "KC-135 Stratotanker in Detail & Scale," Vol 44 (Klambach Publishing, Waukesha, WA, C. 1994) pp 4-20

[7] 2nd Bombardment Wing (Heavy) & Barksdale AFB History, July 1963, Vol 1

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Wing & Barksdale History, September 1963

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[8] Shreveport & Bossier City Salute, Unofficial Directory & Guide, 1963, p 10

[9] Maj. Arthur B. Klein interview, July 1995

[10] Wing/Base Chronology 1964

[11] Ibid, 1965

[12] Klein interview, July 1995

[13] John Schlight, "The War in South Vietnam - The Years of the Offensive 1965-1968," (Office of Air Force History, Wash DC 1988) pp 49-51

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[14] Lloyd, "The B-52. . . 35 Years Young," p 23

[15] Klein interview, July 1995

[16] Ibid

[17] Wing/Base Chronology, 1966

[18] 2nd Bomb Wing News Releases: No. 66-11-13; No. 66-11-25; No. 66-11-26; No. 66-11-27; No. 66-11-18; and No. 66-11-29

[19] Wing/Base Chronology, 1967

[20] Ibid, 1968

[21] 1991 World Almanac, p 448

[22] Wing/Base Chronology, 1969

[23] 1991 World Almanac, p 448

[24] Wing/Base Chronology, 1970

[25] Ibid, 1971

Wing/Base History, October-December 1971

[26] "Tournament Of Champions," (AIRMAN Magazine, Vol XV, No.3, March 1971) pp 28-37

[27] Except where otherwise noted, narrative based on Wing/Base Chronology 1972

[28] 1991 World Almanac, p 449

[29] Henry Kissinger, "White House Years," (Little Brown and Company, Boston, 1979) pp 1399, 1422

[30] Ibid 1426-1429, 1444

[31] Ibid 1445, 1447-1448

[32] LINEBACKER II narrative taken from Brig. Gen. James R. McCarthy and Col. Robert E. Rayfield, "LINEBACKER II, A View from the Rock," (USAF Southeast Asia Monograph Series, Vol VI, Monograph 8, Office of Air Force History, Wash DC 1985) pp 1-175

[33] Henry Kissinger, "White House Years," (Little Brown and Company, Boston, 1979) p 1457

[34] Ibid 1457, 1458

[35] Ibid 1458

[36] Ibid 1473, 1474

[37] Ibid 1452, 1455

[38] Timothy A. Warnock, "United States Air Force Combat Medals, Streamers and Campaigns," (Office

of Air Force History, Wash DC 1990) pp 233-280, 289
[39] *Wing/Base Chronology 1973; Wing/Base History January -March 1973; July-December 1973*
[40] *Air Force Manual 100-5, " Military Radio Affiliate System, USAF Communications-Electronic Doctrine," May 1960 pp 15-1*
[41] *Warnock, Ibid p 299*
[42] *Wing/Base Chronology 1974*
[43] *Ibid 1975*
[44] *World Almanac 1991, pp 449, 450*
[45] *Warnock, Ibid p 302*
[46] *Wing/Base Chronology 1976*
[47] *Ibid, 1977; Wing/Base History April-June 1977*
[48] *Wing/Base Chronology January-March 1978*
[49] *Ibid 1979*
[50] *Ibid 1980*
[51] *Ibid 1981*
[52] *Gordon Swanborough and Peter M. Bowers, "United States Military Aircraft Since 1909," (Putnam, London 1989) pp 422, 423*
Casey & Baker, Ibid pp 44, 45
[53] *Wing/Base Chronology 1982*
[54] *Ibid 1983*
[55] *Warnock, Ibid p 305*

CHAPTER XXII

DESERT STORM AND A NEW ERA

1984-1993, CLOSING THE DECADE

The overriding events of this closing decade in the 2nd Bomb Group/Wing's 75 year history were the ending of the Cold War, the war with Iraq, and the restructuring of the U.S. armed forces.

In a real sense, the Cold War ended in 1989 with Mikhail Gorbachev's program of reforms, including *glasnost* (openness), expanded freedoms, democratization of the Soviet political process, and the opening of the Berlin Wall. Officially, the Cold War didn't end until February 1, 1992 when President Bush and Russian President Boris Yeltsin issued a joint declaration stating that "Russia and the United States did not regard each other as potential adversaries."[1]

Though tensions eased with Russia, the Middle East continued to fulfill its historical tradition as a cauldron of unrest. A dispute over the sovereignty of the Shatt al-Arab waterway that separates Iran and Iraq erupted into war between the two countries in 1980 that ushered in a decade of instability in the region. After the Ayatollah Khomeini ousted ailing and pro-western Shah Pahlavi, Iran declared a Holy War against western nations. In a choice between the lesser of two evils, the western nations chose to support Iraq. In 1984 the Iran-Iraq war spread to the Persian Gulf. Iran began to attack Kuwait oil tankers in the Gulf in retaliation for Kuwait's support of Iraq in the Iran-Iraq war. In 1987, Kuwait ask the U. S. to place its flag on Kuwaiti tankers. With approval of President Reagan, the U.S. Navy began reflagging and escorting Kuwaiti tankers. On July 22, 1987, the first reflagged tanker moved through the Gulf. Two days later one of the tankers struck an underwater mine laid by Iran. With the aid of Military Airlift Command, eight RH-53D Super Jolly Green Giant mine sweeping helicopters were brought to the area and started mine sweeping operations in mid-August. In a show of force against Iranian harassment of Gulf operations, U.S. Navy warships and airplanes destroyed two Iranian oil platforms and repelled an Iranian small boat retaliatory raid.

The crowded Gulf waters and tense atmosphere contributed to two tragic incidents that intensified passions in the area. An Iraq warplane launched a missile attack on the *USS Stark*, a Navy frigate on patrol in the Persian Gulf, killing thirty-seven U.S. sailors. Iraq apologized for the attack, claiming it was inadvertent. The *USS Vincennes* accidentally shot down an Iranian passenger plane, killing all 290 aboard. Navy personnel mistook the plane for an Iranian F-14 jet fighter. The brutal Iran-Iraq war finally ended in August 1988, when Iran and Iraq agreed to accept a United Nations resolution calling for a cease fire.

By 1990, rearmed mainly by purchases from the Soviets and recovered from the war with Iran, Iraq, under Saddam Hussein, emerged as a major military power in the region. Saddam became restive and ambitious. He charged that some rulers of the Persian Gulf States, inspired by the U.S., had kept oil prices down by over-production. Iraq had claimed sovereignty over Kuwait back in 1961. Now Saddam Hussein accused Kuwait of having stolen $2.4 billion worth of oil from the Rumala oil field that extended under the border of the two countries. Before dawn on August 2, 1990, Iraq invaded Kuwait with 100,000 troops and quickly overran the country and its massively out-gunned and out-manned army of 20,000. The emir of Kuwait barely escaped from his presidential palace by helicopter.

With their easy conquest of Kuwait, Iraqi forces were now poised opposite the borders of Saudi Arabia, where a successful assault could bring one-half of the world's known oil reserves under Saddam Hussein's control. A wide spectrum of nations, the U.N Security Council, and the Arab League deplored Iraq's aggression and demanded that it withdraw from Kuwait. A broad range of collective actions were taken to isolate and pressure Iraq into compliance. A ban on oil sales by Iraq, arms embargo, suspension of trade, freezing of assets held in foreign countries, and a general economic blockade were all brought to bear on Iraq. For six months diplomats from many nations sought to persuade Saddam Hussein to pull his forces out of Kuwait. In the meantime, the U.S. sent a sizeable military force to defend Saudi Arabia. This was followed by the formation of a coalition of nations to provide for the collective defense of the region. Coalition forces were moved steadily into the region and by January 1991 there were over 400,000 troops, 1,500 aircraft and 65 warships assembled — sufficient to take the offensive against Iraq and its forces in Kuwait. The offensive began with air attacks on January 17, 1991. The six-week air campaign sharply reduced Iraq's offensive and defensive capability. The follow-on ground campaign killed or captured thousands of Iraqi troops and sent the rest into a disorganized retreat in just 100 hours before President Bush ordered a unilateral cease fire.[2] In a departing act of vengeance, Saddam ordered that the oil wells in Kuwait be set afire. The resulting conflagration, of hundreds of oil wells burning out of control, raised widespread alarm over its environmental consequences. The Iraqi's blasted oil pipe lines and left them to befoul the desert, coastal waters and beaches in the area. Bad as it was, the environmental damage was not as dire as many feared. The fires were blown out and wells capped sooner than expected, and the recuperative powers of nature were under estimated.

With the Gulf war over, the absence of the Soviet threat, and mounting concern over the national debt, it was time to re-assess the nation's national defense needs. There was much talk and speculation about a "peace dividend," from a reduction in defense needs. The re-assessment resulted in a major reorganization and reduction in U.S. armed forces, and a series of military base closures. Barksdale AFB and the 2d Wing survived, but the Wing's mission and make up were considerably altered.

Other lesser events marked this closing period that effected or involved the 2d Wing — terrorist attacks and in particular those sponsored by Libya; overthrow of the Noriega regime in Panama; U.S. efforts to limit nuclear proliferation by ending production of weapons-grade plutonium and uranium, and the Russian-U.S. nuclear arms reduction treaty that lowered each country's nuclear arsenal to 1960 levels (U.S. 3,500 and Russia 3,000).[3]

1984[4]

The Wing mission remained the same - *Peace through Deterrence*. Authorized personnel strength at year-end was 8,029, with 7,763 assigned. Wing assigned aircraft at the beginning and end of year were, respectively: 28 B-52Gs vs 24; 18 KC-135s with no change; and 7 KC-10As vs 15. Unclassified records show that the Wing was engaged in thirty-one code-named training missions, exercises and deployments during the year (see Appendix 23). Three B-52s deployed to Okinawa for the annual Korean exercise. One deployed to England in April and another three deployed there in September. KC-10 tankers from the 32nd ARefS deployed to Saudi Arabia for twenty-three days starting in February. Wing tankers supported nine deployments, including 4th and 35th Tactical Fighter Wing (TFW) deployments to Germany and a 20th TFW deployment to Spain.

The Wing was the beneficiary of certain facility improvement projects during 1984, including airman dormitory renovations, alert facility renovation, a new fuel hydrant system, new air launched cruise missile (ALCM) facility, and taxiway and parking apron renovations.

SAC's 28th Annual Bombing & Navigation Competition was held at Barksdale AFB on October 31, 1984, and the 78th ARefS (Associate) received the *Best KC-10 Crew Award.*

1985[5]

Wing aircraft flew over 18,000 hours during the year, took part in fourteen exercises, and other directed operations and made one major deployment. Seven B-52s and 200 support personnel deployed to England in May. Unfortunately there were three minor aircraft accidents and one airplane was lost to a ground accident. The program to improve base facilities continued, and there was a major upgrade in B-52 navigation, and missile launch capabilities, and a

Members of the 2D Civil Engineering Squadron were practicing the erection of a temporary shelter. Such operations took place when Prime Beef Teams *deployed in support of remote operations. (Courtesy of the United States Air Force)*

Members of the base Fire Department are well known for their activities on the flight line. Here they were quenching a fire in one of the base housing units. (Courtesy of the United States Air Force)

new air-launched missile was added to the bomber arsenal. Four Wing units received awards for their performance and professionalism during the year.

One major accident marred the 1985 period. KC-135A 61-0316 was assigned to the 71st ARefS. It had been modified to also serve as a VIP aircraft for use by the Eighth Air Force commander. It had a plush interior installed in the aft cabin, including a galley, carpets, fake window panels, curtains, and comfortable seats. It proved unfortunate that some of the flammable amenities were located in the area of the on-board auxiliary power unit. The aircraft was taken by Lt. Gen. Kenneth L. Peek on a staff visit to the middle east. On March 19 the aircraft was destroyed by fire on the airport ramp in Cairo, Egypt. The general and his staff had gone into Base Operations while the crew chief went about servicing the aircraft. Because the ground power carts would not work, the crew chief had to use the on-board auxiliary power unit to provide electrical power for refueling. During the refueling, the power unit tripped off and smoke filled

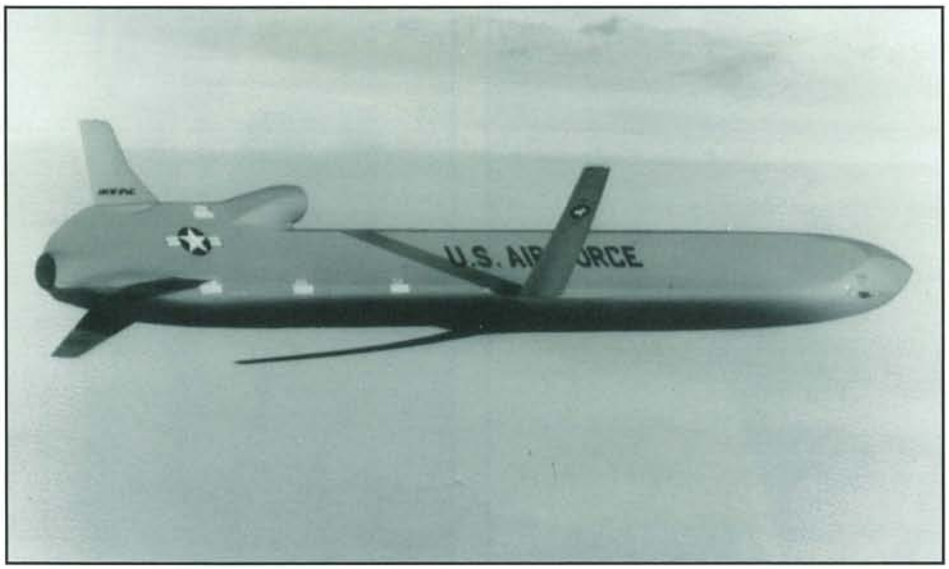
Base air traffic controllers keep a constant vigil over all air operations. (Courtesy of the United States Air Force)

the aft cabin. All personnel abandoned the aircraft. The subsequent accident investigation revealed that the auxiliary power unit's flexible exhaust duct had overheated, burned through, and set the carpet and curtains afire. The fire was intensified by flames entering the power unit fuel vent line. Airport fire fighters extinguished the blaze but not before the aircraft sustained extensive fuselage damage. The wings and empennage were still intact, but the fuselage was gutted and the crown was weakened. When ground crews attempted to tow the aircraft, it began to sag. Reinforcing straps had to be installed on the fuselage crown in order to tow the aircraft.

On August 6, a B-52G suffered $39,120 in damage from a bird strike. On October 7, a KC-10A burst a tire during gear retraction and sustained $3,265 in damage. A taxi accident on October 31 resulted in $1,825 in damage to a B-52G.

Wing B-52Gs were modified to carry the AGE-89B Air Launched Cruise Missile (ACLM), developed by The Boeing Company. The first ACLM arrived on November 12. The AGM-89B can be launched from outside a combat area or many miles from an intended target — referred to as a stand-off capability. The missile is 19.5 feet long with a diameter of 2.1 feet. Its wings fold back when stowed and spread to a span of 12 feet when launched. The weapon is powered by a F107-WR-100 turbofan engine which burns JP-10 fuel. It weighs 2,800 lbs., flies at approximately 500 mph, and has a range of 1,500 nautical miles, hence the "stand- off capability." The AGM-89B has a W-80 nuclear warhead, with a yield of approximately 200 kilotons. The missile has an on-board terrain following system for guidance and control. The ALCMs greatly enhanced the strategic bomber's offensive nuclear capability and its defensive survivability.

The ACLM coupled with improved B-52 avionics made the bomber a much more sophisticated weapons launch platform. The AN/ASQ-151 electro-optical viewing system (EVS) and



The AGM-89 Air-Launched Cruise Missile (ALCM) comes in two models. The AGM-89B nuclear weapon, and the AGM-89C conventional missile. This missile is shown in its flight mode with the wings spread and the engine inlet erected. Up to six of these missiles may be carried beneath each wing of the B-52s and another six on an internal rotary launcher. (Boeing Photo)

These are ATM-84A training missiles used to simulate the AGM-84A Harpoons carried on the external pylons of the B-52Gs and later the B-52Hs. Originally, six missiles were carried on each pylon; however testing proved that four was the optimum number to be carried. (Courtesy of the United States Air Force)

forward-looking infrared (FLIR) had been installed in 1973 to enhance the low-level capabilities of the B-52G and B-52H. An offensive avionics system (OAS) was added to the B-52Gs and B-52Hs beginning in 1982. The existing AN/ASQ-38 bombing-navigation system was replaced by a new AN/ASQ-176 system with a digital processor. A pair of redundant inertial navigation systems (INS) were also incorporated. A new attitude heading reference system was also added. Coupled with several other components, the OAS offers accurate navigation, position fix, and weapons delivery capabilities for the B-52.

The first ACLM arrived at the Wing on November 12, and the first B-52 equipped with the Offensive Avionics System arrived on December 17.

In 1986 an air launched cruise missile with a conventional warhead, (CALCM), was developed and given the Air Force designation, AGM-89C . It has an avionics guidance system which incorporates a global positioning system. Its range is less than the 1,500 miles of the ALCM. The AGM-89C, with the conventional warhead, proved to be better suited to military needs following the Cold War and the apparent end of the Soviet nuclear threat.

Through arrangement with the U.S. Navy, their AGM-84A Harpoon, anti-shipping missile, was tested, and put in the SAC weapons inventory in 1985, to help Navy surveillance of the oceans. The 2d Wing was one of four B-52 wings capable of operating with the Harpoon. The missile is 12' 7.5" long, with a body diameter of 1' 1.5", and a wingspan of 3'. It is powered by a 660 lb static thrust turbojet engine. The missile weighs 1,145, and is a high speed, subsonic weapon with a range of 57 miles. The warhead is a 488 lb. penetrating high-blast explosive. Guidance is provided by a sea-skimming, cruise monitoring computer, radar altimeter, and active radar terminal homing. Initial tests were with six missiles per external pylon, however, release problems resulted in reducing the number to four per pylon, or eight per aircraft.

Base improvement projects during 1985 included a new Modular Flight Surgeons Clinic, Environmental Medical Facility, and Phase II of the airmen's' dormitory construction. Renovations included Base Operations, Phases I and II of runway, apron, and taxiway repair; and the Airmen's' Club which reopened on April 19.

The Wing and its units garnered four awards. The Wing was given the 1984 SAC Community Relations Award. The 71st ARefS and the Hospital each won the Air Force Outstanding Unit Award, and the 32nd ARefS won the Best KC-10 Crew award at the Bomb Competition

1986[6]

The Wing flew a total of 22,600.3 hours and participated in a number of exercises during the year including four tests of major accident response, and deployed three B-52s, four crews, and 100 support personnel to England for thirty-nine days beginning August 29. While the purpose of the deployment remains classified, one can speculate that it was another demonstration of force and mobility in the Cold War. Other exercises included an ORI, and exercise WILLIAM TELL. The latter was an air defense exercise held at Eglin AFB, FL, originally for Air Defense Command and then Tactical Air Command to evaluate the effectiveness of air defense fighter crews against a variety of targets, including drones. This was the first year that bombers participated in this air defense exercise. Perhaps the most important and certainly the most satisfying operation of the year was the punitive strike against Libya in April for its sponsorship of terrorist attacks. Wing tankers supported the operation. Base construction activities continued. Several awards were bestowed on units of the Wing.

On March 26, the Wing received a bomb threat call from an alleged representative of the Libyan Front.

Reprisal Against Libyan-Sponsored Terrorism

In 1969 a military junta, led by Col. Mohamar Qaddafi seized power in Libya from the constitutional monarchy. By the mid-1970s Libya had helped to arm violent revolutionary groups in Egypt and Sudan, and given aid to terrorists of various nationalities. Libya and Egypt fought several land and air battles along their border in July 1977. Libyan attempts to invade and take parts of Chad were eventually repulsed. On May 6, 1981, the U.S., citing "a wide range of Libyan provocations and misconduct," closed the Libyan mission in Washington

DC. In August 1981, two Libyan jets were shot down by U.S. Navy planes taking part in naval exercises in the Gulf of Sidra (off the Mediterranean coast of African between Tripoli and Benghazi, Libya), which Libya claimed as its territorial waters. The U.S. accused Libya of masterminding numerous terrorist attacks, including the December 1985 attacks on the Vienna and Rome airports. In January 1986, the U.S. resumed flights over the Gulf of Sidra, and on March 23, a U.S. Navy task force again began exercises in the Gulf. When Libya fired antiaircraft missiles at U.S. warplanes, the Navy responded by sinking two Libyan ships and striking a missile site in Libya. The task force operation ceased on March 27.[7]

There were several unpublicized encounters between Libyan and U.S. aircraft during this period. SAC RC-135s monitored the Libyan air defense system and attempted to lure their eager fighter pilots out to sea and induce them to run out of fuel and have to ditch. On April 2, a TWA 727 airliner was bombed in flight near Athens, Greece, and four passengers were sucked to their deaths. Three days later, a terrorist bomb attack on a West German night club killed two U.S. servicemen and a Turkish woman. Libyan terrorists claimed responsibility for the airliner bombing and were suspected in the night club bombing. The U.S. accused Qaddafi of having ordered the night club attack.

After the U.S. failed to get agreement on economic sanctions against Libya, President Reagan began high-level, behind the scenes talks with Allied nations about a retaliatory strike against Libya. British Prime Minister Margaret Thatcher was instrumental in permitting the United States to use England's bases for this operation. The strike plan was code named Operation EL DORADO CANYON

Operational planners had their hands full in determining the targets and available aircraft for the strike. A B-52 raid was out of the question for both political reasons and the potential dilution of SAC's EWO posture. U.S. Navy carrier aircraft in the Mediterranean were too few in number to strike all of the targets on one night mission. The best available USAF aircraft to work in concert with the Navy was the F-111F *Aardvark* supported by EF-111A *Raven* (a.k.a. *Sparkvark)* jammers. To make such a long strike with these aircraft, required extensive refueling support and diplomatic clearances.

High level diplomatic missions were conducted to secure adequate support bases and overflight permission for the strike. The shortest route to Libya from bases in England is over France and Italy, but neither would grant overflight permission because of their political and commercial ties with Libya. Another potential limitation was that the U.S. had authorization for only a small number of no-notice exercises from English bases, any in addition to the authorization had to be publicly announced in advance. The U.S. was fortunate in that it had one unannounced exercise left unused at that time. Secrecy was paramount. If all the activity aroused the attention of the media, they were to be told it was a base efficiency exercise.

With planning completed, support tankers, including 13 KC-10s and two KC-135s from the 2d Wing, were deployed to bases in England to await the strike order. So classified was the operation, no radio communications regarding it were permitted. A general officer from the Pentagon personally delivered the strike orders to England.

On the night of April 12, U.S. Navy ships in the Mediterranean moved off the coast of Libya. USAF tankers in England took off a half hour ahead of the strike aircraft. The strikes were to commence at about midnight. The outbound and return routes were over international waters, resulting in a 2,800-nautical mile round trip flight.

The strike force was comprised of 24 F-111s from the 48th Tactical Fighter Wing, supported by 3 EF-111As from the 42nd Electronic Countermeasures Squadron. Eight F-111s struck the Tripoli Airfield, 4 attacked the Sidi Bilal Terrorist Training Camp, and 12 demolished the Al Azziziyah Barracks Compound. Of the 24 F-111s dispatched, one failed to return. The total flying time for each of the strike aircraft was approximately 13 hours.

Two E-3A *Sentry* airborne warning and control system (AWACS) aircraft from the 552d Wing also supported the operation. SAC tankers from a number of wings provided refueling support. While SAC still had its EWO alert commitments, various wings were able to provide a limited number of tankers to support the operation. A force of 22 KC-135s and 26 KC-10s operated out of RAF Mildenhall and RAF Fairford.[8] The 2d Wing furnished 30% of its tanker force. (See Appendix 23.)

Major construction activities at Barksdale during 1986 included a new day care center and runway threshold lighting. The latter enhanced all-weather operations.

SAC revised the paint schemes for the B-52s during the latter half of the 1980s. Aircraft awaiting the paint change had their white noses painted over with a dark gray. On December 30, 1986 the 2d Bombardment Wing was authorized by Headquarters Eighth Air Force to apply the *Fleur-de-Lis* on the tail of their B-52Gs. The *Fleur-de-Lis* goes back to the 1st Day Bombardment Group in World War I.

The 32nd ARefS received three out of the four Wing major awards for 1986 — The Air Force Outstanding Unit Award, and the Best KC-10 Unit Trophy, and Best KC-10 Crew Award at the annual Bomb Competition. The 2d Consolidated Maintenance Squadron earned the Air Force Outstanding Unit Award.

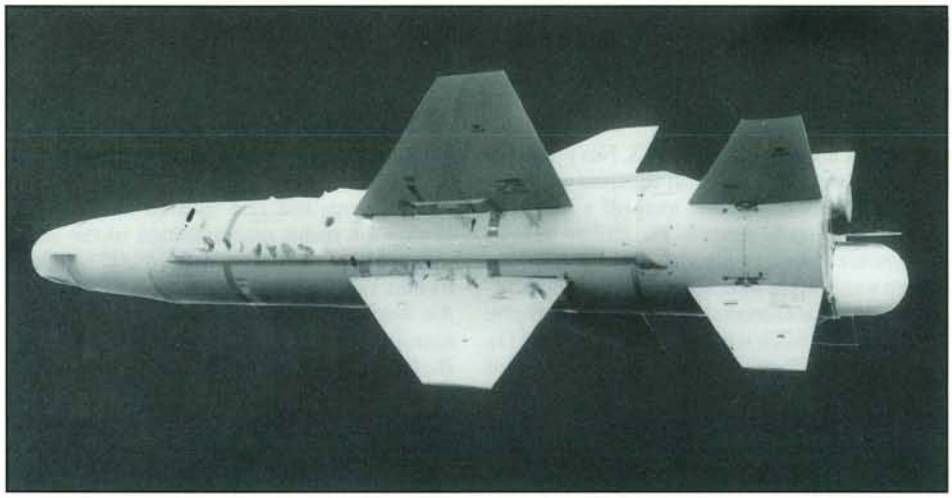
49TH TEST SQUADRON[9]

On April 1, 1963, when the 2d Bomb Wing ceased B-47 operations at Hunter AFB, GA, the 49th and 96th Bomb Squadrons were deactivated. The 96th Squadron didn't come back into existence until September 1993. The 49th Squadron, while never reassigned to the 2d Wing, was reactivated as the 49th Test Squadron at Barksdale in July 1986, by redesignation of the 4201st Test Squadron. This was a move to preserve the lineage and history of significant Air Force units. The 4201st had been organized since the early 1970s and engaged in the test and evaluation of air-launched missiles and some nonnuclear gravity weapons. It had been co-located with the 2d Wing at Barksdale since July 1974. Barksdale was chosen because of its central location to other bases and the national test ranges, and to be co-located with the 2d Bomb Wing and its Non-Tactical Instrumentation Branch. (This latter unit was subsequently assigned to the 4201st.) The 49th Test Squadron continued the same test mission. In 1988 the 49th was assigned directly to the Deputy Chief of Staff for Requirements and Test at SAC Headquarters. During the major reorganization of the armed forces during 1990-1992, when SAC was deactivated, the 49th was reassigned to the USAF Air Warfare Center, Eglin AFB, FL, however, it remains co-located with the 2d Wing at Barksdale. Over the years the 49th and 2d Wing collaborated and worked together to test and evaluate advanced weapon systems, as directed by higher authority, including such weapons as short range attack missiles, an anti-shipping missile, air launched cruise missiles, and perhaps most importantly, the AGM-86C, the Conventional Air Launched Cruise Missile used by the Wing in its first strike against Iraq during Desert Storm. Examples of major weapons tests are described below.

Test drops of gravity nuclear weapons, including the B-28, B-53, B-61, and B-83 were made on the Tonopah Test Range in Nevada. The sorties attempted to emulate an EWO mission. The mission was started from an alert status. The crews took off at the scheduled time, air refueled, proceeded to the target on a low level en route, entered the test range, released weapons on specified targets, and returned to base. Weapon release profiles were a mixture of free fall air burst, free fall ground burst, and low altitude laydown.

The AGM-142, Have Nap, missile, designed in Israel, went into production in the United States in 1989 as a result of testing by the 2nd Bomb Wing and the 49th Test Squadron. It is currently being built to USAF standards under license by Lockheed-Martin in Orlando, Florida. The AGM-142 was integrated into the USAF inventory in January 1993. It is an advance precision-guided air-to-ground missile which is effective against high-value ground and sea targets, such as power plants, missile sites, bridges, bunkers and ships. The missile is 15' 11" long, 21" in diameter, and has a 6' 6" wingspan. It is powered by a solid booster rocket engine, and has a range of 50 miles. Either a blast fragmentation or penetrating warhead may be used. The weapon's overall weight is 3,000 lbs., with a 1,000 lb. warhead. It has an inertial mid-course guidance system, and an exchangeable high performance television or infrared terminal guidance system. A large bulbous antenna is mounted on the aft missile body for the TV data link.

The weapons, and other hardware and software, for all B-52 conventional munitions were tested extensively. Since 1982, seventy-two such special missions had been flown. The British 1,000-lb. class gravity bomb was tested and certified prior to Operation DESERT STORM. Guided Bomb Units and Laser Guided Bombs were also tested and certified for delivery by B-52s. Another unique system, for use in high altitude bombing, was tested and demonstrated. The system used new, precision technology of Light Detection and Ranging in conjunction with a ground-based laser to derive an average wind for input into the bombing computer. Test ranges



This is an AGM-142A Have Nap *missile with its bulbous TV data link antenna mounted on the rear end. (Courtesy of Lockheed-Martin)*

Armorers from the 2D Munitions Maintenance Squadron practiced loading this clip of B61 nuclear bombs into the belly of a B-52G. (Courtesy of the United States Air Force)

Here an armorer from the 2d Munitions Maintenance Squadron, in full battle gear, looked over a pallet load of Mk. 84 bluies *– training bombs. (Courtesy of the United States Air Force)*

are located in California, Florida, Idaho, New Mexico, and Utah.

1987[10]

The wing flew and incredible 39,379 hours, which was 16,778.7 more than in 1986. 1987 was marked by the usual training through numerous exercises and deployments, support of Persian Gulf operations, and unit awards, and marred by the destruction of an airplane and the tragic loss of one life. The Persian Gulf operations may account for the higher than usual flying workload.

Three B-52Gs, using a cell formation, participated in Exercise COPPER FLAG 87-1 on January 27. This was a TAC-sponsored low level simulated nuclear strike conducted by the Air Defense Weapons Center at Eglin AFB, FL. Its purpose was to train air crews and weapons controllers in the challenges of an air defense environment. The bombers successfully used expendable chaff and flares, ECM, and evasion maneuvers against defending fighters. Saturated commercial airways system at the Atlanta Air Route Traffic Control Center, and Montgomery (Alabama) Approach Control caused timing difficulties over the target.

Three B-52Gs, equipped with the Offensive Avionics System (OAS), participated in Exercise COPPER FLAG 87-2. An overview of the extensive planning is presented here. The exercise called for mission briefing and planning on January 27 from 8:00 A.M. through 5:00 P.M. The following day crews gathered at the squadron at 8:00 a.m. for a half hour of general briefing followed by two hours of specialized briefings for the electronic warfare officers and gunners. The pilots and navigators performed mission planning between 8:30 A.M. and 3:30 P.M. A 30-minute (minimum interval takeoff) MITO/ Cell briefing was held between 1:00 and 1:30 P.M. This was followed by a crew briefing between 3:30 and 4:30 P.M. On January 29, a pretakeoff briefing was conducted at the squadron hanger between 9:45 and 10:05 A.M. The MITO takeoff was scheduled for 12:46 P.M.

Such training paid off for the Wing crews during Operation DESERT STORM.

Exercise RED FLAG 87-3 was flown on March 27, by three OAS-equipped B-52Gs over the Nellis Range for a low level conventional weapons strike. The mission called for a cell takeoff followed by an en route cell formation. The aircraft entered the range and dropped three bombs per aircraft where scoring was excellent. One aircraft developed a trim control problem after engine start and a substitute aircraft was provided. Difficulties in using the Air Force Satellite Communication System were attributed to an incorrectly briefed communications plan. Tactics employed included terrain masking (flying below mountain ranges) and terrain avoidance. ECM training was of minimal value due to too few ground radar threats. The crews also begged for fighter opposition at low level so as to enhance and test their skills.

Three OAS-equipped B-52Gs participated in Exercise MAPLE LEAF on May 14. This was a low level simulated nuclear strike over Canada. The aircraft made a cell takeoff followed by an en route cell formation. The aircraft entered the

Canadian Maple Flag Range on time and made a successfully camera attack on the designated target.

1987 was the year of the nation's heaviest involvement in the Persian Gulf policing actions. The Iran-Iraq war still raged. The U.S. Navy began escorting the reflagged Kuwait tankers in the Gulf on July 22. Two days later one was struck by an Iranian underwater mine and the Navy had to quickly bring in helicopter minesweepers from the U.S. with the assistance of MAC airlift. Navy fighters and ships destroyed two Iranian oil platforms and repelled an attack by small Iranian boats. MAC C-141s and C-5s began flying personnel and supplies to airfields in the Persian Gulf region. These transports were refueled by SAC KC-135s and KC-10s.

Tactical Air Command deployed a rotating force of E-3A AWACS aircraft from the 552nd Wing at Tinker AFB, OK, to bases at Riyadh and Dhahran, Saudi Arabia. One E-3A was airborne in the Persian Gulf region around the clock. They provided real time intelligence about aircraft and ship movements, controlled U.S. and Allied air traffic, directed air defense operations, and coordinated air refueling operations. SAC tankers rotating from the U.S. furnished refueling support for these missions. These operations continued until August 20, 1988 when Iran and Iraq agreed to a U.N. resolution calling for a cease fire. For over a year 2nd Wing tankers lent their support to these operations and crews are eligible to wear the Persian Gulf campaign ribbon.

Four B-52s and six crews deployed to RAF Fairford, England August 17 in what is presumed to have been related to the Gulf War or was a Cold War maneuver.

The aircraft accident tragedy occurred on August 17. KC-10A, number 82-0190 had returned from a training mission at a remote installation and was undergoing maintenance to clear malfunctions in the fuel and hydraulic systems when the airplane exploded. The explosion and subsequent fire separated the fuselage at the leading edge of the wing. Five emergency vehicles from the base fire department arrived within two minutes of the explosion but were unable to save the aircraft, or Sgt. Joseph M Burgio Sr. from the 2d Consolidated Maintenance Squadron. Sgt. Burgio was working in the rear of the fuselage.

Fire consumed the entire aircraft from the trailing edge of the wing to the nose gear. The cockpit was left lying on its right side with the top caved in due to the fire. The wing tanks were ruptured, with sections outboard of the engines resting on the ground. Although still attached to the wing, the No. 1 engine was severely damaged by the fire and its lip was touching the ground.

A hydraulics specialist was in the cockpit at the time of the explosion and managed to escape through a cockpit window. Sgt. Burgio was not so fortunate. His body was found by fire department personnel in the boom pod in the aft fuselage.

The following awards were presented to elements of the 2d Bombardment Wing:

- 2d Bombardment Wing – *Sweeny Award* presented by Eighth Air Force for best operational performance.
- 32d ARefS – *Golden Tanker Award* for outstanding air crew professionalism.
- 32d ARefS – *Outstanding Air Refueling Squadron in Eighth Air Force* in 1986.
- 2d Bombardment Wing – *General George C. Kenney Trophy* for the best performance in a SAC ORI.
- 2d Bombardment Wing – *Glossy Eagle Award* for the best maintained aircraft in the bomber division. (The Glossy Eagle program was started by CINCSAC, Gen. John T. Chain to improve the appearance of the command's airplanes. Both air and ground crews worked together on non-duty days [ie, weekends and non-alert days] to clean, apply touch-up paint, and to generally spruce-up the aircraft. Even the families joined in these work parties, further cementing the bond between air crews, ground crews, and their families. The program was halted in the 1990s after USAF attorneys raised the issue of personal injury liability of the Air Force for possible injury to family members.)

1988[11]

The Wing received a mission change effective October 1. The 62d Bomb Squadron's mission was changed from nuclear to conventional warfare. The 596th Bomb Squadron retained its nuclear mission. In September, two B-52s and two KC-10s deployed to Andersen AFB, Guam to test the Wing's conventional warfare capabilities from a forward operating location. The aircraft flew to both Guam and Korea as part of a SAC-generated conventional weapons exercise. Each aircraft flew 12 successful missions.

Most other Wing operations remain classified, but eleven exercises, including the deployment to Guam, were identified. They included four BOLD SHIELD aircraft generation exercises, and four major aircraft response exercises during the first third of 1988. During late May and early June the Wing deployed to Clinton-Sherman AFB, Oklahoma to participate in Exercise BULL RIDER, a test of the war reserve spares kit. This SAC-directed mission called for the deployment of seven B-52Gs for 30 days of flying out of a forward operating location. During this exercise, the Wing flew a total of 172 sorties.

T/Sgt. Timothy P. Carroll, of the 2d Organizational Maintenance Squadron, was recognized as the *Air Force Crew Chief of the Year* on September 19, 1988, at the Air Force Association National Convention in Washington, DC. When asked about his job as a B-52 crew chief, he replied: "This job takes a lot of dedication, especially for a plane as old as the B-52. Everyone knows that there are very few B-52 pilots older than the aircraft they're flying, but if you think about it, there's probably not a crew chief as old as a B-52."

The 2d Bombardment Wing was awarded the *General George C. Kenney Trophy* for the second consecutive year for performance in its annual ORI. Wing commander, Col. Charles T. Robertson, Jr., stated: "An ORI is the most realistic peacetime test a SAC wing can undergo as an operational Air Force unit and being selected as champion under those circumstances is an honor of which the Wing should be very, very proud." As of this writing, Robertson is serving on active duty in the grade of lieutenant general (see Appendix 6).

1989

As this history progresses into more current time periods, the unclassified records become increasingly scarce. In addition to the limited available information about exercises and other operations, the most significant event of this period was the operation that led to the capture of Panamanian strongman, Gen. Manuel Noriega.

During May, Wing bomber forces worked numerous extended duty days and weekends in support of forty-nine PROUD SHIELD sorties, six MAPLE FLAG missions — in a joint exercise with the RCAF at the Cold Lake base in Alberta, Canada — one AGM-142 HAVE NAP missile test mission, one flare test, and two media sorties. A media sortie permits the unit to display some of its military capabilities to members of the press corps.

On May 20 Wing tankers flew nine missions in support of Exercise PROUD SHIELD and achieved a 100% takeoff rate.[12]

Operation JUST CAUSE

On February 4, 1988, federal grand juries in Miami and Tampa, FL returned indictments against Panama strongman Gen. Manuel Noriega, charging that he had protected and otherwise assisted the Bolivian Medellin drug cartel, linked to 80% of the cocaine smuggled to the U.S. Part of that assistance was through-passage of drugs and laundering of drug money. Attempts to oust Noriega by the U.S. plunged Panama into political and economic turmoil. After he tried to fire Noriega as head of the Panama Defense Forces, Panamanian President Delvalle was himself ousted by the country's National Assembly. Noriega became the effective ruler of Panama, and despite U.S.–imposed economic sanctions, he remained in power. National elections were held in May and Noriega claimed victory, but foreign observers reported that the opposition had won overwhelmingly. The government voided the election. In October a U.S. sponsored coup failed and Panama declared a "state of war," with the U.S. President Bush ordered an invasion of Panama.

With the agreement of the Organization of American States (OAS), 24,000 U.S. troops invaded Panama on the night of December 20 to overthrow the Noriega regime, and install a U.S.-backed popularly elected government. The General was to be captured and brought to the U.S. to face the drug trafficking charges.[13]

The situation in Panama had prompted the U.S. to deploy additional troops there in April. The 2nd Wing's 71st ARefS gave tanker support to the C-141s that airlifted these troops.

Lt. Col. William G. Rogers, commander of the 71st ARefS, led the total tanker force that refueled the inbound airlift, and its tactical air support aircraft. More than half of the Squadron's tankers and crews off-loaded over 500,000 lbs. of fuel to 14 receivers during this operation.[14] General Noriega escaped immediate capture, took refuge in the Vatican diplomatic

mission, but surrendered after ten days to U.S. authorities on January 3, 1990.[15]

Units participating in Operation JUST CAUSE between December 20, 1989 and January 31, 1990 were awarded the campaign ribbon for this operation.[16]

CINCSAC General John T. Chain presented the Wing with two awards during 1989. The Wing was awarded the Omaha Trophy as the best SAC Wing and the 2d Organizational Maintenance Squadron was honored as the Best in SAC for 1988. Other awards received during the year were:

- 2d Bombardment Wing – *Hoban Trophy* presented by retired Lt. Gen. Richard M. Hoban for the Best Wing in the Eighth Air Force.
- 2d Bombardment Wing – *Air Force Outstanding Unit Award.* (July 1, 1987 thru June 30, 1990)
- 2d Bombardment Wing – *Verne Orr Award* for the Best Utilization of Resources in the Air Force.
- 2d Bombardment Wing – *Glossy Eagle Award* for the best maintained aircraft for the third consecutive year.
- 2d Bombardment Wing – *Carl A. Spaatz Refueling Trophy* for the Best Tanker Unit in SAC.
- 2d Missile Maintenance Squadron – *Best in the Eighth Air Force.*
- 2d Organizational Maintenance Squadron – *Best in Eighth Air Force.*
- 2d Aircraft Maintenance Squadron – *Best in Eighth Air Force.*[17] (See Appendix 5.)

1990

1990 began much like any other year for the Wing with SAC EWO alert operations, unit training, and higher headquarters tasking. Between December 27, 1989 and January 19, 1990 the Wing deployed seven B-52Gs, three KC-10As, and 400 support personnel to Roswell AFB, New Mexico to test bare base operating capabilities for Exercise MIGHTY FORCE 90-1 and RED FLAG 90-2. The Wing placed 100% of its bombs on target and achieved an outstanding effectiveness rating.[18] But events in the Middle East would soon shake the Wing out of its routine operations.

The Arab Oil embargo of 1973 had, at least temporarily, sensitize the U.S. to the potential consequences of its dependence on foreign oil, and especially Middle East oil. If they didn't recall the embargo's impact on the economy, many Americans had vivid memories of their frustrations and the personal inconvenience of the long automobile lines at the gas pumps. The experience prompted a national campaign to reduce dependence on foreign oil. A broad spectrum of programs was instituted, including energy conservation, development of alternate sources of energy such a solar, wind, and nuclear power, and increase in domestic oil exploration and production. But the U.S. is the most voracious consumer, by far, of oil on the planet, and in 1989 consumed 3.5 times more than Japan, and 7.6 times more than West Germany, the next two closest competitors. The impetus from the oil embargo soon faded and by 1990, the U.S. was more dependent on foreign oil than in 1973, the year of the embargo. That year the U.S. imported 34.8% of its total consumption, only 5.3% of which came from the Arab Organization of Petroleum Exporting Companies (OPEC) nations. By 1990 the U.S. was importing approximately 45% of its consumption, of which 14% came from the Arab OPEC nations. In a nation that consumed oil at the 6.3 trillion barrel level in 1990, or in excess of 17 million barrels per day,[19] a disruption in that flow of only a very few percentage points could have far-reaching consequences. So when events indicated that another Middle East war was in embryo, the area caught both U.S. and international attention.

By mid-1990, President Saddam Hussein of Iraq had the means and the motive, and showed growing evidence of the intent to embark on a venture of conquest. Iraq was in dire need of hard currency to pay off its debts from the eight-year war with Iran. By the summer of 1990, Iraq had the world's fourth largest army and sixth largest air force. Its military budget placed a $721 per capita annual debt on its population which had an average annual income of $1,950. The mounting evidence of intended conquest came from the following chronology of the events:[20]

On July 17, 1990 , in a televised speech, Saddam Hussein warned the world he would attack Kuwait if his demands are not met regarding reestablishing the Iraqi-Kuwaiti border, a reduction in Kuwaiti oil production, and a decrease in Kuwait's share of oil from the Rumala oil field which extends under the border between the two nations. Kuwait owned one-tenth of the world's oil reserves. Hussein charged certain Persian Gulf States, and particularly Kuwait, of depressing oil prices by overproduction,costing Iraq as much as $1.00 per barrel and $1.0 billion annually in revenues. In adition to other demands, Hussein demanded $10 billion immediately from Kuwait.

On July 18, Kuwaiti forces were placed on alert and American Ambassador to Iraq, April Glaspie, tells the Iraqi Foreign Ministry that all disputes in the Middle East must be settled peacefully.

On July 19, Joint Chiefs of Staff Chairman Gen. Colin C. Powell telephoned Gen. H. Norman Schwartzkopf, CINC Central Command (CENTCOM), to discuss contingency planning for the defense of Kuwait and Saudi Arabia against a potential attack from Iraq. USAF Brig. Gen. Buster C. Glossom, en route to his new assignment as Deputy Commander of the Joint Task Force, Middle East, paid a courtesy call on Gen. Schwartzkopf and was instructed to oversee Exercise IVORY JUSTICE in which United Arab Emirates French-built Dassault *Mirage* fighters spent two weeks practicing air refueling operations with SAC tankers.

July 20 newspapers reported that Iraqi forces were amassing on the Kuwaiti border. The CIA confirmed that 30,000 Iraqi troops were deployed.

On July 21, Exercise IVORY JUSTICE commenced. USAF AWACS aircraft were also involved in the exercise. The United States installed a mobile tactical air control center in Abu Dhabi, capitol city of the United Arab Emirates.

On July 25, Ambassador Glaspie was summoned to meet with Saddam Hussein. Hussein, correctly interpreting the implication of Exercise IVORY JUSTICE, states that he would not resolve his dispute with Kuwait by force.

On July 26, Kuwait agreed to cut its oil production.

On July 30, the CIA reported that 100,000 Iraqi troops and over 300 tanks were massed at the Kuwaiti border. A reconciliation meeting was held between Iraq, Kuwait, and Saudi Arabia in Jeddah, Saudi Arabia. The talks failed, and Kuwait walked out August 1, but stood down its armed forces so as not to provoke Hussein. Separately, Hussein assured Egyptian President Hosni Mubarek and Saudi King Fahd that he would not attack Kuwait, but not to tell Kuwait. Mubarek called President Bush and said Hussein was bluffing.

At 1:00 A.M., (6:00 P.M. Eastern Standard Time) August 2, Iraqi forces entered Kuwait with air, land, and naval forces. Kuwaiti forces reeled under the attack and the royal family barely had time to leave the country. By noon Hussein controlled one-fifth of the worlds oil supply and was moving, unopposed, to Saudi borders. Hussein judged that the U.S. response would be limited and would tale off. Vietnam had been a terrible defeat militarily and politically, and the U.S. didn't have the stomach for sufficient military intervention.

President Bush issued Executive Orders 12722 and 12723, declaring a national emergency and addressed the National Security Council on the implications of the attack. Then the U.S. froze all Iraqi and Kuwaiti assets in U.S. banks. Additionally, trade and financial relations with Iraq were terminated. The Soviet Union, Iraqs major arms supplier, suspended sales of military equipment. On August 3, Secretary of State, James Baker, and Soviet Foreign Minister, Eduard Shevardnadze, issued a joint statement condemning the invasion. The Joint Chiefs of Staff reviewed their options, including a top secret CENTCOM plan for moving ground troops and supporting air and naval forces to the region over a period of three-four months! The CENTCOM staff began formulating a plan for the defense of Saudi Arabia. Exercise IVORY JUSTICE was terminated, however, SAC KC-135 tankers remained in the theater.

After U.S. Secretary of Defense, Richard Cheney met with Saudi Kind Fahd, the King agreed to permit U.S. forces to deploy to his country. In what was to become Operation DESERT SHIELD — the build-up of Coalition forces in the region — the U.S. deployed 250,000 soldiers, sailors and airmen into the Persian Gulf in less than three months. The difficult part for King Fahd was obtaining agreement from his Arab neighbors for permitting assembly of large foreign forces in Saudi Arabia.

Between August 13 and August 25 numerous high-level talks were held between heads of state, ambassadorial staffs, and military leaders. The U.S. ordered a major call-up of Reserve forces and deployed numerous ships, aircraft, and personnel to Saudi Arabia. For the first time in history, the Civil Air Reserve Fleet (CRAF) was called up, with numerous U.S. airlines providing aircraft and crews for the massive airlift to the Gulf. By August 20 CENTCOM had sufficient ground forces to fight a holding action in Saudi Arabia. These forces were all airlifted to the Gulf. It was not until August 27 that the first sealift forces arrived in the theater.

On August 30, President Bush urged other nations to help pay the costs of this massive effort, and to provide additional personnel and equipment to support the Coalition operation. U.N. sanctions prevailed and 13 other nations provided a total of 658 tactical aircraft. The U.S. Navy deployed six of its aircraft carriers – three each were stationed in the Persian Gulf and Red Sea. Saudi Arabia provided all of the fuel at no charge to the Coalition forces.

The Coalition Forces came from the U.S. and 13 other nations. A summary of these nations and their committed aircraft follows:

Nation	No. of Aircraft
Bahrain	12
Belgium	18
Canada	30
France	48
Germany	18
Italy	26
Kuwait	35
Netherlands	18
Oman	50
Qatar	19
Saudi Arabia	216
United Arab Emirates	78
United Kingdom	90
United States	2,152
Total Fixed Wing Aircraft	2,790

The Coalition Forces in the theater trained daily amidst the arrival of additional forces. SAC deployed 256 KC-135s, 46 KC-10s, and 107 B-52Gs to the theater. Seven of these B-52Gs came from the 2d Bomb Wing. Another seven B-52Gs from the Wing participated in an historic mission known as Operation SECRET SQUIRREL.

Operation DESERT SHIELD

Beginning on August 7, four KC-10As from the 32d ARefS deployed 44 security police and staff to Riyadh, Saudi Arabia. Within one week, the Wing had airlifted a total of 161 personnel and 44.8 tons of equipment to Riyadh. On the same day, KC-10As from the 32d ARefS began refueling support for a massive deployment of F-15s from the 1st Tactical Fighter Wing at Langley. They were supported by 71st ARefS KC-135s led by its commander, Lt. Col. Gary L. Barber. Not knowing what was in store for them, the F-15s flew armed for combat. The fighters took off from Langley at 5:20 P.M. (12:20 A. M. Riyadh time) refueled several times with the 71st tankers, and landed at 7:20 A.M. EST, (2:20 P.M. Riyadh time), making it a 14-hour flight. Also, arriving in Saudi Arabia was a C-141 with a combat control team from Langley, and two E-3 AWACS aircraft from the 552nd AWACS Wing at Tinker AFB, OK.

Many of the units deploying to the Gulf region operated under bare base conditions. Living quarters were tents. Providing purified distilled water became a major logistics problem.

Air navigation facilities were minimal, therefore the Air Force Communications Command and Military Airlift Command provided navigational equipment and a wide variety of communications gear. Of great importance was the relatively new Global Positioning System (GPS) of navigation. Fighting a war at night requires precise navigation. The air crews had to struggle with the indistinct radar ground returns from the desert. The GPS system, which permitted navigational accuracy to within a few feet, was an indispensable piece of equipment, especially for nighttime, hi-tech warfare. It was used by the crews and pilots on B-52s, tankers, and tactical aircraft. In addition, it was used on the ground by Air Force forward air controllers, in lead vehicles, to keep the Coalition ground forces out of harms way of friendly aircraft attacking enemy front line positions. One ground unit even used a GPS system to direct mess vehicles to a starving unit. To make up for a shortage of issued GPS equipment, many Army and Air Force deploying units purchased their own receivers from places like Radio Shack!

On August 10, the Pentagon officially designated this period of force build-up as Operation DESERT SHIELD. By August 11, crews and aircraft from the Air National Guard and Air Force Reserve began augmenting the Military Airlift Command's (MAC) C-5 and C-141 airlift force and SAC's tanker force. During Stage 1 of the force build-up, sixteen commercial air carriers from the Civil Reserve Air Fleet (CRAF) furnished 18 flight crews for *long-range passenger airlift, and another 21 long-range cargo aircraft and crews*. On January 18, 1991, Secretary of Defense Richard Cheney activated Stage II for the CRAF, which increased the commercial airlift force to 79 passenger and 108 cargo aircraft. The CRAF call-up was doubly difficult for some of the airlines because many of the called-up reservists also flew for these airlines.

Tankers from the Lajes and Moron (Spain) Tanker Task Forces refueled the thirsty C-5s and C-141s as they crossed the Atlantic.

On August 17, the 71st ARefS deployed four KC-135As with 100 Wing personnel — one-fourth of the Squadron — to the Azores. Twelve days later Col. William J. Liquori, Vice Wing Commander, and a few staff personnel arrived to head up the Lajes Tanker Task Force. The 71st Squadron continued to support the European and Alaskan Tanker Task Forces, as well as maintaining the SAC's strategic war plan (nuclear force) alert at Barksdale.[21]

On September 27, Col. Albert W. Perez, II, Wing Deputy Commander for Maintenance, led a contingent of 15 staff personnel from the Wing to head the Moron Tanker Task Force in Spain.

One of the Standardization/Evaluation crews from the 71st ARefS deployed to Giorio Colle, Italy, to qualify Italian Air Force *Tornado* pilots in the delicate art of aerial refueling using the probe and drogue method. The Italians had their own refueling capabilities using tactical aircraft, but getting behind a large KC-135 for the first time was no easy task. Immediately thereafter, the Italians left to join the Coalition forces.

By the end of September, SAC had 100 tankers in the Gulf region, and by December 20, the Air National Guard had brought in an additional 62.

The 32nd ARefS won the 1990 Sgt. Archibald Mathies Memorial Trophy as the best flight engineering section in SAC. The award recognized SAC Flight Engineers who have demonstrated the highest level of professionalism, dedication, and sustained excellence.[22]

The Wing ended 1990 having flown 32,580.7 hours — 4,796 more than allocated by SAC.[23]

1991 — Secret Squirrel and Desert Storm

On January 12, Col. Ronald C. Marcotte, commander of the 2d Bomb Wing, went to Moron AB, Spain to take command of the 801st Bombardment Wing (Provisional). The men and women of the 2d Bomb Wing had played an increasingly active role in Operation DESERT SHIELD. Since Iraq invaded Kuwait, Wing KC-135As and KC-10As had flown numerous sorties hauling over 2,000 passengers, more than 2,000 tons of supplies and equipment, and offloading over four million gallons of fuel. The Wing furnished commanders at two forward tanker task force bases, in addition to Col. Marcotte at the 801st. Col. Albert Perez, who led the Moron Tanker Task Force, said: "Long working hours, cramped living conditions, unfamiliar customs and food, and, of course, the absence of family and friends are but a few of the challenges facing the men and women deployed here."[24]

Coalition forces were fortunate that Saddam Hussein was not a military leader. He allowed the Coalition to assemble its forces and become familiar with the region with little or no interference. One crew member likened this to conferring home field advantage on Coalition forces.

Operation SECRET SQUIRREL[25]

Planning for the potential use of the AGM-86C Conventional Air Launched Cruise Missile (CALCM) started early during the Operation DESERT SHIELD phase. The missile had been developed four years earlier in an attempt to solve problems encountered during the attack on Libya. That mission had taken and inordinate amount of planning and preparation, one crew was lost, and some civilians were injured or killed by errant bombs. The needed improvements were obvious — shorter mission response time, better crew security, and precision bombing accuracy to avoid endangerment of non-combatants. The solution was the AGM-86C standoff missile designed with a 1,000-lb. conventional blast fragmentation warhead, that had the effect of a 2,000 lb. bomb, and with Global Positioning System (GPS) satellite receivers for unprecedented target accuracy. The missile was developed and tested in strictest secrecy, first, so that any potential enemy would not know of its existence because there were so few GPS satellites in operation an enemy might suspect an attack by knowing when the satellites were in position and secondly, so as not to upset or complicate U.S.-Soviet arms limitations negotiations because, to the unpracticed eye, the AGM-86C was indistinguishable from its nuclear counterpart.

There were more than three dozen of the missiles in storage igloos at Barksdale on August 2 when Iraqi forces invaded Kuwait. Air Force leaders advised the National Security Council that selected, high-value targets in Iraq could be struck from the U.S. within one days flying time This was to give the President an option, where few others existed, to strike early for political reasons, realizing there was little or no capability for sustained follow up. Even then, additional preparation time was required. For security rea-

sons, only one crew had flight tested the missile. In the next few weeks fifteen more crews were introduced to the missile.

Lt. Col. Jay Beard, commander of the 596th Squadron was ordered to get ready. More crews would be needed to carry out the type of mission offered to the White House. On August 18 eight more crews were brought into the planning. This started a five-month period of suspense and pressure on the air crews.

A select few qualified crew members went to SAC headquarters early in the preparation phase to confer on mission planning and to work with targeters. A target list was developed at SAC Headquarters and provided to the Wing. As of this writing, the target list is still classified.

Back at Barksdale the B-52s were loaded with the CACLMs, fully fueled and crews went on alert. New mission planning "tapes," with current targets, arrived from SAC, sometimes as many as three times a week. This put aircrew mission flight planning into a constant state of adjustment. Copilots, responsible for fuel planning, plotted and re-plotted fuel consumption curves. One copilot said the air refueling seemed to change every day.[26] Alert crews and staff personnel began mission practice, rising as early as 3:30 A.M. to meet a 90 minute reaction time, for possible take offs at 6:00 A.M.

These conditions were taxing Col. Beard's crews to the limit. Not only were they heavily engrossed in SECRET SQUIRREL preparations, but had not been relieved of alert responsibility for SAC's strategic war plan. They were also losing B-52s and crews to forward bases in Spain and Diego Garcia from which they would later operate during DESERT STORM. To give relief and permit a more normal training routine, seven more crews were assigned two months into the program. On Tuesdays, crews studied the mission and the numerous changes. A randomly selected crew would then conduct a rigorous certification of all aspects of the mission. All aircraft committed to the mission were preflighted on Thursdays. This included verification of the Global Positioning System on each of the 39 CALCMs.

As time passed and Saddam Hussein did not push into Saudi Arabia, or show any signs of leaving Kuwait, Coalition plans changed. President Bush decided to essentially double Coalition ground forces. With a wide spectrum of air power already in the region, the need for a CALCM first strike subsided, but the pressure on the alert crews didn't ease.

Early in mission planning, SAC told the crews they would have a 24-hour advance notice – 12 hours to get ready and 12 hours for crew rest.[27] Such notice was eminently reasonable given the length of the mission, even with an augmented crew – and the importance attached to its success as a first strike. Thorough last-minute preparation and mission planning were a must to best assure success and to preserve the element of surprise. A minimum of four refuelings would be required. The normal six-man crew would be augmented by an extra pilot and an extra radar navigator. With an augmented crew of eight, quarters would be cramped. There was also the matter of food and the need for plenty of fluids to stave off dehydration. And crews wanted to start with clean clothes and flight gear.

The crews continued to go through mission briefings and pre-flight. The seven B-52Gs, loaded with the missiles and fueled, were parked in a cordoned off area of the ramp. One crewman recalls going out to pre-flight the aircraft one rainy night and one of the guards asked him about the conventional ALCM — the crewman denied any knowledge of such a weapon.

On January 11, 1991, after five months of preparation and waiting, the seven crews destined to fly the mission were placed on heightened alert. On January 14 they were restricted to the Wing alert facility. This caused a bit of concern for one of the wives who called the Wing Command Post several times looking for her missing husband! Col. Beard received the launch order at midnight on January 16. Takeoff was to be 6:30 that morning! He rousted the crews at 3:00 A.M. No 24-hour advance notice, for some unexplained, compelling reason — perhaps security. And the local weather must not have been a consideration. A cold, hard, January rain was falling.

Col. Beard had placed some fit-for-flight meals — low residue, low gas — aboard the airplanes so as not to tip-off the mission through the mess hall by allowing crews to have hot meals or even flight box lunches. He had stocked the airplanes with five-gallon jugs of water and jugs of coffee. The pilot and radar navigator instructor seats had been removed and two sets of air mattresses and sleeping bags were put aboard, one for the flight deck and one for the lower deck, to give some opportunity for crew rest en route.

After the mission briefing, Lt. Gen. Ellie G. Shuler, Jr., Eighth Air Force Commander, spoke to the crews. It was in part a pep talk in which he likened the mission to that of the Doolittle raiders fifty years earlier. "After that we were really pumped up," said Col. Beard. There were notable similarities between the two missions. After long and careful planning, the first casualty of the mission was the plan. Each was launched earlier than planned in foul weather. Each was a first mission of its kind ever flown in combat. Each was to make a much needed morale-building strike — one after the national embarrassment of Pearl Harbor, and one after the embarrassment of the Vietnam war.

The crews slogged out to their rain-soaked airplanes. There was a flurry of re-fusing shorted gear. Later one secure voice radio link had to be coaxed into operation by on-board crew ingenuity. The fully loaded planes grossed 244 tons — the heaviest most pilots had ever flown — and would take 9,000 feet of runway to get airborne. The seven-ship formation flew in three cells — 3-2-2 — in trail, one mile apart with 500 feet vertical separation. Lt. Col. Beard was the airborne commander and flew as the extra pilot in the lead ship. (See Appendix 24 for SECRET SQUIRREL aircraft and crew rosters.)

All ships roared off successfully and turned northeastward into the dull early morning skies. The first hitch, in a mission that was to be plagued by them, was not long in coming. Some where over the Atlantic, and before the first refueling near the Azores, Col. Beard called on the secure voice frequency for check in. He quickly had affirmatives from five, but not the sixth. Aircraft commander, Capt. Bernard S. Morgan, and pilot Lt. Michael C. Branche, flying sortie 4 in *Miami Clipper,* reported they were working on something and would have to get back to him. Then silence. An hour went by, and so did the point of no return. Still nothing. Finally Morgan reported they had shut down an engine at takeoff due to fluctuating oil pressure. Normally this would have been reason for mission abort, but it had been determined that the mission could be flown with six of the eight engines. The crew had stalled the report until past the point of no return. Col. Beard had to admire their gung-ho attitude, and gave the OK to continue.

The first air refueling was by two KC-135s per bomber from the Lajes Tanker Task Force. Each tanker off-loaded 70,000 lbs. of fuel. The second refueling was over the middle of the Mediterranean by KC-10s from Moron AB, Spain. The lead cell was tracked by an unknown fighter that passed through the formation, in the dark, during this refueling. Timing across the Mediterranean was crucial. The mission had been set back a couple hours so the formation would not pass Libya before the F-117 Stealth Fighters made their first strikes on Baghdad. Mission planners did not want Libya to spot the B-52s and alert Iraq. The formation flew in radio silence, blacked out, and in darkness across the Mediterranean, the Red Sea, and finally to the vast wastelands of the Arabian desert.

DESERT STORM hostilities had begun. As the three cells approached (classified) they were ordered to reverse course or land at (classified). Apparently the order was part of the confusion that attended the opening of the air offensive. Lt. Col. Beard responded with: "Stand by," and pressed on with the mission. Just prior to reaching their assigned launch areas, the sixth and seventh airplanes in the last cell were trailed by an unidentified fighter for about five minutes.

After crossing (classified), each aircraft descended, accelerated, and controlled its own timing to the missile launch area. The three lead bombers went to a northern launch area, and the remaining four went to a southern launch area. The launch areas were in the far western part of Saudi Arabia, about 100 miles from the Iraq-Saudi Arabia border. Of the 39 missiles carried, 35 were launched. Launches were sequenced over a ten minute period to disperse the missiles so they wouldn't hit each other or the launching aircraft. Launch times and routes to the targets — some took direct courses and some indirect — were programmed so the missiles would arrive at their targets simultaneously. Four missiles failed the in-flight pre-launch testing and had to be hauled back to Barksdale. Air Force authorities had given strict orders that no defective missiles were to be launched to avoid undesirable or embarrassing collateral damage. As the missiles unfolded their wings, fired up, fanned out, and headed for Iraq, the launch crews wheeled to the west and started homeward. The flight was half over, but not half flown.

DESERT STORM operations started at 03:00 A.M. The first Coalition strike was from eight Apache gun ships that destroyed two early warning radars in southern Iraq using Hellfire missiles fired from a range of four miles. The radars were protected by antiaircraft guns, but electronic countermeasures and a low-level approach prevented the gun laying radars from "seeing" the gun ships. The gun ships were followed by

ten stealth bombers–the first Coalition force to strike Baghdad. Pre-strike jamming of Iraqi radar defenses gave away the attack, so Iraqi anti-aircraft artillery lit the Baghdad sky with barrages of random fire. The Stealths sent their precision-guided bombs against telephone communications, Baghdad air defenses, and Saddam's war ministries, and came away unscathed. Six minutes after the Stealths left, SECRET SQUIRREL cruise-launched missiles were slamming into their targets.

Back over the Mediterranean, the SECRET SQUIRREL bombers ran into severe weather. Visibility dropped below two miles, the minimum for refueling. With only thirty minutes of fuel left, visibility improved enough for the refueling rendezvous with KC-10s from the Moron Tanker Task Force. Head winds higher than expected necessitated that each bomber take on 200,000 lbs. of fuel — 50,000 lbs. more than planned. Lt. Col. Beard had reason to worry about fuel. Four bombers were carrying 2,500 lbs. each of hung missiles. Two others were each dragging a pair of seized engines, and another two had fluctuating oil pressure readings.

As they headed into the Atlantic, some crew members tried to get some rest. It wasn't easy. On the lower deck, space was so cramped that the choice was to have one's head or feet in the urinal. Then weather turned foul again. They were lashed by head winds of 130 to 140 knots. No amount of searching to get out of the wind provided any relief. At Lajes the fierce winds grounded the tankers that were to give the bombers their fourth and last refueling. With fuel running low, Col. Beard radioed Moron AB for help. KC-10s rushed to the rescue. They stayed as long as they could, giving each bomber, except one, 50,000 to 60,000 lbs. of fuel, but had to break while they still had fuel enough to get back to Moron. A refueling malfunction and a shut-down engine left sortie 3, Capt. Charles E. Jones, Jr., A/C and crew in *Grim Reaper,* 40,000 lbs. less fuel than the other bombers.

The planes, with hung missiles, dead engines and still fighting head winds, continued to eat up fuel. Col. Beard realized they would need yet another refueling to avoid premature landings somewhere along the east coast. He managed to raise the Eighth Air Force Command Post at Barksdale on a secure frequency and two alert tankers from the 19th Air Refueling Wing, Robbins AFB, GA, met the bombers just off the coast. But the plague of the unexpected wasn't quite over.

One of the bombers was suffering from a faulty radio and was unable to communicate with the tanker. Using a special plane-to-plane communication system to relay messages, Col Beard got the ailing bomber and tanker together. Only then did everyone have enough fuel to limp back to Barksdale. Fighting the extra drag and head winds ultimately lengthened the mission by six hours!

It was nearly dark when the crews arrived at Barksdale. They wasted no time getting on the ground. The three aircraft with hung missiles were nosed into hangars until the missiles could be unloaded. The dog-tired crews went through a perfunctory debriefing, then back to quarters for a well-deserved rest. They had just completed the longest combat mission ever flown, covering 14,000 miles in approximately 35 hours, made the first salvo launch of AGM-86Cs in combat, and destroyed, or seriously damaged vital targets in Iraq. Yet their accomplishment remained cloaked in secrecy for exactly a year to protect the identity of the AGM-86C.

Aircraft	Provisional Wing	Base	Sorties	Combat Hours
57-6508	801st	Moron AB	5	79.3
57-6509	1708th	Jeddah	29	134.5
	801st	Moron AB	3	40.5
58-0176	801st	Moron AB	20	301.4
58-0181	801st	Moron AB	25	355.1
58-0245	801st	Moron AB	2	29.0
	806th	RAF Fairford	9	133.0
59-2580	801st	Moron AB	17	236.0
59-2590	801st	Moron AB	25	355.4
		Total	118	1,664.2

The CALCMs had been launched against eight, high priority targets, including electricpower generation and transmission facilities and military communications relay sites. Initially, it was difficult to assess the results. When the lights didn't come on in Iraq the following night, it wasn't known whether because of voluntary blackout or the result of the mission strikes. It proved to be a combination of both. Later reconnaissance showed that many of the CALCMs hit their targets dead-on. Of the 35 missiles launched, one fell in the launch area and was later found and destroyed, one was never accounted for and perhaps was shot down, and the remaining thirty-three were ultimately judged by SAC Intelligence to have achieved 85% to 91% of the target objectives.[28]

There was one other notable achievement of the mission — it was a demonstration that military "presence" had taken on new meaning. "Presence" no longer necessarily meant deployment or stationing of forces in forward areas overseas. As Air Force Chief of Staff, Gen. Merrill A. McPeak stated: " The 2d Bomb Wing is 'present' at Barksdale . . . and it is also 'present' twenty hours later, at any spot on the globe. And everybody knows that."[29]

The Operation SECRET SQUIRREL flight crews briefed Gen. McPeak in the Pentagon on September 19, 1991. Gen. McPeak declared..., "the accomplishment of this mission was impressive." Subsequent briefings of Secretary of Defense Dick Cheney, and Chairman of the Joint Chiefs, Gen. Colin L. Powell yielded similar comments.[30] (See Annex 24.)

A year later after the classification was removed, Eighth Air Force commander Lt. Gen. Martin J. Ryan, Jr., in a special ceremony at Barksdale, recognized the dedication and heroism of the men and women of the 2d Wing who had participated in this historic, longest mission. Each participating crew member was awarded the Air Medal for superb airmanship and demonstration of the USAF philosophy of *Global Reach - Global Power.*[31]

Operation DESERT STORM[32]

On January 17, 1990 at 3:00 A.M. (January 16, 7:00 P.M. Eastern Standard Time) Lt. Gen. Charles A. Horner ordered Phase I of the air war to commence. By 3 A.M. the moon had set and layers of clouds swirled over much of Saudi Arabia and up into Iraq. The objective was to gain air superiority. Coalition Forces flew 750 sorties from land bases, while the U.S. Navy and Marines launched another 228 combat sorties from the six carriers stationed in the Red Sea and Arabian Gulf. Command and control was furnished by USAF E-3A AWACS aircraft and U.S. Navy E-2C Hawkeyes. Two hundred different targets were hit on this opening aerial assault. It was the first time the world had seen precision bombing on a massive scale. Only one coalition pilot was lost.

KC-135s from the 71st ARefS were deployed to numerous bases in the theater including: Incirlik, Turkey; Riyadh, Saudi Arabia; Moron AB, Spain; and Lajes AB, Azores. Three 71st crews were involved in the strike against Iraq on that first night. Eight wings sent a total of 107 B-52Gs to participate in the Gulf War. Included were the seven aircraft from the 2d Wing listed in above chart.

B-52G, s/n 57-6509 carried the name *Nine-O-Nine*, in honor of a B-17 from the 91st Bombardment Group in England during WW II. This airplane is on display at the Eighth Air Force Museum at Barksdale. The remaining B-52Gs were retired to Davis-Monthan AFB during 1992.

In addition to the other deployments, several crews from the 2d were deployed to Diego Garcia where they flew B-52Gs provided by other SAC wings. This unit was known as the 4300th Bombardment Wing (Provisional), where the 42nd Bombardment Wing from Loring AFB, Maine was the lead unit.

The remaining 2d Wing B-52Gs were deployed from Barksdale AFB, to other SAC bases to preserve SAC's emergency war plan capability by replacing B-52Gs sent to the Gulf War. No combat aircraft were left at Barksdale during this period.

Scud Hunters

On January 18, Iraq countered with a Scud missile attack on both Israel and Saudi Arabia. A total of seven missiles were launched at Tel Aviv and Hafia. Another missile, aimed at Dhahran, missed by 1.5 miles. On the following day, Iraq launched three more Scuds at Tel Aviv. Throughout the war, Iraq employed its Al

Outhouse Mouse II, *was B-52G-90-BW, s/n 57-6508, stationed at Moron AB, Spain with the 801st Bombardment Wing (Provisional). The crew chief block on the 2d Bombardment Wing B-52s is in the form of a map of Louisiana with a star marking Barksdale. This aircraft was named in honor of the WW II* Outhouse Mouse, *B-17G from the 323rd Bomb Squadron, 91st Bombardment Group, Eighth Air Force in England. (Courtesy of Maj. Rod Lees)*

The remains of a SCUD missile and launcher after being attacked by U.S. airpower. (Courtesy of the United States Air Force via Air Force Association)

This is an SA-2 Guideline *surface-to-air missile employed by the Iraqis during the war in the Gulf. To the rear is a* Fansong *radar used to guide the missile. (Courtesy of the United States Air Force via Air Force Association)*

Hussein and Al Abbas mobile-launched Scud missiles. Hussein wanted to provoke Israel into retaliating, and thereby actually or tacitly joining the coalition. Hussein hoped that by so doing, the coalition would disintegrate as other Arab states would refuse to fight along side Israel against him. Israel was convinced to leave retailiation to the Coalition and was quickly furnished the U.S. Army Patriot defensive missile for some measure of self-protection and to help pacify a jittery populace.

The Scud is a mobile, mid-range tactical missile designed and manufactured by the Soviet Union, and exported to its satellite nations. It was sold in quantity to all Warsaw Pact nations and to Egypt, Iraq, Iran, Libya, South Yemen, and Syria. The Scud was first used in combat by Egypt during the 1973 Arab-Israeli War. Subsequently it was employed by both Iraq and Iran during their protracted eight-year war. The missiles are transported on large, eight-wheeled MAZ-543 mobile erector/launcher vehicles, which are easily camouflage during the day in residential areas. The Soviets had furnished the Iraqis with 45 to 65 of these vehicles; however, more could have been built locally. It was known by U.S. intelligence that the missiles required about one hour to fuel, thereby giving significant time for satellite infra-red detection. But the crafty Iraqis devised special insulated tankers which reduced infra-red detection. The Scud B has a range of 100-180 miles. With the help of Soviet technicians, Iraq made two longer-range versions of the Scud B known as the Al Hussein and Al Abbas. These missiles have ranges between 400-600 miles. The basic missile is 2' 9" in diameter and varies in length. The Scud B is 37 '4" in length. The missile fins are moveable and controlled by a primitive inertial guidance system. Neither missile is known for its accuracy (about a half mile) and serve mainly as a weapon of intimidation. The Al Hussein and Al Abba missiles have greater lengths for increased fuel capacity, but smaller war heads to compensate for the added fuel weight. The guidance system is less able to cope with the larger weapon, resulting in even less accuracy. The warhead on the Scud B weighs 1,892 lbs., and successively less on the Al Hussein and Al Abbas.

These missiles were well concealed during the day and extremely difficult to locate from the air. Fortunately, the U.S. had a counter-capability just emerging from development — the E-8A Joint Stars (JStars) aircraft. This nocturnal airplane prowled the skies locating targets of opportunity for the other Coalition aircraft. The *JStars* was deployed directly from test status, accompanied by manufacturer technical representations who flew actual combat missions to assure the operational capability of the aircraft. Developed by Grumman, on a former Boeing commercial 707-300 jetliner, the E-8A is a USAF/U.S. Army Joint Surveillance and Target Attack Radar System (Jstars), which is used for battle management. There are seventeen operator stations on board. The aircraft uses a variety of radars, including a new synthetic aperture radar which produces a photographic-like image road map of fixed targets or of selected geographic areas, and stores them for future use. The aircraft also carries the Wide Area Surveillance Moving Target Indicator, which detects, locates, and identifies moving targets. An advanced signal processor enables the E-8A to differentiate between wheeled and tracked vehicles. During Operation DESERT STORM, these aircraft even spotted barbed wire being moved by the desert wind at night! Un-refueled, the aircraft can fly for over seven hours.

The E-8A logged 535 combat hours during

the Gulf war. It directed numerous types of tactical aircraft, including the B-52Gs. According to Maj. Gen. John A. Corder, CENTAF Director of Operations, the B-52s flew along roads that were known to be traveled by the Scud vehicles in the western combat area. In what became known as the "Giant Scud Hunt," Coalition aircraft flew 2,493 sorties against these targets, thereby reducing the Scud attacks from five per day during the first 10 days of combat to an average of one per day for the remaining 30 days. On the night of February 13, the E-8A detected an Iraqi armored division as it began to move, and a B-52 cell was directed to attack this rich target. On another occasion, Scud missiles were detected on flat cars in a marshalling yard and the B-52s were called in to destroy them.

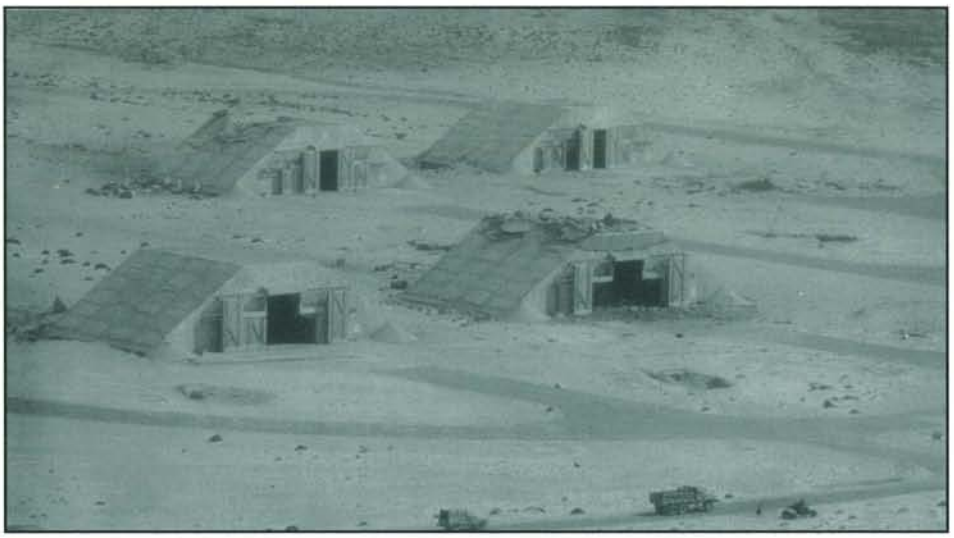
B-52 Night Bombing

Beginning with the opening night, B-52Gs from the three provisional wings flew three-ship cells on low-level, multi-axis attacks — a combat tactic developed in the mid-1980s. Three B-52s would penetrate a target area, at near simultaneous times, from three different directions, flying at speeds of 400 knots and approximately 200 feet above the ground. The tactic was designed to saturate a target and foil or confuse defenses. Navigation and timing from the IP, on these attacks, were extremely critical to assure success of the tactic and to avoid collision with fellow raiders. One crew member reported how loud the antiaircraft fire sounded even above the roar of his aircraft's eight thundering engines.

Crews from the Wing's 62nd Squadron led the first-ever, night, low-level, combat sorties through mountainous terrain, in adverse weather, to strike vital targets in north, central and southern Iraq. The 62nd's crews flew 12 of these missions and over 220 high level sorties and dropped in excess of one million pounds of bombs. These numbers represented 20% of all bomber ordnance dropped. "Consistency and total team effort helped us become the best in the command." said Lt. Col Michael L. Chase, the Squadron commander.[33]

Several of the 62nd's crews were honored for their courageous and meritorious performance on that opening night. Capt. Christopher S. Hoefly, of the 2d Wing's 62nd Bomb Squadron, was flying B-52 s/n 59-2585 out of Diego Garcia, in the Indian Ocean. He and his crew were using the night low-level attack tactic against an Iraqi airfield. In the face of heavy antiaircraft defenses and enemy fire, and extremely limited visibility over unfamiliar enemy territory, the crew pressed the attack. The raid denied the enemy the ability to conduct operations out of the airfield.[34] Capt. Hoefly was awarded the DFC, and his crew Air Medals for this mission. The crew landed at Jeddah after flying the 12.2-hour mission. The aircraft and crew were then reassigned to the 1708th Bombardment Wing (Provisional) at Jeddah.

Captains Frank Ochello, Tim Leaptrott, Gary Scott, and T/Sgt John Wright entered Iraq at night from the north, penetrating mountainous terrain at low level in zero visibility because of weather and successfully struck their target. Capt. Charles Perez also on this first low-level night assault against Iraq successfully attacked an airfield in southern Iraq. All of these men were awarded the DFC.[35]



These hardened shelters, built by Soviet advisors for the Iraqi Air Force, were no match for U.S. airpower. (Courtesy of the United States Air Force via Air Force Association)

That first night Coalition aircraft, of almost every type, struck critical command and control, communications, and power stations in Iraq. Later, the B-52s hammered the elite Iraqi Republican Guard inside Kuwait. A captain from the 2nd Wing assigned to the 4300th Bombardment Wing (Provisional) on Diego Garcia, recalls seeing an unforgettable sight on his forward looking infrared/electro-optical viewing screen – Iraqi troops raising their heads as the B-52s thundered overhead. Nothing happened, except a load of bombs with time-delayed fuses were dropped. Later, back at the officer's club on Diego Garcia some crew member would stand up at 15-minute intervals and shout "BOOM!" – to mimic the bombs exploding on Iraqi troop concentrations in Kuwait.

On the second night, January 18, Capt. Timothy Leaptrott, A/C, and crew from the 2d, in *Nine-O-Nine*, s/n 57-6509, flew from the provisional wing at Moron AB, Spain to make a low-level attack on a suspected Iraqi chemical, biological, and radiological research facility near Mosul. The rest of the crew consisted of Capt. Bryan Ellsworth, CP; Capt. Timothy Puhr, RN; Capt. Tony Ramos, EWO; and S/Sgt. James Sellen, G. The crew received the DFC for their airmanship in attacking this very crucial target.

Another crew from the 2nd Wing was flying on the third night and sustained antiaircraft fire at an altitude of 35,000 feet. The blast ruptured the cabin pressurization system, and the aircraft suffered a rapid decompression. Sudden decompression is a startling sensation , but very survivable if oxygen is quickly used, *and* there is no failure of cabin structural integrity sufficient for occupants to be blasted out of the airplane. Unlike the airlines, where oxygen masks are to be donned in the event of decompression, combat crews routinely fly on oxygen when over hostile territory for safety reasons and to improve their senses

S/Sgt. James D. Protzman, the boom operator on a KC-10 from the 2nd ARefS, was credited with saving a battle-damaged A-10 Warthog and its pilot. Sgt. Protzman snagged the ailing aircraft by its refueling receptacle with the refueling boom latches on his KC-10. The KC-10 crew was then able to drag the ailing aircraft back over friendly territory in Saudi Arabia where the pilot made a safe, dead-stick landing. S/Sgt. Protzman was rewarded with the Air Medal for his skill. [36]

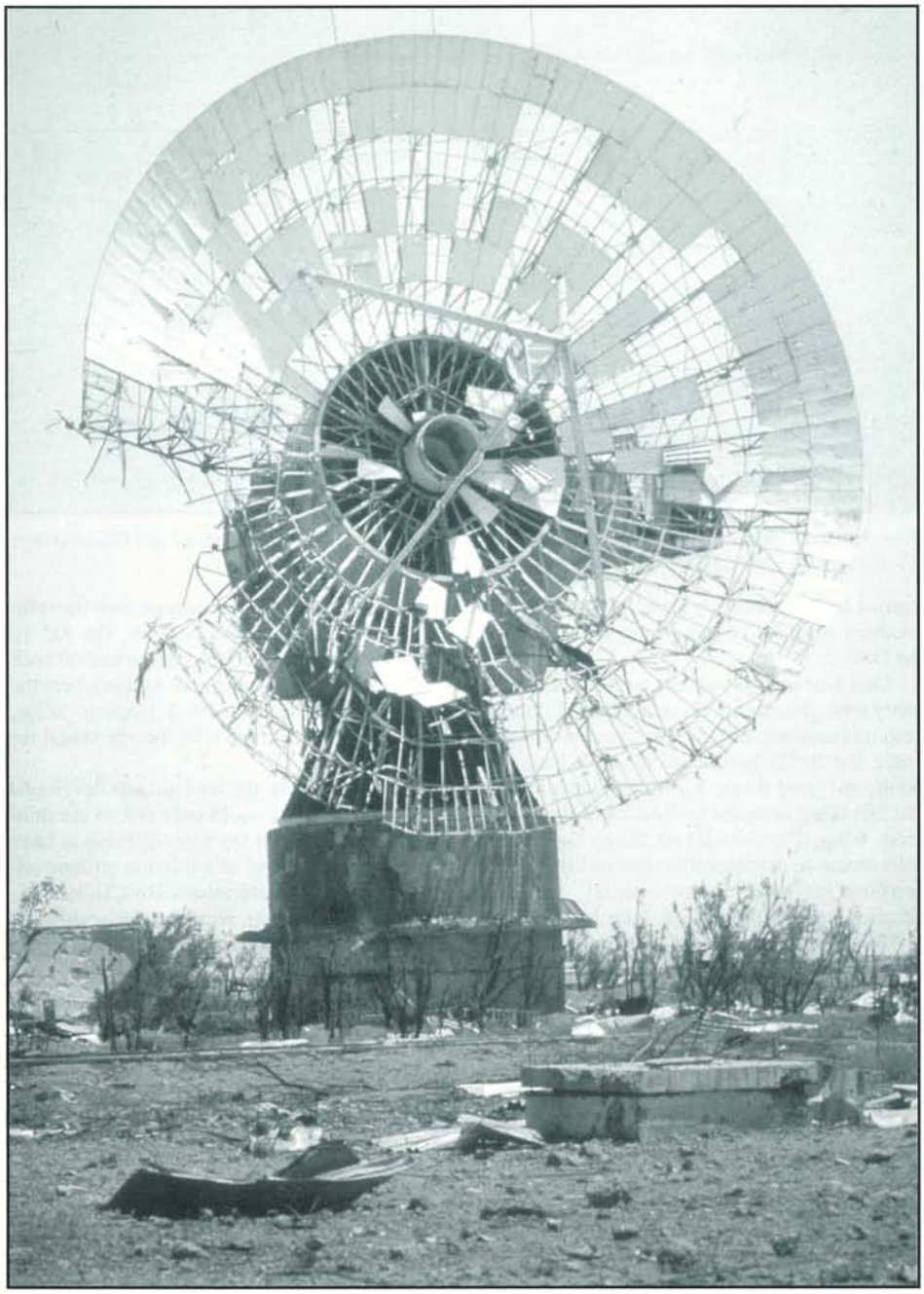
On one mission, the lead aircraft developed radio problems and could only talk to the third aircraft in the cell. It becomes difficult to have command and control of a mission without adequate radio communications. Rick Holt, copilot in the lead aircraft, was knowledgeable and innovative enough to restore the radios.

Shortly after takeoff from Moron AB on another mission, the aircraft air conditioning system went to full cold. The water jugs froze. The entire crew was freezing. They took off their boots and put their feet in their helmet bags and used the high-powered Aldus signal light to heat their feet. Despite their predicament, the crew successfully completed the mission.

One crew from the 2d reported dodging a Scud missile while inbound to the target! They tracked it with their electro-optical viewing system — one of the 1985 up-grades to the B-52 to enhance its low-level operating capability.

The B-52s engaged in a series of counter-air attacks against Iraqi airfields and weapons storage areas, helping to paralyze Saddam's air force. After just a week of bombing, only about five Iraqi airfields were operational. The enemy hid his aircraft in farm buildings and even put some next to a famous archeological site to spare them from the devastating air attacks. By January 23, Coalition forces had control of the air. Initially, the B-52 strikes were conducted only at night, but with advent of air supremacy, these bombers flew around the clock.

A cell of six KC-10s, commanded by Col. Marcotte, took off from Moron AB, Spain at 4:00 P.M., January 28, to refuel six B-52s en route to targets in Iraq. Capt. Bob Burton, 2d Wing Chief of Safety, was an observer on tanker number 6. About 9:00 P.M., and with the refueling a half hour away, the boom operator on number 6 became violently ill from food poisoning, and was incapacitated. The aircraft commander advised Col. Marcotte of the emergency, while Capt.



This is an example of Coalition action against a Soviet-built radar antenna which was part of Saddam Hussein's air defense system. (Courtesy of the United States Air Force via Air Force Association)

Burton administered oxygen and water to the boom operator. Marcotte advised the crew to accomplish the refueling any way possible. Burton and the flight engineer carried the ailing boom operator to the refueling station. The engineer returned to his normal station on the flight deck. Burton went through the refueling check list as the boom operator nodded yes or no. Burton instructed the B-52 commander to make contact on his first approach, which he did. The refueling was completed successfully, and the B-52 crew took on 160,000 lbs. of fuel, enough to complete their mission. Capt. Burton took the boom operator back to the flight deck and continued to give him water and oxygen. The still ailing operator was turned over to a waiting flight surgeon on return to Moron. Capt. Burton was awarded the Air Medal for his performance during this emergency.

According to Maj. Gen. Corder, CENTAF Director of Operations, the B-52s were a superb psychological weapon, especially before the land battle began. Our troops could feel the ground shake and see burning Iraqi tanks ahead of them. Psychological warfare airplanes went in dropping POW passes and leaflets informing the Iraqis what they could expect if they did not leave Kuwait. Next came the *giant rototiller in the sky* — the B-52s — unleashing havoc on troop and tank concentrations. The B-52s hammered unmercifully on the Iraqi army at three-hour intervals. Iraqi POWs poured over the lines with ruptured ear drums and bleeding sinuses. They were completely shell-shocked. Iraqi prisoners talked of their fear of the aircraft. Iraqi tank troops, who viewed their tanks as a battlefield haven, came to fear them because they kept being blown up.

Just prior to the Coalition ground assault, the Marines expressed concern over the barbed wire entanglements ahead of them. The B-52s were called in to destroy the concertina wire, thereby clearing the way for the Marines.

The last mission in the Gulf War was flown on February 28, 1991. A force of 14 F-111s, based at Incirilik, Turkey, and 16 B-52s struck Taji, a large military-industrial complex just north of Baghdad.

The Gulf War air campaign was carried out in four phases. Phase I were the strategic sorties flown against key targets in Iraq, mainly around Baghdad, between January 16 and 18. Phase II were the air defense suppression sorties flown to gain air superiority. A limited number of sorties were flown between January 16 and February 28 against Iraqi airfields and their integrated air defense system. In Phase III, coalition air forces attacked the Iraqi field army. This phase was to isolate the army by denying it supplies and reinforcements, to systematically destroy its armor, artillery, and vehicles, and to demoralize its will to fight. In Phase IV the air forces supported the Coalition ground force offensive starting on G-Day, February 24 and continuing until the cease fire was ordered on February 28.

The last major redeployment of the Wing during 1991 occurred on April 17, when Col. Marcotte, Wing personnel, and the aircraft returned from Moron AB, Spain to Barksdale.

On September 16, 1991 Eighth Air Force Commander, Lt. Gen. Martin Ryan, awarded the decorations described above to members of the 2d Bombardment Wing who had distinguished themselves during the Gulf War. At this same ceremony, Col. Marcotte was awarded the Bronze Star for meritorious service as the commander of 801st Bombardment Wing (Provisional). He quickly established combat operations and directed 293 combat strikes, crippling Iraq petroleum storage, electrical generation, and weapons production and storage capabilities. His rapidly-organized depot level maintenance function supported 45 bombers and 250 tankers at 16 forward operating locations, and produced an average aircraft mission-capable rate of over 90%, which exceeded even peacetime standards.[37] (Note: Initially there were very few decorations awarded to the air crews for the Gulf War. Some air crew commanders felt there was an inequity in the way decorations were awarded, particularly the Air Medal. Some Air Medals went to individual crew members and some to entire crews without a perceivable distinction as to why. Following appeals to review the awards process, additional decorations were awarded in 1995.)

During both Operation DESERT SHIELD (the build-up), and Operation DESERT STORM (hostile operations), members of the 2d Wing bomber and refueling units distinguished themselves in a myriad of air operations. During DESERT STORM, 2d Wing tanker squadrons were an integral part of the tanker force that flew almost 17,000 sorties, completed nearly 52,000 air combat refuelings, and transferred more than 123.0 million gallons of fuel. The 2d Wing tankers alone off-loaded more than 17.0 million gallons of fuel and flew in excess of 1,800 sorties. Perhaps more than in any other campaign, aerial refueling was vital to getting air forces into the theater quickly, and once hostilities started, sustaining around-the-clock operations.