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INDEX TO NUCLEAR ACCIDENTS

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1-24 CLASSIFIED NUCLEAR ACCIDENTS:

DATE	SYSTEM	LOCATION
OCT 11, 1965	C-124	WRIGHT-PATTERSON AFB, OHIO
DEC 5, 1965	A-4	AT SEA, PACIFIC
JAN 17, 1966	B-52	PALOMARES, SPAIN
SPRING, 1968		AT SEA
SEP 19, 1980	ICBM	TITAN II AT DAMASCUS, ARKANSAS

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25-32 UNCLASSIFIED NUCLEAR ACCIDENTS:

DATE	SYSTEM	LOCATION
FEB 13, 1950	B-36	PACIFIC OCEAN, OFF COAST OF BRITISH COLUMBIA
APR 11, 1950	B-29	MANZANO BASE, NEW MEXICO
JUL 13, 1950	B-50	LEBANON, OHIO
AUG 5, 1950	B-29	FAIRFIELD SUISUN-AFB, CALIFORNIA
NOV 10, 1950	B-50	OVER WATER, OUTSIDE UNITED STATES
MAR 10, 1956	B-47	MEDITERRANEAN SEA
JUL 27, 1956	B-47	OVERSEAS BASE
MAY 22, 1957	B-36	KIRTLAND AFB, NEW MEXICO
JUL 28, 1957	C-124	ATLANTIC OCEAN
OCT 11, 1957	B-47	HOMESTEAD AFB, FLORIDA
JAN 31, 1958	B-47	OVERSEAS BASE
FEB 5, 1958	B-47	SAVANNAH RIVER, GEORGIA
MAR 11, 1958	B-47	FLORENCE, SOUTH CAROLINA
[illegible] 4, 1958	B-47	DYESS AFB, TEXAS
NOV 26, 1958	B-47	CHENNAULT AFB, LOUISIANA
JAN 18, 1959	F-100	PACIFIC BASE
JUL 6, 1959	C-124	BARKSDALE AFB, LOUISIANA
SEP 25, 1959	F-5M	PACIFIC OCEAN, OFF WASHINGTON-OREGON COAST
OCT 15, 1959	B-52/135	HARDINSBERG, KENTUCKY
JUN 7, 1960	BOMARC	MCGUIRE AFB, NEW JERSEY
JAN 24, 1961	B-52	GOLDSBORO, NORTH CAROLINA
MAR 14, 1961	B-52	YUBA CITY, CALIFORNIA
NOV 13, 1963	IGLOO	AEC/MEDINA BASE, TEXAS
JAN 13, 1964	B-52	CUMBERLAND, MARYLAND
DEC 5, 1964	ICBM	LGM 30 MINUTEMAN AT ELLSWORTH AFB, SD
DEC 8, 1964	B-58	BUNKER HILL (GRISSOM) AFB, INDIANA

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OCT 65

October 11, 1965/C-124/Wright-Patterson AFB, Ohio

Section I: Narrative (U)

(U) The aircraft was being refueled in preparation for a routine logistics mission when a fire occurred at the aft end of the refueling trailer. The fuselage of the aircraft, containing only components of nuclear weapons and a dummy training unit, was destroyed by the fire. There were no casualties. The resultant radiation hazard was minimal. Minor contamination was found on the aircraft, cargo, and clothing of explosive ordnance disposal and fire fighting personnel, and was removed by normal cleaning.

Section II: Commander's Summary (U)

(1) (U) The aircraft, C-124C 330010, arrived at Patterson Field, WPAFB, Ohio, for scheduled RON and delivery of material to the 17th Bomb Wing, SAC. The aircraft was operating on a scheduled MATS special mission.

(2) (S-RD) The aircraft load consisted of:

(A) [redacted]

(B) [redacted]

(C) [redacted]

(D) Miscellaneous classified and unclassified cargo.

(b)(1)
(b)(3)

(3) (U) Initial response (0555Z) to the accident was made on the basis of an aircraft and a refueler fire, since the shipment had not been identified as "hazardous cargo" (AFR 55-14 and T.O. 11N-20-11).

(4) (S) [redacted]

(b)(1)

(5) (S-RD) Approximately four hours after the fire started, the base command post was able to confirm with a SAAMA representative that the shipment contained an inert trainer and [redacted] Initially, [redacted] information was without meaning to these individuals. The information was discussed with the EOD officer who confirmed that the material contained [redacted] would constitute a hazard. From this point, the accident was treated as if it were contaminated. Personnel pulled back from the scene and EOD prepared to re-enter to monitor the area.

(b)(1)
(b)(3)

(6) (S-RD) EOD personnel again entered the aircraft at approximately 1245Z to monitor the area [redacted] and to confirm condition of the cargo. Monitoring did not indicate contamination. Swipes were taken and dispatched for processing by the Health Physics Laboratory.

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(7) (U) Based on the negative results from the monitoring [redacted] the EOD detachment obtained pictorial coverage and proceeded to unload the A/N containers. The local health physics personnel responded and proceeded to: (b)(1) (b)(3)

(A) Establish a decontamination station near the scene.

(B) Obtain urine samples from all personnel that had been involved in responding to the accident.

(C) Obtain additional samples from the aircraft and the surrounding area and removed material for processing by the USAF Radiological Health Laboratory, WPAFB.

(8) (S-RD) At approximately 1600Z, the base command post instituted Broken Arrow procedures. This was based on confirmation from SAAMA that [redacted] were aboard and upon advice from the AFLC Command Post that such action should be taken. (b)(1) (b)(3)

(9) (C) Based upon initial results from the swipe tests and advice from health physics representatives, all further action to unload the aircraft was suspended until completion of personnel decontamination. EOD personnel then completed unloading of all cargo except the trainer. The material was moved [redacted] and secured. (b)(1)

(10) (C) The following day (13 October 1965) was primary devoted to obtaining an inventory of the nuclear items. Material was obtained for subsequent repackaging. The Atomic Energy Commission, Sandia Corporation, MATS, AFLC and HQ USAF personnel had arrived to advise and assist as needed. Results from the initial health physics processing of urine and swipes were obtained for use in determining further action.

(11) (S-RD) During the morning of 14 October 1965, a conference was held to formulate a detailed plan for subsequent action. Members of the accident investigation board conducted a detailed examination of the aircraft, refueler and nuclear material. The board then released the aircraft and refueler to the base for decontamination, salvage and/or destruction as appropriate. The EOD personnel, assisted by the AEC and USAF representatives, proceeded to open the A/N containers, identify the contents and repackage them for shipment. Throughout this process swipe samples were taken for determining levels of contamination. The [redacted] were used to insure against hazardous concentrations of radioactivity. Protective clothing was worn. The [redacted] was unloaded and clean-up of the area proceeded. (b)(1) (b)(3)

(12) (S-RD) Clean-up and flushing of the aircraft and accident area was accomplished 15 October 1965. Results of monitoring indicated initial estimates, as to the amount of contamination were considerably higher than actually experienced. Significant results were provided by message supplement 7, EWE 05418. Engines were removed and the aircraft was prepared for movement to a different location for burning. The EOD personnel completed repackaging [redacted] The material was disposed of:

(A) [redacted] (b)(1) (b)(3)

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(B) [redacted]

(b)(1)
(b)(3)

(C) [redacted]

(D) [redacted]

(13) ~~(C)~~ On 16 October 1965, residue and waste material from the inside of the aircraft cargo compartment was removed to a dump located on base. The remains of the aircraft were taken to the designated area and burned. Additional burning was required and was accomplished on 20 October 1965.

(14) ~~(U)~~ The base response to the accident was both timely and effective. As a result of insufficient information, there was some delay in recognizing that nuclear accident procedures should be instituted. After the significance of the nuclear material was learned, Broken Arrow procedures were used.

SECTION III: Type and Extent of Contamination ~~(U)~~

(1) ~~(S-RD)~~ Initial radiological monitoring of the accident site was conducted by the EOD team using a [redacted] Results of this monitoring showed zero contamination. Based on this information, the EOD team unloaded the aircraft and arranged for [redacted] The AEC representatives arrived at the scene prior to removal of the last flat bed load of material to the [redacted] They took readings with their own [redacted] and observed a very slight indication on the [redacted] meter. Concurrent with the recovery operation, the health physics branch initiated its laboratory procedures to determine the extent of contamination inflicted upon the personnel connected with the accident. The material was stored [redacted] EOD team, health physicists, and AEC representatives monitored, unpacked, decontaminated and repacked the material. Utilizing the [redacted] in the storage and repack area indications of contamination were detected, none of which were considered worthy of alarm. Preliminary results of the health physics branch follow: this information is a resume of a small portion of the samples collected for the analysis of this incident. These initial samples were taken to provide guidelines of operations for those personnel intimately connected with the recovery problem. Approximately eight hundred samples were taken and a more accurate report is available at the radiological health laboratory.

(b)(1)
(b)(3)

(A) Urine Samples: Highest concentration found to date was that of [redacted]

(b)(6)

(2) (S-RD) Clothing Monitoring: The clothes were placed in plastic bags agitated and sniffed using the [redacted] Of the clothes examined in this manner, only those worn by three (3) EOD personnel and one (1) maintenance man showed an indication above normal background on the [redacted] showed no reading above zero. Swipe tests on the boots worn by [redacted] Normal washing or dry cleaning would be adequate to remove this contamination from the clothing.

(b)(1)
(b)(3)
(b)6

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(3) [redacted]

(4) [redacted]

(b)(1)
(b)(3)

(5) [redacted]

(6) [redacted]

[redacted]

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DEC 65

December 5, 1965/A-4/At Sea, Pacific

Section I: Narrative (U)

(U) An A-4 aircraft loaded with one nuclear weapon rolled off the elevator of a U.S. aircraft carrier and fell into the sea. The pilot, aircraft, and weapon were lost. The incident occurred more than 500 miles from land.

Section II: Commander's Summary

(S-FRD) An A4-E aircraft [redacted]

(b)(1)
(b)(3)

(S-FRD) Recovery Actions: [redacted]

(b)(1)
(b)(3)

(U) Weather: Sea was relatively calm: Sea 350 degrees, 2 seconds, 1 foot; swell 010 degrees, 5 seconds, 3 feet. Water temperature 79 degrees fahrenheit. Visibility was 10 miles. Wind at 340 degrees, 25 knots, Deck had very little motion and was dry and free of oil spills.

Section III: Management Summary

(U) [redacted]

(b)(1)
(b)(3)

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JAN 66

January 7, 1966/B-52/KC-135/Palomares, Spain

Section I: Narrative (U)

(U) The B-52 and the KC-135 collided during a routine high altitude air refueling operation. Both aircraft crashed near Palomares, Spain. Four of the eleven crew members survived. The B-52 carried four nuclear weapons. One was recovered on the ground, and one was recovered from the sea, on April 7, after extensive search and recovery efforts. Two of the weapons' high explosive materials exploded on impact with the ground, releasing some radioactive materials. Approximately 1400 tons of slightly contaminated soil and vegetation were removed to the United States for storage at an approved site. Representatives of the Spanish government monitored the cleanup operation.

(U) Section II: Commander's Summary Classified

(U) General: Palomares, a small remote community of the Spanish Mediterranean coast, will long remember the date 17 January 1966 when a B052 bomber and a KC-135 tanker collided high overhead. Aside from interrupting the quiet existence of the residents of Palomares, this mid-air collision changed the Spanish policy of United States aircraft overflights, and threatened the U.S. Air Force airborne alert posture.

(U) The aircraft involved were part of a formation of two B-52's and two KC-135's using the Saddle Rock Refueling Area. The weather was clear with winds from the NNW at 60 knots, 30,000 feet to westerly at 20 knots on the surface. Aircraft wreckage was strewn over a wide area, portions of the B-52 fell off-shore.

(S-RD) The initial apex BEELINE report of a probable aircraft accident was made by the 16th Air Force Command Post at 10402. Confirmation of the accident was forwarded by 16th Air Force at 11222. The 68th Bomb Wing at Seymour-Johnson AFB, North Carolina, home base of the B-52, confirmed that four [redacted] weapons were aboard the aircraft.

(b)(1) (b)(3)

(U) Maj Gen Delmar E. Wilson, Commander of 16th Air Force, Torrejon AB, Spain, proceeded immediately to the site with a disaster control team. Later the same day, a team from the 7410th EOD Squadron USAFE, was airlifted to the scene. The SAC disaster control team, commanded by Maj Gen William B. Campbell requested MAC to divert a C-135 to Kirtland AFB, New Mexico, where the Director of Nuclear Surety, Col W. E. Gernert, and a team of atomic experts from the U.S. Air Force Directorate of Nuclear Safety, Los Alamos Scientific Lab, Atomic Energy Commission, Sandia Corp., and Defense Atomic Support Agency were airlifted to Torrejon AB. They were accompanied by Col H.W. Ritter and Mr. Sidney Berman, representatives of flight safety.

(U) The weapons were numbered in the order in which they were discovered. They had been positioned in the MHU-20C as follows: Number 1, upper left; Number 2, upper right; Number 3, lower right, and number 4, lower left.

(S-RD) Weapon No. 1: Weapon No. 1 was located in a terraced, cultivated area about 1 mile southeast of the village of Palomares and several hundred yards from the beach. This weapon was essentially intact. [redacted]

(b)(1) (b)(3)

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(b)(1)
(b)(3)

[redacted]

(S-RD) Weapon No. 2: Weapon No. 2 was located in low rolling hills about 1 mile west of Palomares. The high explosives (HE) had experienced a low order detonation. [redacted] was found in a crater about 20 feet in diameter and six feet deep. A damaged [redacted] was found 25 feet from the crater. The [redacted] were found about 100 yards from the impact point. [redacted]

(b)(1)
(b)(3)

(S-RD) Weapon No. 3: Weapon No. 3 was found in a cultivated area on the eastern edge of Palomares. The HE in this weapon also experienced a low order detonation. [redacted] there was plutonium contamination in the area.

(b)(1)
(b)(3)

(U) The tail coverplate of weapon No. 4 was found on land with the support rings and MDF intact. No other traces of this weapon were found until the weapon was located on the ocean floor.

(S-RD) Contamination: As radiological monitoring moved outward from the impact points of weapons No. 2 and 3, the contaminated area was established. From ground zero of weapon No. 2, initial [redacted] Contamination was caused by the scattered plutonium and uranium.

(b)(1)
(b)(3)

(U) Immediate requirements existed to detect and mark the large areas of contamination and to locate and recover the No. 4 weapon. Personnel and equipment were dispatched to this area until a peak population of over 700 was reached at "Camp Wilson." Over 40 PAC-IS radiation detection instruments were used by the monitors. It became apparent that an accident of this scope required field reliable instruments and thoroughly trained operators.

(U) Once the weapon components were recovered and the contaminated area well defined, the problem of "what to do about it" came next. With the agreement of the Spanish Government, the top soil of the very highly contaminated areas was removed, placed in barrels, and returned to the continental U.S. The lesser contaminated areas were plowed and watered until the count was reduced to an insignificant level. All crops and other vegetation under 400 CPM were

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removed from the highly contaminated areas and disposed of. The tomatoes from low-level radiation areas were purchased by the Air Force and, after washing, were consumed by the camp complement, "Warner's Warriors."

(S-RD) The search for Weapon No. 4: During the detection and cleanup of the contaminated areas, an equal force was busily engaged combing a large area for the missing No. 4 weapon. This area was crossed and re-crossed by searchers at arm's length. The area was searched in minute detail with personnel looking for holes [redacted] in the event a mid-air break up of the weapon had occurred. Many small depressions and open mine shafts were marked and systematically probed in an effort to locate the weapon component.

(b)(1)
(b)(3)

(U) A systems analysis team composed of personnel from the AEC Albuquerque Operations Office, Sandia Corporation, System Evaluation Group (Wright-Patterson AFB), and the Directorate of Armament Development (Eglin AFB, FLA), was appointed to study the problem and define the probable impact area of the No. 4 weapon and/or weapon parts. This team, aided by computer runs at Sandia Corp, established the probable aircraft impact point, probable point at which weapons were forceably released and possible areas to search for the missing weapon. Two theories, both with some supporting evidence, pointed to the Mediterranean Sea as the resting place.

(S-RD) One of the two salt water solutions would have the weapon striking a portion of falling aircraft debris resulting in a low order detonation. There was some unexplained low-level contamination on several aircraft parts and in the initial urinanalysis of one of the survivors. Also, eyewitness reports of deployed parachutes described two, in particular, that would account for the 16-foot chute with large chute bag attached and the 64-foot chute with only the [redacted] attached.

(b)(1)
(b)(3)

(S-RD) The second theory postulated that the weapon tail cover plate was torn off when the weapon was thrown free of the aircraft, deploying the parachutes. This would allow the weapon to descend in a retarded condition. The sighting of a large chute apparently reefed in a figure eight appearance lent credence to this solution. Since only the cover plate was found and the large chute would cause the bomb to drift out to sea during descent, this was finally selected as the more logical theory.

(U) Based on crew member reports from several fishing boats concerning the estimated positions of the parachutes and recovery of survivors, a primary water search area was established. A Navy task force, commanded by RADM William Guest, conducted the underwater portion of the recovery operation. Sonar was used to detect suspected objects. The location of each sounding was charted and numbered for later examination by deep submersible vehicles.

(U) Recovery of Weapon No. 4: On the 15th of March at 1100Z, the two-man submersible device named "Alvin" located an object with an attached greyish parachute resting on a 70-degree slope at a 2550 ft depth. The chute was tangled with the object, covering most of it. The following day, underwater photographs of the object were evaluated by a team composed of AEC and Air Force EOD personnel. The civilian crew of the Alvin also examined photographs of weapons and clip-in racks. Both groups were convinced that the object was the missing weapon with a portion of the clip-in assembly still attached.

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(U) Sea conditions and the necessity for careful planning delayed the recovery attempt until 23 March. Improved conditions on 24 March led to the first attempt to recover the weapon. The plan was to move the unit up slope to a more shallow, level area where divers could be used for final recovery. During this attempt, the nylon cable fastened to the weapon was cut and contact with the weapon was lost.

(U) On 2 April, the Alvin again located the weapon. It had moved down slope to a depth of 2,900 feet. Again, preparations were initiated to recover the unit. Early on the morning of 7 April, the Curv, an unmanned torpedo-recovery vehicle, became firmly entangled in the weapon parachute while attempting to attach a third towing line. At this time, it was decided to raise the Curv and weapon together. When the weapon was approximately 100 feet below the surface, divers attached a steel cable fore and aft of the bomb lift lugs. The unit was then hoisted aboard the recovery vessel where a composite Air Force/Navy EOD team was standing by to perform the rendering safe procedures. Minimum rendering safe procedures were performed in order to maximize post mortem investigation.

(S-RD) The recovered weapon was in surprisingly good condition, considering the environment to which it had been subjected over the past 80 days. [redacted]

(b)(1)
(b)(3)

(S-RD) The rendering safe procedures accomplished by the joint Air Force/Navy team were monitored by the Air Force, Navy, and AEC representatives. [redacted]

(U) The disassembled weapon was mounted in a J-79 engine container, and sand was poured around the warhead section. The other components were packed separately in either end of the container.

(U) Throughout the render safe procedures and preparation for shipment, monitoring was conducted with T-290, PDR-27 and PDR-56 radiac instruments. There was no detection of contamination above background level for the weapon.

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(U) Camp Wilson was closed on Easter, 10 April 1966 and Navy Task Force 65 was deactivated on 11 April 1966. To many support agencies and especially those who wear the insignia of the Broken Arrow and the Black Beret and specially to Maj Gen Delmar E. Wilson who commanded and coordinated all phases of the search and rescue operation --- job well done.

(U) Section III: Site Management Summary

(U) Initial Response: Spanish Guardia civil assumed security responsibility for the accident shortly after the accident occurred. The disaster control team from Torrejon AB arrived at the accident site at 1230Z on 17 January, with Maj Gen D.E. Wilson as the on-scene commander.

(U) SAC Disaster Control Group: Arrived 0630Z, 18 January, with MGEN Beck in charge. Col Rhodes assumed command when MGEN Beck departed on 22 January. The AEC scientific group arrived 1530Z, 18 January, headed by D.J. Hart. The Junta De Energia Nuclear (Spanish AEC), under the direction of Edwardo Ramos and Emilio Irazo, arrived 20 January. The CTF-65 (U.S. Navy) undertook sea search and recovery operations, under RADM W. Guest, 6th Fleet, who assumed command on 23 January. General A. Montel was the Spanish representative for most of the recovery and cleanup.

(U) Cleanup: Negotiations began 23 January between the Spanish and American officials to arrive at a satisfactory solution to the problem of health considerations and psychological and economic impacts. Changing attitudes on leaving the contamination in Spain resulted in negotiations being conducted by the U.S. Embassy and JUSMG-MAAG with their Spanish governmental counterparts during the week of 14 February. On 24 March, the last barrel of contamination was moved off the beach. On 1 April, all land in the contaminated zone has been placed in a condition acceptable to the spanish owners. On 10 April, Camp Wilson, the base camp for recovery operations, was closed. On 11 April, CTF-65, the Navy element of the recovery operation was deactivated.

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JAN 68

January 21, 1968/B-52/Thule, Greenland

Section I: Narrative (U)

(U) A B-52 from Plattsburgh AFB, New York, crashed and burned some seven miles southwest of the runway at Thule AB, Greenland, while approaching the base to land. Six of the seven crew members survived. The bomber carried four nuclear weapons, all of which were destroyed by fire. Some radioactive contamination occurred in the area of the crash, which was on the sea ice. Some 237,000 cubic feet of contaminated ice, snow, and water, with crash debris were removed to an approved storage site in the United States over the course of a four-month operation. Although an unknown amount of contamination was dispersed by the crash, environmental sampling showed normal readings in the area after the cleanup was completed. Representatives of the Danish Government monitored the cleanup operations.

(U) Section II: Commander's Summary - Classified

(S-RD) This report is the summary of the search and recovery operations conducted by the SAC disaster control team near Thule AB, Greenland, following the crash of a B-52 with four [redacted] nuclear weapons aboard. SAC Command Post was notified that a crash had occurred at 2039Z. The Disaster Control Team was alerted, assembled, briefed, and then dispatched at 0125Z January 22, 1968. Arrival time at Thule was 0544Z. The Deputy Base Commander provided a status briefing. The aircraft crashed seven miles from the base on Wholstenholme Fiord. Helicopter pilots reported that no major portion of the aircraft was visible, that a large elongated burn area was evident, and that landing in the crash area was unsafe due to a "white out" caused by the rotor down-wash. Vehicles were not permitted to travel on the ice because its strength was unknown.

(b)(1)
(b)(3)

(S) First Actions: The Deputy Base Commander arranged for Mr. Zinglersen, a Danish civilian, to serve as a guide and interpreter. The guide made arrangements for dog sleds and Greenlander drivers to carry two explosive ordnance disposal men and two radiation monitors out to the crash site. Upon their return, this initial reconnaissance team summed up the general situation. A short period of half light existed at mid-day. Random monitoring for beta and gamma at the scene indicated no nuclear yield. The presence of alpha was evident on individual pieces of debris and throughout the burn area. Weapon para-packs were found, but no major portion of the aircraft was observed. The severe cold caused radiological equipment failures within a relatively short period of time. The team, the guide, and the Greenlander drivers all registered light contamination when monitored upon return.

(U) Organization: A disaster control team command post was established in the base service club, and the team was organized to make the best use of the talents available. A total of 68 people had arrived, including the SAC team. Other commands or agencies represented were Air Force Logistics Command, Directorate of Nuclear Safety, Defense Atomic Support Agency, Atomic Energy Commission, Air Defense Command, and Los Alamos Scientific Laboratory. The new organization which was established included the on-scene commander, SAC general officer, Chief of Staff, SAC Colonel, Chief of Weapons Recovery, DNFS AF Colonel, and Chief of Radiological Division, DASA Navy Captain. The various teams and individuals were assigned to those divisions best able to utilize their specialties. Within days, a force of 565 people from 72 separate locations were working smoothly together. On 1 March 1968, after 38

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days of operation, the team was reorganized to more effectively execute the tasks involved in the burn area cleanup. Many personnel whose skills were no longer needed were released and skilled civil engineering personnel were obtained.

(S-RD) Weapons Recovery: The location of the aircraft engines, the debris pattern and initial weapon finds indicated that the one by three mile area within the zero line was the prime area to be searched. While the total search covered approximately 30 square miles, the heaviest search concentration was within the zero line. Continuous and extensive searches were conducted by various methods throughout the thirty mile area. Areas within the zero line were searched at least three times and some of them were searched more than five times. This complete and detailed coverage located four [redacted] (b)(1) (b)(3) parachutes, and numerous small weapon fragments. Preliminary data from the AEC [redacted] weapons [redacted]

(U) Base Camp: To provide control, equipment support, shelter, and communications, a base camp was constructed at the accident scene. In a coordinated effort the helicopters sling lifted material to waiting men who had traveled to the site in dog sleds. The first effort consisted of the construction of a heliport, erection of a pre-fab shelter, and the installation of generators. With the addition of a telephone land line and radio communications, the nucleus of a base camp was formed. Completion of the first ice road eased the logistic support problem and made a 24 hour operation possible. The camp grew rapidly and soon included a large pre-fab building two ski mounted buildings, break huts, a maintenance building, and several diesel power units. The camp proved to be the key factor in permitting sustained operations in the hostile Arctic environment.

(S-RD) Radiological: A zero line marking the outer limits of measurable alpha contamination was completed on 25 January. This 1 by 3 mile rectangle was used as the "hot line" for control of personnel and vehicles. Practically all metal debris within this area was alpha-contaminated. Within the 2100 by 500 foot burn and impact area, surface contamination readings of [redacted] This substantiated that there was no nuclear yield from the weapons. The use and reliability of the PAC-1S alpha meter for conducting an area survey were questionable due to the drifting and masking effect of the snow. (b)(1) Personnel from LRL arrived and two newer types of radiac instruments. The (b)(3) first consisted of a PRM-5 and a fidler probe. This is a portable scintillation instrument which utilizes a 5-inch diameter by one-sixteenth inch thick nai-sodium iodide scintillator. While the instrument may be calibrated to respond to a spectrum of gamma energy levels it is most efficient at the lower levels. It was used effectively to pla[redacted] The detector is essentially the same as that used in the fidler. The SPA-3 is a high energy gamma probe and uses a 2-inch diameter by 2-inch thick scintillator. This unit was calibrated to respond to the 185 KEV gamma emmissions from the U235. The fidler was used effectively for the required area survey. The SPA-3 was used for weapon search. A radial

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plot completed with the fidler on 2 February defined the scope and intensity of the contamination. A third survey completed on 14 February indicated that the debris removal effort had decreased the size and the intensity of the pattern. The 1000 UG/M (squared) line was almost coincidental with the outline of the burn area. An analysis of the blackened crust disclosed the presence of plutonium contaminated JP-4 and residual tritium. Ice core analysis indicated the PU and traces of tritium had been deposited in portions of the ice in the impact area. Although the presence of tritium was assumed from the first, it was not considered to be a personnel hazard in the frozen state as ice and snow. The first objective evidence of the quantity present came from analysis of samples sent to Los Alamos in preparation for the Copenhagen meeting. It was calculated that an approximate total of only 3.6 X 10 (to the 4th power) curies was in the black area. No significant tritium concentrations were found in the individual ice cores, and a total of only 3 X 10 (squared) curies was estimated to be present in the impact area. Because of the transportation lag, it was necessary to bring a tritium laboratory capability to Thule. Urine tritium determinations averaged 10 (to minus 4 power) microcuries per CC, and the highest personnel exposure was estimated to no higher than one fourth of a maximum permissible body burden or 8.0 microcuries per liter: only one other individual's urine was above 1 microcurie per liter. One microcurie per liter of urine is equivalent to 8.4 millirem total integrated does. There was no detection of plutonium in any urine sample analyzed by the radiological health laboratory, Wright-Patterson AFB. The radiological health laboratory provided a capability at Thule to field count nasal swabs on all personnel processing through decontamination stations. Urine samples were taken from all persons indicating high nasal swab counts. Conversion of the frozen water to liquid or vapor by heating as part of any later processing will require careful evaluation of the tritium hazard. After removal of the black crust area, the concentration of the tritium in the same area was reduced by a factor of 2500. With the exception of the lighter debris, the contamination appeared fixed. The basic goal throughout the operation was to control the spread of contamination and minimize the exposure hazard to personnel. Personnel and equipment were potential carriers for spreading contamination. Gross decontamination of personnel was accomplished on site and final decontamination for all personnel was accomplished in a complete facility on base. The standards used were maximum of 450 CPM as measured with PAC-1S for U.S. personnel and a zero level for foreign nationals. Vehicles also received rough decontamination at the site and were then processed through one of the two water and steam equipped facilities on base. These same facilities were used to decontaminate AGE and support equipment. As a check on the effectiveness of established controls, base facilities in common use, such as clubs, were routinely monitored. The results of these test swipes indicated that contamination had been effectively controlled. Plans were developed to monitor and decontaminate as required all base facilities utilized during project "Crested Ice". This "phase out" plan was implemented on 10 March 1968.

(S-RD) Aircraft Debris Recovery: In order to halt the spread of contaminated aircraft debris, which occurred during periods of high wind, the efforts of all available weapons recovery and radiological survey personnel were devoted to collecting, piling, and securing aircraft debris on 30 January. As aircraft debris was gathered, the surrounding area was closely scrutinized for any weapon debris. Throughout the operation, EOD personnel studied all questionable pieces to prevent mixing weapon and aircraft debris. On 9 February containment of aircraft debris was started utilizing 30 and 50 gallon

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containers, surplus R-4360 engine containers and various large tanks taken from the salvage yard. Every container was monitored with SPA-3 probe to [redacted] The containers were also swipe tested immediately after packing and upon arrival at the storage area. Representatives from the Oak Ridge National Laboratory observed all packing, transportation, sealing, and storing procedures and expressed complete satisfaction. A total of 163 drums, 14 engine containers, and 11 large tanks with a total capacity of 14,720 cubic feet were filled with debris, sealed and stored in the old SAC munitions area.

(C [redacted]) Core Sampling: An extensive ice core sampling program began on 5 February and ended on 4 March, yielding a total of 186 cores. Initially, Danish scientists participated in the collection and radiological scanning of the 2.5 to 4 foot cores: they sent nine frozen cores to Copenhagen for study. Two separate shipments of cores, the first eight frozen and last five melted, were flown to the Los Alamos Scientific Laboratory. All copies were scanned segmentally at Thule with a PG-1 probe and data recorded. Photographs of many were made to demonstrate that most were clean and others (always from the impact area) contained dark lines varying from one to a few centimeters thick. Angles of the lines demonstrated disruption and relocation of the originally blackened surface of the impact area ice. Cores from areas other than the impact crushed area were invariably clean. Inch by inch counts on the cores ranged from background [redacted] Melting large numbers of cores revealed an extremely thin film of floating hydrocarbon and black particles, with about 23% of the radioactivity at the surface and 77% at the bottom: after agitation and resettling, this became 17% and 83%. After extensive sampling and analysis, U.S. conclusions were that less than 100 gallons of JP-4 was in impact ice, and that most of the residual tritium, plutonium and JP-4 were in the black crust area. Removal of impact ice was considered to be very hazardous and totally unnecessary.

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([redacted]) Cleanup of blackened area: Several proposals were made for disposal of contaminated material collected when the blackened area was cleaned up as required by the Danish-American scientists' gentlemen's agreement. A CSAF message announced that the material would be placed in 90, ten by 42 foot steel containers for storage pending shipment from Greenland. The Danish construction company was engaged to assist the SAC disaster control team. A plan was developed which outlined all tasks to be accomplished, including a radiological and health physics program. The Danish construction corporation removed the 25,000 gallon tanks from their installations, prepared them for use, and placed them in the filling area. The company also provided crane operators and helpers. All other tasks were blue suit. Throughout the operation, maximum efforts were devoted to preventing the Danes from coming in contact with contaminated material, insuring that they wore protective clothing and were processed through decontamination facilities. In the blackened area, graders were used to plow the contaminated crust and debris into low windrows, and belt loaders or front end loaders were used to load the windrowed material into reinforced plywood boxes. As the operation progressed, technicians examined each windrow and the adjacent graded area with a SPA-3 probe in a search for weapon components. Two of the filled boxes were carried by each tractor flat bed trailer unit 7 miles to the tank filling

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area on base where cranes lifted and dumped the boxes into the 25,000 gallon tanks: covers for the fill holes were wedged into place to seal the tanks. Difficulty was experienced in keeping the cranes, tractors, trailers, front end loaders, and belt loaders in operation. However, an intensive maintenance program carried out at night between the two major shifts kept the equipment operating. A total of 67 25,000 gallon tanks were filled with snow and aircraft debris. In addition, four of the tanks are filled with general contaminated debris such as tires, lumber, etc. The tanks contain 237,140 cubic feet of material. After detailed study, the Lawrence Radiation Laboratory and Los Alamos Scientific Laboratory found no possibility that a criticality problem could occur in any tanks when the ice and snow melts. A venting system to relieve any internal gas pressure build-up when snow and ice melts and to provide a monitoring point will be installed on each tank. The method of removal/disposal of tanks and their contents has not been determined. Several recommendations submitted by the disaster control team including a melting, draining, filtration process are under study. Air Force Logistics Command has been tasked to develop an effective filtration system as an alternate to bulk shipment.

(U) Public Affairs: Relations with the news media have been excellent throughout the operation. The early release of factual data concerning the crash and the prompt establishment of a releasing authority on scene were vital aspects of this success. Working within this framework, and in consonance with established guidelines, the four news conferences held on 25, 26, 27, and 28 January were smooth and effective. The close coordination achieved between all participating governmental agencies was noteworthy.

(U) General: Communications were good. The installation of teletype equipment in the command post did much to facilitate the classified message flow. The KY-9 secure telephone proved valuable. The extended period of the operation complicated the task of the personnel group. In all, over 740 personnel actions involving 72 separate installations were required. The overall personnel support received was excellent. The operations was totally dependent upon airlift support. The response of the Military Airlift Command and the many other organizations that assisted was exemplary. The local MAC terminal processed 85 aircraft, over 700 personnel and over 900 tons of freight in the growing phase of "Crested Ice". Assignment of project name "Crested Ice" and the priority precedence of 1-5 was of great assistance.

(U) Summary: The entire "Crested Ice" operation was highly successful. Actions required in weapons recovery, aircraft debris recovery and packaging, radiological surveys, contamination, burn area clean-up and base support were all successfully carried out in a bitter Arctic environment which compounded even the simplest task. ~~Most of~~ the personnel involved had little Arctic experience and in many cases the equipment at hand was not designed for use under such conditions. Response to disaster control team requirements by participating commands in the United States was outstanding. The rapidity with which the required tasks were carried out attests to the high state of motivation, resourcefulness, and professionalism of all who participated as members of the SAC Disaster Control Team. HQSAC established 30 March 1968 as the close-out date for SAC "Crested Ice" operation.

/s/
R.O. Hunziker

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Major General, USAF
DCS/Materiel

(U) Section III: Site Management Summary
(U) Initial Response: Made by Colonel Paul D. Copher, Acting Base Commander, Thule AFB, Greenland. Assisting him was Mr. Jens Zinglersen from the Royal Greenland Trade Department, who served as the on-scene Arctic consultant. Danish Government notified 21 January, time unknown.

(U) SAC Disaster Control Team: Arrived Thule 06442 22 Jan with MGEN R.O. Hunziker, SAC On-Scene Commander. MGEN Hunziker returned to U.S. on 17 Mar. BGEN Bowley on-scene until 31 Mar. Col Greer on-scene until 10 Apr. Col G.S. Dresser, Thule AFB Commander remained until last contaminant was shipped from Thule to Charleston, SC, 13 September.

(U) Danish Scientific Group: Formed on 22 Jan 68 with Professor Dr. Jorgen Koch as the group leader. USA technical brief given by the HON. Dr. Carl Walske ATSD/AE to Danish scientific group on 25 January. Danish scientific group arrived Thule 25 January for the purpose of conducting a series of investigations parallel to the U.S. actions. A Danish restricted committee was formed on 8 Mar with HH. Koch, Permanent Under Secretary of State, and the Chairman, Executive Committee, Danish Atomic Energy Commission.

(U) The American Scientific Group: Arrived 25 January, headed by Dr. Wright Langham, LASL. Team chief transferred to Col Jack Fitzgerald, DASA Field Command surgeon on 3 Feb. Initial investigation meeting was held 15-16 Feb at Copenhagen and resulted in the continuation of the cooperation between the governments.

(U) General: The American Ambassador to Denmark visited Thule AFB on 24 Feb and expressed approval of Danish and U.S. efforts. He was accompanied by the Honorable Erik Hesselberg, Permanent Under Secretary for the Danish Ministry for Greenland, who was also a part of the Danish scientific group, but had not been to Thule earlier. A hetrogeneous work force was formed involving personnel from Danish authorities and over 70 agencies including DOD, AEC, State, and others -- in all, over 700 people during the course of the operation. The difficulties of integrating this diversified group into an efficient working force dictated a management division which was important to the success of the operation. It was decided at the start that available individuals would be used without regard for their normal chain-of-command.

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~~Section 142b, Atomic Energy Act, 1954.~~

SPRING 68
Spring 1968/At Sea, Atlantic
Section I: Narrative ~~(U)~~

THERE ARE NO UNCLASSIFIED NARRATIVES OF THIS ACCIDENT

Section II: Classified Summary ~~(U)~~
(~~S RD~~)

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SEP 80

September 19, 1980/Titan II ICBM/Damascus, Arkansas

Section I: Narrative (U)

(U) During routine maintenance in a Titan II silo, an Air Force repairman dropped a heavy wrench socket, which rolled off a work platform and fell toward the bottom of the silo. The socket bounced and struck the missile, causing a leak from a pressurized fuel tank. The missile complex and the surrounding area were evacuated and a team of specialists was called in from Little Rock AFB, the missile's main support base. About 8½ hours after the initial puncture, fuel vapors within the silo ignited and exploded. The explosion fatally injured one member of the team. Twenty-one other USAF personnel were injured. The missile's re-entry vehicle, which contained a nuclear warhead, was recovered intact. There was no radioactive contamination.

(U) Section II: Commander's Summary - Classified

(U) At 1830, 18 Sep 80, a propellant servicing specialist, responding to a stage II low tank pressure indication at Titan II missile complex 674-7, dropped a 6 pound, 3½ inch wrench socket between the work platform and the missile. The wrench socket fell about 70 feet, hit the thrust mounting, ricocheted into the missile and punctured the stage I missile fuel tank causing a missile fuel (Aerozine 50) leak.

(U) Additional missile maintenance personnel and an on-scene disaster control group were dispatched from Little Rock AFB to evaluate and monitor the hazardous situation. Civilians within a 2 mile radius of the missile complex were evacuated with the assistance of local civil authorities. The missile potential hazard network was established to provide technical advice from the contractor and assistance/direction from higher headquarters.

(U) While two propellant transfer specialists were exiting the access portal area at 0300 the next morning, the missile exploded and completely destroyed the missile silo area. Military personnel in the area reacted heroically by entering the accident area to rescue others, without knowing what the hazards were. The injured were transported to the base and area hospitals. The evacuation area was increased to 5 miles following the explosion.

(U) Immediately after HQSAC was informed of the explosion, the SAC HQ's disaster response force was directed to assemble at the Offutt AFB, NE, passenger terminal. The team departed Offutt AFB at 0545 by KC-135 and arrived at Little Rock at 0700. Upon arrival, the team proceeded to the 308 SMW briefing room to receive a status briefing and establish support contacts.

(U) Maj Gen James E. Light, SAC Disaster Response Force Team Chief, and party were briefed that around 20 injured military members were located in the base and area hospitals. The extent of their injuries was unknown. Numerous personnel, vehicles and helicopters had departed the accident site without being checked for contamination at the site, medical personnel initially assumed the injured personnel were contaminated and processed them accordingly. A member of the SAC team recommended that all people and vehicles that had left the site after the explosion be isolated and checked for contamination as soon as possible. A base decontamination team had been sent to the site. Later in the morning, it was confirmed there was no contamination and the people and vehicles on site no longer required checks

for contamination. The SAC public affairs team member read approved news releases and advised that media and civilians were keeping all available public affairs personnel extremely busy with calls from all parts of the country. Near the end of the briefing, a report was received from the site that the warhead had been located and no radiation hazard existed. Maj Gen Light assumed command of the recovery operation at the end of the briefing (0745).

(S) Public affairs policy at this time was to "refer all queries to HQSAC; make no comment on the situation locally". This policy remained in effect until 0700, Sat 20 Sep, and created much public resentment throughout the area. More significantly, coordination problems were created in many areas because the DOD policy of neither confirming nor denying the presence of a nuclear weapon remained in effect throughout the incident. This policy caused unnecessary concern for the public safety and complicated dealings with state and local government officials as well as causing media fixation and speculation on the warhead involvement.

(U) Emergency funds were requested by the Judge Advocate from the Secretary of the Air Force to assist evacuees. Contract motel rooms were acquired for evacuees; three public shelters already had about about 270 evacuees. Two claims centers were established near the accident area in Conway. The number of military injuries was established at 22 by mid-morning.

(S) The first element of the SAC HQs disaster response forces arrived at the accident site at 0945. They were advised that the warhead had been located in a ditch approximately 500 feet from the silo, and the absence of contamination was reconfirmed. Warhead separation from the reentry vehicle had put the warhead in a "rendered safe" condition. Large pieces of debris were scattered up to 2,000 feet from the silo. Smaller pieces of debris were tossed out to 3000 feet from the site. Base photographers took ground and aerial photographs of the area throughout the morning.

(U) Physical security was properly established on site. Two entry control points were established on the site access road upwind from the silo, one near the highway at approximately 2,000 feet and the second at a cattle guard approximately 600 feet from the silo. Highway 65 was blocked approximately ½ mile North and South of the site access road. Reporters had been in the area since before the explosion. Several light aircraft and helicopters were flying over the missile complex.

(C) Members of the Little Rock AFB disaster control group advised that radiological sampling with AN/PDR-27 (Beta) and PAC-1S (Alpha) had been conducted along the access road to the site as far as the warhead and along perimeter roads (about 2500 feet away). No contamination was found. Bioenvironmental air samples and portable vapor detector in the same areas also proved negative.

(U) No one had penetrated within the complex fence since the rescue operation had concluded at approximately 0400L. Extensive damage was evident and some residual smoke was coming from the southwest corner of the silo area and from a truck.

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FORMERLY RESTRICTED DATA
Authorized for release to [redacted] subject to [redacted] Section 144b, Atomic Energy Act, 1954.

(S RD) General Light arrived on site at 1015 and received an update briefing on the status of the weapon and ongoing activities. He was escorted to the warhead and observed the warhead was partially buried in a 15 degree nose down attitude. [redacted]

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(U) The air transportable radiac package (ATRAP) team from Kelly AFB, TX, and the health physics team from the Brooks AFB, TX, occupational and environmental health laboratory arrived about 1230. Shortly thereafter, two teams started radiation and health surveys of surrounding areas.

(U) BASE and SAC disaster response force members made a cautious penetration of the site at about 1300 to better evaluate missile complex condition. Entry was made by the access portal down to the last stairwell landing above blast door six (about 30 feet below the surface). No toxic vapors or damage were observed.

(U) Shortly after 1500, a team of bioenvironmental engineers entered the inner complex fence with portable vapor detector (PVD) and mine safety appliance (MSA) colometric detectors and found negative sample results. Only occasional fuel-like odors were detected on site, depending on wind and location. They recommended that non-essential personnel remain outside the complex fence.

(S) The Department of Energy (DOE) advance team arrived on site at about 1415 and were quickly integrated into the team recovery effort. The DOE team was relieved to discover that no attempt to move the weapon had been made prior to their arrival and they had a change to assess for damage to internal components. Following their examination of the warhead, it was decided that additional personnel and equipment would be required to perform a more detailed internal evaluation. The warhead was covered with a tarp or otherwise screened throughout recovery.

(S) The base on-scene commander, Col Jones, reported that news media activities at the access road entrance were of concern and that two county sheriffs there were also disgruntled over the lack of communication. The on-scene public affairs representative advised them that all requests for information were being referred to the SAC/PA. This did not please them. General Light directed that since it was Department of Defense policy "not to confirm or deny the presence of nuclear weapons, "the media would not be escorted on-site until the warhead was removed. About 10 newsmen remained at two checkpoints throughout the day. The news media treated the incident as a lead news story of international interest. National wire services, large metropolitan newspapers, and national radio and television networks sent special teams to the accident site.

(U) About 1500, all civilians, were permitted to return to their homes; state and local emergency services and police agencies notified the evacuees. Shortly thereafter, the last closed portion of Highway 65, that joined the access road to the complex, was opened to all traffic. An 1800 foot security corridor was established; it did not include any residences. Throughout the first day, entry control procedures on-site were complicated by the arrival of necessary teams from many off-base locations.

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(S) Throughout the recovery operation, radio transmissions for rescue and recovery (missile security radio net) were monitored by the public and long distance directional microphones were used by the news media to obtain information. By sunset, two telephone drops and a park hill secure voice unit had been installed on-scene.

(S) Arrangements were made for an additional claims office to be opened in the nearby town of Damascus the next day. Early indications were that damage to homes, churches, barns, and other buildings was limited to broken windows, fallen items, and debris in fields. Size of debris on site ranged from small stones to boulders of steel or concrete weighing several tons. Aerial photographs and other testing was requested to document existing conditions. One of the most seriously injured, SRA David Livingston, died at approximately 1740. His family was notified and HQ SAC approved a news release. The parents refused to allow an autopsy and the matter was not pursued.

(S) During the night of 19 Sep 80, a DOE field radiography team arrived with additional specialized equipment. Throughout the day, on 20 Sep 80, they took many long radiographic (x-ray like) exposures to help determine the status of the high explosive and internal components of the warhead. Additional radiological testing and collection of soil and water samples were accomplished and plotted out to approximately 3 miles. The additional EOD team that had arrived from Barksdale AFB, LA, was tasked to continue the sweep of the accident site for explosive hazards. Also, on day two, a color-coded badge system and detailed entry authorization lists were used effectively for entry control. HF radios were installed on site.

(S) Several General officers toured the accident site during the day. Public affair restrictions on local discussion of the incident and general unclassified information about SAC were lifted, except for any discussion of re-entry vehicles or nuclear weapons. Two of the injured personnel were interviewed by the media at the base hospital. Lt Gen Leavitt, VCINCSAC, held a 50 minute press conference at the Officer's Club at 1610. At 1930, a tentative warhead recovery plan was discussed by members of the integrated response force that involved a partial disassembly of the warhead. Members of the Little Rock AFB EOD team and DOE personnel, practiced the separation procedure on the base trainer that night.

(S-FRD) At 0830, 21 Sep 80, the warhead recovery plan was finalized. [redacted] The coordination and skillful execution of the plan set a new standard for disaster recovery operations.

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(S) While the warhead [redacted] other EOD teams continued their search for hazardous components. Additional air and soil sampling was done on the missile complex and downwind from the complex. Personnel were required to wear protective clothing when working inside the complex fence.

(U) Civilian aircraft and helicopters were observed overflying the site. A TV crew had hired a large crane "cherry picker" to obtain height to see over visual barriers at the site. The State Police were asked to have it removed, but they refused. The TV crew had obtained the landowner's permission to locate on his land if necessary. Later that evening, Arkansas State Police were told the Air Force might need some support moving special equipment the next day.

(S) The convoy [redacted] was executed as planned. At [redacted] State Police provided timely, effective convoy support. The only difficult area was restrictions on disclosure of accident information. Use of limited disclosure authority would have improved communications. The news media presented the biggest hazard duing the convoy. The convoy was chased the entire route and camera men dangerously extended themselves from vehicle windows. Numerous news vehicles were operated in an erratic manner, i.e., vehicles attempting to pass the convoy on the right and/or left. At 1100 with the warhead safely [redacted] General Light passed command of the site to Col Moser (SAC) for the Accident Investigation Board.

(U)

(S) At 0830, 23 Sep 80, an on-base convoy transferred the warhead on a flatbed truck to the "hot cargo" pad where a MAC C-141 was waiting. Standard security for nuclear weapons in logistics movements was used. MAC aerial port personnel offloaded the two containers from the flatbed trailer and loaded them into the aircraft. The aircraft departed at 1050 for Amarillo, TX, with Mr. Bobby Lemmon and Mr. Ronald Alexander, DOE contract employees, on board. The warhead was transferred to DOE custody at the DOE's Pantex facility, Amarillo, TX.

(S) Section III: Site Management Summary

(S) Initial Response: Missile potential hazard team headed by Col John T. Moser, Commander 308 SMW, was on site prior to the accident. The team had responded to handle a missile hazard indication. Assisting Col Moser was Col James L. Morris, 308 SMW Deputy Commander for Maintenance. Little Rock AFB Disaster Response Force arrived at the site at 0400Z as a result of the missile hazard. On-scene commander was Col William A. Jones, 314 TAW Commander (who assumed command from Col Moser).

(S) SAC Disaster Response Force: Maj Gen Light, SAC On-Scene Commander, relieved Col Jones of command. The DOE ARG, consisting of a team of scientists from DOE's Albuquerque Operations Office and Los Alamos National Laboratory headed by Jack Burke arrived on 19 Sep.

(S) Lessons Learned:

(~~S~~) 1. Policy on commenting on nuclear weapons. Whenever there is an accident in which a nuclear weapon is involved and there is widespread public speculation (a general public expectation) that a nuclear weapon would be

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present, the presence of the weapon and its condition should be disclosed as soon as practical after the weapon's condition has been verified by qualified on-scene personnel to allay public concern about health effects. This limited disclosure will significantly improve essential coordination and working relations with state and local officials and help negate adverse publicity resulting from the accident. This recommendation falls under the perview of AFR 190-10, release of information of accidents serious incidents, which permits confirming the presence of a nuclear weapon to allay public concern.

(~~FOUO~~) 2. Policy on movement of warhead. DOD should incorporate in nuclear accident response directives and schools, a policy of not moving a nuclear weapon involved in an accident with a potential for internal damage to the warhead, until it is evaluated by DOE specialists.

(~~FOUO~~) 3. Coordination with civil agencies. Written agreements should be established between Air Force bases and the responsible state/local officials, Office of Emergency Services, County Sheriffs, etc., that identify single point of contact to receive, confirm, and pass the military determination/decision to evacuate civilians from hazardous areas caused by the military accident/incident. Whenever possible, the written agreement should also identify an on-scene civil official who will coordinate the civil assistance to the military and involvement of other civil agencies that respond to the incident; this designated official should be kept informed of ongoing military activities.

(~~FOUO~~) 4. Operations and communications security. All personnel involved in an activity such as this incident should be knowledgeable of operations and communication security measures that should be employed. Secure type communications must be established as soon as the need is apparent. DOD personnel must be reminded to the need to limit radio/telephone communications to that which is essential and to use secure communications to protect sensitive or classified information. Since the missile security radio net was initially the only functional means of communications available to conduct disaster recovery operations, a programmed security multi-frequency net would have been most useful.

(~~FOUO~~) 5. Classification of photographs. Since many accident site photographs are necessary during the first few days, it is appropriate to provide for daily classification capability to insure proper protection of classified material while not over-classifying nearly all the photographs. Daily classification management of this information is essential.

(~~FOUO~~) 6. Obscuration techniques. The public and especially the news media continually attempted to encroach upon the accident scene making it necessary to improvise methods to deny visual observation of classified components and procedures from low flying aircraft and long-range cameras. Guidance should be issued so that each unit's disaster response force is equipped with, or has immediately available, obscuration devices and/or techniques to be used under similar circumstances.

(~~FOUO~~) 7. Use of grid maps. Grid maps of each missile complex to a scale of 1 inch to 200 feet or less should be prepared for disaster response purposes. The map should cover a radius of 3000 meters from the silo and should include all facilities within the complex, off-site buildings and easements to include

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property lines, homes, and other easily identifiable structures. These maps must be designed for use in plotting hazard corridors, the location of hazardous components, or areas of restrictions.

(~~FOUO~~) 8. Release of public information. Unit public affairs (PA) officers should be allowed to provide unclassified, routine information about an incident at the local level rather than refer requests for such information at higher levels, such as the major air command. This could improve relations with the news media, avoid release of out-of-date information to the public, and enhance the Air Force image as an organized, sensitive, and cooperative service. In addition, it would further enhance our credibility to arrange a press conference within the first 24 hours to explain what happened and what actions are in work to correct or control the situation. Personal experience interviews should be addressed by Air Force policy to permit a positive story to be told on a timely basis.

(~~FOUO~~) 9. Public affairs manning and facilities. On a major accident, no less than two PA officers (one a Lt Col) should be deployed with the command disaster response force. This is needed to provide adequate initial coverage in the unit command post and on the scene in support of base PA personnel. One PA officer should be dedicated to work with state officials, U.S. Congressional staffs, and civilian queries. Each tenant missile wing should be assigned a full time PA officer to further enhance the capability of weapon system experienced PA personnel. At least four (2 class A) telephone lines should be made available in the command post area solely for PA activities.

(~~FOUO~~) 10. Communications assistance. Communications personnel should assign one technician on site to provide communications-operator assistance and to train users that are not familiar with the use of the communications equipment in use.

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FEB 50

FEBRUARY 13, 1950/B-36/PACIFIC OCEAN, OFF COAST OF BRITISH COLUMBIA

SECTION I: NARRATIVE (U)

(U)/THE B-36 WAS ENROUTE FROM EIELSON AFB TO CARSWELL AFB ON A SIMULATED COMBAT PROFILE MISSION. THE WEAPON ABOARD THE AIRCRAFT HAD A DUMMY CAPSULE INSTALLED. AFTER SIX HOURS OF FLIGHT, THE AIRCRAFT DEVELOPED SERIOUS MECHANICAL DIFFICULTIES, MAKING IT NECESSARY TO SHUT DOWN THREE ENGINES. THE AIRCRAFT WAS AT 12,000 FEET ALTITUDE. ICING CONDITIONS COMPLICATED THE EMERGENCY AND LEVEL FLIGHT COULD NOT BE MAINTAINED. THE AIRCRAFT HEADED OUT OVER THE PACIFIC OCEAN AND DROPPED THE WEAPON FROM 8,000 FEET. A BRIGHT FLASH OCCURRED ON IMPACT, FOLLOWED BY A SOUND AND SHOCK WAVE. ONLY THE WEAPON'S HIGH EXPLOSIVE MATERIAL DETONATED. THE AIRCRAFT WAS THEN FLOWN OVER PRINCESS ROYAL ISLAND WHERE THE CREW BAILED OUT. THE AIRCRAFT WRECKAGE WAS LATER FOUND ON VANCOUVER ISLAND.

APR 50

APRIL 11, 1950/B-29/MANZANO BASE, NEW MEXICO

SECTION I: NARRATIVE (U)

AIRCRAFT DEPARTED KIRTLAND AFB AT 0938 AND CRASHED INTO A MOUNTAIN ON MANZANO BASE APPROXIMATELY THREE MINUTES LATER KILLING THE CREW. DETONATORS WERE INSTALLED IN THE BOMB ON BOARD THE AIRCRAFT. THE BOMB CASE WAS DEMOLISHED AND SOME HIGH EXPLOSIVE (HE) MATERIAL BURNED IN THE GASOLINE FIRE. OTHER PIECES OF UNBURNED HE WERE SCATTERED THROUGHOUT THE WRECKAGE. FOUR SPARE DETONATORS IN THEIR CARRYING CASE WERE RECOVERED UNDAMAGED. THERE WERE NO CONTAMINATION OR RECOVERY PROBLEMS. THE RECOVERED COMPONENTS OF THE WEAPON WERE RETURNED TO THE ATOMIC ENERGY COMMISSION. BOTH THE WEAPON AND THE CAPSULE OF NUCLEAR MATERIAL WERE ON BOARD THE AIRCRAFT BUT THE CAPSULE WAS NOT INSERTED FOR SAFETY REASONS. A NUCLEAR DETONATION WAS NOT POSSIBLE.

JUL 50

JULY 13, 1950/B-50/LEBANON, OHIO

SECTION I: NARRATIVE (U)

(U) THE B-50 WAS ON A TRAINING MISSION FROM BIGGS AFB, TEXAS. THE AIRCRAFT WAS FLYING AT 7,000 FEET ON A CLEAR DAY. AIRCRAFT NOSED DOWN AND FLEW INTO THE GROUND KILLING FOUR OFFICERS AND TWELVE AIRMEN. THE HIGH EXPLOSIVE PORTION OF THE WEAPON ABOARD DETONATED ON IMPACT. THERE WAS NO NUCLEAR CAPSULE ABOARD THE AIRCRAFT.

AUG 50

AUGUST 5, 1950/B-29/FAIRFIELD SUISUN-AFB, CALIFORNIA

SECTION I: NARRATIVE (U)

(U) A B-29 CARRYING A WEAPON, BUT NO CAPSULE, EXPERIENCED TWO RUNAWAY PROPELLERS AND LANDING GEAR RETRACTION DIFFICULTIES ON TAKEOFF FROM FAIRFIELD-SUISUN AFB (NOW TRAVIS AFB). THE AIRCRAFT ATTEMPTED AN EMERGENCY LANDING AND CRASHED AND BURNED. THE FIRE WAS FOUGHT FOR 12-15 MINUTES BEFORE THE WEAPON'S HIGH EXPLOSIVE MATERIAL DETONATED.

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AUGUST 5, 1959/B-29/FAIRFIELD SUISUN-AFB, CALIFORNIA (CONTINUED)

NINETEEN CREW MEMBERS AND RESCUE PERSONNEL WERE KILLED IN THE CRASH AND/OR THE RESULTING DETONATION, INCLUDING GENERAL TRAVIS.

NOV 50

NOVEMBER 10, 1950/B-50/OVER WATER, OUTSIDE UNITED STATES

SECTION I: NARRATIVE (U)

BECAUSE OF AN IN-FLIGHT AIRCRAFT EMERGENCY, A WEAPON CONTAINING NO CAPSULE OF NUCLEAR MATERIAL WAS JETTISONED OVER THE WATER FROM AN ALTITUDE OF 10,000 FEET. A HIGH-EXPLOSIVE DETONATION WAS OBSERVED.

MAR 56

MARCH 10, 1956/B-47/MEDITERRANEAN SEA

SECTION I: NARRATIVE (U)

(U) THE AIRCRAFT WAS ONE OF A FLIGHT OF FOUR SCHEDULED FOR NON-STOP DEPLOYMENT FROM MACDILL AFB TO AN OVERSEAS BASE. TAKE-OFF FROM MACDILL AND FIRST REFUELING WERE NORMAL. THE SECOND REFUELING POINT WAS OVER THE MEDITERRANEAN SEA. IN PREPARATION FOR THIS, THE FLIGHT PENETRATED SOLID CLOUD FORMATION TO DESCEND TO THE REFUELING LEVEL OF 14,000 FEET. BASE OF THE CLOUDS WAS 14,000 FEET AND VISIBILITY WAS POOR. THE AIRCRAFT, CARRYING TWO NUCLEAR CAPSULES, IN CARRYING CASES, NEVER MADE CONTACT WITH THE TANKER.

(U) AN EXTENSIVE SEARCH FAILED TO LOCATE ANY TRACES OF THE MISSING AIRCRAFT OR CREW. NO WEAPONS WERE ABOARD THE AIRCRAFT, ONLY TWO CAPSULES OF NUCLEAR WEAPONS MATERIAL IN CARRYING CASES. A NUCLEAR DETONATION WAS NOT POSSIBLE.

JULY 56

JULY 27, 1956/B-47/OVERSEAS BASE

SECTION I: NARRATIVE (U)

(U) A B-47 AIRCRAFT WITH NO WEAPONS ABOARD WAS ON A ROUTING TRAINING MISSION MAKING A TOUCH AND GO LANDING WHEN THE AIRCRAFT SUDDENLY WENT OUT OF CONTROL AND SLID OFF THE RUNWAY, CRASHING INTO A STORAGEA IGLOO CONTAINING SEVERAL NUCLEAR WEAPONS. THE BOMBS DID NOT BURN OR DETONATE. THERE WERE NO CONTAMINATION OR CLEANUP PROBLEMS. THE DAMAGED WEAPONS AND COMPONENTS WERE RETURNED TO THE ATOMIC ENERGY COMMISSIOON. THE WEAPONS THAT WERE INVOLVED WERE IN STORAGAE CONFIGURATION. NO CAPSULES OF NUCLEAR MATAERIALS WERE IN THE WEAPONS OR PRESENT IN THE BUILDING.

MAY 57

MAY 22, 1957/B-36/KIRTLAND AFB, NEW MEXICO

SECTION I: (U)

(U) THE AIRCRAFT WAS FERRYING A WEAPON FROM BIGGS AFB, TEXAS, TO KIRTLAND AFB. AT 11:50 A.M. MST, WHILE APPROACHING KIRTLAND AT AN ALTITUDE OF 1,700 FEET, THE WEAPON DROPPED FROM THE BOMB BAY TAKING THE BOMB BAY DOORS WITH IT. WEAPON PARACHUTES WERE DEPLOYED BUT

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APPARENTLY DID NOT FULLY RETARD THE FALL BECAUSE OF THE LOW ALTITUDE. THE IMPACT POINT WAS APPROXIMATELY 4.5 MILES SOUTH OF THE KIRTLAND CONTROL TOWER AND .3 MILES WEST OF THE SANDIA BASE RESERVATION. THE HIGH EXPLOSIVE MATERIAL DETONATED. COMPLETELY DESTROYING THE WEAPON AND MAKING A CRATER APPROXIMATELY 25 FEET IN DIAMETER AND 12 FEET DEEP. FRAGMENTS AND DEBRIS WERE SCATTERED AS FAR AS ONE MILE FROM THE IMPACT POINT. THE RELEASE MECHANISM LOCKING PIN WAS BEING REVOVED AT THE TIME OF RELEASE. (IT WAS STANDARD PROCEDURE AT THAT TIME THAT THE LOCING PIN BE REMOVED DURING TAKEOFF AND LANDING TO ALLOW FOR EMERGENCY JETTISON OF THE WEAPON IF NECESSARY.) RECOVERY AND CLEANUP OPERATIONS WERE CONDUCTED BY FIELD COMMAND, ARMED FORCES SPECIAL WEAPONS PROJECT. RADIOLOGICAL SURVEY OF THE AREA DISCLOSED NO RADIACTIVITY BEYOND THE LIP OF THE CRATE4R AT WHICH POINT THE LEVEL WAS 0.5 MILLORDENTGENS. THERE WERE NO HEALTH OR SAFETY PROBLEMS. BOTH THE WEAPON AND CAPSULE WERE ON BOARD THE AIRCRAFT BUT THE CAPSULE WAS NOT INSERTED FOR SAFETY REASONS. A NUCLEAR DETONATION WAS NOT POSSIBLE.

JULY 57

JULY 28, 1957/C-124/ATLANTIC OCEAN

SECTION I: NARRATIVE

TWO WEAPONS WERE JETTISONED FROM A C-124 AIRCRAFT ON JULY 28 OFF THE EAST COAST OF THE UNITED STATES. THERE WERE THREE WEAPONS AND ONE NUCLEAR CAPSULE ABOARD THE AIRCRAFT AT THE TIME. NUCLEAR COMPONENTS WERE NOT INSTALLED IN TEH WEAPONS. THE C-124 AIRCRAFT WAS ENTROUTE FROM DOVER AFB, DELAWARE WHEN A LOSS OF POWER FROM NUMBER ONE AND TWO ENGINES WAS EXPERIENCED. MAXIMUM POWER WAS APPLIED TO THE REMAINING ENGINE; HOWEVER, LEVEL FLIGHT COULD NOT BE MAINTAINED. AT THIS POINT, THE DECISION WAS MADE TO JETTSION CARGO IN THE INTEREST OF SAFETY OF THE AIRCRAFT AND CREW. THE FIRST WEAPON WAS JETTISONED AT 4,500 FEET ALTITUDE. NO DETONATION OCCURRED FROM EITHER WEAPON. BOTH WEAPONS AND PRESUMED TO HAVE BEEN SUBMERGED ALMOST INSTANTLY. THE OCEAN VARIES IN DEPTH IN THE AREA OF THE JETTISONINGS. THE C-124 LANDED AT AN AIRFIELD IN THE VICINITY OF ATLANTIC CITY, NEW JERSEY, WITH THE REMAINING WEAPON AND NUCLEAR CAPSULE ABOARD. A SEARCH FOR THE WEAPONS OR DEBRIS AND NEGATIVE RESULTS.

OCT 57

OCTOBER 11, 1957/B-47/HOMESTEAD AFB, FLORIDA

SECTION I: NARRATIVE

THE B-47 DEPARTED HOMESTEAD AFB SHORTLY AFTER MIDNIGHT ON A DEPLOYMENT MISSION. SHORTLY AFTER LIFTOFF ONE OF THE AIRCRAFT'S OUTRIGGER TIRES EXPLODED. THE AIRCRAFT CRASHED IN AN UNINHABITED AREA APPROXIMATELY 3,800 FEET FROM THE END OF THE RUNWAY. THE AIRCRAFT WAS CARRYING ONE WEAPON IN FERRY CONFIGURATION IN THE BOMB BAY AND ONE NUCLEAR CAPSULE IN A CARRYING CASE IN THE CREW COMPARTMENT. THE WEAPON WAS ENVEALOPED IN FLAMES WHICH BURNED AND SMOLDERED FOR

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APPROXIMATELY FOUR HOURS AFTER WHICH TIME IT WAS COOLED WITH WATER. TWO LOW ORDER HIGH EXPLOSIVE DETONATIONS OCCURRED DURING THE BURNING. THE NUCLEAR CAPSULE AND IT'S CARRYING CASE WERE RECOVERED INTACT AND ONLY SLIGHTLY DAMAGED BY HEAT. APPROXIMATELY ONE-HALF OF THE WEAPON REMAINED. ALL MAJOR COMPONENTS WERE DAMAGED BUT WERE IDENTIFIABLE AND ACCOUNTED FOR.

JAN 58

JANUARY 31, 1958/B-47/OVERSEAS BASE

SECTION I: NARRATIVE

A B-47 WITH ONE WEAPON IN STRIKE CONFIGURATION WAS MAKING A SIMULATED TAKEOFF DURING AN EXERCISE ALERT. WHEN THE AIRCRAFT REACHED APPROXIMATELY 30 KNOTS ON THE RUNWAY, THE LEFT REAR WHEEL CASTING FAILED. THE AIRCRAFT CAUGHTFIRE AND BURNED FOR SEVEN HOURS. FIREMEN FOUGHT THE FIRE FOR THE ALLOTED TEN MINUTES FIRE FIGHTING TIME FOR HIGH EXPLOSIVE CONTENTS OF THAT WEAPON, THEN EVACUATED THE AREA. THE HIGH EXPLOSIVE DID NOT DETONATE, BUT THERE WAS SOME CONTAMINATION IN THE IMMEDIATE AREA OF THE CRASH. AFTER THE WRECKAGE AND THE ASPHALT BENEATH IT WERE REMOVED AND THE RUNWAY WASHED DOWN, NO CONTAMINATION WAS DETECTED. ONE FIRE TRUCK AND ONE FIREMAN'S CLOTHING SHOWED SLIGHT ALPHA CONTAMINATION UNTIL WASHED. FOLLOWING THE ACCIDENT, EXERCISE ALERTS WERE TEMPORARILY SUSPENDED AND B-47 WHEELS WERE CHEDKED FOR DEFECTS.

FEB 58

FEBRUARY 5, 1958/B-47/SAVANNAH RIVER, GEORGIA

SECTION I: NARRATIVE

THE B-47 WAS ON A SIMULATED COMBAT MISSION THAT ORIGINATED AT HOMESTEAD AFB, FLORIDA. WHILE NEAR SAVANNAH, GEORGIA, THE B-47 HAD A MID-AIR COLLISION AT 3:30 A.M. WITH AN F-86 AIRCRAFT. FOLLOWING THE COLLISION THE B-47 ATTEMPTED THREE TIMES TO LAND AT HUNTER AFB, GEORGIA, WITH A WEAPON ABOARD. BECAUSE OF THE CONDITION OF THE AIRCRAFT, ITS AIRSPEED COULD NOT BEA REDUCED ENOUGH TO INSURE A SAFE LANDING. THEREFORE, THE DECISION WAS MADE TO JETTISION THE WEAPON RATHER THAN EXPOSE HUNTER AFB TO THE POSSIBILITY OF A HIGH EXPLOSIVE DETONATION. A NUCLEAR DETONATION WAS NOT POSSIBLE SINCE THE NUCLEAR CAPSULE WAS NOT ABOARD THE AIRCRAFT. THE WEAPON WAS JETTISONED INTO THE WATER SEVERAL MILES FROM THE MOUTH OF THE SAVANNAH RIVER (GEORGIA) IN WASSAW SOUND OFF TYBEE BEACH. THE PRECISE WEAPON IMPACT POINT IS UNKNOWN. THE WEAPON WAS DROPPED FROM AN ALTITUDE OF APPROXIMATELY 7,200 FEET AT AN AIRCRAFT SPEED OF 180-190 KNOTS. NO DETONATION OCCURRED. AFTER JETTISON THE B-47 LANDED SAFELY. A THREE SQUARE MILE AREA WAS SEARCHED USING A SHIP WITH DIVERS AND UNDERWATER DEMOLITION TEAM TECHNICIANS USING GALVANIC DRAG AND HAND-HELD SONAR DEVICES. THE WEAPON WAS NOT FOUND. THE SEARCH WAS TERMINATED APRIL 16, 1958. THE WEAPON WAS CONSIDERED TO BE IRRETRIEVABLY LOST.

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MAR 58

MARCH 11, 1958/B-47/FLORENCE, SOUTH CAROLINA.

SECTION I: NARRATIVE

ON MARCH 11, 1958 AT 3:53 P.M. EST. A B-47E DEPARTED HUNTER AFB, GEORGIA AS NUMBER THREE AIRCRAFT IN A FLIGHT OF FOUR ENROUTE TO AN OVERSEAS BASE. AFTER LEVEL OFF AT 15,000 FEET, THE AIRCRAFT ACCIDENTIALLY JETTISONED AN UNARMED NUCLEAR WEAPON WHICH IMPACTED IN A SPARSELY POPULATED AREA 6 1/2 MILES EAST OF FLORENCE, SOUTH CAROLINA. THE BOMB'S HIGH EXPLOSIVE MATERIAL EXPLODED ON IMPACT. THE DETONATION CAUSED PROPERTY DAMAGE AND SEVERAL INJURIES ON THE GROUND. THE AIRCRAFT RETURNED TO BASE WITHOUT FURTHER INCIDENT. NO CAPSULE OF NUCLEAR MATERIALS WAS ABOARD THE B-47 OR INSTALLED IN THE WEAPON.

NOV 58

NOVEMBER 4, 1958/B-47/DYESS AFB, TEXAS

SECTION I: NARRATIVE

A B-47 CAUGHT FIRE ON TAKE-OFF. THREE CREW MEMBERS SUCCESSFULLY EJECTED: ON WAS KILLED WHEN THE AIRCRAFT CRASHED FROM AN ALTITUDE OF 1,500 FEET. ONE NUCLEAR WEAPON WAS ON BOARD WHEN THE AIRCRAFT CRASHED. THE RESULTANT DETONATION OF THE HIGH EXPLOSIVE MADE A CRATER 35 FEET IN DIAMETER AND SIX FEET DEEP. NUCLEAR MATERIALS WERE RECOVERED NEAR THE CRASH SITE.

NOV 58

NOVEMBER 26, 1958/B-47/CHENNAULT AFB, LOUISIANA

SECTION I: NARRATIVE

A B-47 CAUGHT FIRE ON THE GROUND. THE SINGLE NUCLEAR WEAPON ON BOARD WAS DESTROY ED BY THE FIRE. CONTAMINATION WAS LIMITED TO THE IMMEDIATE VICINITY OF THE WEAPON RESIDUE WITHIN THE AIRCRAFT WRECKAGE.

JAN 59

JANUARY 18, 1959/F-100/PACIFIC BASE

SECTION I: NARRATIVE

THE AIRCRAFT WAS PARKED ON A REVETED HARDSTAND IN GROUND ALERT CONFIGURATION. THE EXTERNAL LOAD CONSISTED OF A WEAPON ON THE LEFT INTERMEDIATE STATION AND THREE FUEL TANKS (BOTH INBOARD STATIONS AND THE RIGHT INTERMEDIATE STATION). WHEN THE STARTER BUTTON WAS DEPRESSED DURING A PRACTICE ALERT, AN EXPLOSION AND FIRE OCCURRED WHEN THE EXTERNAL FUEL TANKS INADVERTANTLY JETTISONED. FIRE TRUCKS AT THE SCENE PUT OUT THE FIRE IN ABOUT SEVEN MINUTES. THE CAPSULE WAS NOT IN THE VICINITY OF THE AIRCRAFT AND WAS NOT INVOLVEAD IN THE ACCIDENT. THERE WERE NO CONTAMINATION OR CLEANUP PROBLEMS.

JUL 59

JULY 6, 1959/C-124/BARKSDALE AFB, LOUISIANA

SECTION I: NARRATIVE

A C-124 ON A NUCLEAR LOGISTICS MOVEMENT MISSION CRASHED ON TAKE-OFF. THE AIRCRAFT WAS DESTROYED BY FIRE WHICH ALSO DESTROYED ONE WEAPON. NO NUCLEAR OR HIGH EXPLOSIVE DETONATION OCCURRED - SAFETY DEVICES FUNCTIONED AS DESIGNED. LIMITED CONTAMINATION WAS PRESENT

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JULY 6, 1959/C-124/BARKSDALE AFB, LOUISIANA (CONTINUED)

OVER A VERY SMALL AREA IMMEDIATELY BELOW THE DESTROYED WEAPON. THIS CONTAMINATION DID NOT HAMPER RESCUE OR FIRE FIGHTING OPERATIONS.

SEP 59

SEPTEMBER 25, 1959/P-5M/PACIFIC OCEAN, OFF WASHINGTON-OREGON COAST
SECTION I: NARRATIVE ~~(U)~~
~~(U)~~ A U.S. NAVY P-5M AIRCRAFT, ASSIGNED TO NAS WHIDBEY ISLAND, WASHINGTON, CRASHED IN THE PACIFIC OCEAN ABOUT 100 MILES WEST OF THE WASHINGTON-OREGON BORDER. IT WAS CARRYING AN UNARMED NUCLEAR ANTI-SUBMARINE WEAPON CONTAINING NO NUCLEAR MATERIAL. THE WEAPON WAS NOT RECOVERED.

OCT 59

OCTOBER 15, 1959/B-52/KC-135/HARDINSBERG, KENTUCKY
SECTION I: NARRATIVE ~~(U)~~
~~(U)~~ THE B-52 DEPARTED COLUMBUS AFB, MISSISSIPPI AT POSITION IN A FLIGHT OF TWO. THE KC-135 DEPARTED COLUMBUS AFB AT 5:53 P.M. CST AS THE #2 TANKER AIRCRAFT IN A FLIGHT OF TWO SCHEDULED TO REFUEL THE B-52'S. RENDEZVOUS FOR REFUELING WAS ACCOMPLISHED IN THE VICINITY OF HARDINSBERG, KENTUCKY AT 32,000 FEET. IT WAS NIGHT, WEATHER WAS CLEAR, AND THERE WAS NO TURBULENCE. SHORTLY AFTER THE B-52 BEGAN REFUELING FROM THE KC-135, THE TWO AIRCRAFT COLLIDED. THE INSTRUCTOR PILOT AND PILOT OF THE B-52 EJECTED, FOLLOWED BY THE ELECTRONIC WARFARE OFFICER AND THE RADAR NAVIGATOR. THE CO-PILOT, NAVIGATOR, INSTRUCTOR NAVIGATOR, AND TAIL GUNNER FAILED TO LEAVE THE B-52. ALL FOUR CREWMEMBERS IN THE KC-135 WERE FATALLY INJURED. THE B-52'S TWO UNARMED NUCLEAR WEAPONS WERE RECOVERED INTACT. ONE HAD BEEN PARTIALLY BURNED BUT THIS DID NOT RESULT IN THE DISPERSION OF ANY NUCLEAR MATERIAL OR OTHER CONTAMINATION.

JUN 60

JUNE 7, 1960/BOMARC/MCGUIRE AFB, NEW JERSEY
SECTION I: NARRATIVE ~~(U)~~
~~(U)~~ A COMARC AIR DEFENSE MISSILE IN READY STORAGE CONDITION (PERMITTING LAUNCH IN TWO MINUTES) WAS DESTROYED BY EXPLOSION AND FIRE AFTER A HIGH PRESSURE HELIUM TANK EXPLODED AND RUPTURED THE MISSILE'S FUEL TANKS. THE WARHEAD WAS ALSO DESTROYED BY THE FIRE ALTHOUGH THE HIGH EXPLOSIVE DID NOT DETONATE. NUCLEAR SAFETY DEVICES ACTED AS DESIGNED. CONTAMINATION WAS RESTRICTED TO AN AREA IMMEDIATELY BENEATH THE WEAPON AND AN ADJACENT ELONGATED AREA APPROXIMATELY 100 FEET LONG, CAUSED BY DRAINING OFF OF FIREFIGHTING WATER.

JAN 61

JANUARY 24, 1961/B-52/GOLDSBORO, NORTH CAROLINA
SECTION I: NARRATIVAE ~~(U)~~
~~(U)~~ DURING A B-52 AIRBORNE ALERT MISSION STRUCTURAL FAILURE OF THE RIGHT WING RESULTEDDDDDD IN TWO WEAPONS SEPARATING FROM THE AIRCRAFT

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JANUARY 24, 1961/B-52/GOLDSBORO, NORTH CAROLLINA (CONTINUED)

DURING AIRCRAFT BREAKUP AT 2,000-10,000 FEET ALTITUDE. ONE BOMB PARACHUTEA DEPLOYED AND THE WEAPON RECEIVED LITTLE IMPACT DAMAGE. THE OTHER BOMB FELL FREE AND BROKE APART UPON IMPACT. NO EXPLOSION OCCURRED. FIVE OF THE EIGHT CREW MEMBERS SURVIVED. A PORTION OF ONE WEAPON, CONTAINING URANIUM, COULD NOT BE RECOVERED DESPITE EXCAVATION IN THE WATERLOGGED FARMLAND TO A DEPTH OF 50 FEET. THE AIR FORCE SUSBSEQUENTLY PURCHASED AN EASEMENT REQUIRING PERMISSION FOR ANYONE TO DIG THERE. THERE IS NO DETECTABLE RADIATION AND NO HAZARD IN THE AREA.

MAR 61
MARCH 14, 1961/B-52/YUBA CITY, CALIFORNIA
SECTION I: NARRATIVE (U)
(U) A B-52 EXPERIENCEAD FAILURE OF THE CREW COMPARTMENT PRESSURIZATION SYSTEM FORCING DESCENT TO 10,000 FEET ALTITUDE. INCREASED FUEL CONSUMPTION CAUSED FUEL EXHAUSTION BEFORE RENDEZVOUS WITH A TANKER AIRCRAFT. THE CREW BAILED OUT AT 10,000 FEET EXCEPT FOR THE AIRCRAFT COMMANDER WHO STAYED WITH THE AIRCRAFT TO 4,000 FEET STEERING THE PLANE AWAY FROM A POPULATED AREA. THE TWO NUCLEAR WEAPONS ON BOARD WERE TORN FROM THE AIRCRAFT ON GROUND IMPACT. THE HIGH EXPLOSIVE DID NOT DETONATE. SAFETY DEVICES WORKED AS DESIGNED AND THERE WAS NO NUCLEAR CONTAMINATION.

NOV 63
NOVEMBER 13, 1963/ATOMIC ENERGY STORAGEA IGLOO/MEDINA BASE, TEXAS
SECTION I: NARRATIVE (U)
(U) AN EXPLOSION INVOLVING 123,000 POUNDS OF HIGH EXPLOSIVE COMPONENTS OF NUCLEAR WEAPONS CAUSED MINOR INJURIES TO THREE ATOMIC ENERGY COMMISSION EMPLOYEES. THERE WAS LITTLE CONTAMINATION FROM THE NUCLEAR COMPONENTS STORED ELSEWHERE IN THE BUILDING. THE COMPONENTS WERE FROM OBSOLETE WEAPONS BEING DISASSEMBLED.

JAN 64
JANUARY 13, 1964/B-52/CUMBERLAND, MARYLAND
SECTION I: NARRATIVE (U)
(U) A B-52D WAS ENTOUTE FROM WESTOVER AFB, MASSACHUSETTS, TO ITS HOME BASE AT TURNER AFB, GEORGIA. THE CRASH OCCURRED APPROXIMATELY 17 MILES SW OF CUMBERLAND, MARYLAND. THE AIRCRAFT WAS CARRYING TWO WEAPONS. BOTH WEAPONS WERE IN A TACTICAL FERRY CONFIGUARTION (NO MECHANICAL OR ELECTRICAL CONNECTIONS HAD BEEN MADE TO THE AIRCRAFT AND THE SAFING SWITCHES WERE IN THE "SAFE" POSITION). PRIOR TO THE CRASH, THE PILOT HAD REQUESTED A CHANGE OF ALTITUDE BECAUSE OF SEVERE AIR TURBULENCE AT 29,500 FEET. THE AIRCRAFT WAS CLEARED TO CLIMB TO 33,000 FEET. DURING THE CLIMB, THE AIRCRAFT ENCOUNTERED VIOLENT AIR TURBULENCE AND AIRCRAFT STRUCTURAL FAILURE SUBSEQUENTLY OCCURRED. OF THE FIVE AIRCREW MEMBERS, ONLY THE PILOT AND CO-PILOT SURVIVED. THE GUNNER AND NAVIGATOR EJECTED BUT DIED OF EXPOSURE TO SUB-ZERO

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JANUARY 13, 1964/B-52/CUMBERLAND, MARYLAND (CONTINUED)

TEMPERATURES AFTER SUCCESSFULLY REACHING THE GROUND. THE RADAR NAVIGATOR DID NOT EJECT AND DIED UPON AIRCRAFT IMPACT. THE CRASH SITE WAS AN ISOLATED MOUNTAINOUS AND WOODED AREA. THE SITE HAD 14 INCHES OF NEW SNOW COVERING THE AIRCRAFT WRECKAGE WHICH WAS SCATTERED OVER AN AREA OF APPROXIMATELY 100 YARDS SQUARE. THE WEATHER DURING THE RECOVERY AND CLEANUP OPERATION INVOLVED EXTREME COLD AND GUSTY WINDS. BOTH WEAPONS REMAINED IN THE AIRCRAFT UNTIL IT CRASHED AND WERE RELATIVELY INTACT IN THE APPROXIMATE CENTER OF THE WRECKAGE AREA.

DEC 64

DEC 5, 1964/LGM 30B (MINUTEMAN ICBM)/ELLSWORTH AFB, SOUTH DAKOTA

SECTION I: NARRATIVE

THE LGM 30B MINUTEMAN I MISSILE WAS ON STRATEGIC ALERT AT LAUNCH FACILITY (LF) L-02, ELLSWORTH AFB, SOUTH DAKOTA. TWO AIRMEN WERE DISPATCHED TO THE LF TO REPAIR THE INNER ZONE (IZ) SECURITY SYSTEM. IN THE MIDST OF THEIR CHECKOUT OF THE IZ SYSTEM, ONE RETROROCKET IN THE SPACER BELOW THE REENTRY VEHICLE (RV) FIRED, CAUSING THE RV TO FALL ABOUT 75 FEET TO THE FLOOR OF THE SILO. WHEN THE RV STRUCK THE BOTTOM OF THE SILO, THE ARMING AND FUSING/ALTITUDE CONTROL SUBSYSTEM CONTAINING THE BATTERIES WAS TORN LOOSE, THUS REMOVING ALL SOURCES OF POWER FROM THE RV. THE RV STRUCTURE RECEIVED CONSIDERABLE DAMAGE. ALL SAFETY DEVICES OPERATED PROPERLY IN THAT THEY DID NOT SENSE THE PROPER SEQUENCE OF EVENTS TO ALLOW ARMING THE WARHEAD. THERE WAS NO DETONATION OR RADIOACTIVE CONTAMINATION.

DEC 64

DECEMBER 9, 1964/B-58/BUNKER HILL (NOW GRISSOM) AFB, INDIANA

SECTION I: NARRATIVE

SAC AIRCRAFT WERE TAXIING DURING AN EXERCISE ALERT. AS ONE B-58 REACHED A POSITION DIRECTLY BEHIND THE AIRCRAFT ON THE RUNWAY AHEAD OF IT, THE AIRCRAFT AHEAD BROUGHT ADVANCED POWER. AS A RESULT OF THE COMBINATIN OF THE JET BLAST FROM THE AIRCRAFT AHEAD, THE ICY RUNWAY SURFACE CONDITIONS, AND THE POWER APPLIED TO THE AIRCRAFT WHILE ATTEMPTING TO TURN ONTO THE RUNWAY, CONTROL WAS LOST AND THE AIRCRAFT SLID OFF THE LEFT HAND SIDE OF THE TAXIWAY. THE LEFT MAIN LANDING GEAR PASSED OVER A FLUSH MOUNTED TAXIWAY LIGHT FIXTURE AND 10 FEET FURTHER ALONG IN ITS TRAVEL, GRAZED THE LEFT EDGE OF A CONCRETE LIGHT BASE. TEN FEET FURTHER, THE LEFT MAIN LANDING GEAR STRUCK A CONCRETE ELECTRICAL MANHOLE BOX, AND THE AIRCRAFT CAUGHT ON FIRE. WHEN THE AIRCRAFT CAME TO REST, ALL THREE CREW MEMBERS ABOARD BEGAN ABANDONING THE AIRCRAFT. THE AIRCRAFT COMMANDER AND DEFENSIVE SYSTEMS OPERATOR EGRESSED WITH ONLY MINOR INJURIES. THE NAVIGATOR EJECTED IN HIS ESCAPE CAPSULE, WHICH IMPACTED 548 FEET FROM THE AIRCRAFT. HE DID NOT SURVIVE. PORTIONS OF THE FIVE NUCLEAR WEAPONS ON-BOARD BURNED; CONTAMINATION WAS LIMITED TO THE IMMEDIATE AREA OF THE CRASH AND WAS SUBSEQUENTLY REMOVED.