

*United States
Atmospheric & Underwater
Atomic Weapon Activities*

- 1945 "TRINITY"
ALAMOGORDO, N. M.
- 1945 "LITTLE BOY"
HIROSHIMA, JAPAN
- 1945 "FAT MAN"
NAGASAKI, JAPAN
- 1946 "CROSSROADS"
BIKINI ISLAND
- 1948 "SANDSTONE"
ENEWETAK ATOLL
- 1951 "RANGER"
NEVADA TEST SITE
- 1951 "GREENHOUSE"
ENEWETAK ATOLL
- 1951 "BUSTER - JANGLE"
NEVADA TEST SITE
- 1952 "TUMBLER - SNAPPER"
NEVADA TEST SITE
- 1952 "IVY"
ENEWETAK ATOLL
- 1953 "UPSHOT - KNOTHOLE"
NEVADA TEST SITE
- 1954 "CASTLE"
BIKINI ISLAND
- 1955 "TEAPOT"
NEVADA TEST SITE
- 1955 "WIGWAM"
OFFSHORE SAN DIEGO
- 1955 "PROJECT 56"
NEVADA TEST SITE
- 1956 "REDWING"
ENEWETAK & BIKINI
- 1957 "PLUMBOB"
NEVADA TEST SITE
- 1958 "HARDTACK-I"
ENEWETAK & BIKINI
- 1958 "NEWSREEL"
JOHNSTON ISLAND
- 1958 "ARGUS"
SOUTH ATLANTIC
- 1958 "HARDTACK-II"
NEVADA TEST SITE
- 1961 "NOUGAT"
NEVADA TEST SITE
- 1962 "DOMINIC-I"
CHRISTMAS ISLAND
JOHNSTON ISLAND
- 1965 "FLINTLOCK"
AMCHITKA, ALASKA
- 1969 "MANDREL"
AMCHITKA, ALASKA
- 1971 "GROMMET"
AMCHITKA, ALASKA
- 1974 "POST TEST EVENTS"
ENEWETAK CLEANUP

" IF YOU WERE THERE,
YOU ARE AN
ATOMIC VETERAN "



NAAV

National Association of Atomic Veterans, Inc.

"Assisting America's Atomic Veterans Since 1979"
Website: www.naav.com E-mail: naav.cmdr@naav.com



R. J. RITTER - Editor

October, 2013



A MONITOR AIRCRAFT PREPARES TO SEND A RADIO-CONTROLLED QF-80 FIGHTER (WITH A "GUINEA-CHIMP") THROUGH THIS (1951) MUSHROOM CLOUD FOR RADIATION SAMPLES AND RADIOLOGICAL EFFECTS TESTS. . .

The Newsletter for America's Atomic Veterans

COMMANDER'S COMMENTS



The **Veterans Advisory Board on (radiation) Dose Reconstruction (VBDR)** held it's last (official) plenary meeting on July 23, 2013. That is, of course, if Congress amends current law to allow the board to sunset. If not, we will keep you posted of any events that may tend to keep the **VBDR** afloat . . .

Established by Congress, with the passing of the **Atomic Veterans Relief Act (2003)**, the **VBDR** held it's first (public) meetings in Tampa, FL., to coincide with the annual **NAAV** convention, so as to visit first hand with America's (secret) Wounded Warriors. Serving as **VBDR** members (and Chairman) were three (past) **Armed Forces Surgeon Generals**.

These were: **Dr. James Zimble** (V-Adm. – USN – Ret.), **Dr. Ronald Blank** (Lt.Gen. – USA – Ret.) and **Dr. Charles “Chip” Roadman** (Lt. Gen. – ASAF – Ret.). We are saddened by the fact that Dr. Zimble is now deceased, and it is our wish that his spirit will forever enjoy fair winds and smooth seas. Other members of the Board included well known & published Health Physicists, Expert Scientists & Radiation Specialists from an assortment of Colleges, Nuclear Research and Medical Institutions, as well as representatives from the **Dept. of Veterans Affairs (DVA)** Medical and Compensation & Pension groups, the **Defense Threat Reduction Agency (DTRA)**, and the **Nuclear**



Dr. James Zimble

Test Personnel Review (NTPR). The full biographies of the **VBDR** board members are available at www.vbdr.org . . .



Dr. Ronald Blank

Those Board members representing the U.S. Atomic-Veteran community, included **Col. Ed Taylor** (**NAAV** Director Emeritus), and yours truly. Speaking for both Col. Taylor and myself, it has been a great honor to have been associated with such a learned and talented group of dedicated professionals. I will always appreciate their insistence on finding ways to reach out to both surviving Atomic Veterans and to the families of deceased Atomic-Veterans, while working diligently with the **DoD** and the **DVA** to improve & shorten the (radiation) claims adjudication process. For this, we will always be eternally grateful. It is our hope that the oversight observations, comments, suggestions and recommendations that the **VBDR** presented to the **DVA** and **DOD**, during the active period of participation, will continue to be diligently acted upon accordingly, after the Board sunsets. . . .

As a side note; **Col. Ed Taylor** participated in the **NTS (1957) Plumbbob** tests is currently experiencing some very difficult health issues. We extend our best wishes to him and his family, and hope that he will soon overcome those issues. Additionally, **Bernie Clark** (**NAAV** Director), who was also in tests at the **NTS** is currently engaged in challenging a few (developing)



Dr. “Chip” Roadman

health issues, and we are keeping a close watch on his progress, and will update the status of both **Col. Taylor** and **Bernie Clark**, in the March (2014) issue. . .

Given that (Directors) **Dr. F. L. “Linc” Grahls**, and **Rodney Lee Guidry** attended the **VBDR** meetings, we were able to



Col. Ed Taylor

conduct our (annual) **NAAV** Board meeting, since there was a quorum present. The first order of business addressed our current financial status and the outlook for the next few years. Since our membership has aged to the point that the ability to travel is a major concern, we simply cannot afford the costs of setting up a planned reunion when there may only be a half dozen (or

so) participants who may be able to show up. It was also determined that our 2014 (**NAAV**) Director's meeting, will be conducted via phone conference. Since we have had such a difficult time finding candidates, who may be interested (and able) to be a Director, it was decided to keep the present (Officer) positions “status-quo” until the next Board meeting.

The current Officers are: **R. J. Ritter** (Nat. Cdr.), **Dr. F. “Linc” Grahls** (Vice-Cdr.), **Bernie Clark** (Sec. Treas.), **Rodney Lee Guidry & Gilley Jenkins** (Director at Large). I agreed to continue writing & publishing the (periodic) **NAAV** newsletter's until such time as we deplete our funds dedicated to that function, and all such “outreach” support activities as may be required, in accordance with our Mission Statement. . .

As an update; the “**Outreach**” efforts (of both **NAAV** and **VBDR**) resulted in articles appearing in the (Jan. 2010) **VFW Magazine**, the (Nov., 2011 & Jun., 2012) **AARP Bulletin**, and the (Sept., 2012) **MOAA Magazine**. Since March, 2010, **NAAV** has responded to more than **30,000** requests for information related to (available) benefits from the **VA** or **DOJ**, that may be awarded to (qualified) surviving Atomic-Veterans, or to the surviving Widow (or children) of deceased Atomic Veterans. Those requests for assistance were divided between phone calls, e-mails and “snail-mail” inquiries. . .



Bernie Clark

The (**NAAV**) costs associated with the total inquiry load was approx. **\$28,000**. It is also well to note, that the results of our response to those inquiries produced (approx.) **\$50** million in **DOJ (RECA)** pay-out awards to qualified applicants, on behalf of Atomic Veterans. It gives us great comfort, to know that those awards could not have been made possible, if it were not for those successful “**Outreach**” efforts. I want to take a moment to thank my wife “**Alice**,” for being a real trooper, as she graciously responded most of those phone calls. And, let us not forget to say thanks to the **NAAV** membership for their continued support in these areas.

After **33** years of serving **America's (secret) Wounded Warriors**, we can finally show measurable results. And so, somewhere out there, if you have a friend, or a neighbor, or a business partner, who may be willing to send us an (affordable) contribution, that will enable us to complete our mission, we would be much obliged. . . .and most grateful, as well. . . .



FINAL MUSTER



Atomic-Veterans are dying off at the rate of 1,800 per month, and we are not privy to their names. To properly bestow our respects and share the grief experienced by their respective families, we ask our members to observe a special moment of silence to give thanks and recognize their dedication and honorable service, to their God, their families and their Country.



“Rest in peace, our Atomic-Veteran friends.”



"THE BREATH OF THE DRAGON"

He wasn't supposed to do it, but on May 15, 1948, **Lt. Col. Paul H. Fackler** (Commanding Officer of the U.S. Air Force 514th Weather Reconnaissance Squadron) flew his (**WB-50**) aircraft directly into the seething mushroom cloud of an atomic bomb detonation. The **WB-50** was a (Boeing) **B-29** Superfortress re-fitted with larger engines, and modified so as to carry additional loading, including a host of test instruments, etc. The mushroom cloud that **Fackler** had entered was the result of a nuclear weapon development test, code named "**Zebra**," the third (and final) of the "**Sandstone**" series at Enewetak Atoll, which is a part of the (western Pacific) Marshall Island chain . . .

Fackler's planned assignment was to track the atomic cloud from a distance of 10 miles, while hoping that the special (finite particle) filter units attached to his aircraft would capture samples of airborne radioactive debris. But as he pulled away from the mushroom cloud, in a climbing turn to the left, **Fackler** suddenly realized that he was inside a small finger-like projection of the rapidly rising "nuclear-hot" cloud. After quickly assessing his situation, he promptly distanced his aircraft from the cloud and continued his normal flight profile until his radiation safety officer, who was sitting in the nose of the aircraft (where the bombardier would normally be) was busy monitoring radiation levels, and announced that the crew had reached their exposure limit of 100 milli-roentgens, the amount a person would normally receive annually from the sun and the soil. It was now time to break off and get back to their home base on Kwajalein Island. On the way, **Fackler** managed to fly through a few rain showers that would (hopefully) wash away any radioactive particles from the exterior of his airplane . . .



The (Kwajalein) ground crew inspects a 'cloud-sampler' aircraft for radiation "hot-spots" after the flight through a nuclear cloud. It is well to note that they are not wearing "radiation" protection suits, or masks while performing those duties . . .

All of these carefully planned tests were of the utmost importance to the **DOD**, for use in the ongoing development of the methods and responses that may be required during an Atomic-Warfare battlefield situation. The after-effects of such a situation on personnel and equipment could well determine the final outcome - for either side of the contest . . .

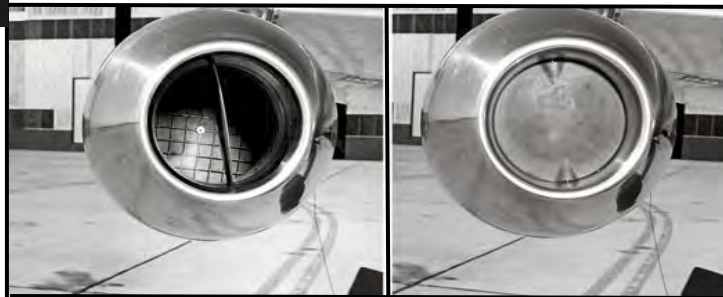
Equally important was the ability to analyze the tiny (trace element) radioactive particles of fallout, and the short-lived radioisotopes unleashed by the nuclear fission & fusion reactions, so as to get definitive data on just what had happened inside the multi-million-degree heart of a nuclear reactive explosion. But collecting that debris in the aftermath of those explosions presented an exceedingly "high-risk" challenge . .

During the postwar (1946) "**Crossroads**" nuclear test series, specially trained pilots, in "stand-off" aircraft, used newly developed remote control (radio-guidance) systems to fly unmanned "drone" aircraft through the nuclear clouds, of both the "**Able**" and "**Baker**" test detonations, from a safe distance. These radio-guided drones were specially equipped (Boeing) **B-17** bombers and (Grumman) **F6F** fighters. Each drone had pods mounted on the fuselage or under the wings, that were lined with special filter paper designed to capture airborne radioactive particles. Controlling the drones was tricky business, even under the best conditions, much less in the extreme turbulence following a nuclear blast . . .



Lt. Col. Paul H. Fackler

Describing that event to a writer for **The History of Air Force Atomic Cloud Sampling** (a government document published in January 1963) **Fackler** stated that "*none of us keeled over dead, and no one got sick after that cloud penetration flight.*" Aside from the constant static (and unstated objective of geopolitical saber rattling) the main purpose of those atomic bomb tests was to explore & measure the performance of new nuclear weapon systems & component designs, that would improve the performance of existing (stockpiled) bombs and missile warheads, and to measure the effects of a nuclear blast on ships, structures, and various types of military hardware . .



RADIATION WING-POD IS OPEN FOR AIR SAMPLE GATHERING

THE WING-POD IS CLOSED FOR TAKEOFF & LANDING

The drones often crashed or went astray, and even when all systems functioned properly, they couldn't always collect the high-quality samples required by the Physicists & Radiological Chemists at the *Los Alamos Scientific Laboratories (LASL)*, in New Mexico, or the *Lawrence Livermore National Laboratory (LLNL)* in California. All the controller could do was point his drone in the general direction of the cloud and send it through blindly, hoping that, by sheer luck, the drone would catch a suitable sample, while maintaining radio contact so as to survive the return flight and landing. . .



The QF-80 with the Chimp (top) is controlled by the QF-80 back-seat Officer (bottom) while lifting off from the "Indian Springs" runway, for a cloud sampling & radiation test mission . . .

It also afforded the *Bureau of Medicine ("Bu-Med")* radiation assessment team the opportunity to examine the Chimp's for radiation exposure reactions & other (external) health anomalies prior to sending them off to the Scientific Labs for long term (biological effects) studies. . .

One of the "Jangle" missions required a flight of three "Q" F-80's to enter the rising mushroom cloud at differing altitudes. After entering the cloud, control of two of the fighters was suddenly interrupted, by electronic interference. At that time, the nature of *Electro-Magnetic Pulse (EMP)*, and it's effects on electronic signals was not fully understood. And so, the result was the loss of both jet's and their Chimp passengers. With the loss of radio-control, the two jets soon crashed in the north sector of Pahute Mesa. Radio control of the third jet was maintained, until it was then handed off to a ground controller who was able to get it down safely, as shown below . . .

Fackler's (hot-cloud) stunt (whether purposeful or accidental - no one would ever know for sure) had raised some intriguing prospects. While the "Q" F-80 "Chimp-Squad" was engaged in radiation sample gathering & test effects missions at the *NTS* (in 1951) *Fackler*, and some of his supportive colleagues, were hard at work trying to convince the *Department of Defense (DOD)* and the *Atomic Energy Commission (AEC)* to concentrate more on "manned" sampling flights. Given the inconsistency of controlling "drone" aircraft at nuclear test events, and the inability to pinpoint the reasons for frequent loss of control, the *DOD's* interest in *Fackler's* arguments was rapidly growing, and gaining ground. . .



Crew members of the (B-29) "Over-Exposed" receive a cursory radiation check after a "Sandstone" mission. . .

After the first two "Sandstone" tests (code named *X-ray & Yoke*), the B-29 "Overexposed" flew cloud sampling missions in the prescribed manner and gathered adequate airborne samples accordingly. After landing at their Kwajalein air strip, as shown above, the entire crew was checked for radiation contamination levels. They then had to place their mission clothes into a special container, take showers, get more radiation reading checks, and were then issued new jumpsuits, which was standard operating practice at that time. Those "manned" missions were successful, as the total control of the aircraft was fully maintained by the pilot & co-pilot . . .



A "Lab-Chimp" is being trained to sit in the cockpit of remote controlled QF-80 jet fighter for "hot-cloud" missions in Nevada. .

While *Lt. Col. Fackler* and his crew were gathering airborne radiation samples from the last "Sandstone" test (when he made that decision to fly through the "hot" nuclear cloud) the Air Force was training Chimpanzee's to sit in the cockpit of remote controlled "Q" F-80 jet fighter, for the (1951) "Ranger" and "Buster-Jangle" tests at the Nevada Test Site (*NTS*). In addition to the collection of radiation samples, the Chimp's would be used as test subjects, for the purposes of designing & developing "radiation-safe" flying suits . . .

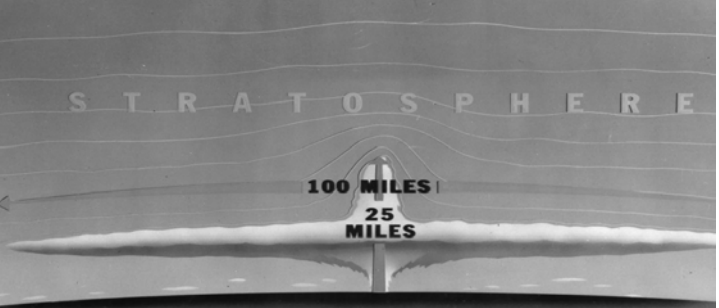


INFRARED IMAGE OF RISING MUSHROOM CLOUD ALLOWS MONITORING AIRCRAFT TO CHOOSE SAMPLE POINTS

The plan would be relatively simple. Monitor aircraft (orbiting at a distance) could vector manned aircraft into the parts of a cloud most likely to yield good samples, and an airplane (with a trained pilot) could respond to any rapidly changing conditions much faster than a remote-controlled aircraft. . .

After approval, those "cloud-sampling" flights were pronounced a success, and what had begun as a simple pilot error, was then explored as a cautious experiment, that soon became a vital element associated with America's nuclear weapons development & testing programs. As the "sampling" flights continued to be assigned to further tests (in Nevada and in the Pacific proving grounds), the flight teams were perfecting new techniques, the engineers were improving and upgrading monitoring equipment, and **Fackler** continued to push for the establishment a totally dedicated cloud sampling unit. . .

As Operation "**Ivy**" began (in late 1952) the cloud-sampling flights had largely transitioned from relatively slow prop-driven aircraft to the much faster jet powered aircraft, whose greater speed gave crews less time to hang around in the "hot" cloud. They could also quickly reach higher altitudes, an important consideration for adequately sampling H-bomb detonations, whose mushroom clouds would quickly reach altitudes above 100,000 ft., while spreading rapidly over a wider and broader area. On November 01, 1952 the world's first thermo-nuclear (hydrogen) weapon, code named "**Mike**," wiped out the entire (Marshallese) Island of Elugelab. At the time of detonation, four **F-84-G** fighters, each carrying radiation sample collection equipment on their wing-pods, were already airborne, and rapidly speeding toward the test area.



The Ivy "Mike" Hydrogen Bomb produced the largest mushroom cloud dispersion, at that time, with a total height of 25 miles and a maximum diameter of 100 miles

On April 8, 1944 **Capt. Virgil K. Meroney**, flying a (North American) **P-51-D** "Mustang" on a strafing mission over Germany, was shot down and captured. For over a month, he was listed as missing in action, until he was found imprisoned in a Stalag Luft POW camp. One year later, he managed to escape and was soon repatriated with U.S. Forces . . .

Now it was November 1, 1952 and **Lt. Col. Virgil Meroney** was the leader of "**Red-Flight**," four (Republic) **F-84-G** "Thunderjet" aircraft that was just arriving in the general area of the fully formed "**Mike**" thermo-nuclear mushroom cloud about 90 minutes after detonation. As per instructions from the (Convair) **B-36** sampler-mission control aircraft, that was circling at some distance away, **Meroney (Red-1)** and his wingman (**Red-2**) penetrated the stem of the rising mushroom cloud at an altitude of approx. 40,000 feet. . .



As predicted, the main cloud, which began forming at about 55,000 ft., was too high for an aircraft to reach, so samples from the rising stem would have to do. Immersed in the dull red glow of the cloud interior, **Meroney** watched intently as his radiation detection instruments pegged-out to their maximum readings. After five minutes, inside the roiling cloud stem, he and his wingman then executed a 90 degree turn

5 in preparation for a rapid escape. . . .



GREENHOUSE "DOG" - 04-18-51 - 70 KILOTONS

While this was all happening, the age of the Hydrogen-Bomb was just about to begin. Until now the destructive forces generated by an atomic bomb was measured in **Kilotons**. One kiloton is equal to **1 thousand tons** of conventional explosives. Back in the Marshall Islands, the "**How-Double-Prime**" method of "**fission-boosting**," by using **Lithium-6-Deuteride (L-6-D)**, or **Lithium-6-Deuteride-Tritide (L-6-D/T)** to increase the percentage of total first stage fission process activity, which then results in the increased generation of x-rays, was successfully "proof-tested" during the (1951) "**Greenhouse**" series . . .

This was the final stepping stone leading to the development of the "**fission-to-fusion**" process where massive amounts of X-ray activity generate enough energy within the second stage to cause Hydrogen atoms to combine to form Helium atoms, which then release energy & destruction in the **Megaton** range. One Megaton is equal to **1 million tons** of conventional explosives. As the destructive power of nuclear weapons was rapidly increasing, the total weapon size & weight was rapidly decreasing. The resulting (post test) mushroom clouds, however, were getting larger and rising to altitudes that were unobtainable by piston driven aircraft . . .



Capt. Jimmy Robinson

As they were exiting the cloud stem, the rest of "Red-Flight" was on the final leg of their sample-gathering run. Now it was time for Capt. Bob Hagan (Red-3) and his wingman Capt. Jimmy Robinson (Red-4) to enter the cloud stem. Hagan reported, to the control aircraft, that "the cloud stem consists of both grey and dark shades and still appears to be

boiling." He also recalled that "while we were going through the cloud, it appeared as though Robinson became disoriented and spun out," He went on to say, "apparently, as Robinson pulled his airplane into a tight turn to escape what his instruments told him was a particularly 'hot' region of the cloud, his autopilot disengaged, the jet then stalled and lost altitude, and Robinson briefly lost control of his airplane."

Jimmy Robinson and Bob Hagan were both veterans of World War-II. Robinson had been a B-24 "Liberator" pilot, who had been shot down over Romania, and after being captured, he spent some time in a prisoner of war camp, while Hagan had flown almost 100 ground support missions in a P-47 "Thunderbolt" with the Ninth Air Force. . .



B-24 "Liberator"



P-47 "Thunderbolt"

Flight leader Meroney would later report that he heard heavy breathing over the radio, as if Robinson had been holding down his mike button and hyperventilating while he struggled to maintain control of his aircraft. After Robinson reported that he had recovered

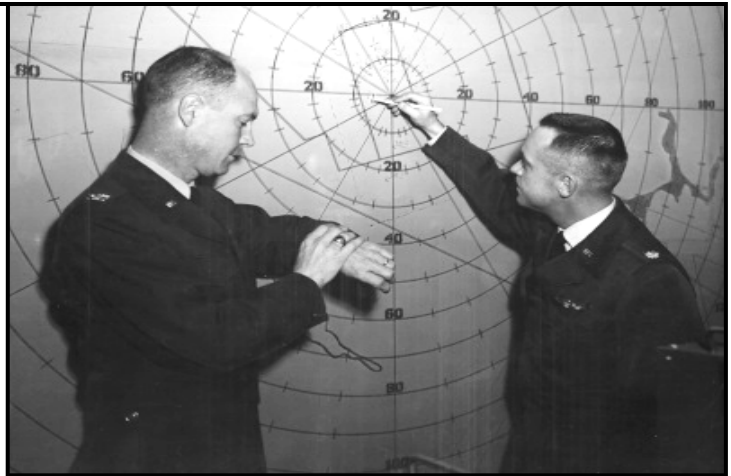
at 20,000 ft., Meroney then ordered Robinson and Hagan to immediately exit the cloud and rendezvous at a safe - stand-off distance. . .

Hagan later said, "I continued on out of the cloud and then went down to 20,000 feet to try to find him, but that didn't work, and although there was a refueling tanker, somewhere out there, they just simply couldn't find us." And then, there was another major 'off-again - on-again' problem with their communications and electronic instruments. . .

Electro-Magnetic Pulse (EMP) effects generated by a Hydrogen-bomb detonation, are much stronger, and longer lasting than those generated by a "straight-fission" (single stage) atomic weapon device. As an example, the (1.4 megaton) "Starfish-Prime" warhead, that was detonated 480 miles above Johnston Island, in the 1962 "Fishbowl" (EMP) effects tests, shut down all teletype communications and radio & TV transmissions in the Hawaiian Islands, freaking out both natives and tourists for more than two hours. . .

After the "Mike" test, the EMP effects was wreaking havoc with the "Red-Flight" navigational and radio equipment, and as they struggled with those problems, their fuel supply was rapidly dissipating. And so, they were in a real predicament, uncertain communications & navigation ability, and short on fuel, with no service station in the neighborhood. . .

After being forced to spend almost an hour at a much lower altitude, Hagan and Robinson soon realized that they had eaten into their scarce & limited fuel reserves.



While all of this was happening their activities were being plotted and monitored at mission headquarters, given the limited ability to receive legible radio transmissions. Hagan later said, "I decided we better head for a runway somewhere, and Enewetak was the closest one to our present location." As the transmission static diminished, he managed to pick up a radio beacon from the island and started off in that direction. Soon thereafter, Robinson also caught the beacon and fell in behind Hagan, hoping to make it the only landing strip out in the middle of no-where. . .

Nuclear cloud sampling missions (in the western Pacific) demanded greater flying distances, so fuel was tight, and the F-84's were unable to carry extra fuel in wingtip tanks, as that was where the cloud sampling filter pods were mounted, thus the mission fuel capacity was even more limited. Hagan recalled, "When we got to Enewetak, my gas gauge was on empty. Luckily, on my final approach, I was able to set up a pattern and land without fuel, using total 'dead-stick' maneuvers, and, on more than one occasion, I almost lost control of my airplane. After flaming out, the only landing I could make was a "hard" one, and the impact blew out my right tire." Within a few hours a mechanic was flown out to the Enewetak airstrip, where he installed a new wheel on Hagan's aircraft, which was then refueled, and Hagan was then able to take off and return safely to his home base. . .

Jimmy Robinson, however; wasn't so lucky. He had sent out a radio message saying that at 13,000 feet his engine had flamed out, but he thought he could make it to the Enewetak air strip. But by the time he had descended to 5,000 feet, and with the island and runway in sight, Robinson radioed again that it looked like he would not make it, and he was going to have to bail out over the ocean. The pilot of a rescue helicopter had arrived just in time to spot Robinson's F-84, wings level and gliding in at about 500 feet, north of the atoll. The helicopter pilot later said that it looked as though Robinson had jettisoned his canopy, but had decided to stay with his aircraft in an attempt to execute a safe water landing. . .



The aircraft then hit the water, skipped smoothly over the surface, then it hit a large wave and flipped over. The rescue helicopter quickly moved in, and hovered over the jet as it rapidly sank. After several minutes of intense searching, **Capt. Jimmy Robinson** was nowhere to be seen. . .

Hagan later said, "After landing, pulling onto the tarmac, and getting out of my airplane, the people in the tower told me that an airplane had just gone into the ocean behind me, and they didn't see any signs of a parachute or anything else. Then, deep in my gut, I had a bad sinking feeling." And it was at that moment Hagan knew that he would never see **Capt. Jimmy Robinson**, his close friend and flying comrade, again. .

At that time, cloud-sampling pilots wore lead-lined vests, which, along with the rest of their gear, would have made even bailing out problematic, let alone attempting to stay afloat for any period of time while awaiting rescue. According to official reports, *Robinson's* body was never recovered. "They searched but they couldn't find anything," said Hagan. "It's pretty deep under that spot in the Ocean. I wasn't around when they did it, but I heard later that they had tried their best and couldn't find Jimmy, or his airplane. There must have been strong currents in there that took him & his airplane away."

One year after that horrible event, **Capt. Jimmy Priestly Robinson**, age 28, would be (posthumously) awarded a *Distinguished Flying Cross (DFC)*, that was proudly accepted by his surviving widow & family. . .



Rebecca Jane Robinson accepts the *Distinguished Flying Cross* for her deceased husband **Capt. Jimmy Robinson**. Their daughter, **Becky (Robinson) Miller** has devoted most of her free time working with *NAAV* assisting other *Atomic-Veterans* in need . . .

Then, on April 1, 1953, **Lt. Col. Paul Fackler's** Pentagon campaigning finally paid off, and the *4926th Air Sampling Test Squadron* was officially commissioned, and ready to do business. Until atmospheric nuclear testing finally ended, in the fall of 1962, men would continue piloting specially equipped aircraft and flying them into "hot" radioactive clouds.

In her 1999 study of "Cold-War" radiation experimentation, journalist *Eileen Wellsome*, author of "*The Plutonium Files*" wrote: "Perhaps no humans got closer to the exploding heart of a nuclear weapon than the radiation air-sampler pilots." The men chosen for those "high-risk" missions had a lot of flying hours that, in many cases, also included combat experience. Pleased to be picked for such an important job, all four "*Mike*" cloud-sample pilots shrugged off the dangers. . .

Hagan laughed and said, "You know, when you are young and dumb, your concerns about any risk factor is on the back burner." But aside from great stick-and-rudder skills and exceptional instrument flying abilities, those air-sampling pilots needed a knack for, what's now called, multi-tasking. . .



Paul Guthals, one of the cloud sampling project leaders at *Los Alamos Scientific Labs (LASL)* explained in the *Air Force History* publication: "It was difficult to find pilots with the ability to succeed in radiation sampling missions. They had to possess the ability to receive radioed instructions, make taped recordings of instrument readings, be alert for excessive radiation events, while simultaneously dealing with and a myriad of other details. Most pilots with less experience and proven ability were simply overwhelmed, so badly that they could not function satisfactorily, and were often distracted by the awesomeness of the clouds ever-changing interior". . .

By most reports, the world inside an atomic cloud was a turbulent mixture of glowing colors dominated by a deep, throbbing reddish glow. On his many sampling missions, Hagan didn't notice much color, but admits, "I didn't pay much attention because I was flying instruments, and you don't have much time to look at the surrounding scenery." The reddish tint, from explosion byproducts such as nitrogen dioxide and iron oxides, provided pilots with a handy way to visually distinguish atomic clouds from nearby cumulonimbus clouds. . .

After a mission, the pilots parked in an area removed from the normal flight line of the designated (Nevada or Pacific) test-site airstrip. But the crewmen couldn't just pop the canopy and hop out. Any direct contact with the airplane's exterior was considered to be extremely hazardous. So, after parking in their designated area, they had to shut the engines down and wait for the ground crew, with a forklift, to raise a pallet-like platform to cockpit level (as shown above). The pilot and radiation safety officer would then step carefully out of the airplane and onto the platform, while carefully avoiding physical contact with the aircraft's "radioactive" outer skin. .



"Hot" (cloud) samples are removed from the wing-pods . . .



The "Hot" samples are then placed in a lead-lined box. . .

After the forklift driver returned the flight-crew to the ground, some distance away from the airplane, they were checked with a Geiger counter for contamination and directed to strip down, place their clothes in a special container, and shower immediately. They then had to repeat the shower procedure, until the Geiger counter stopped its furious clicking. The flight crew were then issued fresh clothing, while their contaminated gear, along with the radiation dosimeters they'd worn during the mission, were carefully packed up and sent away for full laboratory analysis. In an unusual case, the pilot of one mission was asked to swallow an encapsulated film container, attached to a string. After the mission, a Bu-Med technician carefully pulled the string until the capsule was removed from the pilot's stomach. It was then forwarded to the lab for radiation analysis to determine if internal dose readings were possible during the cloud sampling mission. . .

While this was happening, five-man filter recovery crews used 10-foot poles to unlatch the sample pods, remove the filters, and place them in lead-lined containers for shipment back to the labs, for examination and assessments. These procedures required a certain amount of finesse, constant vigilance, and manual dexterity. Maintenance crews then thoroughly washed down the aircraft and scrubbed it clean of radioactive debris, using both soap and water and a cleaning compound called "gunk" — although not even "gunk" could render a contaminated airplane pristine & completely safe. . . .

According to **Lou Watts**, a member of the ground-crew for an **F-84** cloud-sampling squadron, "We were issued lead-lined gloves and a vest, which probably did no good. We were not



Now the "hot" airplane is washed down by the ground crew, who were not issued any radiation protective clothing or masks. . .

issued any protective masks that would have prevented the inhaling or ingesting of airborne radiogenic particles caused by blowing winds & dust." Watts said he is convinced that many of his cohorts died early of radiation exposure cancers and sees some correlation between what they were tasked with doing,

and the resulting health issues they eventually experienced. **Watts** also said, "All of those Air Force "decon-grunts" that I served with during the (1956) 'Redwing' tests in the Marshall Islands, and that I have managed to kept close contact with, are now gone, and no one can tell me why." He went on to say, "When it came to cleaning those "hot" airplanes, the best that we could do was to cleanse it to a reasonably low level of radio-activity, then let the remaining particles naturally decay." But because of the frantic pace of the testing program, most aircraft never sat idle long enough to completely cool off. And some parts of an aircraft simply couldn't be reached. As **David Ellis**, an aircraft mechanic said, "There was no way in Hell that we could wash the inside of those piston fired, or jet powered engines". . .

Carole Gallagher (author of *American Ground Zero*) interviewed cloud-sampler pilot **Langford Harrison**, who offered the following comments. "Most engines are oily by nature, and "more-oily" is a normal occurrence after they have been allowed to cool down. The ground crew mechanics could never get those radiation particles out of our engines. They'd leave the airplane in an off-limits area for two or three days and when they were ordered back into service, they were still emitting dangerous levels of radiation like there was no tomorrow. We had to then crawl back into the airframe surrounding those 'hot' engines, and fly through more 'hot' atomic clouds, using the same aircraft over and over. Given what I know now, those airplanes should have been burned along with our flight suits". . .



Lou Watts (front-center) & his 5 man Air-Sampler-Decon team. .

As the nuclear weapon testing at the Nevada Test Site and out in the Marshall Islands intensified, to keep up with growing Cold-War concerns, Atomic Energy Commission Scientists argued with the Air Force over just how much radiation was considered to be "too much." Then, when fully manned aircraft (cloud-sample) testing began, in 1951, the **AEC** specified that all personnel participating in test operations could (safely) receive up to **3.9** roentgens of (gamma) radiation over a three month period. Once an individual had reached that level, he would be banned from further exposure until the remainder of the three months had passed. Given this, the total (annual) acceptable total dose would have been **15.6** roentgens. . . .

That was the proposed theory, however; in practice, the policy proved troublesome, particularly for the Air Force, which admitted as much in its official history of the cloud-sampling program: "The enforcement of radiological safety measures was a continuing problem, with Air Force operational leaders threatening outright rebellion, on at least one occasion, when they argued that no serious mishaps had occurred and the imposition of any new radiological safety measures would unnecessarily increase the requirements for additional manpower, while lessening the readiness of crews and aircraft for post

test air sample gathering purposes.” They also argued that, “all of the current (in place) decontamination program protective measures are more than what is actually required to insure safety.” By 1957, the controversy had escalated, from a mild grumble to open (administrative) warfare, with (Air Force) **Col. William Kieffer** pushing to seriously downgrade, if not entirely eliminate, most of the (in-place) minimum routine decontamination procedures . . .

Dr. Harold Plank, who was the (**LASL**) Scientific Director of the cloud-sampling program, argued that **Col. Kieffer** “simply could not understand the philosophy which regards every radiation exposure as being injurious, but accepts minimum exposure events as being most critical for some jobs.” The in-place safety and decontamination procedures continued (more or less) and the controversy was never completely resolved. Throughout the entire program, and until (U.S.) atmospheric testing finally ceased (in the fall of 1962), the **officially permitted radiation exposure dose limits**, for cloud-samplers & their ground crew personnel, continued to drift upward to as high as the Air Force “**Brass**” thought they could get away with !!!

ONLY ONE TENTH OF A SECOND

Norman “Bud” Evans (USAF) describes his first-hand recollection of a “Redwing” cloud-sampling mission

Well now - let’s see, as I can recall, during the five months that I spent monitoring **Operation “Redwing,”** which tested 17 (second-generation) nuclear & thermo-nuclear (hydrogen) bombs over the Marshall Island proving grounds, 6 of which were in the Megaton range, I flew my (Republic) **F-84-F “Thunderstreak”** into seven of those mushroom clouds, for the purposes of measuring the heat & shock wave effects on my aircraft. I have to say that every one of those flights was a brand new experience, for both me and my airplane. It was on July 3, 1956 that I had to fly into the “**Mohawk**” cloud, and on that day, I’ve got to tell you, things went horribly wrong. . .



Air Force Tech’s are assisting F-84-F pilots prior to their next assigned (Nuclear Test) cloud-sampling mission . . .

The “**Mohawk**” shot was a 360 kiloton (tower) test of a **University of California Research Laboratory (UCRL)** two-stage hydrogen-bomb, with a boosted “**Swan**” primary and a “**Flute**” secondary, that was detonated on **Eberiu Island**, which is a part of the **Enewetak Atoll** group. This particular test, however; according to the those white-coat scientific types, was considered to be a low risk to pilots flying anywhere near surface zero. Due to pressure collapse of the porous coral soil, that bomb detonation created a crater with a diameter of **1,340 ft.** The destructive power of that test was **20 times**

more powerful than the bomb that decimated the city of Hiroshima, Japan on August 6, 1945. . .

My flight path was programmed so I would be at a particular point (in the sky), within **0.1** second of the detonation — or as close as feasible to a point that would subject the airplane to the maximum amount of heat effects and blast shock loading. I know, you are thinking that such precision timing sounds impossible, but that was the requirement placed on me for all my post-test equipment effects assignments. . .

That sort of careful positioning is what first brought me to **Patrick Air Force Base, Florida** the previous year. My assignment coincided with the final development of a new space



Redwing “Mohawk”

positioning system developed by **Radiation Inc. of Melbourne, Australia.** This system was supposed to provide pilots with that high degree of navigation accuracy. And, as the pilot who was going to use this system with nuclear stress test assignments, I was tasked with making those test flights for **Radiation Inc.**, using it’s system, which (hopefully) would allow me to capture & record the desired post-test data – at least according to the proposed system function theory, unless that illusive **Mr. Murphy** showed up !!

We would soon find out, in actual practice, that the system had plenty of bugs to work out. We could not find a proper fix before my assignment to the “**Mohawk**” mission. And so, I had to use a (standard) radar positioning system, flying by the guidance of a well trained Air Force radar technician. I don’t mind saying that I was a little more than concerned about a controller, at a remote radar site, positioning me & my airplane with the required accuracy to the a specific spot in the sky, at a precise given time, prior to a nuclear weapon “blow & show,” however; I had to place my full trust his know-how .

Although the “**Mohawk**” test was classified as a “mild” shot, our objective was to determine how large a nuclear bomb an aircraft could deliver, while surviving the after-effects of the resulting blast effects. We needed to learn how much heat the airframe, skin, electronics, and engines could absorb, and still survive. And additionally, there was the need to know how many impact loads, above the design limits of **14 G’s**, could the airframe and control surfaces safely absorb, and what kind of overpressures could the (jet) engine turbine wheels withstand without causing the engine to fail & crap out . . .

On this mission, my airplane would experience heat and shock waves from the smaller (sub-megaton) thermo-nuclear explosion. And so, my “live-shot” day began at 0400, with a break-fast of steak & eggs, a special meal for the pilots and flight



Capt. Eddie Stahl prepares his B-57 "Canberra" for a nuke effects (stress test) mission, during the 1956 "Redwing" series. . .

crews participating in those "hot-dog" nuclear test "snoop & scoop," or stress-test assignments. . .

For this test, I was to fly a late model **F-84-F-25** which, at that time, was the sturdiest aircraft in the Air Force inventory. In addition to my flight, there were several other aircraft being tested that day, including the (*Dougllass*) **B-66 "Destroyer"**, the (*Martin*) **B-57 "Canberra"**, and the (*McDonnell*) **F-101-A "Voodoo."** These aircraft were assigned positions at a greater distance from the bomb detonation effects than I was. . .

For the "**Mowhawk**" assignment my wingman was **Charles "Chuck" Kitchens**, who would be flying in an older model **F-84-F**. His assignment was to measure the over-pressure side loads created by the detonation shock wave. "**Chuck**" had earlier flown **F-80's** that remotely controlled cloud sampling "**Q**"**F-80's** (with "*Guinea-Chimp's*") over and around the *Nevada Test Site* during the 1951 nuke tests. Following our last-minute briefing, we lifted off into the black sky. These early liftoff's were always the loneliest times I have ever spent in the cockpit. Roughly 10 minutes later, I closed my protective hood and then continued flying (on instruments only) towards my assigned holding pattern over the northern sector of Enewetak. While this was happening, "**Chuck**" was maneuvering into his assigned position. . .

The countdown went smoothly, and all of my radar controller's navigation commands were easy to follow. Then, as "zero-hour" approached, I pulled my black goggles down over my eyes and covered them with my gloved left hand. Detonation show-time was now, and suddenly, shards of brilliant light penetrated all my protective devices, and for a few seconds, I felt a severe and sharp pain my eyes. As the brilliance faded, I could see the bones in my hands, which scared the Hell out of me, and by now, I was fighting a real panic mode. I then suddenly had the sensation that millions of long hot needles, were shooting, at a rapid pace, through my entire body. These events were definitely not going to "make-my-day" . . .

Since we were not issued any fire-resistant garb, and I was only wearing a lightweight flight suit, I had a sinking feeling that I was in real deep trouble. When I pushed the goggles up, instead of seeing the light fading, the way it had performed in previous blasts, I had the horrible sensation of being on fire. I wasn't fully braced for the impact of the shock wave, and when it hit my airplane, I was affected more by the flaming debris in the cockpit than by the external forces of the initial impact itself. I wasn't sure what was happening, except that it was

damn sure not good, and different from anything I had previously experienced. As I tried to regain my composure, I could see flames around my feet, causing me to pull them back as far back into the foot rests as I could get em, and I was thinking, OK son, now what the Hell are we going to do ?

When I tried to unfasten my protective hood, the heat from the metal zipper and snaps burned through my gloves. Then, when I was finally able to pull the hood back, I was suddenly covered in a shower of burning fabric. This was all happening within a few seconds, which actually felt more like several minutes, or maybe even hours !! I kept trying to convince myself that I had not actually flown into the fireball, but given these events, I knew that I had somehow been to damn close for comfort, and now had to get the Hell out of this mess . . .

In the back of my mind, were the memories and visions of an earlier Hydrogen bomb test, when my space positioning system failed at five minutes to detonation. That H-bomb lit off (45 seconds) to early, and the resulting fireball was directly in the center of my flight path. Had I not aborted the mission, I would have flown slap-dab into the center of "*Nuclear-Hell,*" and into total atmospheric oblivion. My brain processes quickly dialed back to the reality of this unfolding event. As the surrounding smoke was soon swallowed up by the cockpit air circulation system, I could once again see through my canopy, and was greatly relieved to see that my airplane was not actually engulfed within the rising "**Mohawk**" fireball. The fizzing fire around my feet had gone out, but even through my oxygen mask I could still smell the toasted material and metal.



Norm "Bud" Evans & "Chuck" Kitchens practice radar navigation positioning flights prior to the Redwing "Mohawk" nuke test effects mission over Enewetak Atoll, in the Marshall Islands. . .

I tried to make a "*Mayday*" call, but all I could hear in my headset was the loud static & buzz noises created by the **EMP** interference effects. Just a bit above me, the overcast was punctured by the fireball's trail. In it's wake I could see, what looked like, patterns of light shaped like small Japanese umbrella's, exploding every thousand feet or so. After all those years, I can still see those lights, and sense those cockpit smells, and see my bones, in my dreams . . .

After exiting the immediate area, I pushed the control stick to the right and began looking around for a suitable airstrip to set down on, while hoping that my radio and instruments would once again come back to life, when to my pleasant surprise, an airstrip beacon appeared through the smoke and haze just 25 miles off my left wingtip . . .

By now the static in my headset had subsided somewhat, and the smoke under my feet had begun to dissipate. For the first time in a few long seconds, I was thinking that I might have a chance of surviving this here mission. While I was thinking this, I had no idea about the overall condition of my airplane, but it was responding to my control input, so at least I could

point it toward home. I then tried another "Mayday" call, and was greatly relieved when my controller acknowledged my transmission and vectored me toward that runway. As I was on my final approach the smell, from whatever had been burning, was still making my eyes burn and water, and I could only partially see well enough to center my airplane down the rapidly approaching runway. . .

After safely landing and slowly extracting my shaking self from the cockpit, I discovered that the lens, on the over-the-shoulder camera inside my protective hood had melted. Now don't that beat all ? And then one of the ground crew members told me that this was the same airstrip that **Capt. Jimmy Robinson** had tried to reach, before he crashed and disappeared after an earlier nuclear test mission. I remembered observing a moment of silence, and having a distinct feeling of being blessed with a safe landing after my experience with the wrath of the nuclear dragon. . .



Norm "Bud" Evans (left) and Charles "Chuck" Kitchens (right) are greeted by Republic Aircraft Corp. and Allison Engine Mfg. Rep's (in shorts), after completing one of their nuclear blast effects tests with their F-84-F aircraft . . .

Of the three layers of asbestos and aluminum cloth that made up the hood itself, two of them had been incinerated. For several weeks, after that test, I continued to have the sensation of needles burning through my body. Because of the overall classification of the "Redwing" tests I was never allowed to see the data gathered from any of my missions. Nor was I ever given the radiation readings from the film badges I wore during the last five mission flights. . .

Although we had been briefed that the maximum exposure we could safely receive was 100 milliroentgens, in a six month period, I had pointed out to the flight surgeon that I had been exposed to 100 on each of my first two flights !! Whether the over-exposure contributed to the life threatening melanoma's I have since developed, only seven months later, I would never know. . .

My next two missions were also Hydrogen-bomb tests over Bikini Island. On the second mission, the bomb exceeded it's predetermined design yield by a significant amount, and the shock wave impact broke my airplane's right wing spar, in two places, and I have to tell ya that getting safely back to the airstrip, in one piece, was a real challenge, on that day too. This was the (July 20, 1956) test that was code named "Tewa." It was a 5.0 Megaton barge shot off Yurochi (Dog) Island. This device was the first (three stage) "dirty" (salted) "Basson-Prime" design sanctioned by the **DOD**, and I would later learn that this was actually the second test of that

particular design. The earlier "clean" version of this same (Bassoon) device was used for the (May 27, 1956) 3.5 Megaton "Zuni" test. The fission-burn yield of this device was 87%, which was the highest known fission yield in any U.S. thermo-nuclear test to that date. It incorporated an all *Oralloy* (super-enriched) Uranium tamper surrounding the tertiary **Pu-239** "pit," instead of the standard lead-tamper that was used in the "Zuni" test device. . .

This design was later developed into the **Mk-41 (5 to 25 Megaton)** strategic H-Bomb, with "dial-a-yield" capability, and the highest (total-yield) weapon ever stockpiled & deployed by the *U.S. Strategic Air Command (SAC)*. The crater produced by the "Tewa" shot was 4,000 ft. in diameter and 129 ft. deep. . .

On the plus side, the results of the "Tewa" shot provided the aircraft design & test engineers with the maximum possible nuke impact & stress data, thereby negating the need for any more "live" (dragon-breath) field tests. Although those nuke stress test missions were, at that time, new and challenging "macho-type" events, I am sure the nuke test pilots were most pleased with this decision. And, for the record, I can say, with the highest degree of certainty, that I damn sure was !

By: **Norman C. "Bud" Evans**
Atomic Veteran - current status, unknown.

"RAD-EFFECTS MONITORING" - MY STORY

By: **Capt. James C. Meredith (USPHS - Ret.)**

"It was in 1957, that I had the privilege of experiencing 12 atomic bomb test detonations. I use the term "experiencing" rather than 'seeing,' because, as I will describe, all of my physical senses were impacted. There are relatively few atomic test witnesses remaining, who can accurately recall and fully share their first-hand experiences of those long past events. Of equal importance, there is only one publication that will allow those of us to tell our story, unedited with our own inflections, and that is the periodic NAAV newsletter, that takes us back in time, to that period in our history that allowed America to win the Cold War Nuclear Arms Contest. And so I am glad to share my experiences accordingly."

As a Commissioned Officer attached to the *U.S. Public Health Service (PHS)*, I was assigned to the 1957 (**Plumbob**) atomic tests in Nevada for the purposes of providing off-site monitoring along with approx. 50 other PHS Officers, one Civil Service Scientist, and two U.S. Army Veterinarians. The last (U.S. sponsored) above ground atomic test was performed in Nevada on July 17, 1962. This was the "**Little-Feller-I**" (final) test of the **W-54 "Davy-Crockett"** (155mm) recoilless rifle nuke mounted on an armored personnel carrier. This test was a part of "**Exercise Ivy Flats,**" and was witnessed by **Robert F. Kennedy** and **Gen. Maxwell D. Taylor**. . .

After each nuclear test, me and 15 (or so) other PHS Officers were assigned to drive under the nuclear cloud as it moved eastward to test for radioactive fallout particles. The remaining Officers were stationed in, and around strategic communities in **Nevada, Utah, Arizona and California**, to provide continuous monitoring of radiation contamination, and to keep the local citizens informed of the planned atomic explosions (termed "shots") as well as other related activities. . .

The two Army Veterinarians were tasked with observing animals in the four-state area, that may have been effected by fallout, from those atomic tests. So that we could blend in with the public, none of us were in uniform. The *Atomic Energy Commission (AEC)* provided additional on-site monitoring. At that time, our PHS Director was **Capt. Oliver Placek** and the Asst. Dir. was **Cdr. Melvin Carter**. . .



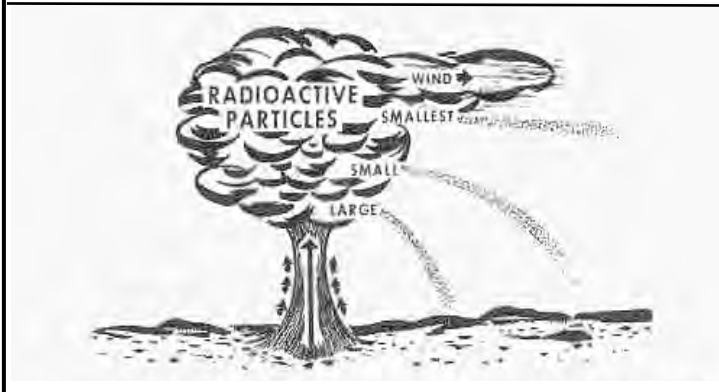
Plumbbob "Stokes" - 08-15-57 - 17 kilotons

Later, Dr. Carter became a professor at Georgia Tech. University, and was recognized as a world-renowned expert on nuclear energy. For example, he was an on-site consultant shortly after the **Chernobyl** nuclear power plant "melt-down" in the Ukraine . . .

The Nevada Test Site (**NTS**) was located only 65 miles northwest of Las Vegas. All military personnel participating in the **NTS** nuclear weapons tests were quartered at **Camp Desert Rock**, with exception to those who were flown in for an exercise, then flown back out before dusk. Our group lived in small trailers, each of which had two sets of bunk beds. We could look out of our window and see an Army encampment across a dry gulch, where a battalion of soldiers suffered in the heat, while living in those small pup tents. . .

In addition to these soldiers, and a contingent of Marines were occasionally flown in from a nearby base, to take their places in trenches about a mile or two from the blast zone. After the test detonation, they would then slowly walk towards the smoldering remains of "ground-zero." It would later be determined that it was **not a good idea to use these soldiers as nuclear test "guinea-pig" subjects.** . .

On those days, when an atomic test shot was scheduled for the following morning, we would check the tower in the center of the camp at 1800 to see whether the light was "green" or "red." If the light was red, we would head into Las Vegas to see a live entertainment show, with famous movie stars.



Large quantities of pulverized soil & dust particles are drawn up into the ascending "radiation-hot" cloud and may be carried to heights of 15 miles or more, after which they gradually drift back down to the surface, after being contaminated with a host of radio-nuclide particles, including Radio-iodine (131) that can cause thyroid cancer and Cesium (137) that can cause genetic mutations that may cause second and third generation health issues.

On the other hand, if the light was green, we would eat supper, relax until 2300 and check the tower one more time. If the light was red, we would sleep through the night, but if the light was green, we would retire and get up at 0100, dress and mosey-on over to our dining tent for breakfast. . .

As a point of sheer interest, we would gain entrance to the dining hall by putting a silver dollar in a slot, to open a turnstile, similar to getting into a subway station. Dollar bill's were rarely used in those days, as everyone had silver dollar coins to put into those "stingy" Las Vegas slot machines. . .

From the dining hall, we would load up into Van's to go to the test site early enough to be in place by 0400. Before the test shot, we were given a tour in closed vehicles around the craters created by earlier tests. These craters appeared similar to a volcano crater, except that they were not black with lava, but white with fused sand. The craters were about half-mile in diameter and were ringed by structures made from



Range cattle (downwind of the Nevada Test Site) are being rounded up for "radiation-effects" studies by PHS Veterinarians. .

different materials to determine how they would hold up to the tremendous heat and blast forces generated by the tests devices. There were also several damages trucks, tanks, airplanes, etc. that were not taken away, as they were still contaminated with radioactive materials, and would remain "hot" for several hundred years. It may seem hard to imagine today, but we went on these tours without wearing any "radiation" protective gear. . .

When we arrived at the test site, well before the scheduled detonation time, it would be completely black with darkness. Most of the atomic bombs were detonated a few minutes before daybreak, so as to allow testing for radiation without the sunlight effects. Sunlight consists of the same types of radiation as an atomic explosion – visible light, infrared light, ultraviolet light, etc. – and the scientists wanted to observe the initial detonation effects without having to compete with the complex effects from mother nature and the universe. . .

At the time of detonation, we would be standing in a bunker, which was essentially a mound of sand, about 15 ft. high and approx. a mile long, located about ten miles from "**GZ.**" Our only protective gear consisted of a pair of dark goggles. An Atomic detonation is about 100 times brighter than the sun, so we could look directly into the sun with those goggles, and it would appear as only a bright disc. Please keep in mind that these are my personal reflections, and are not an official description of a nuclear explosion. . .

As zero hour approached, a voice would be heard over the loud-speaker, at given intervals, warning us of the approaching time of detonation. Finally, as the countdown would begin – our pulse would quicken, and a tense feeling would engulf our senses. The awareness that I had of something bad about to happen was a feeling that the atmosphere was electrified and there was a slight odor of ozone in the air – like during a thunderstorm. As the countdown went to “zero,” there was an immediate bright flash of such brilliance, that I thought my eyes would burst behind my dark goggles. . .

Finally, **Cdr. Carter** got on the radio and told us to stay there and call in readings every fifteen minutes. We did this, and were there for about three hours, in that dry heat, and I became so dehydrated that I was having severe headaches. When we finally got to a populated oasis, my partner jumped into a public pool, surrounded by palm trees, with his clothes on, while I lay on a bench under a tree and suffered. I finally got over it after drinking a lot of water and having a good night’s sleep. We would sometimes be gone for two or three days on these cloud-tracking trips. In the meantime, our headquarters was plotting the radioactivity readings on maps as we called them in. . .

On one occasion, a bomb (in a tower) did not detonate, and **Cdr. Carter** picked me as the subject of a practical joke. He called me into his office and said “*Cham, we got a call from control central and they want a Public Health Officer to go up to the tower with the techs. and see why that bomb did not go off. You have been selected for that task.*” For a moment, I believed him and I know that I must have turned white as a sheet. After I started shaking like a leaf in a windstorm, he broke out with a big grin, and we all had a laugh, while my pounding heart began to slow down a bit. It was later found that someone had forgotten to plug in one of the control circuits, and the bomb just sat there until the mistake was finally discovered, and fixed, and when the test was re-scheduled, then it went “bang,” at the designated time. . .

The one test that fascinated me the most was in the open desert, with a bomb device suspended on a balloon about a mile over “ground-zero.” I later learned that this was the (July 5, 1957) “**Hood**” test that produced a **74** kiloton yield.



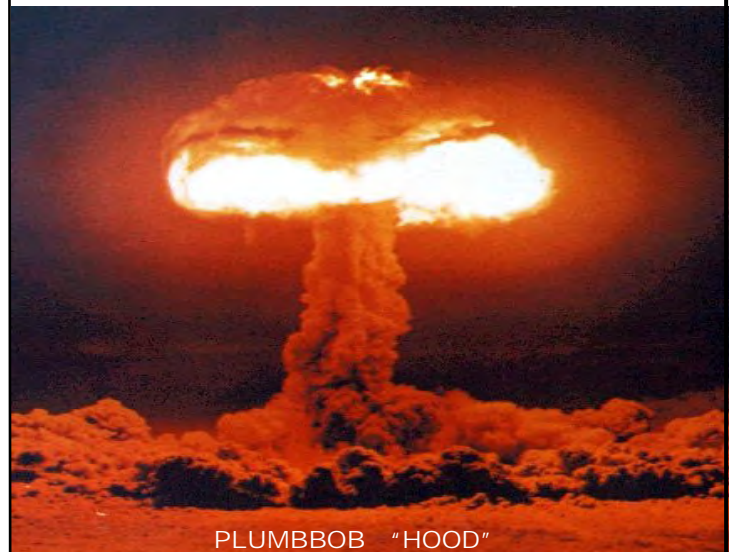
This is a typical NTS (tower) shot setup, showing the bomb device at the 100 ft. mark, as per the specs for this given test. . .

Within a couple of seconds, a bright white ball formed and very quickly expanded over ground zero. Almost immediately thereafter; it began a rapid rise into the upper atmosphere. At that point, this nuclear sun was rising over the dry desert, and it appeared that the explosion had lit up the entire world. As the surrounding brilliance subsided, we were able to remove our goggles and watch the upward progress of the boiling cloud, and it’s mix of various colors. Finally, as the cloud took the form of a giant mushroom, the whole column would turn white and keep expanding as it gained altitude. . .

The next sight seen at every test was a silver flash of an airplane circling the cloud, and reflecting both the brilliance of the rising cloud and the rising of the morning sun. I would later learn that those airplanes were collecting “hot” nuclear cloud samples for radiation dispersion studies. Some of those planes had real pilots, and some had “guinea-chimp’s” in the pilot seat. . .

After about an hour, or so, the cloud began drifting eastward. We would then go back to the camp and get into vehicles to start driving out across the desert to look for signs of radiation fallout particles. On many occasions, test shots were delayed, for several days, until the wind patterns were judged to be acceptable. There would be two of us in a vehicle, and we would stop periodically to check for different forms of radiation – Gamma rays, or Alpha & Beta particle emissions. After marking our readings on grid-charts, we called them in over our radio’s. . .

Back then, we used what the public knows as a Geiger Counter, that used removable shields to block out all but one type of radiation emission at a time. One time, we made the mistake of calling in from a point on the side of the road in the barren desert when it was 100 degrees in the shade, except, in this case, there was no shade !



From the mountaintop, about seven miles away, we could see a cable reaching from a structure, at ground-zero, to a giant balloon with the bomb hanging below, at 1,500 ft. Without any protection, except for our trusty goggles, we took the full impact of that explosion. Most of the other explosions we had seen, from behind the bunkers, were from bombs in the **10** to **20** kiloton range. But, I have to tell you, this one was a real bone shaker. . .

When that bomb went off, the entire area was electrified, as the whole desert was lit up, and I had the sensation of electrical needles rushing up and down my body. Although it was for only for a fraction of a second, it was just enough to put me in panic mode. Even though this detonation was almost a mile over the desert, it looked like it was actually down on the ground, and the rumbling and roar was deafening. . .

The next thing I can remember was being hit by the heat wave. It felt like I was standing in front of the open door of a blast furnace, and just as quickly, it too was gone. Thankfully, we were not harmed in any serious way. And, just as we were taking off our goggles, we could see the effects of the shock wave rushing across the desert floor in all directions, and we could also feel the rumble of the earth. . .

The dust cloud was a few hundred feet high, and we had no place to hide, or take cover. As the shock wave hit, we were thrown backward, and just as quickly, the wave reversed course, and we were pushed back up again. The swirling sand and dust particles blinded us for several minutes. After we were able to see, reasonably well again, we saw those silver aircraft, circling around, getting ready for another "hot" run through those boiling clouds. . .

I learned, many years after the fact, that the "Hood" shot was the largest atmospheric test ever conducted at NTS (and within continental limits of the U.S.), producing a 74 kiloton yield, with a predicted (design) yield of 60-80 kilotons. That test also included troop maneuvers by 2,500 U.S. Marines, and air operations involving 124 aircraft. . .

Since those experiences, I have been amazed at the amount of pure energy that a nuclear weapon can generate, and the potential destruction is can cause to those who may be subjected to such wrath, if we ever get into a nuclear war situation. And, from that day forward, I knew that all the military personnel, civilian scientists, engineers & support technicians who I was associated with during my time at those nuclear test events, would forever be "Atomic-Veterans". . .

Over the years since, I have often thought of the instant of creation when God must have converted a part of His unfathomable energy into the masses of what we call our universe. Astronomers and physicists have no other explanation, but this one satisfies me, and someday, it will all be converted back into the total energy of the cosmos. . .

Many years later, when I was detailed to the U.S. Environmental Protection Agency (EPA), I received a full body scan at Oak Ridge, before I could become a project Officer there. They found zero residual radiation, and I feel real lucky, after what I had witnessed in the Nevada desert in 1957, given some of the health issues experienced by those who were not so lucky. . .

In thinking back to that special assignment, a half century ago, I am grateful to have been a part of that highly significant and awesome experience that helped keep the United States in a strong defensive position in the world. From an Agency perspective, it provided the opportunity for the U.S. Public Health Service Commission Corps to contribute in a vital and visible way in an operation so important to our country, and I can surely appreciate the sacrifices made by those who were also there, and who are no longer with us today, because they may have been smitten by the long term effects of ionizing radiation exposure. . .

Editors notes: Operation "Plumbbob" was conducted at the Nevada Test Site (NTS) from May through October of 1957. It was the sixth test series at NTS and consisted of 29 test shots. Six of these were safety tests, and two did not produce any measurable nuclear yield. Shot "Hood" was a test of a two-stage thermo-nuclear device designed by University of California Radiation Laboratory (UCRL), even though the U.S. Government stated, at that time, that "no thermo-nuclear tests were being conducted in Nevada" !! This series addressed several major objectives, including tactical weapon proof tests, safety tests, and improved component and mockup

development tests for thermo-nuclear systems that would be further proof tested during the 1958 "Hardtack-I" series, among other things. . .

During "Plumbbob" 16,000 (DOD) personnel participated in the Desert Rock VII and VIII (atomic-warfare) exercises. The LASL shots were named for deceased Scientists, while the UCRL shots were named for North American mountains. . .

"Plumbbob" released approximately 58,300 kilocuries of radioiodine (I-131) into the atmosphere. This was more than twice as much as any other continental test series. This produced total civilian radiation contamination amounting to 120 million person-rads of thyroid tissue exposure, which was approx. 32% of all exposure produced by the (U.S.) continental nuclear weapon tests. . .

It is also estimated that these exposure levels caused approx. 38,000 cases of thyroid cancers, (in on-site participants and downwinders) resulting in approximately 1,900 deaths. These statistics were generated by the (1997) National Cancer Institute Study "Estimating Thyroid Doses of I-131 Received by Americans From Nevada Atmospheric Nuclear Bomb Tests."

ARE YOUR DUES CURRENT ??

To insure that you receive your newsletters, we must remind you to keep your dues current. The numbers following your name, on the newsletter mailing label, is your dues expiration date. Be sure to send us your (\$25.00) dues before the expiration date, if at all possible. For this, we thank you in advance . . .

NOT SO SECRET NUKE FACTORY CRUMBLING

Berkshire England - Atomic Weapons Establishment Aldermaston (AWE), in Berkshire, "secretly" makes reactor fuel for Britain's Navy and enriched Uranium (nuclear warhead) components for the nation's WMD arsenal. The 750 acre AWE complex has operated independently for the last 60 years – and is now operated as a consortium of U.S. based Lockheed Martin, Jacobs Engineering Group and SERCO (a British company). . .

AWE had contracted for the design, manufacture, assembly, decommissioning and disposal of British nuclear weapons. The site has also been found to be grossly responsible for letting on-site structures corrode and degrade to the point of near collapse. In January, it was discovered that at one (unnamed) Aldermaston building, all of it's "non-essential" nuclear operations were halted because of massive corrosion, resulting in weakened steel superstructure members, were the root cause of failing all applicable safety requirements. . .

As an example, a steel support column and surrounding pipes had corroded to the point where the stability of the entire structure could be affected my any severe weather changes, or even a light earth tremor. AWE discovered the degradation situation in May, 2012. The Government's Office of Nuclear Regulation then served notice for immediate and proper repairs in November, but it wasn't until January, 2013 that the problem situation was first disclosed to the general public. . .

The facility now has until the end of 2013 to fix all structural and building integrity related problems, or be permanently closed. The crumbling building led to inspections at Britain's Burghfield site and other similar Aldermaston structures. The Guardian (newspaper) reported on January 24th. that the AWE complex suffered 50 fires in a two year period, between 2010 and 2012. Additional news reports cite broken fire hydrants, alarm systems and lapses in maintenance records for essential equipment. . . .

National Association of Atomic Veterans, Inc.

MEMBER APPLICATION

11214 Sageland - Houston, Texas 77089 - Ph: 281-481-1357

Revised: 02-6-10

First Name	Initial	Last Name	Spouse			Phone	Date of Birth
Address		City	St.	Zip 5	Zip 4	E-mail address	
Branch of Service	Ship (or) Unit (or) Squadron		Name of Operation or Test			Year	Location

Health Issue Comments:

I am a family member of _____ a (deceased) Atomic-Veteran

- Notes:
1. Please include, on the back of this application, any other radiation exposure events you may have experienced while in the military, or any illnesses suffered by you, your children, or your grandchildren, if any, and the correct name and address of anyone who might be filling this application for an Atomic Veteran.
 2. Spouses & children of Atomic Veterans, or Veterans who may have been exposed to radiation from Depleted Uranium munitions or armor plate during the Gulf War or any middle east conflict are qualified to be a member of NAAV, Inc.

Date:	Signature	NAAV has my (our) permission to publish this information:	Yes	No
			<input type="checkbox"/>	<input type="checkbox"/>

ANNUAL dues = \$ 25.00 ----- or ----- **LIFE dues = \$ 250.00**

Please send money orders or personal checks (only) to:

NAAV 11214 Sageland Houston, Tx. 77089

NAAV (Atomic-Veteran) ITEMS FOR SALE



ATOMIC VETERAN CAP
\$ 15.00



JACKET PATCH
\$ 10.00



WINDSHIELD DECAL
\$ 10.00



REAR AUTO DECAL
\$ 10.00

NAAV "Atomic Veteran" Certificate * (8 x 11 - 4 color) ----- \$10.00

* Furnish your full name, branch of service, ship, or unit, or squad. Info, and test (or Operation) name & date (or year) for Certificate accuracy

NAAV "Nuclear Veteran" Certificate ** (8 x 11 - 4 color) ----- \$10.00

** Furnish same as above + type of radiation event (nuclear power plant, nuke weapon tech., depleted uranium exposure, X-ray tech., etc.

NAAV "Atomic Bomb Test" Photo ** (8 x 11 color) ----- \$10.00

** Furnish you Operation, or test name so we can furnish the proper photo

"Atomic Veterans - The Real Story" (2.5 hr. CD presentation) ----- \$35.00

A 5 part pictorial presentation that includes radiation effects on the human body, nuclear weapon effects, a complete history of U.S. nuclear weapons development, including military participation, tests on animals, the inner workings of nuclear weapons, NAAV newsletters (in full color) and more.

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NUCLEAR EVENT UPDATES



Huntington, West Virginia: Employees of the former **Huntington Pilot Plant**, and survivors of workers who have died, have been awarded cash benefits for exposure to radioactive materials and heavy metals. The Department of Labor has announced in March that it would settle for **\$30.7 million**, with **\$4.25 million** going to cover medical expenses on **769** of the **1,467** compensation claims filed. The factory in West Virginia, where people were exposed to plutonium, neptunium and other hazardous materials provided nickel powder starting in 1951, for use in nuclear weapons production at Paducah, Ky. and Portsmouth, Oh. The Atomic Energy Commission (**AEC**) built the facility, which became too radioactive to salvage and was subsequently dismantled and buried as nuclear waste at the Portsmouth Gaseous Diffusion Plant in Piketon, Oh.

Huntington News – March, 2013

Window Rock, New Mexico - The Navajo Nation has accepted a **\$3 million** grant to continue demolishing radioactively contaminated houses and to construct new homes on its reservation in the four-corners area. **Kerr McGee Corp.** built houses for workers using its uranium mine tailings. Navajo officials banned uranium mining in 2005 after **Kerr McGee, Union Carbide** and **Peabody** extracted four million tons of uranium ore and left the land massively contaminated and residents and miners sickened with tumors and lung cancers. More than **\$100 million** in tax money has gone into “cleanup” of uranium mine wastes on tribal lands, but the work will never be completed. The area is riddled with over **500** abandoned mines. With an estimated **70 million** tons of uranium still in the ground, mining companies are eagerly working at voiding the ban, and again mining those **Navajo** and **Dine** lands.



Navajo Post – March 2013

CAUTION



RADIOACTIVE

Chicago, Illinois - On March 14, 2013 Federal agents, on the **Union Pacific West** line in Chicago, picked up radioactive readings on their hand-held Geiger counters. Transportation Security Administration agents delayed the train until they discovered the source at Chicago’s Ogilvie station. That morning, **Jerry Jones** (a Chicago lawyer) had been to the hospital for a “nuclear” stress test, and was emitting the radioactive activity detected by the Federal agents. Some patients, who receive radioactive injections, or implants, emit so much radiation that contact with living things should be avoided for up to seven weeks. People receiving radioactive iodine for thyroid treatments are warned to stay away from children, in particular. According to the **World Health Organization**, on a

worldwide basis, **3.6 billion** X-ray examinations are performed annually, as well as some **37 million** radioactive medical procedures, and **7.5 million** radio-therapy treatments.

CBS Chicago – March, 2013

Los Alamos, New Mexico - County authorities have committed **\$50,000** to a Tennessee firm to find an alternative to its long-time brand name “**Atomic City.**” The company plans to meet with residents, community leaders and business people to determine what it will take to make the community unique – other than its role in building the first atomic bomb. The **Pentagon** used eminent domain to purchase existing Los Alamos area homesteads and school property in 1942, going on to use the land exclusively for the **Manhattan Project’s** prime bomb development and testing facility. The **Los Alamos National Laboratory (LANL)** remains the center of the area’s economy, directly employing **9,000** of approximately **18,000** Los Alamos residents. With a federally funded budget in excess of **\$2.2 billion**, the **LANL** is one of two labs in the country dedicated to the continued design of nuclear weapons. With its high population of physicists, Los Alamos boasts the highest concentration of millionaires of any city in the country. Almost **12%** of its households possess at least **\$1 million** in liquid assets.



KRQE Albuquerque – March 2013



**“BEWARE”
CHILD AT PLAY !**

Vienna, Austria - The **Democratic People’s Republic of Korea (DPRK)**, known as **North Korea**, conducted a nuclear weapon test on February 12, 2013 which was thought to have been a **5 kiloton** blast (about 1/3 the power of the bomb that destroyed Hiroshima, Japan on August 6, 1945. The nuclear test, conducted by China’s maligned satellite nation, made headlines again on April 23rd, when the Vienna-based **Comprehensive Test Ban Treaty Organization (CTBTO)** reported that traces of

radioactive (noble gases) **xenon-131** and **xenon-133** were detected at a monitoring station in **Takasaki, Japan**. The monitoring station is 620 miles from the North Korea test site. **Anika Thunborg** of the **CTBTO** told the **Huffington Post** that “*detection of radioactive noble gas more than seven weeks after the event is indeed most unusual, and we did not expect this.*” Noble gases are released, in great quantities, from both reactor (meltdown) disasters and nuclear weapon tests. Reactor meltdowns at **Three Mile Island, Chernobyl** and **Fukushima** dispersed all the noble gases contained in the five reactors. **CTBTO** radionuclide expert **Mika Nikkinen** said, in a press release, “*We are in the process of eliminating other possible nuclear activity, under certain specific conditions, but so far we do not have any additional information.*” The **CTBTO** went on to say that its measurements “*coincides very well with the announced nuclear test by DPRK that occurred 55 days before the measurements were recorded.*”

Los Angeles Times - March 2013

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R. J. Ritter - National Commander & Editor

Website: www.naav.com

E-mail: naav.cmdr@naav.com

“Saluting America’s (secret) Wounded Warriors”
(both living & deceased)

