



*Where the
Boys Were*

**Nuclear Testing at
Eniwetok Atoll in 1958**

Atomic Veteran Stories

Edited by: Walter E. Venator, Jr.

This brief book is dedicated to all of the Atomic Veterans who served in their respective military branches for the United States of America in support of weapons testing for our cold war need to have a superior nuclear arsenal.

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Acknowledgement

The editor thanks those Atomic Veterans who contributed their stories, particularly Bud Feurt, George Mace, Tadd Kowalzyk, Lloyd Teed (deceased) and the thousands of others who had similar experiences in 1958. A very comprehensive chronology of Atomic Testing events is told by John Smitherman in *The Atlantic Monthly*, July, 1984. Seaman Smitherman died at an early age from various cancers caused by ionized radiation, but not recognized by our government.

I could have included hundreds of stories like John Smitherman's, but that is not the intent of this paper. The objective is to disclose information and inform people of the events that occurred in 1958 to support our freedom. Freedom does not come cheaply, and many of our defenders of peace pay a price during combat or peacetime service.

In addition to the military men who proudly served, let us not forget the thousands of civilians who were members of the construction crews that helped make the nuclear test missions possible. They too, deserve recognition for they received the same amount of ionizing radiation as the military.

The Marshall Islands played a pivotal role in the Atomic testing Programs and the Marshallese received massive doses of radiation because of the tests in their homeland. Our government admitted responsibility for injuries to the Marshallese and compiled a list of 46 assumptive diseases caused by radiation exposure. By comparison, only 22 ionizing radiation diseases are on the Atomic Veteran's list.

One wonders how the Marshallese who were exposed to the same levels of radiation or less are in greater danger than the military personnel and American civilians who were not protected to a higher degree than the island residents.

Therefore, it is only right and just that the country they served recognize those who participated in the Atomic Tests of 1958, and are compensated, and treated by the VA for illnesses caused by ionizing radiation.

It is my fervent hope that in raising awareness we inform, inspire and involve future generations about the plight of thousands of Atomic Veterans who served their country. I hope that we can create sufficient critical mass of interest to form a charitable fund and provide medical assistance and compensation to survivors, their widows and recognition to honor all who served, now living and deceased.

Contents

Introduction.....	1
1958 Chronology.....	3
The Cold War.....	5
The Veteran’s Administration.....	5
The Records Fires.....	7
1958 Atomic Testing Chronology.....	8
Operation Hardtack I.....	9
1958 - Pacific Proving Grounds.....	9
Shot Locations.....	12
Atomic Veterans.....	13
The Cost-Free Ionizing Radiation Registry Health Exam.....	13
Eligibility for Ionizing Radiation Registry Health Exam.....	13
My Atomic Experience.....	14
George Mace – Atomic Veteran.....	21
Tadd Kowalzyk – Atomic Veteran.....	28
Bud Feurt - Atomic Veteran.....	30
Atomic Veteran Lloyd Teed.....	32
Comments from a Research Physicist.....	34
Radiation Effects.....	36
Ionizing Radiation and Cancer.....	38
Types of Cancer Linked to Ionizing Radiation.....	39
Sources of Ionizing Radiation.....	39
Nuclear Fallout.....	40
Duty, Honor, Cancer.....	40
Diseases Associated with Ionizing Radiation Exposure.....	41
Senator Bob Filner Letter.....	43
Senate Bill # S. 1128.....	45
Recognition of Forgotten Atomic Veterans and their Surviving Spouses Act of 2007.....	46
Canadian Atomic Veterans Recognition Program.....	47
Marshall Islands.....	48
Eniwetok Atoll.....	49
Eniwetok Atoll Observer Photographs.....	50
Cactus.....	51
Operation Hardtack I.....	51
Oak.....	52
Operation Hardtack I.....	52
Umbrella.....	53
Operation Hardtack I.....	53
Let the Games Begin.....	56
Important Reference Sites.....	58
http://en.wikipedia.org/wiki/Ionizing_radiation.....	58
http://www.atsdr.cdc.gov/phs/phs.asp?id=482&tid=86.....	58
Additional Reading.....	59
Additional Online Information.....	60
About the Editor.....	61

Introduction

Very few Americans know the extent of Atomic Bomb Testing the United States of America conducted from 1946 to 1962 and the subsequent fate of hundreds of thousands of military and civilian personnel who were exposed to nuclear radiation. Between July 16, 1945 and September 23, 1992, the United States of America conducted no less than 1054 nuclear tests. Because the participants had Secret or Top-Secret Clearances, and were sworn to remain silent about their activities, most information on this subject has been withheld, destroyed, or never revealed to the public. Every attempt to gain recognition and benefits is ignored by Congress and as the veterans who worked at these proving grounds are aging their angst increases. Their pleas for recognition and medical benefits go unanswered as many career politicians give lip service in order to obtain votes. The military personnel were guinea pigs for the sole purpose of testing nuclear devices and the subsequent radiation effects on the participants. The exposure to radiation was never a mistake or scientific miscalculation, e.g., caused by wind and rain and it was not due to a lack of knowledge of the consequences.

Many of the participants in these documented tests have some form of cancer or leukemia resulting from the ionized radiation exposure, The United States Government steadfastly refuses to recognize many of these illnesses as service connected and directly the result of nuclear radiation. Governor Richardson, (then Senator Richardson of New Mexico) introduced a bill HR 1131 in 1997 to recognize and honor those who served in atomic testing by awarding a nuclear radiation medal. Efforts to pass the bill were thwarted by the Congress and consequently, many service and civilian personnel have never been recognized or compensated for illnesses directly related to atomic testing and radiation.

The ability to gain access to proper V. A. medical facilities is greatly hampered by the fact that the Defense Department (and Pentagon) did not permit any mention of atomic test participation on a veteran's (DD-214) discharge form. Additionally, the Defense Department demanded that most military personnel swear to a (20 or 25 year) oath of secrecy, under penalty of imprisonment, should they mention, in any way, their association with or participation in any atomic device test.

The Veterans Administration uses the DD-214 discharge form to determine the level (or group) of medical services to which the veteran is entitled. Currently, veterans exposed to Agent Orange (during the Vietnam conflict) are classed in medical Group 6C. Atomic Veterans who can prove their participation of any atmospheric atomic device detonation event are also classed in Group 6C, while those who were awarded the Purple Heart are listed in Group 3, and entitled to unlimited, no-cost, no-copay V. A. services.

On April 13, 2000, President William Jefferson Clinton announced he would ask Congress for a \$100,000.00 one-time payment for those who served in the cold

war and were exposed to nuclear radiation because of participating in a radiation-risk activity. We are all still awaiting the check.

On April 29, 2009 House Bill #, HR 2553 and Senate Bill # S 1128 were introduced.

A service medal was never awarded because the Congress has found ingenious ways to avoid recognizing the people who served.

Most of the participants at the Atomic test sites are either now deceased from natural causes, or their illness and subsequent death was from exposure to ionizing radiation. The survivors are in their seventies or older and more than likely combating service-connected diseases, not genetically related ones. This piece of American history and resultant casualties remains a secret. Because of this secrecy, there is no mention or indication of participation in any service member's 201 Folders, orders or records.

Much of the test results are now public information. This paper intends to acquaint the reader with the facts concerning the nuclear tests conducted in 1958. It was the most active year for nuclear bomb tests and was toward the end of all above ground detonations. The editor was an airman in the United States Air Force, was a participant in these tests as part of Joint Task Force Seven, has first-hand knowledge of the events and was exposed to ionizing radiation.

Contributing Atomic Veteran stories are exactly as sent via email to the editor, except for correction of typographical or grammatical errors. Some of the information was obtained from government and private web sites. Credit is given to the web site or author as appropriate.

This is a 'living document' that will change as new stories are added. Therefore, the editor solicits all Atomic Veterans, or their survivors with verifiable accounts of the events, to submit their stories for inclusion in future editions.

1958 Chronology

In the race for military supremacy, hundreds of thousands of military and civilian personnel were participants in atomic bomb testing. Tens of thousands received their award for service in the form of leukemia and other cancers. Men were ordered to witness atomic detonations and march to ground zero only minutes after the blast, or if they were lucky, view it from a distance of six to twelve miles where they risked exposure to high-speed nuclear particles, irradiated dust, water and contaminated air. Family, wives and widows were often left in the dark as to the real reason their loved ones died prematurely and never mentioned their military experience for fear of reprisal.

Numerous attempts have been made by Atomic Veterans and their survivors to receive some form of compensation, recognition and justice. The attempts have for the most part been ignored and produced denials, destroyed records, apathy and disinterest.

National Geographic Vol.169-No.16 dated June 1986 states that "Today, 40 years and 235 nuclear explosions later, the Bikinians are still waiting [to return home]...For as instruments on Bikini show, their atoll is still dangerously radioactive".

If only we had instruments on the guinea pigs who faithfully served their country in support of the Nuclear Arms Race, many may still be enjoying life, although the quality would be questionable given the variety of illnesses awaiting the participant.

They who faithfully served when their country called seek only recognition and medical payment for diseases directly attributed to radiation exposure.

1958 Event Chronology:

[January 31](#) – The first successful American [satellite](#), [Explorer 1](#), is launched into orbit.

[February 21](#) – A [peace symbol](#) is designed and completed by [Gerald Holtom](#), commissioned by the [Campaign for Nuclear Disarmament](#), in protest against the [Atomic Weapons Research Establishment](#).

[February 25](#) – [Bertrand Russell](#) launches the [Campaign for Nuclear Disarmament](#).

[April 4](#) – [April 7](#) – In the first protest march for the [Campaign for Nuclear Disarmament](#) from [Hyde Park, London](#) to [Aldermaston, Berkshire](#), demonstrators demand the banning of [nuclear weapons](#).

[August 27](#) – [Operation Argus](#): The [United States](#) begins nuclear tests over the South Atlantic.

[September 30](#) – The [U.S.S.R.](#) performs a [nuclear test](#) at Novaya Zemlya.

- President Eisenhower orders U.S. troops into Lebanon
- General Charles de Gaulle becomes French Premier and later President
- Nikita Khrushchev becomes Premier of Soviet Union
- The US Supreme Court rules unanimously that Little Rock, Ark., schools must integrate
- Army's Jupiter-C rocket fires first US satellite, Explorer I, into orbit
- Elvis Presley was inducted into the Army
- The Edsel was introduced.
- The Bridge Over the River Kwai received the Oscar
- Dean Martin sang "Return to Me"
- Connie Francis sang "Where the Boys Are"
- NASA initiates Project Mercury
- We used slide rules for mathematical calculations
- [USA](#), [USSR](#) and [Great Britain](#) agree to stop testing atomic bombs for 3 years.
- Operation Hardtack 1 was conducted in the Marshall Islands and Johnston Island
- I was a participant in Operation Hardtack 1 and part of Joint Task Force 7

The Cold War

Almost immediately after World War II ended, the U.S. and its allies realized they were in a Cold War with the Soviet Union. The first atomic bomb was tested successfully at the Trinity Site in southeastern New Mexico in July 1945 and the second and third bombs were dropped on Hiroshima and Nagasaki, Japan, in August 1945, bringing about a speedy end to World War II. (Thank God for that, as we had no more atomic bombs to drop.) U.S. officials knew that the Soviet Union was on a fast track to develop the "bomb" and that they must develop more sophisticated nuclear weapons to stay ahead of the Cold War enemy.

With the backing of the Executive Branch and Congress, the Army's Manhattan Engineer District (MED), which designed, developed and tested the first atomic bomb, embarked on a nuclear testing program in 1946 at the newly established Pacific Proving Ground in the Marshall Islands area. The MED was dissolved in 1947 and its duties and functions were given to the U.S. Atomic Energy Commission (AEC). The DOD joined the AEC in Joint Task Forces, which continued the atmospheric testing program. This program allowed rapid gains in knowledge about weapons development, military effects, fallout and radiation effects, biomedical science, nuclear science, and delivery systems.

AL, a field office of the AEC, opened the Nevada Proving Ground northwest of Las Vegas, Nevada, in 1951 to reduce the cost of nuclear testing. The cost of transporting supplies, scientific gear, and materials for housing and testing, and for keeping a work force in the Pacific was monumental. The name of the Nevada Proving Ground was changed in 1957 to the Nevada Test Site.

In hindsight, the AEC and the DOD made many mistakes in the testing program, such as underestimating the effects of fallout and deploying troops in areas of excessive radiation. Despite the errors in the early testing efforts, the U.S. surged ahead of all other nations in nuclear weapons capabilities, and gained the expertise, which now sets the standard for what is "safe."

Although the Soviet Union mounted a massive attempt to gain a distinct advantage in nuclear military power, the U.S. maintained a deterrent to nuclear aggression. The U.S. now has a smaller but more sophisticated nuclear weapons stockpile, which the DOE manages jointly with the DOD. Through treaties, nuclear testing has been discontinued.

The Veteran's Administration

The United States has the most comprehensive system of assistance for veterans of any nation in the world. This benefits system traces its roots back to 1636, when the Pilgrims of Plymouth Colony were at war with the Pequot Indians. The Pilgrims passed a law, which stated that disabled soldiers would be supported, by the colony.

The Continental Congress of 1776 encouraged enlistments during the Revolutionary War by providing pensions for soldiers who were disabled. Direct medical and hospital care given to veterans in the early days of the Republic was provided by the individual States and communities. In 1811, the first domiciliary and medical facility for veterans was authorized by the Federal Government. In the 19th century, the Nation's veteran's assistance program was expanded to include benefits and pensions for not only veterans, but also their widows and dependents.

After the Civil War, many State veterans homes were established. Since domiciliary care was available at all State veterans homes, incidental medical and hospital treatment was provided for all injuries and diseases, whether or not of service origin. Indigent and disabled veterans of the Civil War, Indian Wars, Spanish-American War, and Mexican Border period as well as discharged regular members of the Armed Forces were cared for at these homes.

Congress established a new system of veterans' benefits when the United States entered World War I in 1917. Included were programs for disability compensation, insurance for servicepersons and veterans, and vocational rehabilitation for the disabled. By the 1920s, the various benefits were administered by three different Federal agencies: the Veterans Bureau, the Bureau of Pensions of the Interior Department, and the National Home for Disabled Volunteer Soldiers.

The establishment of the Veterans Administration came in 1930 when Congress authorized the President to "consolidate and coordinate Government activities affecting war veterans." The three component agencies became bureaus within the Veterans Administration. Brigadier General Frank T. Hines, who directed the Veterans Bureau for seven years, was named as the first Administrator of Veterans Affairs, a job he held until 1945.

The VA health care system has grown from 54 hospitals in 1930, to include 171 medical centers; more than 350 outpatient, community, and outreach clinics; 126 nursing home care units; and 35 domiciliaries. VA health care facilities provide a broad spectrum of medical, surgical, and rehabilitative care. The responsibilities and benefits programs of the Veterans Administration grew enormously during the following six decades. World War II resulted in not only a vast increase in the veteran population, but also in large number of new benefits enacted by the Congress for veterans of the war. The World War II GI Bill, signed into law on June 22, 1944, is said to have had more impact on the American way of life than any law since the Homestead Act more than a century ago. Further educational assistance acts were passed for the benefit of veterans of the Korean Conflict, the Vietnam Era, Persian Gulf War, and the All-Volunteer Force.

In 1973, the Veterans Administration assumed another major responsibility when the National Cemetery System (except for Arlington National Cemetery) was transferred to the Veterans Administration from the Department of the Army. The Agency was charged with the operation of the National Cemetery System,

including the marking of graves of all persons in national and State cemeteries (and the graves of veterans in private cemeteries, upon request) as well and administering the State Cemetery Grants Program.

The Department of Veterans Affairs (VA) was established as a Cabinet-level position on March 15, 1989. President Bush hailed the creation of the new Department saying, "There is only one place for the veterans of America, in the Cabinet Room, at the table with the President of the United States of America."

Source: http://www4.va.gov/about_va/vahistory.asp

The VA does an excellent job providing medical care for veterans. The facilities I have visited are equipped with the latest technology affording the best possible medical care. The hospitals and clinics are well staffed with highly trained and dedicated personnel, and from my personal perspective, they are always very courteous and eager to help. I have never had a bad visit to a VA facility. Too bad I don't have the same words for the NARA.

The Records Fires

The National Archives and Records Administration is the official depository for records of military personnel separated from the United States Air Force, Army, Coast Guard, Marine Corps, and Navy. The records are housed in three locations: the National Archives Building in Washington, D.C., the Washington National Records Center in Suitland, Md., and the National Personnel Records Center (NPRC) in St. Louis, MO. A fire at the National Personnel Records Center (NPRC) in St. Louis on July 12, 1973, destroyed about 80 percent of the records for Army personnel discharged between November 1, 1912, and January 1, 1960. About 75 percent of the records for Air Force personnel with surnames from "Hubbard" through "Z" discharged between September 25, 1947, and January 1, 1964, were also destroyed. Source: National Veterans Legal Services Program

There are numerous cases where Veterans' service records were destroyed, as in the 1973 fire at the NPRC. It then becomes the responsibility of the veteran to prove entitlement to VA benefits because their records, they entrusted to the custody of NPRC, where destroyed. An Atomic Veteran survivor must "reconstruct" his service record on what limited information is available and sensible deduction. This is next to impossible. A former VA Undersecretary was able to locate the records of a dying veteran who had been told that his records could not be found. This undersecretary was almost immediately transferred to a remote VA hospital. Source: Stars and Stripes, March 13 - March 26, 2000

There are ways to reconstruct a veteran's record, e.g., by using alternate sources, NPRC may often be able to reconstruct a veteran's beginning and ending dates of active service, the character of service, rank while in service, time lost while on active duty, and periods of hospitalization. NPRC is usually able to issue NA Form 13038, "Certification of Military Service," considered the

equivalent of a Form DD-214, "Report of Separation From Active Duty," for the purpose of establishing eligibility for veterans' benefits.

Source: <http://www.nvlsp.org/Information>

Although my records were destroyed in one of the fires, I was able to prove my participation because I had the original of every set of orders. I have a duplicate of my entire 201 file. Therefore, although the VA questioned me about how I was able to have all those records, was obligated to accept me as Category 6C.

As the remaining participants die, they take their story to the grave. The American Citizen and family survivors do not know the Atomic Veteran's story and many families are unaware that their loved ones died because of radiation exposure.

1958 Atomic Testing Chronology

April 7 - The AEC commissioners decide not to conduct two very high altitude firings of nuclear weapons at Enewetak Proving Ground because the AEC cannot assure absolutely that the Marshallese would receive no eye damage from the light resulting from such detonations

May 6 - As part of the Hardtack tests operation in the Pacific, the task force radiological safety office is prepared to warn, advise, and help inhabitants in taking safety measures in case of significant fallout in an inhabited area. The office's monitors also have trained Marshallese medical practitioners and health aides in basic emergency measures.

Oct 31 - The U.S. conducts nuclear weapon tests in Operation Hardtack I at Bikini, Enewetak, and Johnston Island.

May 1959 - In a moratorium, the United States, Great Britain, and the USSR suspend nuclear weapon testing.

Operation Hardtack I

1958 - Pacific Proving Grounds

Hardtack I included 35 tests, the largest test series so far (1958 in fact saw a total of 77 U.S. tests, more than the three previous record setting years combined). Partly, this burst of testing activity was due to building pressure for an imminent test moratorium, leading the weapons labs to rush as many device types to the test range as possible. A total of 35.6 megatons were shot during this series.

The lab tests centered on ICBM and SLBM missile warheads and high yield strategic bombs. The DOD conducted high altitude multi-megaton tests to study their usefulness for ABM (anti-ballistic missile) warheads, and discovered the high-altitude EMP (electromagnetic pulse) effect in the process. Effects tests of underwater explosions were also conducted.

The extensive test schedule required the use not only of both atolls (Bikini and Enewetak) but Johnston Island also. This series was the last to conduct atmospheric testing at Bikini and Enewetak atolls. Test names were taken from North American trees and shrubs.

Source: nuclearweaponarchive.org

In previous years, tests were conducted in various locations throughout the Marshall Islands. The first hydrogen bomb test, code-named Mike, was tested on November 1, 1952. The explosion vaporized the island of Elugelab.

Results of surveys by the University of Washington Laboratory of Radiation Biology (LRB) at Bikini and 10 other central Pacific islands between 1954 and 1958 reveal that "radioactivity decreased with distance and direction" from the Enewetak test site. Thus, islands within a 130-mile radius of the site exhibited 10 or more times the radioactivity of those surveyed outside this area, and the "major portion of the radioactivity was deposited at or close to the test sites at Enewetak and Bikini Atolls." In addition, islands east of the Bravo test site, i.e., Bikar, Likiep and Rongerik, "contained relatively high amounts of radioactivity." These surveys also showed that zirconium 95-niobium 95, ruthenium 103 and 106, and -rhodium 103 and 106 were the predominant radioisotopes in most samples; that isotopes such as tungsten 181 and 185, zirconium 65, and cesium 137 were relatively high in some samples; and that strontium 90 was found usually in very low amounts.

Source: Marshall Islands Chronology

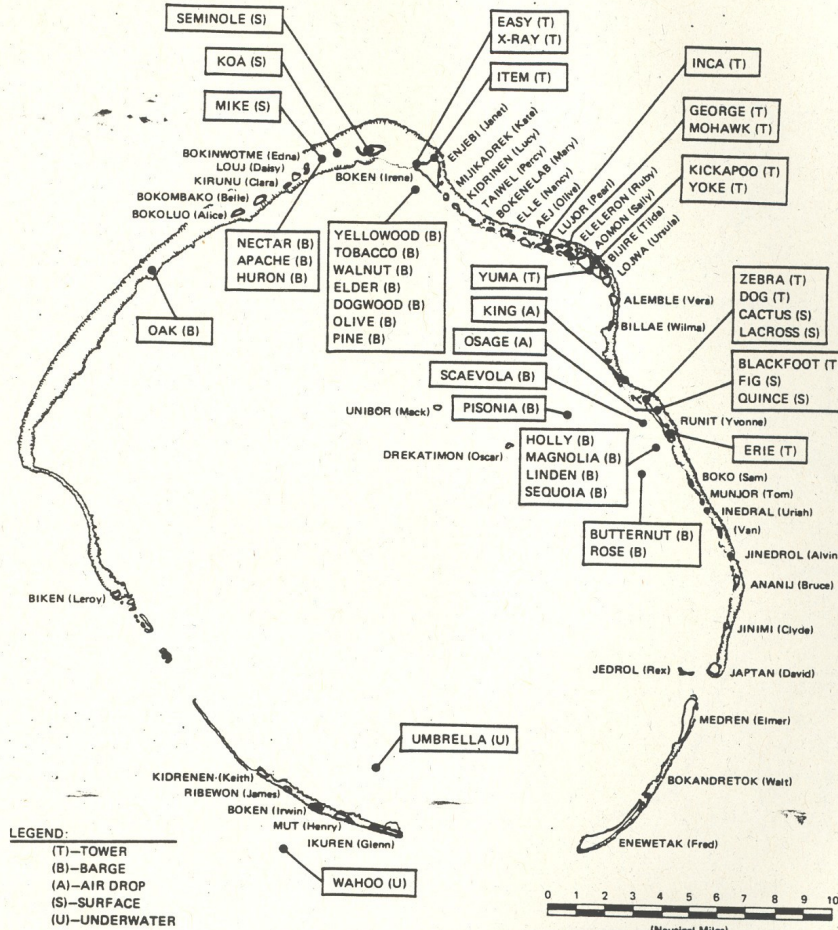
In April through August, 1958, 35 tests were conducted in the Pacific. The following is a list of the tests.

Test	Date	Sponsor	Location	Type	Purpose	Yield
Yucca (Operation Newsreel)	4/28/58	LANL/DOD	Pacific	Balloon	Weapons effects	1.7 kt
Cactus	5/5/58	LANL	Enewetak	Surface	Weapons effects	18 kt
Fir	5/11/58	LLNL	Bikini	Barge	Weapons related	1.36 Mt
Butternut	5/11/58	LANL	Enewetak	Barge	Weapons related	81 kt
Koa	5/12/58	LANL	Enewetak	Surface	Weapons related	1.37 Mt
Wahoo	5/16/58	LANL/DOD	Enewetak	Underwater	Weapons related	9 kt
Holly	5/20/58	LANL	Enewetak	Barge	Weapons related	5.9 kt
Nutmeg	5/21/58	LLNL	Bikini	Barge	Weapons related	25.1 kt
Yellowwood	5/26/58	LANL	Enewetak	Barge	Weapons related	330 kt
Magnolia	5/26/58	LANL	Enewetak	Barge	Weapons related	57 kt
Tobacco	5/30/58	LANL	Enewetak	Barge	Weapons related	11.6 kt
Sycamore	5/31/58	LLNL	Bikini	Barge	Weapons related	92 kt
Rose	6/2/58	LANL	Enewetak	Barge	Weapons related	15 kt
Umbrella	6/8/58	LANL/DOD	Enewetak	Underwater	Weapons effects	8 kt
Maple	6/10/58	LLNL	Bikini	Barge	Weapons related	213 kt
Aspen	6/14/58	LLNL	Bikini	Barge	Weapons related	319 kt
Walnut	6/14/58	LANL	Enewetak	Barge	Weapons related	1.45 Mt
Linden	6/18/58	LANL	Enewetak	Barge	Weapons related	11 kt
Redwood	6/27/58	LLNL	Bikini	Barge	Weapons related	412 kt
Elder	6/27/58	LANL	Enewetak	Barge	Weapons related	880 kt
Oak	6/28/59	LANL	Enewetak	Barge	Weapons related	8.9 Mt
Hickory	6/29/58	LLNL	Bikini	Barge	Weapons related	14 kt
Sequoia	7/1/58	LANL	Enewetak	Barge	Weapons related	5.2 kt
Cedar	7/2/58	LLNL	Bikini	Barge	Weapons related	220 kt
Dogwood	7/5/58	LLNL	Enewetak	Barge	Weapons related	397 kt
Poplar	7/12/58	LLNL	Bikini	Barge	Weapons related	9.3 Mt
Scaevola	7/14/58	LANL	Enewetak	Barge	Safety experiment	0
Pisonia	7/17/58	LANL	Enewetak	Barge	Weapons related	225 kt
Juniper	7/22/58	LLNL	Bikini	Barge	Weapons related	65 kt
Olive	7/22/58	LLNL	Enewetak	Barge	Weapons related	202 kt
Pine	7/26/58	LLNL	Enewetak	Barge	Weapons related	2 Mt

Test	Date	Sponsor	Location	Type	Purpose	Yield
Teak (Operation Newsreel)	8/1/58	LANL/DOD	Johnston	Rocket	Weapons effects	3.8 Mt
Quince	8/6/58	LLNL/DOD	Enewetak	Surface	Weapons related	0
Orange (Operation Newsreel)	8/12/58	LANL/DOD	Johnston	Rocket	Weapons effects	3.8 Mt
Fig	8/18/58	LLNL/DOD	Enewetak	Surface	Weapons related	20 tons

Source: <http://www.cdc.gov/niosh/ocas/pdfs/tbd/ppgr0.pdf>

Shot Locations



NUCLEAR DETONATION SITES ON ENEWETAK ATOLL.

Atomic Veterans

- Veterans are considered to be "Atomic Veterans," an unofficial term that refers to those who participated in what is called a "radiation-risk activity:"
 - ☑ Veterans who were involved in the occupation of Hiroshima and Nagasaki, Japan between August 6, 1945, and July 1, 1946
 - ☑ Veterans who were prisoners of war in Japan during World War II
 - ☑ Veterans who participated in atmospheric nuclear weapons tests, which were conducted primarily in Nevada and the Pacific Ocean between 1945 and 1962
- Veterans who participated in underground nuclear weapons testing at:
 - ☑ Amchitka Island, Alaska before Jan, 1, 1974
 - ☑ One of the following gaseous diffusion plants for at least 250 days before February 1, 1992:
 - ☑ Paducah, Kentucky
 - ☑ Portsmouth, Ohio
 - ☑ K25 in Oak Ridge, Tennessee

The Cost-Free Ionizing Radiation Registry Health Exam

- Cost-free for eligible Veterans, no requirement for a co-payment.
- Comprehensive examination, including exposure and medical histories, laboratory tests, and physical exam.
- Results discussed by a VA health professional with Veteran, both in a personal face-to-face consultation and a follow-up letter.
- No requirement to enroll in VA health care system to receive registry exam.
- An Ionizing Radiation Registry Examination is not a claim; nor is it required for VA health care benefits or disability compensation.

Eligibility for Ionizing Radiation Registry Health Exam

A veteran, who participated in atmospheric nuclear weapons testing, served with the U.S. occupational forces in Hiroshima or Nagasaki or was a POW there, or was exposed to ionizing radiation while participating in another radiation-risk activity may participate in an Ionizing Radiation Health Exam.

Veterans who received nasopharyngeal (NP) radium treatments while in military service also may participate.

Veterans should ask to speak to their Environmental Health Coordinator or Patient Care Advocate at the nearest VA medical facility for information about getting an Ionizing Radiation Registry health exam.

Obtaining (Official) Proof that you are an Atomic-Veteran

For those who want an “Official” letter of Nuclear-Weapon test participation, the following will apply. This letter can be obtained by calling the Defense Threat Reduction Agency (DTRA) at: 800-462-3683. After requesting to be connected to an Atomic-Veteran service agent, you will have to furnish your military service number, social security number, branch of service, ship, unit (or outfit) number, squadron, etc., and the test event you believe you were associated with. As an example, you may have been in Operation Dominic-I, but do not know the date or name of the test shot you participated in. DTRA will be able to furnish such information, given the data that you furnish. After securing the DTRA letter, make a copy and keep the original. For radiogenic illness (VA) claim filing purposes, you will have to furnish the VA Service Officer with the copy of the DTRA letter of confirmation.

In my case, in addition to copies of my orders, I have an original (signed by A. R. Luedecke, Major General, USAF, Commander) Certificate of Participation in Operation Hardtack 1.

My Atomic Experience

I am one of the thousands of veterans who served in the Pacific in 1958 where some of the largest atomic tests were conducted during Operation Hardtack 1. I was directly exposed to atomic radiation from a number of atomic tests, and in particular, the atmospheric test at Johnston Island, I observed while aboard the U.S. aircraft carrier, Boxer. I served in the 1253rd AACSRON, APO 187 at Eniwetok and was temporarily assigned to Johnston Island and attached to 1957th AACS, APO 953. I have my original records in a safe deposit box and can prove all I say. I was honorably discharged in 1962 as an Airman First Class, United States Air Force.

Presently, I am a Category 6 VA patient because I was able to prove I was exposed to nuclear radiation. The category 6 means I may use the VA for prescriptions and two visits per year. I have my own Aetna/Medicare insurance and a primary care physician. I do go to the VA as back up and just in case the U.S. Congress has a change of heart and increases benefits for those who served and were exposed to ionizing radiation, I have my name in the hat. I do have a propensity for skin cancer on the left side of my face, although there is no history of it in my family. I have had three surgeries for tumors on my left cheek near my nose. More recently, I developed small malignant tumors on the left side

of my face and just had a growth removed from my ear that seemed to appear overnight. My dermatologist informed me that I have basal cell carcinoma and need additional surgery. This makes three in one year! My siblings have none of these problems and they sat in the sun. I was always covered. The dermatologist told me this form of cancer is prevalent with people who have; light colored skin, blue or green eyes, blond or red hair or overexposure to x-rays or other forms of radiation. The only item that pertains to me is the overexposure to other forms of radiation because I have brown eyes, brown hair (actually now all gray, what is left of it) and I do not have light colored skin.

The following is my story.

I had what appeared to be the perfect assignment. In 1957 I was an electronics technician, (radio/radar) stationed at Westover AFB, Granby, MA. It was a great assignment and I found the people of western Massachusetts to be extremely friendly and kind to military personnel. Because I worked at an off-base secure communications facility about 10 miles from Westover, I lived off base too. Not just off base, but I got real lucky when the First Sergeant secured quarters for me and a buddy in the College Inn, directly across the street from Mt. Holyoke College. Just imagine 3200 love-starved girls, two of us and per-diem too. Actually, with the exception of a few summer students, the girls were not to be found because I was in the College Inn about a month until the fall semester approached when we had to secure different housing. I wound up in The Evergreen Inn, a very nice place, and much closer to my work, but about five miles from Mt. Holyoke. So much for the good times

I knew it could not last, it was too good a deal. All this would change in January 1958.

One of my friends, who worked in personnel, informed me I would have to take an overseas tour or risk going to Thule, Greenland. Because of my AFSC (Air Force Specialty Code) I would be prone to remote assignments overseas. He knew I hated the cold, so I asked him to find a nice warm place where the girls spoke English. A week later he presented me with my choices; Saudi Arabia, Lebanon and Turkey. You do not want to go off the base in any of those locations. What I had in mind was the other side of the world. Hawaii would have been nice, but I lacked the required time in the service for such an assignment and that would have been a three-year stint. I needed a one-year tour. A week later, he told me he had the perfect place. "Picture this", he said, "a warm South Pacific island with a beautiful girl behind every tree, and it's only a year tour. In addition, you qualify. They need your AFSC and you have a Top Secret Clearance." I received a Top Secret Clearance after being investigated by the FBI, and it was needed in the performance of my work.

I should have suspected something when he said Top Secret, but I had those girls on my mind. I left the ideal assignment at Westover and headed for Travis

AFB, California and on to APO 187, 1253rd AACCS, Eniwetok, Marshall Islands. The MATS Lockheed Constellation stopped in Hawaii and Kwajalein just long enough for refueling and crew changes, and continued shaking and rattling over the endless ocean until we came upon what looked like a carrier. Ok, two carriers. Welcome to Eniwetok! Upon landing and a debriefing in the main hanger, it dawned on me that my personnel friend knew more about this place than he let on, or he believed his own story, for I was clearly in trouble. There was only one tree and not a girl in sight. This island named "FRED" was so flat and small that I could see practically every inch from the flight line. There was not a whole lot to see! The atoll, while sounding exotic, was nothing more than a volcano rim consisting of a small ring of sandy islands with a few palm trees. I was amazed at the amount of residual war material in the lagoon.

There was no way our Air Force uniforms would be comfortable so we wore khaki shorts, short-sleeved shirts and a blue baseball cap. This was the approved attire for all military personnel at least while on the islands.

I remember being called white meat by some of the men. They were nicely tanned and I had a winter white look having come from Massachusetts and New Jersey. After I met the people I would be working with, I decided this is not so bad, and it is only a year. Well, a year is a long time when you are 20. All one could do was eat, sleep, drink, lay on the beach, swim or dive and go to the open theater which was just outside my aluminum barracks. The swimming area was restricted due to the World War II debris strewn about the lagoon. There was a roped-off beach area and any dip to cool down was restricted to that area. Good thing too; I learned the area was infested with sharks and barracudas in addition to a poisonous "stone" fish. This ugly fish just stayed on the bottom with his poisonous dorsal waiting for some unsuspecting fish or human. In addition, we were instructed not to go near any of the wrecks because live ammunition could be present. The Navy was always collecting live shells and bombs that would wash up periodically. The food was ample and good. The drinks were cheap and everyone went to the NCO club for additional relaxation. I was careful not to absorb too much of the sun's rays for fear of being burned. After a week or two of daily exposure of no more than twenty minutes and ample quantities of lotion, I was quite dark. No more white meat! We were directed not to eat any fish we caught because of lingering radiation. I questioned about the road dust we inhaled and the food we ate. I was told not to worry. Well, when someone tells me not to worry, that is when I start investigating. The brush-off comment made me curious about residual radiation from prior year tests. I also wondered about the water we drank. Our desalinated drinking water was pumped directly from the lagoon. Although the water was filtered, I figured you can not eliminate atomic particles. I was right.

I recall the awesome sight of the remnants of WW II. Like many of the Pacific islands, Eniwetok (it is also spelled Enewetak), was a strategic spot on the map and had to be taken. We lost over 1,500 men securing the island, which gave us

a runway and a step closer to the invasion of Japan. Eniwetok, being part of the rim of a volcano, has a lagoon side and an ocean side. The lagoon side is beautiful if you overlook the truck, plane and ship parts strewn over a good part of the beach. It looked as though a battle had been fought a week ago, but of course, it was 13 years prior to my arrival when the Americans defeated the Japanese and took possession of the island. The water is a beautiful azure and the coral reef extends about 100 yards beyond the island. It was then, and is today, a fabulous place for diving. Just be sure to avoid the poisonous stonefish

One memory is still very vivid. I recollect Russian spy ships at both Eniwetok Atoll. and Johnston Island. At Eniwetok, they spied on us with powerful binoculars mounted on the decks of their trawlers. I believe there were two ships. At Johnston Island they viewed our activities from two submarines. I wonder how much radiation they received for their efforts.

Our day started at 4:30 AM. We worked in the morning hours and spent the afternoons relaxing. We had to stop working around noon because the temperature in the communications facility where we worked would approach triple digits, and the humidity felt like it was 100 percent. The communications building housed ground to air transmitters that used 4X150 tubes in their finals. These tubes got extremely hot. Because of the intense ambient temperature, and the resultant building warmth caused by the expelled heat from the transmitters, the 4X150s needed continual replacement. The silver solder used in their construction actually melted. A team of four was kept constantly busy maintaining the transmitters. After about two months, air conditioning was installed in the building and we were out of work. The air conditioning cooled the site so much that the 4X150s never melted again and we just needed to take meter readings once a week. That air conditioning saved the taxpayers a lot of money because those tubes were not cheap. I was transferred to an Army communications facility in the middle of the island. Rather than a solid structure, the high frequency equipment was housed in a huge tent. We had a great crew and all got the job done. I recall my Air Force supervisor was A/2c Darrell Chalcraft. I cannot recall the name of the Army Staff Sergeant who subsequently became our supervisor, although he impressed me with his knowledge of high-frequency communications equipment. Our 1253rd Airways and Air Communication Service (AACS) Squadron Commander was Captain Joseph Tretola, a super nice person from New Jersey and a great team leader.

Two weeks after I arrived at Eniwetok, my personnel friend showed up. He must have really believed his own story. He asked how I was doing and I said I'm getting off this rock." It seems that is what everyone said, everyone except the civilian contractors. They were making good money as employees of Holmes and Narver the construction company responsible for buildings and ancillary equipment not maintained by the military.

I awoke one morning with severe facial pain. I had no idea what it was. The Army medic did. My wisdom teeth were breaking through the gums, all four of them and they had to be removed. That entitled me to a trip to Hawaii. A trip to Hawaii was always good for at least a week because a plane returned only on Fridays. After my sojourn from Hawaii, I saw my personnel friend (I wish I could recall his name) and when he asked the obligatory question, I responded with, "I am getting off this rock." To my amazement, he replied with, "You're right this time, your bags must be packed because at 2200 hours you are on that C-124 parked on the runway. You will be going to Hawaii, then on to Johnston Island." Before leaving, something caught up to me. I had to see the medic to check my health and unfortunately my shot record before transfer to another location. I had conveniently avoided getting shots prior to leaving Westover AFB, (actually, I did not have the time) and now I had to get seven just to get current and two more for whatever else I needed. I thought I would tough it out and get them all in one arm, but after four, I took the remainder in the left arm and rear-end. I never missed another shot during my enlistment.

An Air Force Sergeant, S/SGT Brewer was placed in charge of about six of us. We flew to Kwajalein and on to Hawaii. We were assigned to Bellows AFB for about a week and then I went to Johnston Island with A/2c William Grandstaff to join a team from Johnson AFB, Japan to maintain ground and ground-to-air equipment. S/SGT Brewer as the NCO in charge saw to it that we got to our assigned areas at Bellows AFB. We were assigned to the 1957th AACS Squadron to maintain ground-to-air communications equipment.

We spent about a month installing communications equipment and making it operational for support of the missile shot. Then, we were instructed to pack an overnight and were evacuated from the island on a LCM to board the Boxer an aircraft carrier, CVS 21. I was in awe of its size, but it was small compared to today's carriers. That night, we were instructed to go to the flight deck to witness a nuclear blast. We observed a nuclear bomb detonated from a Redstone missile at an altitude of 141,000 feet and 26 miles downrange from Johnston Island. This exercise was called Project Newsreel. I do not know why the operation was called Project Newsreel, however, we were filmed as we evacuated the island.

Once aboard the Boxer I had time to think about the future developments. We were told by the Captain that test were conducted aboard the ship and it was discovered that gray paint had more radio activity than white, we would wear something white for the shot we would witness that night. Although only 20, and not at all educated in the physics of nuclear devices, I clearly proceeded with hesitation. Something did not sound right. We were told to bring sheets from our bunks because the radiation would be reflected by the white color. I could not believe it, knowing a sheet could not stop solar rays, why should it have any affect on nuclear radiation. I did not know about alpha and beta particles then. It is true the alpha and beta particles are stopped in their tracks with a piece of

paper; gamma rays are a whole other thing. Years later, I learned that gamma rays require a substantial wall of concrete, lead or water to be absorbed. My gut just told me this is something to view with caution.

I dutifully stood on the deck with my useless white sheet and goggles. I recall asking a civilian adjacent to me if he had any idea how long the heat would last. He said he had no clue. I did not dare look at the shot because I feared the outcome to my eyes. At about 2330, the bomb detonated at the altitude of 141,000 feet. We were approximately 710 miles from Waikiki. I recall three very vivid things. An intense white light that I can only describe as an infinite number of flash bulbs going off and staying on for quite a lengthy time. I heard from people in Hawaii as I passed through back on my way to Eniwetok some weeks later, that you could read a chapter of a book at Waikiki beach; the light was so bright and lasted so long. They had no idea the blast was coming and when they observed it, they thought it was the end of the world. The second thing I recall is the heat. It was intense. It probably did not last more than 200 milliseconds, but the residual temperature was uncomfortable. I had my head down because I refused to look into the fireball. Because I had my head in this position, I think it enabled me to see something those looking up could not see. I saw those in front of me, (and there were hundreds on the deck) as though they were X-rayed. I remember that sight most of all. The X-ray sight was awesome. I thought, my God, this is not good. I also thought that the people responsible for these tests did not have a clue about the effects of nuclear radiation on human tissue and internal organs. The protection we got for the radiation from these bombs was zero.

We returned to Johnston Island the following day and were debriefed. I returned to Eniwetok after a one week stay in Hawaii and about a week later I left for an assignment to Okinawa on 90 days temporary duty, (TDY). I lived in the barracks on a small Air Force station in Teragara and was shuttled to Awase each day. After 90 days working at the Awase Communications facility in Okinawa, I returned to Eniwetok just in time to obtain a flight to Travis AFB, then San Francisco and a commercial airline got me home in time for Christmas.

My most vivid recollection of my Project Hardtack experience was the Teak Shot at Johnston Island. The first radio transmission received at Johnston Island hours after the Teak thermonuclear test was "Are you still there?" Our Air Force counterparts at Bellows Air Force Base did not know if we were still on the map. The Electromagnetic Pulse (EMP) was so perverse that all aircraft were grounded in Hawaii and the surrounding area. The Teak fireball was observed as far away as Oahu Island, approximately 525 nautical miles from Johnston Island. Eyewitnesses claimed the multi-colored sky rivaled the Southern Lights, and they experienced an eerie twilight on Waikiki Beach that lasted for about 15 minutes.

I have an 8 x 10 full color picture of the Umbrella detonation taken by an Army photographer. When the plume of water shot upward, the WW II junk in the lagoon was sucked up in a column of 13,000 feet of super heated irradiated water. I cannot forget the many craters caused by nuclear bombs set off in the

pristine coral. Moreover, most of all, I cannot forget the shot I witnessed aboard the Boxer. I wonder about the effects of nuclear radiation on the Marshallese to this day.

Prior to leaving Eniwetok for Okinawa, I was directed to complete a form indicating my preference for a stateside base. Maguire AFB in New Jersey, Plattsburgh AFB in New York and Dobbins AFB in Georgia, were my choices but not the Air Force's and I was assigned to Hamilton AFB in Novato, California. Hamilton, which is no longer in existence, was a great place and considered the "Country Club" of the Air Force. Hamilton was just up the road from San Quentin and about equally distant to San Francisco and Santa Rosa. I worked off base at a High Frequency Transmitter facility situated on about 1,200 acres. I finished my enlistment as an Airman First Class with 12 months in time and grade towards Staff Sergeant. In those days, you could not be a Staff Sergeant with less than four years of service, and although assured I would be a good candidate to make Staff Sergeant, I surmised that I was due for another overseas assignment and would not be able to attend college and obtain an engineering degree. I completed my service with exactly four years of active duty. I joined the United States Air Force on August 20, 1956 and separated from active duty on August 19, 1960. My complete commitment was six years, four active and two inactive reserve. I received an Honorable Discharge on August, 1962. I enjoyed my time in the service, and if I thought I could have continued my education at a stateside base, I would have seriously considered making the Air Force a career.

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George Mace – Atomic Veteran**An Atomic Bomb Test Veteran Remembers**by George Mace

George Mace is a veteran of nuclear bomb testing in the Pacific and Nuclear Operations Reconstruction Coordinator for the National Association of Atomic Veterans. There is nothing like a first hand account from someone who was there.

“Exactly 52 years ago I participated in nuclear Electromagnetic Pulse Tests. I had been assigned to Joint Task Force Seven, for participation in Operation Hardtack-I, to be conducted at the Pacific Proving Grounds. This mainly consisted of Bikini and Eniwetok Atolls, about 150 miles apart and by using two Atolls the U.S. could test many more bombs.

On 1 February 1958, I reported in at Travis Air Force Base, California and waited several days for a Military Air Transport Service (MATS) flight to Hawaii. This was the first time in my life for flying and some experience. There was no finished interior in the aircraft, just bucket seats and cold box lunch meals. It was a cold flight and one engine started to smoke, which had to be shut down (feathered) on the way over and I am sitting on the wing seat watching out the window with more than a little concern! Hawaii smelled like a big pineapple upside down cake when we landed, because of the canning factories.

Again, several days passed waiting for another flight, which would take me to Eniwetok Atoll. It is a long way from Hawaii to Eniwetok, which is part of the Marshall Islands and near Bikini and Kwajalein Atolls, which almost everyone has heard of. Looking out the aircraft window all you could see was white caps (big waves) in a very blue ocean. After what seemed like an eternity of cold box lunches and rather cold sleeping, the aircraft started to descend and I could not see any land. Finally, what appeared to be the deck of an aircraft carrier came into view and we started our approach. It turned out that Eniwetok Island was about 90% runway and the remainder living quarters for the troops! This main island was named Eniwetok but code named FRED, which I shall use to prevent confusion between it and Eniwetok Atoll. Because the islands had native names and were hard to pronounce, all had been assigned code names by the United States, which I shall also use.

Once off the plane we were escorted to a building for in- briefing and further assignment. No cameras or weapons were allowed on the island and all our mail would be censored (read) for classified information before forwarding stateside. We would not be allowed to write anything about our duties or what took place on the island, or in the Atoll! This did not leave a whole lot to talk about when writing home. In April, I would celebrate my 23rd birthday on this "wonderful" island!

I had one duffle bag with all my uniforms in it and the first thing we did was turn it all in for storage. I was issued tan short sleeve shirts, short pants, sneakers and a blue ball cap, which would be my dress uniform for the next nine months! My quarters would be a ten- man tent with wooden lockers, heated 24 hours a day by a light bulb to keep the

moisture out of my clothes. It also burned holes in your clothes if you were not careful! The tent was constructed with a wooden frame and second tent over it with an air space in between to help keep it cool inside. The sides of the tent were rolled up to about three feet off the wooden floor for air circulation. This also allowed the horizontal rain coming in off the ocean to soak your cot during the frequent nighttime storms, (Many a wet butt night).

Wooden walkways connected the tents to each other and a central latrine with (showers, stools, washbasins). All you ever wore to the latrine was a towel! As luck would have it, the living quarters were located right at the end of the runway and you prayed a lot when the runways were in use. The big end of FRED island was all runway and aircraft hangers, with a single road running on the lagoon side all the way down the narrow portion of the island. I do mean narrow. From in front of my tent, I could throw a stone into the ocean, then turn and throw a stone into the lagoon. We were also only seven feet above sea level!

Although small, FRED island had a Joint Task Group Headquarters building, communications building, dinning facility, chapel, out door movie theater, base exchange (store), barber shop, metal buildings (Billets) for the officers, dozens of tent billets for the enlisted men, (there were no women on the island, or in the Atoll as far as I know), enlisted club (Trade winds), officer club (Pau Hana) and boat landing. FRED island had one tree about eight feet tall located by the chapel. WWII and previous nuclear bomb tests took care of the rest. Because it was an isolated tour of duty, there was no kitchen police (KP) that the troops had to perform, as this was accomplished by hired Hawaiians. I will have to say that the food as a whole was excellent, but men putting out their after dinner cigarettes in the mashed potatoes is something I will never get used to!

Eniwetok Atoll consists of dozens of tiny islands (about 40) formed in a rough circle, with a lagoon of mostly calm waters in the center and shallow and deep entrances between the islands to the sea. The center of the lagoon was deep enough (approximately 200 feet) for navy ships to enter through the deep entrances for delivery of materials and personnel. From my island I could only see one other island ELMER, about two miles away. For some unknown reason this island was also called PARRY. I did not know it at the time but the next island from ELMER was named DAVID (Japtan) and on it a small group of men (13) manning an Army Signal Corp radio receiver site; commanded by Sergeant Orville Kelly. Their task was to receive all incoming messages from the Army portion of the task force scattered around the islands and relay them to my island FRED. All kinds of animals and electronic test equipment were placed on these islands by Army personnel and retrieved after each SHOT. Within 15 years, Orville was diagnosed with lymphatic cancer; became the first veteran awarded service connected benefits for exposure to bomb radiation and died in June 1980, just 6 months after winning his seven-year battle with the government! I would come to know this man before he died and go on to help his widow Wanda, form the National Association of Atomic Veterans. That is a whole other event in my life for future recall.

My main source of off duty activity was water skiing near the boat dock. I had never water-skied before and it took some doing. For months, I used two skis and toward the end of my tour was getting fairly good on one ski. This was great exercise because every muscle in your body is used while skiing and I got dark as a peanut. My swim trunks got old quick from the salt water and the legs were very loose. One day while on two skis I got the bright idea of bumping my butt on the water, from a spread eagle position. Without realizing it I gave myself a salt- water enema and hit the shore on a dead run for the latrine! Not to smart and I haven't told very many people about that one!

One time the boat operator pulling me on two skis took me all the way around a navy ship in the lagoon. This was out where the water turns dark blue and the sharks search for garbage from the ship. Had I lost my ski for any reason, I would never have let go of that rope, until back on shore!

I also spent hours snorkeling in the lagoon, with air pipe and goggles. It is very easy to stay afloat in salt water and just stare at the lagoon bottom for helmet shells and other goodies. The water was about 15 or 20 feet deep close to shore and on the bottom lay all kinds of equipment from WWII; landing craft, tanks, engines, etc., which I would dive down to and search. One day while snorkeling I was just floating and concentrating on the lagoon bottom when I became aware of a presence. I had drifted into a large school of big brownish/black fish and there must have been thousands of eyes watching me. Scared the devil out of me and from then on I looked around while snorkeling, as it could have been a shark. Many of the guys went spear hunting for sharks out in the deeper water and had stories to tell, but that was not for me!

I also took long walks on the ocean side of the island and gathered live bullets, still there, after almost 15 years since the island was invaded during WWII. All this time they had been submerged in seawater and constantly agitated by the tides. I would break them open, which was easy because the brass casings were brittle and the powder would still ignite. One day I remember finding a live hand grenade with almost all the exterior projectiles and firing mechanism worn off and threw it far out into the deep water. The beach on the ocean side of the island was peculiar, as it was almost solid coral with very little sand. Rumor was that if you walked off the edge of this coral you would be washed under the island, so I never went too far out. No use pushing my luck.

Some of the men would "borrow" a large tablespoon from the mess hall and using the round end hammer a silver dollar around its edge and make rings, after boring a hole in it. Not a whole lot to do for thousands of men on a very small island!

There were many high paid civilians on the islands and on weekends, the gambling would start around the clock. There was a Sergeant in the communications center who kept one thousand dollars in our safe, just for gambling! He was professional and sent the winnings home. He would start playing cards and if he lost 3 or 4 hundred dollars, would stop, until the next week! Me, I was lucky to have ten dollars in my pocket.

We had been told that in the coming months testing of atomic devices would be started, but not how many or that hydrogen bombs would be included. It did not matter at

the time because I did not know an atomic bomb from a hydrogen bomb and we were assured that everything would be safe. Only in the late 1970's did I find out that hydrogen bombs are hundreds of times more powerful than atomic bombs. There was no talk about danger from radiation produced by the bombs and at different times, we were issued film badges to measure radiation. I now believe that I was fortunate working every day in a concrete, air- conditioned communications building, which limited my radiation exposure to some degree. From February 1958 to the beginning of May, I was busy working in the communications center getting the equipment ready, before the bomb tests began. Because the Operation was a Joint Military effort, there were two air force enlisted men, including myself and one Army Warrant Officer (WO) as Maintenance Chief, to maintain all equipment in the communications center on FRED. We provided the Operation with long-haul secure circuits back to the states via Kwajalein and Okinawa.

I was a lost entity in a very busy Joint Operation, with no hope for promotion! At first, I did not like WO Milton Learner, the maintenance chief, because he made me work! Every piece of teletype and crypto equipment in that communications center we cleaned and checked. All wiring was tested point to point and many operational checks performed. The online secure systems were of the one-time tape variety and included the B-2 Table, SSM-33, TT-160/SAMSON unit, all using SIGTOT Distributors. One- time tape systems were considered the most secure devices available (Still Are). Off-line equipment included the TSEC/KL-7, TSEC/KL-47 (NAVY) and the SP 3000, all Rotor Secured devices. Only after the bomb testing started and we had no equipment problems did I come to appreciate WO Learner's wisdom of preparation!

WO Learner was a big, tall, well -built Jewish man and could take his part in any scrap. If angry, he would come nose to nose with you and talk you down! The communications center had another Warrant Officer who out ranked WO Learner and was in charge of the operations portion. He directed that all maintenance personnel leave the secure area when Top Secret message traffic was being processed. WO Learner turned red and stated that we all had Top Secret security clearances and would remain in the area, unless operations wanted to repair their own equipment and that ended the discussion!! Years later WO Learner would play a part in my being hired as a civilian Crypto technician. Always mend your bridges and never burn them behind you!

From the 6th of May through the 11th of August, no less than 35 nuclear devices were tested at Eniwetok Atoll, Bikini Atoll and the Johnston Islands. This was an awful lot of detonations in just over three months! All total 35.628 MEGATONS were detonated which equals 1,781 Hiroshima size bombs! Later in life, I found out that the United States and Soviet Union were negotiating a Limited Nuclear Test Ban Treaty and both sides wanted to test as many nuclear devices as possible before sitting down at the table! Every detonation was called a "SHOT" and at that time I wasn't told their Code Names, how far away they were, or their size (KILOTON=1,000 tons TNT, MEGATON=1,000,000 tons TNT). Any information that we received concerning the tests came a week late, when we read the Hawaii Newspapers! Whenever I ask how far away the detonations were, I was always told about 50 miles.

Years later I found out that the 22 detonations conducted at Eniwetok Atoll were never more than 15 miles from the island of FRED and consisted of a mixture of atomic and hydrogen devices. I also discovered that the 11 detonations that took place at Bikini Atoll, about 150 miles east of Eniwetok, had a nasty habit of drifting their radioactive clouds over us! I know this because in 1979 I had the government sent me the declassified Operation Hardtack-I plans, which included wind drift charts for all SHOTS. I paid Uncle Sam \$35.00 for these Xerox copies; however, I am glad I did, as they are no longer available! Once it became known that veterans were expressing an interest in nuclear testing, almost all government sources dried up!

Some of the nuclear devices must have come by plane as they would be loaded on flatbed trucks, covered with canvas and driven down the lagoon road for reloading onto water landing craft. The trucks were guarded with machine guns and I remember thinking, "Who's going to steal it and where would they go with it." We were never told ahead of time that a SHOT was going to occur, but the day before they would anchor the water tower down with cables and trucks.

For most of the SHOT detonations at Eniwetok all personnel would be assembled on the lagoon side of the island, sitting with our backs to the blast, head on our knees and our arms over our eyes. Officers had welders goggles and could watch the whole show. Only after the fireball died down could we turn and look at the cloud rising. I did learn to respect (Fear) the tremendous power displayed by each detonation. A few seconds after detonation, you would see this tremendous flash and then a wave of heat would feel like the sun coming up on your back. The largest SHOT I ever witnessed was code named OAK on 29 June and the heat on my back got to the point of becoming uncomfortable, in fact it started to burn my skin right through my shirt. Once the fireball had subsided, I turned around to see the water column rising into the sky and forming the familiar mushroom cloud.

Then high winds hit me within minutes or seconds. It is hard to put a time frame on it though because time really stands still when you see something like that. This was all very scary of course but it was also really beautiful. There are so many colors to it, especially in a Pacific island setting; there is the aqua green water and a brilliant red residue from the fireball, and then the luminous white mushroom cloud going up into a clear blue sky. It's awe-inspiring and my first emotion was pure amazement.

Only years later did I find out that the OAK detonation was a nine megaton hydrogen bomb (700 times greater than the Hiroshima Bomb);detonated on a landing craft, about 15 miles from my island. We sandbagged the island beforehand, because it was only seven feet above sea level. When OAK detonated, there was this wink of light that I sensed through my closed eyes and arms, just like a flashbulb going off inside my head. And when I turned to see the column of water rising out of the lagoon, it was so tremendous that no one spoke. You could hear the sound waves bouncing off the islands Boom! Boom!, as it came down the atoll chain .And when the sound wave hit Eniwetok, the whole island shook and a hot wind blew our baseball caps off, but within seconds the wind reversed and sucked in toward the bomb. The column was surrounded by ragged

haloes of white shock waves, which produced an electrical field. I actually experienced an electrical field passing through me; my arm hair stood up and there was a cracking sensation all through me that was as much felt as heard. I knew what this was because I had felt the same effect when in the field of a high- powered radio antenna. There was also a metallic taste in my mouth, like when chewing gum foil touches a tooth filling. And that mushroom cloud just continued to build and grow until it had risen about sixty or seventy thousand feet into the air and covered the entire atoll. A circle of islands about fifteen miles in diameter were all shadowed by this terrifying, magnificent thing.

I remember talk of evacuating the islands because of concern about fallout, but it never occurred. After fifteen or twenty minutes, the water in the lagoon began to recede until the lagoon bottom lay exposed for about two hundred yards from shore. I could see sunken PT boats and equipment from WWII that was normally covered by fifteen or twenty feet of water. I really thought the earth had cracked and that the water was running into it! I mean, it had to go somewhere, right?

Finally, the water stopped receding and it just stood there like a wall for a minute. I thought of Moses and the parting of the Red Sea, for it must have looked like this! Then it started coming back and I got a sick feeling, because here I was on this dinky little island, not very wide, and here comes what seemed like the whole ocean. The wave hit the island and sprayed up over the sandbags and all day long the water kept seesawing back and forth. Because of this agitation, the lagoon water turned an ugly milk chocolate brown and it started to rain very hard. At this point, the effects of the bomb detonation took on apocalyptic gloom and I felt oppressed! Prometheus had stolen heavens fire and Pandora's' box spilled a Nuclear Holocaust on mankind forever!

The bomb had created a column, which sucked up all the lagoon water for fifteen miles around. I will never forget that. The lagoon water was off limits for swimming for three days, but the ironic part of it was that the lagoon was our source of drinking water, after it went through the desalinization plant, which did not remove radiation. The mighty OAK had dug a crater 183 feet deep in the lagoon and 4,400 feet in diameter. It also made a good size dent in my memory bank!

Another SHOT named PINE occurred on 27 July and was detonated in the lagoon, on a barge off Janet Island, again about 15 miles from my island. This was a 2-MEGATON bomb and the mushroom cloud rose to 66,000 feet. Later information I obtained from the government stated this bomb used two primaries for detonation. This indicates the device was a two stage thermonuclear bomb, using Tritium and Deuterium, (both by products of hydrogen) and not the normal lithium deuteride. Through study, I found out this was done to maximize the release of neutrons; therefore, the PINE SHOT must have been a Neutron Bomb! During this 1950's time period the United States had announced it was developing a Clean Bomb with very little radiation fallout and minimum blast damage; however, the massive release of neutrons would kill or damage all living matter for miles around. Such a bomb would permit U.S. ground troops to enter enemy towns immediately after bombing, with little concern about radiation fallout or military resistance; and as a

bonus the buildings and utilities would still be intact! I still wonder if my fifteen miles was far enough away!

It is interesting now, years later, to remember that the OAK and PINE SHOTS were detonated at sea level; which means that an awful lot of coral became radioactive fallout in the atmosphere and stratosphere throughout the planet. It would be years before this "stuff" came down! And today the medical profession wonders why there is so much wide spread cancer!

Two other SHOTS of interest occurred during this test series, which again only became known to me years later. Two missile warheads, each 3.8-MEGATON were detonated at 252,000 and 141,000 feet. They were fired from Johnston Island on 31 July (TEAK) and 11 August (ORANGE) to see what would happen if nuclear bombs were used as weapons against incoming enemy nuclear missiles. Quite unexpected the United States found out that hydrogen detonations in the atmosphere create an Electromagnetic Pulse; which destroys solid state electronic equipment of all kinds. Communications all over the Pacific, including Hawaii were wiped out for hours! This meant that all military communications facilities, including aircraft would require special devices to filter out such a pulse or havoc would occur. Knowledge of this Electromagnetic- Pulse (EMP)-phenomena became ultra Top Secret for many years to come, until fixes were made.

My experiences at Eniwetok may sound to some as a fun time, but I can assure you that nine months living on a small island with thousands of other men, (and one tree) was no picnic! At age 23 and very naive, I did not give any thought about the 1945 Atomic destruction of Hiroshima or Nagasaki. Having grown up during WWII, I was taught to hate the Japanese and that the Atomic Bomb ended the war and saved thousands of American soldiers' lives. This was 1958 and my country needed nuclear weapons to defend our freedom and keep the world safe. In fact, I was proud to be part of this Nuclear weapons development and would have agreed to their use on any enemy. This mind set would change later when I discovered that the government of the United States was not above lying to their own people and the world, concerning nuclear weapons or reactors.

Operation Hardtack-I delivered the coup-de-grace' to Bikini and Eniwetok Atolls as they would never again serve for the testing of nuclear devices. From 1946 to 1958, Bikini withstood 23 detonations and Eniwetok 46 detonations. Both atolls are now so radioactive that they can never again support human life, without damage. Over the years, the United States spent hundreds of millions of dollars trying to clean up the atolls, to no avail. Natives from these atolls still live as Wards of the United States on a single congested island, where we relocated them over 52 years ago! Just as we had done to the American Indian, the United States once again destroyed the physical environment and cultural ecology of an entire race. What goes around comes around and we are not going to like it! To add insult to injury, in later years the United States and Japan dumped radioactive waste into the sea trenches of the Marshall Islands. Henry Kissinger summed it all up, by saying "there are only a few thousand natives out there and who gives a damn!" I do Henry, I do!

I was assigned to McGuire Air Force Base, New Jersey to finish out my tour of duty. The Air Force at that time was down sizing, so I got a 60-day early out and was discharged 15 December 1958. Three years, ten months and one day of active service to be exact!”

George [gmace8(at)comcast.net]

There is a postscript to this story. The struggle of the Atomic Veterans with a government they once served has not been in vain. In the beginning, even the other service organizations such as the American Legion and Disabled American Veterans (DAV) would not acknowledge the National Association of Atomic Veterans (NAAV) as a creditable organization, not already encompassed in their charters. A ground swell of forthcoming Atomic Veterans however, would change this attitude and both organizations now embrace the NAAV and do battle for it! The creation of Atomic Veterans did not cease in 1963 with termination of atmospheric Nuclear Weapons tests. Everyday, men and women continue to serve in nuclear powered submarines and surface ships working and sleeping near nuclear reactors and soldiers use artillery shells treated with depleted uranium.

Bills have been passed by the U.S. Congress listing certain cancers, which are now recognized as possibility connected to radiation exposure and therefore are covered as service connected disabilities by the Veterans Administration.

Tadd Kowalzyk – Atomic Veteran

I was an A/3c stationed at APO 187 from 28 Sep 57 to 27 Sep 58. I was in Det 25, 15th weather squadron as a weather observer doing upper air balloon flights.

Oak was a 9.8-megaton yield hydrogen bomb that was detonated in I think June 58 on the NNW side of the lagoon 24 1/2 miles from the island of Fred. The shot left a crater in solid rock 1500 feet deep and 5 miles in diameter. The mushroom cloud rose to a height of 200,000 feet as seen by our CPS9 weather radar which was located near the base operations building on a tower about 80 feet high. Our weather balloons could only average about 100,000 feet altitude and the upper flow was to the NE, which means we should have been safe from fallout. The upper level of the cloud sheared off and moved SSE and some landed on Fred and Japtan.

For Oak, I and those of my unit not directly at work, were in formation facing away from the blast with left arms over our eyes wearing long leg and sleeve fatigues. At detonation, I could see the outline of my barracks across the road and felt an instant "sunburn" to my neck and back as well as the back facing portions of my ears. We were told not to look at the blast until the count got back to 10 but at 4 I snuck a look with my left eye covered. I was only 19 and still not very smart and paid for it with dead spots on my optic nerve, which are there to

this date. Through the miracle of binocular vision and the brain filling the blank spots I still have 20/20 vision.

When I first arrived at Eniwetok in Sep 57 I was told swimming was only allowed in the roped off area near the Coast Guard station in the lagoon. Any other location that we went in the water we called skin diving.

I have a Photo of an underwater shot that was about 1 mile NW of the garbage pier. No flash, no sound but a tall column of water and spray that splashed my work location which was on the SW end of the island of Fred just S of the garbage pier.

When I left APO187, I was stationed at Dow AFB, ME. and was going bald. I suspect that was from the radiation. The hair grew back over time. I am not sure but believe I am one of only two weathermen out of about 20 during the testing of Hardtack that is still alive. The other is Peter Pachetti who must be in his 80s now. I am 71.

I went aboard the Boxer on a rare day off to check the ship store. A few years later, I served about 18 months aboard MSTs ships from Agana, Guam and Rodman naval base, Panama as a mobile weatherman supporting photo mapping and got to spend about two weeks at Eniwetok awaiting transportation to Samoa. I think that was in 1964.

I recall that shortly after OAK when fallout was a possibility, my commander Captain Ragland had all our radiak detectors, which we wore all the time collected and placed them in the unit safe. They were never again seen. Two days after OAK a C131 from Washington DC arrived and every person who deplaned did so in full protective gear. They walked all around the Island checking for radiation. My supervisor at the time an Electronic tech Louis B Atkins a MSGT asked one of them why the protective gear and the answer was, "normal procedure."

You wonder about the effects on the Marshallese. The US government did a cleanup that concluded not many years ago. They gathered up as much of the radioactive material that they could, placed it on one of the islands and entombed it in concrete. They then went to Majuro and told the native people they could return home. One of the things the US promised those people in 1945 that for the use of their atoll, they would receive a stipend (I do not know how much) and they could attend any university paid in full by the US government. When in 1945 the US offered the Marshalese a temporary island at Ugelang and free education anywhere in exchange for the use of Eniwetok, they thought they were dealing with inferiors. Only a very few took the US up on the free schooling. One of the few who went to school was the chief when they were removed from Eniwetok the second time which I think was in the 80s.

After a very short period, it became clear that it was still not safe to be there and we offered them another similar island. One of the very few who had accepted the offer of college attended the University of Hawaii and attained a bachelor's degree. He just happened to be present when the offer of a similar island was made and he said, "okay we want Hilo."

One of the bomb craters from an early A Bomb test was on the South side of Fred a few hundred yards from my barracks on the coral reef. It was a favorite location to "skin dive" for seashells.

During my two weeks in the 60s, awaiting transportation to Samoa I went to a beer bust near there and went swimming in the Ocean. From the reef at ankle deep, a single step and we were in water 6000 fathoms deep.

Another kind of test that involved the Boxer and other ships and all personnel there was "SHAD" which was a biological weapons decontamination test. They sprayed what was then believed to be a harmless virus then tried to clean it up. The man who replaced my PCS was Albert Mayo who now has a 100% disability rating caused by that "harmless virus."

A few years ago 1998 or 1999 I think, I wrote to the DNA in Nevada now known by a different name (DTRA) to get radiation information just in case it finally gets to me and was answered by a Navy Captain who denied I was ever there. I have since received a record of being stationed there and a dose reading which is very low. The fallout from OAK and a shot at Bikini a few weeks earlier were not recorded.

A short while after arriving at Dow AFB, ME in October 1958 I was evaluated for radiation and was told I had received the equivalent of 10 to 15 thousand chest X-rays. That exam was never made a part of my medical records and I was told it was classified very highly and I was not supposed to tell anyone.

Tadd Kowalzyk, MSGT, USAF, Retired, 31 Jul 1979
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Bud Feurt - Atomic Veteran

I was on the USS Boxer CVS 21 for all of the shots in "Operation Hardtack & Project Newsreel". I believe there was 28 shots altogether according to my DTRA (Defense Threat Reduction Agency) report. The first shots were launched from our ship with balloons and where detonated so far away that we could only see a flash on the horizon, but each got closer and closer. I remember one shot where I receive a load of shrapnel in my face in the form of melted glass, which I still pick out from time to time fifty two years later. There were shots on

islands shots, on barges and shots that were dropped from airplanes. There were shots that killed many animals. I went through the two underwater shots (Wahoo & Umbrella) where ships were tossed in the air like toys and I thought the Umbrella shot was going to roll our ship over. The biggest shots (Teak and Orange) were in the Johnson Islands. At that time we were ordered on deck in white uniforms and doused with sun tan oil, which did not do any good, we all were pretty well tanned from the sun and still got burned from the blast. The shot was spectacular and hard to describe to anyone that was not there. We had our backs turned and our eyes covered. When the shot went off the light was many times brighter than the sun. With my eyes closed and covered, I could see the bones in my arms. When I finally peeked down at the deck, there was no color in anything just black and white from the shadows. The heat was unbearable and there was some panic and screaming. It was brighter than day at 2400 hours and a huge yellow cloud in the sky. It stayed day light for approx. 30 to 45 minutes, a rainbow of many colored rings popped from the yellow cloud, slowly a red ring closed in from around the horizon with daylight on one side and night on the other. A shaft of purple light came out of the yellow cloud and penetrated deep into the sea. The Russians were on a ship and filmed the whole thing and we could not even have a Brownie Hawk Eye camera.

The living conditions on the ship were lousy, and liberty was occasionally limited to a small atoll named NAN. There were no women, but lots of drinking which usually ended in a brawl. Once, we were allowed to go on liberty on Kwajalein, but a riot broke out and destroyed the EM club. We were never allowed to go back.

The food was bad and I can remember powdered eggs and powdered milk three times a day for weeks. The bread was full of cockroaches, the candy bars were full of weevils, and rats ran around all over the ship. Some of us lived on K and C rations we got from the Marines we evacuated from one of the islands.

When we got back to the States, the crew was broken up and sent to different ships. I only had 3 months left to go so they sent me to the Kearsarge CVS 33. While I was on the Kearsarge I was given my shipping over lecture by a chief warrant officer that was on the Boxer, He told me I was recommended to reenlist. I told him that if there was any chance I might get that kind of duty again I was not going to ship over. He said "I don't blame you a bit that was a hell ship" and end of my shipping over lecture.

I am a lifetime member of the National Association of Atomic Veterans and I have been trying to get some recognition for being the guinea pig at the atomic tests. I have talked to my congressman Duncan Hunter and have made contact with 60 Minutes. The Canadian atomic veterans got \$22,000 compensation and the Japanese get special medical treatment and \$1,300 a month. We cannot even get a service medal.

The Veteran Hospital in San Diego has been taking very good care of me and is keeping a close eye on my health. They have removed a tumor from my chest and are monitoring some nodules in my thyroid. I feel that I am very lucky that this is the only problem I have with the ionizing radiation.

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Atomic Veteran Lloyd Teed

All Atomic Veteran's stories are moving, but the saga of Airman Third Class Lloyd Teed is especially poignant because the man was called to perform his duty, was subjected to nuclear radiation and died at an early age as a result of multiple tumors. He succumbed to the effects of ionizing radiation from his participation in Operation Castle in 1954. He was 32 when he died. He looked 70!

After attending schooling at Lackland and Shepard Air Force bases, Airman Teed participated in nuclear tests and he along with other crewmembers developed leukemia. His radiation exposure occurred when their plane flew into or through a Mushroom Cloud. Air Force doctors informed him that he might be sterile or have malformed children. The few details he mentioned to his widow such as, the tests took place over water, they blew away an island and that it was the first hydrogen bomb test could only mean the 1952 "IVY" series -- shot "Mike". It is certain that he participated in additional tests, since these individuals, who were trained and had security clearances, were regularly utilized for the Nuclear Test Program. The 509th Bomb Wing was dedicated to Nuclear testing and was not used as a combat unit during Lloyd's service years. The following hospitalization and diagnosis of leukemia leads to an assumption that he also participated in the Castle test, shot Bravo. He was placed on permanent disability while suffering from Chronic Lymphatic Leukemia for which he received massive doses of Nitrogen Mustard. His death certificate is conveniently a Casualty Report and makes no mention of ionizing radiation exposure. Four years prior to his death, Airman Ted's VA doctor, Dr. Dessel informed him that he was the last survivor of the crewmembers of his plane that flew through the radiation cloud.

The reader is directed to <http://www.atomicvetkin.com/index.php#whatsnew> for the complete story written by his widow.

Nuclear Testing Facts

The United States government conducted aboveground nuclear tests in the South Pacific and in the state of Nevada between 1945 and 1962. Many people

in the military at the time were part of training exercises in the area and were exposed to ionizing radiation from these tests. Others were exposed to radiation while working at facilities making the bombs or at other nuclear sites. More information on this topic is available in a document, *Cancer Among Military Personnel Exposed to Nuclear Weapons*.

Non-military people living near or downwind of nuclear test sites may have also been exposed to radioactive byproducts. Levels of radiation are likely to be higher near these sites, but some radioactive particles from the tests entered the atmosphere and traveled great distances, landing thousands of miles away from the original site. While exposure levels were likely to be higher at the time of testing, some radiation in the soil today is the result of these tests.

The DoD has released a number of films on nuclear testing that may be ordered. The descriptions of some of the films are described here.

“0800056 - Enewetak Cleanup Produced by the Defense Nuclear Agency - No date - 13:15 - Color - This video shows the actions being taken to cleanup the islands comprising Enewetak Atoll so that the previous inhabitants could return to live on some of them. The inhabitants were forced to relocate to other islands in 1948 when the United States began atmospheric testing of nuclear devices at the Pacific Proving Ground. Over the 1948-1958 period, 43 tests were conducted on or near Enewetak Atoll.

Numerous decaying, abandoned buildings are shown that had to be demolished, while others were still suitable for use by the returning people. Homes, schools and government buildings had to be built.

The film details the radiation studies conducted to determine the extent of contamination and the uptake of radioactive particles by plants. Some parts of the Atoll would never be suitable for habitation because of the extent of contamination. One of the decontamination activities planned was removing the contaminated soil, transporting it to craters on one of the highly contaminated islands, and encasing it in concrete.

Those organizations cooperating in the cleanup effort included the Atomic Energy Commission, the Coast Guard, the Defense Nuclear Agency, and a marine biology firm.

0800000 - Nuclear Film Declassification Project / Nuclear Testing Review - 25:00 - Color - The U.S. Department of Energy (DOE) has embarked on the Nuclear Weapons Film Declassification Project to make available to the public and many users films that contain historically significant events in the development of the U.S. nuclear weapons program. This is being done under the Department of Energy's Openness Initiative. The film project is being carried out by DOE's Albuquerque Operations Office (AL) in cooperation with the U.S. Department of Defense (DoD).

Comments from a Research Physicist

Dr. Sternglass, a highly respected physicist, studied the effects of fallout and radiation from nuclear reactors. These comments excerpted from <http://www.ratical.org/radiation/inetSeries/nwEJS.html> clearly express his feelings about nuclear energy and atomic bomb testing. The following is taken from chapter 3 in the 1982 book *Nuclear Witnesses, Insiders Speak Out* describing Dr. Ernest J. Sternglass, at the time the director of the Department of Radiological Physics at the University of Pittsburgh Medical School. The editor suggests the reader access this very informative article. [text in italics denotes the author's--Leslie Freeman's--voice.]

"I was giving a paper at a health physics meeting here in Pittsburgh. I figured, at least here, there would be some newspaper reporters. Someone told me, go, and talk to one of the reporters in the newsroom. So I did. I gave him a rundown of the significance of my findings. He took notes and said he'd do a story. That story never got out on the wires. Some time later I told someone at the AP office in Pittsburgh about my findings. 'Dr. Sternglass, how come you didn't give us this story before?' I said, 'I did give it to you. There was a stringer.' And I gave him his name. He said, 'I'll look it up.' And he called me up and said, 'There is no such individual working for Associated Press.' Who had I spoken to? I never found out."

After World War II the U.S. military was intent upon building up its weapons arsenal. But Americans were sick of war. The military figured that the way to get their weapons program funded was to make the bomb look "peaceful and happy," to take away the spectre of war and transform atomic energy into a "promise for peace." The "peaceful atom" was a cover for the continued proliferation of weapons development. It was an elaborate lie. Dr. Sternglass gradually realized how far-reaching the lie had been. "The military was behind everything."

"Back in 1947 they knew. The data had been gathered at Argonne National Laboratory. [1] They knew that the newborn puppies, whose mothers had been fed small amounts of radioactive strontium-90, were dying of underdevelopment and serious birth defects. The government knew, and decided to keep it secret. The government set up the study. The government knew the results. And the government kept those results from the American people. Why?"

We are at the University of Pittsburgh Medical School in the office of the director of the Department of Radiological Physics, Dr. Ernest Sternglass. . . . He came to the United States from Nazi Germany when he was fourteen, in 1938. He leans forward, gesturing with his hands. "I know how a government can be totally destructive of its own people, how people in the highest level of government can use lies to achieve their political purposes."

Dr. Sternglass has been working for almost twenty years to publicize the dangers of low-level radiation. His article on the increased incidence of leukemia from fallout was

published in Science in the spring of 1963. The Atomic Energy Commission "pooh-poohed the whole thing." They said his statistics "weren't good enough." His findings threatened the nuclear establishment. The government and the nuclear industry tried to discredit his evidence by making Dr. Sternglass out to be a "kook." It took courage to continue to speak out. . . .

The year 1947 was a turning point for Sternglass. . . . [he] had the opportunity to meet Einstein in person.

“The military supports secrecy, and the military is behind the entire nuclear reactor program, and behind the entire Plowshare Program. It's behind everything connected with nuclear energy--even artificial hearts powered with plutonium pacemakers. The military feels that they need to use nuclear weapons in order to protect this nation. You have to be willing to use the weapons. If you yourself are suspected of believing that the weapons are too poisonous to use, then they lose their value as a military deterrent. But, if we're going to get our people to fund these weapons and our soldiers to use them, they can't be told that the fallout will go back and kill their babies. Say you're a soldier, and someone hands you a gun and says, "I want you to go out now. And I've got a little gadget here that is guaranteed to really keep the Russians away. It's got two barrels on it. Now you worry about this one barrel. Let's point it at the Russians. I want you to pull that trigger when I tell you to."

And you say, "What's the other barrel for?"

He says, "Well, the other barrel is aimed at your baby at home."

Would you pull that trigger?

So they tell you there's only one barrel to the gun. Otherwise they couldn't get decent, patriotic people, willing to defend their families from being taken over by the Commies, to use those weapons and pull the triggers whenever they want them to.

That is the entire rationale behind the avid support of nuclear energy versus coal, versus solar, versus every other aspect of energy generation. Because only nuclear energy makes bombs. The military-industrial complex could not sell nuclear energy if the public knew that the use of nuclear weapons would destroy the very thing we are trying to protect, the very thing that in the past we have asked soldiers to go out into the field and give their lives for--namely the survival of their way of life, of their children, and their children's children, for which people are willing to give their lives. But to ask people to go and use a weapon whose poisonous gases would cripple the minds of their children and destroy their bodies for generations to come--could you sell that as a weapon? To Congress? Or to the soldiers who were going to be asked to die in the battlefield under the nuclear mushrooms of Europe? “

Source: <http://www.ratical.org/radiation/inetSeries/nwEJS.html>

Radiation Effects

Higher frequency ultraviolet radiation begins to have enough energy to break chemical bonds. X-ray and gamma ray radiation, which are at the upper end of magnetic radiation, have very high frequency --in the range of 100 billion billion Hertz--and very short wavelengths--1 million millionth of a meter. Radiation in this range has extremely high energy. It has enough energy to strip off electrons or, in the case of very high-energy radiation, break up the nucleus of atoms.

Ionization is the process in which a charged portion of a molecule (usually an electron) is given enough energy to break away from the atom. This process results in the formation of two charged particles or ions: the molecule with a net positive charge, and the free electron with a negative charge. Radiation is absorbed by the material it penetrates by a process known as ionization. Radiation creates ions in the material that it passes through, and some or all of the radiation energy is lost during this process. An ion is an atom, group of atoms, or a particle with a positive or negative charge. Ionization is any process that changes the electrical balance within an atom. Ionization means the ability to dislodge an electron from an atom

Each ionization releases approximately 33 electron volts (eV) of energy. Material surrounding the atom absorbs the energy. Compared to other types of radiation that may be absorbed, ionizing radiation deposits a large amount of energy into a small area. In fact, the 33 eV from one ionization is more than enough energy to disrupt the chemical bond between two carbon atoms. All ionizing radiation is capable, directly or indirectly, of removing electrons from most molecules.

Source: U.S. Environmental Protection Agency

Alpha and beta particles are directly ionizing because they carry a charge and can, therefore, interact directly with electrons. Radioactive materials usually release alpha particles, which are the nuclei of helium, beta particles, which are quickly moving electrons or positrons, or gamma rays. Alpha and beta particles can often be stopped by a piece of paper or a sheet of aluminum. They cause most damage when they are emitted inside the human body. Gamma rays are less ionizing than either alpha or beta particles, and protection against gammas requires thicker shielding. The damage they produce is similar to that caused by X-rays, and include burns and also cancer, through mutations. Human biology resists germline mutation by either correcting the changes in the DNA or inducing apoptosis in the mutated cell.

The units used to measure ionizing radiation are rather complex. The ionizing effects of radiation are measured by units of exposure:

- The [coulomb](#) per [kilogram](#) (C/kg) is the [SI](#) unit of ionizing radiation exposure, and measures the amount of radiation required to create 1 coulomb of [charge](#) of each polarity in 1 kilogram of matter.

- The [roentgen](#) (R) is an older traditional unit that is almost out of use, which represented the amount of radiation required to liberate 1 [esu](#) of charge of each polarity in 1 cubic centimeter of dry air. 1 Roentgen = 2.58×10^{-4} C/kg

The basic unit of radiation dose absorbed in tissue is the gray (Gy), where one gray represents the deposition of one joule of energy per kilogram of tissue.

Neutrons and alpha particles cause more damage per gray than gamma or beta radiation so another unit, the sievert (Sv) is used in setting radiological protection standards. This unit of measurement takes into account biological effects of different types of radiation. One gray of beta or gamma radiation has one sievert of biological effect, one gray of alpha particles has 20 Sv effect and one gray of neutrons is equivalent to around 10 Sv (depending on their energy). Since the sievert is a relatively large value, dose to humans is normally measured in millisieverts (mSv), one-thousandth of a sievert.

The becquerel (Bq) is a unit or measure of actual radioactivity in material (as distinct from the radiation it emits, or the human dose from that), with reference to the number of nuclear disintegrations per second (1 Bq = 1 disintegration/sec). Quantities of radioactive material are commonly estimated by measuring the amount of intrinsic radioactivity in becquerels – one Bq of radioactive material is that amount which has an average of one disintegration per second, *i.e.* an activity of 1 Bq.

Older units of radiation measurement continue in use in some literature:

1 gray = 100 rads

1 sievert = 100 rem

1 becquerel = 27 picocuries or 2.7×10^{-11} curies

One curie was originally the activity of one gram of radium-226, and represents 3.7×10^{10} disintegrations per second (Bq).

Alpha particles (symbol α) are a type of ionizing radiation ejected by the nuclei of some unstable atoms. They are large subatomic fragments consisting of two protons and two neutrons.

The health effects of alpha particles depend heavily upon how exposure takes place. External exposure (external to the body) is of far less concern than internal exposure, because alpha particles lack the energy to penetrate the outer dead layer of skin. However, if alpha emitters have been inhaled, (remember my comment on the irradiated dust) ingested (swallowed, *i.e.*, desalinated irradiated water), or absorbed into the blood stream, sensitive living tissue can be exposed to alpha radiation. **The resulting biological damage increases the risk of cancer; in particular, alpha radiation is known to cause lung cancer in humans when alpha emitters are inhaled.**

Beta particles are subatomic particles ejected from the nucleus of some radioactive atoms. They are equivalent to electrons. The difference is that beta particles originate in the nucleus and electrons originate outside the nucleus.

If ionizing radiation passes through a cell in the body, it can lead to mutations (changes) in the cell's DNA, the part of the cell that contains its genes (blueprints). This could contribute to cancer, or to the death of the cell. The amount of damage in the cell is related to the dose of radiation it receives. The damage takes place in only a fraction of a second, but other changes such as the beginning of cancer may take years to develop.

Ionizing Radiation and Cancer

Ionizing radiation is a proven human carcinogen (cancer causing agent). Ionizing radiation damages tissue by causing ionization, which disrupts molecules directly and produces highly reactive free radicals, which attack nearby cells and, consequently, biological molecules suffer local disruption. This phenomena may exceed the body's capacity to repair the damage and may also cause mutations in cells currently undergoing replication. The evidence for this comes from many different sources, including studies of atomic bomb survivors in Japan, people exposed during the Chernobyl nuclear accident, people treated with high doses of radiation for cancer and other conditions, and people exposed to high levels of radiation at work, such as uranium miners. The amount of damage done to matter (especially living tissue) by ionizing radiation is more closely related to the amount of energy deposited rather than the charge. This is called the absorbed dose.

Most studies on radiation and cancer risk have looked at people exposed to very high doses of radiation. It is harder to measure the much smaller increase in cancer risk that might come from much lower levels of radiation exposure. Most studies have not been able to detect an increased risk of cancer among people exposed to low levels of radiation. For example, people living at high altitudes, which are exposed to more natural background radiation from cosmic rays than people living at sea level, do not have noticeably higher cancer rates.

Most scientists and regulatory agencies agree that even small doses of ionizing radiation increase cancer risk, although by a very small amount. In general, the risk of cancer from radiation exposure increases as the dose of radiation increases. Likewise, the lower the exposure is, the smaller the increase in risk. However, there is no threshold below which ionizing radiation is thought to be totally safe.

Although radiation exposure affects the occurrence of various types of cancer, it does not affect their aggressiveness (tendency to grow and spread).

Types of Cancer Linked to Ionizing Radiation

Ionizing radiation increases the risk of certain types of cancer. The thyroid gland and bone marrow are particularly sensitive to radiation. Leukemia, a type of cancer that arises in the bone marrow, is the most common radiation-induced cancer. Leukemia may appear as early as a few years after radiation exposure.

Other types of cancer can also result from radiation exposure, although they may take longer to develop (usually at least 10 to 15 years). Some of the other cancers most strongly linked to radiation exposure in studies include:

- Lung cancer
- Skin cancer
- Thyroid cancer
- Multiple myeloma
- Breast cancer
- Stomach cancer

These are not necessarily the only cancer types that may be linked to radiation, however. The types of cancer linked to radiation are also affected by the part of the body that is exposed. For example, people who get pelvic radiation therapy would not be expected to have higher rates of cancers in the head and neck because these areas were not exposed to radiation.

Sources of Ionizing Radiation

People may be exposed to ionizing radiation from three main sources:

Acute ionizing radiation comes from exposure to an atomic explosion or reactor meltdown, e.g., Chernobyl

Chronic ionizing radiation comes from continued exposure to nuclear explosions over time or living in proximity to radiation sources, e.g., Chernobyl

Natural background radiation comes from cosmic rays from our solar system and radioactive elements normally present in the soil. This is the major contributor to worldwide radiation exposure.

Medical radiation comes in the form of diagnostic x-rays and other tests, as well as from radiation therapy. Radiation therapy is currently used to treat some types of cancer and involves dosages many thousand times higher than those used in diagnostic x-rays.

Non-medical, man-made radiation can come from workplace and other sources, and is a result of above ground nuclear weapons testing that took place before 1962. Source: American Cancer Society

Nuclear Fallout

Strontium - Sr-90 can be inhaled, but ingestion in food and water is the greatest health concern. Once in the body, Sr-90 acts like calcium and is readily incorporated into bones and teeth, where it can cause cancers of the bone, bone marrow, and soft tissues around the bone.

Sr-90 decays to yttrium 90 (Y-90), which in turn decays by beta radiation so that wherever Sr-90 is present Y-90 is also present. Because of the beta radiation, Y-90 poses a risk of burns to the eyes and on the skin from external exposure. For more information on Sr-90, see the Public Health Statement by the Agency for

Toxic Substances and Disease Registry at <http://www.atsdr.cdc.gov/toxprofiles/phs149.html>, or visit the Environmental Protection Agency at <http://www.epa.gov/radiation/radionuclides/strontium.htm>.

Plutonium-239 readily undergoes fission, and is used for nuclear weapons and for energy. Plutonium has 15 isotopes with mass numbers ranging from 232 to 246. All isotopes of plutonium are radioactive, but they have widely varying half-lives. The half-life is the time it takes for half the atoms of an element to decay. The half life of Pu-239 is 24,000 years. Plutonium-239 and 241 are fissile, meaning the nuclei of their atoms can break apart by being bombarded by slow moving thermal neutrons, releasing energy, gamma radiation and more neutrons. These can therefore sustain a nuclear chain reaction, leading to applications in nuclear weapons and nuclear reactors.

Gamma rays from radioactive decay commonly have energies of a few hundred keV, and almost always less than 10 MeV. The upper limit for such energies is about 20 MeV, and there is no lower limit.

Because they are a form of ionizing radiation, gamma rays can cause serious damage when absorbed by living tissue, and are therefore a health hazard.

Source: http://en.wikipedia.org/wiki/Gamma_radiation

Duty, Honor, Cancer

According to the Congressional Record over 200,000 "atomic veterans," the servicemen exposed to radiation in American tests of nuclear weapons were involved in some capacity. The Veterans Administration denies most of the disability claims of atomic veterans, and many veterans refuse to believe illnesses and birth defects were not caused by their service. Testimony from N.A.A.V. members has helped atomic veterans gain recognition from the Government. The Veterans Administration agreed to provide treatment of

illnesses that might have been caused by exposure. By the end of May, 1983 the agency had received more than 3,300 claims for disability compensation for atomic veterans and had awarded compensation to 69. Wow!

Diseases Associated with Ionizing Radiation Exposure

The VA has recognized, or presumed, certain cancers and health problems as associated with ionizing radiation exposure during military service. These are called "presumptive diseases."

If an Atomic Veteran or a Veteran who participated in another radiation-risk activity develops one of the diseases shown below, VA presumes the disease is related to ionizing radiation exposure in service and will provide appropriate disability compensation:

- Bronchiolo-alveolar cancer (a rare form of lung cancer), Cancer of the Bile ducts, Bone, Brain, Breast, Colon, Esophagus, Gall bladder, Liver (primary site) (except if cirrhosis or hepatitis B is indicated), Lung, Pancreas, Pharynx, Ovary, Salivary gland, Small intestine, Stomach, Thyroid, Urinary tract (kidney/renal, pelvis, ureter, urinary bladder, and urethra), Leukemia (except chronic lymphocytic leukemia), Lymphomas (except Hodgkin's disease), Multiple myeloma

The National Association of Atomic Veterans Web site states there are now as many as 195,000 atomic veterans left across America who either don't know that their oath of secrecy about their service has been rescinded, or are not aware of the potential monetary benefits due them for their radiation induced illnesses. Many of the surviving atomic veterans have long ago given up on seeking any medical or financial compensation for their service-related injuries. e.g., skin cancer, prostate cancer, bone cancer, diabetes, heart disease, and gall bladder problems.

However, the U.S. Department of Veteran's Affairs has refused numerous applications for compensation, saying that according to its calculations the radiation exposure received was not enough to account for the illnesses.

That is a far stretch when you consider that there was no instrumentation monitoring radiation other than lapel worn dosimeters, and they were never checked, at least not during my tenure. [I am a VA patient, Category 6. I frequently have melanoma on my face, and usually require surgery at least once per year. There is no history of this type of cancer, or any skin cancer in my family.](#)

The United States government should compensate the atomic veterans for the risk of exposure to nuclear radiation. The Canadian government has compensated their veterans, and the United States gave Japanese fishermen on

the boat Lucky Dragon about \$18,350 each after exposure to radioactive ash from a hydrogen bomb test on Bikini Atoll in 1954.

Rep. Bob Filner, Chairman of the House Veterans Committee has expressed his support of HR 2573. Now Radiated Veterans, families and allies, need the further support of the entire Committee, the entire House of Representative, the U.S. Senate and the President so the bill can be made Law. "Time is Running Out" so keep the messages flowing and support HR 2573 Atomic Veterans Relief Act.

Senator Bob Filner Letter

DEMOCRATS
BOB FILNER, CALIFORNIA, CHAIRMAN
 CORRINE BROWN, FLORIDA
 VIC SPYGLER, ARKANSAS
 MICHAEL W. MCHUGH, MAINE
 STEPHANIE HERBETH SANDLIN, SOUTH DAKOTA
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 JOHN W. ADLER, NEW JERSEY
 ANN KIRKPATRICK, ARIZONA
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 MALCOM A. SHORTER
 STAFF DIRECTOR

U.S. House of Representatives
 COMMITTEE ON VETERANS' AFFAIRS
 ONE HUNDRED ELEVENTH CONGRESS
 335 CANNON HOUSE OFFICE BUILDING
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REPUBLICANS
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 VERN BUCHANAN, FLORIDA
 DAVID P. ROE, TENNESSEE
 KINGSTON E. SMITH
 REPUBLICAN STAFF DIRECTOR
 AND CHIEF COUNSEL

May 24, 2010

Richard H. Ellett
 1809 Clearwater Rd.
 Fayetteville, AR 72704

Dear Richard:

Thank you for sharing your concerns regarding the Atomic Veterans Relief Act, H.R. 2573. I appreciate hearing from you on this important issue.

As you may know, H.R. 2573 would revise the eligibility criteria for presumption of service connection of certain diseases and disabilities for veterans exposed to ionizing radiation during military service. I am committed to ensuring that our veterans are provided with the benefits that they have earned and deserve, and I assure you that this bill will receive careful consideration by the Committee.

Again, thank you for sharing your concerns on this important issue. As Chairman of the House Committee on Veterans' Affairs, please rest assured that I will continue to work hard to honor our nation's promise to care for our veterans.

Sincerely,

 BOB FILNER
 Chairman

KR/mw

The Atomic Veteran Medal

House Bill # HR 2553

111TH CONGRESS 1ST SESSION H. R. 2553

To authorize the award of a military service medal to members of the Armed Forces who were exposed to ionizing radiation as a result of participation in the testing of nuclear weapons or under other circumstances.

IN THE HOUSE OF REPRESENTATIVES MAY 21, 2009

Mr. TIAHRT (for himself, Mr. MOORE of Kansas, Ms. BERKLEY, Mr. GINGREY of Georgia, Mr. MORAN of Kansas, Ms. BORDALLO, and Mr. LOEBSACK) introduced the following bill; which was referred to the Committee on Armed Services

A BILL

To authorize the award of a military service medal to members of the Armed Forces who were exposed to ionizing radiation as a result of participation in the testing of nuclear weapons or under other circumstances.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Atomic Veterans Service Medal Act".

•HR 2553 IH

SEC. 2. ATOMIC VETERANS SERVICE MEDAL.

a)The Secretary of Defense shall design and produce a military service medal, to be known as the "Atomic Veterans Service Medal", to honor retired and former members of the Armed Forces who are radiation-exposed veterans (as such term is defined in section 1112(c)(3) of title 38, United States (Code).

(b) DISTRIBUTION OF MEDAL.—

(1) ISSUANCE TO RETIRED AND FORMER MEMBERS.—At the request of a radiation-exposed veteran, the Secretary of Defense shall issue the Atomic Veterans Service Medal to the veteran.

(2) ISSUANCE TO NEXT-OF-KIN.—In the case of a radiation-exposed veteran who is deceased, the Secretary may provide for issuance of the Atomic Veterans Service Medal to the next-of-kin of the person.

(3) APPLICATION.—The Secretary shall prepare and disseminate as appropriate an application by which radiation-exposed veterans and their next-of kin may apply to receive the Atomic Veterans Service Medal.

Senate Bill # S. 1128

**111TH CONGRESS
1ST SESSION S. 1128**

To authorize the award of a military service medal to members of the Armed Forces who were exposed to ionizing radiation as a result of participation in the testing of nuclear weapons or under other circumstances.

**IN THE SENATE OF THE UNITED STATES
MAY 21, 2009**

Mr. ROBERTS (for himself and Mr. BROWNBACK) introduced the following bill; which was read twice and referred to the Committee on Armed Services.

A BILL

To authorize the award of a military service medal to members of the Armed Forces who were exposed to ionizing radiation as a result of participation in the testing of nuclear weapons or under other circumstances.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the “Atomic Veterans Service Medal Act”.

SEC. 2. ATOMIC VETERANS SERVICE MEDAL.

(a) **SERVICE MEDAL REQUIRED.**—The Secretary of Defense shall design and produce a military service medal, to be known as the “Atomic Veterans Service Medal”, to honor retired and former members of the Armed Forces who are radiation-exposed veterans (as such term is defined in section 1112(c)(3) of title 38, United States Code).

(b) DISTRIBUTION OF MEDAL.—

(1) **ISSUANCE TO RETIRED AND FORMER MEMBERS.**—At the request of a radiation-exposed veteran, the Secretary of Defense shall issue the Atomic Veterans Service Medal to the veteran.

(2) **ISSUANCE TO NEXT-OF-KIN.**—In the case of a radiation-exposed veteran who is deceased, the Secretary may provide for issuance of the Atomic Veterans Service Medal to the next-of-kin of the person.

(3) **APPLICATION.**—The Secretary shall prepare and disseminate as appropriate an application by which radiation-exposed veterans and their next-of-kin may apply to receive the Atomic Veterans Service Medal.

Recognition of Forgotten Atomic Veterans and their Surviving Spouses Act of 2007

HR 3794 IH

A BILL

To improve the availability of benefits for veterans and the surviving spouses of veterans who were exposed while in military service to ionizing radiation, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the 'Recognition of Forgotten Atomic Veterans and their Surviving Spouses Act of 2007'.

SEC. 2. IMPROVED ACCESS FOR VETERANS AND SURVIVING SPOUSES TO BENEFITS UNDER RADIATION EXPOSURE COMPENSATION ACT.

(a) Identification of Living Atomic Veterans and Surviving Spouses of Deceased Atomic Veterans- The Attorney General shall--

(1) obtain from the files of the Operations Office of the Department of Energy in Nevada records showing the identity of all atomic veterans;

(2) with respect to each atomic veteran for whom records are obtained under paragraph (1), use the service serial number of that veteran to obtain the veteran's social security number;

(3) with respect to each such atomic veteran who is living--

(A) use that veteran's social security number to locate the veteran; and

(B) advise that veteran of the provisions of the Radiation Exposure Compensation Act, including the right of the veteran to file a claim under that Act; and

(4) with respect to each such atomic veteran who is deceased--

(A) use that veteran's social security number to locate the surviving spouse of the veteran (if any); and

(B) if a surviving spouse is located, advise that surviving spouse of the provisions of the Radiation Exposure Compensation Act, including the right of the surviving spouse to file a claim under that Act.

(b) Assistance in Filing Claims- The Attorney General shall assist any atomic veteran or surviving spouse identified under subsection (a)(3) or (a)(4), respectively, in filing a claim under the Radiation Exposure Compensation Act, if the atomic veteran or surviving spouse requests such assistance.

(c) Assistance From Other Agencies- The heads of other Departments and agencies of the United States shall assist the Attorney General as necessary to enable the Attorney General to carry out the provisions of this section, including assistance in providing access to records needed for the Attorney General to carry out this section.

(d) Atomic Veterans- For purposes of this section, the term 'atomic veteran' means a person who while serving in the Armed Forces was exposed to ionizing radiation or fallout from the atmospheric detonation of a nuclear device.

SEC. 3. ADDITIONAL CONDITIONS PRESUMED TO BE SERVICE-CONNECTED WHEN APPEARING IN RADIATION-EXPOSED VETERANS.

For purposes of paragraph (1) of [section 1112\(c\) of title 38, United States Code](#), any disease covered as of the date of the enactment of this Act under section 3.309 or 3.311 of title 38 of the Code of Federal Regulations shall be considered to be a disease specified in paragraph (2) of [section 1112\(c\) of title 38, United States Code](#).

Canadian Atomic Veterans Recognition Program

On September 2, 2008, the Minister of National Defense and the Minister of Veterans Affairs Canada announced the establishment of the Atomic Veterans Recognition Program to further acknowledge the service of Atomic Veterans. These Canadian military Veterans participated in nuclear weapons tests and Chalk River decontamination efforts, performing their duties under exceptional circumstances. In recognition of their exceptional service to the nation, these Canadians will be eligible to apply for an *ex-gratia* payment.

While the U.S. Atomic Veterans fight their government for recognition and medical benefits, apparently, the Canadian Government sees things differently, and has taken the proper steps to compensate those who served. If only we could receive the same treatment.

Ottawa Compensates 'Atomic Veterans'

Jason Fekete, Canwest News Service

\$24,000 for those exposed to radiation during tests

CALGARY -- After decades of pressuring for compensation, Ottawa announced Tuesday that "atomic veterans" - about 900 soldiers who were deployed at atomic-bomb test sites in Nevada half a century ago and showered with radiation - will be eligible for a special payment of \$24,000.

The payment was quickly labeled "a joke" by the association representing the remaining veterans and their widows -- some of whom have filed a class-action lawsuit against the government -- and called an "election ploy" on the eve of an expected federal campaign.

The Atomic Veterans Recognition Program will offer \$24,000 "ex-gratia" payments to about 700 eligible Canadian military veterans and technology workers who participated in nuclear weapons tests for the United States and United Kingdom between 1946 and 1963.

It will also compensate about 200 military personnel who helped in the decontamination of the Chalk River, Ont., nuclear reactor following two accidents in the 1950s.

"It's a recognition that is long deserved and long overdue," Defense Minister Peter MacKay told a luncheon of military and defense experts in Calgary.

Marshall Islands

In the western Pacific, the Marshall Islands form two parallel island groups—the Ratak (sunrise) Chain and Ralik (sunset) Chain. These atolls, reefs, and islets include Kwajalein, test range for U.S. missiles and home to the world's largest lagoon, and Enewetak, where the United States exploded the first hydrogen bomb in 1952. Bikini Atoll is still uninhabitable because of past nuclear tests. In 1986, the former trust territory became self-governing in free association with the United States, which is responsible for its defense and foreign affairs.



Idyllic Bikini Atoll was the site of U.S. atomic bomb testing through 1958.

Photograph by William Curtsinger

Eniwetok Atoll

Pictures taken in 1958 at Eniwetok.



The island is approximately two miles long and one-quarter mile wide. It is surrounded by a beautiful coral reef showing crystal clear water. The lagoon side of the atoll is horseshoe shaped with a beach and a deep-water harbor.



1253rd AACS on the court.



Honor Guard raising the colors.

Activities included work, the beach and getting a tan, volleyball, basketball, a card game of pinochle or hearts, the club at night or the picture of the week at an outdoor theater adjacent to the barracks area shown above. It rained almost every night, so the well prepared brought a poncho.



World War II equipment rusting away in the lagoon. We were not permitted to explore any of these for fear of uncovering live ammunition or mines. This job was left for the Navy.

Eniwetok Atoll Observer Photographs



RB-57 Canberra equipped with wing-tip high-resolution cameras, observing the Juniper shot at Eniwetok.

A number of these bomber/reconnaissance planes were located at Eniwetok and Johnston Island.



An unknown shot that occurred sometime in the evening. Participants were assured there were no health hazards associated with viewing the detonations, and they were at least 25 miles distant. One can see neither is the case.



Clad in a typical Eniwetok uniform, four men observe the Yucca blast. Notice the absence of eye protection and clothing. Any form of protective clothing would be useless against harmful ionizing radiation as the high-speed particles require a wall of protection in order to be completely attenuated.

Nuclear Detonation Pictures

Cactus

Operation Hardtack I

LASL test of a MK-43 primary in a thermonuclear system mockup. The test was similar to the Elder device. Predicted yield 13-14 kt. The Cactus device primary weighed 110.3 lb (50 kg). The overall device weighed 1432 lb. and had a width of 18 inches and a length of 69 inches.



Yield: 18 kilotons
Location: Eniwetok
Date: 5.May.1958



The device was detonated 596 feet southwest of the Redwing Lacrosse crater. The Cactus crater had a diameter of 346 feet, and a maximum depth of 37.2 feet (with an 8-14 foot lip). In 1979-1980, this crater was used as a burial pit to inter 110,000 cubic yards of radioactive soil scraped from the various contaminated Eniwetok Atoll islands.

Oak

Operation Hardtack I



Yield: 8.9 Megatons

Location: Eniwetok

Date: 28.Jun.1958

The test was conducted in very shallow water (12 feet). The device was horizontal on the barge, with the axis 3 feet above the barge deck, which was in turn 5.6 feet above the water line. The barge weighed 223 tons and was unballasted to provide a shallow draft. The subsurface crater produced was 5740 feet diameter and 204 feet deep.

The test device was 37 inches in diameter and 100.5 inches long, and weighed 6113 lb. This design was later developed into the 9 Mt W/Mk-53 warhead deployed on the Titan II missile and the Mk-53 strategic bomb. This last version remained in active service until early 1997, making it the oldest and highest yield weapon in the U.S. stockpile, (it is not clear whether it is still being held in the reserve stockpile, or whether it was slated for dismantlement).

Umbrella

Operation Hardtack I



Yield: 8 kilotons
Location: Eniwetok
Date: 8.Jun.1958

Umbrella was a DOD sponsored weapons effects test for a medium depth underwater explosion. An Mk-7 bomb was used for the test (30 inches in diameter, 54 inches long, device weight 825 lb.) in a heavy pressure vessel (total weight 7000 lb.). Very similar to the Wahoo device. The device was detonated on the lagoon bottom NNE of Mut (Henry) Island. An underwater crater 3000 feet across and 20 feet deep was produced. Another perspective of this explosion is shown on the front cover.

Source: <http://nuclearweaponarchive.org/Usa/Tests/Hardtack1.html>

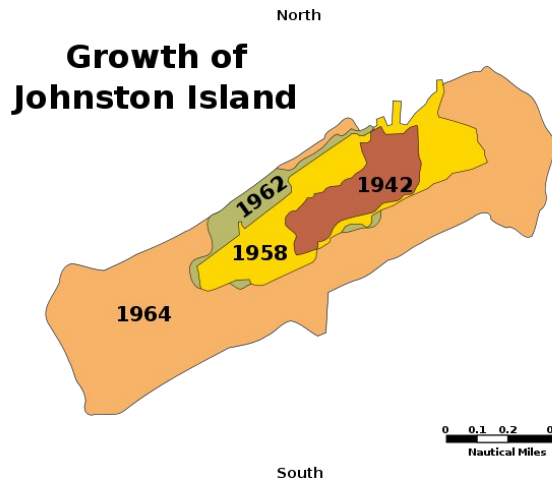
Johnston Atoll

In 1958 I was temporarily stationed at Johnston Island which is the main island of Johnston Atoll. Johnston Atoll is a 50-square-mile (130 km²) atoll in the North Pacific Ocean about 1,400 km (750 nmi) west of Hawaii. There are four islands located on the coral reef platform, two natural islands, Johnston Island and Sand Island, which have been expanded by coral dredging, as well as North Island (Akau) and East Island (Hikina), an additional two artificial islands formed by coral dredging.

Johnston is an unincorporated territory of the United States, administered by the U.S. Fish and Wildlife Service of the Department of the Interior as part of the Pacific Remote Islands Marine National Monument. For statistical purposes, Johnston Atoll is grouped as one of the United States Minor Outlying Islands.

The Johnston Atoll area was used during the 1950s and 1960s as an American nuclear weapons test site - for both aboveground and underground nuclear tests. It was also used for a rocket launch site for some of the first American spy satellites. Later on, it became the site of a chemical weapons depot and the site of the Johnston Atoll Chemical Agent Disposal System (JACADS). All of the chemical weapons that were once stored on Johnston Island have been incinerated, and that process was completed in 2000 and JACADS demolished by 2003.

Between 1958 and 1975, several scientific sounding rockets were launched from Johnston Island. There were also several nuclear test missiles that were launched from Johnston Island in 1962 during the "Operation Dominic" series of nuclear tests, from a launch pad at 16°44'13"N 169°31'26"W 16.7370°N 169.5240°W. Twelve thermonuclear warheads were exploded in all, one of which failed when the PGM-17_Thor carrying it failed to launch and scattered plutonium debris over the island. Afterwards, the radioactive debris and soils were placed in a 25 acre landfill on the island, along with residue from Agent Orange containers returned from Southeast Asia after the Vietnam War, PCBs, PAHs, dioxins, and sarin nerve gas from the Soviet Union and East Germany.



Formerly used as a refueling site for aircraft and submarines during WWII and as a base for airlift operations during the Korean War, and later as a site for nuclear weapons tests, chemical weapons storage and recently as a chemical weapons destruction facility, Johnston Atoll was handed over to the US Fish and Wildlife Service in 2003 to manage the atoll as part of the Hawaiian and Pacific/Remote Islands National Wildlife Refuges system.

In 1958 the Teak thermonuclear test was conducted on August 1, at Johnston Island. This 3.8 megaton, 77-kilometer-high detonation caused an EMP (electromagnetic pulse) which interrupted radio communication throughout a large area of the Pacific. As a radio technician stationed at Johnston Island, but aboard the Boxer at the time, I can verify that there was no radio reception for perhaps eight hours after the shot, with the possible exception of Very Low Frequency and Ultra Low Frequency transmissions used for communications with submarines. I did not think to check with the Navy radio technicians aboard the Boxer if they were able to communicate with submarines.

I witnessed many things in 1958. The Teak Shot was the most powerful, probably the most dangerous for ionizing radiation emission and the most memorable.

Let the Games Begin

Nothing moves until military orders are issued. It is interesting to note that according to the military orders below, those in command knew not all personnel were protected from the blast and the effects of nuclear radiation. Otherwise, it would not have been necessary to make the statement :

“All personnel located at ENIWETOK Atoll are within viewing distance of the TOBACCO fireball, and are susceptible to eye damage. Therefore, all personnel who are not supplied with protective goggles will turn away from the detonation point and close their eyes during the time of burst. At least ten seconds should be allowed before looking at the burst.

Knowing what we know today, looking away from the blast may protect your eyes, but the action will not block radiation exposure to your head, skin and other parts of the body. Melanoma, which is most prevalent among nuclear testing participants, is not covered by the VA as a presumptive cancer.

AD-A280 306

Headquarters, Joint Task Force SEVEN

APO 437, San Francisco, California

22 May 1958

Operation Order 20-58 (TOBACCO Event)

1. SITUATION

- a. Information and instructions contained herein supplement JTF SEVEN Operation Order 1-58, dated 1 October 1957, with changes thereto.
- b. TOBACCO will be detonated on a barge moored at Station 30, 3,000 feet southwest of Janet Island, ENIWETOK Atoll. The time and date of detonation will be announced at a later date.
- c. Ships will remain in the ENIWETOK Lagoon and all personnel except those authorized will be located on FRED, DAVID and ELMER Islands.
See Appendix 20 to Annex N, attached.
- d. TOBACCO is expected to produce significant fallout; therefore, postshot cloud sampling, radsafe re-entry reconnaissance and barrier patrols will be necessary. Search areas will be delineated by this Headquarters on D-3 and D-2. Search of the danger area will commence on D-2.
- e. The over pressure and thermal energy expected at sites FRED, ELMER and DAVID will be negligible. No destructive or hazardous effects are anticipated at these sites.

2. SPECIFIC INSTRUCTIONS

a. TG 7.1

(1) Position the TOBACCO device on a barge off JA'ET Island, ENIWETOK Atoll for a detonation about 26 May. Specific authority to arm and detonate the device will be obtained from CJTF SEVEN.

(2) Conduct the initial post-shot radsafe and damage survey.

b. TG 7.3

(1) Position all TG 7.3 ships so as to be on station at H-30 minutes.

(2) On order of CJTF SEVEN provide aircraft for radsafe reconnaissance and barrier patrol as required.

c. TO 7.4

(1) Provide sampling aircraft as required.

(2) Ensure that participating aircraft are on station at H-5 minutes.

CJTF SEVEN will be notified immediately if participating aircraft will not be in position to accomplish their assigned mission at H-Hour.

(3) Monitor CPS-9 scope and pass TOBACCO cloud information to JTF SEVEN Radsafe Office.

(4) Pass radsafe information obtained from cloud sampling and barrier patrol aircraft to JTF SEVEN Radsafe Office.

3. OEUA INSTRUCTIONS

a. All personnel located at ENIWETOK Atoll are within viewing distance of the TOBACCO fireball, and are susceptible to eye damage. Therefore, all personnel who are not supplied with protective goggles will turn away from the detonation point and close their eyes during the time of burst. At least ten seconds should be allowed before looking at the burst.

b. The JTF SEVEN CHECK LIST - BIKINI and ENIWETOK EVENTS, dated 10 May 1958, is changed as follows for TOBACCO Event:

(1) Delete the following items: 5, 6, 11, 13, 14, 33, 38 and 39.

(2) Change the following items to read as indicated below: P#Y OURV ENTJTF SEVEN ACTION 16. D-Day Early Same Same 34. Same Same TG 7.1 commences Radiafe and Radsafe officer damage survey by hcptr. monitors this event.

a. Command of the operation will be exercised by CJTF SEVEN from the JTF SEVEN Command Post on ELMER Island.

b. Command Post locations:

(1) CTG 7.1 ELMER Island

(2) CTG 7.2 FRED Island

(3) CTG 7.3 USS BOXER

(4) CTG 7.4 FRED Island

(5) CTG 7.5 ELMER Island

5. COMMUNICATIONS

a. The frequencies authorized for use during TOBACCO are listed in Annex A, attached hereto.

b. The time-count-down will be provided as outlined in SCI 10-14, paragraph 6 applies.

c. General instructions contained in paragraph 7b, part 4 of Annex "I" to JTF SEVEN Operation Order 1-58 apply

d. The radio silence period for TOBACCO is from H-3 minutes to H+2 minutes. All frequencies and communications systems not listed in

3. Circuits and frequencies not specifically designated in paragraphs 1 or 2 will not be used during the *silent period*. Where transmitters may be keyed accidentally, action will be taken to disable the transmitters during the silent period.

OFFICIAL: A. R. LUEDECKE

Major General, USAF

Important Reference Sites

Radio Chemistry Society
U.S. Nuclear Tests

http://www.radiochemistry.org/history/nuke_tests/index.shtml

U.S. Nuclear Testing Program in the Marshall Islands

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HISTORY ASSOCIATES INCORPORATED
The Historic Montrose School
5721 Randolph Road
Rockville, Maryland 20852
Prepared for the U.S. Department of Energy
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We Were Trapped by Radioactive Fallout

By - *Dr. John C. Clark*

Saturday Evening Post, July 1957 (The editor has copy of this document in .pdf format)

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Behavior of plutonium isotopes in the marine environment
of Enewetak atoll

V. E. Noshkin,*1 W. L. Robison,*2 K. M. Wong,**3 R. J. Eagle***(The editor has copy of this document in .pdf format)

Beta and Gamma Comparative Dose Estimates
on EnewetOk Atoll

K.W. Crase, P.H. Gudiksen, N.L. Robison This article was published in *Health Physics*; vol. 42 (no. 5) May 1982; p. 559-64.

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- [Radiological Effluents Released from U.S. Continental Tests, 1961 through 1992, DOE/NV-317 \(Rev. 1\), August 1996](#) - documents all U.S. continental nuclear tests from 1961 through 1992 from which radioactive effluents were released.
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- The *National Cancer Institute Study Estimating Thyroid Doses of I-131 Received by Americans From Nevada Atmospheric Nuclear Bomb Test*, 1997 is available from the [National Cancer Institute](#). To get the full report, in Acrobat (.pdf) format [click here](#).
- Go to the [DOE IHP Marshall Islands Program](#) this is an on-line repository of more than 6,000 documents pertaining to the U.S. Nuclear Testing Program in the Marshall Islands.
- United States Senate Committee on Veterans' Affairs - http://www.ccnr.org/rosalie_testimony.html

About the Editor



Walter E. Venator, Jr., is an Atomic Veteran who was a participant in the Project Hardtack 1 and Newsreel operations.

After years of silence, I decided it was time to inform others of the events that occurred in 1958. Atomic Bomb testing in the Pacific and elsewhere in 1958 affected the lives of ten of thousands of United States service men and civilians. I have no axe to grind, and hold no grudge. I simply feel that I have been silent about my experience for so many years and the time has come to acquaint others about the events. I am responding to a tap on my shoulder to make people aware of those walking among us whose numbers are dwindling and who lived through an experience that has adversely affected their health, families and possibly offspring.

Fifty-two years after my Atomic experience, I am retired. I was a sales manager in the computer field for thirty years. Prior to sales, I was a microwave design engineer and made some original contributions to the Apollo Program and Electronic Countermeasures equipment. I studied nuclear engineering and once thought I would become a nuclear engineer and work in a power plant but although I took the courses, I never pursued it. I know from my studies how harmful radioactive substances can be on human tissue, especially Plutonium 239, Uranium 238 and Strontium 90. Besides, by the time I was ready for a job in the nuclear field, all power plant licenses were suspended, and I do not think we have built a power reactor since 1965.

I have often wondered how many people were affected by ionizing radiation exposure from the bombs detonated in 1958, and what sort of diseases they contracted as the years progressed. I did not witness all of the shots in 1958, but the ones I saw convinced me that we should never use those awesome weapons if at all possible. In my studies, I learned later that we could have possibly conducted these tests differently. Dr. Robert Oppenheim was right. We could have performed many of the tests with mathematics. But we were in a race for nuclear supremacy and had to go all out.

The 1958 mission was top-secret until 1994 when the Clinton administration began declassifying the information. Before that time, witnesses could have been prosecuted for telling what they knew. I am sure some men still will not talk about their experience.

Like thousands of others, I would like recognition for the time spent in Operation Hardtack 1 in 1958 and medical benefits.

Index

- Agent Orange..... 1
atom..... 34, 36
Atomic..... 1, 2, 61
Atomic Veterans 3, 13, 21, 22, 28, 31, 41, 42, 44,
45, 46, 47, 58
ATOMIC VETERANS SERVICE MEDAL.. 44,
45
Bellows AFB..... 18
Beta particles..... 38
Bikini... 3, 8, 9, 10, 21, 24, 25, 27, 30, 42, 48, 58
Boxer..... 14, 18, 20, 29, 30, 31, 55
Canadian Government..... 47
cancer..... 1
Cancer..... 33, 38, 39, 40, 41, 60
Chernobyl..... 38, 39
civilian..... 1
Clinton..... 1
Congress..... 1, 2
Congressional Record..... 40
DD-214..... 1
Dr. Ernest J. Sternglass..... 34
Elugelab..... 9
Enewetak..... 8, 9, 10, 11, 33, 48, 59
Eniwetok Atoll..... 17, 21, 22, 24, 25, 49, 50, 51
FRED..... 16, 21, 22, 24, 25, 56, 57
gamma ray..... 36
ground zero..... 3
guinea pigs..... 1
Hawaii..... 15, 16, 18, 19, 21, 24, 27, 30, 54
Holmes and Narver..... 17
ionization..... 36, 38
ionized..... 1
Ionizing Radiation Health Exam..... 13
Johnston Island 4, 8, 9, 14, 17, 18, 19, 27, 50, 54,
55
Joint Task Force Seven..... 2
Kearsarge..... 31
Kwajalein..... 16, 18, 21, 24, 31, 48
Lloyd Teed..... 3, 32
Marshalese..... 29
Marshallese..... 3, 20
medal..... 1
military service medal..... 44, 45
Nevada..... 5, 13, 30, 32, 46, 47, 60
nuclear radiation..... 1
Oak..... 10, 13, 28, 52
Okinawa..... 19
President William Jefferson Clinton..... 1
presumptive diseases..... 41
radiation..... 1, 2, 16, 18, 19, 20, 61
records..... 2, 3, 7, 8, 14, 30, 46
Rep. Bob Filner..... 42
Richardson..... 1
Secret..... 1
Soviet Union..... 4, 5, 24, 54
Strontium..... 40, 61
Teak..... 11, 19, 31, 55
Top Secret..... 15, 24, 27
Top-Secret..... 1
U.S. Department of Veteran's Affairs..... 41
United States 1, 2, 4, 5, 6, 7, 8, 14, 20, 21, 24, 26,
27, 32, 33, 34, 41, 44, 45, 46, 47, 48, 54, 60,
61
United States Air Force..... 2, 7, 14, 20
Veterans Administration..... 1, 6, 28, 40
Waikiki..... 19
X-ray..... 19