

United States  
Atmospheric & Underwater  
Atomic Weapon Activities

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

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



# NAAV

National Association of Atomic Veterans, Inc.

"Assisting America's Atomic Veterans Since 1979"

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**R. J. RITTER - Editor**

**November 2012**



The Newsletter for America's Atomic Veterans



## COMMANDER'S MEMO

Over the last three years, outreach efforts by **NAAV**, in concert with the *Veterans Advisory Board on Radiogenic Health Issues (VBDR)* have produced many excellent results. These efforts include articles in the ( Jan., 2010 ) issue of *V.F.W.* Magazine, the ( Nov., 2011 & Jun., 2012 ) issues of the *AARP* Bulletin, and the most recent article in the ( Sept., 2012 )

issue of the *Military Officers Assoc. Magazine (MOAA)*. Over these last 33 months, **NAAV** has received more than 27,000 phone calls, e-mail & snail-mail requests for information related to those articles, and the potential benefits that might be available from the *Veterans Administration (VA)*, or the *Dept. of Justice (DOJ)*, under the *RECA* Act. We have responded to all of those requests accordingly, and must report that our operating funds have been severely stressed out. Since we are top-weighted with LIFE members, our sources of operating income has now grossly diminished. "Good-Samaritan" monetary assistance would be greatly appreciated, and will allow us to continue to "reach-out" to surviving Atomic-Vet's, or to surviving widows & children of deceased A-Vet's, in an effort to inform them ( or their children ) of any righteous rewards that may be due them for the suffering and pain endured from radiogenic health issues precipitated by their proud and honorable service to their country, during the "Cold-War" years . . . . .

They experienced events where military personnel, from all Service Branch's, were ordered to participate in Nuclear-Warfare exercises using real "live" nukes, and because of "official" secrecy constraints, were told that they had to keep those event details to themselves, and by-the-way, many ( including myself ) were also told: "**Do not have any kids for at least 10 years**". . . . .

It wasn't until 1996 that the "secrecy" oath was rescinded, by ( then Sec. of Defense. ) William Perry, however; by that time, more than 300,000 Atomic-Vet's had carried their oath with them to their graves, many of whom died from a host of radiogenic health issues, without any measure of proper recognition, or thanks, from the Dept. of Defense, or from the Congress of the United States of America, or from anyone else !

In 1996, ( 51 years after the first A-Bomb test ), no one really knew what an Atomic-Veteran was, nor did they know what radiation sickness was all about, nor did they give a tinker's dam about the health problems an Atomic-Vet may be experiencing, or trying to describe . . . . . to anyone !!!!

While signing the Atomic-Veterans Relief Act of 2003, President George W. Bush said the following. "*Being wounded by radiation particles ( an invisible enemy ) during a nuclear battlefield exercise, or at an atomic weapon detonation test, is just as serious ( and honorable ) as being wounded by an enemy's bullet on the field of battle.*" The difference is that a bullet wound ( that does not kill ) will soon heal, and not impact the future health, or life expectancy of those wounded, while a wound from ionizing radiation particles can cause great pain, grief, and death to those so wounded, often more than 50 years after the exposure event . . . . .

Given the opportunity to visit the White House, for a Veteran's-Day breakfast, I found myself face to face with President Bush. With a big smile, he shook my hand and said, "*Hello - welcome to the White-House.*" My first response was to thank him, on behalf of America's Atomic-Veterans, for those kind words related to radiation wounds. . . . .

After a short pause, he looked me in the eye and said, "*Well, given the fact that you and your group have seen the face of Hell first hand, I meant every one of them words.*" I looked him right back in the eye and said, "*Yep, and you, Mr. President, are the only elected official so far, who has acknowledged that fact, and for that, we are truly grateful.*". . .

Without any prejudicial intent, **NAAV** has received many comments from disgruntled and highly disappointed Atomic-Vet's about a group of minority veterans, who were recently presented the Congressional Gold Medal, just for joining the Marine Corps. when this nation was grappling with racial discrimination & equal rights issues. Those A-Vet's were absolutely amazed that just being a Marine was worthy of a *C.G.M.* As a **NAAV** member from Kentucky said: "*Hot-damn, it looks ( to me ) like that's just another nail in the coffin of disrespect for our ( Congressionally ) thankless existence.*"

Atomic-Vet's are "*America's Secret Wounded Warriors,*" and are, indeed, a unique "minority" group, who were selected from all branch's of the service, and ordered to stand in harm's way against that invisible enemy, as properly described by President Bush ( 43 ), yet it is apparent that the U.S. Congress, and the Dept. of Defense does not think they are worthy of a medal, of any kind. . . . .

So we must ask the question, "*How can one minority group be rewarded ( by Congress ) with public pomp & merriment and gold medals, while another group, suffering from ( service connected ), radiogenic wounds has been shamefully ignored by that same Congress, who has over the years refused to award any appropriate type of recognition, or even public thanks, for sacrificing their health and welfare in the interest of our National Security ?*" To date, we cannot find any elected bureaucrat who has the courage to properly address that question . . . . .

Over the years, Congressional Representatives from several States, have told their ( A-Vet ) constituents that they will see to it that an Atomic-Veteran Medal will soon be available. They have been hearing this same line of garbage from their Senator's & Representatives for the last 30+ years, without any visible evidence of any meaningful activity from Congress. If any of those Congressional Rep's were to wake up in a cold sweat, in the middle of the night, after seeing the brightness of the flash, hearing the thunderous roar of the blast, and smelling the flesh of dead test animals, in their dreams, they would not hesitate to fulfill their promises in these areas. . . . .

As Bush 43 said, "*That surely must have been pure Hell.*" And so, it continues - the lights shining over America's dwindling Atomic Veteran community grow dimmer each year, and the lives and memories of those who were placed in harm's way, so long ago, and who have since endured suffering and pain, without reward, or proper recognition, will also fade away as well. Is there anyone in the U.S. Congress who would really care.....even a little ???

### ARE YOUR DUES UP TO DATE ?

To insure that you receive your periodic newsletters, we must remind you to keep your dues current. You can do this by looking at the mailing label on your newsletter. The numbers following your name, is your **dues expiration date**. Be sure to send your ( **\$25.00** ) dues to us before this expiration date, if at all possible. . . . .

### 2013 MEETING IN ALBUQUERQUE, N.M.

The Veterans Advisory Board ( *VBDR* ) will hold meetings at the Crowne Plaza Hotel in Albuquerque, N.M. on March 20<sup>th</sup> & 21<sup>st</sup> ( 2013 ). **NAAV** extends an invitation to all Atomic-Vet's, who may be able to travel, to attend, as this could develop into an A-Vet mini-reunion. Additional information is available on the ( *naav.com* ) website. . . . .

## U.S. NUCLEAR WEAPON PROGRAM OVERVIEW PART - 3

We begin **Part-III** of our ( U.S. nuclear weapon program ) overview with a re-cap of the ( 1962 ) "**Nougat**" and "**Storax**" series. . . . .

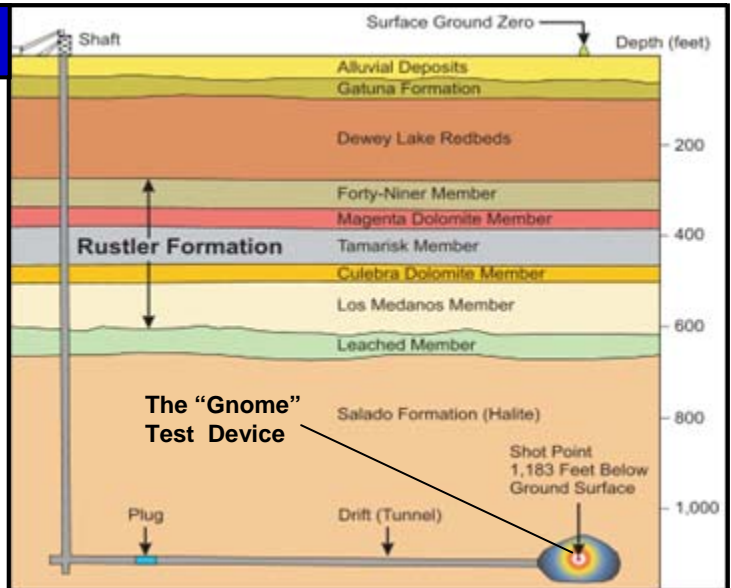
**NOUGAT:** In its closing days of the **Dwight D. Eisenhower** administration, negotiations on a nuclear test ban were underway with the Soviet Union. This had been previously announced by **Eisenhower** in August, 1956. As a secondary confidence building measure, "**Ike**" also said that the United States would implement a one-year ( voluntary ) moratorium on nuclear testing, provided the Soviets would visibly adopt a reciprocal commitment. . . . .

The moratorium would go into effect on 31 October 1958. This ban was later extended ( to 31 December 1959 ), but on 29 December 1959 the U.S. announced an end to the voluntary moratorium, although it also promised not the renew testing without advance public notice. This decision, not the extend the formal moratorium commitment, may have been due to the status of the negotiations, which were faring very poorly. Then, on 3 January 1960, **Nikita Khrushchev** pledged that the **Soviet Union** would not conduct nuclear testing unless the Western nations resumed such tests. The **U.S.**, ( along with the **U.K.** and **France** ) made no move to resume testing, and so the matter rested for nearly three years. . . . .

Then, on 31 August 1961, **Khrushchev** announced that the **Soviet Union** was abandoning the prevailing ( de-facto ) nuclear testing moratorium, which they ( and the **United States** ) had observed for previous 34 months. The next day, on 1 September 1961, the Soviet Union resumed atmospheric testing of an unprecedented magnitude, with their **84<sup>th</sup>** nuclear weapon test. It was a **16 kiloton** ( improved "lens-type" implosion design ), air dropped over their ( **Kazakhstan** ) **Semipalinsk Test Site**. Two weeks later, the **U.S.** responded by initiating **Operation "Nougat"**. . . . .



The Nougat "Shrew" device is being lowered into a Yucca-Flats test shaft at the Nevada Test Site on Sept. 16, 1961



This series was conducted at the **Nevada Test Site**, which permitted the rapid initiation of tests, but restricted them to low yields ( and mostly underground test shots ) due to increasing public concerns about radiation fallout. Although this was still the "era of atmospheric testing," **Nougat** was actually the first of more than **900** underground test series conducted at the **NTS**. . . . .

Higher yield ( atmospheric ) tests followed seven months later with **Operation "Dominic-I"** in the Pacific proving grounds. The assignment of tests to individual "Operations" between this time and the "official" end of atmospheric testing is confused and complicated, and available documentation on these operations is somewhat unclear or confusing, and it may be that in some cases a given ( test shot ) may be officially included in more than one operation. Definitely, and unambiguously, assigning some of the test shots to specific operations, for this period, is thus hard or impossible. Some disagreement about which shots should be properly included with a particular operation has occurred. . . . .

According to this account **Operation "Nougat"** included a total of **44** weapon shots, exceeding the **37** tests of the previous record holder, "**Hardtack-II.**" During these tests, newly designed thermo-nuclear primaries, neutron generators, boosting methods and radiation implosion mockups were prime test criteria. Much attention was paid to simultaneously achieving desired performance and one-point safety in "sealed pit" fission devices, some designs requiring numerous ( or simultaneous ) shots. . . . .

Since all the tests were fired underground, and only a few of them produced true blast craters ( i.e. not subsidence craters caused by blast cavity collapse ), there are few pictures available of these tests. The one test for which any relevant images are available is much ( much ) publicized **Gnome** shot.

The **Gnome** test ( 12-10-62 ) was a **3.1 kiloton** ( -1184 ft. ) shaft shot, associated with the "**Plowshare**" program, conducted by **Lawrence Radiation Laboratory** ( to be later known as **Lawrence Livermore National Labs.** ). This test was fired in an underground salt dome formation, leaving a permanent ( stable ) vaporized cavity 170 ft. in diameter, and 80 ft. high. This was also one of the very few nuclear test cavities ( perhaps the only one ) to avoid significant collapse. Some radiation was accidentally released to the atmosphere, as a result of pot-shot drilling, and was later detected at several off-site locations. . . . .

**“STORAX”** - was the second fiscal year based "test series," running from 1 July 1962 and through 30 June, 1963. This series was concluded before the ( 05 August, 1963 ) signing of the **Atmospheric Test Ban Treaty**, and included the last of the U.S. atmospheric tests of any description. The last was a zero-yield, **Plutonium** dispersal test, code named **Roller-Coaster “Clean-Slate-III,”** and was fired on 09 June, 1963 . . . . .

Although the two ( limited ) test series, **“Sunbeam”** and **“Roller-Coaster”** were conducted at the **NTS** and were simultaneous with **“Storax,”** it may be that these tests were not actually part of the initial ( designated ) **“Storax”** series. The majority of the **“Storax”** tests were conducted underground, as had been the **“Nougat”** series, although with better confinement of atmospheric radiation dispersion, than experienced with earlier tests. **“Storax”** included several **“Plowshare”** tests, including the spectacular ( and thus very well known ) **“Sedan”** shot. The **“Plowshare”** tests were intended to develop nuclear explosive events for non-military uses. *“They shall beat their swords into plowshares, and their spears into pruning hooks: nation shall not lift up sword against nation, neither shall they learn war any more.”* **Isaiah 2:4** . . . . .

The ( 07-06-62 ) **“Sedan”** test ( shown below ) was a **104** kiloton sub-surface shot, and one of the most spectacular nuclear test ever fired within the continental United States. It was an **LLNL** test conducted under the auspices of the **“Plowshare”** program, which was an attempt to develop non-military uses for nuclear explosives. The purpose of **“Sedan”** was to investigate the potential of "clean" thermonuclear devices that would produce large craters cheaply, as an example, for canal or harbor construction, or for large earthen excavation projects . . . . .



**“Sedan”** was detonated at a depth of **635** ft. below the surface, which was estimated to be the optimal crater depth in an alluvial soil strata. The force of the detonation lifted **12 million tons** of soil and rock into the air, **8 million tons** of which were dispersed outside of the crater perimeter. The final crater was **1,280** feet wide and **320** feet deep, as shown in the above photo. The force of the detonation released seismic energy equivalent to an earthquake magnitude of **4.75** on the Richter Scale . . . . .

The **“Sedan”** nuclear device was similar in design to that used in the ( **Dominic-I** ) **“Bluestone”** and **“Swanee”** tests, at Christmas Island, and was thus a variant of the **W-56** ( high yield ) missile warhead. The device had a fusion yield of **70%**, which was an improvement over earlier devices of similar design. The **“Sedan”** device had a diameter of only **17.1”**, a total length of **38”**, and a total weight of **467.9** lbs. That is the equivalent of **4,490** tons of destructive force for each ( **1** ) lb. of bomb weight !!

The **Veterans Advisory Board ( VBDR )** visited the **Nevada Test Site**, at the invitation of the **Dept. of Defense**, on April 9, 2007. During their visit, they were able to tour Yucca Flats, Frenchman’s Flat, Pyhute Mesa, Camp Mercury, Camp Desert Rock and several of the remains of underground test craters. Including the test facility for the ( cancelled ) **“Devine-Strake”** ( bunker buster ) test. In the photo below, taken by their tour guide, **Dr. Byron Ristvit ( DTRA )** they are shown taking a lunch break at the **“Sedan”** crater, as seen today, from the viewing platform. Having been there, I can say that it is a very impressive experience . . . . .



Up to a point, the more deeply buried an explosive charge is, the larger the crater it will make. Beyond this point much of the material is thrown, with insufficient force, to clear the crater and falls back in, thus reducing the final size, and at the optimal crater depth, a lot of the “blown-out” material actually ends up back in the crater bottom . . . . .

This is an advantage for a **“Plowshare”** type crater experiment since much of the radioactivity gets returned to the crater and is buried. The measured ( **Radio-iodine-131** ) radiation release, from the **“Sedan”** detonation, that would have the most impact on human health, was **880,000** curies, or equivalent to a **3-4** kiloton atmospheric fission test . . . . .

## NUCLEAR WEAPON DETONATION EFFECTS:

The detonation of a nuclear device produces effects that are overwhelmingly more significant than any of those produced by conventional ( high-yield ) explosives, even if the nuclear device produces a relatively low-yield, or is small in physical size, such as a "suitcase" or "back-pack" nuke. A nuclear detonation differs from a conventional explosion in several ways. The energy produced by a nuclear weapon, of a given size and weight, is millions of times more powerful than the energy produced any conventional explosives of the same size and weight. Additionally, the nuclear explosion will produce an ( instantaneous ) electro-magnetic pulse ( **EMP** ) that can destroy, or seriously disrupt all electronic devices that incorporate sensitive ( low-voltage ) devices, or that incorporate the use of one, or more micro-processor ( computer ) chips. A large percentage of the detonation energy is transmitted, in the form of heat and light, within a few seconds, which can produce burns and ignite fires at great distances from the point of detonation . . . . .

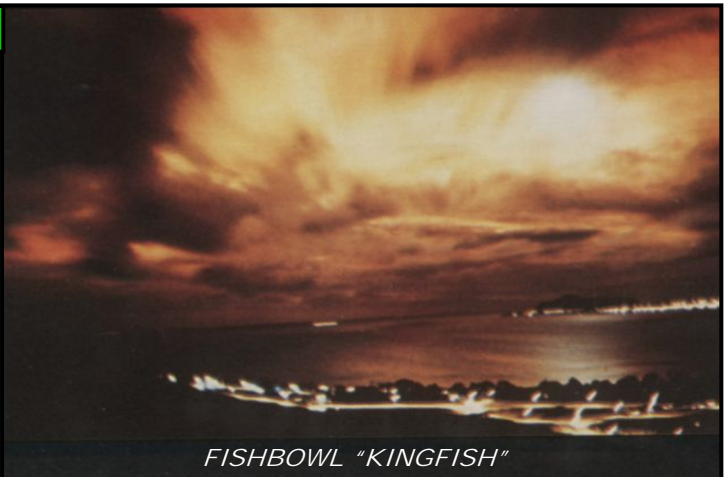
This destructive activity is also accompanied with ( highly penetrating ) nuclear radiation ( alpha particles, beta particles, gamma rays and X-rays ) within the first 60 seconds after the detonation event. The radiation dispersion effect can be harmful to human and animal life, and can also cause additional damage to sensitive electronic devices. An above-ground blast wave is created ( if the detonation is in the lower atmosphere ) that can cause casualties or damage at significant distances from "surface-zero." The shock wave can destroy underground structures if the detonation is a surface or near-surface burst. And, residual ( nuclear ) radiation will be emitted over an extended period of time, which may be extremely harmful to humans, if the detonation is close to the ground, or may damage electronic components in satellites, if the detonation is exo-atmospheric. Additionally, some of these effects may cause catastrophic interference to communications and navigation systems . . . . .

As an example, the two ( 1958 ) "**Newsreel**" high altitude rocket tests, "**Teak**" & "**Orange**," both of which were 3.8 Megaton detonations ( above Johnston, Island ) caused a ( 3 hour ) total communications blackout over a three hundred mile radius, from the center of each detonation. Likewise, the ( 1962 ) "**Fishbowl**" high altitude tests resulted in a complete communications blackout ( radio, teletype, television, etc. ) over the entire Hawaiian Island group, causing a wave of extreme anxiety among both the native Hawaiians and several thousand vacationing tourists. . . . .

A near-surface burst is a detonation, in the air, that is low enough for the immediate ( chain reaction driven ) fireball to touch the ground . . . . .



NEWSREEL "TEAK"



FISHBOWL "KINGFISH"

For the purpose of this article, a "typical" nuclear detonation is one that occurs on the Earth's surface, or at a height that is low enough for the primary effects to cause severe damage to surface targets and living organisms. Detonations that are exo-atmospheric ( high altitude ), or deeply buried underground have very different physical impact effects. Understanding the effects of nuclear weapons is important for two reasons . . . . .

First, as a part of the responsibility for maintaining the U.S. nuclear deterrent, the U.S. must have trained specialists that are knowledgeable and capable of advising senior leaders about the predictable results and the uncertainties associated with any employment of U.S. nuclear weapons, regardless of how important the target. This includes a realistic assessment of post detonation damage to adversarial assets, as well as reactive infrastructure abilities . . . . .

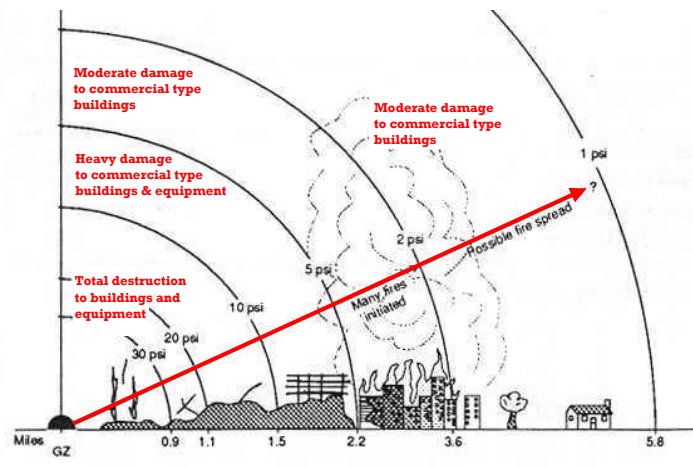
Second, because potential adversary nations now possess nuclear weapon capabilities, we must have an understanding of how much and what types of damage might be inflicted on a U.S. populated area, or a military unit, by an enemy's use of one, or more, nuclear weapons. We must also know what procedures must be implemented to properly respond to the needs of surviving victims of either a nuclear blast, or the dispersion of nuclear materials from a "dirty-bomb" act of terrorism. Nuclear detonations can occur on, below, or above the Earth's surface. *Ground-Zero* ( **GZ** ) is the point on the Earth's surface closest to the center of the detonation. The effects of a nuclear weapon detonation can destroy unprotected or unhardened structures and systems and can harm, or kill exposed personnel at great distances from the point of detonation, thereby effecting the successful outcome of a military mission or producing a large number of casualties in a populated area, in close proximity to the blast zone . . . . .

For people, or objects that are very close to **GZ**, the effects are devastating. People and objects will survive at various distances depending on several factors, especially the total destructive force ( yield ) of the weapon. If employed properly, any one nuclear weapon should defeat any one military target. However; a few nuclear weapons, with low-yield capabilities ( such as the U.S. first generation nuclear designs ) will not defeat a large military force ( such as the allied force that operated in the first *Gulf War* ). A single, low-yield nuclear weapon employed in a major metropolitan area will produce total devastation in an area large enough to produce tens of thousands of fatalities. It will not, however; completely wipe out the entire major population area . . . . .

Survival of thousands of people who are seriously injured, or exposed to a moderate level of nuclear radiation, will depend on the response of various federal, state and local

government agencies. Examples of single military targets include; one or a group of structures in a relatively small area; special contents ( i.e. biological agents ) within a structure; a missile silo or launcher position; a military unit ( i.e. single ship, air squadron or a ground-force battalion; a command post, or communications site, etc. . . .

### EFFECTS OF A 500 KT SURFACE BURST WEAPON



**CONCEPTS & TERMS:** An explosive of any type generates tremendous force by releasing a large amount of energy in a limited amount of space in a short period of time. This sudden release of energy increases the temperature and pressure of the immediate area to such a degree that all materials present are transformed into hot compressed gases. . . .

As these gases seek equilibrium, they expand rapidly outward in all directions, creating a shock wave, or blast wave that as tremendous destructive potential. In a conventional explosion, almost all of the energy goes into producing the blast wave, only a small percentage of which produces a visible thermal radiation flash. . . .

A typical nuclear detonation will produce both blast and thermal radiation, but it will also include a release of nuclear radiation. The distribution of energy is primarily a function of weapon design, yield, and height of burst over the target of interest. A nuclear weapon's output can be tailored to increase its ability to destroy specific targets, but a detonation of a typical fission-design weapon, at or near the ground, will result in approximately **50%** of the energy producing air blast, ground shock forces ( or both ); **35%** producing thermal radiation ( intense light & heat ) and **15%** producing nuclear radiation effects. . . .

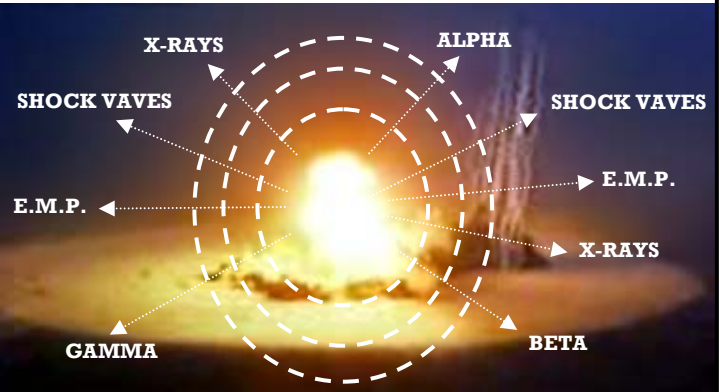
The yield of a nuclear detonation is normally expressed in terms of an equivalent amount of energy released by a conventional explosive. For instance, a **1 Kiloton** device will produce the same destructive force as **1,000 tons** of conventional explosives. Likewise, a **1 Megaton** device will produce the same destructive force as **1 million tons** of conventional explosives. . . .

The ability to tailor the destructive force of a given type of nuclear device can be further described as follows. During the height of the Cold-War, the U.S. developed two types of thermo-nuclear weapons that incorporated the use of "Dial-a-Yield" ( **DAY** ) control capabilities ( as fully described in the July, 2012 issue of this newsletter ). One of these weapons allowed for a range of settings, from **1 to 5 Megatons**, while the other allowed for a range setting from **5 to 25 Megatons**. . . .

Given these features, any *Strategic Air Command* ( **SAC** ) aircraft deploying these weapons had the flexibility to set the destructive force of the H-bomb to suit the requirements of assigned target, while in flight to said target, and in accordance with their target authentication code. In 1992, the Strategic Air Command was dissolved, and the *U.S. Strategic Command for the Defense of Weapons Mass Destruction* ( **STRATCOM** ), based at Ft. Belvoir, VA., is now charged with nuclear strike & counterstrike command & control . . . . .

**THE FIREBALL:** The detonation of a typical nuclear device will produce a huge number of X-rays, which heat the air around the center of the detonation activity to extremely high temperatures, causing the heated air to expand and forming a large fireball within a small fraction of a second. The size of the immediate fireball is a function of yield and the surrounding environment. . . . .

As the fission activity continues, the immediate fireball reaches temperatures of tens of millions of degrees, as hot as the interior temperatures of the sun. Inside the fireball, the temperature and pressure cause a complete disintegration of molecules and atoms. While current targeting procedures do not consider the fireball to be one of the primary effects, a nuclear fireball could be used to defeat special types of target elements, completely incinerating chemical or biological agents used in other types of *WMD's*. . . . .

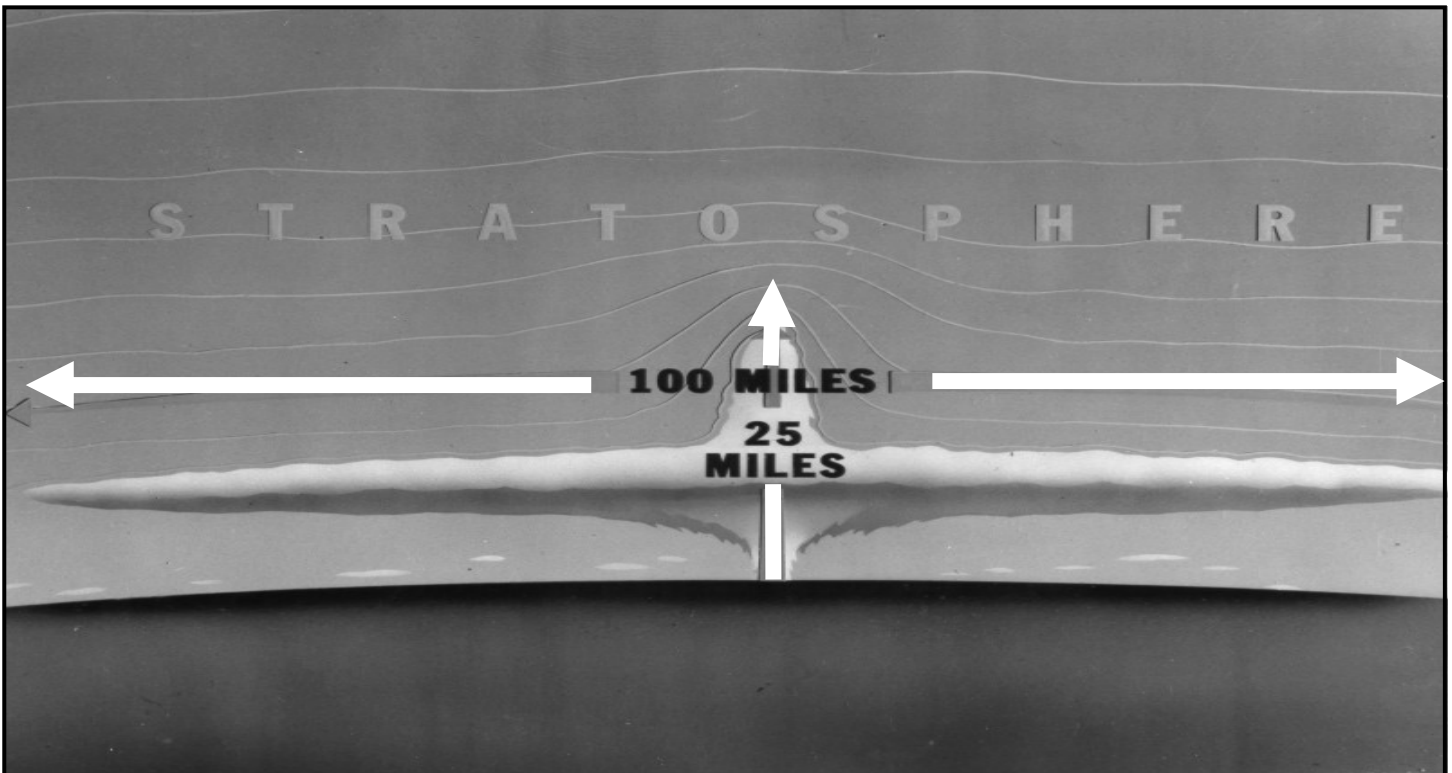


Because the fireball is so hot, in a typical nuclear detonation, it begins to rise in altitude immediately. And, as it rises, a vacuum effect is created beneath the fireball, and air that had been pushed away ( by the detonation pressure effects ) reverses flow, and rushes back toward the fireball, causing a rapid up-draft of air and dust particles, that are then sucked into the rising "heat-chute," which forms the stem of the "mushroom" shaped cloud . . . . .

As the fireball continues to rapidly move upward, it will also be blown downwind. Most of the dust and other materials that had been in the stem of the mushroom cloud will drop back to the ground in and around the "GZ" area. . . .

If there is a strong wind, some of this may be blown downwind, and in come cases, over hundreds of miles from Ground Zero. After several minutes the cloud will reach an altitude where it's vertical movement slows, and after ten, or so minutes it will reach it's stabilized height, and will gradually expand laterally, over a period of hours, or even days, causing the cloud to become much less dense, but much larger. . . .

The top of the cloud could have some materials drawn into the upper atmospheric zone. After a period of weeks, or months, the cloud will have dispersed to the extent that it covers a very large area and will have very little radioactivity remaining. .



**THE ( 10-31-52 ) IVY ( "MIKE" ) MUSHROOM CLOUD ROSE TO AN ALTITUDE OF 25 MILES, WITH A TOTAL ( RADIATION FALLOUT DISPERSION ) DIAMETER OF 100 MILES, IN LESS THAN 10 MINUTES. THE 10.4 MEGATON ( TWO-STAGE T-X-5 FISSION DEVICE ) DETONATION CONSUMED AND LIFTED MORE THAN 700,000 TONS OF CORAL AND SAND FROM THE ISLAND OF ELUGELAB ( ENEWETAK ATOLL ), LEAVING A CRATER THAT MEASURED 6,240 FT. ACROSS AND 164 FT. DEEP, WITH MASSIVE RADIATION PARTICLE CONTAMINATION . . . . .**

**THERMAL RADIATION ( TR ):**  TR is electromagnetic radiation in the visible light spectrum that can be sensed as both heat and light. A typical nuclear detonation will release thermal radiation in two pulses. . . .

For low-yields, the two pulses occur too quickly to be noticeable without special sensing equipment. For very large yields ( 1 Mt. or more ) on clear days, the two pulses would be sensed by people at great distances from the detonation ( 25 to 50 miles ), with the second pulse remaining intense for ten ( or more ) seconds. . . .

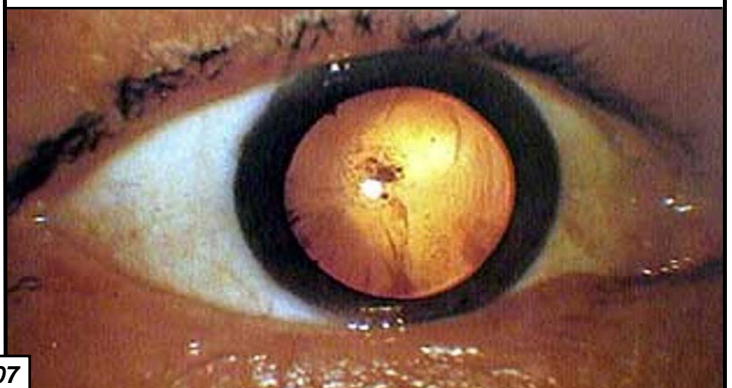
Maximum thermal radiation effect is entirely dependant upon the size of the weapons yield. Therefore; the maximum effect of a low-yield weapon would be a low altitude detonation, while the maximum effect of a high-yield weapon would be detonation at a suitable ( or higher ) altitude, etc. . . . .

**RADIATION DAMAGE & INJURY:** Thermal radiation can ignite wood frame buildings and other combustible materials at significant distances from "GZ." It can also cause burns to exposed skin directly, or indirectly if clothing ignites, or if the person is caught in a fire ignited by the thermal radiation effects. Anything that casts a shadow ( opaque material ) or reduces light, including buildings, trees, dust from the blast, heavy rain, and dense fog, would provide at least some protection from thermal burns, or ignitions to objects within the shadow. Transparent materials, such as glass or plastic, will attenuate thermal radiation only slightly. . . . .

Flash blindness, or "dazzle," is a temporary loss of vision caused by the eyes being overwhelmed by the intense thermal light. On a clear night, dazzle can affect people at distances of 10 to 20 miles from the point of detonation, and this dazzle effect may last for up to 30 minutes. . . . .

On a clear day, dazzle can affect people at distances well beyond the distances for first degree burns, but should last for a shorter period of time. Flash blindness can occur regardless of whether a person is looking toward the detonation because the thermal radiation can be scattered and reflected in the air. At distances where it can produce first degree burns, it is so intense that it can penetrate the back of the skull to overwhelm the eyes. . . .

For people looking directly at the fireball at the moment of detonation, retinal burns can occur at great distances. If the yield is large enough, and the duration of the second thermal pulse is more than the one second, some people would look toward the detonation and receive severe retinal burns. The photo below is that of a victim who's eyes were severely burned when he was looking directly at the ( Nagasaki, Japan ) A-bomb detonation flash, on August 9, 1945. Normally, retinal burns would cause a permanent blindness to a small portion in the center of the normal field of vision. A surface burst would reduce the incident of both temporary blindness and retinal burns. . . .





# Final Muster



Members of the Atomic-Veteran community are dying off at the rate of 1,600 per month. . . . We are not privy to all of their names, or place of residence. To properly bestow our respects and to share the grief experienced by their respective families, we ask our members to observe a special moment of silence so as to properly recognize & give thanks for their dedication and honorable service, to their God, their families and their Country. . .



*"Rest in peace, our Atomic-Veteran friends."*



## VOICES FROM NUCLEAR HELL

### OPERATION "CASTLE" ( 1954 )

During the Great Depression, you had to be ready for any opportunity, and knowing that Bakers made mistakes, young **John Bianco** decided to seek a job as an apprentice at a bakery near his Baltimore home. He knew that if he recognized a mistake quickly enough, he could take it home with him, at no charge. *"A lot of times, that was all me and my family had to eat,"* Bianco said. At the age of 86, and living in a local retirement home, he often recalled his life as a strapping sailor, as he meandered through the halls of the retirement home, supported by a rolling walker, in spite of the fact that he has endured two knee replacement operations, four back surgeries and two bouts with cancers. . . .

While being interviewed by a local news writer, who was researching the experiences of Atomic-Veterans, Bianco had the opportunity to revisit the most memorable moments in his life and career in the U.S. Navy. His short laughs, funny stories and occasional ( exaggerated ) hand gestures belied his almost constant pain. His esophagus didn't function properly, making eating a repetitive and unpleasant experience. But that's not what Bianco wanted to talk about. Most of his conversation surrounded the events of one historic day, in 1954, a day that was forever burned into his memory. . . .



Back then, he was a ship's baker, aboard the **U.S.S. Philip ( DE-498 )**, a "Fletcher" Class Destroyer Escort. His ship had participated in a number of support roles during various battles and conflicts in the final years of the war with Japan, and was now assigned to participate in *Operation 'Castle,'* a series of experimental thermonuclear detonations near Bikini Atoll in the Marshall Islands. . . .

On the morning of February 28<sup>th</sup>. ( 1954 ) the first of seven thermonuclear devices — commonly called Hydrogen bombs — was scheduled to be tested. It was the **"Bravo"** shot, and would be the largest Hydrogen bomb tested by the U.S. . . .



*John Bianco ( center ) with some of his U.S.S. Philips shipmates.*

At 0645 Bianco, and several of his Galley-mates were assembled on the deck of the Philip, along with much of the rest of the ship's crew. They wore special ( welder's ) glasses to block the intense light emitted by, what was anticipated to be, a six-megaton explosion event. The brilliance of the flash somehow overcame the safety of the glasses, and Bianco's reaction was to block his eyes with his right forearm and the crook of his elbow. . . .

As Bianco recalled, *"I saw the blood running through the arteries of my arm, then I panicked, and dropped my arm."* That revealed an even more chilling sight. Said Bianco, *"The Bosun's Mate standing in front of me was a complete skeleton, and that scared the Holy-Hell out of me."* As it turned out, the blast was actually **15-megatons**, and the resulting flash was bright enough to give Bianco temporary X-ray vision, or so he assumed. . . .

A short time later, a voice over the ship's loudspeaker told them that they could gaze at the fireball rising rapidly above their location. Bianco said he hesitated to look at the rising fury, given the incredibly bright light the explosion had created, and his horrifying experience. Eventually, he took a peek. *"All I could see was a big ball of black, red, yellow & orange boiling upwards into the sky,"* he said. . . .

The device detonated in the **"Bravo"** test was nearly three times more powerful than the lab physicists had expected. This was caused by the **"Tritium-Bonus"** from the Lithium-7-Deuteride ( booster fuel ) encased in a natural Uranium tamper. It was not known, at the time, that there would be a **"Tritium-Bonus"**, from the Lithium-7 isotope. This isotope was expected to be essentially inert, but in fact, it had a substantial cross section reactivity with the high energy neutrons produced by the **Deuterium-Tritium** ( hydrogen isotope ) fusion, which proved to be highly energetic, thus providing the greatly increased yield of the **"Shrimp"** device detonation. . .

An hour, or so, later, he also said, *"A fine mist began to cover the ship, and it looked like it was snowing."* This was radioactive ash fallout, from the surface blast at Nan Island, which is a part of the Bikini Atoll. Another problem soon developed - the wind shifted, thus scattering the fallout further than anticipated. . . .

Bianco, and the rest of the sailors, scurried below decks. The ship's ventilation system was then closed, which turned the U.S.S. Philip into a toxic sauna. Bianco said he vividly remembered inhaling deeply, once he was cleared to be out in the open air again; and at the time, *"that cool air sure felt refreshing, after being in that buttoned up ship."*



He went on to say that he couldn't help but think that it was those irradiated particles which caused his esophageal problems. He also wondered if that radiation fallout also caused his cancers and joint pains, too. . . .

But more than that, he often wondered about all of his shipmates, especially those men who tried to help the nearby natives on Rongelap Island. He remembered watching a group of sailors, from his ship, helping a large group of natives, who had been subjected to the radiation fallout from the "Bravo" test. "I saw a baby with radiation sickness, and I have never forgotten that moment," Bianco said. He then paused, and with a grim look said "If anybody deserved a medal, those men did." His last remark was "Over the years, I often found myself - in my dreams - seeing that flash, hearing the roaring thunder, seeing those bones in my shipmate, watching that boiling mushroom cloud rising above our ship, and feeling the radioactive fallout of the "Castle-Bravo" nuclear test" . . . . .

Over the years, Bianco said that he has received assistance from the *National Association of Atomic Veterans ( NAAV )*, in the area of gathering information for filing health claims with the *V.A.* But he hasn't heard from any other sailors who were aboard the U.S.S. Philip that day in his life. He also wondered how many are still alive, and how many were suffering from radiogenic health issues, and how many were now deceased as the result of those events. . . .

**John Bianco** proudly and honorably served his Country in the U.S. Navy until 1964, when he retired and accepted a civilian job as Chief of food service at a prison, near his home in Glen Burnie, Md. After retiring again, in 2004, he and his wife, Sandy, moved to Las Cruces, N.M. When he talked about that, a big smile returned to Bianco's face. "I came to Las Cruces to visit my daughter," he said. "and somehow, I just didn't want to go back to Maryland". . . . .

*John Bianco - Atomic-Veteran - now deceased*

**OPERATION "PLUMBBOB" ( 1957 )**  
**GROUND ZERO: FACT FOR THE FRETFUL**  
*By Col. Barney Oldfield, USAF (Ret.)*

They were all volunteers in the best military tradition. Among them, they had 22 years of experience with nuclear weaponry. Their offer was courageous, carefully calculated on the basis of their competence. . . . .

They were in the same mold as the yellow fever adversaries named *Walter Reed, James Carroll, Jesse Lazear, and Aristide Agramonte* who, before the turn of the century, bared their bodies to the stegomyia fasciata ( later named *Aedes Aegypti* ) mosquito which was the suspected germ carrier. They were convinced of the specifics of performance of the 2.5 kiloton "Genie" ( *MB-1* ) air-to-air rocket, and believed there was no reason to fear their exposure under conditions of its operational use subjected them to either lingering death or physical impairment. . . . .

Air Force officers all, the five were *Col. Sidney Bruce, Lt. Col. Frank Ball, and Majors Norman Bodinger, John Hughes, and Don Luttrell*, then with what was about to be *Hq. North American Air Defense Command*, in Colorado Springs, CO. It was the year of the "Plumbbob" series of nuclear tests scheduled for Yucca Flat, located within the Nevada Test Site, just 65 miles from Las Vegas, NV., in the Summer of 1957. . . . .

Much was riding on this one shot. While others in the tests were devices, the "Genie" was a new air defense ( nuke ) weapon. Already being placed on U. S. bases near aircraft



**THIS "GENIE"- MB-1 WAS FITTED WITH A ( 1.5 KT. ) W-25 WARHEAD**

equipped to carry them, it was imperative to reduce the unknown's about the "Genie" air-to air defense capabilities. Enemy bombers, then capable of being employed in attacks on North America, could approach targets at 10 miles per minute, so every minute saved in the interception of such hostile intruders was crucial in keeping them from reaching their designated targets. Although there had been provisions for a joint Canada/US Air Defense in original *NATO* planning in 1949, only now, eight years later, was *Hq. NORAD* about to be born ( Sept. 12, 1957 ) . . . . .

After much negotiation and expressed concerns, elementary logic had prevailed that ( air ) defense of North America was really one problem which required the contributions of both nations in common purpose if there was to be any "forward strategy" at all. Canada was always nervous about nuclear matters, and a large majority of Americans were so emotionally anti-nuclear that they seemed to prefer being naked to such armaments of an enemy rather than have any meaningful counter-punch capability. . . . .

The possibility that any last ditch ( nuclear ) defense of North America might be workable, in reality, it gave politicians on both sides of the border sour stomachs. The need for public reassurance and gaining public confidence was pressing, and restrictions on how much could be said on atomic matters were a snake-pit of out of sight security classifications, shapes, tonnages, costs, locations - you name it, and the general consensus was that it just couldn't be done. . . . .

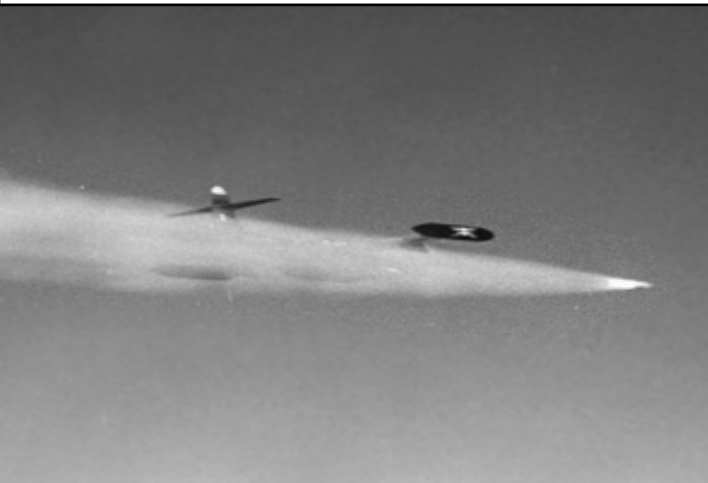
*Gen. Earle E. Partridge*, who would be the first *NORAD CINC*, said something had to be done to get ( atomic ) air defense weapons "out" and to develop some sensible explanations about the need to use them. When he told me to work on this, he gave me a sound admonition: "Keep me posted about what you're doing, as I can keep you out of jail better than I can get you out of jail." Now that statement gave me a real measure of comfort. . . . .

The key part of all this was to get agreement from the Joint Chiefs of Staff to fire an *MB-1* during the planned 1957 nuclear weapons test series, which was forthcoming, and then to start building a case on the basic *MB-1* difference -- it's operational weapon aspects vs. the other *AEC* devices to be tested in the near future. At this point, my five Air Force colleagues walked into my office saying they were willing to volunteer to play the part of guinea-pigs and stand directly under the "Genie" burst at Ground Zero, which would be about 13,000 feet directly above them. . . . .

*Gen. Nathan Twining ( JCS Chairman )* and *Gen. Partridge* approved my plan, and the scene then shifted to Nevada. Shot day was scheduled for July 19, 1957. We then found ourselves busily rigging the coverage to be sure we would have it all.

The *Genie* cost approx. \$250,000 and would probably not

be fired, with a live nuke warhead, except during an act of War. Our prep's included movie cameras, still cameras, and tape recorders. *Major Bodinger* was wired with ( cockpit ) mike at his throat, and scheduled to talk the oncoming *F-89-J*, "*Genie*" loaded fighter-jet, as it flew directly over him and his four associates. I had taken the cardboard from a fresh shirt just in from the laundry, and finger-painted an inked legend: "*Ground Zero - Pop. 5*" to which was attached to a stake so it could be planted at the volunteers' feet within the picture framing. . . .



Right on schedule, the *F-89-J* appeared overhead, and the "*Genie*" nuke streaked ahead ( as shown in the above photo ) as the pilot pulled a six-G back-flip to get-the-Hell out of Dodge, before the gunfight. When the nuke missile struck the "drone" target aircraft, over Phytte Mesa, it was completely vaporized, as shown in the photo below. . . . .

Bodinger then began to describe the bright colors of the sky-burst above them, however, the shock waves and electromagnetic interference garbled his mike's transmission. Then there were shouts from all of them that it had "worked", and their exuberance was hardly containable. That film and that recording became the greatest public confidence builders of my memory, coupled with one or all of the volunteers who appeared on stages or at podiums of service clubs, schools, or before church and political groups. . . . .



The successful "*Genie*" nuke test was the highlight presentation at the Air Force Association convention in Washington, that coincided with the day and date of *NORAD's* being

ushered in as a two-nation, regional development under the guidelines of *NATO*. Some of the coincidences are fascinating. One of the longest running perpetual/nuclear doom-sayers has been *Norman Cousins*, the editor of Saturday Review. He and *Norman Bodinger* had the same maternal Grandfather, from whom they got their given names. . . .

*Frank Ball* had been sent to observe an earlier nuclear test, from one of several special trenches dug deep and at varying distances from "ground-zero". Frank was slated for the trench farthest away from GZ, however; he had made a rather considerable night of it in Las Vegas, and somehow got on the wrong bus back to the test site. Accordingly, he wound up in the trench closest to the burst, and saw a great deal of Nevada topsoil and test equipment debris go sailing past, just six inches over his head. . . .

When his time came to stand beneath the "*Genie*", it was the second such familiarization course for him. There was an unexpected derivative from that "*Genie*" shot which benefitted everyone in uniform as we released a story about the combined wages of the three service men who loaded the weapon on the *F-89-J*, and armed it, on whom such awesome responsibilities rested. Their combined income was half that of one Las Vegas bartender - each month. This found its way into the Congressional Record, and had a marked effect on the vote for the military pay overhaul which was, at that time, under legislative consideration. . . . .



**Col. Sidney Bruce, Lt. Col. Frank Ball, and Major,s Norman Bodinger, John Hughes, and Don Luttrell are directly below the first "*Genie*" nuke missile test at Phytte Mesa ( N.T.S. )**

Memories of that morning going out to "ground-zero" includes one of the conversations of the five Air Force volunteers, and one said: "*We have to put the requirements for human progress in some kind of perspective. In the 1830s, when a guy first struck a common match during a reception in an old Southern mansion, it caused many grand ladies to faint dead away and for him to be regarded as a dangerous sorcerer. He had the nerve to suggest this was a better way of making fire than the old tinderbox: We're about that same business today.*" And then, they went on to Ground Zero and did their thing for human progress and public safety --- and as a measure of the National-Security we still enjoy. . . .

**ARE C.T. SCANS & RAD IMAGES GOOD – OR BAD ?**

*“The parents of these children,” said Dr. Nicholas Dello Russo, who teaches at Harvard Dental School, “have no idea about the amount of radiation used in these CT scans, and even more frightening, neither do the dentists who use them.” One expert in dental radiation, Dr. Joel E. Gray, said, “There is a general lack of understanding of the effects of radiation in dental offices” . . . .*

In November ( 2010 ), the American Academy of Oral and Maxillofacial Radiology and the American Association of Endodontists issued a joint statement saying that cone-beam CT *“must not be used for screening purposes in the absence of clinical signs and symptoms.”* The increasingly common practice of zapping children with high-powered 3-D dental X-rays known as “cone-beam” CT ( computed tomography ) is exposing this vulnerable population to potentially dangerous radiation doses. . . .



**3-D Cone Beam Dental Scanner**

The British Journal of Radiology reported that cone-beam scans exposed patients to “significantly higher” amounts of radiation than conventional dental X-rays. And, Professor John Ludlow, of the University of North Carolina, told the *New York Times* that cone-beams produce four to 67 times as much radiation as the older dental X-rays. . . .

According to recent news accounts, including a 3,700 word report in the Times, the use of cone-beams is spreading wildly among dentists and orthodontists, even though there is scant evidence that their higher radiation doses produce pictures better than those from the old-fashioned X-ray methods. The practice had raised concerns among experts and health professionals worldwide. . . .

Diagnostic X-rays, of all kinds, were added to the federal government’s list of carcinogens in 2003. At the time, the National Institute of Environmental Health Sciences, was becoming critical of increasingly higher levels of radiation exposure the public was getting from CT scans, fluoroscopy, mammography scans, and medical X-ray devices. . . .

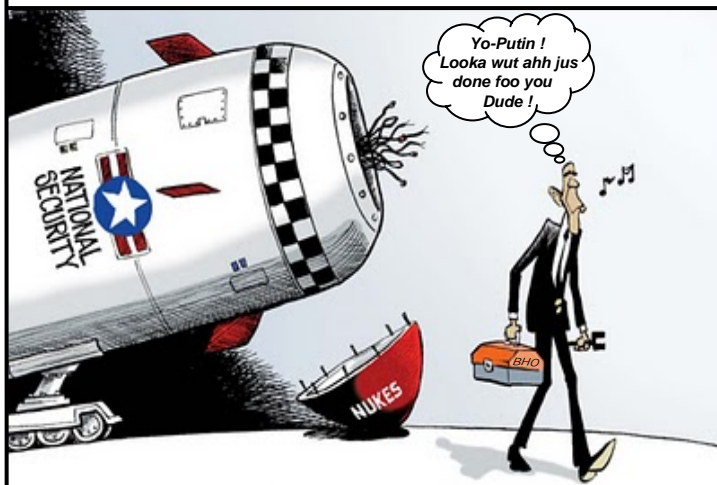
Adding dental cone-beam devices to the mix helps to explain why the Nuclear Regulatory Commission, in 2009, nearly doubled it’s estimate of the radiation dose that average person gets, on a per year basis, in the U.S ( from 360 m-rem to 620 m-rem ). The NRC says that half of this annual exposure is from radiation imaging like CT scans and radioactive isotopes used internally. . . .

Each CT scan can expose a patient to the equivalent of 400 ordinary X-rays. These warnings about the risks of nuclear medicine are coming at the time that the unnecessary use of whole-body X-rays, powerful CT scanners, and full body scans ( at airports ) as well as accidental overdoses, are being broadly criticized by several concerned experts in the after-effects of such exposures. In April, 2010 the F.D.A. adopted new regulations for radiotherapy equipment, after a nationwide review found over 1,000 reports of overdoses and other serious health issue problems. . . .

A 2009 study, published in the British medical journal “Lancet,” concluded that CT scans were being needlessly used in cases of children who had hit their heads. When used to try to rule out the chance of a serious brain injury, CT scans actually helped only 5% of the time. *“They clearly did not need to have a CT scan,”* said Dr. Nathan Kupperman, the study’s chief investigator. Kupperman added, *“What we are saying is, for goodness sake, don’t subject children to a CT scan if they do not exhibit any signs of brain injury” . . . .*

As long ago as 1985, the routine ordering of a chest X-ray, nor newly admitted hospital patients was condemned after a study found that 96% of the time, they weren’t helpful, or useful. In 2002, the National Cancer Institute issues an alert, urging radiologists to reduce CT doses for children. At the time, the NCI declared that most scientists *“agree there probably is no low-dose radiation threshold for inducing cancer, i.e., no amount of radiation exposure should be considered to be absolutely safe.”* The National Association of Atomic-Veterans ( NAAV ) has been saying this for the last 31 years !!!!!

This is a significant reminder, especially since by 2010, about 70 million CT scans were being done in the U.S., every year – up from 62 million in 2006, and 23 times the number done in the early 1980’s. In 2010, the Times reported that *“as many as 14,000 people may die every year of radiation-induced cancers as a result of the increased use of CT scans.”* Today, many States, hospitals and clinics have increased the use of radiation exposure devices, many of whom lack any licensing requirements or regulatory oversight, and of those that do have regulatory restraints, are subject to weak enforcement. Christine Lung, V.P. of the American Society of Radiologic Technologists said, *“It’s amazing to us, knowing the complexity of medical imaging, that there are States that require massage therapists and hairdressers to be licensed, but they have no standards in place for exposing patients to ionizing radiation, and the after-effect consequences” . . . .*



Is this what America’s ( secret ) Wounded Warriors sacrificed their health and normal longevity for ? ? ? ?

**"CROSSROADS" - THE BIG BIKINI FISH FRY**

**Outside Bikini Lagoon on "Able-Day"**

It is now 1500, on the 30th. of June, 1946, and what a day this was. A real honest-to-goodness "atomic-bomb" dropped in to visit here today and, in addition to frying a whole lot of fish, cooking a whole lot of test animals, and sinking some ships, it left quite an impression on all of us. And that impression has been with me all these years. I don't have as many dreams about those mushroom clouds any more, but occasionally, they do reoccur. . . . .

I'm **Charles "Frenchy" LeBlanc**, and I was a Bosun's-mate on the **U.S.S. Achomawi (ATF-148)**, on that day in my Navy life. Now I don't know whether you listened to it over the radio or not - it was a very complete broadcast ( we heard it here, too ), as "Sparks" ( our Radioman ) piped it over the ship's squawk-box. But even if you didn't hear it on the radio you've probably read something about it in the paper, or even saw it at the "Bijoux" ( this is what us Cajuns call a movie house ). I won't go into a lot of useless details, but I will just tell you what I saw from my ship. . . . .

At 0830 that morning, we had set condition "A" ( dogging down all water-tight doors & hatch's ), and those of us who were not on "watch" were all mustered on the foc'sle of the ship's 0-1 deck. For you folks who are not swab types, that is the bow of the ship. The ship's squawk-box's were set up so we could hear the broadcasts, "stand-by" orders, and bomb release signal. Our ship station, for the "**Able**" test, was just outside of the Bikini lagoon opening. It was a bright sunny day with a cool breeze blowing toward us from the atoll, and there were scattered puffs of clouds overhead, but not enough to endanger the project. . . . .

At 0850 we saw two ( high-flying ) B-29's approaching the atoll. One of them ( we later learned ) was "Dave's-Dream," out of the 509th Composite Group that bombed Hiroshima & Nagasaki, Japan a year earlier. It was carrying the "**Able**" bomb, which was identical to the "**Fat-Man**" bomb that destroyed Nagasaki on August 9<sup>th</sup>, 1945. . . . .

At 0858 the squawk-box said, "*now hear this - face away from the target ship fleet - that is all,*" and we did just that, and as per previous instructions, covered our eyes with our arms. Then at 0900 the squawk-box said "*now hear this - the bomb was dropped - hold your positions - that is all.*" Then there was a long silence, followed by a bright flash of light, a loud blast and a long rumbling roar. Hell had just arrived at Bikini Atoll. .



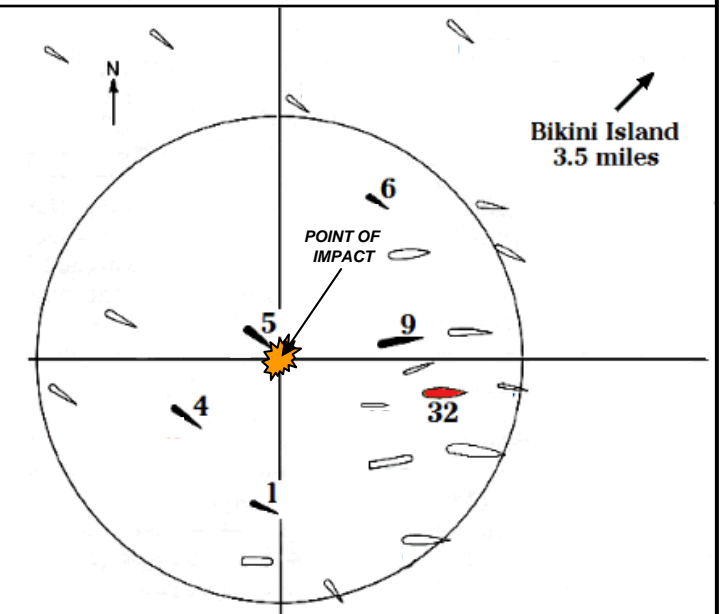
**"ABLE" was a 21 Kiloton (Pu-239 core) Atomic-Bomb Housed in a Mk-3a drop case. . . . .**



**"FRENCHY" LEBLANC AND HIS SHIPMATES WATCH THE "BAKER" TEST FROM THE 0-1 DECK OF THEIR SHIP. . . . .**

Then the squawk-box said, "*Now hear this - as you were - that is all,*" and we then tuned around and rushed over to the star-board rail to watch the mushroom cloud as it rose rapidly skyward. It grew larger as it gained height, and we could see a glowing ball of boiling colors from within. . . . .

I was thinking that it looked like a mushroom shaped piece of cotton candy like we used to get at the carnivals when we were kids. The cloud kept growing for about 10 minutes, and must have risen to about 20,000 feet, or what looked like the height that those B-29's were cruising at. For several hours, B-29's, B-17's and some Carrier based aircraft flew all around the area, while radio-controlled "drone" planes flew through the cloud. We soon found out that the bomb missed the target ship, by more than six football fields. . . . .



The target ship ( 32 ) was the **U.S.S. Nevada (BB-36)** that was painted a bright orange for ease of recognition. The bomb detonated 1,870 ft. off target, or 800 ft. forward of the bow of ( 5 ) the **U.S.S. Gilliam (APA-57)** sinking it, and ( 1 ) the **U.S.S. Anderson (DD-411)**, as well as ( 4 ) the **U.S.S. Carlisle (APA-69)**, and ( 6 ) the **U.S.S. Lamson (DD-367)** and ( 9 ) the **Sakawa** ( Japanese Navy Heavy Cruiser ). A (DoD) investigation of the "off-target" incident found that when the bomb was being loaded into the B-29, one of the tail fins was accidentally damaged, and the ground crew failed to inform the aircraft Weapons-Officer, and as the bomb was falling to the target, the tailfin caused the "off-target" drift. . . . .

The next morning, we were ordered to enter the lagoon, and as we approached, I could see the palm trees clearly. They did not appear to have been greatly damaged by the blast. I could see smoke rising from the **U.S.S. Saratoga**, as it listed

to starboard, with it's bow slightly elevated. Several other ships appeared to have been severely damaged, and were also burning. Many other's were sunk by the blast effects, while others were strewn about, listing to port or starboard, or with their bows or sterns looking up at the sky. . . . .



**These Goats were used to determine the biological effects of blast, heat and radiation at the Bikini Island "Crossroads" nuclear tests.**

We had a few scientists aboard, who wanted to board a few select ships that had test animals, either in wire cages, or tethered to deck-eyes, so as to be fully exposed to the blast effects. We off-loaded them on three of the test ships. I almost heaved, when we pulled alongside the first ship. I can't remember the name or hull number, but I can still see those goats lying dead, and I can still smell the smoldering scent and hear the guttural moans of others, who were in real pain. . . .

As we approached the second ship, I could see rabbits and pigs, also tied down, or in cages. I also saw the remains of a small seaplane, lying over the side of it's launch rack, and a 40mm anti-aircraft mount that was damaged by the blast over-pressure shock wave. There was a group of sailors, hard at work scrubbing down the ship's decks, while other scientists were climbing over wrecked deck-gear, while waving radiation meters in all directions. . . .



After we off-loaded our scientists, we were ordered to assist other tugs on salvage work, then we collected our scientists and finally dropped anchor about 2 miles from the remaining ships in the target fleet. . . .

50 years after my "Crossroads" experience, I had the occasion to be at a *NAAV* Atomic-Vet reunion in San Diego, CA. When Atomic-Vet's get together, it is normal for those who were in the same tests to kind of hang out together, and I soon found myself engaged with a group of "Crossroads" salts. . . .

One of them was *Don Byers*, who was a Navy photographer, assigned to the *U.S.S. Wharton* (AP-7) for the "Crossroads" exercise. He explained to us that he was assigned the tasks of taking photos of the "target-fleet" before and after the tests, and that the *Wharton* was outfitted with a complete photo lab that was also used by the scientists who had taken photos of damaged equipment and test animals. Don also showed us a photo copy of a glowing Surgeon fish, taken a few years after the "Crossroads" tests, as shown below. . . .



**This Surgeon fish was captured some-time after the ( Crossroads ) "Baker" test. Scientists have since stated that the "glow" is the result of eating ( radiated ) algae from the Bikini lagoon . . . .**

He had also saved some of the ( DoD ) log forms the photographer's had to fill out describing every shot they took. One of the first forms he showed us was filled out with "Mushroom cloud & stem," and in several line box's below, was written "ditto," "ditto," "ditto." Don told us that, "during the count down for the first shot, I had set a camera on a tripod with two red filters and a pin-hole opening for a time exposure. As the countdown got closer my knees started knocking, all that stood between me and that bomb was the camera." Don said, "I transferred from the *Wharton* to a Tug, to board the ships of the target fleet and take pictures of the damage, and test animals." Several of the forms were filled-out with descriptions of those photos, such as, "mid-ships, gun pit, cable, blast shadow, aft stack," rabbit 232, pig 115, goat 95, etc. . . .

As he went on with his recollections, I then recalled that while we were taking those scientists to the target ships, we were allowed only fifteen minutes alongside, and after departing from each ship, we were all checked with Geiger counters. The counters had speakers and you could hear it ticking. The higher the scale reading, the louder the ticking. . . .

Our clothes and bodies were contaminated. I was told that the highest reading was around my butt, but I hadn't sat down on anything. We than had to strip down to our birthday suits, shower with seawater pumped out of the lagoon, get radiation checks and then were allowed to go into the ship's spaces for a "fresh-water" shower, followed by another radiation check, and then on to the chow-hall, for cold-cuts and soda-pops.

Then, on July 24th., the "Baker" bomb ( an underwater blast ) almost finished off the rest of the target-fleet ships & submarines, and really contaminated the entire Bikini lagoon.

After the **Baker** shot, we were, once again, tasked with getting scientists aboard the remains of a few more ships, for sample gathering and photos. . . .

At this time, my long-ago thoughts and recollections was interrupted by the sound of a creaky voice that movie makers would have placed with an old prospector, or perhaps a Walter Bernnan type character. It was **Cecil Herald**, a sailor who was also at the '46 Bikini blasts. Cecil was a character that only Jules Verne could have dreamed up. . . .

He told us he was 78 years old ( at that time ) and after getting out of the Navy, he spent 45 more years on merchant ships, sailing the world over, with a girl in every port. In 1946, he was stationed aboard the **U.S.S. Sylvania ( AKA-44 )**, an attack Cargo Ship, for the "Crossroads" event. He was billeted over to the **Fleet Tug ( ATA-124 )** after the "**Baker**" shot, and then back to the **Sylvania**, before sailing into Bremerton, WA., for decontamination. I asked him if he saw both of the nuke-detonations, and he said, "I sure as Hell did, and I saw that **Sakawa ( Jap Cruiser )** sink too. The bomb was supposed to hit the **Nevada**, but she was way off target, and I wondered if that **B-29** bombardier had gotten a-hold of some bad squeeze. We were stationed way over on the ship's port quarter. After the bomb exploded over the **Sakawa**, it took it about 24 hours to sink. When I was sent over to look at the damage, I found that the watertight integrity of the Japanese ships were a Hell-of-a-lot better than ours, but she was so messed up, that she sunk anyway. The science geeks who were with us, to monitor the stuff before they would let us go in, said that both sides of the ship were squeezed together just like an accordion". . . .



**THIS PHOTO OF THE "44" WAS TAKEN BY CECIL BEFORE ARRIVING AT BIKINI FOR THE "CROSSROADS" EVENT. . . . .**

I asked him if he had goggles to watch the explosion. He said, "no, we just turned our backs to it, so we wouldn't get the flash, then we were able to turn around to watch the mushroom cloud. And we did the same with that underwater shot." He went on to say, "After that shot, they transferred me to the **ATA-124**, and we were hauling ammunition and other stuff off the ships, and took it out to the "60" mark ( fathoms ) and dumped it, ya know. Then I got back on the "44" and we went on the Hawaii and then Bremerton."

I asked him what his job was on the "44", and he said, "I was a Warrant machinist, and uh, the skipper, **Woody Haven** was his name, was a Chief Warrant. I was Woody's Engineering officer, so-called, and I just stood a regular bridge watch when we were underway, and I was not doing something else."

I asked him what he thought of the "**Baker**" shot, and he said, "Now that was the shot that made a real big mess of things. Well, I don't think them scientists knew how big a hole in the ocean that bugger was going to make. We sure had a lot of junk-iron floating around after that one." Cecil went on to describe their salvage and cleanup duties that day. I could relate to that, as ours were almost identical in nature. He finally said, "Later that evening, after things calmed down, we were back in the lagoon, catching fish for 'Cookie' to fry up for us, then we dropped the hook, and went over to that "Gee-Dunk" Officers Club, out on the end of the Island, to get unrattled & properly soused, before sack time". . . . .

Cecil also said, "You know, I've never run across or talked to anybody from '**Crossroads**' after I got out of the Navy. After the big Bikini fish fry, we brought the **Sylvania** up to Bremerton, decontaminated it, boiled out all the heat exchangers, keel cooler pump circuits and stuff." He went on to describe how the scientists came on board with their Geiger counters and how they told the Bosun-mate to put weird smelling solution in the urinals, then after one hour, to clean them out. One Bosun-mate told him, "Hells-bells, we put that stuff in all of them urinals, except one, and when them white-coat guys came through, with their Geiger counters, they OK'd every damn one of em. Now ain't that the bees-neeze."

He said that the washout material was put in drums, and where they took all that stuff out and dumped it, he didn't know. "They probably just dumped it right there in the Sound, at the 60 mark. Back then, that stuff was hit and miss, you know." he said. And, I had to agreed with him, that a lot of that radiation monitoring and stuff was probably, at the least, hit & miss. . . .

Cecil said that his daughter, living in Colorado, was 'surfing' the internet when she came across the **NAAV** website and told him about the Atomic-Veterans Association. Cecil said that he got all excited, and looked forward to meeting anyone who may have been at the '46 **Bikini-Fish-Fry**. His daughter signed him up as a **NAAV** member, and he hustled over to the San Diego pow-wow. Don said he was sure glad to meet up with a group of sailors who were also a part of the Crossroads event, and said that after all those years, we were the only veterans who he felt comfortable discussing those events & experiences with. "No sense trying to talk with your neighbors, or anyone else for that matter, cause they wouldn't know what the Hell you were trying to tell em." He went on to say, "Besides, I was told not to say nothin to no one, and have been totally mute about those events, until today. I'm sure glad I found you guys." We all felt the same way, and kind of tight with each other, that night, cause we had all witnessed the wrath of man-kind's ultimate weapons. . . .

Our conversations were drawing to a close and I told Cecil & Don, and the rest of the group, that I was so happy to have been able to talk to them, and if they would send me a copy of their stories, I would see if we could get them printed in one of the **NAAV** newsletters. After several years, I finally put together a short version of my notes and our stories, and sent them in to the NAAV editor, and hopefully, they will be printed. Well, after all those years, I found myself back in the bayou's of Louisiana, and settled down with a full platter of boiled "mud-bugs," or a nice bowl of "Lapin" stew laid gently over a platter of dirty rice, a cold Falstaff, and as far away from Bikini as possible. . . . .

Editors note: The NAAV San Diego Pow-Wow happened in August, 2006, and we are pleased to honor the "Crossroads" experiences & memories of "Frenchy" LeBlanc, Don Byers and Cecil Herald in this issue. At this time, the current status of these Atomic-Veteran Patriots is unknown. . . . .

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