

Special Weapons

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What is a special weapon?

In the Navy, a special weapon is also called a **tactical nuclear weapon**, which is a weapon designed for a specific military purpose, for example, to destroy a submarine. A special weapon should not be confused with a **strategic nuclear weapon**, which is designed to destroy military bases, arms industries, or even entire cities.

Was this division a "top secret" part of the ship?

The Special Weapons Division was not a secret at all. In fact, the Navy wanted every enemy nation in the world to know that all aircraft carriers had tactical nuclear weapons on board. The Marine guard post, the red demarcation on the floor near the entrance to Special Weapons, the rifle rack, and the WARNING poster on the door, were all there to engender a sensation of awe, reverence and mystery toward this department. No, it was not a secret at all.

Was the Navy the only ones who brandished their weaponry at the enemy?

The Army, also, flexed their nuclear muscles for the world to see and fear. During the late 1950s, Nike missile bases sprouted up in epidemic numbers near densely-populated cities along California's coastline. Nike missiles were ground-based, radar-controlled, anti-aircraft, guided missiles. Each missile base had a bright-white, 20-foot-high, over-sized radar dome which was visible from miles away. These ominous structures were there to warn all enemy invaders that America was capable of detecting, targeting, and obliterating any foreign aircraft that dared to penetrate our borders.

How many enemy aircraft were shot down by nuclear weapons during the Cold War?

Nuclear warheads were never used against any foreign power since the bombing of Japan. There have been over 2,000 nuclear tests in the world, but none was used offensively. To date, nine countries hold nuclear weapons. Reportedly, 13,400 nuclear weapons remain on standby, which is enough energy to obliterate all life on the face of the earth.

Is it true that the Alameda Naval Air Station stored nuclear weapons?

This naval base never stored nuclear weapons, but it was designed to look like it did. The north end of the base has about a dozen ammunition bunkers, (which were never used). The fencing around that end of the base was topped with razor wire, and it was patrolled by a Marine Detachment. By satellite photographs taken of the base, this most certainly looks like a nuclear storage facility.

Who used those nine rifles positioned on the wall outside the Special Weapons Division?

The rifles you see on display are strictly for the use of the marines assigned to guard this area. The desk is referred to as the *Marine Guard Shack*. During 3 shifts a day, two men stood watch at this station 24 hours a day, 7 days a week. Two other marines stood watch at the top of the ladder leading to the weapons magazine.

Other than keeping out intruders, what other duties did the marines have?

The marines were in charge of all brig activities. They also kept track of the Special Weapons crew as they came and went from their Division to eat and to toilet with the regular crewmen. The weaponsmen were allowed to talk with other crewmen, but they could not discuss their job or anything about the Division.

When you open the mysterious door to enter Special Weapons, what is the first thing you see?

When you open the door, the only thing you see is a stairway landing and a small water closet. The Special Weapons crew usually made use of the facilities outside their division, but this small one could be used for small emergencies or during General Quarters lockdown. Lavatories are not found lower than Third Deck, because that is the level that the sewage holding tanks are located. During GQ lockdowns, crewmen working below Third Deck had their sewage hauled up in buckets through escape scuttles.

How many men worked in this division?

In total, 10 men worked in this division. Six were enlisted men with the rating of Gunners Mate Technician. Their correct rating was Nuclear Weaponsman, but they wore the Gunners Mate patch on their uniform for security reasons. All six men were Petty Officers. There were also two Officers and two Chiefs.

Shouldn't there be more men to do all this work?

Actually, this position could have been filled with only five men, but government regulations require that all nuclear

facilities use two men for every position. This is a system of checks and balances, and every action that a Nuclear Weaponsman makes is observed, recorded, and approved by his partner. This is extra insurance that every duty that the weaponsman performs is done carefully, correctly, efficiently, and with certainty that no duty gets overlooked.

What compartments are there to see on Fourth Deck.

There is the barracks for the six weaponsmen, a snack shack for coffee breaks, an administration office, a stateroom for the two officers, a stateroom for the two chiefs, and a workshop.

Did the bombs get assembled in the workshop?

Until the middle 1960s, weapons came to the ship in pieces, and final assembly took place in this room, but in the late 1960s, the weapons came fully assembled except for one small piece: the fusing mechanism. That mechanism was kept in this room locked in a safe. Every day, the weaponsmen would practice arming and disarming the bomb. If the time ever came to employ the bomb, the crew would have to work swiftly, efficiently, and with absolute precision.

If a weapons magazine were bombed, could it initiate a chain reaction and blow up the whole ship?

Tactical warheads are designed with multiple safety features built in. Even if they have been fused, the bomb will not detonate, even under the most violent conditions, such as fire, impact, crush, or puncture.

Did the bombs we dropped at Hiroshima and Nagasaki have these safety mechanisms?

They certainly did. No nation would be reckless enough to transport a nuclear weapon without taking every precaution possible not to have an untimely detonation. In 1945, not only America, but also Germany and Japan knew how to make an atomic bomb. America was the first country to employ this weapon because we were the first ones to perfect the fail-safe security system.

Was there ever a time when our emergency security system was put into use?

On January 23, 1961, two Mark 39 hydrogen bombs were accidentally dropped over Goldsboro, North Carolina. A B-52 Air Force bomber broke apart midair releasing its cargo. One of the bombs performed precisely in accordance with its design: its parachute opened, its trigger mechanisms engaged, and one single low-voltage switch tripped the safety mechanism which deactivated the bomb, and it parachuted to earth quietly and safely. The other bomb was also deactivated when it fell out of the disintegrating airplane, but its parachute failed to open. The bomb slammed into the ground at over 700 MPH, and buried itself more than 180 feet deep into the ground. Three crewmen lost their lives in the plane crash, but thousands of lives were spared due to the high-tech safety engineering that went into those bombs.

What must be done to successfully fuse the warhead?

The final mechanism that fuses the warhead is called the **strike enabling plug**. This device electrically completes the circuits that enable the weapon to be armed. This sounds very simple, but the security lies in the storage of the device. Two officers stored the device in a double-locked box in a safe. To open the box, both officers had to verify that they had a valid authorization code by comparing it to a sealed authenticator which was stored in the safe. Each officer had a key to open one of the two locks on the box, which prevents one of the officers from opening the box without the other officer. Then the two officers oversaw the insertion of the **strike enabling plug** into the bomb to verify that everything was done correctly.

Where were the nuclear weapons stored?

The nuclear weapons were stored on Fifth Deck. The two marines who guard this division are posted at the top of the ladder to ensure that only the 10 men assigned to this area are allowed to go down, and again following the 2-man rule, no man was allowed to go down without his assigned partner. Not even the Marines themselves were allowed on Deck Five.

What were the most recent weapons used on this ship?

The Mark 101 (Lulu), was a nuclear depth charge. It weighed 1,200 pounds, and yielded 11 kilotons of TNT. It was deliverable from a Tracker airplane, or from a Sea King helicopter.

The B57 was a nuclear bomb. It weighed 500 pounds, and it had a variable yield of 5-20 kilotons of TNT. It could be delivered as a nuclear depth charge or a tactical weapon. It had an aerodynamic shape, which made it suitable for high-speed attack aircraft. One delivery option was by parachute from an aircraft, or if it was delivered by helicopter, the fins were collapsed to fit on the hard point.

How were the weapons secured onto the ship?

Each weapon was chained to an individual skid bolted to brass plates embedded into the deck. The brass plates were to prevent static electric discharges. Each bomb was chained at both ends in a very precise pattern to avoid any possible movement. Placards showing the precise tie-down pattern are posted on the bulkheads to ensure precision.

What type of maintenance did the bombs require?

Each weapon underwent scheduled maintenance based upon its manufacture date. All maintenance work followed a strict protocol dictated by a set of cards that outlined each step-by-step procedure. Work was done with surgery-like precision. Workers wore a full face shield and rubber gloves. When tightening a bolt or screw, torque wrenches were used to set the torque to microscopic tolerances. Even the torque wrenches had to be routinely checked for accuracy.

Were the nuclear weapons ever removed from this room?

The weapons were fused, moved to the Flight Deck, and mounted onto aircraft as a regular drill. Also, during General Quarters, the pilots, planes, and weapons remained on stand-by alert and ready to go.

How would a nuclear weapons incident be communicated to a land-based facility?

A nuclear incident requiring outside attention would be communicated by an encrypted teletype message. Code phrases would indicate what type of incident had occurred:

RAINBOW MESSAGE = immediate notification to the Pentagon of an unintentional event that could result in an unplanned nuclear explosion. The purpose was to prevent the explosion from being misinterpreted as an attack by an enemy force.

- BROKEN ARROW = a nuclear weapon was lost.
- BENT SPEAR = an accident requiring a weapon to be sent to Sandia for repair.
- DULL SWORD = an electrical malfunction or unsafe handling condition.

Other than the weapons, what else required meticulous maintenance?

In the weapons magazine, all metal surfaces had to be oiled or greased every day. All moving parts had to be lubricated and smooth-running, and they can not show any signs of wear, corrosion, or oxidation. On both 4th and 5th deck, the floors were polished every day, and there could be no trace of dust anywhere. The decks were stripped and re-waxed on a 3-week cycle.

Was air humidity a concern?

On Fourth Deck you would find several thermometers and hygrometers used to monitor air temperature and humidity. During the 1960s, it was believed that nuclear decay was accelerated by ambient air conditions. For this reason, this facility was well air conditioned, and dehumidifiers were ubiquitous. Today, extensive research has concluded that nuclear half-life is not influenced by external conditions.

How does the hygrometer work?

The hygrometer is an instrument which has two thermometers mounted in parallel. The left thermometer has wet gauze on the tip, and the right one does not. Wind is blown on both thermometers. The left one will cool off very quickly because of evaporation, but the right one will remain at room temperature. The dryer the air is, the colder it will register because the water evaporates quickly. In the fog, the two thermometers will show the same temperature because there is no evaporation taking place, and the hygrometer will register 100% relative humidity.

Is there anywhere that we can see the precision that was engineered into this room?

To move a nuclear bomb within the weapons magazine, the bomb was handled as though it were very fragile, (even though it would be virtually impossible to detonate accidentally). The bomb would be carefully lifted from its platform by a gantry crane. An electric motor and a cable hoist are mounted on a movable carriage. The carriage runs on I-beam rails attached to the overhead. The hoist lifts the bomb, and the carriage rolls along the rails until it needs to change directions. The carriage and the bomb do not have to change directions at all to make a 90° turn. The bomb that was on a north-south track, is now on an east-west track, and it is still facing north-south. Also, take a look at the power cord for the electric motor. There are take-up reels and swag hooks mounted near the rails. The crane can go anywhere in the room and the power cord will follow it all over without slack cord getting in the way. This is pretty impressive engineering.