

The Cold War's Missing Atom Bombs

By Benjamin Maack

In a 1968 plane crash, the US military lost an atom bomb in Greenland's Arctic ice. But this was no isolated case. Up to 50 nuclear warheads are believed to have gone missing during the Cold War, and not all of them are in unpopulated areas.

It was a little early to be swimming in the Mediterranean that year. But in early March 1966, Manuel Fraga Iribarne, the Spanish information minister at the time, and Biddle Duke, the American ambassador in Madrid, together with their respective families, plunged into the chilly waters off the Costa Cálida. Journalists from around the world had gathered on the beach of the small village of Palomares to report on the two families' spring bathing outing. Their interest would have been surprising, if it hadn't been for the hydrogen bomb lying on the ocean floor only a few kilometers away, a bomb with more than 1,000 times the explosive force of the one that flattened Hiroshima.

Only a few weeks earlier, on Jan. 17, 1966, the worst nuclear weapons incident of the entire Cold War had taken place off Spain's southeastern coast. During an aerial tanking maneuver, an American B-52 bomber and a KC-135 tanking aircraft collided in mid-air at 9,000 meters (29,000 feet), and both planes exploded in a giant fireball over Palomares. There were four hydrogen bombs in the hold of the B-52. One landed, unharmed, in tomato fields near the village. The non-nuclear fuse detonated in two others causing bomb fragments and plutonium dust to rain down on the impact site. The fourth bomb fell into the water somewhere off the coast, burying itself in several meters of silt. But where exactly did it fall?

In the weeks after the accident, Palomares looked like the set for a film about the apocalypse. On land, men wearing white protective suits and blue facemasks used Geiger counters to scan the ground for radiation. The fields were sealed off, and an entire harvest of tomatoes and beans rotted on the vine. The US government had the fields dug up and 1,400 tons of earth removed. The contaminated soil was then shipped to the United States for disposal. Dozens of American warships patrolled the coastline to seal off the area where a fisherman had seen the bomb landing in the water. It took 81 days to recover the nuclear weapon from a depth of 800 meters (2,600 feet). Expressing its shock over the events in Spain, the German daily *Hamburger Abendblatt* wrote: "More than any sandbox scenario, the bomb incident makes it clear what it means today to be 'living with the bomb'."

Greenland's Stray Atomic Bomb

The prospect of a stray, possibly damaged atom bomb lying somewhere on the ocean floor is truly horrific. Britain's BBC is currently causing an uproar with a report on the loss of an American atom bomb in 1968. When an American B-52 bomber crashed into the ice off Greenland, the conventional explosives in the bombs exploded, causing a large area to become radioactively contaminated by the plutonium that was released in the process. But what the US government kept secret for decades was that a reconstruction of the bomb components found at the site had revealed that a nuclear warhead was missing. It had apparently drilled its way through the ice in North Star Bay. It was never found.

The loss of an atom bomb is not as rare an occurrence as one would hope. "The American Defense Department has confirmed the loss of 11 atomic bombs," says Otfried Nassauer, an expert on nuclear armament and the director of the Berlin Information Center for Transatlantic Security. "It is believed that up to 50 nuclear weapons worldwide were lost during the Cold War."

Most of these highly dangerous weapons are still lying on the ocean floor. In April 1989, a fire on board the Komsomolez resulted in the sinking of the Russian nuclear submarine to a depth of 1,700 meters (5,500 feet) in the North Atlantic Ocean, together with two torpedoes and their nuclear warheads. On May 22, 1968, another nuclear submarine, the USS Scorpion, sank to a depth of 3,300 meters (10,800 feet) about 320 nautical miles south of the Azores. There were two nuclear warheads on board. Because of the considerable depths involved, neither the weaponry nor the nuclear reactors on both submarines have been recovered to date.

Absurd 'Broken Arrow'

A much larger number of atom bombs disappeared in plane crashes over the open ocean. "In the early days of the Cold War, the aircraft lacked sufficient range to cross the Atlantic on one tank of fuel," explains nuclear expert Nassauer. "Some bombers collided with their tanker planes, while others simply missed the tankers and, after running out of fuel, plunged into the sea."

Between the late 1950s and mid-1960s, the most explosive part of the Cold War, US bombers carrying atom bombs were in the air around the clock, 365 days a year. Their four main routes passed over Greenland, Spain and the Mediterranean, Japan and Alaska. Only when the bombers became capable of flying across the Atlantic or Pacific on one tank did the frequency of accidents diminish.

Probably the most absurd "broken arrow" (the Americans' code word for accidents involving nuclear weapons) happened on Dec. 5, 1965 on board the USS Ticonderoga. The aircraft carrier was en route from Vietnam to Yokosuka in Japan when a fighter-bomber emerging from one of the giant elevators that carry the aircraft from the ship's hold onto the deck plunged into the ocean. The pilot, the aircraft and the nuclear bomb on board sank to a depth of five kilometers (16,400 feet) and were never found.

That incident was also kept secret for many years, partly because, when it was finally made public in 1981, it proved that the Americans had stationed nuclear weapons in Vietnam, after all. It also revealed that the United States had defied a treaty with Japan, under which the Americans had agreed not to bring any nuclear weapons onto Japanese territory.

Blown Fuses

The US military's rather nonchalant handling of its most dangerous toys was not limited to foreign countries. In fact, seven of the 11 nuclear warheads that are officially missing were lost at home in the USA. On Feb. 5, 1958, bomber pilot Howard Richardson had to jettison the hydrogen bomb he was carrying after colliding with a fighter jet. The bomb then disappeared in the shallow waters of Wassaw Sound, about 20 kilometers (12 miles) from Savannah, Georgia, a city of 100,000 people. Richardson, an experienced pilot, barely managed to land his aircraft at nearby Hunter Army Airfield.

The crew of a B-52 that exploded on Jan. 24, 1961 as a result of a defective fuel line was less fortunate. Before the aircraft broke apart, the men managed to eject their dangerous cargo. One of the two hydrogen bombs was parachuted safely into a tree, while the other one went down in a swamp near the small city of Goldsboro, North Carolina, where it plunged an estimated 50 meters (165 feet) into the marshy ground -- and where it still lies today. The crash site remains a restricted military zone.

But what made this incident famous was the bomb that landed in a tree. Five of its six fuses designed to prevent a detonation failed, with only the last one averting a nuclear explosion. After this near-disaster, the security systems in US nuclear weapons were revised, and Washington asked the Soviet Union to do the same.

Could Terrorists Find a Bomb?

To this day, these two incidents are a hotly disputed topic among experts, military officials, conspiracy theorists and the concerned citizens of Savannah and Goldsboro. Do the two bombs still pose a danger to the residents of these cities? "Weapons that are on the ocean floor are hardly unlikely to explode," says Nassauer. Nevertheless, he cautions, "perhaps this risk is somewhat greater with the bombs that were lost on land. But virtually nothing is known about whether such bombs can explode spontaneously."

A completely different fear has taken hold since the terrorist attacks of Sep. 11, 2001. What happens if terrorists acquire one of the lost bombs? An unfounded fear, says Nassauer, noting that even the military, after using all means at its disposal, has failed to find or salvage the bombs. "Quite a few weapons are located in places that are still completely inaccessible with the means available to us today," says Nassauer. The real dangers lie in the area surrounding a crash site, and they include the possibility of explosion at the time of the accident and the effects of corrosion, which could allow radioactivity to escape over decades.

In Palomares, for example, the nightmare continues after more than four decades. The sleepy village has since become part of a thriving tourist region. But in 2004, two pits containing radioactive soil were discovered at the site of future golf courses and luxury hotels. Extensive soil studies revealed that other areas were still contaminated. The Spanish government has confiscated the affected land, and in 2009 US troops will be deployed to decontaminate the area once again. More than 40 years after the first bomb fell on Palomares, several thousand tons of contaminated earth will be shipped to America once again.

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