

## **'BROKEN ARROW'**

**WHEN THE FIRST U.S. ATOMIC BOMB WENT MISSING  
WAS IT DETONATED OVER THE OCEAN OR DID IT JUST DISAPPEAR  
IN THE CANADIAN WILDERNESS?**

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**THIS ARTICLE IS IN THREE PARTS**

**PART ONE:** WHAT IS A BROKEN ARROW?

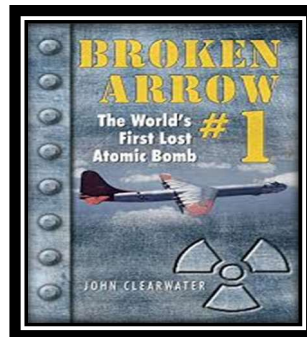
**PART TWO:** WHEN THE FIRST US ATOMIC BOMB WENT MISSING

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### **PART ONE**

**WHAT IS A 'BROKEN ARROW'?**



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**The military uses the term “broken arrow” to describe any incident in which a nuclear weapon is lost, stolen, or inadvertently detonated.** That might seem like a rare phenomenon, but records show that the United States has experienced **more than 30 such close calls since the beginning of the nuclear age.** Risks were particularly high during the Cold War when bombers armed with thermonuclear weapons patrolled the skies around the clock. With so many planes in the air, a few experienced mishaps that led to crashes and unplanned bomb drops. In 1957, a 42,000-pound hydrogen bomb accidentally fell through the bomb bay doors of a B-36 bomber as it flew over New Mexico. The bomb’s non-nuclear conventional explosives detonated upon impact, killing a grazing cow and leaving behind a crater 12 feet deep.

Luckily, the nuclear payload did not blow. Another famous near-disaster came in 1961 when a B-52 bomber suffered a fuel leak and exploded over Goldsboro, North Carolina. The plane broke apart and released two Mark 39 hydrogen bombs. All that prevented one of them from detonating was a single low-voltage safety switch.

Similar fail-safe measures have ensured that no broken arrow has ever resulted in a nuclear blast, but there have been a few incidents in which a weapon was lost and never found.

During the Vietnam War, a plane carrying a nuclear bomb slid off the aircraft carrier Ticonderoga and disappeared in the Pacific. In 1968, the submarine Scorpion mysteriously sank with all 99 hands—and two nuclear-tipped torpedoes—off the coast of the Azores. The Soviet Union experienced a similar disaster two years later when the nuclear submarine K-8 went down in the Bay of Biscay. All told, the combined broken arrows of the United States and Russia have left several dozen nuclear warheads lost at sea.

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## PART TWO

### WHEN THE FIRST U.S. ATOMIC BOMB WENT MISSING



### **THE B-36**

**THE U.S. FIRST TRUE INTERCONTINENTAL BOMBER CAPABLE OF CARRYING A NUCLEAR WEAPON TO ANY PART OF THE WORLD.**

### **"THE PEACEMAKER"**



UPDATED JAN 13, 2020

In 1950, an American B-36 bomber on a peace-time training mission crashed over British Columbia, Canada carrying a Mark IV atomic bomb, a weapon comparable in size to the nuke dropped on Nagasaki in 1945. According to testimonies from the surviving crew members, they had safely jettisoned the bomb and detonated it in mid-air before the plane went down.

The crash became famous as the very first "broken arrow," the U.S. military's term for an accident involving a nuclear weapon. But questions swirled for decades about whether the bomb was really detonated over the ocean—or whether it went missing somewhere in the Canadian wilderness.

Five years after using the first atomic weapons to force the surrender of Japan in World War II, the United States military was preparing for a new era of nuclear warfare with its Cold War adversary, the Soviet Union. The Convair B-36 "Peacemaker" was the first true intercontinental bomber capable of carrying nuclear weapons to any part of the world, and the U.S. Strategic Air Command (SAC) was eager to test the new planes with a real payload.

### A TEST BOMBING RUN GOES AWRY

After months of lobbying, SAC leaders were able to convince the Atomic Energy Commission to lend them a Mark IV atomic bomb without its plutonium core. The bomb still contained large amounts of uranium and conventional explosives—but it couldn't trigger a devastating nuclear blast.

On February 13, 1950, a B-36 known as Flight 2075 took off from Eielson Air Force Base near Fairbanks, Alaska with a crew of 17. The test flight was meant to replicate a bombing run on a major city in the Soviet Union.

The B-36 was slated to fly a 5,500-mile route from Alaska to Montana, then down to San Francisco, its bombing "target," and finally landing at Carswell Air Force Base in Texas.

But things didn't go as planned. Not long after taking off, ice began to accumulate on the bomber's fuselage, and the excess weight put tremendous strain on the engines, **three of which caught fire and had to be shut down.** With only three functioning engines, the B-36 began to lose altitude at a rate of 500 feet per minute.

Captain Harold Barry and his crew acted quickly. Their first order was to ditch the atomic bomb following

Military protocol to keep nuclear weapons or their components out of enemy hands.

#### AS THE PLANE FAILS THE CREW BAILS OUT



*Open bomb bay doors of a B-36 Bomber, photographed in 1951.*

But when Barry's copilot hit the "salvo" button to release the bomb, nothing happened. He then hit it a second time, releasing the bomb bay doors and dropping the Mark IV over the Pacific, where, **according to crew reports, its conventional explosives were detonated and the bomb destroyed.**

Then Barry set the failing plane's autopilot to steer it on a course toward the open ocean while he and his crew parachuted into the darkness over Princess Royal Island on the coast of British Columbia. The abandoned **B-36 cruised for another 200 miles,** veering from its set course and crashing into the snowy flank of Mount Kologet, **deep in the inland Canadian wilderness.**

#### THE WEAPONER AND THE BOMB WERE NEVER FOUND

Immediately, a combined force of the U.S. and Canadian military launched a massive search-and-rescue mission involving 40 aircraft scouring the frozen coastline. Thanks to their efforts, 12 of the 17 crew members were recovered alive, including one man found dangling upside-down from his parachute in a tree with a broken ankle. **But five crewmen, including the weaponer, Captain Theodore Schreier, were never found.**

The U.S. military interviewed the crew, who each corroborated Captain Barry's report that the Mark IV was safely detonated before the crash. Meanwhile, the search continued for the wreckage of Flight 2075, the only way to confirm if the airmen's story was true.

The U.S. Air Force search team couldn't find a trace of the downed plane and assumed it had crashed into the Pacific. But three years later, a Canadian rescue operation searching for a missing oil prospector spotted the wreckage atop Mount Kologet.

The Air Force tried three times to send expeditions to the remote mountain crash site, but each team had to turn back due to bad weather and grueling conditions. **Finally, in 1954, a small demolition crew reached the downed B-36 and proceeded to strip the plane of any classified equipment and destroy it.**

#### THEORIES PROLIFERATE ABOUT THE LOST NUKE



A Mark 4 nuclear bomb

Since the demolition crew's report was top secret, no word emerged about the whereabouts of the missing atomic bomb. Were there clues in the wreckage that the bomb had been released before impact? In the absence of definitive proof, rumors began to swirl about the true fate of the lost nuke. At the epicenter of these rumors was Captain Schreier, the missing weaponeer.

Several unsubstantiated claims pointed to an alternative fate for the lost bomb. First, there was a rumor that a body was found in the wreckage on Mount Kologet. What if it was Schreier's? The weaponeer was a former airline pilot and could have attempted to fly the plane back to Alaska when the others bailed out.

Adding fuel to the conspiracy fire? A second claim was that Captain Barry had seen the bomber turn sharply soon after he had leaped into the midnight sky. The story began to circulate that the bomb never left the plane and that Schreier died trying to get it back to the safety of the Air Force base.

None of the rumors were confirmed by the military, however, and over the following half-century, other adventurers and amateur investigators made pilgrimages to the Flight 2075 crash site to see what they could find and/or pilfer.

#### A CURIOUS FIND

In 2003, an investigative team led by John Clearwater, an expert on Canada's nuclear weapons program and the history of lost nukes, journeyed to the crash site to make its assessment. At first, it appeared that most of the plane had been destroyed by the 1954 demolition crew or stolen by generations of adventurous looters.

Then they found something interesting.

While the crash and ensuing demolition destroyed much of the equipment in the bomb bay, the bomb shackle—which is what held the weapon suspended there—remained impressively intact. Clearwater and his team concluded that if the bomb had gone down with the rest of the plane, and the shackle remained in such good condition, there would have been some clear evidence of the bomb in the wreckage. But there wasn't.

The more conventional explanation of the fate of America's first broken arrow was likely the truth—the only remains of the detonated Mark IV rested deep on the ocean floor.

The crash of Flight 2075 may have been the first broken arrow, but it wasn't the last. Clearwater writes that in the first 24 years of the atomic age alone, the U.S. and Soviet Union jettisoned or accidentally released 23 other lost nukes.

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### PART THREE

#### NINE CASES OF BROKEN ARROWS. THERMONUCLEAR NEAR MISSES THROUGHOUT HISTORY



UPDATED AUG 22, 2018

#### 1. May 22, 1957: Kirtland Air Force Base, New Mexico

Albuquerque residents enjoying a spring day on May 22, 1957, found themselves rocked by what felt like a nuclear explosion. They weren't far off.

No one knows precisely what happened aboard the B-36 aircraft transporting a nuclear weapon from Texas to New Mexico that day, but somehow the device fell through the bomb bay doors, plummeting about 1,700 feet into a field south of Kirtland Air Force Base. The conventional explosives detonated, blasting a crater 12 feet deep and 25 feet across. Luckily the nuclear capsule had been separated from the conventional explosives during transport for safety reasons, and that capsule was found intact. The only casualty of the blast? An unfortunate cow grazing nearby.

## 2. February 5, 1958: Savannah River, Georgia

When a B-47 carrying a nuclear device experienced a midair collision with an F-86 aircraft during a training simulation in February 1958, officials decided to jettison the bomb into the Savannah River. Fortunately, the device's conventional explosives didn't detonate when the weapon slid into the water and, as is standard with the nuclear version of a "live fire" exercise, the nuclear capsule wasn't installed in the weapon. The Air Force searched until mid-April but never located the bomb. Today residents refer to this broken arrow as the Tybee Bomb.

## 3. March 11, 1958: Florence, South Carolina

In March 1958, as a team of military divers scoured the Savannah River in Georgia for a broken arrow, another one fell in the southeast quadrant of the United States. A B-47E aircraft carrying a thermonuclear weapon took off from South Carolina for an overseas base, accidentally jettisoning it shortly thereafter. The conventional explosives detonated on impact with the ground in a suburban Florence neighborhood, demolishing a house and causing several injuries.

## 4. November 4, 1958: Dyess Air Force Base, Texas

When a B-47 carrying a nuclear warhead catches fire on takeoff, it's a problem. That's what happened when a B-47 left Texas' Dyess Air Force Base in November 1958 to transport a thermonuclear device to another location. At 1,500 feet it began experiencing trouble. Three of the plane's crew members ejected safely, but one was killed when the plane subsequently crashed, setting off the bomb's conventional explosives and blasting a crater 35 feet in diameter and 6 feet deep. All the nuclear components were recovered at the scene.

## 5. January 24, 1961: Goldsboro, North Carolina

In one of the closest calls in accidental nuclear detonation history, a single safety switch prevented a 20-megaton Mk39 hydrogen bomb from exploding in North Carolina in January 1961. When a B-52 carrying two of the bombs suffered a fuel leak in the wing, the plane exploded and dropped both bombs earthward. The parachute of one bomb deployed, but the other weapon nearly detonated when five of its six safety devices failed and it broke apart upon impact with the ground. While the Air Force recovered the bomb's plutonium, the thermonuclear stage containing uranium was never found. The Air Force subsequently purchased and fenced off a land easement in the area where officials believe the uranium lies.

## 6. March 14, 1961: Yuba City, California

In March 1961, a heroic Air Force commander ordered his crew to bail out of a crippled B-52 carrying a pair of thermonuclear devices when the plane's compartment pressurization system failed at 10,000 feet. The commander stayed aboard to pilot the plane away from populated areas near Yuba City, California, before ejecting to safety at 4,000 feet. The two nuclear weapons aboard the aircraft were torn from the plane when it crashed, but nothing exploded and no radioactive contamination was released.

## 7. January 17, 1966: Palomares, Spain

It's pretty hard to cover up the midair explosion of a B-52 carrying four hydrogen bombs when the event is witnessed by hundreds of onlookers. So it came as no surprise to anyone when the Palomares incident, as it has come to be known, hit the front page of the New York Times in January 1966, just three days after the event occurred. During a routine refueling operation over Spain, an American B-52 patrolling on airborne alert was struck by the fuel plane's boom, which instantly destroyed both planes and killed seven of the 11 total crew members.

Two of the B-52's bombs exploded on impact with the ground near the village of Palomares, contaminating approximately 1 square mile with radioactive plutonium. Another bomb was found unexploded in a riverbed, while the fourth weapon fell into the Mediterranean Sea. That broken arrow was sighted by a local fisherman, who promptly went to court to claim salvage rights. Under prevailing maritime law, the salvage rights would have conferred 1 percent of the device's \$2 billion value—or about \$20 million—on the fisherman. The Air Force reportedly settled out of court for an undisclosed sum.

#### 8. January 21, 1968: Thule Air Force Base, Greenland

When a fire broke out in the navigator's compartment of a B-52 flying on alert near the Arctic Circle in January 1968, the plane attempted to land at Thule Air Force Base in Greenland. It crashed about seven miles short of the runway and burst into flames, causing one bomb to detonate, one to burn, and two others to sink through the ice sheet into the bay. The accident spread radioactive contamination from the plutonium core across a 1,000-foot area around the crash. Nearly a quarter of a million cubic feet of contaminated ice, snow, water, and crash debris were removed to a storage site in the United States over four months. Of the two weapons that went through the ice sheet, one was finally recovered in 1979, but an as-yet-unrecovered broken arrow still lies on the floor of Baffin Bay

#### 9. September 19, 1980: Damascus, Arkansas

When an Air Force repairman in Damascus, Arkansas, dropped his wrench into a Titan II ICBM missile silo during a routine maintenance operation in September 1980, his fumble spelled disaster. The heavy wrench punctured the pressurized fuel tank of the missile, which leaked slowly for over eight hours before exploding, killing one service member and injuring 21 others. A nuclear warhead contained in the missile's reentry vehicle was ejected in the blast but was subsequently recovered intact.

### ACCIDENTAL NUCLEAR WAR – A TIMELINE OF CLOSE CALLS

The most devastating military threat arguably comes from a nuclear war started not intentionally but *by accident or miscalculation*. Accidental nuclear war has almost happened many times already, and with 15,000 nuclear weapons worldwide – thousands on hair-trigger alert and ready to launch at a moment's notice – an accident is bound to occur eventually.

*The list of close calls is too long for comfort, yet it's likely very incomplete, given that these represent only America's declassified events. Many other events may have occurred in the U.S. that we don't know about,* and we certainly don't know about close calls the other eight nuclear countries have had.

Moreover, there are signs of the Cold War restarting. The U.S. and Russia are both upgrading their arsenals, which means new weapons and new ways for something in the system to go wrong. *The risk of accidental nuclear war is only growing, and barring major initiatives for risk reduction, it's merely a matter of time until our luck runs out.*

To view this *"Timeline Of Close Calls"* copy and paste the below link into your browser. You will be surprised how many times we have been on the brink of a nuclear war.

<https://futureoflife.org/background/nuclear-close-calls-a-timeline/?cn-reloaded=1>

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