False alarms, accidents and near-disasters involving nuclear weapons

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Quote:
"You know, when you can launch rockets so fast, accidents are bound to happen. Just as Fermi said about physics. What is not forbidden is prescribed. At some point it will happen. There is nothing that makes it impossible to launch nuclear weapons. If the probability is not 'zero', then it will happen."
Frank von Hippel, nuclear physicist, Princeton University in "Countdown to Zero" (2010)

Aims of the article

The aim of the article is to present relevant events concerning false alarms, accidents and near-disasters with nuclear weapons and to evaluate their causes.
To this end, the long version of the article is structured in a particularly user-friendly way; all relevant information from a wide variety of sources is incorporated as continuous text 1:1, without the need to go to the internet with links or to procure literature.
The findings of the article are listed in the section "Introduction to the topic"/"Causes of false alarms, accidents and near-disasters involving nuclear weapons".
A breakdown by cause and time period can be found in the "Table of Causes" section.
A listing of the events in 1-line form with time and location information and with coded cause can be found in the "Events (short presentation)" section.
A detailed listing of the events with time and place, with coded cause, with detailed descriptions from various sources including source designation can be found in the section "Events (long presentation)" - each paragraph corresponds to a source and is assigned to the respective source by the source number at the end of the paragraph.
In the "Sources" section, one finds the type of source, a link if it exists, the name of the source and a short list of all the events that the source otherwise contains - set in brackets by time and keyword at the end of the respective source.

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Introduction to the topic

Technical note:
The findings of the article are listed in the section "Introduction to the topic"/"Causes of false alarms, accidents and near-disasters involving nuclear weapons".

Causes of false alarms, accidents and near disasters involving nuclear weapons
The 87 events listed since the end of the 1940s have varying potential for nuclear detonations events have varying potential for nuclear detonation, use of nuclear weapons, nuclear escalation, nuclear winter or the destruction of all life in the northern hemisphere or the entire Earth. They show technical and human failure in roughly equal proportions, about 43 to 38, causal for false alarms, accidents and near disasters. Thus, it cannot be assumed that improvements can be expected on the part of humans or technology, which is becoming increasingly complex and thus more prone to error. Even new technologies, such as A.I. (Artificial Intelligence), processing incomplete, vague and uncertain information, do not provide a way out. There are avoidable as well as unavoidable events. Failures of machinery are mainly attributable to carrier systems (air/land/sea) and sensor technology, but also to computer problems. On the human side, mishap and bad decisions are at the top of the list, followed by sloppiness and drug use. In terms of time, there is a high density of events during the (Turkish) Cuban Missile Crisis in 1962 and during the 1980s at a time of high armament (70,ooo warheads). In the 1950s and 1960s, there were a number of losses of nuclear weapons by falling from aircraft, mostly into the sea, or in the form of sinking submarines. To date, at least 50 nuclear warheads and 9 nuclear reactors have been lost at sea, and these must be found, recovered and removed. There was never a nuclear chain reaction, but radioactive contamination after detonations. Many people were injured and almost 4oo people died. In some cases, there was a lack of communication or access to nuclear missiles over a long period of time. Crews were unfit for duty (alcohol, etc.). The most critical event, apart from the (Turkish) Cuban Missile Crisis in 1962, was the NATO Nuclear Command Staff Exercise "ABLE ARCHER 83" prepared from 2 November 1983 and conducted from 7-11 November, and preceding activities by the Soviets. At that time, misinterpretation and group dynamics prevailed in Moscow. They felt under pressure to pre-empt the misinterpreted "NATO attack" with a decapitation strike in accordance with the "RJaN" plan. However, the agent at NATO headquarters, Rainer Wolfgang Rupp (Topas), calmed the Soviet Union with his information to the senior officer Karl Rehbaum, thus had a de-escalating effect on the Soviet side and contributed to peace. Other highly critical events would be in connection with the duty officer of Base Volk Field Wisconsin on 25.10.1962, the submarine Commodore Vasily A Archipov during the Cuban Missile Crisis on 27.10. 1962, the alleged 4 live launch codes for the hydrogen bombs of the 498th Tactical Missile Group on 28.10.1962 in Okinawa, although there was no "DEFCON 1 = state of war" and the duty missile defence officer Bruce K Brown of NORAD on 09.11.1979. The most famous event is undoubtedly the night shift of the duty missile defence officer Stanislav J Petrov of SERPUKHOV-15 on 26.09.1983. Due to blackout periods, general secrecy and lack of press, an average of 2 critical events per year can be assumed.

How are nuclear weapons accidents defined?
The US Department of Energy defines a nuclear weapons accident as:
"an unexpected event involving nuclear weapons or nuclear components from which any of the following results:

- the accidental or unauthorised launch, detonation, or deployment of a nuclear-capable weapon system by U.S. forces or U.S.-supported allied forces
- an accidental or unauthorised or unexplained nuclear detonation
- a non-nuclear detonation or burning of a nuclear weapon or nuclear component
- radioactive contamination
- dropping of a nuclear weapon or nuclear component

- a public hazard, real or assumed."

To classify the magnitude of the accident, ministry officials were given a list of password keys for internal communications:

- Nucflash: an accidental or unauthorised use of nuclear weapons that could lead to nuclear war between the US and USSR (now Russia).
- Broken Arrow: largest probable accident involving a nuclear weapon, warhead or nuclear components.
- Bent Spear: a major accident involving a nuclear weapon, warhead, nuclear components or a vehicle loaded with nuclear weapons.
- Empty Quiver: The seizure, theft or loss of a US nuclear weapon.
- Dull Sword: An incident involving a nuclear weapon.
- Faded Giant: An incident or radiological accident associated with a nuclear weapon.

Definition of an incident (US Department of Energy):
"An unexpected event involving a nuclear weapon, nuclear facility, or nuclear components that could result in any of the following situations.

- An increase in the risk of explosion or radioactive contamination.
- Errors during assembly, testing, loading or transport of equipment, or the malfunction of equipment or materials, which could result in the inadvertent operation of all or any part of the sequence to arm or detonate the weapon, or significantly alter its explosive power.
- Force majeure, adverse environmental or other conditions resulting in damage to the weapon, equipment or components." 19)

Naval accidents

The history of the navy is extremely marked by secrecy and lies. Neither the US nor the Russian Navy want the truth about the incredibly bad accident record to come out. Nevertheless, Greenpeace and Bellona have been able to uncover quite a bit: at least 1,200 serious accidents up to 1989, about one every fortnight. They included shipwrecks, collisions of ships or with submarines, collisions with icebergs, explosions and fires. They have happened on the open sea, in coastal waters, in shipyards and in ports all over the world. Many people have lost their lives. As a result of these accidents, more than 50 nuclear warheads and nine nuclear power plants are on the seabed. This paper also deals with naval accidents in which nuclear weapons were probably involved or lost. However, there are plenty of accidents on nuclear-powered submarines where the real killer was the reactor. There are also deliberate sinkings of nuclear submarines where the reactors were not removed beforehand. These incidents have been documented in great detail by the Norwegian Bellona Foundation with the help of the former captain of the Russian Northern Fleet and former employee of the Russian Ministry of Defence Alexandr Nikitin. Nikitin was charged with treason and espionage as a result of this work, but was acquitted after several trials. 21)

The USA is missing 17 nuclear bombs. At least

A-bomb now discovered off Canada is not an isolated case. For the USA alone, 700 incidents are estimated. How many nuclear weapons other powers have "lost" nobody knows. The object that Canadian diver Sean Smyrichinsky has now discovered off the coast of British Columbia is said to look like a four-metre "sliced bagel". There is much to suggest that it is the remnant of a nuclear bomb of the then newest type Mark 4 that has been missing for 66 years. The list of accidents involving such weapons is long. The USA alone is missing at least eight fully explosive bombs. There are also nine more that were not loaded with the fissile material plutonium, but contained other radioactive substances - mostly depleted uranium. The term "broken arrow" has come to be used worldwide for such incidents. In the USA, this code word refers to an incident involving nuclear weapons of any kind. The numbers given vary greatly, however, because there are very different definitions: Is a nuclear weapon without plutonium, i.e. which cannot trigger a chain reaction, a nuclear weapon at all? What about weapons that - nuclear loaded or not - were demonstrably destroyed in the crash of an aircraft? Are radioactive charges that were lost without the elaborate technology to trigger nuclear fission counted or not? Moreover, there are reasonably reliable figures only for one nuclear power, the USA. For the Soviet Union, only little information exists, mostly on the sinking of nuclear submarines. How many Red Army aircraft

lost nuclear weapons is completely unknown. Estimates for the USA alone assume a total of up to 700 incidents in which up to 1250 nuclear weapons were involved. However, this statistic explicitly includes unloaded nuclear weapons and all incidents at nuclear weapons factories. In the first decade and a half of the nuclear weapons era, US nuclear weapons were always constructed in such a way that the plutonium core could be easily inserted and removed. This was to reduce the risk of an accidental nuclear explosion, for example in the event of a plane crash. However, plutonium atoms can not only be split with a devastating release of energy, but also emit lethal doses of radioactivity in any case. Moreover, even a few micrograms are highly toxic. 32)

Plutonium core

In the first decade and a half of the nuclear weapons era, U.S. nuclear weapons were always designed so that the plutonium core could be easily inserted and removed. This was to reduce the risk of an accidental nuclear explosion, such as in the event of an airplane crash. However, plutonium atoms can not only be split with devastating release of energy, but also emit lethal doses of radioactivity in any case. Moreover, even a few micrograms are highly toxic. 32)

Permissive Action Link

A Permissive Action Link (PAL) is an access control security device for nuclear weapons. Its purpose is to prevent unauthorized arming or detonation of the nuclear weapon. The United States Department of Defense definition is: A device included in or attached to a nuclear weapon system to preclude arming and/or launching until the insertion of a prescribed discrete code or combination. It may include equipment and cabling external to the weapon or weapon system to activate components within the weapon or weapon system. The earliest PALs were little more than locks introduced into the control and firing systems of a nuclear weapon, that would inhibit either the detonation, or the removal of safety features of the weapon. More recent innovations have included encrypted firing parameters, which must be decrypted to properly detonate the warhead, plus anti-tamper systems which intentionally mis-detonate the weapon, destroying it without giving rise to a nuclear explosion.....68)

Table of causes

The causes are broken down as follows:				40s	50s	60s	70s	80s	90s	00s	10s	20s
Total:	87			1	17	31	9	16	1	2	8	2
Cause is concealed / is unknown (C):		6						1			3	2
Force majeure (FM):		0,5				0,5						
Human (H):		37,5										
Alcohol/Drugs/Fatigue (HAD):			4			1,5	1				1,5	
Communication (HC):			2									
External (HCE):			*0*									
Internal (HCI):			*2*			*1*			*1*			
Decision (HD):			6,5									
Deliberate Deception (HDD):			*0*									
Confluence of Events (HDE):			*2*		*0,5*	*1,5*						
Group Dynamics (HDG):			*1,5*			*1*		*0,5*				
Incomplete/incorrect information (HDI):			*2*		*0,5*	*1,5*						
Misinterpretation (HDM):			*1*					*0,5*			*0,5*	
Underestimation of the opponent's possibilities & abilities (HDU):			*0*									
Misfortune (HM):			13,5		0,5	4,5	3	4		1	0,5	
Psychopathy/Senility (HPS):			0									
Risk-taking (HR):			5,5	1	1	1,5	1	1				
Sloppiness (HS):			6			2,5	1	1		1	0,5	
Other (HO):			0									
Engine (E):		43										
Technology breaks down (EB):			0,5			0,5						
Computer (EC):			4					1				
Hardware (ECH):			*2*					*2*				
Software & A.I. Artificial Intelligence (ECS):			*1*								*1*	
Sensors (ES):			7,5		1	3,5	1	2				
Transmission (ET):			1			1						
Warhead in… (EW):			30									
Aircraft (EWA):			*16,5*		*11*	*2,5*	*1*	*1*			*1*	
Land based missile (EWL):			*7*			*6*		*1*				
Submarine or ship (EWS):			*6,5*		*2,5*	*2*	*1*	*1*				
Other (EO):			0									

Events (short presentation)

Technical note:
A listing of the events in 1-line form with time and location and with coded cause can be found in the "Events (short presentation)" section.

When:	Who/Where:	(Code) What:
1940 till 1949		
1949-XX-YY:	US/SOW:	(HR) Curtis E. LeMay wants to destroy Soviet Union with nuclear first strike, Truman stops him, McNamara fires him in 1965.
1950 till 1959		
195X-YY-ZZ:	US:	(ES) NORAD registered on radar the approach of a Soviet bomber fleet in the polar region. It was a flock of wild geese
1950-XX-YY:	US:	(EWA/EWS) Contamination St. Lawrence Stream. In 1950 4 more incidents. Loss of 51 warheads and 7 reactors in the sea.
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1950-02-13:	US/CAN:	(EWA) For technical reasons (Convair B-36B crash), the A-bomb Mark 4 had to be dropped and detonated non-nuclear. 5 dead.
1951-04-11:	US/KOR/CN:	(HR) Douglas McArthur repeatedly proposes to use nuclear weapons against 49 North Korean cities and China, Truman fires him in 1951.
1956-03-10:	US/EUR:	(EWA) A B-47 crashed into the Mediterranean Sea with 2 plutonium cores that were not found. Contamination. Casualties?
1956-07-27:	US/GB:	(EWA) B-47 crashed at Lakenheath and hit a depot with 3 live A-bombs. Damage, no detonation. No contamination.
1956-11-05:	US/SOW:	(HDE/HDI) Suez crisis: wrong, misinterpreted or exaggerated info come together and give wrong picture.
1958-01-01:	US/ARC:	(EWA) US forces lose A-bomb in Arctic. To date 51 warheads and 7 nuclear reactors lost at sea.
1958-01-31:	US/MOR:	(EWA) After a crash of a B-47 carrying a live Mark 6 in Morocco, there was only contamination of the surrounding area.
1958-02-05:	US:	(EWA) B-47 collides with fighter jet, Howard Richardson had to drop H-bomb Mark 15 near Savannah (Georgia). Not found.
1958-02-28:	US/GB:	(EWA) A B-47 crashed badly at Greenham Common, with scientists detecting elevated radioactivity. US denies.
1958-03-11:	US/GB:	(EWA/HM) B47 jet (training) accidental bomb release. Mark 6. crater. 6 injured. Contamination. Mars Bluff/South Carolina.
1959-11-25:	US:	(EWA) Plane crashed near Whidbey Island (Washington). H-bombs were not found.
1960 till 1969		
1960-01-01:	US:	(EWL) Detonation of a BOMAG air defence missile. Nuclear warhead melts. Contamination.
1960-10-05:	US:	(ES) Error on radar because of moonrise
1960-10-24:	SOW:	(HM) Baikonur: R16 intercont. ballistic missile, wrong switch activated before launch, explosion, combustion, nitric acid, 100+ dead
1961-01-24:	US:	(EWA) 2 H-bombs fell accidentally on Goldsboro/North Carolina. Last of 6 switches prevented nuclear detonation
1961-03-14:	US:	(EWA/HAD) Yuba City/Calif., crash B-52, 4 A-bombs, decompression, lack of fuel, no contamination, 1 dead, injured
1961-11-24:	US:	(HDE/ET) Loss of SAC contact with NORAD & BMEWS systems due to failure of a relay station, attack was suspected.
1962-06-04:	US/PAZ:	(EWL) South Sea A: H warhead falls into the sea and was never found.
1962-06-20:	US/PAZ:	(EWL) South Sea B: H warhead detonated at an altitude of 10 kilometres. Contamination of parts of the atoll.

1962-07-26: US/PAZ: (EWL) South Sea C: Rocket with H-bomb explodes on launch pad. Contamination several kilometres.
1962-08-23: US/SOW: (HM) US bombers in Soviet no-fly zone due to navigation error. Fortunately Soviets did not react. Later correction of the route.
1962-10-XX: US/PAZ: (EWL) South Sea D: Nuclear rocket launch failure.
1962-10-14: SOW/US: (…) Cuban crisis/Caribbean crisis: Soviet missiles in Cuba as a result of American missiles in Italy, Turkey (until 1962-10-28)
1962-10-24: US/SOW: (ES) Soviet satellite explodes during Cuban Missile Crisis and is considered an attack.
1962-10-25: US: (HS) Bear set off nuclear alarm due to wiring failure. Officer off duty Base Volk Field Wisconsin stopped bomber launches.
1962-10-26: US/SOW: (HM) American F102A fighter jets with nuclear missiles inadvertently penetrated Soviet airspace. No escalation.
1962-10-26: US: (HCI) Surveillance located missile launched by Cuba, but detonated by US itself over Florida, lack of communication.
1962-10-26: US: (HS) Skipped procedures, easily accessible codes and ready-to-launch Minuteman-1 missiles at Malmstrom Air Force Base.
1962-10-27: SOV/US: (HDI/HR) V. Archipov prevents nuclear sinking of US Atlantic fleet by short-circuiting action of a submarine captain.
1962-10-27: US/CUBA: (HDG) Shooting down of an American U-2 spy plane over Cuba. Near escalation to nuclear war. Negotiations. De-escalation.
1962-10-27: US/SOW: (HR) U-2 spy plane penetrated 480 km into Soviet airspace, 2 nuclear-armed F-102A US fighters escort it home.
1962-10-28: US: (HDE) false report "An atomic bomb is dropped on Tampa/Florida", cause: satellite on the horizon & simultaneous military exercise.
1962-10-28: US: (HDI) False message warning centre Laredo to NORAD: "2 missiles over Georgia", cause: satellites were mistaken for missiles.
1962-10-28: US/JP: (HM) Suspected: 4 live launch codes for the H-bombs of the 498th Tactical Missile Group in Okinawa, although no "DEFCON 1".
1962-11-XX: US/PAZ: (EWL) South Sea IV: H-atom rocket launch failure.
1965-11-09: US: (ES/ET) Power failure northeastern USA. Sensors indicated nuclear explosion as cause. Circuit failure.
1965-12-05: US/VIE/JP: (EWA/HM) Aircraft crashed into the sea with **H-BOMB (!)** from USS "Ticonderoga" [from **VIETNAM (!)** to **JAPAN (!)**]. Not found.
1966-01-17: SPA/US: (FM/EWA) Palomares/Costa Cálida, B-52, turbulence, tanker explosion, 4 H-bombs found, 11 dead, contamination ground.
1967-05-23: US: (ES) Strong solar flare, coronal mass ejection, jammed several NORAD radars, Soviets accused, near counterattack.
1968-01-21: GRÖ/US: (EB/HS) Thule/Greenland, fire, B-52 crashed, 1 of 4 H-bombs missing, 2 dead, contamination, sick, **END OF BOMBER READINESS**
1968-04-11: US/SOW: Hawaii-I: Soviet subm. K-129 sank. Unclear. 3 ballistic SS-N-5s, possibly nuclear torpedoes, 96 dead, CIA wanted to lift, broke up.
1968-05-22: US/ATL: (EWS) South of Azores: Nuclear submarine USS "Scorpion" sank with 2 Mark-45 nuclear torpedoes. 99 dead. Torpedo detonation?
1969-04-15: US/NKOR: (HAD) Attack order on North Korea with B61 bomb and F-4 by drunken Nixon after EC-121 (early warning aircraft) shoot-down.

1970 till 1979

1970-02-22: DEU: (HM) Boetingen/Germany: Maintenance work, warhead fell down, was damaged and a piece of the rocket tip broke off.
1971-02-20: US: (HM) NORAD: Teletype erroneously sent "nuclear emergency" alert information to all radio and television stations.
1973-10-09: US/SOW: (HR) -24: Yom Kippur War (Arab-Israeli War): Israel wanted to use nuclear weapons, mechanic activated his base's alarm system.
1974-XX-XX: DEU: (HM) Laarbruch/Germany: An atomic bomb of type WE 177 fell down while being loaded into an aircraft.
1974-08-01: US: (HAD) US President Nixon was "cold-called" by the Secretary of Defence on nuclear issues because of depression, alcohol, drugs.
1975-11-22: US/SIZ: (EWS) Sicily: USS Kennedy/USS Belknap collided, major damage, fire and explosions only 10m from nuclear weapons. 8 dead.
1977-XX-XX: ???: (EWA) Engine fire of a CH-47 helicopter carrying nuclear weapons caused it to crash.
1979-10-03: ???: (ES) Radar detecting submarine-launched missile, detected missile body in low orbit, caused false alarm and hit report.
1979-11-09: US: (HS) NORAD. Simulated Soviet massive attack due to training tape mistaken for real attack but ignored by Bruce K Brown.

1980 till 1989

1980-03-15: SOV/US: (ES) Kuril Islands: US sensors indicate expected impact on USA of 1 of 4 Soviet submarine training missiles due to trajectory.

1980-06-03:	US:	(ECH) Chip-I, Faulty chip shows Soviet attack. NORAD Cheyenne Mountain / Colorado, "2222" instead of "0000" missiles underway.
1980-06-06:	US:	(ECH) Chip-II, Faulty chip shows Soviet attack. NORAD Cheyenne Mountain / Colorado, "2222" instead of "0000" missiles underway.
1980-09-15:	US:	(EWA) Grand Forks: Parked B-52 bomber burned, wind prevented spread to high explosive of nuclear weapons.
1980-09-18:	US:	(HM) Missile explosion during maintenance: warhead 30m away, no radioactivity, Sgt. David Lee Livingston and colleague dead. Injured.
1981-02-23:	DEU:	(C) Explosion of a Pershing II missile. Sechselberg, Baden-Württemberg.
1982-11-02:	DEU:	(HS) Waldprechtsweier: US missile transporter (Pershing Ia missile) brakes fail, several cars crushed, 1 dead.
1983-09-26:	SOW:	(ES) Stanislav J Petrov ignored 5 missile attacks, Serpukhov-15, false alarms, day/night boundary interference IR sensors of satellites.
1983-11-2/7/11:	US/SOW:	(HDG/HDM) Soviet Union considers NATO staff nuclear exercise "Able Archer 83" as an attack, plans nuclear first strike after "RJaN".
1984-XX-XX:	US:	(EC) Computer error, Minuteman missile tried to launch by mistake, armoured vehicle on silo prevented it.
1984-XX-XX:	GB:	(HM) Bruggen: A WE 177 nuclear bomb fell down while being loaded into an aircraft, temporary closure of the base.
1985-01-11:	DEU:	(EWL) Heilbronn-I: Electrostatic discharge, fire, explosion of a Pershing-II missile, parts flew 120 m, 3 dead, 16 seriously injured.
1986-06-30:	???:	(HM) Accident with a Pershing missile. The nuclear warhead fell from the missile onto the ground.
1986-10-03:	US/SOW:	(HR) Collision US/USSR nuclear submarine, fire 2 missiles, near meltdown, boat sunk, Matr. Sergei Preminin and 7 others dead.
1987-05-05:	DEU:	(HM) Heilbronn-II: Pershing missile landed one in a ditch after a traffic accident.
1989-04-07:	SOW:	(EWS) North Sea: nuclear submarine K-278 "Komsomolets", fire, at 1700 m, 2 nuclear torpedoes, reactor, 42 dead, slightly contaminated.
1990 till 1999		
1995-01-25:	NOR/RUS:	(HCI) Norweg.-US research missile Black-Brant XII mistaken for intercontin. ballistic missile, exploded, Pres. Yeltsin on "nuclear case".
2000 till 2009		
2005-03-01:	DEU:	(HM) Büchel/Nordhorn, 1 practice bomb lost: Pilot released the bomb 900 metres too early. Missed drop.
2007-08-29:	US:	(HS) Minot Air Force Base/North Dakota: 6 misguided nuclear missiles secondarily missing, B-52 unguarded at night (until 30.8.).
2010 till 2019		
2010-10-23:	US:	(ECS) 1 hr loss of control over 50 Minuteman III intercontinental ballistic missiles, high alert, improperly installed computer smart card.
2013-01-01:	US:	(HS/HAD) 1 year command totally out of control: hacking defence, unfit for duty, ecstasy, speed, alcohol, women, fraud.
2014-01-16:	DEU:	(C) Büchel, Tornado without nuclear weapons crashed on night approach in flight path.
2014-03-01:	DEU:	(EWA) Büchel/Nordhorn, 3 practice bombs lost: technical malfunction caused misdrop
2016-03-18:	US:	(HAD) Over 3 months of substance abuse, 19 soldiers, 150 nuclear missiles, 90th Missile Wing at F. E. Warren Air Force Base.
2016-06-19:	WORLD:	(…) Rising risk: cyber, tensions USA-CHI/RUS, China "hair-trigger alert".
2016-06-20:	WORLD:	(...) Unknown incidents, nuclear deterrence unsuitable, more dead than saved with nuclear war risk greater than zero.
2017-02-14:	DEU/US:	(C) US-Spangdahlem/Eifel: Test message missile warning with shelter, on all "live" screens. After 8 min all-clear.
2018-01-13:	NKOR/US:	(HM/HDM) Hawaii-II: 'Warning' intercontinental ballistic missile, wrong button pressed, advance nuclear threats North Korea.
2019-08-08:	RUS:	(C) Arkhangelsk, test area/sea, explosion rocket stage?, hypersonic nuclear missile Zirkon? 5 dead? 3 injured? DMH/radioactivity?
2020 till 2029		
2020-12-12:	DEU/US:	(C) Ramstein conceals cause over false alarm linked to 4 Russian practice missiles in Sea of Okhotsk (Pacific)
2021-01-07:	US:	(...) Perry calls for abolition of president's sole decision-making power over nuclear weapons after Washington riots.
2021-03-02:	DEU:	(C) Büchel/Nordhorn, 2 practice bombs lost: cause still under investigation.
XXXX-XX-XX:		(...) Accidents involving nuclear weapons: To date, at least 50 nuclear warheads and 9 nuclear reactors have been lost at sea.

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Events (long presentation)

Technical note:
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When: Who/Where: (Code) What:

1940 till 1949
1949

1949-XX-YY: US/SOW: (HR) Curtis E. LeMay wants to destroy Soviet Union with nuclear first strike, Truman stops him, McNamara fires him in 1965.

.....A meeting in November 1948 with Air Force Chief of Staff, Hoyt Vandenberg, found the two men agreeing the primary mission of SAC should be the capability of delivering 80% of the nation's atomic bombs in one mission. At the Dualism Conference in December 1948, the Air Force high command rallied behind LeMay's position that the service's highest priority was to deliver the SAC atomic offensive "in one fell swoop telescoping mass and time". "To LeMay, demolishing everything was how you win a war." Towards this aim, LeMay delivered the first SAC Emergency War Plan in March 1949 which called for dropping 133 atomic bombs on 70 cities in the USSR within 30 days. LeMay predicted that World War III would last no longer than 30 days. Air power strategists called this type of pre-emptive strike "killing a nation". However, the Harmon committee released their unanimous report two months later stating such an attack would not end a war with the Soviets and their industry would quickly recover. This committee had been specifically created by the Joint Chiefs of Staff to study the effects of a massive nuclear strike against the Soviet Union. Nevertheless, within weeks, an ad hoc Joint Chiefs committee recommended tripling America's nuclear arsenal, and Chief of Staff Vandenberg called for enough bombs to attack 220 targets, up from the previous 70.....In 1954 LeMay remarked to pilot Hal Austin, whose plane had been damaged by a MiG-17 while on a reconnaissance mission over the Soviet Union, "Well, maybe if we do this overflight right, we can get World War III started". Hal Austin assumed that LeMay was joking, but years later, after LeMay retired, Austin saw him again and "brought up the subject of the mission we had flown. And he remembered it like it was yesterday. We chatted about it a little bit. His comment again was, 'Well, we'd have been a hell of a lot better off if we'd got World War III started in those days.'".....As Chief of Staff, LeMay clashed repeatedly with Secretary of Defense Robert McNamara, Air Force Secretary Eugene Zuckert, and the chairman of the Joint Chiefs of Staff, Army General Maxwell Taylor. At the time, budget constraints and successive nuclear war fighting strategies had left the armed forces in a state of flux. Each of the armed forces had gradually jettisoned realistic appraisals of future conflicts in favor of developing its own separate nuclear and nonnuclear capabilities. At the height of this struggle, the U.S. Army had even reorganized its combat divisions to fight land wars on irradiated nuclear battlefields, developing short-range atomic cannon and mortars in order to win appropriations. The United States Navy in turn proposed delivering strategic nuclear weapons from supercarriers intended to sail into range of the Soviet air defense forces. Of all these various schemes, only LeMay's command structure of SAC survived complete reorganization in the changing reality of Cold War-era conflicts.....During the Cuban Missile Crisis in 1962, LeMay clashed again with U.S. President John F. Kennedy and Defense Secretary McNamara, arguing that he should be allowed to bomb nuclear missile sites in Cuba. He opposed the naval blockade and, after the end of the crisis, suggested that Cuba be invaded anyway, even after the Soviets agreed to withdraw their

missiles. Kennedy refused LeMay's requests, and the naval blockade was successful.....In his 1965 autobiography (co-written with MacKinlay Kantor), LeMay is quoted as saying his response to North Vietnam would be to demand that "they've got to draw in their horns and stop their aggression, or we're going to bomb them back into the Stone Age. And we would shove them back into the Stone Age with Air power or Naval power—not with ground forces". LeMay subsequently rejected misquotes of the famous "Stone Age" quote. Later, in a Washington Post interview LeMay said that "I never said we should bomb them back to the Stone Age. I said we had the capability to do it. I want to save lives on both sides". Etymologyst Barry Popik cites multiple sources (including interviews with LeMay) for various versions of both quotes from LeMay Nevertheless, the "should" quote remained part of the LeMay legend, and remains widely attributed to him ever after..... 29)
.....Initially, the basic policies outlined by President Kennedy in a message to Congress on March 28, 1961, guided McNamara in the reorientation of the defense program. Kennedy rejected the concept of first-strike attack and emphasized the need for adequate strategic arms and defense to deter nuclear attack on the United States and its allies.....During the Cuban Missile Crisis in October 1962, McNamara served as a member of EXCOMM and played a large role in the Administration's handling and eventual defusing of the Cuban Missile Crisis. He was a strong proponent of the blockade option over a missile strike and helped persuade the Joint Chiefs of Staff to agree with the blockade option.....Nuclear Strategy, the Triad Doctrine.....When McNamara took over the Pentagon in 1961, the United States military relied on an all-out nuclear strike to respond to a Soviet attack of any kind, which would kill Soviet military forces and civilians. This was the same nuclear strategy planned by the Strategic Air Command (SAC), led by General Curtis LeMay. McNamara did not agree with this approach. He sought other options after seeing that this strategy could not guarantee the destruction of all Soviet nuclear weapons, thus leaving the United States vulnerable to retaliation. McNamara's alternative in the doctrine of counterforce was to try to limit the United States nuclear exchange by targeting only enemy military forces. This would prevent retaliation and escalation by holding Soviet cities hostage to a follow-up strike. McNamara later concluded that counterforce was not likely to control escalation but to provoke retaliation. The U.S. nuclear policy remained the same.....Cuban Missile Crisis.....The Joint Chiefs of Staff favored launching air strikes against the Soviet missile sites in Cuba, an opinion that McNamara did not hold and advised Kennedy against the chiefs, warning that air strikes would almost certainly be crossing the Rubicon. McNamara's relations with the hawkish Joint Chiefs of Staff had been strained during the crisis, and his relations with Admiral George Anderson and General Curtis LeMay were especially testy. Both Admiral Anderson and General LeMay had favored invading Cuba, welcomed the prospect of a war with Soviet Union under the grounds that a war with the Soviet Union was inevitable, and whose attitudes towards Kennedy and McNamara had verged on insubordination. Admiral Anderson had at a one point ordered McNamara out of the Naval Operations Room, saying that as a civilian he was unqualified to be making decisions about naval matters, leading McNamara to say that he was the Defense Secretary and Anderson was unqualified to be ordering him to do anything.....After the crisis McNamara recommended to Kennedy that Admiral Anderson and General LeMay be sacked. However, Kennedy was afraid of a Congressional backlash if he sacked two of the chiefs at once. Moreover, Kennedy did not wish for his disagreements with the Joint Chiefs to become public and felt that sacking two of the chiefs at once would lead to speculation in the media about such a disagreement. Kennedy told McNamara: "All right, You can fire one. Which one will it be?" Without hesitation, McNamara answered "Anderson". Later on in 1963, a White House release announced that Admiral Anderson was the new American ambassador to Portugal.....ABM.....Toward the end of his term McNamara also opposed an anti-ballistic missile (ABM) system proposed for installation in the U.S. in defense against Soviet missiles, arguing the $40 billion "in itself is not the problem; the penetrability of the proposed shield is the problem." Under pressure to proceed with the ABM program after it became clear that the Soviets had begun a similar project, McNamara finally agreed to a "light" system which he believed could protect against the far smaller number of Chinese missiles. However, he never believed it was wise for the United States to move in that direction because of psychological risks of relying too much on nuclear weaponry and that there would be pressure from many directions to build a larger system than would be militarily effective.....He always believed that the best defense strategy for the U.S. was a parity of mutually assured destruction with the Soviet Union. An ABM system would be an ineffective weapon as compared to an increase in deployed nuclear missile capacity.... 74)

1950 till 1959
1950

Fehlalarme, Unfälle und Beinahe-Katastrophen mit Atomwaffen/ False alarms, accidents and near-disasters involving nuclear weapons

195X-YY-ZZ: US: (ES) NORAD registered on radar the approach of a Soviet bomber fleet in the polar region. It was a flock of wild geese

NORAD registered on the radar screens the approach of a Soviet bomber fleet in the polar region. It turned out to be only a flock of wild geese. In the meantime, the Americans have perfected their worldwide network of early warning and identification systems to such an extent that a false alarm caused by wild geese hardly seems conceivable any more. Dozens of orbiting scouting and intelligence satellites, batteries of radar stations between Thule (Greenland) and Alice Springs (Australia) form the network of this most expensive alarm system in the world. 22)

1950-XX-YY: US: (EWA/EWS) Contamination St. Lawrence Stream. In 1950 4 more incidents. Loss of 51 warheads and 7 reactors in the sea.

In 1950 alone, there were four other similar incidents. Once, an area on the Saint Lawrence River was contaminated by depleted uranium. To date, 51 nuclear warheads and 7 reactors have been lost at sea. 32)

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1950-02-13: US/CAN: (EWA) For technical reasons (Convair B-36B crash), the A-bomb Mark 4 had to be dropped and detonated non-nuclear. 5 dead.

The largest bomber Convair (Consolidate-Vultee Aircraft Corporation) B-36B "Peacemaker" with Mark 4 atomic bomb (2 X Hiroshima) on board is overloaded. It does

not reach cruising altitude. The night is cold. It flies over Canada. The pilot is Harold Leslie Barry. Ice blocks the air intakes of 3 engines. The 3 engines must be shut down. The bomber can't stay in the air. There is no landing site in sight. A crash is inevitable. The bomber was now flying with only three engines, all on the right wing, and losing altitude. When engine No. 5, in the centre of the right wing, caught fire, the bomber had to be abandoned. It was decided to drop the atomic bomb into the Pacific. 12 of the 17 crew members survived. The Mark 4 did not have a plutonium "shaft" built in, so a nuclear detonation was not possible. The conventional explosive would detonate at a predetermined altitude, destroying the bomb and its components. This was a safety measure to prevent a complete bomb from being recovered. The bomb was dropped at an altitude of 2,743 metres (9,000 feet) north-northwest of Princess Royal Island off the northwest coast of British Columbia, Canada. It was detonated 1,400 feet (427 metres) above the surface, and crew members reported seeing a large explosion. The Mark 4 bomb was developed by Los Alamos National Laboratory (LANL). It was a further development of the implosion-type Mark 3 "Fat Man" from World War II. The bomb was 3,351 metres (10 feet, 8 inches) long and had a maximum diameter of 1,524 metres (5 feet, 0 inches). Its weight is estimated at 10,800-10,900 pounds (4,899-4,944 kilograms). The bomb's core was a spherical composite of plutonium and highly enriched uranium. This was surrounded by about 2,495 kilograms of highly explosive "lenses" - very complex shaped charges designed to focus the explosive force very precisely inwards. When detonated, the explosives "imploded" the core, crushing it into a smaller, much denser mass. This created a "critical mass" and triggered a fission chain reaction. The Mark 4 was produced with an explosive yield of 1 to 31 kilotons. 550 units were built. It is only 40 years later that documents about the incident are released. According to a Canadian researcher (Dr John Clearwater), the bomber was part of an attack on the Soviet Union at a time when intercontinental missiles were not yet available. This "Operation Dropshot" planned to drop 300 atomic bombs and 29,000 high explosive bombs on 200 targets in 100 cities. 85% of the Soviet Union's industrial capacity was to be destroyed in a single strike. Between 75 and 100 of the 300 nuclear weapons would be used to destroy Soviet fighter planes already on the ground. General Curtis E LeMay (Strategic Air Command Nebraska SAC), a hardliner, is responsible for implementing the plan. For him, nuclear war with the Soviet Union is inevitable. The crews are ready for action day and night. The most important war targets are updated hourly by the strategists. The focus is on large cities, military airports and the enemy's main industrial centres. The pilots have to know their targets down to the last detail. Training flights take place under realistic conditions. The flight of Commander Barry and his crew is subject to strict secrecy. The bomber sets course south along the Canadian and US coasts. After 17 hours of flight time, the crew was to simulate the dropping of an atomic bomb over San Francisco. The city was a favourite Air Force test target because it was said to be very similar to Leningrad in the Soviet Union. The scale of this attack plan illustrates the Americans' fear of the Soviet Union. At the time, the communist flag was flying all over Eastern Europe. For the US, Moscow's control over these countries is worrying. They fear that the virus will spread further. Since 1949, the Soviet Union has also had the atomic bomb. A nuclear conflict is a realistic scenario. The first known incident in which a US nuclear weapon was lost was the crash of a B-36 strategic bomber off the west coast of Canada on 13 February 1950. The non-nuclear charged bomb was dropped; the conventional explosive detonated on impact. The rest of this bomb may now have been discovered by Sean Smyrichinsky. 80 kilometres off the west coast of Canada, the nuclear bomb lost in 1950 may now have been found. 25)

13 February 1950: 13 February 1950: Two Consolidated-Vultee B-36B Peacemaker long-range strategic bombers of the 436th Bombardment Squadron (Heavy), 7th Bombardment Wing (Heavy), Strategic Air Command, departed Eielson Air Force Base (EIL), Fairbanks, Alaska, at 4:27 p.m., Alaska Standard Time (01:27 UTC), on a planned 24-hour nuclear strike training mission. B-36B-15-CF 44-92075 was under the command of Captain Harold Leslie Barry, United States Air Force.[1] There were a total of seventeen men on board. Also on board was a Mark 4 nuclear bomb. The B-36s were flown to Alaska from Carswell Air Force Base, Fort Worth, Texas, by another crew. The surface air temperature at Eielson was -40 °F. (-40 °C.), so cold that if the bomber’s engines were shut down, they could not be restarted. Crews were exchanged and the airplane was serviced prior to takeoff for the training mission. In addition to the flight crew of fifteen, a Bomb Commander and a Weaponeer were aboard. After departure, 44-92075 began the long climb toward 40,000 feet (12,192 meters). The flight proceeded along the Pacific Coast of North America toward the practice target city of San Francisco, California. The weather was poor and the bomber began to accumulate ice on the airframe and propellers. About seven hours into the mission, three of the six radial engines began to lose power due to intake icing. Then the #1 engine, outboard on the left wing, caught fire and was shut down. A few minutes later, the #2 engine, the center position on the left wing, also caught fire and was shut down. The #3 engine lost power and its propeller was feathered to reduce

drag. The bomber was now flying on only three engines, all on the right wing, and was losing altitude. When the #5 engine, center on the right wing, caught fire, the bomber had to be abandoned. It was decided to jettison the atomic bomb into the Pacific Ocean. The Mark 4 did not have the plutonium "pit" installed, so a nuclear detonation was not possible. The conventional explosives would go off at a pre-set altitude and destroy the bomb and its components. This was a security measure to prevent a complete bomb from being recovered. The bomb was released at 9,000 feet (2,743 meters), north-northwest of Princess Royal Island, off the northwest coast of British Columbia, Canada. It was fused to detonate 1,400 feet (427 meters) above the surface, and crewmen reported seeing a large explosion. Flying over Princess Royal Island, Captain Barry ordered the crew to abandon the aircraft. He placed the B-36 on autopilot. Barry was the last man to leave 44-92075. Descending in his parachute, he saw the bomber circle the island once before being lost from sight. Twelve of the crew survived. Five were missing and it is presumed that they landed in the water. Under the conditions, they could have survived only a short time. The survivors had all been rescued by 16 February. It was assumed that 44-92075 had gone down in the Pacific Ocean. On 20 August 1953, a Royal Canadian Air Force airplane discovered the wreck of the missing B-36 on a mountain on the east side of Kispiox Valley, near the confluence of the Kispiox and Skeena Rivers in northern British Columbia. The U.S. Air Force made several attempts to reach the crash site, but it wasn't until August 1954 that they succeeded. After recovering sensitive equipment from the wreckage, the bomber was destroyed by explosives. The Mark 4 bomb was designed by the Los Alamos National Laboratory (LANL). It was a development of the World War II implosion-type Mark 3 "Fat Man." The bomb was 10 feet, 8 inches (3.351 meters) long with a maximum diameter of 5 feet, 0 inches (1.524 meters). Its weight is estimated at 10,800–10,900 pounds (4,899–4,944 kilograms). The core of the bomb was a spherical composite of plutonium and highly-enriched uranium. This was surrounded by approximately 5,500 pounds (2,495 kilograms) of high explosive "lenses"—very complex-shaped charges designed to focus the explosive force inward in a very precise manner. When detonated, the high explosive "imploded" the core, crushing it into a smaller, much more dense mass. This achieved a "critical mass" and a fission chain reaction resulted. The Mark 4 was tested during Operation Ranger at the Nevada Test Site, Frenchman Flat, Nevada, between 27 January and 6 February 1951. Five bombs were dropped from a Boeing B-50 Superfortress of the 4925th Special Weapons Group from Kirtland Air Force Base in New Mexico. The first four bombs were dropped from a height of 19,700 feet (6,005 meters) above ground level (AGL) and detonated at 1,060–1,100 feet (323–335 meters) AGL. Shot Fox was dropped from 29,700 feet (9,053 meters) AGL and detonated at 1,435 feet (437 meters) AGL. (Ground level at Frenchman Flat is 3,140 feet (957 meters) above Sea Level). The Mark 4 was produced with explosive yields ranging from 1 to 31 kilotons. 550 were built. Consolidated-Vultee B-36B-15-CF Peacemaker 44-92075 was completed at Air Force Plant 4, Fort Worth, Texas, on 31 July 1949. It had been flown a total of 185 hours, 25 minutes. The B-36B is 162 feet, 1 inch (49.403 meters) long with a wingspan of 230 feet (70.104 meters) and overall height of 46 feet, 8 inches (14.224 meters). The wings' leading edges were swept aft 15° 5′ 39″. Their angle of incidence was 3°, with -2° twist and 2° dihedral. The empty weight is 137,165 pounds (62,217 kilograms) and the maximum takeoff weight was 326,000 pounds (147,871 kilograms). With a wing area of 4,772 square feet (443 square meters) and 21,000 horsepower, the B-36 could fly far higher than any jet fighter of the early 1950s. The B-36B was powered by six air-cooled, supercharged and turbocharged 4,362.49 cubic-inch-displacement (71.488 liter) Pratt & Whitney Wasp Major B4 (R-4360-41) four-row, 28-cylinder radial engines placed inside the wings in a pusher configuration. These had a compression ratio of 6.7:1 and required 115/145 aviation gasoline. Each engine was equipped with two General Electric BH-1 turbochargers. The R-4360-41 had a Normal Power rating of 2,650 horsepower at 2,550 r.p.m. Its Takeoff/Military Power rating was 3,500 horsepower at 2,700 r.p.m., with water/alcohol injection. The engines turned three-bladed Curtiss Electric constant-speed, reversible propellers with a diameter of 19 feet, 0 inches (5.791 meters) through a 0.375:1 gear reduction. The R-4360-41 is 9 feet, 1.75 inches (2.788 meters) long, 4 feet, 6.00 inches (1.372 meters) in diameter, and weighs 3,567 pounds (1,618 kilograms). The B-36B Peacemaker had a cruise speed of 193 knots (222 miles per hour/357 kilometers per hour) and a maximum speed of 338 knots (389 miles per hour/626 kilometers per hour) at 35,500 feet (10,820 meters). The service ceiling was 43,700 feet (13,320 meters) and its combat radius was 3,710 nautical miles (4,269 statute miles/6,871 kilometers). The maximum ferry range was 8,478 nautical miles (9,756 statute miles/15,709 kilometers). The B-36 was defended by sixteen M24A-1 20 mm automatic cannons. Six retractable gun turrets each each had a pair of 20 mm cannon, with 600 rounds of ammunition per gun (400 r.p.g.for the nose guns). These turrets were remotely operated by gunners using optical sights. Two optically-sighted 20 mm guns were in the nose, and two more were in a tail turret, also remotely operated and aimed by radar. The B-36 was designed during World War II and nuclear weapons were unknown to the Consolidate-Vultee Aircraft Corporation engineers.

The bomber was built to carry up to 86,000 pounds (39,009 kilograms) of conventional bombs in the four-section bomb bay. It could carry two 43,600 pound (19,777 kilogram) T-12 Cloudmakers, a conventional explosive earth-penetrating bomb. When armed with nuclear weapons, the B-36 could carry several Mk.15 thermonuclear bombs. By combining the bomb bays, one Mk.17 25-megaton thermonuclear bomb could be carried. Between 1946 and 1954, 384 B-36 Peacemakers were built by Convair. 73 of these were B-36Bs, the last of which were delivered to the Air Force in September 1950. By 1952, 64 B-36Bs had been upgraded to B-36Ds. The B-36 Peacemaker was never used in combat. Only four still exist. 27) (28) (29)
The first known incident in which a US nuclear weapon was lost was the crash of a B-36 strategic bomber off the west coast of Canada on 13 February 1950. The non-nuclear charged bomb was dropped; the conventional explosive detonated on impact. The rest of this bomb may now have been discovered by Sean Smyrichinsky. 32)

Diver finds US atomic bomb thought lost: It is an unbelievable mystery: In 1950, the US armed forces lost an atomic bomb off the coast of Canada that is still missing today. A diver has now solved the mystery apparently by chance. It is the find of a lifetime: a Canadian diver may have found a US atomic bomb off the coast of British Columbia that was thought to have been lost since the Cold War. According to a report by the Canadian Broadcasting Corporation, diver Sean Smyrichinsky had come across a strange object while diving off the Haida Gwaii archipelago. "I was actually just trying to catch fish for the next day," he told the broadcaster. In the process, he said, he saw something "he had never seen before". Describing the object, which was about four metres tall, as a "sliced bagel", he toned to his diving buddies, "I found a UFO." An older club mate brought him back down to earth and said that the find could also be "the bomb". By this he meant a Mark 4 nuclear bomb, nicknamed "Fat Man", which the US forces were said to have lost at the beginning of the Cold War. Lost for 66 years: According to the Air Museum, a Convair B-36 intercontinental bomber had taken off from a military base in Alaska on 14 February 1950, heading southeast. The mission: to simulate an atomic bomb attack on the US coastal metropolis of San Francisco. But during the flight, three of the six propeller engines caught fire. The crew would then have dropped the bomb over the waters of the Pacific to prevent detonation on impact. Shortly before midnight, the B-36 bomber disappeared from radar screens. Twelve of the 17 crew members were able to save themselves with a parachute. The wreckage of the "Peacemaker" was found in the mountains of British Columbia. The Mark 4 bomb is one of numerous so-called broken arrows. Atomic bombs that were lost in air or sea accidents. Smyrichinski came across all these reports during his research. The crash of the B-36 bomber, the story of the "lost nuke". There are only 80 kilometres between Smyrichinsky's discovery site and the crash site. He wrote an email to the Canadian military. He described what he had found. A reply said they had a "strong interest" in the case. The USA said at the time that the dropped object was merely a dummy of a nuclear bomb. Instead of a plutonium core, it was filled with lead. A Canadian military spokesman said on Friday that a ship was on its way to the site to examine the object more closely. "We want to be sure," it said. 33)
To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1951

1951-04-11: US/KOR/CN: (HR) Douglas McArthur repeatedly proposes to use nuclear weapons against 49 North Korean cities and China, Truman fires him in 1951.

.....Removal from command.....Within weeks of the Chinese attack, MacArthur was forced to retreat from North Korea. Seoul fell in January 1951, and both Truman and MacArthur were forced to contemplate the prospect of abandoning Korea entirely. European countries did not share MacArthur's world view, distrusted his judgment, and were afraid that he might use his stature and influence with the American public to re-focus American policy away from Europe and towards Asia. They were concerned that this might lead to a major war with China, possibly involving nuclear weapons. Since in February 1950 the Soviet Union and China had signed a defensive alliance committing each to go to war if the other party was attacked, the possibility that an American attack on China would cause World War III was considered to be very real at the time. In a visit to the United States in December 1950, the British prime minister, Clement Attlee, had raised the fears of the British and other European governments that "General MacArthur was running the show".....Under Ridgway's command, the Eighth Army pressed north again in January. He inflicted heavy casualties

on the Chinese, recaptured Seoul in March 1951, and pushed on to the 38th Parallel. With the improved military situation, Truman now saw the opportunity to offer a negotiated peace but, on 24 March, MacArthur called upon China to admit that it had been defeated, simultaneously challenging both the Chinese and his own superiors. Truman's proposed announcement was shelved.....On 5 April, Representative Joseph William Martin Jr., the Republican leader in the House of Representatives, read aloud on the floor of the House a letter from MacArthur critical of Truman's Europe-first policy and limited-war strategy. The letter concluded with:..... It seems strangely difficult for some to realize that here in Asia is where the communist conspirators have elected to make their play for global conquest, and that we have joined the issue thus raised on the battlefield; that here we fight Europe's war with arms while the diplomats there still fight it with words; that if we lose the war to communism in Asia the fall of Europe is inevitable, win it and Europe most probably would avoid war and yet preserve freedom. As you pointed out, we must win. There is no substitute for victory.....In March 1951 secret United States intercepts of diplomatic dispatches disclosed clandestine conversations in which General MacArthur expressed confidence to the Tokyo embassies of Spain and Portugal that he would succeed in expanding the Korean War into a full-scale conflict with the Chinese Communists. When the intercepts came to the attention of President Truman, he was enraged to learn that MacArthur was not only trying to increase public support for his position on conducting the war, but had secretly informed foreign governments that he planned to initiate actions that were counter to United States policy. The President was unable to act immediately since he could not afford to reveal the existence of the intercepts and because of MacArthur's popularity with the public and political support in Congress. However, following the release on 5 April by Representative Martin of MacArthur's letter, Truman concluded he could relieve MacArthur of his commands without incurring unacceptable political damage.....Truman summoned Secretary of Defense George Marshall, Chairman of the Joint Chiefs Omar Bradley, Secretary of State Dean Acheson and Averell Harriman to discuss what to do about MacArthur. They concurred MacArthur should be relieved of his command, but made no recommendation to do so. Although they felt that it was correct "from a purely military point of view", they were aware that there were important political considerations as well. Truman and Acheson agreed that MacArthur was insubordinate, but the Joint Chiefs avoided any suggestion of this. Insubordination was a military offense, and MacArthur could have requested a public court martial similar to that of Billy Mitchell. The outcome of such a trial was uncertain, and it might well have found him not guilty and ordered his reinstatement. The Joint Chiefs agreed that there was "little evidence that General MacArthur had ever failed to carry out a direct order of the Joint Chiefs, or acted in opposition to an order". "In point of fact", Bradley insisted, "MacArthur had stretched but not legally violated any JCS directives. He had violated the President's 6 December directive [not to make public statements on policy matters], relayed to him by the JCS, but this did not constitute violation of a JCS order." Truman ordered MacArthur's relief by Ridgway, and the order went out on 10 April with Bradley's signature.....In a 3 December 1973 article in Time magazine, Truman was quoted as saying in the early 1960s:.....I fired him because he wouldn't respect the authority of the President. I didn't fire him because he was a dumb son of a bitch, although he was, but that's not against the law for generals. If it was, half to three-quarters of them would be in jail.....The relief of the famous general by the unpopular politician for communicating with Congress led to a constitutional crisis, and a storm of public controversy. Polls showed that the majority of the public disapproved of the decision to relieve MacArthur. By February 1952, almost nine months later, Truman's approval rating had fallen to 22 percent. As of 2021, that remains the lowest Gallup Poll approval rating recorded by any serving president. As the increasingly unpopular war in Korea dragged on, Truman's administration was beset with a series of corruption scandals, and he eventually decided not to run for re-election. Beginning on 3 May 1951, a Joint Senate Committee—chaired by Democrat Richard Russell Jr.—investigated MacArthur's removal. It concluded that "the removal of General MacArthur was within the constitutional powers of the President but the circumstances were a shock to national pride"..... 75)

.....Korean War.....On June 25, 1950, the North Korean army under Kim Il-sung invaded South Korea, starting the Korean War. In the early weeks of the war, the North Koreans easily pushed back their southern counterparts. Truman called for a naval blockade of Korea, only to learn that due to budget cutbacks, the U.S. Navy could not enforce such a measure. Truman promptly urged the United Nations to intervene; it did, authorizing troops under the UN flag led by U.S. General Douglas MacArthur. Truman decided he did not need formal authorization from Congress, believing that most legislators supported his position; this would come back to haunt him later when the stalemated conflict was dubbed "Mr. Truman's War" by legislators.....However, on July 3, 1950, Truman did give Senate Majority Leader Scott W. Lucas a draft resolution titled "Joint Resolution Expressing Approval of the Action Taken in Korea". Lucas stated Congress supported the use of force, the formal resolution would

pass but was unnecessary, and the consensus in Congress was to acquiesce. Truman responded he did not want "to appear to be trying to get around Congress and use extra-Constitutional powers," and added that it was "up to Congress whether such a resolution should be introduced."..... By August 1950, U.S. troops pouring into South Korea under UN auspices were able to stabilize the situation. Responding to criticism over readiness, Truman fired his secretary of defense, Louis A. Johnson, replacing him with the retired General Marshall. With UN approval, Truman decided on a "rollback" policy—conquest of North Korea. UN forces led by General Douglas MacArthur led the counterattack, scoring a stunning surprise victory with an amphibious landing at the Battle of Inchon that nearly trapped the invaders. UN forces marched north, toward the Yalu River boundary with China, with the goal of reuniting Korea under UN auspices.....However, China surprised the UN forces with a large-scale invasion in November. The UN forces were forced back to below the 38th parallel, then recovered. By early 1951 the war became a fierce stalemate at about the 38th parallel where it had begun. Truman rejected MacArthur's request to attack Chinese supply bases north of the Yalu, but MacArthur promoted his plan to Republican House leader Joseph Martin, who leaked it to the press. Truman was gravely concerned further escalation of the war might lead to open conflict with the Soviet Union, which was already supplying weapons and providing warplanes (with Korean markings and Soviet aircrew). Therefore, on April 11, 1951, Truman fired MacArthur from his commands.....I fired him [MacArthur] because he wouldn't respect the authority of the President ... I didn't fire him because he was a dumb son of a bitch, although he was, but that's not against the law for generals. If it was, half to three-quarters of them would be in jail.—Truman to biographer Merle Miller, 1972, posthumously quoted in Time magazine, 1973.....The dismissal of General Douglas MacArthur was among the least politically popular decisions in presidential history. Truman's approval ratings plummeted, and he faced calls for his impeachment from, among others, Senator Robert A. Taft.[205] Fierce criticism from virtually all quarters accused Truman of refusing to shoulder the blame for a war gone sour and blaming his generals instead. Others, including Eleanor Roosevelt, supported and applauded Truman's decision. MacArthur meanwhile returned to the United States to a hero's welcome, and addressed a joint session of Congress, a speech the president called "a bunch of damn bullshit."..... Truman and his generals considered the use of nuclear weapons against the Chinese army, but ultimately chose not to escalate the war to a nuclear level. The war remained a frustrating stalemate for two years, with over 30,000 Americans killed, until an armistice ended the fighting in 1953. In February 1952, Truman's approval mark stood at 22 percent according to Gallup polls, which is the all-time lowest approval mark for a sitting U.S. president, though it was matched by Richard Nixon in 1974..... 76)

1952
1953
1954
1955
1956

1956-03-10: US/EUR: (EWA) A B-47 crashed into the Mediterranean Sea with 2 plutonium cores that were not found. Contamination. Casualties?

A B-47 bomber disappeared over the Mediterranean. The nuclear bombs on board were never found. 12)
Then in 1956, a B-47 jet bomber crashed into the Mediterranean. It had no nuclear bombs on board, but two plutonium cores, of which no trace has ever been found. 32)
To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1956-07-27: US/GB: (EWA) B-47 crashed at Lakenheath and hit a depot with 3 live A-bombs. Damage, no detonation. No contamination.

Lakenheath, Air Force Base, Great Britain, 1956. On 27 July 1956, a B-47 bomber crashed at Lakenheath Air Base. The aircraft had no nuclear weapons on board itself. It

crashed into a concrete nuclear bunker housing three US nuclear bombs (of the Nagasaki type) and completely destroyed it. The collision caused damage to all three bombs that could have resulted in detonation. General James Walsh described the accident in a telegram to the US commander General James Walsh as follows: "Bomber exploded, burning fuel spilled everywhere. Crew killed. (...) Initial investigation by bomb disposal officer: a miracle that one of the bombs with fuse exposed and sharpened did not explode." 21)
To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1956-11-05: US/SOW: (HDE/HDI) Suez crisis: wrong, misinterpreted or exaggerated info come together and give wrong picture.

The danger posed by an accidental coincidence of several independent events in a political crisis is illustrated by an example: On November 5, 1956, the following situation existed: In the dispute over the Suez Canal, England and France intervened militarily against Egypt. Hungary was occupied by Soviet troops. The Soviet news agency TASS generated fear of a worldwide nuclear war. Moscow, which saw itself as Egypt's protective power, sent messages to London and Paris with hints that attacks against those cities would be considered if the Egyptian attack did not cease. Late in the afternoon of Nov. 5, the White House in Washington receives word that Moscow is proposing joint U.S.-Soviet military action in Suez. Against this background, the following events and news converge the next night: Unidentified jet fighters fly over Turkey, and the Turkish Air Force is put on alert. 100 Soviet MIG-15s fly over Syria. A British Canberra bomber has been shot down over Syria. The Russian fleet sails through the Dardanelles into the Mediterranean. This was considered a sign of hostility, since the Soviet Union in times of crisis its fleet. Assessment of Alerts15 must bring it out of the Black Sea, where it was trapped in the two world wars. The White House reaction is not fully known, but it is reported that General Goodpaster feared that NATO deployment plans might be triggered, which at the time envisioned an all-out nuclear retaliatory strike against the Soviet Union.An analysis later revealed the following causes for the four events: The jet fighters over Turkey were a flock of swans detected by radar and misinterpreted. The 100 Soviet MIGs were a much smaller routine escort for the Syrian president returning from a state visit from Moscow. The British Canberra crashed because of technical errors. The Russian fleet was on its way to the Mediterranean for a long-planned maneuver. Taken in isolation, the individual events were relatively harmless. The coincidence in a serious world political crisis led to a very threatening situation. If, in such a situation, nuclear missiles had been reported by an early warning system instead of MIGs over Turkey, the risk of a worldwide catastrophe would have been much higher. 5)
5 November 1956: Suez Crisis: During the Suez Crisis, the North American Aerospace Defense Command (NORAD) received a series of simultaneous reports, including unidentified aircraft over Turkey, Soviet MiG-15 fighters over Syria, a downed British Canberra medium-range bomber, and unexpected manoeuvres by the Soviet Black Sea Fleet through the Dardanelles that seemed to indicate a Soviet offensive. Given earlier Soviet threats to use conventional missiles against France and Britain, US forces believed that these events might trigger a NATO nuclear strike against the Soviet Union. In fact, however, all reports of Soviet actions proved to be false, misinterpreted or exaggerated. The perceived threat was due to a fortuitous combination of events, including a wedge of swans over Turkey, a fighter escort for Syrian President Zhukri al-Quwatli returning from Moscow, a British bomber brought down by mechanical problems, and planned Soviet fleet exercises. 6)
November 5, 1956: False Alarms during the Suez Crisis: While British and French forces attacked Egypt, the U.S.S.R. warned they were considering non-nuclear attacks on London and Paris to bring a stop to the fighting. On the night of November 5, 1956, NORAD received alerts that unidentified aircraft were flying over Turkey, 100 Soviet MIGs were flying over Syria, a British bomber had been brought down over Syria, and a Soviet fleet was on the move in Turkey. Thinking these events were a Soviet offensive, the U.S. worried a NATO nuclear strike against Russia could soon follow. It turns out, each of these perceived attacks was actually: swans flying over Turkey, an air force escort for the Syrian president, a bomber brought down due to mechanical issues, and scheduled, routine exercises of the Soviet fleet. Bad information is not uncommon and it's easy to misinterpret. This example comes from the Nuclear Files. 7)
A flock of geese was thought to be fighter planes. 12)

1957
1958

1958-01-01: US/ARC: (EWA) US forces lose A-bomb in Arctic. To date 51 warheads and 7 nuclear reactors lost at sea.

Dropped - but where? In a plane crash in 1958, the US Army lost a nuclear bomb in the ice of the Arctic. 8)
Escape from destruction: It was already known, however, that accidents and negligent handling in connection with nuclear weapons were the rule rather than the exception. As early as 1958, US forces lost a nuclear bomb in the Arctic. 10)
To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1958-01-31: US/MOR: (EWA) After a crash of a B-47 carrying a live Mark 6 in Morocco, there was only contamination of the surrounding area.

After several more accidents, the first accident with a live and fully operational US nuclear weapon occurred on 31 January 1958: a B-47 crashed in Morocco and burnt out completely. The Mark 6 bomb did not detonate but contaminated the surrounding area. 32)
Or in Morocco, where a US bomber carrying nuclear weapons caught fire in 1958. 35)
To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1958-02-05: US: (EWA) B-47 collides with fighter jet, Howard Richardson had to drop H-bomb Mark 15 near Savannah (Georgia). Not found.

However, in the past, the US military was sometimes quite nonchalant with its most dangerous toys, not only in foreign countries - seven of the officially eleven missing nuclear explosive devices were lost at home in the USA. This was the case on 5 February 1958, when bomber pilot Howard Richardson had to release his hydrogen bomb after a collision with a fighter jet, which then disappeared forever in the shallow waters of Wassaw Bay, about 20 kilometres from the 100,000-inhabitant city of Savannah, Georgia. The experienced pilot was able to land his aircraft with difficulty at the nearby Hunter Air Base. 8)
Only five days later, the crew of a B-47 had to drop a Mark 15 hydrogen bomb off the US east coast near the city of Savannah after a collision with a fighter plane. The large weapon could not be found until today. While the US Air Force said it did not contain a nuclear core, the commander of the B-47 said the opposite. 32)
How the USA misplaced a nuclear bomb: Sounds unbelievable, but it's true: In 1958, the US forces lost an atomic bomb in the sea, which has not yet reappeared. Officially it is not dangerous, but nobody believes that. An invisible danger lurks in the sea off the coast of Savannah in the US state of Georgia. A beast four metres long. Man-eating sharks or stinging jellyfish are lap animals by comparison. When thousands of holidaymakers flock to the beach on Tybee Island again this year, they should keep their eyes open. You can't really miss the monster: a three-and-a-half-ton bomb with an unknown load of uranium and nearly 200 kilos of explosives. Oh, and: If you see something - please let me know! The Mark 15 bomb is one of presumably hundreds of so-called Broken Arrows, i.e. nuclear bombs that were lost in air or sea accidents. It had to be dropped in the winter of 1958, as part of a secret mission to simulate an air raid on a Soviet city. The B-47 carrying the bomb collided with an F-86 fighter shortly after midnight and had to make an emergency landing at an airbase near Savannah - but before that, the pilot, Colonel Howard Richardson, dropped the bomb in the water a few miles off the island. The crew survived and Richardson was awarded the Distinguished Flying Cross for his actions. The Air Force searched for the bomb for two months after the incident, but the weather was bad, the water cold and visibility abysmal. On 16 April 1958, the military declared the bomb "irretrievably lost". Today, they advise people to leave it alone - it poses little danger and is very unlikely to explode. This assessment is based on a handwritten acknowledgement of receipt with the word "simulated" scrawled in ink at the top. Hundred times more powerful than the Hiroshima bomb: According to the US Air

Force, this means the bomb has no fuse and cannot cause a nuclear explosion. However, there are doubts as to whether this is true. "This is ridiculous," says military historian and best-selling author Douglas Keeney. "This note - it's being discovered now, 50 years later - one of thousands of documents, is the only one that says it was not armed. That's silly." He points out that quite a few pre-censored documents read differently. These include a 1966 testimony before Congress that says the bomb is complete and contains not only uranium but also plutonium - that's what makes it a hell machine. If it were to detonate, the explosive effect would be a hundred times more powerful than the Hiroshima bomb. Its mushroom cloud would be visible for miles, its fireball would have a diameter of almost two kilometres. "These are statements made under oath to Congress. Two groups - one civilian, one military - would have to go to jail if they had lied," Keeney says. But why would they have lied? After all, they had nothing to gain by saying the bomb was armed. True, the government has officially given up the search for the bomb. But the locals have by no means forgotten about it. It is now part of local history, which is reflected among other things in "A-J's Dockside Restaurant", formerly the headquarters of the Tybee Island Bomb Squad, which searched for the bomb in 1958. On the wall you can see paraphernalia from that time. Newcomers are always startled when they hear that there is a bomb so close to the coast - but then they laughingly dismiss it as harmless madness. Have there really been "only" 32 nuclear weapons accidents? Some pessimists, however, are concerned with the risks the bomb poses to the environment and health, even if it fails to detonate. Derek Duke, a retired Air Force lieutenant colonel, went a step further and led a search for the bomb in 2004. He detected high levels of radiation in the shallow waters off the coast of Savannah, but research showed that the levels were normal for the naturally occurring minerals there. Still, Duke, now 70, says it's "an incredible story, and it holds up - like Bigfoot." He believes the government considers the bomb a politically sensitive issue. If the bomb has a detonator, it could be used against America if an enemy found it. Whether or not it posed a mortal danger, the forgotten bomb is only one of thousands of nuclear weapons accidents that occurred between 1950 and 1968, according to critical Pentagon documents on broken arrows compiled by historian and author Eric Schlosser. In his book "Command and Control", he rejects the official Pentagon list of nuclear weapons accidents in the USA - allegedly there were "only" 32 - and claims that there were rather over 1000. "This subject is subject to great secrecy in the first place," Schlosser says. "There is no doubt that there were many more accidents, and the Pentagon's list is essentially worthless." Others also think there are unanswered questions. For example, bomb engineer Robert Peurifoy, who says he was merely involved in the background when the bomb was dropped. "I'm surprised no bomb debris was found," Peurifoy says. He later became vice-president of the government-funded Sandia nuclear weapons laboratory, and is now over 80 years old. "Not that the Air Force doesn't wonder itself. But you'd think they could get to the bottom of it." 34)

1958 Tybee Island mid-air collision. The Tybee Island mid-air collision was an incident on February 5, 1958, in which the United States Air Force lost a 7,600-pound (3,400 kg) Mark 15 nuclear bomb in the waters off Tybee Island near Savannah, Georgia, United States. During a practice exercise, an F-86 fighter plane collided with the B-47 bomber carrying the bomb. To protect the aircrew from a possible detonation in the event of a crash, the bomb was jettisoned. Following several unsuccessful searches, the bomb was presumed lost somewhere in Wassaw Sound off the shores of Tybee Island. Midair collision. The B-47 bomber was on a simulated combat mission from Homestead Air Force Base in Florida. It was carrying a single 7,600-pound (3,400 kg) bomb. At about 2:00 a.m., an F-86 fighter collided with the B-47. The F-86 crashed after the pilot ejected from the plane. The damaged B-47 remained airborne, plummeting 18,000 feet (5,500 m) from 38,000 feet (12,000 m) when the pilot, Colonel Howard Richardson, regained flight control. The crew requested permission to jettison the bomb, in order to reduce weight and prevent the bomb from exploding during an emergency landing. Permission was granted, and the bomb was jettisoned at 7,200 feet (2,200 m) while the bomber was traveling at about 200 knots (370 km/h). The crew did not see an explosion when the bomb struck the sea. They managed to land the B-47 safely at the nearest base, Hunter Air Force Base. Colonel Richardson was awarded the Distinguished Flying Cross after this incident. The bomb. Some sources describe the bomb as a functional nuclear weapon, but others describe it as disabled. If it had a plutonium nuclear core installed, it was a fully functional weapon. If it had a dummy core installed, it was incapable of producing a nuclear explosion but could still produce a conventional explosion. The 12-foot (4 m) long Mark 15 bomb weighs 7,600 pounds (3,400 kg) and bears the serial number 47782. It contains 400 pounds (180 kg) of conventional high explosives and highly enriched uranium.[4] The Air Force maintains that its nuclear capsule, used to initiate the nuclear reaction, was removed before its flight aboard the B-47. As noted in the Atomic Energy Commission "Form AL-569 Temporary Custodian Receipt (for maneuvers)", signed by the aircraft commander, the bomb contained a simulated 150-pound cap made of lead.[6] However, according to 1966 Congressional testimony

by Assistant Secretary of Defense W.J. Howard, the Tybee Island bomb was a "complete weapon, a bomb with a nuclear capsule" and one of two weapons lost that contained a plutonium trigger.[7][8] Nevertheless, a study of the Strategic Air Command documents indicates that Alert Force test flights in February 1958 with the older Mark 15 payloads were not authorized to fly with nuclear capsules on board. Such approval was pending deployment of safer "sealed-pit nuclear capsule" weapons, which did not begin deployment until June 1958. Recovery efforts. Starting on February 6, 1958, the Air Force 2700th Explosive Ordnance Disposal Squadron and 100 Navy personnel equipped with hand-held sonar and galvanic drag and cable sweeps mounted a search. On April 16, the military announced the search had been unsuccessful. Based on a hydrologic survey, the bomb was thought by the Department of Energy to lie buried under 5 to 15 feet (1.5 to 4.6 m) of silt at the bottom of Wassaw Sound. In 2004, retired Air Force Lt. Colonel Derek Duke claimed to have narrowed the possible resting spot of the bomb down to a small area approximately the size of a football field.[citation needed] He and his partner located the area by trawling in their boat with a Geiger counter in tow. Secondary radioactive particles four times naturally occurring levels were detected and mapped, and the site of radiation origination triangulated. Subsequent investigations found the source of the radiation was natural, originating from monazite deposits. Ongoing concerns. As of 2007, no undue levels of unnatural radioactive contamination have been detected in the regional Upper Floridan aquifer by the Georgia Department of Natural Resources (over and above the already high levels thought to be due to monazite, a locally occurring mineral that is naturally radioactive). In popular culture. In February 2015, a satirical news web site ran an article stating that the bomb was found by vacationing Canadian divers and that the bomb had since been removed from the bay. The fake story spread widely via social media. 51)
To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1958-02-28: US/GB: (EWA) A B-47 crashed badly at Greenham Common, with scientists detecting elevated radioactivity. US denies.

Bis heute gingen 51 nukleare Sprengköpfe und 7 nukleare Reaktoren auf See verloren.
Greenham Common in the UK, 1958 (unconfirmed): A B-47 crashed badly on 28 February at a US airbase near Greenham Common in England. Scientists working for the Atomic Weapons Research Establishment in Aldermaston found a high concentration of radioactive contamination on the base in 1960. In their conclusion, they indicated that a nuclear weapon must have been involved in the accident. The US government never confirmed this assumption. 21) (28)
To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1958-03-11: US/GB: (EWA/HM) B47 jet (training) accidental bomb release. Mark 6. crater. 6 injured. Contamination. Mars Bluff/South Carolina.

Hunter Air Force Base: B47 jet on training flight of a squadron to Europe/England, and with hydrogen bombs type "MK-6" on board, has "warning bomb loss". There is a problem with the safety pin. The co-pilot loses balance and falls on the lever that releases the bomb while troubleshooting. The co-pilot is able to escape back into the plane. The bomb falls on the home of Walter Gregg, Florence (Mars Bluff)/South Carolina. The explosive TNT detonates. 12 meter crater. 6 injured. Despite that nuclear part was supposedly dismantled and remained in the plane, radiated parts were found on the property. Walter Gregg Jr., Florence (Mars Bluff)/South Carolina, contemporary witness: "Here you see the only place in the USA where an atomic bomb fell. Today the crater is overgrown, but I'm sure it's still 12m wide. We heard a loud bang. My father thought a jet had crashed. But in fact it was a bomb that had fallen into the garden." News: "Nuclear bomb hits US city. A nuclear bomb from a B-47 jet has fallen from its moorings over South Carolina. An unusual accident. Near disaster for anyone within range of the TNT. Six people were injured. Walter Gregg's house was destroyed. A crater 12 metres deep was created in the garden.". Witness Helen Holladay: "When the bomb hit the earth shook and we threw ourselves to the ground. Walter can tell you how he and my father fared.". Walter Gregg Jr: "My father protected me with his upper body and ran out of the garage with me because the roof was collapsing. In the process, he was injured in his back and side. Once we were outside, he saved the rest of the family." What had happened? On 11 March 1958, a B-47 carrying a nuclear bomb took off on a training flight, routine really. But the pilots are worried because there is a problem: Gregg Jr: "The warning light came on. They turned it off, but over Florence (Mars

Bluff) it started to light up again. The co-pilot was sent to the back of the plane. He slipped and fell on the lever that set off the bomb. He almost fell out of the plane with the bomb. There were bombs in each of these jets in case of emergency. But the nuclear part was dismantled because we were not at war. That was the reason why only the TNT exploded. But even TNT is pretty nasty stuff!". The bomb is a model called the Mark-6. The nuclear reaction is ignited by normal explosives, which explode in the Greggs. The plutonium core, on the other hand, is kept separate during the flight, in this container called a "birdcage". It's hard to imagine what would have happened if it had been in the bomb. The Greggs were lucky in their misfortune. But years later they still find radiated bomb parts on their ground. No one can tell them why they are radioactive. Gregg Jr.: "My cousin found a big piece. Somebody came from college with a Geiger counter. When they examined the piece, it started beeping. They asked my father what they should do. He said, "Come on, just throw it in the woods or in the swamp."" Instead of throwing away the radioactive parts, the Greggs donated them to the Florence County Museum of Local History ("Florence County Museum"), where they still hang today. The incident remains mysterious. And an example of how "shirt-sleeved" those in charge in the 1950s dealt with the new technology. 11)

A nuclear bomb tore loose from the retaining device of a B-47 over Florence (Mars Bluff)/South Carolina, causing a sensational, extraordinary accident. 12)

After the 1957 NATO meeting in Paris, the USA deploys bombs in Europe. During one of these explosive transports, another accident occurs. 11 March 1958. A squadron of B47 bombers flies towards Europe. This new model has jet engines instead of propellers. This allows the bombers to reach speeds of almost 1000 kilometres per hour. The three-man crew has only one hour to load the planes with a 3.5 tonne MK-6 nuclear bomb. Sergeant Gary Coe is responsible for this: "I was a 22/23 year old sergeant. We were under enormous pressure because we had so little time to get the aircraft ready for the crew. That was the reality, not a drill. Every month 4, 6 or 8 aircraft rotated to Europe and back to be on alert. We were at war, even if it was the Cold War. We had to deter the Russians. Khrushchev threatened to bury us and we had to make sure he didn't.". Heavily loaded, the plane takes off without a hitch. But at an altitude of over 1500 metres, an alarm goes off. There is a problem with the safety pin that holds the bomb in place. "The pilot ordered the gunner to check the pin in the bomb bay. In the process, he lost his balance and held on to the emergency release cable. The bomb fell on the door of the bomb bay. It took only 1 or 2 seconds, then the bomb fell out. He grabbed onto something in the bomb bay and crawled back into the plane. He was lucky, he almost fell out with it.". The crew report to base that they have lost a bomb. They fear the worst. A nuclear alert is immediately sounded at Strategic Air Command. The bomb has hit near the town of Mars Bluff in South Carolina. Local authorities rush to the scene. The bomb's 2 ½ ton detonation charge has torn a crater 10 metres deep. Has nuclear contamination occurred? The military carry out measurements of radioactivity. They recover all the fragments of the secret bomb. A committee investigates the incident and questions the crew of the plane. No charges are brought. But the accident itself, in the middle of a village, cannot be covered up. Journalists put pressure on those responsible. The army is forced to release the cordoned-off area. "A nuclear bomb detaches from its holder in the hold of a B47 jet. It strikes near Florence, South Carolina. An unbelievable accident. Local residents narrowly escaped disaster. Six people were injured. The home of Walter Gregg lies in ruins.". The official explanation is that the bomb was not fitted with a nuclear warhead. 25)

Or a few weeks later, when a Mark 6 bomb crashed into a South Carolina farmer's yard, exploding, injuring several family members and barbecuing dozens of chickens alive. Only the explosive charge needed for nuclear fission detonated. 35)

1958 Mars Bluff B-47 nuclear weapon loss incident. The 1958 Mars Bluff B-47 nuclear weapon loss incident was the inadvertent release of a nuclear weapon from a United States Air Force B-47 bomber over Mars Bluff, South Carolina. The bomb, which lacked the fissile nuclear core, fell over the area, causing damage to buildings below. Though there was no nuclear detonation, six people were injured by the explosion of the bomb's conventional explosives. The Air Force was sued by the family of the victims, who received US$54,000, equivalent to $478,526 in 2019. Description of incident. On March 11, 1958, a U.S. Air Force Boeing B-47E-LM Stratojet from Hunter Air Force Base operated by the 375th Bombardment Squadron of the 308th Bombardment Wing near Savannah, Georgia, took off at approximately 4:34 PM and was scheduled to fly to the United Kingdom and then to North Africa as part of Operation Snow Flurry. The aircraft was carrying nuclear weapons on board in the event of war with the Soviet Union breaking out. Air Force Captain Bruce Kulka, who was the navigator and bombardier, was summoned to the bomb bay area after the captain of the aircraft, Captain Earl Koehler, had encountered a fault light in the cockpit indicating that the bomb harness locking pin did not engage. As Kulka reached around the bomb to pull himself up, he mistakenly grabbed the emergency release pin. The Mark 6 nuclear bomb dropped to the bomb bay doors of the B-47 and the weight

forced the doors open, sending the bomb 15,000 ft (4,600 m) down to the ground below. Two sisters, six-year-old Helen and nine-year-old Frances Gregg, along with their nine-year-old cousin Ella Davies, were playing 200 yards (180 m) from a playhouse in the woods that had been built for them by their father Walter Gregg, who had served as a paratrooper during World War II. The playhouse was struck by the bomb. Its conventional high explosives detonated, destroying the playhouse, and leaving a crater about 70 feet (21 m) wide and 35 feet (11 m) deep. Fortunately, the fissile nuclear core was stored elsewhere on the aircraft. All three girls were injured by the explosion, as were Walter, his wife Effie and son Walter, Jr. Seven nearby buildings were damaged. The United States Air Force (USAF) was sued by the family of the victims, who received US$54,000, equivalent to $478,526 in 2019. The incident made domestic and international headlines. 52)
To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1959

1959-11-25: US: EWA) Plane crashed near Whidbey Island (Washington). H-bombs were not found.

In 1959, a plane crashed near Whidbey Island in Washington State. The nuclear hydrogen bombs were never recovered. 12)
To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1960 till 1969
1960

1960-01-01: US: (EWL) Detonation of a BOMAG air defence missile. Nuclear warhead melts. Contamination.

1960 explodierte eine BOMAG-Luft-Abwehrrakete und brachte den nuklearen Sprengkopf zum Schmelzen. 12)
In 1960, a BOMAG air defence missile exploded and melted the nuclear warhead. 12)

1960-10-05: US: (ES) Error on radar because of moonrise

An American radar reports dozens of missiles heading for the USA, which leads to a high alert level. As the Soviet president is in New York at the time, the report is declared a false alarm. The cause of the alarm is a misinterpretation of the rising moon over Norway by a radar installation. 5)
5 October 1960: Radar equipment in Thule, Greenland, misinterpreted a moonrise over Norway as a large-scale Soviet missile launch. After receiving a report of the supposed attack, NORAD was put on high alert. However, due to the presence of Soviet leader Nikita Khrushchev in New York City as head of the USSR delegation to the United Nations, doubts arose about the authenticity of the attack. 6)
October 5, 1960: A Nuclear Attack? Or the Moon?: A radar alert from Thule, Greenland was sent to NORAD, announcing the detection of dozens of Soviet missiles launched for the United States. NORAD went to high alert, but leaders suspected something was amiss, given that the Soviet leader was visiting New York during the supposed attack. It turns out, the radar had misinterpreted a moonrise over Norway. This example comes from the UCS. 7)
There were cases where the rising moon was interpreted as a Russian attack with intercontinental missiles. 12)
Case 1: The mirrored moon: On 5 October 1960, an early warning radar on Greenland reported a massive Soviet ballistic missile attack en route to the USA. An error in the computer system removed two zeros from the radar's measurement components. This made the missile attack appear to be 2,500 miles away. In reality, it was the

reflection of moonlight 250,000 miles away. 20)
Computers are wrong, and thoroughly so. Sometimes poetically. Once in 1960, the computer of the North American Air Defense Command (NORAD) warned of approaching Soviet missiles with 99.9 percent certainty. Nothing happened. It turned out that the US early warning system in Thule, Greenland, had mistaken the rising moon over Norway for swarms of missiles from Siberia. 35)

1960-10-24: SOW: (HM) Baikonur: R16 intercont. ballistic missile, wrong switch activated before launch, explosion, combustion, nitric acid, 100+ dead

People in a sea of flames. Living torches in the middle of a huge fireball. Burning firefighters who somehow try to save what can be saved, but who themselves already seem hopelessly lost in the midst of smoke and fire... These are not images from an action film. They are documentary film images: Flashes of the worst catastrophe in the history of space travel, captured by cameramen who were supposed to be shooting other pictures. The location of the action: the Soviet rocket centre Baikonur. The plan was to take successful pictures of the launch of the new Soviet nuclear missile R-16 in October 1960. A new superweapon for the Cold War. An intercontinental missile that brought the USA within reach and seemed to have overcome the Soviet nuclear missile force's backlog against the USA. The missile was to be presented to Khrushchev as a gift, so to speak, just in time for the upcoming revolutionary anniversary. The countdown was already running when a huge explosion rocked the launch site at around 6.45 pm. A malfunction had unintentionally triggered a rocket motor, which eventually caused the entire rocket to burst. Within seconds, the fireball swallowed everything in the immediate vicinity. Only a few minutes after the explosion, the first report of horror arrived in Moscow. A hundred victims were reported. What actually happened in Baikonur on 24 October 1960 remained one of the Soviet Union's best-kept state secrets for decades. The film footage of the accident only became accessible in the course of glasnost and perestroika, as did investigation reports, statements and documents. Only years after the collapse of the Soviet Union are contemporary witnesses and survivors prepared to speak openly about the circumstances, background and consequences of the Baikonur disaster. 41)
The largest officially known rocket accident is the Nedelin disaster. On 24 October 1960, according to Soviet figures, 126 people died when a military intercontinental ballistic missile exploded at the Baikonur Cosmodrome. Mitrofan Nedelin, the head of the USSR's strategic rocket forces, wanted to be present at the first successful launch of the R-16 rocket. His presence and orders put the personnel involved under enormous time pressure and, after a series of mistakes, the explosion occurred, burning 124 tonnes of fuel within 90 seconds. 42)

1961

1961-01-24: US: (EWA) 2 H-bombs fell accidentally on Goldsboro/North Carolina. Last of 6 switches prevented nuclear detonation

24 January 1961: 1961 Goldsboro B-52 crash: On 24 January 1961, a B-52 Stratofortress carrying two 3-4 megaton Mark 39 nuclear bombs crashed in mid-air near Goldsboro, North Carolina, jettisoning its nuclear payload. The pilot in command, Walter Scott Tulloch, ordered the crew to eject at an altitude of 2,700 metres. Five crew members successfully ejected from the aircraft and landed safely, another did not survive the landing and two died in the crash.[9] Information released in 2013 showed that one of the bombs was about to detonate. 6)
January 24, 1961: H-bombs Dropped on North Carolina: A bomber was flying over North Carolina, when it lost a wing, and two of its nuclear bombs fell to the ground in Goldsboro, NC. One of the bombs broke on impact after its parachute failed. The other landed unharmed, but five of its six safety devices also failed. Defense Secretary Robert McNamara had this to say: "by the slightest margin of chance, literally the failure of two wires to cross, a nuclear explosion was averted." (Center for Defense Information 1981; McNamara et al. 1963, p. 2). If this Hydrogen bomb had detonated, could it have been misinterpreted as Soviet foul play? This example comes from the UCS. 7)

Blown fuses: The crew of the B-52 that exploded on 24 January 1961 due to a defective fuel line was less fortunate. Before their plane broke apart, the crew was able to jettison their dangerous cargo. One of the two hydrogen bombs landed by its parachute in a tree, the other in a swamp near the small town of Goldsboro in North Carolina. There it bored an estimated 50 metres into the muddy ground - and is still there. The crash site is still a restricted military area. The incident became famous, however, mainly because of the bomb in the tree. Five of the six fuses that were supposed to prevent detonation failed. Only the very last one prevented a nuclear explosion. After the near-disaster, the safety systems on the US nuclear weapons were revised - and Washington also asked the Soviet Union to do the same. 8)
B-52 crash in North Carolina: USA narrowly escaped nuclear disaster: The bomb would have been 260 times more powerful than that of Hiroshima: In 1961, a nuclear bomb almost detonated in the US state of North Carolina, according to the "Guardian". US authorities have now for the first time provided insight into secret documents on the incident. On 24 January 1961, four days after President John F. Kennedy took office, a US Air Force B-52 bomber crashed near the town of Goldsboro in North Carolina. It was carrying two Mark 39 hydrogen bombs that were dropped accidentally when the plane broke up in mid-air. One bomb landed hanging from a parachute in a pasture, the other fell into a marsh and penetrated deep into the earth. A previously secret document provides evidence for the first time of the devastating potential of this US military accident more than 50 years ago. According to a report in the British "Guardian", the USA only narrowly escaped a nuclear catastrophe in the process. Since that time, there has been speculation about the danger posed by the loss of the hydrogen bombs. The US government repeatedly denied that nuclear weapons could endanger US lives. The authorities had confirmed the incident, but never said how close the bomb was to exploding. That there were significant security lapses is proved by the hitherto secret document now published in the Guardian with the unwieldy title "Goldsboro repeated, or: How I learned to fear the H-bomb, or: To clear up misunderstandings." One last switch saved the US: one of the hydrogen bombs reacted in free fall exactly as it is supposed to for a deliberately dropped atomic bomb in case of war - the parachute opened and the triggering mechanisms were activated. Only a final, very sensitive switch prevented detonation. Radioactive fallout could otherwise have spread across Washington, Baltimore, Philadelphia and even New York City, says the paper examined by US author Eric Schlosser. Millions of lives would have been at risk. Investigative journalist Schlosser recently gained international notoriety with his book "Fast Food Nation". For his new book "Command and Control", author Schlosser made use of his right to inspect files and requested old expert reports on the incident. For the first time, he found conclusive proof that the USA only narrowly escaped a nuclear accident. The files show that a nuclear physicist from the Manhattan Project first described the Goldsboro incident. The Manhattan Project was a military research project in which the construction of the atomic bomb was advanced from 1942 onwards. It developed the atomic bombs that were dropped on Hiroshima and Nagasaki in August 1945. Engineer Parker Jones of Sandia National Laboratories, an institute responsible for the technical safety of nuclear weapons, reassessed the incident in 1969. While the Manhattan Project's nuclear physicist had downplayed the incident, Jones describes in commentary notes that "only a simple, dynamoelectric low-current switch stood between the United States and a huge catastrophe". Three out of four safety mechanisms had failed, he said. "The Mark 39 bomb was not adequately secured for use in an aircraft," Jones concluded. 9)
Escape from sinking: It was already known, however, that accidents and negligent handling associated with nuclear weapons were the rule rather than the exception. In 1961, a bomber crashed in North Carolina with two hydrogen bombs on board. 10)
In 1961, a B-52 broke apart in the air over Goldsboro, North Carolina. This caused 2 nuclear bombs to fall to the ground. One parachute worked, so the bomb was only slightly damaged. The other parachute did not open. **IN THIS WARHEAD, 5 OF 67 SAFETY DEVICES FAILED. A SINGLE SWITCH PREVENTED A NUCLEAR EXPLOSION.** 12)
Seymour Johnson Air Force Base in the USA, 1961: This accident is often cited as a near nuclear disaster. A B-52 bomber exploded in mid-air 12 miles north of Seymour Johnson Air Force Base, Goldsboro, North Carolina on 24 January 1961. Two hydrogen bombs with about 4 megatons of explosive power were dropped in this incident. Five crew members parachuted to safety, but three died. One bomb landed almost intact, the second bomb landed in the mud and broke into pieces on impact. The uranium core was never found, despite an extensive search. The site was fenced off and regularly tested for radiation, although the government says there is no background radiation. The risk of a nuclear explosion - after all, five of the six safety devices had failed - is still disputed today. (see Broken Arrow: Goldsboro, NC). 21)

On Jan. 24, 1961, a B-52 bomber broke apart in flight near Goldsboro, N.C., and two atomic bombs fell free, one in a way that caused its arming sequence to be

initiated. Only one safety switch remaining in the safe position prevented a bomb more than 250 times more destructive than the one dropped on Hiroshima from exploding. One could, of course, claim the switch had operated as designed, and thus the event was “controlled,” not “lucky.” But as one retired weapon system engineer from Sandia National Laboratories later explained in a government-produced documentary on the incident, “unfortunately, there had been some 30-some incidents where the ready-safe switch was operated inadvertently. We’re fortunate that the weapons involved at Goldsboro were not suffering from the same malady.” The only reason a multi-megaton nuclear explosion did not take place is because, luckily, two failures that had happened separately in the past did not happen simultaneously this time. 23)

On 23 January 1961, a B-52 bomber takes off for a 23-hour mission. On board: 2 MK-39 hydrogen bombs. Their destructive power is 250 times that of the Hiroshima bomb. It is no longer a drill. Each of these missions can lead to a nuclear strike against the Soviet Union. Billy Reeves: "I lived in the white house down there. And I heard this terrible sound. I looked out my window and I saw a fireball. I heard my mother praying and I jumped up. I saw the plane. It was swirling in the air like this. The trees were on fire. Forty-five minutes later, the Air Force was there. They were flying around with a helicopter and a huge pig light, yelling "Evacuate, evacuate!". And that's what we did.". The incident is top secret. Joel Dobson, a Strategic Air Command officer, reconstructs it after more than 10 years of research in declassified documents: "It's one of the few accidents where all the evidence of the crash has completely disappeared. I have spoken to people on the ground. They were told never to talk about it. The matter was very secretive at the time. On the morning of 23 January 1961, an aircraft piloted by Major Scott Tulloch took off from Goldsboro / North Carolina on an exercise." The mission proceeds perfectly normally. Until the co-pilot reports a fuel leak on the right wing. A crack that grows larger. The crew informs the base in Goldsboro that they have to make an emergency landing. Earl Smith: "I was an explosive ordnance disposal technician, 24 years old and on standby that day. The tower called me around midnight and told me a B-52 bomber was in trouble. A leak. I grabbed my clothes and headed to the base. It was a real cold January night.". Dobson: "They lost almost 19 tons of fuel in one fell swoop. There must have been a huge tear in the wing. They called the wing 'wet wing' because there was a tank in it.". The situation becomes critical. Commander Tulloch realises the chances of an emergency landing are slim. Then a loud bang shakes the plane. "The plane broke apart in mid-air. The wing and tail broke off. The nose was pointing down but it was turning.". 5 crew members used the ejection seat, a 6th used the parachute, 2 remain trapped in the fuselage. At 0:35 the bomber crashes in a field near Goldsboro. A total of 3 crew members die in the crash. Smith: "In the picture, the body of Major Shelton is recovered. I was a young man. I had never smelled burnt flesh before. It was horrible!". A crew uses a helicopter to search for the two bombs. "In the headlights of the helicopter we saw a bomb and its parachute". Drilled upright into the ground, it looks like a memorial. Smith: "I had a little tool bag with me. I scratched around a bit and got the inspection door open. The switch was in the 'safe' position. We didn't have much to worry about.". Despite systematically searching the entire site, the US Air Force is unable to find the second bomb. This is the connection that Joel Dobson has investigated closely: "In this document I discovered the name Jack ReVelle for the first time. He was an explosive ordnance disposal technician at Wright-Patterson Air Force Base in Ohio. For 50 years he was bound by military secrecy and not allowed to talk about it. Now, for the first time, he is telling what happened. "Early in the morning of January 24, 1961, at 5:30 a.m., I was asleep in my bed, my boss called me. Instead of using the code words we had rehearsed, he told me, "Jack, we have an emergency!".". By plane, Jack ReVelle is at the crash site a few hours later. He gets an overview and reconstructs the incident. The second bomb is underground. The parachute had not opened and the bomb penetrated the ground at the speed of sound. The friction from the earth was so great that the weapon detached from the casing". At a depth of almost 6 metres, they find the actual nuclear device under the destroyed top of the bomb. Earl Smith calls out from the hole to Jack ReVelle: ""We found the safety switch." I said. "Great!". And he goes, "No, not Prima! She's hot!". It got very quiet. We were worried. Is this thing going to explode?"". Earl Smith tries to recover the most dangerous part of the bomb, the plutonium core. Smith: "I reach the bottom of the hole and feel the different parts. Then I feel the plutonium sphere. I pulled it out and gave it to someone. I don't remember who. Maybe Lieutenant ReVelle or someone else.". ReVelle: "I reach down and pick up the plutonium sphere, which weighs about 20 pounds. I lift it to my chest like this and walk to the wooden ladder. Then I climb up over 5 metres to the surface.". Mission accomplished. The search team is extremely relieved. ReVelle: "If one of the bombs, or worse both bombs, had exploded, the explosion would have had a force of 3.8 megatons. That is equivalent to 3 ½ million tonnes of TNT. Every living thing within a radius of 100 km would have been killed. There would have been nothing left there, just a huge hole in the ground. We would probably have had the Gulf or the Bay of North Carolina. The landscape of the east coast of the US would have been completely reshaped.". The apocalyptic scenario remains absent. But the lower part of the bomb,

which also contains highly radioactive elements, cannot be recovered even after 4 months. It remains buried at a depth of more than 60 metres. The US Air Force throws in the towel. Dobson: "There is another document that is heavily censored, as you can see. One sentence is interesting: 'The Los Alamos science lab recommends taking some water samples for analysis and filling in the hole and forgetting about it.'" Somewhere under this field is still some of the nuclear cargo from the USA's most powerful weapon. Among them, several kilograms of plutonium-239, one of the most toxic substances on the planet. At the time, no one in the USA was upset about the accident in Goldsboro. The missions of the B-52 bombers continued undeterred, day after day. 25)

According to the research of journalist Eric Schlosser, only a jammed switch prevented a nuclear explosion over North Carolina on 24 January 1961. However, Schlosser is controversial; his publications are criticised by independent military experts as sensationalist. 32)

A simple electrical switch in a damaged MK39 Mod 2 hydrogen bomb on 24 January 1961 prevented America from commemorating that date as "Nuclear Disaster Day", three days after John F. Kennedy's inauguration. If a short circuit had disabled the switch, more destructive power than in all wars in human history would have been released by explosives, the equivalent of 260 Hiroshima bombs would have incinerated Goldsboro in North Carolina. And radioactively contaminated Washington and Philadelphia. When a B-52 Stratofortress broke apart, a bomb had lifted almost all safety interlocks to detonate. Five of eight crew members survived the emergency ejection at 2700 metres. The state of North Carolina erected a memorial in their honour near the crash site in July 2012. "Nuclear Mishap" it is called, a nice tourist attraction. 35)

Atomic bomb almost exploded over the USA: The USA narrowly escaped a nuclear catastrophe in 1961. Secret files show that two hydrogen bombs accidentally fell from an Air Force B-52 bomber that broke up in mid-air. At the height of the Cold War, the US apparently narrowly escaped a self-inflicted nuclear disaster: In 1961, a hydrogen bomb 260 times as powerful as the Hiroshima bomb almost exploded over North Carolina after a serious aircraft breakdown, the British "Guardian" reported, citing a recently declassified secret US government document. Only at the last moment did a safety switch prevent the explosion. According to the information, on 23 January 1961, a B-52 long-range bomber of the US Air Force with two atomic bombs on board broke apart in mid-air during a routine flight over the town of Goldsboro, the bombs detached and fell to earth - without exploding. However, in an investigation eight years later, Parker F. Jones, an engineer working for the US government, concluded that three of the four safety mechanisms designed to prevent an accidental explosion had failed on one of the two bombs. Only a simple safety switch prevented the impending catastrophe at the last minute. Distrusting the H-bomb: "The MK39 Mod 2 bomb did not have the appropriate safety mechanisms for airborne deployment," Jones concluded in his confidential report, which he titled with dry humour "Reunion in Goldsboro or: How I Learned to Distrust the H-Bomb" - in reference to Stanley Kubrik's cult film "Dr. Strangelove or: How I Learned to Love the Bomb". The US government had already acknowledged the incident in the past - but only the secret report from 1969 confirms how serious the situation really was, according to the British newspaper. According to the report, the incident put the lives of millions of people in danger, and major cities from Washington to New York would have been affected. The document was unearthed by US investigative journalist Eric Schlosser while researching a new book on the nuclear arms race, and he invoked the Freedom of Information Act to obtain it. He accused the US government of hiding the dangers of inadequate safeguards from the public so as not to jeopardise its nuclear policy: "We were told it was impossible for these weapons to detonate accidentally - and yet here we have one where it almost did," he told the Guardian. According to Schlosser's research, the US government recorded at least 700 "significant" accidents and incidents involving some 1250 nuclear weapons between 1950 and 1968. 37)

1961 Goldsboro B-52 crash. The 1961 Goldsboro B-52 crash was an accident that occurred near Goldsboro, North Carolina, on 23 January 1961. A Boeing B-52 Stratofortress carrying two 3–4-megaton Mark 39 nuclear bombs broke up in mid-air, dropping its nuclear payload in the process. The pilot in command, Walter Scott Tulloch, ordered the crew to eject at 9,000 feet (2,700 m). Five crewmen successfully ejected or bailed out of the aircraft and landed safely; another ejected, but did not survive the landing, and two died in the crash. Information declassified in 2013 showed that one of the bombs came very close to detonating. Accident. This section needs additional citations for verification. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed.
Find sources: "1961 Goldsboro B-52 crash" – news · newspapers · books · scholar · JSTOR (January 2018) (Learn how and when to remove this template message). 1961 Goldsboro B-52 crash is located in North Carolina. The aircraft, a B-52G, was based at Seymour Johnson Air Force Base in Goldsboro. Around midnight on 23–24

January 1961, the bomber had a rendezvous with a tanker for aerial refueling. During the hook-up, the tanker crew advised the B-52 aircraft commander, Major Walter Scott Tulloch (grandfather of actress Elizabeth Tulloch), that his aircraft had a fuel leak in the right wing. The refueling was aborted, and ground control was notified of the problem. The aircraft was directed to assume a holding pattern off the coast until the majority of fuel was consumed. However, when the B-52 reached its assigned position, the pilot reported that the leak had worsened and that 37,000 pounds (17,000 kg) of fuel had been lost in three minutes. The aircraft was immediately directed to return and land at Seymour Johnson Air Force Base. As the aircraft descended through 10,000 feet (3,000 m) on its approach to the airfield, the pilots were no longer able to keep it in stable descent and lost control. The pilot in command ordered the crew to abandon the aircraft, which they did at 9,000 feet (2,700 m). Five men landed safely after ejecting or bailing out through a hatch, one did not survive his parachute landing, and two died in the crash. The third pilot of the bomber, Lt. Adam Mattocks, is the only person known to have successfully bailed out of the top hatch of a B-52 without an ejection seat. The crew's final view of the aircraft was in an intact state with its payload of two 3-4-megaton[a] Mark 39 thermonuclear bombs still on board; however, the bombs separated from the gyrating aircraft as it broke up between 1,000 and 2,000 feet (300 and 610 m). The aircraft wreckage covered a 2-square-mile (5.2 km2) area of tobacco and cotton farmland at Faro, about 12 miles (19 km) north of Goldsboro.[8] Three of the four arming mechanisms on one of the bombs activated after it separated, causing it to execute many of the steps needed to arm itself, such as charging the firing capacitors and deploying a 100-foot-diameter (30 m) parachute. Bomb recovery. The first bomb that descended by parachute was found intact and standing upright as a result of its parachute being caught in a tree. Lt. Jack ReVelle, the bomb-disposal expert responsible for disarming the device, stated that the arm/safe switch was still in the safe position, although it had completed the rest of the arming sequence. The Pentagon claimed at the time that there was no chance of an explosion and that two arming mechanisms had not activated. A United States Department of Defense spokesperson stated that the bomb was unarmed and could not explode. Former military analyst Daniel Ellsberg has claimed to have seen highly classified documents indicating that its safe/arm switch was the only one of the six arming devices on the bomb that prevented detonation. In 2013, information released as a result of a Freedom of Information Act request confirmed that a single switch out of four (not six) prevented detonation. The second bomb plunged into a muddy field at around 700 miles per hour (310 m/s) and disintegrated without detonation of its conventional explosives. The tail was discovered about 20 feet (6.1 m) below ground. Pieces of the bomb were recovered.[16][page needed] Although the bomb was partially armed when it left the aircraft, an unclosed high-voltage switch had prevented it from fully arming. In 2013, ReVelle recalled the moment the second bomb's switch was found: Until my death I will never forget hearing my sergeant say, "Lieutenant, we found the arm/safe switch." And I said, "Great." He said, "Not great. It's on arm." Excavation of the second bomb was abandoned as a result of uncontrollable ground-water flooding. Most of the thermonuclear stage, containing uranium and plutonium, was left in place, but the "pit", or core, of the bomb had been dislodged and was removed. The United States Army Corps of Engineers purchased a 400-foot (120 m) circular easement over the buried component. The University of North Carolina at Chapel Hill determined the buried depth of the secondary component to be 180 ± 10 feet (54.9 ± 3.0 m). Consequences to B-52 design. Wet wings with integral fuel tanks considerably increased the fuel capacity of B-52G and H models, but were found to be experiencing 60% more stress during flight than did the wings of older models. Wings and other areas susceptible to fatigue were modified in 1964 under Boeing engineering change proposal ECP 1050. This was followed by a fuselage skin and longeron replacement (ECP 1185) in 1966, and the B-52 Stability Augmentation and Flight Control program (ECP 1195) in 1967. Later analysis of weapons recovery. Lt. Jack ReVelle, the bomb disposal expert responsible for disarming the device, claimed "we came very close" to a nuclear detonation that would have completely changed much of eastern North Carolina. He also said the yield of each bomb was more than 250 times the destructive power of the Hiroshima bomb, large enough to create a 100% kill zone within a radius of 8.5 miles (13.7 km). In a now-declassified 1969 report, titled "Goldsboro Revisited", written by Parker F. Jones, a supervisor of nuclear safety at Sandia National Laboratories, Jones said that "one simple, dynamo-technology, low voltage switch stood between the United States and a major catastrophe", and concluded that "[t]he MK 39 Mod 2 bomb did not possess adequate safety for the airborne alert role in the B-52". However, Michael H. Maggelet and James C. Oskins, authors of Broken Arrow: The Declassified History of U.S. Nuclear Weapons Accidents, dispute this claim, citing a declassified report. They point out that the arm-ready switch was in the safe position, the high-voltage battery was not activated (which would preclude the charging of the firing circuit and neutron generator necessary for detonation), and the rotary safing switch was destroyed, preventing energisation of the X-Unit (which controlled the firing capacitors). The tritium reservoir used for fusion boosting was also full and had not been injected into

the weapon primary. This would have resulted in a significantly reduced primary yield and would not have ignited the weapon's fusion secondary stage. Legacy. In July 2012, the State of North Carolina erected a historical road marker in the town of Eureka, 3 miles (4.8 km) north of the crash site, commemorating the crash under the title "Nuclear Mishap". 53)
To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1961-03-14: US: (EWA/HAD) Yuba City/Calif., crash B-52, 4 A-bombs, decompression, lack of fuel, no contamination, 1 dead, injured

On 14 March 1961 an aircraft accident occurred near Yuba City, California. A United States Air Force B-52F-70-BW Stratofortress bomber, AF Serial No. 57-0166, c/n 464155, carrying two nuclear weapons departed from Mather Air Force Base near Sacramento. According to the official Air Force report, the aircraft experienced an uncontrolled decompression that required it to descend to 10,000 feet (3,000 m) in order to lower the cabin altitude. Increased fuel consumption caused by having to fly at lower altitude, combined with the inability to rendezvous with a tanker in time caused the aircraft to run out of fuel. The aircrew ejected safely, and then the unmanned aircraft crashed 15 miles (24 km) west of Yuba City, tearing the nuclear weapons from the aircraft on impact. However, in a 2012 book LTC Earl McGill, a retired SAC B-52 pilot, claims that the aircrew, after an inflight refueling session that provided inadequate fuel, refused the offer of an additional, unscheduled inflight refueling, bypassed possible emergency landing fields and ran out of fuel. The crew ejected, the aircraft broke up and four onboard nuclear weapons were released. The weapons' multiple safety interlocks prevented both a nuclear explosion and release of radioactive material. LTC McGill, based on his SAC experience, blames the aircrew failures on the use of dexedrine to overcome tiredness on the 24-hour flight preceding the accident. The weapons did not detonate as their safety devices worked properly. A fireman was killed and several others injured in a road accident while en route to the accident scene. Contents 31)
To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1961-11-24: US: (HDE/ET) Loss of SAC contact with NORAD & BMEWS systems due to failure of a relay station, attack was suspected.

24 November 1961: Personnel at Strategic Air Command HQ (SAC HQ) simultaneously lost contact with NORAD and several Ballistic Missile Early Warning System sites. Since these communication lines were redundant and independently designed, the communication failure was interpreted as either a very unlikely coincidence or a coordinated attack. SAC headquarters prepared the entire deployable force for departure before aircraft already flying overhead confirmed that there did not appear to be an attack. It later transpired that the failure of a single relay station in Colorado was the sole cause of the communications problem. 6)
November 24, 1961: The Threat of False Coincidence: On this evening, communication links between Strategic Air Command headquarters (SAC HQ) and NORAD went dead. The result was that SAC HQ lost communication with three Ballistic Missile Early Warning Sites (BMEWS) around the world, all of which were supposed to run on independent telephone and telegraph lines. Staff at SAC HQ were forced to assume that the lines had either all crashed simultaneously by some strange coicidence, or they were under attack. Radio communication was finally established with a B-52 bomber that was flying above one of the BMEWS, and it was able to confirm that the site looked fine and no attack had taken place. It turned out that the supposedly independent communication lines actually all traveled through one relay station in Colorado. On that particular evening, a motor at the relay station had overheated, dropping all communication. This example comes from the UCS. 7)

1962

1962-06-04: US/PAZ: (EWL) South Sea A: H warhead falls into the sea and was never found.

After a few more incidents with nuclear uncharged bombs, several near-disasters occurred in 1962: Several rockets with hydrogen bombs were launched from Johnston Atoll in the western Pacific to explode at high altitude. In the first attempt on 4 June, the warhead crashed into the sea and was never found. 32)
To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1962-06-20: US/PAZ: (EWL) South Sea B: H warhead detonated at an altitude of 10 kilometres. Contamination of parts of the atoll.

After a few more incidents with nuclear uncharged bombs, several near-disasters occurred in 1962: Several rockets with hydrogen bombs were launched from Johnston Atoll in the western Pacific to explode at high altitude. In the second on 20 June, the charge detonated at an altitude of ten kilometres, contaminating parts of the atoll. 32)
To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1962-07-26: US/PAZ: (EWL) South Sea C: Rocket with H-bomb explodes on launch pad. Contamination several kilometres.

After a few more incidents with nuclear uncharged bombs, several near-disasters occurred in 1962: Several rockets with hydrogen bombs were launched from Johnston Atoll in the western Pacific to explode at high altitude. The third attempt on 9 July succeeded as planned, while 17 days later the next rocket exploded on the launch pad, scattering nuclear material over a radius of several kilometres. 32)

1962-08-23: US/SOW: (HM) US bombers in Soviet no-fly zone due to navigation error. Fortunately Soviets did not react. Later correction of the route.

August 23, 1962: US-Bomber in Soviet No-Fly Zone: During this era, U.S. B-52 bombers armed with nuclear weapons were constantly in the air in an attempt to prevent the planes from being destroyed on the ground in a surprise attack. The Russians had interceptor bases that were thought to have a 400 mile radius in order to prevent these planes from getting too close. On this particular day, the crew on one of the B-52s made a navigational error that took them 20 degrees off course and within 300 miles of one of these suspected interceptor bases. It's unclear why the Russians didn't react, but the US did eventually alter the course of that particular route to prevent another similar mistake. However, that correction didn't take effect until after the Cuban Missile Crisis had ended. This example comes from the Nuclear Files. 7)

1962-10-XX: US/PAZ: (EWL) South Sea D: Nuclear rocket launch failure.

After a few more incidents with nuclear uncharged bombs, several near-disasters occurred in 1962: Several rockets with hydrogen bombs were launched from Johnston Atoll in the western Pacific, which were to explode at high altitude. Another failure followed in October and November, as well as four successful launches with explosions at altitudes between 21 and 147 kilometres. 32)

1962-10-14: SOW/US: (…) Cuban crisis/Caribbean crisis: Soviet missiles in Cuba as a result of American missiles in Italy, Turkey (until 1962-10-28)

The Cuban Missile Crisis, also known as the October Crisis of 1962 (Spanish: Crisis de Octubre), the Caribbean Crisis (Russian: Карибский кризис, tr. Karibsky krizis, IPA: [kʁˈrʲipskʲij ˈkrʲizʲɪs]), or the Missile Scare, was a 1 month, 4 day (16 October – 20 November 1962) confrontation between the United States and the Soviet Union which escalated into an international crisis when American deployments of missiles in Italy and Turkey were matched by Soviet deployments of similar ballistic missiles in Cuba. The confrontation is often considered the closest the Cold War came to escalating into a full-scale nuclear war. In response to the presence of American Jupiter

ballistic missiles in Italy and Turkey, and the failed Bay of Pigs Invasion of 1961, Soviet First Secretary Nikita Khrushchev agreed to Cuba's request to place nuclear missiles on the island to deter a future invasion. An agreement was reached during a secret meeting between Khrushchev and Cuban Prime Minister Fidel Castro in July 1962, and construction of a number of missile launch facilities started later that summer. Meanwhile, the 1962 United States elections were under way, and the White House denied charges for months that it was ignoring dangerous Soviet missiles 90 mi (140 km) from Florida. The missile preparations were confirmed when an Air Force U-2 spy plane produced clear photographic evidence of medium-range R-12 (NATO code name SS-4) and intermediate-range R-14 (NATO code name SS-5) ballistic missile facilities. When this was reported to President John F. Kennedy he then convened a meeting of the nine members of the National Security Council and five other key advisers in a group that became known as the Executive Committee of the National Security Council (EXCOMM). After consultation with them, Kennedy ordered a naval blockade on October 22 to prevent further missiles from reaching Cuba. The US announced it would not permit offensive weapons to be delivered to Cuba and demanded that the weapons already in Cuba be dismantled and returned to the Soviet Union. After several days of tense negotiations, an agreement was reached between Kennedy and Khrushchev. Publicly, the Soviets would dismantle their offensive weapons in Cuba and return them to the Soviet Union, subject to United Nations verification, in exchange for a US public declaration and agreement to not invade Cuba again. Secretly, the United States agreed that it would dismantle all of the Jupiter MRBMs, which had been deployed in Turkey against the Soviet Union. There has been debate on whether or not Italy was included in the agreement as well. When all offensive missiles and the Ilyushin Il-28 light bombers had been withdrawn from Cuba, the blockade was formally ended on November 20, 1962. The negotiations between the United States and the Soviet Union pointed out the necessity of a quick, clear, and direct communication line between the two Superpowers. As a result, the Moscow–Washington hotline was established. A series of agreements later reduced US–Soviet tensions for several years until both parties eventually resumed expanding their nuclear arsenals. 43)

1962-10-24: US/SOW: (ES) Soviet satellite explodes during Cuban Missile Crisis and is considered an attack.

October 24, 1962: Soviet Satellite Explodes During Cuban Missile Crisis: In the middle of the Cuban Missile Crisis, a Soviet satellite entered its orbit, but exploded soon after. Not much is known about the event or US reaction to it because the records are still classified. However, many years later, Sir Bernard Lovell of the Jodrell Bank Observatory noted that, "the explosion of a Russian spacecraft in orbit during the Cuban missile crisis... led the U.S. to believe that the USSR was launching a massive ICBM attack." This example comes from the Nuclear Files. 7)

1962-10-25: US: (HS) Bear set off nuclear alarm due to wiring failure. Officer off duty Base Volk Field Wisconsin stopped bomber launches.

To protect the fighter planes, they were stationed at remote bases, such as Volk in northern Wisconsin. The airfield was so small that there was not even a tower. Volk's superior command post was a base in Duluth, Minnesota. The alarm would come from there if the Cuban Missile Crisis required a mission. And on the frosty night of 25 October, the time had come: a saboteur penetrated the Duluth base. The guard post's question about the identity remains unanswered. The Russians are coming! Barely 500 km away at the Volk base, the fighter pilots are roused from their sleep. The pilots were informed that this time it was no longer training. It was indeed serious. They were to take off in the middle of the night with nuclear weapons on board. Meanwhile, in Duluth, the sentry was trying to arrest the saboteur. It was only a bear. At Volk airfield, the duty officer realised he had raised a false alarm, but he could not abort the initiated fighter take-off. Volk had no control tower. At the last second, with lights flashing, a truck appeared on the runway. The officer on duty had reacted quickly. This prevented a nuclear strike at the last second. 1)
25 October 1962: During the Cuban Missile Crisis, US military planners anticipated that sabotage could precede a nuclear first strike by the Soviet Union. Around midnight on 25 October 1962, a guard at the Duluth Sector Direction Center saw a figure climbing over the security fence. He shot at it and activated the sabotage alarm, which automatically set off similar alarms at other bases in the region. At Volk Field in Wisconsin, a faulty alarm system instead triggered the Klaxon, which ordered the Air Defense Command's (ADC) nuclear-armed F-106A interceptors into the air. The pilots had been told that there would be no alert drills and, according to political scientist

Scott D. Sagan, they "firmly believed that nuclear war was starting". Before the planes could take off, the base commander contacted Duluth and learned of the mistake. An officer in the command centre drove his car onto the runway, signalled lights and signalled the planes to stop. The intruder turned out to be a bear. Sagan writes that the incident raised the dangerous possibility of an ADC interceptor accidentally shooting down a Strategic Air Command (SAC) bomber. Interceptor crews had not been fully briefed by SAC on plans to move bombers to dispersal bases (such as Volk Field) or the secret routes flown by bombers on constant alert as part of Operation Chrome Dome. Declassified ADC documents later revealed that "the incident led to changes in the alert klaxon system [...] to prevent a recurrence". 6)
October 25, 1962: Bear Triggers Nuclear Alarm: The Cuban Missile Crisis was underway and U.S. military forces had been put on high alert. A guard at the Duluth Sector Direction Center shot at what he thought was an intruder climbing the fence into the facility. He activated a sabotage alarm that sounded across all the bases in the area, however, at Volk Field in Wisconsin, the alarms had been miswired. Instead of signalling an intruder at another base, an alarm sounded that ordered take off of nuclear armed F-106A interceptors. Because they were on high alert, pilots knew this wasn't a drill. Fortunately, they first established communication with the Duluth center, where they learned that this was not a nuclear attack, but rather, a bear trying to enter the center. This example comes from the Nuclear Files. 7)

1962-10-26: US/SOW: (HM) American F102A fighter jets with nuclear missiles inadvertently penetrated Soviet airspace. No escalation.

October 26, 1962: US F102A Fighters vs Soviet MIG interceptors: It wasn't uncommon for U-2 spy planes to inadvertently fly into Soviet air space. So during the Cuban Missile Crisis, they were ordered not to fly within 100 miles of Soviet air to avoid such accidental mishaps. Yet, on the evening of October 26, one of the U2s was order to change paths and the pilot accidentally flew within Soviet air space. Soviet MIG interceptors took flight, with orders to bring down the U-2. The US pilot was ordered by commanders to fly back to Alaska as quickly as possilble, but he ran out of fuel while still over Siberia. He sent out an SOS, and F-102A fighters were sent up to escort him on his glide back to US ground. The F-102A jets were loaded with nuclear missiles and the pilots had been given orders to shoot at their own discretion. This example comes from the Nuclear Files. 7)

1962-10-26 : US: (HCI) Surveillance located missile launched by Cuba, but detonated by US itself over Florida, lack of communication.

On 26 October, a radar station in Moorestown, New Jersey, was scanning the airspace over Cuba. Suddenly, a missile was detected. It was almost the starting signal for the Third World War. Before the Cuban Missile Crisis, American radars were only pointed over the North Pole at the then Soviet Union. The Airforce now also pointed radar systems towards Cuba. One of these was Moorestown. If a missile had been launched at Cuba, it would have been detected here first. Moorestown was so important for survival that the Air Force installed a hot wire directly to the White House, but it was eventually cut again. The flight time of a missile to Washington was 10 minutes. It took the computer only 30 seconds to determine the missile's target; the President had only minutes to decide whether to destroy the Soviet Union. The missile's course was now clear, it was heading for the Atlantic. It was later learned that the President's own air force had fired the missile at Florida. In the midst of the highest alert in American history, the Air Force conducted a routine test. Moorestown was criminally not even forewarned. That was corrected after this incident, and very quickly. But Moorestown was not the only station watching the skies. This missile launch would have been easily tracked by the Soviet Union and could have been seen as a harbinger of a surprise nuclear attack. The Soviet Union was on full alert, the military thought it could have gone off any second. If the Soviets had interpreted this Titan missile as a surprise attack, nuclear war would have broken out on 26 October 1962. 1)
October 26, 1962: Unannounced ICBM Launch during Cuban Missile Crisis: A Titan-II ICBM was launched from Florida into the South Pacific. But no one alerted the Moorestown Radar site. The understandable concern at the radar site was eased once the crew was able to plot the course of the missile, but this event made clear just how great the potential for a false alarm was. "Orders were given that radar warning sites must be notified in advance of test launches, and the countdown be relayed to them." This example comes from the Nuclear Files. 7)

1962-10-26: US: (HS) Skipped procedures, easily accessible codes and ready-to-launch Minuteman-1 missiles at Malmstrom Air Force Base.

October 26, 1962: Easy-access Codes: With nuclear foreces on high alert because the Cuban Missile Crisis was escalating, work was accelerated at the Malmstrom Air Force Base to prepare the Minuteman-1 missiles for full deployment. In the rush, proper handover procedures and safety checks were skipped. The result was that one of the silos and missiles were ready to go with no armed guards to cover their transport to separate storage. All of the launch equipment and codes were placed together in the silo, which would have allowed a single operator to launch a fully armed missile. Throughout the crisis, the missiles at this base were constantly being pulled on and off alert as more problems were found. Given the extreme tension during that time, it's quite fortunate nothing more serious occurred. This example comes from the Nuclear Files. 7)

1962-10-27: SOV/US: (HDI/HR) V. Archipov prevents nuclear sinking of US Atlantic fleet by short-circuiting action of a submarine captain.

Vasili Alexandrovich Arkhipov (Russian: Василий Александрович Архипов, IPA: [vɐˈsʲilʲɪj ɐlʲɪkˈsandrəvʲɪtɕ arˈxʲipɔːf], 30 January 1926 – 19 August 1998) was a Soviet Navy officer credited with preventing a Soviet nuclear strike (and, presumably, all-out nuclear war) during the Cuban Missile Crisis. Such an attack likely would have caused a major global thermonuclear response. As flotilla commander and second-in-command of the diesel powered submarine B-59, Arkhipov refused to authorize the captain's use of nuclear torpedoes against the United States Navy, a decision requiring the agreement of all three senior officers aboard. In 2002, Thomas Blanton, who was then director of the US National Security Archive, said that Arkhipov "saved the world". Early life: Arkhipov was born into a peasant family in the town of Staraya Kupavna, near Moscow. He was educated in the Pacific Higher Naval School and participated in the Soviet–Japanese War in August 1945, serving aboard a minesweeper. He transferred to the Caspian Higher Naval School and graduated in 1947. Early career: After graduating in 1947, Arkhipov served in the submarine service aboard boats in the Black Sea, Northern and Baltic Fleets. K-19 accident: In July 1961, Arkhipov was appointed deputy commander and therefore executive officer of the new Hotel-class ballistic missile submarine K-19. After a few days of conducting exercises off the south-east coast of Greenland, the submarine developed an extreme leak in its reactor coolant system. This leak led to failure of the cooling system. Radio communications were also affected, and the crew was unable to make contact with Moscow. With no backup systems, Captain Nikolai Zateyev ordered the seven members of the engineer crew to come up with a solution to avoid nuclear meltdown. This required the men to work in high radiation levels for extended periods. They eventually came up with a secondary coolant system and were able to keep the reactor from a meltdown. Although they were able to save themselves from a nuclear meltdown, the entire crew, including Arkhipov, were irradiated. All members of the engineer crew and their divisional officer died within a month due to the high levels of radiation they were exposed to. Over the course of two years, 15 more sailors died from the after-effects. Involvement in Cuban Missile Crisis: On 27 October 1962, during the Cuban Missile Crisis, a group of 11 United States Navy destroyers and the aircraft carrier USS Randolph located the diesel-powered, nuclear-armed Foxtrot-class submarine B-59 near Cuba. Despite being in international waters, the United States Navy started dropping signaling depth charges, explosives intended to force the submarine to come to the surface for identification. There had been no contact from Moscow for a number of days and, although the submarine's crew had earlier been picking up U.S. civilian radio broadcasts, once B-59 began attempting to hide from its U.S. Navy pursuers, it was too deep to monitor any radio traffic. Those on board did not know whether war had broken out or not. The captain of the submarine, Valentin Grigorievitch Savitsky, decided that a war might already have started and wanted to launch a nuclear torpedo. Unlike the other submarines in the flotilla, three officers on board B-59 had to agree unanimously to authorize a nuclear launch: Captain Savitsky, the political officer Ivan Semonovich Maslennikov, and the flotilla commodore (and executive officer of B-59) Arkhipov. Typically, Soviet submarines armed with the "Special Weapon" required the captain only to get authorization from the political officer to launch a nuclear torpedo, but due to Arkhipov's position as commodore, B-59's captain also was required to gain Arkhipov's approval. An argument broke out, with only Arkhipov against the launch. Even though Arkhipov was second-in-command of the submarine B-59, he was in fact commodore of the entire submarine flotilla, including B-4, B-36 and B-130. According to author Edward

Wilson, the reputation Arkhipov had gained from his courageous conduct in the previous year's K-19 incident also helped him prevail.[8] Arkhipov eventually persuaded Savitsky to surface and await orders from Moscow. This effectively averted the general nuclear war which probably would have ensued if the nuclear weapon had been fired. The submarine's batteries had run very low and the air-conditioning had failed, causing extreme heat and high levels of carbon dioxide inside the submarine. They were forced to surface amid the American pursuers and return to the Soviet Union as a result. Aftermath: Immediately upon return to Russia, many crew members were faced with disgrace from their superiors. One admiral told them "It would have been better if you'd gone down with your ship." Olga, Arkhipov's wife, even said "he didn't like talking about it, he felt they hadn't appreciated what they had gone through." Each captain was required to present a report of events during the mission to the Soviet defense minister, Marshal Andrei Grechko in substitute due to illness of the official defense minister. Grechko was infuriated with the crew's failure to follow the strict orders of secrecy after finding out they had been discovered by the Americans. One officer even noted Grechko's reaction, stating that he "upon learning that it was the diesel submarines that went to Cuba, removed his glasses and hit them against the table in fury, breaking them into small pieces and abruptly leaving the room after that." In 2002, retired Commander Vadim Pavlovich Orlov, a participant in the events, held a press conference revealing the subs were armed with nuclear torpedoes and that Arkhipov was the reason those devices had not been fired. Orlov presented the events less dramatically, saying that Captain Savitsky lost his temper, but eventually calmed down. When discussing the Cuban Missile Crisis in 2002, Robert McNamara, the U.S. Secretary of Defense at the time, stated, "We came very close" to nuclear war, "closer than we knew at the time." Arthur M. Schlesinger Jr., an advisor for the John F. Kennedy administration and a historian, continued this thought by stating "This was not only the most dangerous moment of the Cold War. It was the most dangerous moment in human history." Later life and death: Arkhipov continued in Soviet Navy service, commanding submarines and later submarine squadrons. He was promoted to rear admiral in 1975, and became head of the Kirov Naval Academy. Arkhipov was promoted to vice admiral in 1981 and retired in the mid-1980s. He subsequently settled in Kupavna (which was incorporated into Zheleznodorozhny, Moscow Oblast, in 2004), where he died on 19 August 1998. The radiation to which Arkhipov had been exposed in 1961 may have contributed to his kidney cancer, like many others who served with him in the K-19 accident. Nikolai Vladimirovich Zateyev, the commander of the submarine K-19 at the time of its onboard nuclear accident, died nine days later, on 28 August 1998. Both Arkhipov and Zateyev were 72 at the time of their deaths. Personal life: Family: Vasily Arkhipov was married to Olga Arkhipova until his death in 1998. They had a daughter named Yelena. Character: Arkhipov was known to be a shy and humble man. In a PBS documentary titled The Man Who Saved the World, his wife described him as intelligent, polite and very calm. Much of what is known about his personality comes from her. According to her, he enjoyed searching for newspapers during their vacations and tried to stay up-to-date with the modern world as much as possible. In this same interview, Olga alludes to her husband's possible superstitious beliefs as well. She recalls walking in on Vasily burning a bundle of their love letters inside their house, claiming that keeping the letters would mean "bad luck". In popular culture: The K-19 accident was the basis for the 2002 film, K-19: The Widowmaker. The fourth track on the 2017 album The Dusk in Us by American punk rock band Converge is titled "Arkhipov Calm" and is based on his Cuban Missile Crisis decision. Awards and honors. In recognition of his actions onboard B-59, Arkhipov received the first "Future of Life Award," which was presented posthumously to his family in 2017. Offered by the Future of Life Institute, this award recognizes exceptional measures, often performed despite personal risk and without obvious reward, to safeguard the collective future of humanity. 3a-ENG)

The effects that a lack of information and false assumptions can have are shown by an incident during the Cuban Missile Crisis in 1962. A Russian submarine, which was in international waters off Cuba, was surrounded and attacked by the American navy. The Americans wanted to force it to surface and had informed Moscow of this. What the Americans did not know: 1. the submarine's batteries were almost empty, the air conditioning had failed and the temperature on board was over 45 degrees. 2. many crew members were on the verge of carbon dioxide poisoning and had fainted. 3.The submarine had not been in contact with Moscow for days. 4.The submarine had a nuclear weapon on board, which was allowed to be used under certain conditions, without further clearance from Moscow.- Because of the attacks, the Russian crew believed that war had already broken out and had to decide whether to use the nuclear weapon on board. The captain of the submarine considered the situation of the submarine and the crew to be hopeless and decided to launch the nuclear torpedo. The torpedo officer agreed to the launch. Three officers were responsible for the decision to use nuclear weapons. Only if all three agreed was a mission permitted. The third officer, Vasily Archipov, refused to approve the launch and thus possibly prevented a nuclear war. 5)

27 October 1962: Cuban missile crisis: At the height of the Cuban Missile Crisis, the Soviet patrol submarine B-59 nearly fired a torpedo with nuclear warheads while harassed by American naval forces. One of several ships surrounded by American destroyers near Cuba, B-59 dived to avoid detection and was unable to communicate with Moscow for several days. The USS Beale began dropping practice depth charges to signal B-59 to surface; however, the Soviet sub's captain and his Zampolit mistook them for real depth charges. Since the weak batteries were affecting the submarine's life support systems and it could not make contact with Moscow, the commander of B-59 feared that the war had already begun and ordered the use of a 10-kiloton nuclear torpedo against the American fleet. The Zampolit agreed, but the flotilla commander Vasily Arkhipov, realising that the use of "toy" depth charges meant that the US ships were only harassing them, not attacking, refused permission to launch. He convinced the captain to calm down, surface and contact Moscow for new orders. 6)
October 27, 1962: Soviet Sub Captain Decides to Fire Nuclear Torpedo During Cuban Missile Crisis: This may be the closest call of all. On October 27 1962, during the Cuban Missile Crisis, eleven US Navy destroyers and the aircraft carrier USS Randolph had cornered the Soviet submarine B-59 near Cuba, in International waters outside the US “quarantine” area. What they didn’t know was that the temperature onboard had risen past 45ºC (113ºF) as the submarine’s batteries were running out and the air-conditioning had stopped. On the verge of carbon dioxide poisoning, many crew members fainted. The crew had had no contact with Moscow for days and didn’t know whether World War III had already begun. Then the Americans started dropping small depth charges at them which, unbeknownst to the crew, they’d informed Moscow were merely meant to force them to surface and leave. “We thought – that’s it – the end”, crewmember V.P. Orlov recalled. “It felt like you were sitting in a metal barrel, which somebody is constantly blasting with a sledgehammer.” What the Americans also didn’t know was that the B-59 crew had a nuclear torpedo that they were authorized to launch without clearing it with Moscow. Indeed, Captain Savitski decided to launch the nuclear torpedo. Valentin Grigorievich, the torpedo officer, exclaimed: “We will die, but we will sink them all – we will not disgrace our Navy!” Fortunately, the decision to launch had to be authorized by three officers on board, and one of them, Vasili Arkhipov, said no. It is sobering that very few have heard of Arkhipov, although his decision was perhaps the single most valuable contribution to humanity in modern history. PBS made a movie about this incident. 7)
The Soviet side also recorded near-disasters. On 27 October 1962, exactly one day before the critical moment at the US base on Okinawa, US warships had tried to force a Soviet submarine to surface in the Atlantic. Its commander then ordered the firing of a nuclear torpedo. The officer Vasily Archipov, however, refused to give the necessary consent. The attack failed - and so did the possible counterattack. 10)

1962-10-27: US/CUBA: (HDG) Shooting down of an American U-2 spy plane over Cuba. Near escalation to nuclear war. Negotiations. De-escalation.

Major Rudy Anderson was navigating a U2 over Cuba. The Soviets spotted him and shot him down. In this extraordinary situation, a mistake was made by the Soviets. A lieutenant general saw the plane and didn't know what to do. So he gave the order to shoot it down. When it happened, people in Moscow were shocked. The Pentagon asked President Kennedy to retaliate. An invasion was the only answer for the Air Force Chief of Staff. It was the same man who had urged two other presidents to use the (nuclear) bomb, Curtis LeMay (29). LeMay put pressure on Kennedy, but he did not know the enormous strike power of the Soviets. 4o,ooo men and 42 tactical nuclear weapons that could be used at any time. Meanwhile, the Soviets and Cubans were convinced that the US would attack. If it came to that, Castro demanded of his Soviet comrades, they should respond with a massive retaliatory strike. The Soviet ambassador in Havana was so nervous that he did not leave his nuclear bunker during the crisis. The choice between war and peace rested on John F Kennedy's shoulders. Kennedy decided not to retaliate for Rudy Anderson's death. 36 hours later, Khrushchev agreed to withdraw his missiles over Cuba. Kennedy agreed not to attack Cuba and quietly withdrew American missiles from Turkey. The 13-day crisis was over. But an arms race began the likes of which the world had never seen. 1)
On the same day, an American U-2 spy plane was shot down over Cuba. 6)
October 27, 1962: U2 Spy Plane Shot Down Over Cuba: During the crisis, U.S. leaders agreed that if one of their U2 spy planes was shot down over Cuba, it represented a decision by the Soviets to escalate the conflict. They decided that if such an event occurred, they would not need to reconvene, they would simply launch an attack. Sure

enough, a U2 was shot down over Cuba. The U.S. leaders changed their minds and chose not to attack. It was later discovered that Krushchev had followed similar reasoning and had ordered his Cuban commander not to shoot any U2 planes. A more junior Soviet commander had acted on his own authority when he had the U2 shot down. Special thanks to Toby Ord for his help researching this event. 7)

1962-10-27: US/SOW: (HR) U-2 spy plane penetrated 480 km into Soviet airspace, 2 nuclear-armed F-102A US fighters escort it home.

On the morning of 27 October 1962, Jack Maultsby took off from Alaska on a routine mission to take air samples near Soviet airspace and test them for radioactivity. At this point, a solution to the Cuban Missile Crisis was stagnating. It was the most serious threat to humanity since the Second World War. And no one had thought of stopping Maultsby's flight. Historians come up with new revelations every year about the Cuban Missile Crisis and other crises, proving that our nations' political leadership never had the real picture, including what our nuclear-armed forces were doing and how high the risk of ill-considered use was. Maultsby flew over the North Pole, where his magnetic compass was useless. Therefore, he had to navigate like the captains of Christian seafaring once did. With the help of a sextant, he oriented himself by the stars. Unexpectedly for him, the northern lights began to shimmer and the stars disappeared. Then radio contact with the base gradually broke down. By design, he should have been back in Alaskan airspace by now. Maultsby searched for American frequencies to help him find his way back to the base. Alone above the Arctic Circle, Jack Maultsby was lost. The base finally heard a non-mutilated radio message from him asking for help and passing through navigational frequencies. After a while, Maultsby was able to pick up something again on his radio. But what he heard was clearly Russian. By now his own base had lost him. Only the Kotzebue/Alaska surveillance base could locate him with the most powerful radar in the world. Jack Maultsby had flown in the wrong direction. He was over the USSR. The Airforce could not help him without revealing their top secret radar location. But Don Webster decided to send out a search party. Two hours later, they still hadn't found Maultsby. They were low on fuel and flying towards the rising sun on their way home. A pilot asked Jack if he could see the sun. When he said no, the pilot knew immediately that he was too far west and told him to turn 90 degrees west. Maultsby now saw the sun. But his troubles were yet to begin. The Soviets had difficulty deciding between "shoot it down" and "don't shoot it down". Provoking a conflict was thus at stake. The aim was nevertheless to bring up this target and shoot it down if necessary. At 317th Fighter Squadron, Joe Rogers launched two interceptors to rescue Maultsby. Maultsby was pursued and threatened. The fighters were armed with air-to-air nuclear missiles to shoot down enemy aircraft. On alert, firing the nuclear missiles is possible at any time. The crews realise that they have an enormous responsibility and that the fate of entire nations depends on their correct reaction. In the skies above the Arctic, the superpowers were on a collision course towards nuclear war. Maultsby's U2 raced towards safe territory. Barely 20 kilometres above Siberian airspace, Jack Maultsby was speeding towards Alaska. Suddenly, two more dots appeared on his radar screen next to his target marker. The Soviets did not know whether they were watching a rescue mission or an attack. Since he was still over Soviet territory, the telephone wires in the command posts were running hot. The Soviets had to get rid of him. Over the Bering Strait, Maultsby finally met his rescuers. The Soviets turned back before they could shoot the plane down. The planes that were supposed to help him had nuclear weapons on board, as mentioned. When US Defence Secretary McNamara learned that American planes had violated Soviet airspace, he became furious and shouted, "What are you doing? This means war with the Soviet Union!" Maultsby landed in a glide without fuel. When Kennedy was informed, he is reported to have said, "There's always one son of a bitch who doesn't get the point!" 1)
And another U-2 flown by United States Air Force Captain Charles Maultsby strayed 300 miles (480 km) into Soviet airspace. Despite orders to avoid Soviet airspace by at least 100 miles (160 km), a navigational error took the U-2 over the Chukotka Peninsula, causing Soviet MiG interceptors to scramble and pursue the aircraft. American F-102A interceptors armed with GAR-11 Falcon nuclear air-to-air missiles (each with a 0.25 kiloton yield) were then scrambled to escort the U-2 into friendly airspace. Individual pilots were capable of arming and launching their missiles. 6)

1962-10-28: US: (HDE) false report "An atomic bomb is dropped on Tampa/Florida", cause: satellite on the horizon & simultaneous military exercise.

During the Cuban Missile Crisis, there are two false warnings of nuclear attacks on this day, each of which is quickly enough recognised as false. 5)
October 28, 1962: "Tampa is getting nuked": At nearly 9:00 AM, NORAD received news from Moorestown, NJ that a nuclear strike was expected to hit Tampa, FL at 9:02. Fortunately, NORAD had no time to respond, and they were quickly able to learn that no attack had taken place. The Moorestown radar operators later discovered that there had been a test simulation playing out at exactly the same time that a satellite appeared on the horizon. No one had notified them about the satellite or the test, so they were understandably confused. This example comes from the Nuclear Files. 7)

1962-10-28: US: (HDI) False message warning centre Laredo to NORAD: "2 missiles over Georgia", cause: satellites were mistaken for missiles.

During the Cuban Missile Crisis, there are two false warnings of nuclear attacks on this day, each of which is quickly enough recognised as false. 5)
October 28, 1962: "Missiles over Georgia": The newly operational Laredo warning site notified NORAD that they had identified two missiles over Georgia. NORAD, thinking the call came from Moorestown, which was established and more reliable, went into action. Moorestown, meanwhile, did nothing to intervene or correct the Laredo warning. Fortunately, the reaction was again slow enough that they were able to confirm no attack had actually occurred. It turned out the Laredo operators had misidentified a satellite. This example comes from the Nuclear Files. 7)

1962-10-28: US/JP: (HM) Suspected: 4 live launch codes for the H-bombs of the 498th Tactical Missile Group in Okinawa, although no "DEFCON 1".

False launch order for nuclear missiles: The day the world (almost) ended: The world apparently narrowly escaped nuclear war in October 1962 than previously known. According to the account of an eyewitness, US soldiers almost fired their nuclear weapons during the Cuban Missile Crisis. The reason: wrong codes. The men of the 498th Tactical Missile Group on their base on the Japanese island of Okinawa kept a tense watch on world political developments: as on every day, the US base received the daily radio message from its headquarters on 28 October 1962. It contained the time, weather data and a code. It was the job of these men to hastily check the code against the one in their records to assess the danger level. Never before had the world been so close to nuclear war as during the so-called Cuban Missile Crisis between 14 October and 28 October 1962. US forces were mobilised. Since the USA had discovered Soviet nuclear weapons on the Caribbean island of Cuba, hundreds of nuclear missiles were ready to be launched at the Soviet Union at its bases around the world. B-52 bombers equipped with hydrogen bombs were circling in the air, American submarines had taken up positions. It is possible that the situation at that time was even more dangerous than previously assumed: According to a report in the Bulletin of the Atomic Scientists, former US Air Force soldier John Bordne has now revealed a secret that had been kept for more than 50 years. According to the report, the US soldiers stationed on the Pacific island of Okinawa had almost mistakenly launched nuclear-tipped cruise missiles. Order to attack: As on every day, the officers had quickly checked the code they had received - unlike usual, on that 28 October it probably did indeed match the information in their documents. More lines had to be checked. These were also identical. Finally, there was a third part of the code, which was kept separately. If this also matched, it meant: Launch. They were identical, as John Bordne remembers. Only his superior, William Bassett, had doubts about the launch order. Normally, the US armed forces were only allowed to launch their nuclear weapons in the "DEFCON 1" state of alert. This meant war. Until then, only the weaker level "DEFCON 2" would have applied. Officer Bassett felt confirmed in his doubts, Bordne reports, when he read his team's list of attack targets. Only one was in the Soviet Union. He exchanged views on this with his colleagues who, like him, were each responsible for four cruise missiles. Another officer reported that two of the targets given to him were also outside the Soviet Union. Attack called off: Bassett had then asked for the code to be sent again to rule out a mistake. The new transmission, however, confirmed the attack order. The situation came to a head among the senior officers. One lieutenant refused to wait before firing: his four targets were in the Soviet Union. Without further ado, according to Bordne, Basset ordered the officer to be shot if he continued to prepare the launch. Bassett then apparently reached the major by telephone, who sent the code and almost made a fatal mistake. The attack was called off. There is as yet no confirmation of this story, as told to the magazine by Air Force soldier John Bordne in 2015. William Basset himself died in 2011, as reported by the website "The Intercept". According

to the Bulletin of the Atomic Scientists, a Japanese journalist interviewed another witness in 2013, but he wished to remain anonymous. For the time being, John Bordne would be the only survivor willing to testify to the events at the nuclear weapons base. 10)

1962-11-XX: US/PAZ: (EWL) South Sea IV: H-atom rocket launch failure.

After a few more incidents with nuclear uncharged bombs, several near disasters occurred in 1962: Several rockets with hydrogen bombs were launched from Johnston Atoll in the western Pacific, which were to explode at high altitudes. This was followed in October and November by another failure and four successful launches with explosions at altitudes between 21 and 147 kilometres. 32)

1963
1964
1965

1965-11-09: US: (ES/ET) Power failure northeastern USA. Sensors indicated nuclear explosion as cause. Circuit failure.

9 November 1965: The Office of Emergency Planning's command centre went on high alert after a massive power outage in the northeastern US. Several atomic bomb detectors - used to distinguish between regular power outages and power outages caused by an atomic bomb explosion near major US cities - failed to function due to circuit faults, creating the illusion of a nuclear attack. 6)
November 9, 1965: Power Failure Mistaken for Nuclear Blasts: Nuclear bomb alarms were placed near cities and military facilities throughout the U.S., such that, when the sensor was triggered by the flash of a nuclear bomb, it would activate the alarm before the explosion destroyed the sensor. The alarms were lights, coded green for safe, yellow for inactive or faulty, and red for attack. During a power failure, the lights should have gone to yellow. However, a circuit error in two of the alarms meant that when a massive power outage hit the northeastern U.S., two of the cities' alarms lit up red. This was consistent with what a power failure that resulted from a nuclear attack would have looked like. "The Command Center of the Office of Emergency Planning went on full alert. Apparently, the military did not." This example comes from the Nuclear Files. 7)

1965-12-05: US/VIE/JP: (EWA/HM) Aircraft crashed into the sea with **H-BOMB (!)** from USS "Ticonderoga" [from **VIETNAM (!)** to **JAPAN (!)**]. Not found.

The atomic bomb that fell from the lift: A far greater number of atomic bombs disappeared in plane crashes over the high seas. "In the early days of the Cold War, aircraft did not yet have sufficient range to get across the Atlantic on one tankful," explains expert Nassauer. "Many a bomber collided with its tanker in the process, others simply missed it and crashed into the sea with empty tanks." In the late 1950s to mid-1960s, at the most explosive time of the Cold War, operational US bombers with A-bombs circled in the air around the clock, 365 days a year. Their four main routes were over Greenland, Spain and the Mediterranean, over Japan and Alaska - and it was only when the bombers could fly over the Atlantic or the Pacific in one go that accidents became less frequent. Probably the most absurd "Broken Arrow", the Americans' code word for accidents involving nuclear weapons, occurred on 5 December 1965 on the USS "Ticonderoga". The aircraft carrier was on its way from Vietnam to Yokosuka, Japan, when a fighter-bomber crashed into the sea from one of the gigantic lifts that carry the aircraft from the ship's belly to the deck. The plane sank together with the bomb and the pilot to a depth of almost 5 kilometres and could never be recovered. This incident was also kept secret for years because it was doubly explosive: when it became known in 1981, it provided proof that the Americans had stationed nuclear weapons in Vietnam. In addition, it became public that the USA had disregarded an

agreement with Japan in which America had undertaken not to bring nuclear weapons onto Japanese territory. 8)
A Skyhawk fighter plane with a nuclear weapon on board rolled off an aircraft carrier into the Sea of Japan. The weapon was never recovered. 12)
Pacific, near Japan, 1965: In a very explosive case during the Vietnam War, in which the US repeatedly claimed falsehoods, a plane carrying a B-43 hydrogen bomb from the USS Ticonderoga crashed into the sea and sank to a depth of about 5300 metres. The US stated that the accident happened 800 kilometres from the mainland, referring to China. However, the accident happened only 125 kilometres from Japan's Ryukyu island chain and 320 kilometres from Okinawa. It was also claimed that the ship was on its way to Vietnam when the accident occurred. In reality, it was sailing to Japan, which in principle did not allow nuclear weapons in its ports. In addition, it was asked why nuclear weapons were made available during the Vietnam War. 21)
The US Navy also had problems with its nuclear weapons time and again. On 5 December 1965, for example, a fighter-bomber including pilot and a live hydrogen bomb slipped off the deck of the aircraft carrier "USS Ticonderoga" between Taiwan and Japan. No trace was ever found in the 4900-metre deep sea. 32)

1966

1966-01-17: SPA/US: (FM/EWA) Palomares/Costa Cálida, B-52, turbulence, tanker explosion, 4 H-bombs found, 11 dead, contamination ground.

It was actually a bit early in the year to go swimming in the Mediterranean. But Spain's Minister of Information Manuel Fraga Iribarne and Biddle Duke, the American ambassador in Madrid, nevertheless plunged into the cool waters on the Costa Cálida with their families at the beginning of March 1966. Journalists from all over the world had gathered on the beach of the small village of Palomares that day to report on the family spring bathing. No wonder: only a few kilometres away, a hydrogen bomb with more than a thousand times the explosive power of the bomb that had razed Hiroshima to the ground lay on the seabed. Only a few weeks earlier, on 17 January, the worst nuclear weapons accident of the entire Cold War had occurred on the south-east coast of Spain. During an aerial refuelling manoeuvre, an American B-52 bomber and a KC-135 tanker aircraft had collided at an altitude of 9000 metres; both aircraft exploded in a huge fireball over Palomares. There were four hydrogen bombs in the belly of the bomber. One landed intact in the tomato fields near the village. The non-nuclear detonator of two others detonated, bomb fragments and plutonium dust rained down over the impact site. The fourth bomb fell into the water somewhere off the coast and buried itself metres deep in the silt - but where exactly? In the weeks following the disaster, Palomares resembled the set of an apocalyptic film. On land, men in white protective suits and blue face masks checked the soil for radiation with Geiger counters. An entire crop of tomatoes and beans rotted in the sealed-off fields. The US government had the fields dug up and 1400 tonnes of soil removed, and the contaminated soil was shipped off to the US for disposal. Dozens of American warships were moored off the coast to shield the area where the bomb had landed, according to a fisherman. It took 81 days before the nuclear weapon could be recovered from a depth of 800 metres. The "Hamburger Abendblatt" commented on the events at the time in shock: "The bomb incident makes clearer than any sandbox game what it really means today to 'live with the bomb'." 8)
We have seen B-52 aircraft explode in the air during refuelling, causing the 4 hydrogen bombs to fall on Spanish territory and into the Mediterranean. 12)
Palomares in Spain, 1966: Recovery of the bomb 80 days after the accident. The most serious publicly known nuclear accident in US history occurred on 17 January 1966 at Palomares in Spain. A B-52 aircraft loaded with four nuclear weapons collided with another aircraft in mid-air. All four nuclear weapons were jettisoned. One was recovered on the ground and another was retrieved from the sea after a long search. But the other two exploded on impact. Although there was no nuclear explosion, over 1,400 tonnes of soil and vegetation were radioactively contaminated. The USA had to carry out an elaborate clean-up operation under Spanish control. 21)
As a deterrent, they wanted to have weapons in the air at all times. On 16 January 1966, 4 nuclear weapons were loaded into the cargo hold of a bomber at a military base in South Carolina. A 24-hour mission was about to begin. The B-52 first crosses the Atlantic, then the Mediterranean and positions itself at the border of the then Eastern Bloc for a counter-attack. During the return flight the next day, it has to be refuelled over Spain. At an altitude of 10,000 metres, the approach manoeuvre with the tanker plane is difficult. The smallest mistake can be fatal. For the refuelling with 50000 litres of paraffin, the boom is extended like a telescope. The tanker explodes. The bomber

is badly hit and goes out of control. 4 of the 11 crew members are able to save themselves with the ejection seat. The hydrogen bombs fall out of the cargo hold. The plane crashes near Palomares, a village on the Andalusian coast. Journalist Rafael Martínez-Durbán is one of the first to arrive at the crash site where 3 bodies are found: "There were already people from the village there. I don't know what shocked me more, the sight or the smell. A mixture of paraffin, rubber, smoke and burnt flesh. The landing gear crashed right next to a school where about 20 children were having lessons. Miraculously, nothing happened.". 4 crew members of the B-52 survive and are cared for by locals. It is the first nuclear accident in Europe. The arrival of the explosive ordnance disposal teams causes a sensation. Palomares has never seen a helicopter before. The search for the 4 nuclear bombs begins immediately. But the surprise is great when they cannot find them in the wreckage. 3 of them have gone down in the village in different places. These released photos show that one bomb has fallen into a river bed. It is intact, thanks to the parachute. This is not the case with the other two bombers. James Oskins, nuclear weapons expert and author (Lost Nuclear Weapons): "In two of them the parachute did not open. The bombs hit and the conventional explosives in the bombs detonated. This spread radioactive material in the surrounding area.". The fourth bomb remains unaccounted for. The highest alert level is declared. The US Air Force does everything it can to prevent the Soviet Union from taking advantage of this incident. The General Staff therefore orders the deterrence flights to continue. Rafael Moreno, historian: "24 hours after the accident, American bombers, with atomic bombs on board, were already flying over Spain again. There was an outcry in the Franco regime. We still don't know what happened. And we have nuclear bombs over our heads again. Spain subsequently demanded that these flights be stopped.". President Lyndon B. Johnson does everything he can to change the dictator Franco's mind. In 1953 Spain and the USA concluded a military agreement. Spain received economic aid of 1 ½ billion dollars and in return allowed the USA to build 5 military bases. Halfway towards the Soviet Union, they are strategically important for nuclear deterrence. The GIs stationed there are on constant alert. From 2 of these bases, hundreds are sent to Palomares. The men immediately set out to find the lost bomb. They may encounter radioactive debris at any time, but they wear no protective clothing. And this despite the fact that the Geiger counters are going off like crazy everywhere. In the region, the wind usually comes from the southwest. It blows radioactive dust into the inhabited and agricultural areas. Something must be done quickly. The dust must not be allowed to spread any further. The population has no idea of the serious consequences of this accident. Juan Manuel Gonzales: "I didn't know what a nuclear bomb was. At the time, we didn't know much about nuclear weapons.". The soldiers systematically search the area and conclude that the fourth bomb must have fallen into the sea. The US 6th Fleet, stationed in the Mediterranean, sets out to find the bomb. It must not fall into enemy hands. Uncle Sam flexes his muscles in the sea off Palomares. Local residents remember. Jose Rico: "The equipment the Americans dragged in! Anyone who hasn't seen it for themselves can't imagine. It was unbelievable.". In just a few days, a military camp is set up on Palomares beach. Divers are systematically searching the coastal area. Submarines are deployed for the search. The activities attract the attention of the press. Moreno. "The Americans and Spaniards decided against a cordon and evacuation. This allowed journalists to arrive and talk to people.". They interview people, gather evidence and quickly find out what the military would have preferred to cover up. In the USA, the New York Times is the first to publish an article. Dictator Franco is furious at not being able to control the reporting of the foreign press. Moreno: "The Soviets used the Palomares accident to attack the USA, Spain and the Franco regime.". The propaganda machine is working at full speed with images like this: Of an arrogant American officer leaving a trail of death behind him. All over Europe, people are taking to the streets against nuclear armament and for peace. Oskins: "Palomares was a journalistic nightmare for the Air Force. They had to admit what had happened and tried to get rid of the problem as quickly as possible." Decontamination missions are launched. The radioactive dust in the fields has to be removed. The people in Palomares live from growing tomatoes. Overnight they have lost their livelihood. The full extent of the decontamination work can be seen on this previously secret footage. The tomato plants, now nuclear waste, are stored in special containers. The soil is also contaminated. The masses of earth are gigantic. Thousands of containers are being filled. The US Joint Chiefs of Staff are worried about the colossal costs and are trying to reduce them. Moreno: "There were negotiations between the US and Spain regarding the areas that would be difficult to decontaminate. The Americans wanted to leave some of the waste there.". Spain eventually accepts a higher radiation exposure limit for the Palomares area. In return, the Americans, who wanted to leave everything on site, agree to ship all the nuclear waste to the US for final storage. This entails enormous expenses for the general staff. Released documents prove that the Americans cheated to reduce costs. Moreno: "We found that in some areas they just hid the contamination. They simply buried the contaminated soil one metre deep. They thought that way it would disappear forever.". The Geiger counters are no longer hitting. On the surface, the soil appears clean. The owners are even issued a certificate that their soil has been decontaminated. But as soon as the land is ploughed up again, the radioactivity

resurfaces. A real time bomb. But for the moment, the Spanish are more concerned about the bomb lost in the sea. They are afraid that the tourists will not come, that the country's main source of income will be ruined. The tourism minister is launching a hair-raising PR campaign. To demonstrate that there is no radioactive danger in this coastal region, Minister Fraga and the US ambassador take a bath. The mild climate makes it possible, despite the winter. For nothing. The PR measures do not have the desired success. The beaches of Palomares remain empty this summer. The people in the village do not feel like laughing. Overnight they have become lepers. Their worries are written all over their faces. General Delmar Wilson meets with the heads of the affected families. He invokes unity against the communist enemy and praises the American-Spanish friendship. In totalitarian-ruled Spain, no one dares to ask critical questions. Journalist José Herrera: "The meeting didn't achieve anything. They were only told that they have to obey the Spanish and American authorities. And not to go into their fields. Nothing more.". Of course, there are many rumours. The unrest among the population is growing by the hour. Not only the farmers, but also the fishermen fear for their only source of income. Joaquin Rico: "People didn't want to eat fish anymore. They said it was contaminated. So the boats didn't leave.". Herrera: "Otherwise peaceful people rebelled and marched to the military camp. They had been hungry for a week. And their children too.". Those responsible realise that they have completely underestimated the economic consequences of the accident for the villagers. Herrera: "To compensate for the loss, the Americans buy part of the local harvest to supply the troops with food.". From now on, the soldiers eat tomatoes at every meal. They also pay the people who have been hit the worst for small, everyday activities and distribute their food rations in the village. The fourth bomb remains unaccounted for even after 80 days of searching. Washington is no longer prepared to spend any more money. Admiral William Rest asks his men to check all the clues again. And indeed, a witness statement was overlooked. The Spanish police had questioned a fisherman after the accident. Paco Orts saw a strange parachute crash at sea. And he described exactly where. In an area that has not yet been searched. It's the last chance for the salvage forces. The submarines set off again on the search. A diving trip through unknown waters that is risky. The submarine advances into the depths along the unstable wall of a canyon and can easily be buried underneath. At a depth of several 100 metres, a white shape suddenly appears. It is a parachute. And underneath it the bomb. It is retrieved from the depths and hoisted onto the deck of a ship, apparently intact. It has not contaminated the sea. The operation is a feat of engineering. Martínez-Durbán: "On 8 April, in Holy Week, I think it was Good Friday, they took us to Garrucha and let us board a boat without saying anything. Then a boat passed by with a bomb on deck. We were able to take photos because it was travelling very slowly. Then the ship disappeared.". This press conference is proof of the success of the mission. The Spanish and then the international press report on the success of the US navi. The job is done. The Americans pack up their things and leave the inhabitants of Palomares with the consequences of an event they have not yet fully understood. **AFTER THE ACCIDENT, SPAIN REGULATES OVERFLIGHT RIGHTS. THIS AFFECTS US SECURITY INTERESTS. PRESIDENT JOHNSON IS IN A FIX. DEFENCE SECRETARY ROBERT MC NAMARA PLANS TO REDUCE B-52 MISSIONS. THEY ARE TOO RISKY, TOO EXPENSIVE AND DAMAGE THE IMAGE OF THE USA. THE MILITARY IS AGAINST IT.** 26)

Probably the best-known case of a "Broken Arrow" is the crash of a B-52 with four hydrogen bombs on board over south-eastern Spain in 1966. However, no nuclear bomb was lost in the narrower sense. Admittedly, three weapons hit on land and the last one in the Mediterranean. In two of them, the conventional explosives also detonated; the nuclear material thus dispersed contaminated about 180 hectares of fields. The upper layers of soil were removed and disposed of at the expense of the US military. The third bomb was recovered heavily damaged on land and the fourth reasonably intact from 870 metres of sea depth. 32)

1966 Palomares B-52 crash. The 1966 Palomares B-52 crash, also called the Palomares incident, occurred on 17 January 1966, when a B-52G bomber of the United States Air Force's Strategic Air Command collided with a KC-135 tanker during mid-air refueling at 31,000 feet (9,450 m) over the Mediterranean Sea, off the coast of Spain. The KC-135 was completely destroyed when its fuel load ignited, killing all four crew members. The B-52G broke apart, killing three of the seven crew members aboard. At the time of the accident, the B-52G was carrying four B28FI Mod 2 Y1 thermonuclear (hydrogen) bombs, all of which fell to the surface. Three were found on land near the small fishing village of Palomares in the municipality of Cuevas del Almanzora, Almería, Spain. The non-nuclear explosives in two of the weapons detonated upon impact with the ground, resulting in the contamination of a 0.77-square-mile (2 km2) area with radioactive plutonium. The fourth, which fell into the Mediterranean Sea, was recovered intact after a search lasting 2+1⁄2 months. Accident. The B-52G began its mission from Seymour Johnson Air Force Base, North Carolina, carrying four B28FI Mod 2 Y1 thermonuclear bombs on a Cold War airborne alert mission named Operation Chrome Dome. The flight plan took the aircraft east across the Atlantic

Ocean and Mediterranean Sea towards the European borders of the Soviet Union before returning home. The lengthy flight required two mid-air refuelings over Spain. At about 10:30 am on 17 January 1966, while flying at 31,000 feet (9,450 m), the bomber commenced its second aerial refueling with a KC-135 out of Morón Air Base in southern Spain. The B-52 pilot, Major Larry G. Messinger, later recalled, We came in behind the tanker, and we were a little bit fast, and we started to overrun him a little bit. There is a procedure they have in refueling where if the boom operator feels that you're getting too close and it's a dangerous situation, he will call, "Break away, break away, break away." There was no call for a break away, so we didn't see anything dangerous about the situation. But all of a sudden, all hell seemed to break loose. The planes collided, with the nozzle of the refueling boom striking the top of the B-52 fuselage, breaking a longeron and snapping off the left wing, which resulted in an explosion that was witnessed by a second B-52 about a mile (1.6 km) away. All four men on the KC-135 and three of the seven men on the bomber were killed. Those killed in the tanker were boom operator Master Sergeant Lloyd Potolicchio, pilot Major Emil J. Chapla, co-pilot Captain Paul R. Lane, and navigator Captain Leo E. Simmons. On board the bomber, navigator First Lieutenant Steven G. Montanus, electronic warfare officer First Lieutenant George J. Glessner, and gunner Technical Sergeant Ronald P. Snyder were killed. Montanus was seated on the lower deck of the main cockpit and was able to eject from the plane, but his parachute never opened. Glessner and Snyder were on the upper deck, near the point where the refueling boom struck the fuselage, and were not able to eject. Four of the seven crew members of the bomber managed to parachute to safety: in addition to pilot Major Messinger, aircraft commander Captain Charles F. Wendorf, copilot First Lieutenant Michael J. Rooney, and radar-navigator Captain Ivens Buchanan. Buchanan received burns from the explosion and was unable to separate himself from his ejection seat, but he was nevertheless able to open his parachute, and he survived the impact with the ground. The other three surviving crew members landed safely several miles out to sea. The Palomares residents carried Buchanan to a local clinic, while Wendorf and Rooney were picked up at sea by the fishing boat Dorita. The last to be rescued was Messinger, who spent 45 minutes in the water before he was brought aboard the fishing boat Agustin y Rosa by Francisco Simó Orts. All three men who landed in the sea were taken to a hospital in Águilas. Weapons. The weapons lost during the accident were four B28FI Mod 2 Y1 thermonuclear bombs. The letters FI indicated B28 bombs configured in the full fuzing internal configuration. A full fuzing capability means the weapons could be delivered via all of bomb delivery options including free-fall airburst, retarded airburst, freefall groundburst and laydown groundburst delivery. In this configuration the W28 warhead was fitted between a Mk28 Mod 3F shock absorbing nose and a Mk28 Mod 0 FISC rear end containing a parachute. The shock absorbing nose enabled the weapon to survive laydown delivery while the parachute slowed the weapon down in retarded airburst and laydown delivery. The Mod 2 nomeculture indicates the hardened version of the weapon designed to survive laydown delivery as earlier Mod 0 and Mod 1 weapons could not survive the forces involved. The Y1 nomeculture indicates a W28 warhead with a yield of 1.1 megatonnes of TNT (4,600 TJ). Weapons recovery. The aircraft and weapons fell to earth near the fishing village of Palomares. This settlement is part of Cuevas del Almanzora municipality, in the Almeria province, Spain. Three of the weapons were located on land within 24 hours of the accident—the conventional explosives in two had exploded on impact, spreading radioactive contamination, while a third was found relatively intact in a riverbed. The fourth weapon could not be found despite an intensive search of the area—the only part that was recovered was the parachute tail plate, leading searchers to postulate that the weapon's parachute had deployed, and that the wind had carried it out to sea. During early stages of recovery after the accident the 66th Tactical Reconnaissance Wing, flying RF-101C Voodoos out of RAF Upper Heyford near Oxford, England, provided aerial photographs to assist in the recovery operation and to document the crash site.[citation needed] On 22 January, the Air Force contacted the U.S. Navy for assistance. The Navy convened a Technical Advisory Group (TAG), chaired by Rear Admiral L. V. Swanson with Dr. John P. Craven and Captain Willard Franklyn Searle, to identify resources and skilled personnel that needed to be moved to Spain. The search for the fourth bomb was carried out by means of a novel mathematical method, Bayesian search theory, led by Dr. Craven. This method assigns probabilities to individual map grid squares, then updates these as the search progresses. Initial probability input is required for the grid squares, and these probabilities made use of the fact that a local fisherman, Francisco Simó Orts, popularly known since then as "Paco el de la bomba ("Bomb Paco" or "Bomb Frankie"), witnessed the bomb entering the water at a certain location. Simó Orts was hired by the U.S. Air Force to assist in the search operation. The United States Navy assembled 28 ships in response to Air Force request for assistance. Additionally, the aircraft carrier USS Forrestal and various other units of the Sixth Fleet made a brief stopover at Palomares on the morning of 15 March 1966, with Forrestal anchoring at 09:03 and departing at 12:19. The recovery operation was led by Supervisor of Salvage, Capt Searle. Hoist, Petrel and Tringa brought 150 qualified divers who searched to 120 feet (37 m) with compressed air, to 210 feet (64 m) with

mixed gas, and to 350 feet (110 m) with hard-hat rigs;[20] but the bomb lay in an uncharted area of the Rio Almanzora canyon on a 70-degree slope at a depth of 2,550 feet (780 m). After a search that continued for 80 days following the crash, the bomb was located by the DSV Alvin on 17 March, but was dropped and temporarily lost when the Navy attempted to bring it to the surface. After the loss of the recovered bomb the ship's positions were fixed by Decca HI-FIX position-locating equipment for subsequent recovery attempts. Alvin located the bomb again on 2 April, this time at a depth of 2,900 feet (880 m). On 7 April, an unmanned torpedo recovery vehicle, CURV-I, became entangled in the weapon's parachute while attempting to attach a line to it. A decision was made to raise CURV and the weapon together to a depth of 100 feet (30 m), where divers attached cables to them. The bomb was brought to the surface by USS Petrel. The USS Cascade was diverted from its Naples destination and stayed on scene until recovery and took the bomb back to the United States.[citation needed]. Once the bomb was located, Simó Orts appeared at the United States District Court for the Southern District of New York with his lawyer, Herbert Brownell, formerly Attorney General of the United States under President Dwight D. Eisenhower, claiming salvage rights on the recovered thermonuclear bomb. According to Craven: It is customary maritime law that the person who identifies the location of a ship to be salved has the right to a salvage award if that identification leads to a successful recovery. The amount is nominal, usually 1 or 2 percent, sometimes a bit more, of the intrinsic value to the owner of the thing salved. But the thing salved off Palomares was a thermonuclear bomb, the same bomb valued by no less an authority than the Secretary of Defense at $2 billion—each percent of which is, of course, $20 million. The Air Force settled out of court for an undisclosed sum. In later years, Simó was heard to complain that the Americans had promised him financial compensation and had not kept that promise. Contamination. At 10:40 UTC, the accident was reported at the Command Post of the Sixteenth Air Force, and it was confirmed at 11:22. The commander of the U.S. Air Force at Torrejón Air Base, Spain, Major General Delmar E. Wilson, immediately traveled to the scene of the accident with a Disaster Control Team. Further Air Force personnel were dispatched later the same day, including nuclear experts from U.S. government laboratories. The first weapon to be discovered was found nearly intact. However, the conventional explosives from the other two bombs that fell on land detonated without setting off a nuclear explosion (akin to a dirty bomb explosion). This ignited the pyrophoric plutonium, producing a cloud that was dispersed by a 30-knot (56 km/h; 35 mph) wind. A total of 2.6 square kilometres (1.0 sq mi) was contaminated with radioactive material. This included residential areas, farmland (especially tomato farms) and woods. To defuse alarm of contamination, on 8 March[26] the Spanish minister for information and tourism Manuel Fraga Iribarne and the United States ambassador Angier Biddle Duke swam on nearby beaches in front of press.First the ambassador and some companions swam at Mojácar — a resort 15 km (9 mi) away — and then Duke and Fraga swam at the Quitapellejos beach in Palomares. Despite the cost and number of personnel involved in the cleanup, forty years later there remained traces of the contamination. Snails have been observed with unusual levels of radioactivity. Additional tracts of land have also been appropriated for testing and further cleanup. However, no indication of health issues has been discovered among the local population in Palomares. Political consequences. President Lyndon B. Johnson was first apprised of the situation in his morning briefing the same day as the accident. He was told that the 16th Nuclear Disaster Team had been sent to investigate, per the standard procedures for this type of accident. News stories related to the crash began to appear the following day, and it achieved front page status in both the New York Times and Washington Post on 20 January. Reporters sent to the accident scene covered angry demonstrations by the local residents. On 4 February, an underground Communist organization successfully initiated a protest by 600 people in front of the U.S. Embassy in Spain. The Duchess of Medina Sidonia, Luisa Isabel Álvarez de Toledo (known as the "Red Duchess" for her socialist activism), eventually received a 13-month prison sentence for leading an illegal protest. Four days after the accident, the Spanish government under Franco's dictatorship stated that "the Palomares incident was evidence of the dangers created by NATO's use of the Gibraltar airstrip", announcing that NATO aircraft would no longer be permitted to fly over Spanish territory either to or from Gibraltar. On 25 January, as a diplomatic concession, the U.S. announced that it would no longer fly over Spain with nuclear weapons, and on 29 January the Spanish government formally banned U.S. flights over its territory that carried such weapons. This caused other nations hosting U.S. forces to review their policies, with the Philippine Foreign Secretary Narciso Ramos calling for a new treaty to restrict the operation of U.S. military aircraft in Filipino airspace. Palomares, and the Thule Air Base B-52 crash involving nuclear weapons two years later in Greenland, made Operation Chrome Dome politically untenable, leading the U.S. Department of Defense to announce that it would be "re-examining the military need" for continuing the program. As of 2008, there was no museum or monument dedicated to the accident in Palomares, and was noted only by a short street named "17 January 1966". Cleanup. Soil with radioactive contamination levels above 1.2 MBq/m2 was placed in 250-litre (66 U.S. gallon) drums and shipped to the Savannah River Plant in

South Carolina for burial. A total of 2.2 hectares (5.4 acres) was decontaminated by this technique, producing 6,000 barrels. 17 hectares (42 acres) of land with lower levels of contamination were mixed to a depth of 30 centimetres (12 in) by harrowing and plowing. On rocky slopes with contamination above 120 kBq/m2, the soil was removed with hand tools and shipped to the U.S. in barrels. In 2004, a study revealed that there was still some significant contamination present in certain areas, and the Spanish government subsequently expropriated some plots of land which would otherwise have been slated for agriculture use or housing construction. On 11 October 2006, Reuters reported that higher than normal levels of radiation were detected in snails and other wildlife in the region, indicating there may still be dangerous amounts of radioactive material underground. The discovery occurred during an investigation being carried out by Spain's energy research agency CIEMAT and the U.S. Department of Energy. The U.S. and Spain agreed to share the cost of the initial investigation. In April 2008, CIEMAT announced they had found two trenches, totaling 2,000 cubic metres (71,000 cu ft), where the U.S. Army stored contaminated earth during the 1966 operations. The American government agreed in 2004 to pay for the decontamination of the grounds, and the cost of the removal and transportation of the contaminated earth has been estimated at $2 million. The trenches were found near the cemetery, where one of the nuclear devices was retrieved in 1966, and they were probably dug at the last moment by American troops before leaving Palomares. CIEMAT informed they expected to find remains of plutonium and americium once an exhaustive analysis of the earth had been carried out. In a conversation in December 2009, Spanish Foreign Minister Miguel Ángel Moratinos told the U.S. Secretary of State Hillary Clinton that he feared Spanish public opinion might turn against the U.S. once the results of the study on nuclear contamination were to be revealed. In August 2010, a Spanish government source revealed that the U.S. had stopped the annual payments it has made to Spain, as the bilateral agreement in force since the accident had expired the previous year. On 19 October 2015, Spain and the United States signed an agreement to further discuss the cleanup and removal of land contaminated with radioactivity. Under a statement of intent signed by Spanish Foreign Minister José Manuel García-Margallo and U.S. Secretary of State John Kerry, the two countries will negotiate a binding agreement to further restore and clear up the Palomares site and arrange for the disposal of the contaminated soil at an appropriate site in the U.S. Aftermath. The empty casings of two of the bombs involved in this incident are now on display in the National Museum of Nuclear Science & History in Albuquerque, New Mexico. While serving on the salvage ship USS Hoist during recovery operations, Navy diver Carl Brashear had his leg crushed in a deck accident and lost the lower part of his left leg. His story was the inspiration for the 2000 film Men of Honor. In March 2009, Time magazine identified the Palomares accident as one of the world's "worst nuclear disasters". There has been a marked long-term occurrence of cancer and other health defects among the surviving USAF personnel who were directed to the site in the days following the accident to clean up the contamination. Most of the afflicted personnel have had difficulty securing any type of compensation from the Department of Veterans Affairs due to the secretive nature of the cleanup operation and the Air Force's refusal to acknowledge that adequate safety measures to protect the first responders may not have been taken. In June 2016, The New York Times published an article on the 50th anniversary lingering legacy of the Palomares accident. In December 2017, one of the airmen involved in the clean-up, Victor Skaar, sued the Department of Veterans Affairs in the Court of Appeals for Veterans Claims. Skaar was appealing the Department's refusal of medical treatment for leukopenia that Skaar believes was caused by his exposure at Palomares. He also petitioned for the Court to certify a class of veterans "who were present at the 1966 cleanup of plutonium dust at Palomares, Spain[,] and whose application for service-connected disability comp based on exposure to ionizing radiation [VA] has denied ore will deny."[This quote needs a citation] The certification of this class was granted by the Court in December 2019. This one of the first cases ever granted class-action status by the Court of Appeals for Veterans Claims. 47)
To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1967

1967-05-23: US: (ES) Strong solar flare, coronal mass ejection, jammed several NORAD radars, Soviets accused, near counterattack.

23.5.1967: US radar systems for detecting missile attacks show intense signals which are interpreted as deliberate interference and thus as an act of war. Aircraft loaded with nuclear weapons are put on alert. The reason for the disturbance was a solar storm (very strong eruption). 5)

23 May 1967: A strong solar flare accompanied by a coronal mass ejection jammed several NORAD radars over the Northern Hemisphere. This interference was initially interpreted as deliberate jamming of the radars by the Soviets and thus as an act of war. A nuclear bomber counter-strike was almost launched by the United States. 6)
May 23, 1967: Confusing Solar Flares and Nuclear Attacks: The Air Force had a series of radar stations around the world that were supposed to provide early warning detection of a Soviet nuclear attack. On this night, many of these installations went dark, and the military feared the Soviets had disabled their Early Warning System as the first stage of a nuclear attack. Nuclear bombers were prepared to take flight, but just in time, the recently established Solar Forecasting Center was able to get a bulletin into the hands of a commanding officer showing that a solar flare - and not the Soviets - had knocked out the radar systems. From Popular Mechanics. 7)
Other cases: On 23 May 1967, three Arctic radar installations of the US early warning system in Canada, northern England and Greenland failed simultaneously. Was this triggered by a hostile Soviet attack? The nuclear bombers were put on alert on suspicion and the nuclear weapons were made ready for launch. However, a violent solar storm was the trigger that had disrupted the technology. At first, the military did not want to believe this finding of the scientists, because the atmosphere in 1967 was very tense. Eventually, however, the order came to leave the nuclear bombers in the air in their patrol strips and to end the alert. 20)
When the sun almost triggered nuclear war: Because three radar systems failed in May 1967, the US military put nuclear bombers on standby. It is only decades later that it becomes known that astrophysicists prevented the catastrophe at the last minute. In the spring of 1967, the Cold War escalated. In Vietnam, American politicians finally wanted to force a military decision and moved more troops into the region. In Greece, brigands overthrew the leftist government. And with the soft landing of the unmanned probe "Surveyor 3", the USA had gained a prestigious lead in the race to the moon, much to the displeasure of the Soviet Union, which moreover had to grudgingly watch Indonesia's new strong man, the America-friend General Suharto, slaughter hundreds of thousands of communists. It was therefore alarming when on 23 May all three Arctic radars of the American Ballistic Missile Early Warning System (BMEWS) in Canada, northern England and Greenland failed. As all radio communications also broke down, the US military immediately sensed a hostile Soviet act and put the nuclear bombers patrolling in the air on alert. In addition, more aircraft on their bases were armed with nuclear weapons and made ready for launch. World War III was about to break out. It was a scene like in a Hollywood thriller. While the bomber crews waited stubbornly for their mission order, civilian scientists desperately searched for another interpretation - and finally found it: an unusually violent solar storm had paralysed the technology. But that did not solve the problem. Because what the scientists realised, the military did not want to believe - and continued to attack. How the researchers managed to convince the decision-makers at the Pentagon was revealed by a team led by Delores Knipp from Boulder University in Colorado in the journal Space Weather: "It was a very serious situation." When the military recognised the failure of the radar systems, they immediately assumed "jamming", i.e. the deliberate emission of jamming radiation and the deployment of wave-absorbing metal flitter in the atmosphere to electromagnetically blind the enemy and disrupt its communication paths. In the heated atmosphere of the spring of 1967, this was seen as a possible act of war which, as things stood, could only have been staged by the Soviet Union. However, the commanders of the North American Aerospace Defense Command (NORAD) did not rely solely on their radio and radar operators. In the course of the USA's ambitious space plans, the observation of space had been expanded. To this end, NORAD had also set up a division that dealt with the sun and its activities. Many military personnel at NORAD, however, knew nothing about this unit or simply considered its activities to be nonsense. In the early morning of 23 May, solar researchers had registered unusually strong eruptions. An observatory in New England reported electromagnetic waves emanating from the sun with an intensity never before observed. From this, the astrophysicists concluded that a few hours later an extraordinarily strong solar wind, i.e. charged particles, would hit the Earth's atmosphere. Delores Knipp and her co-authors have now reconstructed the sequence of events. On 18 May, an unusually large number of sunspots had formed on the Sun. In them, strong magnetic fields, so-called flares, are created, which hinder the outflow of heat from the interior of the Sun and thus become strongly charged with solar energy. After a few days, this leads to a solar flare, which immediately emits strong radio and UV radiation. They are then followed by the charged particles - electrons, protons, alpha particles. They need about four days to cover the almost 150 million kilometres from the sun to the earth. Today we know that the solar storm that developed in May 1967 was one of the strongest ever observed. Even in New Mexico, auroras could be seen at the time, a phenomenon that usually only occurs in the polar region when the particles coming from the Sun hit the Earth's magnetic field. "The effects of solar eruptions can last up to several days," Knipp explains. This includes the fact that the solar wind can disrupt power and communication networks. NORAD's solar specialists concluded that the unusually strong eruptions of the sun were responsible for the failure of the three polar radar stations: They were so exposed

that they were exposed to the radiation storm from space for days. How the specialists managed to convince the military is not entirely clear. Based on witness statements and accessible documents, Knipp concludes that the researchers approached the Pentagon directly or even US President Lyndon Johnson. In any case, the order came from an authorised source to leave the bombers in the air in their patrol strips and the aircraft ready for take-off on the ground. This may have been done at the last minute. For the crews of the huge B-52s were basically instructed to obey the order once it was given, unless it was explicitly countermanded. In this case, that would probably no longer have been possible after a certain point - the strong solar storm would probably have prevented radio communication with the flying bombers. Stanley Kubrick's 1964 film "Dr. Strangelove or: How I Learned to Love the Bomb" played out this apocalyptic scenario. So 23 May 1967 is another entry in the long list of near disasters involving nuclear weapons. Experts at Sandia National Laboratories, which reports to the US Department of Energy, estimate that there were more than 1200 such near misses with American nuclear bombs alone between 1950 and 1968. Their main task is to develop components for nuclear weapons. 36)

1968

1968-01-21: GRÖ/US: (EB/HS) Thule/Greenland, fire, B-52 crashed, 1 of 4 H-bombs missing, 2 dead, contamination, sick, **END OF BOMBER READINESS**

January 21, 1968: Hydrogen Bomb Shatters in Greenland: A fire broke out on a B-52 bomber that was flying on alert near Thule. The pilot and crew had to abandon the plane before they could properly communicate their situation to SAC HQ. The plane crashed into the ice, seven miles offshore. The fuel and the conventional explosives of the nuclear weapon blew up, but the nuclear explosives within the bomb were not triggered, so there wasn't a nuclear explosion. If the nuclear component had exploded, the lack of communication from the pilot and crew would likely have led SAC to assume that the explosion had been an attack. This example comes from the Nuclear Files. 7)

An abandoned nuclear bomb somewhere on the seabed, perhaps still damaged - a real horror. The British BBC is currently causing a furore with a report on the loss of an American nuclear bomb in 1968. When an American B-52 bomber crashed in the Greenland ice, the conventional explosives in the bombs had exploded, and a large area had been radioactively contaminated by the released plutonium. What the US government concealed for decades: the reconstruction of the bomb parts found revealed that a nuclear warhead was missing. Apparently it had drilled through the ice of the Polar Star Bay. It was never found. That a nuclear bomb is lost and does not reappear is by no means as rare as one would hope. "The American Department of Defence has confirmed the loss of eleven nuclear weapons," knows Otfried Nassauer, expert on nuclear armament and head of the Berlin Information Centre for Transatlantic Security. "In total, 51 nuclear warheads and 7 nuclear reactors are believed to have been lost at sea worldwide to date." 8)

Just how risky the missions are is demonstrated in 1968 on Greenland. The Americans maintain an early warning station there to report Soviet missiles. On 21 January, a B-52 bomber crashed near the base. On board: 4 hydrogen bombs. Dane Jens Zinglersen, who works as a logistician at the airbase: "I love the Arctic. But then I suddenly saw a burning streak fly by at eye level. A huge fire flared up, then burned brightly. I had never seen anything like it." Immediately, Zinglersen contacted the airbase commander. The commander said a B-52 carrying 4 nuclear weapons had crashed. Zinglersen calls 6 Inuits for help and tries to get to the crash site with dog sleds. After 8 hours of driving in the ice they reach the place where the bomber went down. (Zinglesen): "Suddenly I saw a black spot and I smelled paraffin. We packed our sled and went to the crash site. It was 800 metres long and 250 metres wide and completely black." Zinglersen makes his way back to the airbase in the arctic night. He reports back. But an unpleasant surprise awaits him. (Zinglersen): "I was led into a room where a two-star general was sitting. He had a bossy manner. I told him what I had seen. Then he looked at me with his steely blue eyes and said arrogantly: "I don't believe your bullshit story". That really pissed me off. Then a young captain came, he had a measuring device in his hand. He said, "Sir, may I check your boots?". So I showed him my boots. And the gauge gave a reading. So he turned to the general and called out to him, "It's true, he was out there."." The general orders the ice to be removed from the crash site. It's contaminated with plutonium from the four bombs. The explosives had been pulverised on impact. The Danish relief workers are exposed to the radiation, without respiratory protection. To this day they are trying to get compensation for damage to

their health. In vain! **BUT THE USA'S BOMBER READINESS IS STOPPED FOREVER AFTER THE CRASH OF THE B-52. INSTEAD, THE AMERICANS AIM COUNTLESS NUCLEAR MISSILES OF ALL RANGES AT THE EASTERN BLOC.** 11)

A B-52 bomber with nuclear weapons on board has crashed near a US airbase in Greenland, spreading deadly plutonium on the ice cover. 12)

The Idealist - Geheimakte Grönland (original title: Idealisten) is a 2015 Danish thriller film directed by Christina Rosendahl. The film is based on the true events about the crash of a B-52 near Thule Air Base and the related investigations of Danish journalist Poul Brink. Plot: In 1968, a B-52 bomber crashes near Thule Air Base after a fire breaks out on board. On board are four hydrogen bombs, of which three of the warheads can be recovered. During the clean-up and salvage work, many of the workers are contaminated by the leaked plutonium, but this is denied by the authorities and hushed up. When the Danish journalist Poul Brink took up the events in 1988 and interviewed the doctors and workers involved, he noticed the high number of people who had fallen ill. After intensive research, the authorities are forced to look into the case and thoroughly examine all the workers involved. Poul wants to use the medical findings to take legal action against the authorities and force adequate compensation for the workers. He is also demanding documents and snow samples taken from the accident site to be analysed for their plutonium content. These demands, however, pose a problem for the authorities, who are trying by all means to keep the samples and documents secret. After several stays in the USA and investigations in the National Archives, Washington, Poul is increasingly pressured to stop his research. Due to the permanent resistance of the authorities, Poul gets bogged down with his investigations until he receives a tip from the State Department, which speaks of a secret agreement between the USA and Denmark. When Poul finally asks the foreign minister about the alleged agreement on camera, he can no longer deny the facts and confirms its existence. Subsequently, Poul is allowed to see the document and reproduce its core statements in his own words during a live broadcast. The latter reads out the entire document during the broadcast, which is why he is reported for violating the Archives Act. The investigation is dropped a year later. In 1995, Poul succeeds in forcing compensation of $8500 for each worker who falls ill, but he is not satisfied with this. In 2002, he died of a heart attack at the age of 49. 15)

Near Thule US Air Force Base, Greenland, 1968: On 21 January 1968, a B-52 aircraft crashed off the coast of northwest Greenland near Thule US Air Force Base. On board were four atomic bombs. The nuclear bombs were not armed, but on impact the conventional explosives they contained exploded. This caused some of the bomb parts - including plutonium, uranium and tritium - to melt deep into the ice. With the help of Greenlandic and Danish workers, an extensive search was immediately launched. After three months, the US authorities declared the intensive clean-up work finished: They had found the plane wreckage including all the bombs and everything had been properly removed. But in the meantime it has become known that the truth is different. For months after the official announcement, the US military continued to search secretly both on land and in the waters off the coast. And then gave up: a nuclear bomb was never found. 21)

Prof. Poul Villaume, historian: "Normally, the Cold War is seen as an East-West conflict. But if you look at the globe from the Arctic, you see that the Arctic is in the middle of the shortest distance between the US and the Soviet Union. In the days of the long-range bombers, the Arctic played a key role.". The Americans establish the so-called "Distant-Early Warning Line" in Alaska, Canada and Greenland. A chain of over 60 radar stations over a length of almost 5000 kilometres. On Greenland, with the connivance of the Danes, the huge Thule Air Base becomes an important outpost for the Western world. The harbour is only ice-free for 2 months of the year. The radar installation operates 24 hours a day and can detect Soviet missiles at a distance of several thousand kilometres. Prof. Scott Sagan, Stanford University: "We knew that the base could also be attacked first. In the event of a Soviet war of aggression, they would certainly have tried to take out the American radar.". The radar site is protected day and night by a B-52 bomber that is constantly in the air. The so-called Thule monitor mission. Sagan: "This made it possible to inform the Strategic Air Command immediately if Thule was under attack, the radar was down or communications were cut off." On 21 January 1968, a B-52 armed with 4 nuclear bombs tirelessly makes its rounds over the base. The temperature is -40 degrees. Some of the crew complain about the cold. The co-pilot turns up the heat. Then the unbelievable happens. Three cushions lying in front of the heater fan catch fire. The smell of burning alarms the pilot, but the fire spreads quickly. Dense smoke already penetrates the cockpit. The crew has to abandon the plane to save themselves. The bomber then crashes onto the pack ice in North Star Bay. An alarm is sounded at the base. The parachuted crew members must be found quickly or they will freeze to death. A search team consists of Inuit. It is led by Danish civilian Jens Zinglersen, the base's logistics manager: "We learn that a B-52 bomber with nuclear weapons on board has crashed onto the ice. It was impossible to get there. Fire trucks can go on the road, but not on Arctic ice. I got my dogs

and my people. I felt our dogs could track the survivors even if they were unconscious.". Zinglersen makes his way to the crash site. Firefighters search the perimeter of the base for survivors. Marius Schmidt is their leader at the time: "We found one of the pilots. His arm was almost completely frozen. The other one had broken his leg. But, we found them all and took them to hospital.". Ten hours later, Jens Zinglersen returns. He has made it to the crash site and hurries to report to General Richard Hunziker, who is managing the accident. Zinglersen gets caught up in a meeting of the general staff: "I walked into a room with high-ranking officers. I looked around briefly. In the middle sat a fierce-looking two-star general. He had blue eyes and a face like a Roman statue. Arrogant. He looked at me disapprovingly and said, "Okay stranger, tell me your story!". I delivered my report and then him: "Damn. I don't believe a word.". Then he turned around and spoke to his officers. I was really angry. A young captain came in with a Geiger counter. I put my boot up. He held the device underneath and it went "beeep". Then he said to the general, "It's true, he was there". And suddenly the mood changed completely.". The machinery of the Strategic Air Command sets in motion. Probably the 4 atomic bombs released a high level of radiation. Twice as strong as in Palomares. Never before has there been such a nuclear accident. To avoid making the same mistakes as in Palomares, a press conference is called immediately. A first. The American military is not used to such transparency. Especially not in such a sensitive case. Jens Zinglersen captivates the journalists with his account of the events on the ice. They come from all over the world, but know nothing about life in the Arctic. General Hunziker, who is in charge, says as little as possible: "How much is still on the ice? I don't know, our investigations are not yet complete. What will happen now? I don't know at the moment. Because I don't know the extent of the contamination.". The journalists are frustrated. Such a long journey for so little information. But the aerial view of the gigantic black streak left by the bomber speaks for itself. A cocktail of jet fuel and radioactive material frozen in the ice. When General Hunziker and his men inspect the black ice hell, they are surprised to see only smaller pieces of wreckage. James Oskins, nuclear weapons expert: "The plane and the bombs hit at more than 1100 kilometres per hour, beyond the breaking point. It hit the ice with all its destructive force. A fireball melted the ice. Parts of the bomber sank into the sea. The fire later died out and the ice froze again. One thing is clear: the bombs have been hit, as the area is highly radiated. The base's soldiers are sent to collect the debris, which is scattered over dozens of square kilometres of the Arctic Sanctuary. They are not warned about the risks of radioactivity. Zinglersen: "With the Geiger counter, they quickly found hotspots. Some devices showed 2 million counts per minute.". A dose that is far above the permissible levels, even if you are only exposed to it for a short time. Then larger fragments are found. Are they part of the bombs? To determine that, experts examine them in detail. Among other things, they look for serial numbers. 3 bombs can be identified. Released documents reveal this. But there is no trace of the fourth bomb. At the beginning of March, almost all the debris is recovered. The recovery teams have 2 months left for clean-up before the ice melts. The contaminated area is marked. It is 6 square kilometres in size. Oskins: "There was a large amount of radioactivity released. But, knowing the wind patterns exactly, they knew where to look. The Air Force removed the top 15 centimetres of ice for decontamination. These were huge amounts of ice. The ice is stored on the base in old tanks.". Zinglersen: "As it got warmer, the ice started melting. Some tanks had leaks. The contaminated ice melted and flowed out as water. We had to transfer the contents to other tanks two or three times. In the process, the Danes could get contaminated.". For decades they have been fighting for compensation. In 1995, the Danish government finally paid the affected workers 50,000 kroner per person, the equivalent of about 6,500 euros. From the Americans? Nothing! No compensation. In August 1968, an American secret mission begins in the now ice-free waters. Zinglersen: "In the summer of 1968, a submarine capable of diving deeper than 200 metres is transported to Thule. The matter must have been very important to them.". A declassified Atomic Energy Commission document proves that the US Air Force is still searching for the fourth bomb. Week after week, the bay is searched in a grid pattern. Part of it is littered with thousands of pieces of metal debris. From the photos taken by the submarine, they can be identified. They come from the B-52 bomber. Part of the fuselage and a landing gear are discovered. Why not the lost bomb. The mission ends without finding it. It is never searched for again. And what remains today? Each of the bombs contained over 1 kilogram of radioactive plutonium. Is this dangerous relic of the Cold War lying at the bottom of North Star Bay? Thule is only one of 32 accidents involving American nuclear weapons between 1950 and 1980. But in the face of the Soviet threat, military strategists continue to rely on the nuclear-tipped B-52 bombers. President Lyndon B. Johnson decides to orient the US Air Force towards missiles in the future. But even these are not without risk. And the Cold War lasted another 20 years. And the B-52 bombers will also be part of the arsenal of the US armed forces for a long time to come. 26)

The United States' deadly air fortress: It is unclear whether a bomb was lost in the crash of a B-52 bomber near Thule base on Greenland on 21 January 1968. What is certain is that fragments of at least three hydrogen bombs were found, according to official figures even of all four. Opponents of nuclear weapons, however, always question

this. However, the amount of plutonium recovered roughly corresponds to the primary charge of four bombs; in any case, there was considerably more than in three bombs. But this is not enough for Danish activists: they regularly demand new investigations. 32)

1968 Thule Air Base B-52 crash. On 21 January 1968, an aircraft accident (sometimes known as the Thule affair or Thule accident (/ˈtuːli/); Danish: Thuleulykken) involving a United States Air Force (USAF) B-52 bomber occurred near Thule Air Base in the Danish territory of Greenland. The aircraft was carrying four B28FI thermonuclear bombs on a Cold War "Chrome Dome" alert mission over Baffin Bay when a cabin fire forced the crew to abandon the aircraft before they could carry out an emergency landing at Thule Air Base. Six crew members ejected safely, but one who did not have an ejection seat was killed while trying to bail out. The bomber crashed onto sea ice in North Star Bay,[a] Greenland, causing the conventional explosives aboard to detonate and the nuclear payload to rupture and disperse, resulting in radioactive contamination of the area. The United States and Denmark launched an intensive clean-up and recovery operation, but the secondary stage of one of the nuclear weapons could not be accounted for after the operation was completed. USAF Strategic Air Command "Chrome Dome" operations were discontinued immediately after the accident, which highlighted the safety and political risks of the missions. Safety procedures were reviewed, and more stable explosives were developed for use in nuclear weapons. In 1995, a political scandal arose in Denmark after a report revealed the government had given tacit permission for nuclear weapons to be located in Greenland, in contravention of Denmark's 1957 nuclear-free zone policy. Workers involved in the clean-up program campaigned for compensation for radiation-related illnesses they experienced in the years after the accident. Thule Monitor Mission. A series of four metal structures silhouetted on the horizon, with a golf ball looking dome to the left. In 1960, the USAF Strategic Air Command (SAC) began Operation Chrome Dome, a Cold War airborne alert program devised by General Thomas S. Power to fly nuclear-armed Boeing B-52 Stratofortress bombers to the borders of the Soviet Union. The flights were scheduled to ensure that twelve bombers were aloft at all times. These bombers gave SAC offensive capability in the event of a Soviet first strike, and provided a significant Cold War nuclear deterrent. Beginning in 1961, B-52 bombers also secretly flew as part of the "Hard Head" mission (or "Thule Monitor Missions") over Thule Air Base. The objective of "Hard Head" was to maintain constant visual surveillance of the base's strategically important Ballistic Missile Early Warning System (BMEWS), which provided early warning of Soviet missile launches. If the communication link between North American Aerospace Defense Command and the base was severed, the aircraft crew could determine if the interruption resulted from an attack or a technical failure. The monitoring mission started when the designated aircraft reached a waypoint at 75°0′N 67°30′W in Baffin Bay and entered a figure-eight holding pattern above the air base at an altitude of 35,000 feet (11,000 m). In 1966, United States Secretary of Defense Robert McNamara proposed cutting "Chrome Dome" flights because the BMEWS system was fully operational, the bombers had been made redundant by missiles, and $123 million ($969 million as of 2021) could be saved annually. SAC and the Joint Chiefs of Staff opposed the plan, so a compromise was reached whereby a smaller force of four bombers would be on alert each day. Despite the reduced program and the risks highlighted by the 1966 Palomares B-52 crash, SAC continued to dedicate one of the aircraft to monitoring Thule Air Base. This assignment was without the knowledge of civilian authorities in the United States, who SAC determined did not have the "need to know" about specific operational points. Broken Arrow. On 21 January 1968, a B-52G Stratofortress, serial number 58-0188, with the callsign "HOBO 28" from the 380th Strategic Bomb Wing at Plattsburgh Air Force Base, New York was assigned the "Hard Head" mission over Thule and nearby Baffin Bay. The bomber crew consisted of five regular crew members, including Captain John Haug, the aircraft commander. Also aboard were a substitute navigator (Captain Curtis R. Criss) and a mandatory third pilot (Major Alfred D'Mario). Before take-off, D'Mario placed three cloth-covered foam cushions on top of a heating vent under the instructor navigator's seat in the aft section of the lower deck. Shortly after take-off, another cushion was placed under the seat. The flight was uneventful until the scheduled mid-air refueling from a KC-135 Stratotanker, which had to be conducted manually because of an error with the B-52G's autopilot. About one hour after refueling, while the aircraft was circling above its designated area, Captain Haug directed co-pilot Svitenko to take his rest period. His seat was taken by the spare pilot, D'Mario. The crew was uncomfortable because of the cold, although the heater's rheostat was turned up, so D'Mario opened an engine bleed valve to draw additional hot air into the heater from the engine manifold. Because of a heater malfunction, the air barely cooled as it traveled from the engine manifold to the cabin's heating ducts. During the next half-hour, the cabin's temperature became uncomfortably hot, and the stowed cushions ignited. After one crew member reported smelling burning rubber, they looked for a fire. The navigator searched the lower compartment twice before discovering the fire behind a metal box. He attempted to fight it with two fire extinguishers, but could not put it out. Aerial photograph, land masses are covered in snow, but the bay is

not frozen over. At 15:22 EST, about six hours into the flight and 90 miles (140 km) south of Thule Air Base, Haug declared an emergency. He told Thule air traffic control that he had a fire on board and requested permission to perform an emergency landing at the air base. Within five minutes, the aircraft's fire extinguishers were depleted, electrical power was lost and smoke filled the cockpit to the point that the pilots could not read their instruments. As the situation worsened, the captain realized he would not be able to land the aircraft and told the crew to prepare to abandon it. They awaited word from D'Mario that they were over land, and when he confirmed that the aircraft was directly over the lights of Thule Air Base, the four crewmen ejected, followed shortly thereafter by Haug and D'Mario. The co-pilot, Leonard Svitenko, who had given up his ejection seat when the spare pilot took over from him, sustained fatal head injuries when he attempted to bail out through one of the lower hatches. The pilotless aircraft initially continued north, then turned left through 180° and crashed onto sea ice in North Star Bay at a relatively shallow angle of 20 degrees—about 7.5 miles (12.1 km) west of Thule Air Base—at 15:39 EST. The conventional high explosive (HE) components of four 1.1 megaton B28FI thermonuclear bombs detonated on impact, spreading radioactive material over a large area in a manner similar to a dirty bomb. "Weak links" in the weapon design ensured that a nuclear explosion was not triggered. The extreme heat generated by the burning of 225,000 pounds (102 t) of jet fuel during the five to six hours after the crash melted the ice sheet, causing wreckage and munitions to sink to the ocean floor. Inuit around the base worked with the U.S. Air Force to get to the B-52 crash. The sleds were the only way to get to the crash site. Haug and D'Mario parachuted onto the grounds of the air base and made contact with the base commander within ten minutes of each other. They informed him that at least six crew ejected successfully and the aircraft was carrying four nuclear weapons. Off-duty staff were mustered to conduct search and rescue operations for the remaining crew members. Owing to the extreme weather conditions, Arctic darkness, and unnavigable ice, the base relied largely on the Thule representative of the Royal Greenland Trade Department, Ministry of Greenland, Jens Zinglersen, to raise and mount the search using native dog sled teams. Three of the survivors landed within 1.5 miles (2.4 km) of the base and were rescued within two hours. For his initial actions and later services, Zinglersen received the Air Force Exceptional Civilian Service Medal on 26 February 1968 at the hands of the U.S. Ambassador, K. E. White. Captain Criss, who was first to eject, landed 6 miles (9.7 km) from the base—he remained lost on an ice floe for 21 hours and suffered hypothermia in the −23 °F (−31 °C) temperatures, but he survived by wrapping himself in his parachute. An aerial survey of the crash site immediately afterwards showed only six engines, a tire and small items of debris on the blackened surface of the ice. The accident was designated a Broken Arrow, or an accident involving a nuclear weapon but which does not present a risk of war. Project Crested Ice. Aerial photograph of the crash site showing a long black mark that looks like an ink blot on white paper. The resulting explosion and fire destroyed many of the components that had scattered widely in a 1-mile (1.6 km) by 3-mile (4.8 km) area. Parts of the bomb bay were found 2 miles (3.2 km) north of the impact area, indicating the aircraft started to break up before impact. The ice was disrupted at the point of impact, temporarily exposing an area of seawater approximately 160 feet (50 m) in diameter; ice floes in the area were scattered, upturned and displaced. South of the impact area, a 400-foot (120 m) by 2,200-foot (670 m) blackened patch was visible where fuel from the aircraft had burned—this area was highly contaminated with JP-4 aviation fuel and radioactive elements that included plutonium, uranium, americium and tritium. Plutonium levels as high as 380 mg/m2 were registered in the area. American and Danish officials immediately launched "Project Crested Ice" (informally known as "Dr. Freezelove", a clean-up operation to remove the debris and contain environmental damage. Despite the cold, dark Arctic winter, there was considerable pressure to complete the clean-up operation before the sea ice melted in the spring and deposited further contaminants into the sea. Weather conditions at the site were extreme; the average temperature was −40 °F (−40 °C), at times dropping to −76 °F (−60 °C). These temperatures were accompanied by winds of up to 89 miles per hour (40 m/s). Equipment suffered high failure rates and batteries worked for shorter periods in the cold; operators modified their scientific instruments to allow the battery packs to be carried under their coats to extend the batteries' lifespan.[38] The operation was conducted in arctic darkness until 14 February, when sunlight gradually began appearing. A base camp (named "Camp Hunziker" after Richard Overton Hunziker, the USAF general in charge of the operation) was created at the crash site; it included a heliport, igloos, generators and communications facilities. A "zero line" delineating the 1-mile (1.6 km) by 3-mile (4.8 km) area in which alpha particle contamination could be measured was established by 25 January, four days after the crash. The line was subsequently used to control decontamination of personnel and vehicles. An ice road was constructed to Thule from the site. This was followed by a second, more direct road so that the ice on the first road was not fatigued by overuse. The camp later included a large prefabricated building, two ski-mounted buildings, several huts, a decontamination trailer and a latrine. These facilities allowed for 24-hour operations at the crash site. A crane shown loading contaminated ice into a large steel tank. The

USAF worked with Danish nuclear scientists to consider the clean-up options. The spilled fuel in the blackened area was heavily contaminated, raising concerns that when the ice melted in the summer, the radioactive fuel would float on the sea and subsequently contaminate the shore. The Danes thus insisted on the removal of the blackened area to avoid this possibility. The Danes also requested that the nuclear material not be left in Greenland after the cleanup operation was complete, therefore requiring General Hunziker to remove the contaminated ice and wreckage to the United States for disposal. USAF personnel used graders to collect the contaminated snow and ice, which was loaded into wooden boxes at the crash site. The boxes were moved to a holding area near Thule Air Base known as the "Tank Farm". There, contaminated material was loaded into steel tanks prior to being loaded onto ships. Debris from the weapons was sent to the Pantex plant in Texas for evaluation, and the tanks were shipped to Savannah River in South Carolina. According to General Hunziker, 93 percent of the contaminated material was removed from the accident site. In 1987–88 and again in 2000, reports surfaced in the Danish press that one of the bombs had not been recovered. SAC stated at the time of the accident that all four bombs were destroyed. In 2008, the BBC published an article that was based on its examination of partly declassified documents obtained some years earlier, via the United States Freedom of Information Act. The documents appeared to confirm that within weeks of the accident, investigators realized only three of the weapons could be accounted for. One of the declassified documents—dated to January 1968—details a blackened section of ice which had refrozen with shroud lines from a weapon parachute:"Speculate something melted through the ice such as burning primary or secondary." A July 1968 report states, "An analysis by the AEC of the recovered secondary components indicates recovery of 85 percent of the uranium and 94 percent, by weight, of three secondaries. No parts of the fourth secondary have been identified." The BBC tracked down several officials involved in the accident's aftermath. One was William H. Chambers, a former nuclear weapons designer at the Los Alamos National Laboratory. Chambers headed a team dealing with nuclear accidents, including the Thule crash. He explained the logic behind the decision to abandon the search: "There was disappointment in what you might call a failure to return all of the components ... it would be very difficult for anyone else to recover classified pieces if we couldn't find them." Four silver B28FI nuclear bombs in a rack ready for loading into an aircraft. In August 1968, the United States military sent a Star III mini-submarine to the base to look for weapon debris, especially the uranium-235 fissile core of a secondary. A much bigger operation at Palomares off the coast of Spain two years earlier led to the recovery of a lost nuclear weapon from the Mediterranean Sea; the B28FI bomb was lost for 80 days after a mid-air collision between a B-52 on a "Chrome Dome" mission and its KC-135 Stratotanker refueling aircraft. Christensen asserts that the purpose of the underwater search at Thule was obvious to the Danish authorities, contrary to other reports that suggested its true purpose had been hidden from them. At lower levels, however, the dives were surrounded by some confidentiality. One document from July 1968 reads, "Fact that this operation includes search for object or missing weapon part is to be treated as Confidential NOFORN", meaning it was not to be disclosed to non-US nationals. It continues, "For discussion with Danes, this operation should be referred to as a survey, repeat survey of bottom under impact point." Further indications of the search are apparent in a September 1968 interim report by the United States Atomic Energy Commission, which stated, "It was further speculated that the missing <redacted>, in view of its ballistic characteristics, may have come to rest beyond the observed concentration of heavy debris." This discussion was a reference to the unsuccessful search for the uranium cylinder of one of the secondaries. The underwater search was beset by technical problems and eventually abandoned. Diagrams and notes included in the declassified documents make clear it was not possible to search the entire area where crash debris had spread. Four bomb reservoirs, one nearly intact secondary, and parts equaling two secondaries were recovered on the sea ice; parts equaling one secondary were not accounted for. The search also revealed a weapon cable fairing, polar cap, and a one-foot by three-foot section of a warhead's ballistic case. The United States Air Force monitored airborne contamination through nasal swabs of onsite personnel. Of the 9,837 nasal swabs taken, 335 samples had detectable levels of alpha particle activity, although none were above acceptable levels. Urinalysis was also performed but none of the 756 samples displayed any detectable level of plutonium. Star III submersible on display outside Scripps Institution of Oceanography. The white vessel has the appearance of short, fat cigar. By the time the operation concluded, 700 specialized personnel from both countries and more than 70 United States government agencies had worked for nine months to clean up the site, often without adequate protective clothing or decontamination measures. In total, more than 550,000 US gallons (2,100 m3) of contaminated liquid—along with thirty tanks of miscellaneous material, some of it contaminated—were collected at the Tank Farm. Project Crested Ice ended on 13 September 1968 when the last tank was loaded onto a ship bound for the United States. The operation is estimated to have cost $9.4 million ($69.1 million as of 2021). Aftermath. Operation Chrome Dome. The accident caused controversy at the time and in the years since. It highlighted the risks Thule Air Base posed to Greenlanders from

nuclear accidents and potential superpower conflicts. The accident, which occurred two years after the Palomares crash, signaled the immediate end of the airborne alert program, which had become untenable because of the political and operational risks involved. Scott Sagan, a political science academic and anti-nuclear writer, postulated that if the HOBO 28 monitoring aircraft had crashed into the BMEWS early warning array instead of Baffin Bay, it would have presented NORAD with a scenario (radio link to "Hard Head" aircraft and BMEWS both dead, no nuclear detonation detected) that also matched that of a surprise conventional missile attack on Thule, leaving the unreliable submarine telecommunications cable between Thule and the US mainland as the only source of information to the contrary. A satellite communications link was set up in 1974. According to Greenpeace, the United States and USSR were concerned enough by accidents such as the 1961 Goldsboro B-52 crash, the 1966 Palomares B-52 crash and the Thule accident that they agreed to take measures to ensure that a future nuclear accident would not lead the other party to conclude incorrectly that a first strike was under way. Consequently, on 30 September 1971, the two superpowers signed the "Agreement on Measures to Reduce the Risk of Nuclear War". Each party agreed to notify the other immediately in the event of an accidental, unauthorized or unexplained incident involving a nuclear weapon that could increase the risk of nuclear war. They agreed to use the Moscow–Washington hotline, which was upgraded at the same time, for any communications. The decision not to restart on-alert bomber missions was also a reflection of the strategic decline of manned nuclear weapon delivery in favor of unmanned delivery via ICBMs, which had already eclipsed the number of bombers in the United States by April 1964. Weapon safety. Following the Palomares and Thule accidents—the only cases where the conventional explosives of U.S. nuclear bombs accidentally detonated and dispersed nuclear materials — investigators concluded the high explosive (HE) used in nuclear weapons was not chemically stable enough to withstand the forces involved in an aircraft accident. They also determined that the electrical circuits of the weapons' safety devices became unreliable in a fire and allowed connections to short circuit. The findings triggered research by scientists in the United States into safer conventional explosives and fireproof casings for nuclear weapons. The Lawrence Livermore National Laboratory developed the "Susan Test", which uses a special projectile whose design simulates an aircraft accident by squeezing and nipping explosive material between its metal surfaces. The test projectile is fired under controlled conditions at a hard surface to measure the reactions and thresholds of different explosives to an impact. By 1979, the Los Alamos National Laboratory developed a new, safer type of explosive, called insensitive high explosive (IHE), for use in U.S. nuclear weapons; the physicist and nuclear weapons designer Ray Kidder speculated that the weapons in the Palomares and Thule accidents would probably not have detonated had IHE been available at the time. "Thulegate" political scandal. Denmark's nuclear-free zone policy originated in 1957, when the coalition government decided in the lead-up to the Paris NATO summit not to stockpile nuclear weapons on its soil in peacetime. The presence of the bomber in Greenland airspace in 1968 therefore triggered public suspicions and accusations that the policy was being violated. The nature of the "Hard Head" missions was suppressed at the time of the accident; the Danish and American governments instead claimed the bomber was not on a routine mission over Greenland and that it diverted there because of a one-off emergency. United States documents declassified in the 1990s contradicted the Danish government's position, and therefore resulted in a 1995 political scandal that the press dubbed "Thulegate". The Danish parliament commissioned a report from the Danish Institute of International Affairs (DUPI)[f] to determine the history of United States nuclear overflights of Greenland and the role of Thule Air Base in this regard. When the two-volume work was published on 17 January 1997 it confirmed that the nuclear-armed flights over Greenland were recurrent, but that the United States had acted in good faith. The report blamed Danish Prime Minister H. C. Hansen for intentionally introducing ambiguity in the Danish–U.S. security agreement: he was not asked about, nor did he mention, the official Danish nuclear policy when meeting with the United States ambassador in 1957 to discuss Thule Air Base. Hansen followed up the discussion with an infamous letter pointing out that the issue of "supplies of munition of a special kind" was not raised during the discussion, but that he had nothing further to add. In doing so, the report concluded, he tacitly gave the United States the go-ahead to store nuclear weapons at Thule. The report also confirmed that the United States stockpiled nuclear weapons in Greenland until 1965, contradicting assurances by Danish foreign minister Niels Helveg Petersen that the weapons were in Greenland's airspace, but never on the ground. The DUPI report also revealed details of Project Iceworm, a hitherto secret United States Army plan to store up to 600 nuclear missiles under the Greenland ice cap. Workers' compensation claims. Steel tanks with "Crested Ice" painted on them are visible in the background. Danish workers involved in the clean-up operation claimed long-term health problems resulted from their exposure to the radiation. Although they did not work at Camp Hunziker, the Danes worked at the Tank Farm where the contaminated ice was collected, in the port where the contaminated debris was shipped from, and they also serviced the vehicles used in the clean-up. It is also possible that they were exposed to radiation in the local

atmosphere. Many of the workers surveyed in the years following Project Crested Ice reported health problems. A 1995 survey found 410 deaths by cancers out of a sample of 1,500 workers. In 1986, Danish Prime Minister Poul Schlüter commissioned a radiological examination of the surviving workers. The Danish Institute for Clinical Epidemiology concluded 11 months later that cancer incidents were 40 percent higher in Project Crested Ice workers than in workers who had visited the base before and after the operation. The Institute of Cancer Epidemiology found a 50 percent higher cancer rate in the workers than in the general population, but could not conclude that radiation exposure was to blame. In 1987, almost 200 former cleanup workers took legal action against the United States. The action was unsuccessful, but resulted in the release of hundreds of classified documents. The documents revealed that USAF personnel involved in the clean-up were not subsequently monitored for health problems, despite the likelihood of greater exposure to radiation than the Danes. The United States has since instigated regular examinations of its workers. In 1995, the Danish government paid 1,700 workers compensation of 50,000 kroner each. Danish workers' health has not been regularly monitored, despite a European Court directive to the Danish government to begin examinations in the year 2000, and a May 2007 European Parliament resolution instructing the same. In 2008, the Association of Former Thule Workers took the case to the European courts. The petitioners claimed that Denmark's failure to comply with the rulings led to delays in detecting their illnesses, resulting in worsened prognoses. The country joined the European Atomic Energy Community in 1973, and is therefore not legally bound by the European treaty with respect to events in 1968: "When the accident occurred, Denmark was not a Member State and could not therefore be considered as being bound by the Community legislation applicable at that time. The obligations of Denmark towards the workers and the population likely to be affected by the accident could only flow from national legislation." The Danish government rejected a link between the accident and long-term health issues. Dr. Kaare Ulbak of the Danish National Institute of Radiation Protection said, "We have very good registers for cancer incidents and cancer mortality and we have made a very thorough investigation." The workers said the lack of proof was attributable to the lack of appropriate medical monitoring. As of November 2008, the case has been unsuccessful. A 2011 report by the Danish National Board of Health found that "the total radiation dose for representative persons in the Thule area for plutonium contamination resulting from the 1968 Thule accident is lower than the recommended reference level, even under extreme conditions and situations." Scientific studies. Radioactive contamination occurred particularly in the marine environment. The fissile material in the weapons consisted mostly of uranium-235, while the radioactive debris consists of at least two different "source terms". Scientific monitoring of the site has been carried out periodically, with expeditions in 1968, 1970, 1974, 1979, 1984, 1991, 1997 and 2003. A 1997 international expedition of mainly Danish and Finnish scientists carried out a comprehensive sediment sampling program in North Star Bay. The main conclusions were: plutonium has not moved from the contaminated sediments into the surface water in the shelf sea; the debris has been buried to a great depth in the sediment as a result of biological activity; transfer of plutonium to benthic biota is low. Other research indicates that uranium is leaching from the contaminated particles faster than plutonium and americium. Research conducted in 2003 concluded, "Plutonium in the marine environment at Thule presents an insignificant risk to man. Most plutonium remains in the seabed under Bylot Sound far from man under relatively stable conditions and concentrations of plutonium in seawater and animals are low. However, the plutonium contamination of surface soil at Narsaarsuk could constitute a small risk to humans visiting the location if radioactive particles are resuspended in the air so that they might be inhaled." In 2003, 2007 and 2008, the first samples were taken on land by the Risø National Laboratory—the findings were published in 2011. Literature review of declassified documents. A BBC News report in 2008 confirmed through declassified documents and interviews with those involved that a bomb had been lost. The Danish foreign ministry reviewed the 348 documents that the BBC obtained in 2001 under the Freedom of Information Act. In January 2009, foreign minister Per Stig Møller commissioned a study by the Danish Institute for International Studies (DIIS) to compare the 348 documents with 317 documents released by the Department of Energy in 1994 in order to determine if the 348 documents contained any new information about an intact nuclear weapon at Thule. In August 2009, DIIS published its report, which contradicted the assertions of the BBC. The report concluded that there was no missing bomb, and that the American underwater operation was a search for the uranium-235 of the fissile core of a secondary. For the first time, the report was able to present an estimate of the amount of plutonium contained in the pits of the primaries. 48)
To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1968-04-11: US/SOW: (EWS) Hawaii-I: Soviet subm. K-129 sank. Unclear. 3 ballistic SS-N-5, possibly nuclear torpedoes, 96 dead, CIA tried to lift, broke up.

Hawaii, 1968: 1,200 km northwest of the island of Oahu, Hawaii, at a depth of 4,900 metres in the Pacific Ocean, a Soviet diesel submarine K-129 (Gulf class) sank on 11 April 1968 under unexplained circumstances. Three ballistic missiles (SS-N-5) and possibly two torpedoes with nuclear explosives were on board. 80 sailors were killed. In 1974, the CIA, with the participation of naval forces, made a secret attempt to lift the submarine, breaking the hull. The attempt was called "Project Jennifer". Allegedly, the Howard Hughes boat "Glomar Explorer" was used for this. 21)
Soviet submarine K-129 (1960). The K-129 (Russian: К–129) was a Project 629A (Russian: проект 629А lit. Projekt 629A, NATO reporting name Golf II–class) diesel-electric powered ballistic missile submarine that served in the Pacific Fleet of the Soviet Navy–one of six Project 629 strategic ballistic missile submarines assigned to the 15th Submarine Squadron based at Rybachiy Naval Base near Petropavlovsk–commanded by Rear Admiral Rudolf Golosov. The K-129's commander was Captain First Rank V.I. Kobzar and she carried the hull number 722 on her final deployment, during which she sank on 8 March 1968. It was one of four mysterious submarine disappearances in 1968, the others being the Israeli submarine INS Dakar, the French submarine Minerve and the American submarine USS Scorpion. After nearly two months of silence during her patrol in the Pacific Ocean, the Soviet Navy became concerned of her status and reportedly deployed its large assets of aviation and ships to search for the vessel, but no sign or wreckage was found. With the U.S. Navy observing the Soviet efforts, the Americans also began searching, ultimately determining the exact coordinates of the wreck in August 1968. In 1974, the United States attempted to recover the submarine in a secretive Cold War-era effort named Project Azorian. The submarine's position 4.9 kilometres (16,000 ft) below the surface was the greatest depth from which an attempt had been made to raise a ship; only a part of the submarine was recovered despite efforts. The cover story was that the salvage vessel was engaged in commercial manganese nodule mining. Launch and operations. The keel of K-129 was laid down on 15 March 1958 at Komsomolsk-on-Amur Shipyard No. 132. It was launched on 16 May 1959, with its acceptance certificate signed on 31 December 1959. It was assigned to the 123rd Brigade, 40th Division of the Soviet Pacific Fleet at Vladivostok. On 1960, it was reassigned to 15th Submarine Squadron based at Rybachiy Naval Base in Kamchatka. On 3 April 1964, K-129 underwent modernization under project 629A at Dalzavod in Vladivostok and re-entered service following completion of modernization on 30 May 1967. In January 1968, K-129 was assigned to the 15th Submarine Squadron was part of the 29th Ballistic Missile Division at Rybachiy, commanded by Admiral Viktor A. Dygalo. Sinking. The K-129, having completed two 70-day ballistic-missile combat patrols in 1967, was tasked with her third patrol in February 1968, with an expected completion date of 5 May 1968. Upon departure on 24 February, K-129 reached deep water, conducted a test dive, returned to the surface and reported by radio that all was well, and proceeded on patrol. Upon her final deployment, the K-129's commander was Captain First Rank Vladimir I. Kobzar and Captain Second Rank Alexander M. Zhuravin as senior assistant to the commander (Executive Officer). She carried the hull number 722 on her final deployment. No further communication was received from K-129, despite normal radio check-ins expected when the submarine crossed the 180th meridian, and further when it arrived at its patrol area. By mid-March, Soviet Navy commanders in Kamchatka became concerned that K-129 had missed two consecutive radio check-ins. First, K-129 was instructed by normal fleet broadcast to break radio silence and contact headquarters; later and more urgent communications all went unanswered. Soviet naval headquarters declared K-129 missing by the third week of March and organized an air, surface, and sub-surface search-and-rescue effort in the North Pacific from Kamchatka and Vladivostok. This Soviet deployment in the Pacific was analysed by U.S. intelligence as likely a reaction to a submarine loss. U.S. SOSUS naval facilities in the North Pacific were alerted and requested to review acoustic records on 8 March 1968 to identify any possible anomalous signal. Acoustic data from four Air Force AFTAC sites and the Adak, Alaska SOSUS array triangulated a potential event location to within 5 nautical miles, a site hundreds of miles away from where the Soviet Navy had been searching. Several SOSUS arrays recorded a possibly related event on 8 March 1968, and upon examination produced sufficient triangulation by lines-of-bearing to provide the U.S. Navy with a locus for the probable wreck site. One source characterized the acoustic signal as "an isolated, single sound of an explosion or implosion, 'a good-sized bang'.":205 The acoustic event was reported to have originated near 40 N, 180th longitude. Soviet search efforts, lacking the equivalent of the U.S. SOSUS system, were unable to locate K-129, and eventually Soviet naval activity in the North Pacific returned to normal. K-129 was subsequently declared lost with all hands. Recovery: Project Azorian. The wreck of K-129 was identified by USS Halibut northwest of Oahu at an approximate depth of 4,900 metres (16,000 ft) on 20 August 1968. It was surveyed in detail over the next three weeks by Halibut – reportedly with over 20,000 close-up photos – and later also possibly by the bathyscaphe Trieste II. Given a unique

opportunity to recover a Soviet SS-N-5 Serb nuclear missile without the knowledge of the Soviet Union, the K-129 wreck came to the attention of U.S. national authorities. President Nixon authorized a salvage attempt after consideration by the Secretary of Defense and the White House. To ensure the salvage attempt remained "black" (i.e. clandestine and secret) the CIA, rather than the Navy, was tasked to conduct the operation. Hughes Glomar Explorer was designed and built under CIA contract solely for the purpose of conducting a clandestine salvage of K-129. The salvage operation, named Project Azorian, would be one of the most expensive and deepest secrets of the Cold War. The location of the wreck remains an official secret of the United States intelligence services. However, Dr. John P. Craven points to a location nearly 40 degrees North, and almost exactly on the 180th meridian. CIA documents reveal that it sank "1,560 miles northwest of Hawaii," and that Hughes Glomar Explorer had to travel 3,008 miles from Long Beach, California, to reach the recovery site. The International Atomic Energy Agency states that two nuclear warheads from K-129 were located in the Pacific 1,230 miles from Kamchatka at coordinates 40°6'N and 179°57'E at a depth of 6,000 metres (20,000 ft), and lists them as recovered. All three distances point to a location of 38°5′N 178°57′E, which is close to 600 nautical miles (1,100 km) north of the Midway Atoll. The CIA gives 5,010 and 5,030 metres (16,440 and 16,500 ft) for its approximate depth. Media reporting. Seymour Hersh of The New York Times uncovered some of the details of Project Azorian in 1974, but was kept from publication by the action of the Director of Central Intelligence, William Colby. Months after the salvage operation was completed, in February 1975, the Los Angeles Times ran a brief story regarding the CIA operation, which led The New York Times to release Hersh's story. Jack Anderson continued the story on national television in March 1975. The media called the operation Project Jennifer, which in 2010 was revealed to be incorrect, since Jennifer referred only to a security system which compartmentalised Azorian project data. Hughes Glomar Explorer was publicly believed to be mining manganese nodules on the sea floor. Once the real purpose of Azorian was leaked to the media, however, the Soviet Union eventually found out about what happened. According to one account, in July–August 1974 Hughes Glomar Explorer grappled with and was able to lift the forward half of the wreck of K-129, but as it was raised the claw suffered a critical failure resulting in the forward section breaking into two pieces with the all-important sail area and centre section falling back to the ocean floor. Thus the centre sail area and the after portions of K-129 were allegedly not recovered. What exactly was retrieved in the section that was recovered is classified Secret Noforn or Top Secret, but the Soviets assumed that the United States recovered torpedoes with nuclear warheads, operations manuals, code books and coding machines. Another source (unofficial) states that the U.S. recovered the bow area, which contained two nuclear torpedoes,:111 but no cryptographic equipment nor code books. The United States announced that in the section they recovered were the bodies of six men. Due to radioactive contamination, the bodies were buried at sea in a steel chamber in September 1974, with full military honors about 90 nautical miles (167 km) southwest of Hawaii. The videotape of that ceremony was given to Russia by U.S. Director of Central Intelligence Robert Gates when he visited Moscow in October 1992. :359 The relatives of the crew members were eventually shown the video some years later. Continued secrecy. The K-129 recovery has been stated to have been a failure, recovering only a small amount of insignificant parts of the submarine. The CIA argued in a Freedom of Information Act lawsuit, however, that the project had to be kept secret because any "official acknowledgment of involvement by U.S. Government agencies would disclose the nature and purpose of the program." This response has entered the lexicon of legal jargon as the Glomar response or Glomarization; "neither confirm nor deny". As of 2018 the files, photographs, videotapes and other documentary evidence remain closed to the public. A few pictures appeared in a 2010 documentary showing the K-129 wreck: the bow and the sail, with the missile compartment heavily damaged showing only one missile tube left attached to the structure. Causes. The official Soviet Navy hypothesis is that K-129, while operating in snorkel mode, slipped below its operating depth. Such an event, combined with a mechanical failure or improper crew reaction, can cause flooding sufficient to sink the boat. This account, however, has not been accepted by many, and four alternative theories have been advanced to explain the loss of K-129: A hydrogen explosion in the batteries while charging; A collision with USS Swordfish; A missile explosion caused by a leaking missile door seal; Intentional or unintentional scuttle by crew due to K-129 violating normal operating procedures and/or departing from authorised operating areas. Reportedly, as many as 40 of the complement of 98 were new to the submarine for this deployment. K-129 was approximately midway through standard shore leave/replenishment and repair when a new mission was tasked.:156. Battery malfunction. Lead–acid batteries release explosive hydrogen gas while charging. The hydrogen gas, if not properly vented, could have accumulated into an explosive concentration. Dr. John P. Craven, former chief scientist of the U.S. Navy's Special Projects Office and former head of the DSSP and DSRV programs, commented:I have never seen or heard of a submarine disaster that was not accompanied by the notion that the battery blew up and started it all. [...] Naive investigators, examining the damage in salvaged battery compartments,

invariably blame the sinking on battery explosions until they learn that any fully charged battery suddenly exposed to seawater will explode. It is an inevitable effect of a sinking and almost never a cause.215. At least one American submarine, USS Cochino, on the other hand, was lost off Norway in 1949 due to a hydrogen explosion in the battery compartment. Most of Cochino's crew was rescued and the cause of her sinking is therefore known. Collision with USS Swordfish. It was standard practice during the Cold War for U.S. Navy attack submarines to trail Soviet missile submarines as they departed their home ports and moved into the North Pacific or the North Atlantic Ocean. The collision hypothesis is the unofficial opinion of many Soviet Navy officers, and is officially denied by the U.S. Navy. According to U.S. Navy sources, USS Swordfish put into Yokosuka, Japan, on 17 March 1968, shortly after the disappearance of K-129, and received emergency repairs to a bent periscope, reportedly caused by ice impacted during surfacing while conducting classified operations in the Sea of Japan. The USS Pueblo seizure by the North Korean government occurred in the Sea of Japan on 23 January 1968, and the U.S. Navy response to this incident included the deployment and maintenance of naval assets in the area off the eastern North Korean coast for some time thereafter. In response to Russian efforts to ascertain whether K-129 had been lost due to damage resulting from a collision with a U.S. submarine, an official U.S. statement by Ambassador Malcolm Toon to a Russian delegation during a meeting in the Kremlin in August 1993 related: At my request, U.S. naval intelligence searched the logs of all U.S. subs that were active in 1968. As a result, our Director of Naval Intelligence has concluded that no U.S. sub was within 300 nautical miles (560 km) of your sub when it sank.:262. A news release in 2000 demonstrates that Russian suspicion and sensitivity concerning the collision possibility, and indeed their preference for such an explanation, remains active: As recently as 1999, Russian government officials complained that Washington was covering up its involvement. One accused the Americans of acting like a "criminal that had been caught and now claimed that guilt must be proved," according to the notes of a U.S. participant in a November 1999 meeting on the topic. Explosion due to leaking missile hatch. On 3 October 1986 the Soviet Yankee-class ballistic missile submarine K-219, while on combat patrol in the Atlantic, suffered the explosion of a liquid-fuelled SS-N-6 missile in one of its 16 missile tubes. The cause of the explosion was a leaking missile tube hatch seal. The leak allowed sea water to come into contact with residue of the missile's propellants, which caused a spontaneous fire resulting in an explosion first of the missile booster, then a subsequent explosion of the warhead detonator charge. In the case of the Yankee-class ballistic missile submarine, the missiles were located within the pressure hull and the explosion did not cause damage sufficient to immediately sink the boat. It did, however, cause extensive radioactive contamination throughout, requiring the submarine to surface and the evacuation of the crew to the weather deck, and later to a rescue vessel which had responded to the emergency. Subsequently, K-219 sank into the Hatteras Abyss with the loss of four crewmen and rests at a depth of about 5,500 metres (18,000 ft). The Soviet Navy later claimed that the leak was caused by a collision with USS Augusta. There are indicators suggesting K-129 suffered a similar explosion in 1968. First, the radioactive contamination of the recovered bow section and the six crewmen of K-129 by weapons grade plutonium indicates the explosion of the warhead detonator charge of one of the missiles, before the ship reached its crush depth. The report that the forward section was crushed and that charring in the bow section indicated dieseling from an implosion (or alternatively from a fire), would indicate that the explosion occurred while K-129 was submerged and at depth. The report found in Blind Man's Bluff that the wreck revealed K-129 with a 3-metre (10 ft) hole immediately abaft the conning tower would support the theory of an explosion of one of the three missiles in the sail (possibly missile #3). Since K-129's missiles were housed in the sail, much less structural mass (compared to the Yankee-class) was available to contain such an explosion, and loss of depth control of the submarine would be instantaneous. Patrol deviation. According to Dr. John P. Craven, K-129 crossed the International Date Line at latitude 40 north, which was much further south of her expected patrol station: When K-129 passed longitude 180, it should have been farther north, at a latitude of 45 degrees, or more than three hundred miles away. If that was a navigational mistake it would be an error of historic proportions. Thus if the sub were not somewhere in the vicinity of where the Soviets supposed it to be, there would be a high probability, if not a certainty, that the submarine was a rogue, off on its own, in grave disobedience of its orders.:. Craven does not explain why he eliminated the possibilities that K-129 was proceeding to a newly assigned and officially approved patrol area, or using a new track to an established patrol area, nor why he concluded that K-129 was acting in an abnormal or criminal manner for a Soviet strategic missile submarine. Craven also noted: While the Russian submarine was presumed to be at sea, an oceanographic ship of the University of Hawaii was conducting research in the oceanic waters off Hawaii's Leeward Islands. The researchers discovered a large slick on the surface of the ocean, collected a sample, and found that it was highly radioactive. They reported this to George Woolard, the director of the Hawaii Institute of Geophysical Research.:216. Anatoliy Shtyrov (Анатолий Штыров), a former Soviet Pacific Fleet Deputy Chief of Staff for Intelligence, has said that K-129 would normally

patrol an area off the west coast of the United States but it was sent on an unscheduled combat patrol in the eastern Pacific only 1½ months after returning from its regular scheduled patrol. Vladimir Evdasin (Владимир Евдасин), who from June 1960 to March 1961 served aboard K-129, states that K-129 was sent on a secret mission in response to the massive U.S. naval force build-up off the Korean coast after the Pueblo incident. K-129's mission was in support of North Korea, which was an ally of the Soviet Union, and directed against U.S. naval operations, Pacific bases and U.S. maritime support lines to South-east Asia. Conspiracy theories. Red Star Rogue by Kenneth Sewell makes the claim that Project Azorian recovered virtually all of K-129 from the ocean floor,:243 and in fact "Despite an elaborate cover-up and the eventual claim the project had been a failure, most of K-129 and the remains of the crew were, in fact, raised from the bottom of the Pacific and brought into the Glomar Explorer".:22. In August 1993, Ambassador Malcolm Toon presented to a Russian delegation K-129's ship's bell.:262 According to Red Star Rogue, this bell had been permanently attached to the middle of the conning tower of K-129, thus indicating that in addition to the bow of the submarine, the critical and valuable midsection of the submarine was at least partially recovered by Project Azorian. Additionally, Ambassador Toon is quoted from the 6th Plenum of the U.S.–Russia Joint Commission on POW/MIAs:262 as stating, "Our Director of Naval Intelligence has concluded that no U.S. sub was within 300 nautical miles of your sub when it sank". Red Star Rogue places K-129 at 24 degrees north latitude by 163 west longitude, less than 350 miles from Honolulu. This site is consistent with the discovery of radioactive oil:216 reported to the Hawaii Institute of Geophysical Research at the time. The premise of Red Star Rogue is that a fail-safe device designed to be activated in the event of an unauthorised fire command of its nuclear missiles caused two catastrophic explosions (monitored by U.S. technology at the time) resulting in sinking the submarine. The 11 extra crewmen[who?] have never been satisfactorily identified, and K-129's crew manifest was listed as missing by Russian authorities. An ID photograph of a sailor found in the wreck has never been identified. Red Star Rogue claims the changing relations with China and Russia in the early 1970s, forged by Nixon and Kissinger, were enabled by the K-129 incident. Craven suggests that Project Azorian's real goal was not the nuclear weapons or the coding systems at all; rather, the project sought to determine exactly what K-129 was doing at 40N/180W "where she did not belong". Such information could be (and supposedly was) utilized within Henry Kissinger's foreign policy of "Deterrence Through Uncertainty", in order to "raise an unanswerable question in Leonid Brezhnev's mind about his command and control of his armed forces".:221. A retired United States Navy Captain and former naval attaché in Moscow Peter Huchthausen said he had a brief conversation in 1987 with Admiral Peter Navojtsev, who told him, "Captain, you are very young and inexperienced, but you will learn that there were some matters that both nations have agreed to not discuss, and one of these is the reasons we lost K-129." In 1995, when Huchthausen began work on a book about the Soviet submarine fleet, he interviewed a Russian Navy Rear Admiral Viktor Dygalo, who stated that the true history of K-129 has not been revealed because of the informal agreement between the two countries' senior naval commands. The purpose of that secrecy, he alleged, is to stop any further research into the losses of USS Scorpion and K-129. Huchthausen states that Dygalo told him to "overlook this matter, and hope that the time will come when the truth will be told to the families of the victims." Legacy. File:Burial At Sea of Soviet Submariners from Hughes Glomar Explorer.webmPlay media. In October 1992, Robert Gates, as the Director of Central Intelligence, visited Moscow to meet with President Boris Yeltsin of Russia. He said: As a gesture of intent, a symbol of a new era, I carried with me the Soviet naval flag that had shrouded the coffins of the half dozen Soviet sailors whose remains the Glomar Explorer had recovered when it raised part of a Soviet ballistic missile submarine from deep in the Pacific Ocean in the mid-1970s, I also was taking to Yeltsin a videotape of their burial at sea, complete with prayers for the dead and the Soviet national anthem – a dignified and respectful service even at the height of the Cold War. Gates's decision to bring the videotape of the funeral held for the men on the Golf was ultimately motivated by the fact that the United States wanted to inspire Russia to offer up information on missing American servicemen in Vietnam. Before that, "We had never confirmed anything to the Russians except in various vague senses," he said in an interview. Shortly after the USSR collapsed, the Bush administration had told the Russians through an intermediary that we couldn't tell them any more about what had happened on Golf/Glomar. But then when we started asking the Russians about what had happened to U.S. pilots shot down over Vietnam, and if any U.S. POWs had been transferred to Russia and held there, they came back and said, "What about our guys in the submarine?" At the time, the administration told the Russians only that there were no survivors and that there were only scattered remains. A subsequent FOIA search to find if any POWs were released as a result of this visit produced only negative results. According to Peter Huchthausen: American officers have refuted the Russian charge made early on that American nuclear attack submarine U.S.S. Swordfish was the U.S. submarine involved – a charge based solely on the latter's reported arrival in the Ship Repair Facility, Yokosuka, Japan, on 17 March 1968, with a badly damaged sail. Retired U.S. Navy Admiral William

D. Smith informed Dygalo by letter following a 31 August 1994, meeting of a Joint U.S./Russia Commission examining questions of Cold War and previous war missing, that the allegation of Swordfish's involvement was not correct and that Swordfish was nowhere near the Golf on 8 March 1968. The joint commission, headed by General Volkogonov and Ambassador Toon, informed the Russians that no U.S. submarines on 8 March 1968, had been within 300 nautical miles (560 km) of the site where the K-129 was found. Around the same time, Russian President Boris Yeltsin posthumously awarded the Medal "For Courage" to 98 sailors who died on K-129. However, as the complement of a diesel-electric Golf-class Russian submarine was about 83, his award acknowledges there were 15 extra personnel aboard the boat at the time of its sinking. An increase in the sub's total complement would put a strain on the logistical capabilities of a patrol because it reduces its duration. No explanation for the K-129's extra submariners has ever been provided by the Russian Navy.:156. 49)
To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1968-05-22: US/ATL: (EWS) South of Azores: Nuclear submarine USS "Scorpion" sank with 2 Mark-45 nuclear torpedoes. 99 dead. Torpedo detonation?

On 22 May 1968, the USS "Scorpion" was wrecked around 320 nautical miles south of the Azores with two nuclear warheads on board; the American nuclear submarine sank to 3300 metres. Due to the great depth, neither the submarine's armament nor its nuclear reactors have yet been recovered. 8)
In 1968, the USS Scorpion sank 400 miles west of the Azores. The nuclear weapons on board were never found. 12)
Azores, 1968: The nuclear-powered submarine USS Scorpion sank 640 kilometres southwest of the Azores Islands. All 99 sailors on board died. A nuclear reactor and two nuclear-tipped ASTOR torpedoes sank with the submarine at a depth of 3000 metres. 21)
Two nuclear torpedoes were lost in May 1968 in the unaccounted for sinking of the fighter submarine "USS Scorpion". The wreck lies at a depth of 3380 metres southwest of the Azores. 32)
USS Scorpion (SSN-589). USS Scorpion (SSN-589) was a Skipjack-class nuclear powered submarine that served in the United States Navy and the sixth vessel, and second submarine, of the U.S. Navy to carry that name. Scorpion was lost with her entire 99-person crew on 22 May 1968. She is one of two nuclear submarines the U.S. Navy has lost, the other being USS Thresher. It was one of the four mysterious submarine disappearances in 1968, the others being the Israeli submarine INS Dakar, the French submarine Minerve, and the Soviet submarine K-129. Service. Scorpion's keel was laid down 20 August 1958 by General Dynamics Electric Boat in Groton, Connecticut. She was launched 19 December 1959, sponsored by Elizabeth S. Morrison, the daughter of the last commander of the World War II-era USS Scorpion (SS-278), Lt. Cdr. Maximilian Gmelich Schmidt (that ship was also lost with all hands, in 1944). Scorpion was commissioned 29 July 1960, with Commander Norman B. Bessac in command. (See USS George Washington for information on how that submarine had originally been laid down with the name and hull number, USS Scorpion SSN-589, intended to be an attack submarine.)[citation needed]. Service: 1960–1967. Assigned to Submarine Squadron 6, Division 62, Scorpion departed New London, Connecticut, on 24 August for a two-month European deployment. During that time, she participated in exercises with 6th Fleet units and NATO-member navies. After returning to New England in late October, she trained along the eastern seaboard until May 1961. On 9 August 1961, she returned to New London, moving to Norfolk, Virginia, a month later. In 1962, she earned a Navy Unit Commendation.[citation needed]. Norfolk was Scorpion's port for the remainder of her career, and she specialized in developing nuclear submarine warfare tactics. Varying roles from hunter to hunted, she participated in exercises along the Atlantic coast, and in Bermuda and Puerto Rico operating areas. From June 1963 to May 1964, she underwent an overhaul at Charleston. She resumed duty in late spring, but regular duties were again interrupted from 4 August to 8 October for a transatlantic patrol. In the spring of 1965, she conducted a similar patrol in European waters.[citation needed]. In 1966 she deployed for special operations. After completing those assignments, her commanding officer (CO) received a Navy Commendation Medal for outstanding leadership, foresight and professional skill. Other Scorpion officers and crewmen were also cited for meritorious achievement. Scorpion is reputed to have entered an inland Russian sea during a "Northern Run" in 1966, where it filmed a Soviet missile launch through its periscope before fleeing from Soviet Navy ships.[citation needed]. Overhaul: 1967. On 1 February 1967, Scorpion entered Norfolk Naval Shipyard for a refueling overhaul. However, instead of a much-needed complete overhaul, she received only emergency repairs to get quickly back

on duty. The preferred SUBSAFE program required increased submarine overhaul times, from 9 months in length to 36 months. Intensive vetting of submarine component quality, SUBSAFE, was required, coupled with various improvements and intensified structural inspections – particularly, of hull-welding using ultrasonic testing – and of reduced availability critical parts like seawater piping.[citation needed]. Cold War pressures had prompted U.S. Submarine Force Atlantic (SUBLANT) officers to cut corners. The last overhaul of the Scorpion cost one-seventh of those performed on other nuclear submarines at the same time. This was the result of concerns about the "high percentage of time offline" for nuclear attack submarines, estimated at about 40% of total available duty time.[citation needed]. Scorpion's original "full overhaul" was reduced in scope. Long-overdue SUBSAFE work, such as a new central valve control system, was not performed. Crucially, her emergency system was not corrected for the same problems that destroyed Thresher. While Charleston Naval Shipyard claimed the Emergency Main Ballast Tank Blow (EMBT) system worked as-is, SUBLANT claimed it did not, and their EMBT was "tagged out" (listed as unusable). Perceived problems with overhaul duration led to a delay on all SUBSAFE work in 1967.[citation needed]. Chief of Naval Operations Admiral David Lamar McDonald approved Scorpion's reduced overhaul on 17 June 1966. On 20 July, McDonald deferred SUBSAFE extensions, otherwise deemed essential since 1963.[verification needed] . Service: 1967–1968. In late October 1967, Scorpion started refresher training and weapons system acceptance tests, and was given a new commanding officer, Francis Slattery. Following type training out of Norfolk, Virginia, she got underway on 15 February 1968 for a Mediterranean Sea deployment. She operated with the 6th Fleet into May and then headed west for home.[citation needed]. Scorpion suffered several mechanical malfunctions, including a chronic problem with Freon leakage from refrigeration systems. An electrical fire occurred in an escape trunk when a water leak shorted out a shore power connection. There is no evidence that Scorpion's speed was restricted in May 1968, although it was conservatively observing a depth limitation of 500 feet (150 m), due to the incomplete implementation of planned post-Thresher safety checks and modifications. After departing the Mediterranean on 16 May, Scorpion dropped two men at Naval Station Rota in Spain, one for a family emergency (RM2 Eric Reid), and one for health reasons (ICS Joseph Underwood). Some U.S. ballistic missile submarines (SSBNs) operated from the U.S. Naval base Rota; it is speculated that USS Scorpion provided noise cover for USS John C. Calhoun when they both departed to the Atlantic. As well as Soviet intelligence trawlers, there were Soviet fast nuclear attack submarines attempting to detect and follow the U.S. submarines going out of Rota; in this case, two fast 32-knot Soviet November-class hunter-killer subs. Scorpion was then detailed to observe Soviet naval activities in the Atlantic in the vicinity of the Azores. An Echo II-class submarine was operating with this Soviet task force, as well as a Russian guided-missile destroyer.[8] Having observed and listened to the Soviet units, Scorpion prepared to head back to Naval Station Norfolk.[citation needed]. Disappearance: May 1968. Scorpion attempted to send radio traffic to Naval Station Rota for an unusually long period beginning shortly before midnight on 20 May and ending after midnight on 21 May, but it was only able to reach a Navy communications station in Nea Makri, Greece, which forwarded the messages to COMSUBLANT. Lt. John Roberts was handed Commander Slattery's last message that he was closing on the Soviet submarine and research group, running at a steady 15 kn (28 km/h; 17 mph) at a depth of 110 m (350 ft) "to begin surveillance of the Soviets." Six days later, the media reported that she was overdue at Norfolk. Search: 1968. The Navy suspected possible failure and launched a search, but Scorpion and her crew were declared "presumed lost" on 5 June. Her name was struck from the Naval Vessel Register on 30 June. The search continued with a team of mathematical consultants led by Dr. John Piña Craven, the Chief Scientist of the Navy's Special Projects Division. They employed the methods of Bayesian search theory, initially developed during the search for a hydrogen bomb lost off the coast of Palomares, Spain in January 1966 in the Palomares B-52 crash.[citation needed]. Some reports indicate that a large and secret search was launched three days before Scorpion was expected back from patrol. This and other declassified information led to speculation that the Navy knew of Scorpion's destruction before the public search was launched. At the end of October 1968, the Navy's oceanographic research ship Mizar located sections of the hull of Scorpion on the seabed, about 400 nmi (740 km) southwest of the Azores under more than 3,000 m (9,800 ft) of water. This was after the Navy had released sound tapes from its underwater SOSUS listening system which contained the sounds of the destruction of Scorpion. The court of inquiry was subsequently reconvened, and other vessels, including the bathyscaphe Trieste II, were dispatched to the scene to collect pictures and other data. Craven received much credit for locating the wreckage of Scorpion, although Gordon Hamilton was instrumental in defining a compact "search box" wherein the wreck was ultimately found. He was an acoustics expert who pioneered the use of hydroacoustics to pinpoint Polaris missile splashdown locations, and he had established a listening station in the Canary Islands which obtained a clear signal of the vessel's pressure hull imploding as she passed crush depth. Naval Research Laboratory scientist Chester Buchanan used a towed camera sled of his own design aboard

Mizar and finally located Scorpion. Observed damage. This section does not cite any sources. Please help improve this section by adding citations to reliable sources. Unsourced material may be challenged and removed. (September 2016) (Learn how and when to remove this template message). The bow of Scorpion appears to have skidded upon impact with the globigerina ooze on the sea floor, digging a sizable trench. The sail had been dislodged, as the hull of the operations compartment upon which it perched disintegrated, and was lying on its port side. One of Scorpion's running lights was in the open position, as if it had been on the surface at the time of the mishap, although it may have been left in the open position during the vessel's recent nighttime stop at Rota. One Trieste II pilot who dived on Scorpion said that the shock of the implosion may have knocked the light into the open position. The secondary Navy investigation – using extensive photographic, video, and eyewitness inspections of the wreckage in 1969 – suggested that Scorpion's hull was crushed by implosion forces as it sank below crush depth. The Structural Analysis Group, which included Naval Ship Systems Command's Submarine Structures director Peter Palermo, plainly saw that the torpedo room was intact, though it had been pinched by excessive sea pressure. The operations compartment collapsed at frame 33, this being the king frame of the hull, reaching its structural limit first. The conical/cylindrical transition piece at frame 67 followed instantly. The boat was broken in two by massive hydrostatic pressure at an estimated depth of 470 m (1,530 ft). The operations compartment was largely obliterated by sea pressure, and the engine room had telescoped 15 m (50 ft) forward into the hull due to collapse pressure, when the cone-to-cylinder transition junction failed between the auxiliary machine space and the engine room. The only damage to the torpedo room compartment appeared to be a hatch missing from the forward escape trunk. Palermo pointed out that this would have occurred when water pressure entered the torpedo room at the moment of implosion. The sail was ripped off, as the hull beneath it folded inward. The propulsion shaft came out of the boat; the engineering section had collapsed inward in a telescoping fashion. The broken boat fell another 2,700 metres (9,000 ft) to the ocean floor Photos taken in 1986 by Woods Hole Alvin, released by Navy in 2012, shows the broken inboard end of the propulsion shaft. Navy investigations. Court of Inquiry report: 1968. Shortly after her sinking, the Navy assembled a Court of Inquiry to investigate the incident and to publish a report regarding the likely causes for the sinking. The court was presided over by Vice Admiral Bernard L. Austin, who had presided over the inquiry into the loss of Thresher. The report's findings were first made public on January 31, 1969. While ruling out sabotage, the report said: "The certain cause of the loss of the Scorpion cannot be ascertained from evidence now available." In 1984, the Norfolk Virginian-Pilot and The Ledger-Star obtained documents related to the inquiry and reported that the likely cause of the disaster was the detonation of a torpedo while the Scorpion's own crew attempted to disarm it. The U.S. Navy declassified many of the inquiry's documents in 1993. Naval Ordnance Laboratory report: 1970. An extensive, year-long analysis of Gordon Hamilton's hydroacoustic signals of the submarine's demise was conducted by Robert Price, Ermine (Meri) Christian, and Peter Sherman of the Naval Ordnance Laboratory (NOL). All three physicists were experts on undersea explosions, their sound signatures, and their destructive effects. Price was also an open critic of Craven. Their opinion, presented to the Navy as part of the Phase II investigation, was that the death noises likely occurred at 610 m (2,000 ft) when the hull failed. Fragments then continued in a free fall for another 2,700 m (9,000 ft). This appears to differ from conclusions drawn by Craven and Hamilton, who pursued an independent set of experiments as part of the same Phase II probe, demonstrating that alternate interpretations of the hydroacoustic signals were possibly based on the submarine's depth at the time it was stricken and other operational conditions.[citation needed]. The Structural Analysis Group (SAG) concluded that an explosive event was unlikely and was highly dismissive of Craven and Hamilton's tests. The SAG physicists argued that the absence of a bubble pulse, which invariably occurs in an underwater explosion, is absolute evidence that no torpedo explosion occurred outside or inside the hull. Craven had attempted to prove that Scorpion's hull could "swallow" the bubble pulse of a torpedo detonation by having Gordon Hamilton detonate small charges next to air-filled steel containers.[citation needed]. The 1970 Naval Ordnance Laboratory "Letter", the acoustics study of Scorpion destruction sounds by Price and Christian, was a supporting study within the SAG report. In its conclusions and recommendations section, the NOL acoustic study states: "The first SCORPION acoustic event was not caused by a large explosion, either internal or external to the hull. The probable depth of occurrence ... and the spectral characteristics of the signal support this. In fact, it is unlikely that any of the Scorpion acoustic events were caused by explosions." The Naval Ordnance Laboratory based much of its findings on an extensive acoustic analysis of the torpedoing and sinking of the decommissioned submarine Sterlet in the Pacific in early 1969, seeking to compare its acoustic signals to those generated by Scorpion. Price found the Navy's scheduled sinking of Sterlet fortunate. Nonetheless, Sterlet was a small World War II-era diesel-electric submarine of a vastly different design and construction than Scorpion with regard to its pressure hull and other characteristics. Its sinking resulted in three identifiable acoustic signals, as compared to Scorpion's

fifteen.[better source needed]. The NOL acoustics study provided a highly debated explanation as to how Scorpion may have reached its crush depth by anecdotally referring to the near-loss incident of the diesel submarine Chopper in January 1969, when a power problem caused her to sink almost to crush depth, before surfacing.[citation needed]. In the same May 2003 N77 letter excerpted above (see 1. with regard to the Navy's view of a forward explosion), however, the following statement appears to dismiss the NOL theory, and again unequivocally point the finger toward an explosion forward:[citation needed]. The Navy has extensively investigated the loss of Scorpion through the initial court of inquiry and the 1970 and 1987 reviews by the Structural Analysis Group. Nothing in those investigations caused the Navy to change its conclusion that an unexplained catastrophic event occurred. Wreck site. The remains of the Scorpion are reportedly resting on a sandy seabed at 32°54.9′N 33°08.89′W in the North Atlantic Ocean. The wreck lies at a depth of 3,000 m (9,800 ft) approximately 400 nmi (740 km) southwest of the Azores on the eastern edge of the Sargasso Sea.[citation needed]. The U.S. Navy periodically revisits the site to determine whether wreckage has been disturbed and to test for the release of any fissile materials from the submarine's nuclear reactor or two nuclear weapons. Except for a few photographs taken by deep water submersibles in 1968 and 1985, the U.S. Navy has never made public any physical surveys it has conducted on the wreck. The last photos were taken by Robert Ballard and a team of oceanographers from Woods Hole using the submersible in 1985. The U.S. Navy secretly loaned Ballard the submersible to visit the wreck sites of the Thresher and Scorpion. In exchange for his work, the U.S. Navy then allowed Ballard, a USNR officer, to use the same submersible to search for RMS Titanic. Due to the radioactive nature of the Scorpion wreck site, the U.S. Navy has had to publish what specific environmental sampling it has done of the sediment, water, and marine life around the sunken submarine to establish what impact it has had on the deep-ocean environment. The information is contained within an annual public report on the U.S. Navy's environmental monitoring for all U.S. nuclear-powered ships and boats. The reports explain the methodology for conducting deep-sea monitoring from both surface vessels and submersibles. These reports say the lack of radioactivity outside the wreck shows the nuclear fuel aboard the submarine remains intact and no uranium in excess of levels expected from the fallout from past atmospheric testing of nuclear weapons has been detected during Naval inspections. Likewise the two nuclear-tipped Mark 45 anti-submarine torpedoes (ASTOR) that were lost when the Scorpion sank show no signs of instability. It is likely the plutonium and uranium cores of these weapons corroded to a heavy, insoluble material soon after the sinking. The materials remain at or close to their original location inside the boat's torpedo room. If the corroded materials were released outside the submarine, their density and insolubility would cause them to settle into the sediment.[citation needed]. Call for inquiry: 2012. In November 2012, the U.S. Submarine Veterans, an organization with over 13,800 members, asked the U.S. Navy to reopen the investigation on the sinking of USS Scorpion. The Navy rejected the request. A private group including family members of the lost submariners stated they would investigate the wreckage on their own since it was located in international waters. It is illegal to tamper with a sunken military vessel, because they are considered military graveyards. Theories about the loss. Hydrogen explosion during battery charge. A hydrogen explosion as the proximal cause for the loss of Scorpion is assessed and analyzed by retired acoustics expert Bruce Rule, a long-time analyst for the Integrated Undersea Surveillance System (IUSS), in his IUSS alumni association blog. Based on his own experiences, Rear Admiral Dave Oliver, who served in both diesel boats and nuclear submarines, provides his assessment in his book Against the Tide that Scorpion was lost as a result of hydrogen build-up due to changes in the ventilation lineup while proceeding to periscope depth. Most recently, following analysis of the ship's battery cells, this is the leading theory for the loss of Scorpion. This is consistent with two small explosions aboard the submarine, a half-second apart, that were picked up by hydrophones. Accidental activation of torpedo. The classified version of the U.S. Navy's court of inquiry's report, finally released in 1993, listed accidents involving the Mark 37 torpedo as the three of the most probable causes for the loss of submarine, including a hot running torpedo, an accidentally or deliberately launched weapon, or the inadvertent activation of a torpedo by stray voltage. The acoustic homing torpedo, in a fully ready condition and lacking a propeller guard, is theorized by some to have started running within the tube. Released from the tube, the torpedo then somehow became fully armed and successfully engaged its nearest target: Scorpion herself. Explosion of torpedo inside sub. A later theory was that a torpedo may have exploded in the tube, caused by an uncontrollable fire in the torpedo room. The book Blind Man's Bluff documents findings and investigation by Dr. John Craven, who surmised that a likely cause could have been the overheating of a faulty battery. The Mark 46 silver–zinc battery used in the Mark 37 torpedo had a tendency to overheat, and in extreme cases could cause a fire that was strong enough to cause a low-order detonation of the warhead. If such a detonation had occurred, it might have opened the boat's large torpedo-loading hatch and caused Scorpion to flood and sink. However, while Mark 46 batteries have been known to generate so much heat that the torpedo casings blistered, none is known to have damaged a boat or caused

an explosion. Dr. John Craven mentions that he did not work on the Mark 37 torpedo's propulsion system and became aware of the possibility of a battery explosion only twenty years after the loss of Scorpion. In his book The Silent War, he recounts running a simulation with former Scorpion executive officer Lieutenant Commander Robert Fountain, Jr. commanding the simulator. Fountain was told he was headed home at 18 knots (33 km/h) at a depth of his choice, then there was an alarm of "hot running torpedo". Fountain responded with "right full rudder", a quick turn that would activate a safety device and keep the torpedo from arming. Then an explosion in the torpedo room was introduced into the simulation. Fountain ordered emergency procedures to surface the boat, stated Dr. Craven, "but instead she continued to plummet, reaching collapse depth and imploding in ninety seconds – one second shy of the acoustic record of the actual event."[citation needed]. Craven, who was the Chief Scientist of the Navy's Special Projects Office, which had management responsibility for the design, development, construction, operational test and evaluation and maintenance of the UGM-27 Polaris Fleet Missile System had long believed Scorpion was struck by her own torpedo, but revised his views during the mid-1990s when he learned that engineers testing Mark 46 batteries at Keyport, Washington just before the Scorpion's loss, said the batteries leaked electrolyte and sometimes burned while outside their casings during lifetime shock, heat and cold testing. Although the battery manufacturer was accused of building bad batteries, it was later able to successfully prove its batteries were no more prone to failure than those made by other manufacturers.[citation needed]. Intentional firing of defective torpedo. Twenty years later, Craven learned that the sub could have been destroyed by a "hot-running torpedo." Other subs in the fleet had replaced their defective torpedo batteries, but the Navy wanted Scorpion to complete its mission first. If Scorpion had fired a defective torpedo, it could have missed its target and turned back to strike the sub that launched it. Structural damage. Photographs of the USS Scorpion wreck show the submarine's detached shaft and propeller, missing a rotor blade. Some experienced U.S. submariners attribute the loss of the submarine to flooding caused by the detached shaft.[26][27] Given that anti-submarine torpedoes were designed to seek the sound of the cavitation of the target submarine's propeller, this could be damage caused by such a weapon. Malfunction of trash disposal unit. During the 1968 inquiry, Vice Admiral Arnold F. Shade testified that he believed that a malfunction of the trash disposal unit (TDU) was the trigger for the disaster. Shade theorized that the sub was flooded when the TDU was operated at periscope depth and that other subsequent failures of material or personnel while dealing with the TDU-induced flooding led to the sub's demise. Soviet attack. The book All Hands Down by Kenneth Sewell and Jerome Preisler (Simon and Schuster, 2008) concludes that Scorpion was destroyed while en route to gather intelligence on a Soviet naval group conducting operations in the Atlantic. While the mission for which the submarine was diverted from her original course back to her home port is a matter of record, its details remain classified.[citation needed]. Ed Offley's book Scorpion Down promotes a hypothesis suggesting that Scorpion was sunk by a Soviet submarine during a standoff that started days before 22 May. Offley also cites that it occurred roughly at the time of the submarine's intelligence-gathering mission, from which she was redirected from her original heading for home; according to Offley, the flotilla had just been harassed by another U.S. submarine, USS Haddo. W. Craig Reed, who served on Haddo a decade later as a petty officer and diver, and whose father was a U.S. Navy officer responsible in significant Electronic Support Measures (ESM) advances in sub detection in the early 1960s, recounted similar scenarios to Offley in Red November, over Soviet torpedoing of Scorpion and details his own service on USS Haddo in 1977 running inside Soviet waters off Vladivostok, when torpedoes appeared to have been fired at Haddo, but were immediately put down by the captain as a Soviet torpedo exercise.[citation needed]. Both All Hands Down and Scorpion Down point toward involvement by the KGB spy-ring (the so-called Walker Spy-Ring) led by John Anthony Walker, Jr. in the heart of the U.S. Navy's communications, stating that it could have known that Scorpion was coming to investigate the Soviet flotilla. According to this theory, both navies agreed to hide the truth about both USS Scorpion and K-129 incidents. Several USN & RN Navy submarines collided with Soviet Echo-class subs in Russian and British waters in this period, showing greatly enhanced aggression in Soviet Navy sub operations in 1968. The Navy Minister in the British Labour Government, noted 11 such deliberate collisions. Commander Roger Lane Nott, Royal Navy commander of HMS Splendid during the 1982 Falklands War, stated that in 1972, during his service as a junior navigation officer on HMS Conqueror, a Soviet submarine entered the Firth of Clyde channel in Scotland and Conqueror was given the order to "chase it out". Having realized it was being pursued, "a very aggressive Soviet Captain turned his submarine and drove her straight at HMS Conqueror. It had been an extremely close call." According to a translated article from Pravda, Moscow never issued a "fire" command during the Cold War. This is disputed by Royal Navy officers, "there had been other occasions when harassed Russians had fired torpedoes to scare off trails". The Navy court of inquiry official statement was that there was not another ship within 200 miles of Scorpion at the time of the sinking. Adding to the body of evidence against a Soviet torpedo-attack theory, U.S. Navy submarine Captain Robert

LaGassa has flatly stated that "no Soviet Submarine in 1968 could detect, track, approach and attack any Skipjack or later class U.S. submarine". However during 1967, the large Soviet nuclear sub building programme, and the view of naval officers and in particular Admiral Rickover, that Defense Sec R.McNamara, Naval Intelligence and CIA assessments underrated the speed of even existing Soviet subs and their threat led to 2 major tests on the request of Rickover. On 3-5 Jan 1968 the CVN USS Enterprise proved unable to outrun a Soviet November SSN at flank speed of 30/31 knots. This showed the Soviet November SSN, 5 knots faster than, 'shatteringly' wrong intelligence estimates and underwater tracking a US CVN on sonar at 30 knots. Defense Sec R.McNamara remained opposed to a new fast SSN 688 class leader capable of 30 knots. His deputy and the chief sea warfare advisor to head of USN Scientific engineering research James Nunan advised against SSN 688 or the need or reason for an enlarged fast, 30 knot Sturgeon on 18 Dec 1967 in favor of long term research into a new small 'conform' nuclear design. It appears McNamara attempted to have Rickover court martialed and removed from office at this point. However, the USN case for SSN 688 after the hijacking of USS Pueblo in Jan 68 and the Tet offensive in Feb 1968, which showed new communist aggression, was resubmitted. The plan and requirement for new fast SSNs was accepted by USN Chief of Staff Admiral Thomas Moorer after further inquiry in March 1968, but was not accepted by the US Government. Events in May 1968 led to Admiral Rickover and Chief of USN Scientific Research and Engineering, John S Foster, appearing before the US Senate and House armed forces committees in the first week of June 1968, and it was decided to order an immediate test to illustrate to Foster that the tactical advantage of speed in a SSN could outweigh stealth and quietness. The radical test was conducted with a top USN Permit-class SSN crew aboard USS Dace Cpt by Cdr K.McKee and a crew with experience running in Russian waters engaging in a hunt and attempt to simulate a torpedo attack on a fast Skipjack, USS Shark with a declared speed 29 knots. While the trial was successful, it showed just how difficult a faster, noisier submarine like Shark was to engage and by implication that an even faster November-class Soviet sub, while noisy, might well have been able to engage a 29 knot Skipjack. U.S. Navy conclusions. The results of the U.S. Navy's various investigations into the loss of Scorpion are inconclusive. While the court of inquiry never endorsed Dr. Craven's torpedo theory regarding the loss of Scorpion, its "findings of facts" released in 1993 carried Craven's torpedo theory at the head of a list of possible causes of Scorpion's loss.[citation needed]. The first cataclysmic event was of such magnitude that the only possible conclusion is that a cataclysmic event (explosion) occurred resulting in uncontrolled flooding (most likely the forward compartments).[citation needed]. Books. Silent Steel. Released in 2006, Stephen Johnson's Silent Steel: The Mysterious Death of the Nuclear Attack Sub USS Scorpion provides a detailed listing of every mechanical problem on the submarine cited by the Navy or mentioned in crewmen's letters, but does not solve the Scorpion's sinking. Johnson, a critic of Dr. Craven, agrees with Navy scientists who, in 1970, gave their opinion that the sub's hull was smashed by implosion damage and not a torpedo blast, a finding they support with their interpretation of certain evidence about the condition of the hull and hydroacoustic recordings of the disaster. Silent Steel portrays an overworked submarine denied needed maintenance and manned by a demoralized crew, a depiction contradicted by many former Scorpion enlisted men and officers, and based in part on the testimony of sailors who had applied for transfer from the boat. Johnson also enumerates many of the Navy-wide submarine maintenance issues that denied Scorpion an overhaul and overdue safety improvements, though the Navy would maintain that virtually all necessary and vital improvements and repairs were made on the submarine before her final deployment. The Submarine Safety Program, initiated following the 1963 loss of Thresher, delayed new submarine construction and sub overhauls by monopolizing skilled workers and critical spare parts. Fearing that a normal overhaul and safety work during 1967 might sideline Scorpion for three years, it was selected for a brief experimental overhaul, but this was canceled due to a shortage of workers. Scorpion sank eight months after leaving Norfolk Naval Shipyard.[citation needed. Blind Man's Bluff. In 1998, two New York Times reporters published Blind Man's Bluff: The Untold Story of American Submarine Espionage, a book providing a rare look into the world of nuclear submarines and espionage during the Cold War. One lengthy chapter deals extensively with Scorpion and her loss. The book reports that concerns about the Mk 37 conventional torpedo carried aboard Scorpion were raised in 1967 and 1968, before Scorpion left Norfolk for her last mission. The concerns focused on the battery that powered the torpedoes. The battery had a thin metal-foil barrier separating two types of volatile chemicals. When mixed slowly and in a controlled fashion, the chemicals generated heat and electricity, powering the motor that pushed the torpedo through the water. But vibrations normally experienced on a nuclear submarine were found to cause the thin foil barrier to break down, allowing the chemicals to interact intensely. This interaction generated excessive heat which, in tests, could readily have caused an inadvertent torpedo explosion. The authors of Blind Man's Bluff do not directly contradict the official findings but highlight information discovered during the investigation, which contradict the investigation's findings but are not addressed in the report. Notably, the book cites a hot running

torpedo incident on the USS Sargo (SSN-583) prior to the loss of Scorpion, although Sargo was moored at the time and not lost. Red Star Rogue. In 2005, the book Red Star Rogue: The Untold Story of a Soviet Submarine's Nuclear Strike Attempt on the U.S., by former American submariner Kenneth Sewell in collaboration with journalist Clint Richmond, claimed that Soviet submarine K-129 was sunk 300 nmi (560 km) northwest of Oahu on 7 March 1968 while attempting to launch her three ballistic missiles, in a rogue attempt to destroy Pearl Harbor.[citation needed]. Sewell claims that the sinking of Scorpion was caused by a retaliatory strike for the sinking of K-129, which the Soviets had attributed to a collision with USS Swordfish.[citation needed]. In 1995, when Peter Huchthausen began work on a book about the Soviet underwater fleet, he interviewed former Soviet Admiral Victor Dygalo, who stated that the true history of K-129 has not been revealed because of the informal agreement between the two countries' senior naval commands. The purpose of that secrecy, he alleged, is to stop any further research into the losses of either Scorpion or K-129. Huchthausen states that Dygalo told him to "forget about ever resolving these sad issues for the surviving families." All Hands Down. All Hands Down was written by Kenneth R. Sewell, a nuclear engineer and a U.S. Navy veteran who spent five years aboard Parche, a fast attack submarine. It attempts to link the sinking of Scorpion with the Pueblo incident, the John Anthony Walker spy ring, and Cold War Soviet aggression. The thesis of this book is that action off the Canary Islands was the direct cause of the sinking. The author purports that this is supported by motives in the Soviet Navy following the sinking of K-129, which caused the Russian Navy to trap a U.S. submarine. The bait for this trap would be strange military operations and furtive naval manoeuvres in the Atlantic, accompanied by countermeasures that would seemingly be defeated only by the deployment of a nuclear submarine. With information from spying by Walker, the position and arrival time of Scorpion was known by the Russians, and its sinking followed the springing of the trap. The book claims Scorpion was sunk by a Ka-25 helicopter equipped with anti-submarine torpedoes, which took off from one ship and landed on a different one. This was so that no one, other than the aircrew of the helicopter, would notice one torpedo missing.[citation needed]. The book then purports a cover-up by American and Soviet officials, to avoid public outrage and an increase in Cold War tension.[citation needed]. Scorpion Down. Ed Offley, a reporter on military affairs, has closely followed developments in information concerning the sinking of the Scorpion. His most recent article on the subject is "Buried at Sea" published in the Winter 2008 issue of the Quarterly Journal of Military History. This article summarizes the facts in the case as presented in his 2007 book Scorpion Down: Sunk by the Soviets, Buried by the Pentagon: The Untold Story of the USS Scorpion. In the book Offley, gathering decades of his own research, hypothesizes that Scorpion was sunk by the Soviets, possibly in retaliation for the loss of K-129 earlier that year. The book paints a picture of increasing Soviet anger at U.S. Navy provocations — specifically, close-in monitoring of Soviet naval operations by almost every U.S. nuclear submarine. At approximately the same time, the Soviet intelligence community scored a huge boon in receiving the mechanical cryptologic devices from Pueblo. These machines, combined with daily crypto keys from the John Anthony Walker spy ring, likely allowed the Soviets to monitor U.S. Navy ship dispositions and communications.[citation needed]. Offley contends that the Scorpion was tracked by several Soviet Navy assets from the Mediterranean to its final operational area south of the Azores, where it was then sunk by a Soviet torpedo. He claims the U.S. Navy was aware of the loss of the Scorpion on 21 May 1968 and engaged in a massive cover-up, within days destroying much of the sound and communication data at SOSUS ground stations in the U.S. and Europe, and delaying any public indication of the loss until its scheduled arrival at Norfolk, Virginia five days later, partly to disguise the fact that U.S. nuclear subs were in constant or frequent communication with U.S. Naval Communication bases and that the subsequent search for the Scorpion was a five months-long deception to pretend they had no idea of the location of the hull.[citation needed]. The oral testimony relied upon by Offley are recountings of surviving SOSUS recordings documenting torpedo sounds, evasion sounds, an explosion, and eventually the sounds of implosions as Scorpion plunged past crush depth.[citation needed]. Against the Tide: Rickover's Leadership Principles and the Rise of the Nuclear Navy. In a section from this 2014 book titled "The Danger of Culture," retired U.S. Navy Rear Admiral Dave Oliver offers the theory based on his own experiences that it was possibly a hydrogen explosion, either during or immediately following a battery charge, that destroyed USS Scorpion and killed her crew. The proximate cause in that scenario would have been the procedural carryover from diesel boat days wherein the boat was effectively rigged for collision—with subsequent changes in ventilation flow and watertight condition—before proceeding to periscope depth by way of setting "Condition Baker". Oliver had personally witnessed dangerously high percent-hydrogen spikes under such conditions aboard a nuclear submarine, specifically while going to periscope depth and setting Condition Baker during a battery charge. Diesel boats, in contrast, were not capable of doing a battery charge while deeply submerged, but were instead dealing with the risk of collision while on anti-surface ship operations when proceeding to periscope depth while in or near shipping lanes. In regard to NAVSEA responsibility, he

further states: "I always felt that the investigators closed their eyes to the most likely cause because they did not want to acknowledge their own involvement in this tragedy. I had forwarded my letter about Condition Baker via some of the same people responsible for the Scorpion investigation.". Culture. Phil Ochs released a song on his album Rehearsals for Retirement (1969) titled "The Scorpion Departs But Never Returns". 50)
To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1969

1969-04-15: US/NKOR: (HAD) Attack order on North Korea with B61 bomb and F-4 by drunken Nixon after EC-121 (early warning aircraft) shoot-down.

15 April 1969: After the EC-121(early warning aircraft) firing incident in 1969, a pilot at Kunsan Air Base was reportedly ordered to load a B61 nuclear bomb onto an F-4 fighter jet and prepare for a nuclear strike against the People's Democratic Republic of Choson (North Korea). After a few hours, the order was given to abort. The jet never took off. According to reports, Richard Nixon was drunk when he gave the order for a nuclear strike against the DPRK. The order to withdraw was given on the advice of Secretary of State Henry Kissinger. 6)

1970 till 1979
1970

1970-02-22: DEU: (HM) Boetingen/Germany: Maintenance work, warhead fell down, was damaged and a piece of the rocket tip broke off.

Boetingen, 1970: On 22 February 1970, the nuclear warhead of a Pershing missile fell to the ground during maintenance work. The area was evacuated and cordoned off, but the warhead did not explode. The accident was caused by the mistake of a worker who removed a bolt and detonation cable. The warhead fell down and was damaged and a piece of the missile tip broke off. The incident was first classified as a "broken arrow" but was later downgraded to a "bent spear". 21)

1971

1971-02-20: US: (HM) NORAD: Teletype erroneously sent "nuclear emergency" alert information to all radio and television stations.

A "fiasco" is what military experts called, for example, the false alarm that happened on 20 February 1971; it was certainly an embarrassment. That morning, the civil defence officer at NORAD had accidentally -- instead of the usual test tape -- fed a wrong punched tape into his teletype. The result: on dozens of American radio and television stations, the announcer interrupted the programme and read out a prepared text: "This is not a test broadcast. There is a national emergency. Please set your equipment ... to receive a message from the President. This is not a test broadcast ..." It took almost ten minutes for NORAD to realise the error, almost three quarters of an hour for the alarm to be withdrawn from the radio stations concerned. It was also worrying to note that the American reaction to the false alarm was contrary to all expectations. The listeners reached by the message did not panic, hardly a trace of excitement or tension. And most of the stations contacted by telex had not even taken note of the NORAD message, but had blithely continued broadcasting their programmes. 22)

1972

1973

1973-10-09: US/SOW: (HR) -24: Yom Kippur War (Arab-Israeli War): Israel wanted to use nuclear weapons, mechanic activated his base's alarm system.

Kiesinger and Brezhnev escalated the situation verbally and through military action, always with the prospect of a nuclear exchange. After a few days, the situation de-escalated again. 1)
October 1973: Yom Kippur War: During the Yom Kippur War, Israeli officials panicked that the Arab invasion force would overrun Israel after the Syrian army nearly made a breakthrough on the Golan Heights, and the US government denied Israel's request for an emergency airlift. According to a former CIA official, General Moshe Dayan asked and received Israeli Prime Minister Golda Meir's permission to arm 13 Jericho missiles and 8 F-4 Phantom II fighter jets with nuclear warheads. The missile launchers were located at the Sdot Micha airbase, while the fighter jets were stationed at the Tel Nof airbase for 24 hours. The missiles were reportedly aimed at Arab military headquarters in Cairo and Damascus. The United States detected Israel's nuclear deployment after a Lockheed SR-71 Blackbird reconnaissance plane spotted the missiles and began an airlift the same day. After the U.N. Security Council imposed a ceasefire, the conflict resumed when the Israel Defence Forces encircled the Egyptian Third Army. According to former U.S. State Department officials, General Secretary Leonid Brezhnev threatened to use Soviet airborne troops against the Israeli forces, and U.S. forces were placed on DEFCON 3. Israel also deployed its nuclear weapons. While DEFCON 3 was still in effect, mechanics repairing the alarm system at Kincheloe Air Force Base in Michigan accidentally activated it and nearly deployed the B-52 bombers on the base before the officer on duty declared a false alarm. The crisis finally ended when Prime Minister Meir halted all military action. Declassified Israeli documents have not directly confirmed these claims, but they have confirmed that Israel was prepared to use "drastic means" to win the war. 6)
October 24, 1973: False Alarm During DEFCON 3: During the Arab-Israeli war, the U.S. went to high alert as a way of warning the U.S.S.R. not to intervene. However, while this was in effect, mechanics at the Kinchole Air Force Base in Michigan “accidentally activated the whole base alarm system.” Pilots and crew all ran out to their B-52 bombers, ready to take off, when the duty officer realized it was a false alarm, and called them all back, before any further damage was done. This example comes from the Nuclear Files. 7)
During the 1973 Yom Kippur War, Israeli Prime Minister Golda Meir, after being informed by Moshe Dajan on the night of 8-9 October that military defeat against Syria and Egypt was imminent, ordered 13 nuclear bombs, each with the explosive power of 20 kilotons of TNT, to be readied for combat for the Jericho missiles at Sdot Micha Missile Base and the F-4s at Tel Nof Airbase. President Richard Nixon and his Secretary of State Henry Kissinger learned of this measure on the morning of 9 October and ordered Operation Nickel Grass, a massive support with military material for Israel. 39)

1974

1974-XX-XX: DEU: (HM) Laarbruch/Germany: An atomic bomb of type WE 177 fell down while being loaded into an aircraft.

Laarbruch, 1974: An atomic bomb of the type WE 177 fell down while being loaded onto an aircraft. 21)

1974-08-01: US: (HAD) US President Nixon was "cold-called" by the Secretary of Defence on nuclear issues because of depression, alcohol, drugs.

August 1, 1974: Presidential Depression: “In his last weeks in office during the Watergate crisis, President Richard M. Nixon was clinically depressed, emotionally unstable, and drinking heavily. U.S. Secretary of Defense James R. Schlesinger instructed the Joint Chiefs of Staff to route “any emergency order coming from the president”—such

as a nuclear launch order— through him first (Schlosser 2013, p. 360).” This example comes from the UCS. 7)

1975

1975-11-22: US/SIZ: (EWS) Sicily: USS Kennedy/USS Belknap collided, major damage, fire and explosions only 10m from nuclear weapons. 8 dead.

Mediterranean Sea, 1975: On the night of 22 November 1975, two US ships - USS John F. Kennedy and USS Belknap - collided in bad weather near Sicily. Both ships suffered extensive damage. There was a fierce fire with explosions that lasted for over two hours. A secret message immediately informed the Pentagon of a "broken arrow", as nuclear weapons were stored in the immediate vicinity of the fire. Fortunately, the fire was brought under control, but not even ten metres from the nuclear weapons. 21)

USS Belknap (CG-26). USS Belknap (DLG-26/CG-26), named for Rear Admirals George E. Belknap (1832–1903) and Reginald Rowan Belknap (1871–1959), was the lead ship of her class of guided missile cruisers in the United States Navy. She was launched in 1963 as DLG-26, a guided missile frigate under the then-current designation system, and reclassified as CG-26 on 30 June 1975. On 22 November 1975, Belknap and the aircraft carrier John F. Kennedy collided, killing seven sailors on the cruiser and one on the aircraft carrier. Construction. Belknap, the first of a new class of guided missile frigates, was laid down by the Bath Iron Works Corporation at Bath in Maine on 5 February 1962. She was christened by Mrs. Leonard B. Cresswell, the granddaughter and daughter of the RADMs Belknap and was launched by the Bath Iron Works, Bath, Maine on 20 July 1963 and commissioned on 7 November 1964. Collision, fire, and reconstruction. Belknap was severely damaged in a collision with the aircraft carrier John F. Kennedy on 22 November 1975 off the coast of Sicily. A fire broke out on Belknap following the collision, during the fire her aluminum superstructure collapsed after it was weakened by the heat. Seven sailors were killed on Belknap and one on John F. Kennedy. Shortly after the fire began, boats from other vessels operating with John F. Kennedy and Belknap began to pull alongside the burning ship, often with complete disregard for their own safety. The guided missile destroyer Claude V. Ricketts and destroyer Bordelon moved in on both sides of Belknap, their men directing fire hoses into the amidships area that the stricken ship’s crew could not reach. Bordelon was also badly damaged in a collision with Kennedy the following year which forced her removal from service. Claude V. Ricketts moved in and secured alongside Belknap’s port side, and evacuated the injured while fragments from exploding ammunition showered down upon her weather decks. The frigate Pharris closed in the carrier’s starboard side to provide fire-fighting assistance. Ammunition from Belknap’s three-inch ready storage locker, located amidships, cooked off, hurling fiery fragments into the air and splashing around the rescue boats. Undaunted, the rescuers pulled out the seriously wounded and delivered fire-fighting supplies to the sailors who refused to surrender their ship to the conflagration. The ammunition ship Mount Baker was involved later in the rescue and salvage of Belknap, escorting her to an ammunition depot and then providing electric and water services as Mount Baker's Explosive Ordnance Disposal team retrieved all of the remaining ammunition from Belknap. Mount Baker also took aboard most of Belknap's crew until they could be transferred to a way station for re-assignment. The fire and the resultant damage and deaths, which would have been less had Belknap's superstructure been made of steel, helped persuade the US Navy to pursue all-steel construction in future classes of surface combatants. However, in 1987 the New York Times cited cracking in aluminum superstructures such as what occurred in the Oliver Hazard Perry-class frigates, rather than fire, as the reason the Navy returned to steel on some ships. The first USN combatant ships to revert to all steel superstructure were the Arleigh Burke class, which were commissioned beginning in the 1990s. Belknap was reconstructed by the Philadelphia Navy Yard from 30 January 1976 to 10 May 1980. Since the hull was still in good condition the Navy decided to use this as a test platform for the Aegis class cruiser electronics and updated weapons systems. Until the Aegis class cruisers came along Belknap was one of the most powerful warships in the world and saw service in Beirut as part of the multinational peacekeeping force, becoming the first ship to fire on an enemy since the Vietnam War. It was the ship's Naval Tactical Data Systems' (NTDS) reliability during this time in Beirut which was named as the defining reason that the Belknap was chosen as the Sixth Fleet flagship. Later service and Malta. Belknap was converted to a flagship by Norfolk Naval Shipyard from May 1985 to February 1986. This conversion work entailed building out the superstructure forward to just aft of the missile launcher and three decks up to add flag spaces (accommodation and office), and additional communications gear. In addition, the helicopter hangar aft was turned into accommodation spaces for flag staff and a small detachment of

Marines. After this conversion she sailed to Italy [Gaeta naval base] and became Sixth Fleet flagship, relieving Coronado.[citation needed] On 27 May 1986, she participated in a naval parade with ships from 10 countries at Barcelona. Belknap played a role in the Malta Summit between US President George H. W. Bush and Soviet Leader Mikhail Gorbachev on 2 December and 3 December 1989. The US President, along with his advisers, James Baker, John Sununu and Brent Scowcroft, had their sleeping quarters aboard Belknap, whereas the Soviet delegation used the missile cruiser Slava. The ships were anchored in a roadstead off the coast of Marsaxlokk. Stormy weather and choppy seas resulted in some meetings being cancelled or rescheduled, and gave rise to the moniker the "Seasick Summit" among international media. In the end, the meetings took place aboard Maxsim Gorkiy, a Soviet cruise ship anchored in the harbor at La Valletta. Engineers from the Navy Ship Systems Engineering Station devised a mooring arrangement for this event, and despite the worst-case 100-year storm event, Belknap held its ground using emergency operating procedures as outlined by the engineers. Decommissioning. Belknap was decommissioned and stricken from the Naval Vessel Register on 15 February 1995 and sunk as a target on 24 September 1998. 54)

1976
1977

1977-XX-XX: ???: (EWA) Engine fire of a CH-47 helicopter carrying nuclear weapons caused it to crash.

Unknown location, 1977: Engine fire of a CH-47 helicopter equipped with nuclear weapons led to the crash. Classified as a "dull sword" accident. 21)

1978
1979

1979-10-03: ???: (ES) Radar detecting submarine-launched missile, detected missile body in low orbit, caused false alarm and hit report.

A radar responsible for detecting submarine-launched missiles detected a missile body in low orbit and caused a false alarm and a hit report. 5)

1979-11-09: US: (HS) NORAD. Simulated Soviet massive attack due to training tape mistaken for real attack but ignored by Bruce K Brown.

At 8:50 a.m. on 9 November 1979, hundreds of dots lit up on the radar screens of NORAD (North American Aerospace Defense Command) as they approached the USA over the North Pole. Air Defence Command duty officer Bruce K Brown had exactly 3 minutes to have his perception confirmed. Radar stations were dialled, they had not detected any missiles. If the situation remained unclear, the Pentagon would call a missile attack conference in 30 seconds. At Andrews Air Force Base near Washington D.C., the President's command plane taxied to the runway. Across the country, B52 bombers were loaded with nuclear weapons and readied for take-off. Fighter planes were already flying immediate sorties to intercept enemy bombers. It looked as if World War III had begun. Deep in the Cheyenne Mountains near Colorado Springs is the largest computer system in the world. Its job is to detect approaching missiles and give the president enough warning time to launch a counterattack. This strategy is called "Attack after Warning / LOW Launch on Warning". "Attack after warning" means detecting the missile attack 3 to 4 minutes after the start of the attack. After 4 to 5 minutes, maximum 10 minutes, the President must have made a decision. Then another 5 minutes are needed to strike back. It is a tight time frame that allows for no mistakes. And little time for rational thought. Political decision-making has become subservient to a machine. On that day in Colorado, technology decided the fate of humanity. Radar station after radar station reported in - none had detected approaching missiles. The most sophisticated computer system in the world had triggered a false

alarm. The Pentagon realised the error in time. The president's flying command post rolled back into the hangar. The man responsible for America's nuclear weapons, President Jimmy Carter, had not been notified, by the way. Had that happened, he would have had exactly 5 minutes to decide whether or not to press the button. The Airforce rushed to cover up its mistake. The North American Air Defence Command was training new people on radar. The programme included the detection of missile attacks. But no one could get the training tape to work. When asked, headquarters suggested using the "J-band". The "J tape" simulated a massive atomic bomb attack on the United States. Worse! The computer confirmed that it was real. When the Pentagon learned that a simulation tape had almost been the cause of a global catastrophe, they wanted to downplay the embarrassment. But, when the alarm was raised, the Pentagon had ordered major airports to keep the airspace clear. At Dallas airport, a reporter happened to be in the tower at the time and overheard everything. Next, the Pentagon blamed the man who had inserted the exercise tape. But he was only a proxy scapegoat. Those on duty should have realised that the whole thing was wrong. An attack of this scale would normally have been detected by the ground station controlling the satellite from which the warning emanated. The training programme was quickly moved elsewhere. Repairing America's tarnished credibility took a little longer. When the Minister of Defence and the Chairman of the Joint Chiefs of Staff were in Brussels for a NATO ministerial meeting, the representative of another country said something like: "If this is what it looks like to be under America's nuclear umbrella, then we had better take it into our own hands. Because the danger of the Soviets attacking out of the blue is far less than you cowboys accidentally causing a disaster." 1)

A mass attack was reported. The cause was a simulation programme for testing system components that was activated in NORAD's missile warning system without informing the operating personnel. 5)

9 November 1979: Computer errors at NORAD headquarters at Peterson Air Force Base, the Strategic Air Command command post at Offutt Air Force Base, the National Military Command Centre at the Pentagon and the alternate National Military Command Centre at the Raven Rock Mountain Complex resulted in an alert and full-scale preparation for a non-existent major Soviet attack. NORAD notified National Security Advisor Zbigniew Brzezinski that the Soviet Union had launched 250 ballistic missiles with a trajectory for the United States and stated that the President would have to make a decision on a retaliatory strike within 3 to 7 minutes. NORAD computers estimated the number of incoming missiles at 2,200. The Strategic Air Command was notified and the nuclear bombers prepared to take off. Within six to seven minutes of the initial response, PAVE PAWS satellite and radar systems were able to confirm that the attack was a false alarm. Congress quickly learned of the incident because Senator Charles H. Percy was present at NORAD headquarters during the panic. An investigation by the General Accounting Office revealed that a training scenario had been accidentally loaded into an operational computer at the Cheyenne Mountain complex. Commenting on the incident, US State Department Advisor Marshall Shulman said, "False alarms of this nature are not rare occurrences. There is a complacency in dealing with them that worries me." Soviet General Secretary Leonid Brezhnev wrote in a letter to US President Jimmy Carter that the false alarm was "fraught with enormous danger" and "I think you will agree that there should be no mistakes in such matters." In the months following the incident, there were three other false alarms at NORAD, two of which were caused by faulty computer chips. One of them forced the National Emergency Airborne Command Post to taxi into position at Andrews Air Force Base. 6)

November 9, 1979: Simulated Soviet Attack Mistaken for Real: “Computers at NORAD headquarters indicated a large-scale Soviet attack on the United States. NORAD relayed the information to the Strategic Air Command (SAC) and other high-level command posts, and top leaders convened to assess the threat. Within minutes, U.S. intercontinental ballistic missile (ICBM) crews were put on highest alert, nuclear bombers prepared for takeoff, and the National Emergency Airborne Command Post—the plane designed to allow the U.S. president to maintain control in case of an attack—took off (but without President Jimmy Carter on board). After six minutes, satellite data had not confirmed the attack, leading officials to decide no immediate action was necessary. Investigations later discovered that the incident was caused by a technician who had mistakenly inserted a training tape containing a scenario for a large-scale nuclear attack into an operational computer. In a comment about this incident in a letter designated Top Secret (since declassified), senior U.S. State Department adviser Marshall Shulman said that “false alerts of this kind are not a rare occurrence. There is a complacency about handling them that disturbs me” (Shulman 1979, emphasis in original).” This example comes from the UCS. 7)

An exercise programme was played on a computer at our NORAD headquarters and everyone involved believed an attack was actually taking place. A practice magnetic tape would be read into the early warning system in Colorado to simulate a large-scale Soviet nuclear attack. And no one noticed that it was ONLY a practice programme.

Until the US found itself in those feverish checklist procedures used to prepare for nuclear war. In some cases the flying command posts were already in the air. The President's "doomsday plane" actually left its base in anticipation of a Soviet nuclear strike. Senator Charles Percy was there at the time and he said there was absolute panic. 12)

Washington, D.C., March 1, 2012 – During the 2008 campaign, Democratic presidential hopefuls Hillary Clinton and Barack Obama debated the question: who was best suited to be suddenly awakened at 3 a.m. in the White House to make a tough call in a crisis. The candidates probably meant news of trouble in the Middle East or a terrorist attack in the United States or in a major ally, not an 'end of the world' phone call about a major nuclear strike on the United States. In fact at least one such phone call occurred during the Cold War, but it did not go to the President. It went to a national security adviser, Zbigniew Brzezinski, who was awakened on 9 November 1979, to be told that the North American Aerospace Defense Command (NORAD), the combined U.S.–Canada military command–was reporting a Soviet missile attack. Just before Brzezinski was about to call President Carter, the NORAD warning turned out to be a false alarm. It was one of those moments in Cold War history when top officials believed they were facing the ultimate threat. The apparent cause? The routine testing of an overworked computer system. Recently declassified documents about this incident and other false warnings of Soviet missile attacks delivered to the Pentagon and military commands by computers at NORAD in 1979 and 1980 are published today for the first time by the National Security Archive. The erroneous warnings, variously produced by computer tests and worn out computer chips, led to a number of alert actions by U.S. bomber and missile forces and the emergency airborne command post. Alarmed by reports of the incident on 9 November 1979, the Soviet leadership lodged a complaint with Washington about the "extreme danger" of false warnings. While Pentagon officials were trying to prevent future incidents, Secretary of Defense Harold Brown assured President Jimmy Carter that false warnings were virtually inevitable, although he tried to reassure the President that "human safeguards" would prevent them from getting out of control. Among the disclosures in today's posting: Reports that the mistaken use of a nuclear exercise tape on a NORAD computer had produced a U.S. false warning and alert actions prompted Soviet Communist Party General Secretary Leonid Brezhnev to write secretly to President Carter that the erroneous alert was "fraught with a tremendous danger." Further, "I think you will agree with me that there should be no errors in such matters." Commenting on the November 1979 NORAD incident, senior State Department adviser Marshal Shulman wrote that "false alerts of this kind are not a rare occurrence" and that there is a "complacency about handling them that disturbs me." With U.S.-Soviet relations already difficult, the Brezhnev message sparked discussion inside the Carter administration on how best to reply. Hard-liners prevailed and the draft that was approved included language ("inaccurate and unacceptable") that Marshal Shulman saw as "snotty" and "gratuitously insulting." The Events of 1979-1980: "As he recounted it to me, Brzezinski was awakened at three in the morning by [military assistant William] Odom, who told him that some 250 Soviet missiles had been launched against the United States. Brzezinski knew that the President's decision time to order retaliation was from three to seven minutes. Thus he told Odom he would stand by for a further call to confirm Soviet launch and the intended targets before calling the President. Brzezinski was convinced we had to hit back and told Odom to confirm that the Strategic Air Command was launching its planes. When Odom called back, he reported that 2,200 missiles had been launched?it was an all-out attack. One minute before Brzezinski intended to call the President, Odom called a third time to say that other warning systems were not reporting Soviet launches. Sitting alone in the middle of the night, Brzezinski had not awakened his wife, reckoning that everyone would be dead in half an hour. It had been a false alarm. Someone had mistakenly put military exercise tapes into the computer system." -- Robert M. Gates. From the Shadows: The Ultimate Insider's Story of Five Presidents and How they Won the Cold War (New York: Simon & Schuster, 1996),114. The series of alarming incidents and telephone phone calls recounted by former NSC staffer (and later CIA director and future Secretary of Defense) Robert Gates took place in the middle of the night on 9 November 1979. Because of the potentially grave implications of the event, the episode quickly leaked to the media, with the Washington Post and The New York Times printing stories on what happened. According to press reports, based on Pentagon briefings, a NORAD staffer caused the mistake by mistakenly loading a training/exercise tape into a computer, which simulated an "attack into the live warning system." This was a distortion because it was not a matter of a "wrong tape," but software simulating a Soviet missile attack then testing NORAD's 427M computers "was inexplicably transferred into the regular warning display" at the Command's headquarters. Indeed, NORAD's Commander-in-chief later acknowledged that the "precise mode of failure could not be replicated." The information on the display simultaneously appeared on screens at SAC headquarters and the National Military Command Center (NMCC), which quickly led to defensive actions: NORAD alerted interceptor forces and 10 fighters were immediately launched. Moreover, the National Emergency

Airborne Command Post (NEACP), used so the president could control U.S. forces during a nuclear war, was launched from Andrews Air Force Base, although without the president or secretary of defense. Some of this information did not reach the public for months, but at least one reporter received misleading information about how high the alert went. According to the New York Times' sources, the warning was "deemed insufficiently urgent to warrant notifying top Government or military officials." Apparently no one wanted to tell reporters (and further scare the public) that the phone call went to President's Carter's national security adviser Zbigniew Brzezinski. The behind-the-scenes story became more complicated because the Soviet leadership was worried enough to lodge a complaint with Washington. The Cold War tensions had already been exacerbated during the previous year and this could not help (nor could an impending Kremlin decision to invade Afghanistan). On 14 November, party leader Leonid Brezhnev sent a message via Ambassador Anatoly Dobyrnin expressing his concern about the incident which was "fraught with a tremendous danger." What especially concerned Brezhnev were press reports that top U.S. leaders had not been informed at the time about the warning. The Defense Department and Brzezinski took hold of the reply to Brezhnev's message which senior State Department adviser Marshall Shulman saw as "gratuitously snotty" (for example, language about the "inaccurate and unacceptable" Soviet message). The Soviets were indeed miffed because they later replied that the U.S. message was not "satisfactory" because it had taken a polemical approach to Moscow's "profound and natural concern." 18)
Case 2: The Exercise Tape: On 9 November 1979, staff at the Pentagon's military command centre, in the Cheyenne Mountains, as well as at the second command centre, at Fort Ritchie in Maryland, were shown a massive nuclear attack by the Soviet Union on their computers. All senior officers at the three command centres were called together to assess the threat. The Minuteman III intercontinental ballistic missile control centres received initial warnings that the US was facing a nuclear attack. The Air Force was also alerted and 10 fighter planes were launched to intercept the missiles. The false alarm was triggered by a practice tape. The error only came to light when the space-based early warning system failed to confirm the attack. 20)
Already on 7 November last year, the display boards at NORAD had signalled the firing of Soviet submarine missiles, aimed at bomber bases in the south-west of the USA. Cause of error at the time: a "training tape" had fed simulated wartime game data into the "hot line" of the intelligence network. The false alarm lasted six minutes. Three cases in just a few months -this brings the dangers back within reach, reawakens fears that seemed to have been almost suppressed in the last two decades. 22)

1980 till 1989
1980

1980-03-15: SOV/US: (ES) Kuril Islands: US sensors indicate expected impact on USA of 1 of 4 Soviet submarine training missiles due to trajectory.

Four missiles were launched from submarines as part of Soviet exercises. One of these missiles developed a trajectory that appeared to yield a target in the USA. 5)
15 March 1980: A Soviet submarine near the Kuril Islands launched four missiles as part of a training exercise. Of these four, American early warning sensors suggested that one was aimed at the United States. As a result, the United States convened officials for a threat assessment conference, where it was determined that it was not a threat and the situation was resolved. 6)
March 15, 1980: Soviet Missile Headed Toward US?: "The Soviet Union launched four submarine-based missiles from near the Kuril Islands as part of a training exercise. Based on data from a U.S. early warning sensor, one of the launches appeared to have a trajectory aimed at the United States. This led the United States to convene officials for a threat assessment conference (Comptroller General of the United States 1981)." This example comes from the UCS. 7)

1980-06-03: US: (ECH) Chip-I, Faulty chip shows Soviet attack. NORAD Cheyenne Mountain / Colorado, "2222" instead of "0000" missiles underway.

3.6.1980 and 6.6.1980: A mass missile attack on the USA is reported. The reason was a defective chip in a communication unit. This component was constantly sending

data, with zeros in certain places under normal circumstances. Due to the hardware error, other values were sent at these points and thus attacking missiles were reported. 5)

June 3, 1980 — June 6, 1980: Faulty Chip Signals Soviet Attack: Early in the morning of June, 3, the warning displays at command centers began showing varying number of missiles had been launched toward the United States. Preparation for nuclear retaliation immediately commenced, however, personnel were able to determine in time that this was a false alarm as the varying missile numbers weren't logical. Three days later, before the cause could be determined, the same thing happened again, and again B-52 crews and missiles were nearly sent out in retaliation. A faulty chip in the computers was finally found to be the cause of the display problems at the command posts. This example comes from the Nuclear Files. 7)

Another false alarm was triggered by a faulty computer chip that generated reports of a large-scale Soviet attack. We sounded the alarm. The crews got their launch codes from the safe. They put the keys in the launch switches. Zbigniew Brzezinski was awakened in the middle of the night and told that a nuclear attack was certainly underway and that he would have to wake President Carter. For 8 minutes preparations were made to launch nuclear weapons because a computer chip worth less than a dollar was not working properly. 12)

Months later, in May and June 1980, 3 more false alerts occurred. The dates of two of them, 3 and 6 June 1980, have been in the public record for years, but the existence of a third event, cited in a memorandum from Secretary of Defense Brown to President Carter on 7 June 1980, has hitherto been unknown, although the details are classified. False alerts by NORAD computers on 3 and 6 June 1980 triggered routine actions by SAC and the NMCC to ensure survivability of strategic forces and command and control systems. The National Emergency Airborne Command Post (NEACP) at Andrews Air Force Base taxied in position for emergency launch, although it remained in place. Because missile attack warning systems showed nothing unusual, the alert actions were suspended. Supposedly causing the incidents in June 1980 was the failure of a 46¢ integrated circuit ("chip") in a NORAD computer, but Secretary of Defense Brown reported to a surprised President Carter that NORAD "has been unable to get the suspected circuit to fail again under tests." In reports to Carter, Secretary cautioned that "we must be prepared for the possibility that another, unrelated malfunction may someday generate another false alert." Nevertheless, Brown argued that "human safeguards"?people reading data produced by warning systems--ensured that there would be "no chance that any irretrievable actions would be taken."…….About seven months later, U.S. warning systems generated three more false alerts. One occurred on 28 May 1980; it was a minor harbinger of false alerts on 3 and 6 June 1980. According to the Pentagon, what caused the malfunctions in June 1980 was a failed 46¢ micro-electronic integrated circuit ("chip") and "faulty message design." A computer at NORAD made what amounted to "typographical errors" in the routine messages it sent to SAC and the National Military Command Center (NMCC) about missile launches. While the message usually said "OOO" ICBMs or SLBMs had been launched, some of the zeroes were erroneously filled in with a 2, e.g. 002 or 200, so the message indicated that 2, then 200 SLBMs were on their way. Once the message arrived at SAC, the command took survivability measures by ordering bomber pilots and crews to their stations at alert bombers and tankers and to start the engines. No NORAD interceptors were launched so something had been learned from the November episode, but SAC took same precautionary measures. The Pacific Command's airborne command post ("Blue Eagle") was launched for reasons that remain mysterious. NEACP taxied in position at Andrews Air Force Base, but it was not launched as in November. That missile warning sensors (DSP, BMEWs, etc) showed nothing amiss made it possible for military commanders to call off further action. According to a Senate report, NORAD ran its computers the next 3 days in order to isolate the cause of the error; the "mistake was reproduced" in the mid-afternoon of 6 June with the similar results and SAC took defensive measures. When Harold Brown explained to President Carter what had happened and what was being done to fix the system, he cautioned that "we must be prepared for the possibility that another, unrelated malfunction may someday generate another false alert." This meant that "we must continue to place our confidence in the human element of our missile attack warning system." Brown, however, did not address a problem raised by journalists who asked Pentagon officials, if another false alert occurred, whether a "chain reaction" could be triggered when "duty officers in the Soviet Union read data on the American alert coming into their warning systems." A nameless U.S. defense official would give no assurances that a "chain reaction" would not occur, noting that "I hope they have as secure a system as we do, that they have the safeguards we do." How good the safeguards actually were remains an open question. While Secretary of Defense Brown acknowledged the "possibility" of future false alerts, he insisted on the importance of human safeguards in preventing catastrophes. Stanford University professor Scott Sagan's argument about "organizational

failure" is critical of that optimism on several counts. For example, under some circumstances false alerts could have had more perilous outcomes, e.g. if Soviet missile tests had occurred at the same time or if there were serious political tensions with Moscow, defense officials might have been jumpier and launched bomber aircraft or worse. Further, false warnings were symptomatic of "more serious problems with the way portions of the command system had been designed." Yet, defense officials have been reluctant to acknowledge organizational failings, instead blaming mistakes on 46¢ chips or individuals inserting the wrong tape. Treating the events of 1979 and 1980 as "normal accidents" in complex systems, Sagan observes that defense officials are reluctant to learn from mistakes and have persuaded themselves that the system is "foolproof." Bruce Blair also sees systemic problems. Once a "launch-under--attack" strategic nuclear option became embedded in war planning policy during the late 1970s, he sees the weakening of the safeguards that had been in place, e.g., confirmation that a Soviet nuclear attack was in progress or had already occurred. One of the arguments for taking Minuteman ICBMs off their current high alert status (making virtually instantaneous launch possible) has been that a false warning, combined with an advanced state of readiness, raises the risk of accidental nuclear war. The risk of false alerts/accidental war is one of the considerations that is prompting other anti-nuclear activists, including Daniel Ellsberg, to protest at Vandenberg Air Force Base against the Minuteman ICBM program and the continued testing of Minutemen. 18)
Case 3: The computer chip: On 3 June 1980, the alarm was sounded again. The Soviet Union had launched a massive nuclear attack, the computers reported. The missiles also got their launch warnings and the crews got into the interceptor aircraft. But compared to the incident with the training tape, the attack did not seem plausible. The computers displayed conflicting information: sometimes two missiles were seen, then 200. Again, an assessment meeting was called and eventually the early warning satellites defused the situation. Three days later, on 6 June, the event was repeated with the same effort. It was later discovered that a faulty computer chip was the trigger. 20)

"Twenty minutes on the brink of nuclear war": Three times within a few months America's defence headquarters were startled: nuclear alarm - due to technical failure. Can such mishaps trigger the nuclear conflagration of the world? Humans decide on the order to counterattack. But they rely on computers that are not always to be trusted. Like identifying marks, the five men of the "Delta" team carried their brown lunch boxes as they descended into the bomb-proof command room, 15 metres underground, protected by armoured doors and 80-centimetre-thick concrete walls. It was 2 June, just before midnight; the Delta team, one of five alert teams at the US Air Force Strategic Air Command ("SAC") headquarters in Omaha, Nebraska, was reporting for the night shift. A routine job, virtually unchanged for twenty years. The men's job: to stare at computer screens and light boards on the wall for eight hours -- and sound the alarm in case the Soviets open World War III with a nuclear strike. Barely two hours later that night, what was always thought possible p.103 but never really expected happened. On one of the two screens at the computer terminal of the "Warning Systems Control Officer" (in SAC jargon he is called "WISC") the horror message appeared: a large number of Soviet intercontinental and submarine missiles with nuclear warheads approaching the USA. A piercing warning tone sounded from the command console of the WISC. On one of the five-by-five-metre screens, the "decision matrix" lit up, guiding a series of decisions and actions to be taken within the following seconds. The initiative was taken, according to regulations, by the "senior controller" (with the rank of colonel) sitting to the right of the WISC. The senior controller pressed a red button on his command desk: nuclear alert. The sound of a siren wailed through the 50-metre-long, twelve-metre-wide command bunker. A flickering alarm light, like those on American police patrol cars, flashed red light bars through the semi-dark room. The colonel reached for the red telephone and spoke the code word: "SKYBIRD" -- "to all missile and aircraft units of the Strategic Bomber Command". Seconds later, Richard Ellis, Commanding General of Strategic Bomber Command, was informed. Then, literally at the push of a button, the wave of alarm rolled: * A third of the American nuclear bomber fleet, some 100 eight-engine Boeing B-52s, is readied for takeoff. The crews on standby run to their planes and fire up the engines. * All 153 missile crews -- commanding a total of 1054 Minuteman and Titan missiles -- are put on high alert; no one is allowed to leave the command consoles. * Two dozen nuclear submarines, carrying their long-range missiles with hydrogen bomb heads through the seas, are informed of the heightened state of alert. * A four-engine plane, flying command post of Strategic Bomber Command (designated in case the basement in Omaha is bombed), takes off from the runway in Hawaii. * President Carter's "flying commander's mound", a converted jumbo jet, is readied for take-off at Andrews Air Base near Washington. The President was not awakened that night. For after three minutes p.104 and twelve seconds it was clear to those responsible: a spook had flitted across screens and illuminated panels -- at SAC as well as at NORAD, the North American Air Defence Centre in Cheyenne Mountain, from where the alarm message had come (the command centre of NORAD is shown in the SPIEGEL cover picture).

A microcircuit in a NORAD computer, no bigger than a penny, worth a whole 46 cents, was to blame for the failure, the US Department of Defence revealed last Tuesday. The "chip" had gone haywire - false alarm caused by computer error. It took 20 minutes for all the nuclear bomber engines to be shut down again, for the missile crews to be ordered back to normal alert. 20 minutes in which, as the Soviet news agency "Tass" wrote, "the world moved to the brink of nuclear war"? The excitement in the command centres of both world powers was considerable. In front of American television cameras, US Secretary of Defence Harold Brown hastened to assure: "Never" could computers override the "vigilant intelligence of humans" and "accidentally trigger the launch of nuclear weapon carriers". In truth, the New York Times reported, Brown was "terribly upset" about the matter. Chief of Staff David C. Jones was marched to NORAD and SAC headquarters to review the case. Word came from the White House that the Pentagon had been reprimanded: They should "finally clean up their mess". Celebrated, albeit as nameless, were the members of the Delta team at Strategic Bomber Command. For the men of Delta had reacted cleverly: Through a quick circuit, as it were "around NORAD", they had gained access to the global early warning network of the USA with its satellites and radar stations and thus obtained a "DIRECT READING", an unadulterated picture of the situation. Result: No Soviet missiles approaching. A one-off, acceptable, excusable computer error, then? 22)

1980-06-06: US: (ECH) Chip-II, Faulty chip shows Soviet attack. NORAD Cheyenne Mountain / Colorado, "2222" instead of "0000" missiles underway.

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Three days later, on 6 June, NORAD once again triggers a false nuclear alarm, the red flashing light circles again in the SAC command bunker, B-52 crews once again run to their bombers and start the engines. Again it takes three minutes for the alarm to be exposed as false: for the third time in seven months, America's nuclear force is startled out of its normal alert state by computer or operational errors and mobilised for at least a few minutes. 22)

1980-09-15: US: (EWA) Grand Forks: Parked B-52 bomber burned, wind prevented spread to high explosive of nuclear weapons.

Similarly, on the night of Sept. 15, 1980, engine No. 5 of a B-52 at Grand Forks Air Force Base in North Dakota caught fire and, despite the intervention of firefighters, kept burning for more than three hours. Only a strong wind that kept the flames away from the weapons compartment prevented the fire from igniting the high explosives in the plane’s nuclear weapons. Doing so would, at a minimum, have spread a plume of toxic plutonium over a wide area; Roger Batzel, the director of Lawrence Livermore National Laboratory at the time, testified in 1988 that it could have been “worse than Chernobyl.” Avoiding disaster there hinged on three variables that had nothing to do with control practices: the continued presence of strong winds as long as needed for the fire to stop; the fact the wind did not change direction in those three hours, and the fact the burning plane was parked in just the right location on the tarmac for the wind to put the blaze out. Control practices, obviously, don’t affect wind patterns, and other bombers were parked on all sides of the tarmac. 23)

1980-09-18: US: (HM) Missile explosion during maintenance: warhead 30m away, no radioactivity, Sgt. David Lee Livingston and colleague dead. Injured.

On 19 September 1980, a nuclear missile exploded in Damascus, Arkansas, USA. The cause was a dropped screw nut by a maintenance technician. A nuclear warhead was mounted on the missile, which was hurled 200 metres, but fortunately did not explode nuclear. In addition, many (about 50) nuclear weapons are considered missing, some sunk in the sea. Officially, the USA is missing eleven nuclear weapons. 5)
September 18, 1980 — September 19, 1980: Silo Explosion Kills Airman: At a nuclear launch complex in Damascus AR, a warning light indicated that pressure was low in an oxidizer tank for the Titan II housed there. This was a common occurence as slight temperature changes could affect the pressure. Airmen David Powell and Jeffery Plumb responded with what should have been a simple, routine maintenance procedure. However, while unscrewing the pressure cap with a socket wrench, the 9-pound socket fell off. It plummeted 70 feet down the silo before hitting the thrust mount and bouncing off the Titan II. Almost immediately, fuel began spraying out of the hole. Many hours later, the fuel finally exploded, blowing the warhead out of the silo. The warhead landed within a hundred feet of the entrance to the complex, but the safeties held and none of the radioactive material escaped. Sergeant David Livingston was killed during the explosion and many others were injured. 7)
Eric Schlosser: Command and Control: In September 1980, an American nuclear missile - a Titan II - exploded in its silo near Damascus in the state of Arkansas. The nuclear warhead with which the intercontinental ballistic missile was equipped was ejected into the open, but ultimately remained undamaged and could be recovered. The accident, in which one soldier was killed and others injured, was caused by a mishap on the part of the maintenance crew: during routine work, a technician had dropped a tool part. It tore a hole in the missile, from which fuel subsequently escaped. In the book "Command and Control" by the American journalist Eric Schlosser, who previously came to prominence with the non-fiction book "Fast Food Nation", the story of this serious incident takes centre stage. In an impressive feat of research, Schlosser has meticulously reconstructed the Damascus accident from multiple perspectives - from the fateful maintenance work, to the military's feverish attempts to contain the problem, to the impact on the local population and the political reactions. Schlosser expands this core story with numerous longer interpolations dealing with general landmarks in the history of the American nuclear arsenal. Thematically, they range from the development of the nuclear weapon within the framework of the Manhattan Project to the dropping of the atomic bombs on Hiroshima and Nagasaki to the Cuban Missile Crisis or the further development of American nuclear strategy during the Cold War. However, Schlosser pays particular attention to describing accidents and misfortunes that occurred with nuclear weapons comprehensively and in detail. The argumentative vanishing point that ultimately lies behind all these ramifications of "Command and Control" is as simple as it is powerful - and it has a political thrust: according to Schlosser, the existing nuclear arsenals, which rarely come into the public eye, are "a collective death wish, barely suppressed." Every nuclear missile is an "accident waiting to happen, a potential act of mass murder." Schlosser's book thus joins the ranks of studies on nuclear weapons accidents. The benchmark in this field continues to be the fundamental study by the political scientist Scott Sagan on the "Limits of Safety". It has already emphatically and empirically drawn attention to how fallible the safety mechanisms of the American nuclear arsenal can be. [2] On the other hand, it thematically connects, without explicitly naming it, to the important broadening of perspective in research on the Cold War, which includes the experiences of ordinary soldiers during the nuclear confrontation on a micro level. This has only recently been decisively advanced by the journalist Michael Dobbs. Dobbs' monograph "One Minute to Midnight", which has meanwhile become a new standard work on the history of the Cuban Missile Crisis, has rightly gained recognition even among expert historians. Among other things, Dobbs intensively illuminates the inherent dangers that emanated from the nuclear weapons of both superpowers during the crisis. Schlosser's work, on the other hand, leaves an ambivalent impression overall. His strength does not lie in historical analysis. Apart from a thin preface, the reader is offered hardly any systematic clues as to what the deeper epistemological interest of the book lies in. Schlosser essentially states that it deals with the "operating systems and the mind-set that have guided the management of America's nuclear arsenal". In addition, the basic theme of the "mixture of human fallibility and technological complexity that can lead to disaster" (xiii) is to be explored. Schlosser's work is also not without problems in terms of presentation and from a source-critical perspective, which becomes clear early on in the reading: Thus, for the reconstruction of the Damascus incident, "Command and Control" relies, in addition to archival sources, primarily on countless interviews conducted by the author, especially with the military technicians involved. For long

stretches, it is written in the style of a disaster thriller, whereby the reader - up to and including direct quotations - can participate directly in the world of thoughts and feelings of the protagonists. Nevertheless, Schlosser also opens up a fascinating and detailed access to the everyday history of the maintenance and upkeep of the nuclear armament arsenal, which has so far remained largely hidden. As the author convincingly demonstrates, it is indeed just as important a part of the history of nuclear weapons as, for example, political decisions at the highest level. However, the book's less than systematic structure is only partially convincing. For example, the constant (time) jumps between the core story of the Damascus accident and the inserts on the general history of nuclear weapons seem tiring overall. Moreover, they are only indirectly connected to the Damascus incident. The poetic chapter titles, which are for example "Megadeath" or "Like Hell", and thus follow the stylistic forms of fiction, further complicate the overview. In addition, these general insertions, which are primarily based on secondary literature, also seem superficial to some extent in terms of content. Neither are they sufficiently concise in their parforceride through the Cold War and the American administrations, nor can they always do justice to the respective historical context. In many cases, it is only partially clear which argument they actually serve, apart from the eclectic description. For example, many historical figures appear less as actors than as stereotypical staffage: President Nixon, for example, is described in his last weeks in office as "clinically depressed, emotionally unstable, and drinking heavily", but with the power to dispose of nuclear weapons. However, these weighty monitae are offset by several merits of "Command and Control": On the one hand, the book offers a unique fund of detailed information, especially on accidents with American nuclear weapons. On the other hand, it is a meritorious and well-founded micro-study of the daily routine of their technical maintenance. Without taking this perspective into account, it is difficult to fully comprehend the significance of these arsenals, which, in accordance with the idea of deterrence, must be kept permanently ready to fire in order not to be used. Schlosser's work is ultimately, and herein lies its real significance, an important reminder and reminder: regardless of whether or not nuclear weapons are currently the focus of public perception, the inherent dangers associated with them were - and are - real. 16)

Film Review: ‘Command and Control’: A microcosmic study of man’s inability to control just about anything, including the deadly weapons he concocts. The folly of man and the inevitability of disaster are the twin engines powering “Command and Control,” a riveting and dismaying documentary from “Food, Inc.” director Robert Kenner about a 1980 nuclear disaster that took place just outside Little Rock, Ark. Based on the harrowing book by Eric Schlosser (who not only co-wrote, but also appears in the film), this unsettling production — made in concert with PBS’ “American Experience” — is equal parts history lesson, cautionary tale and nerve-rattling thriller, using all manner of nonfiction devices to elicit both horror and outrage over the precariousness of our deadliest arsenals. Delivering one propulsive bombshell after another, while presenting a chilling vision of mankind’s helplessness to prevent its own destruction, it’s a work whose theatrical potential — kicking off Sept. 14 at New York’s Film Forum, then expanding to other cities before its broadcast premiere — would seem to be only slightly less explosive than the nukes with which it’s so concerned. On Sept. 19, 1980, the lethal warhead in question was attached to a musty old Titan II missile buried in an underground silo in Damascus, Ark. — an outdated weapon that, according to then-Secretary of Defense Harold Brown, was being kept around largely as a trade-chip for negotiations with the Soviets. It was maintained by a missile combat crew and Propellant Transfer Team (PTS) that used a variety of checklists and security protocols to keep its oxidizer and fuel tanks in perfect balance to avoid a detonation — until the day PTS member Dave Powell’s decision to service the missile’s oxygen tank with a ratchet instead of a torque wrench caused him to drop a socket down to the silo’s floor, where it bounced directly into the side of the Titan II, creating a hole from which fuel began uncontrollably spewing. As Powell states in hindsight, he can still see that socket tumbling out of his grasp, and director Kenner allows us to do likewise, courtesy of expert dramatic recreations that provide an up-close-and-personal snapshot of this and other critical moments, as well as via CGI tours through, and cross-sections of, the Damascus site’s subterranean chambers. Also utilizing considerable archival materials, “Command and Control” digs into the hour-by-hour specifics of the military response to this incident, which soon involved not only Damascus’ crew and PTS professionals, but commanders in Little Rock, Denver and Louisiana, as well as experts from Sandia Laboratories — the U.S.’s veritable “bomb factory,” where “money was free” and unimaginable weapons were not only imagined, but manufactured on assembly lines. Even further expanding his material’s scope, Kenner interviews a local farmer who was driving by the scene and radio host Sid King, who arrived at the site once it was clear that a tragedy might be occurring. Those from-the-outside perspectives ably complement the wealth of anecdotes and accounts from the mostly inexperienced team that sprung into action to avert disaster. As if a potential nuclear explosion — one whose power would be three times that of every bomb dropped in WWII combined — wasn’t terrifying enough, this incident was occurring at precisely

the same moment as a political convention just 46 miles away in Little Rock attended by vice president Walter Mondale, Arkansas governor Bill Clinton and democratic senator David Pryor. “Command and Control” lays out its mounting stakes with dramatic precision, allowing the alarming scale of its story to build with each new revelation — including the fact that no one seemed to know exactly what might happen to the nuclear warhead should the Titan II blow. Kenner handles this multifaceted action with a deft hand, all while intermittently seguing back to prior incidents in which nuclear fail-safe procedures proved less than airtight. By the time Sandia’s weapons safety expert Bob Peurifoy pronounces, “It will happen,” with regard to a forthcoming nuclear accident, and Brown admits that nuclear weapons oversight is even worse today than it was in 1980, “Command and Control” has long since made a chilling case for the unreliability of America’s arsenal-related guidelines, and the perils of proliferation. 17)

Like a techno-thriller, Schlosser describes the "Arkansas Incident" of 1980, in which a Titan II missile nearly exploded in its silo. A 19-year-old US Air Force maintenance worker had dropped a piece of metal weighing several pounds on the head of the missile. It leaked, the casing, fuel leaked: the explosion of the nine-megaton bomb would have wiped the state of Arkansas largely off the map and made it uninhabitable for decades. 35)

1980 Damascus Titan missile explosion. The Damascus Titan missile explosion (also called the Damascus accident) was a 1980 U.S. Broken Arrow incident involving a Titan II Intercontinental Ballistic Missile (ICBM). The incident occurred on September 18–19, 1980, at Missile Complex 374-7 in rural Arkansas when a U.S. Air Force LGM-25C Titan II ICBM loaded with a 9 megaton W-53 Nuclear Warhead had a liquid fuel explosion inside its silo. Launch Complex 374-7 was located in Bradley Township, Van Buren County farmland just 3.3 miles (5.3 km) NNE of Damascus, and approximately fifty miles (80 km) north of Little Rock. (Coordinates: 35°24′50″N 092°23′50″W.). The incident began with a fuel leak at 6:30 p.m. on September 18, and culminated with the explosion at around 3:00 a.m. on September 19..The Strategic Air Command facility of Little Rock Air Force Base was one of eighteen silos in the command of the 308th Strategic Missile Wing (308th SMW), specifically one of the nine silos within its 374th Strategic Missile Squadron (374th SMS), at the time of the explosion. Incident. Leadup to the incident. At around 6:30 p.m. CDT on Thursday, September 18, 1980, two airmen from a Propellant Transfer System (PTS) team were checking the pressure on the oxidizer tank of a USAF Titan II missile at Little Rock AFB's Launch Complex 374-7. Due to time constraints when going into the silo, a ratchet – 3 ft (0.9 m) long weighing 25 lb (11 kg) – was taken instead of the newly mandated torque wrench. The 8 lb (3.6 kg) socket for the oxidizer tank fell off the ratchet and dropped approximately 80 feet (24 m) before bouncing off a thrust mount and piercing the missile's skin over the first-stage fuel tank, causing it to leak a cloud of its aerozine 50 fuel. Aerozine 50 is hypergolic with the Titan II's oxidizer, dinitrogen tetroxide; i.e., they spontaneously ignite upon contact with each other. The nitrogen tetroxide is kept in a second tank in the rocket's first-stage, directly above the fuel tank and below the second-stage and its 9-megaton W-53 nuclear warhead. Eventually, the missile combat crew and the PTS team evacuated the launch control center, while military and civilian response teams arrived to tackle the hazardous situation. Lieutenant General Lloyd R. Leavitt Jr., the Vice Commander of the Strategic Air Command, commanded the effort to save the launch complex. There was concern for the possible collapse of the now empty first-stage fuel tank, which could cause the rest of the 8-story missile to fall and rupture, allowing the oxidizer to contact the fuel already in the silo. The explosion. Early in the morning of Friday, September 19, a two-man PTS investigation team consisting of Senior Airman David Lee Livingston and Sergeant Jeff K. Kennedy entered the silo. Because their vapor detectors indicated an explosive atmosphere, the two were ordered to evacuate. The team was then ordered to reenter the silo to turn on an exhaust fan. Livingston reentered the silo to carry out the order and shortly thereafter, at about 3:00 a.m., the hypergolic fuel exploded – likely due to arcing in the exhaust fan. The initial explosion catapulted the 740-ton silo door away from the silo and ejected the second stage and warhead. Once clear of the silo, the second stage exploded. The W53 warhead landed about 100 feet (30 m) from the launch complex's entry gate; its safety features prevented any loss of radioactive material or nuclear detonation. After the explosion. Livingston died at the hospital, and 21 others in the immediate vicinity of the blast sustained various injuries; Kennedy struggled with respiratory issues from inhaling oxidizer but survived. Livingston was posthumously promoted to Staff Sergeant (E-5). The entire missile launch complex was destroyed. At daybreak, the Air Force retrieved the warhead, which was returned to the Pantex weapons assembly plant. The launch complex was never repaired. Pieces of debris were taken away from the 400 acres (1.6 km2) surrounding the facility, and the site was buried under a mound of gravel, soil, and small concrete debris. The land is now under private ownership. The site was listed on the National Register of Historic Places on February 18, 2000. Popular culture. A 1988 television film, Disaster at Silo 7, is based on this event. Season 4, episode 4 (ep. 75) of Scorpion is largely based on this event.

In September 2013, Eric Schlosser published a book titled Command and Control: Nuclear Weapons, the Damascus Accident, and the Illusion of Safety. It focused on the explosion, as well as other Broken Arrow incidents during the Cold War. A documentary film titled Command and Control from director Robert Kenner, based on Schlosser's book, was released on January 10, 2017. The film was broadcast by PBS as part of its American Experience series. An in-depth story was told by Jeff Plumb of his role in the incident and featured on the WNYC NPR podcast This American Life's December 22, 2017 episode (Act 1 of Episode 634: "Human Error in Volatile Situations"). 56)

1981

1981-02-23: DEU: (C) Explosion of a Pershing II missile. Sechselberg, Baden-Württemberg.

Sechselberg, Baden-Württemberg, 1981: 23 February 1981: Explosion of a Pershing II missile. 21)

1982

1982-11-02: DEU: (HS) Waldprechtsweier: US missile transporter (Pershing Ia missile) brakes fail, several cars crushed, 1 dead.

Waldprechtsweier, 1982: 2 November 1982: On a downhill stretch near Karlsruhe, the brakes of a US missile transporter carrying a Pershing Ia missile failed, causing it to crash into the village of Waldprechtsweier, crushing several cars and killing a motorist. Before the wreckage was recovered, the whole village was evacuated because it was feared that the missile might explode. Police patrolled otherwise deserted streets. After hours of clean-up, a US convoy carrying the wreckage of military vehicles and missile parts left the site in the afternoon of 3.11.82. 21)
ATOMIC CRACKS. Brakes fail. The pile-up of an American missile train in a village in Baden again raised the question: How dangerous is the Pershing in peace? 07.11.1982, 13.00 - from DER SPIEGEL 45/1982. A carrier vehicle brought in by the Americans was supposed to take away the damaged Pershing-1A missile about 20 hours after the accident. But there was still a delay. "With these tyres," Swabian police officers explained, "not." Worn tyres, defective brakes, engine damage - the fleet of vehicles used by the Americans to cart their 108 Pershing missiles and associated nuclear warheads around West Germany is apparently in desolate condition. SPD member of parliament Robert Antretter accused the Americans of "lack of maintenance" and "sloppiness". In the area around his constituency of Schwäbisch Gmünd alone, seven accidents with missile transporters had occurred since 1978. The pile-up on Tuesday last week at the entrance to the village of Waldprechtsweier in Baden, between Ettlingen and Rastatt, was also due to brake failure. On its way from Neu-Ulm to Gaggenau, the middle of three rocket trains had got stuck in the falling dusk. In Freiolzheim, the articulated lorry with the Pershing missile turned off the intended route towards Waldprechtsweier; the district road no. 3549 leads downhill in a winding, twelve percent gradient. Because the brakes got hot and the thrust was too strong, the two US soldiers in the cab of the heavy semi-trailer truck could no longer bring their vehicle to a halt. In a slight right-hand bend, the missile transporter rammed a wall, then smashed two parked cars and rolled over an oncoming passenger car. The driver, a 54-year-old man from a town near Pforzheim, was killed instantly. The second military truck of the train was stopped in time, the third smashed a parked car, the fourth drove into a field and crashed into a tree. Around six o'clock in the morning, the residents of Waldprechtsweier were evacuated. For twelve hours they remained in the uncertain fear that their houses could be pulverised by a nuclear explosive charge, the whole area atomically contaminated. The Greens in the Stuttgart state parliament accused the state and federal governments of "playing irresponsibly with the lives of the citizens". Such accidents could also occur at any time during transports of the Bundeswehr, which drives through the countryside with its 72 Pershing-1A missiles. Local authorities, American military spokespersons and the Bonn Ministry of Defence, on the other hand, tried to allay all fears: "No danger for the population," they said, adding that nothing could blow up during overland transports of the Pershing and that the nuclear warhead was always transported separately from the missile. It remains worrying that the most powerful weapon of the American deterrent force is being driven back and forth on German

soil on such poor tyres and with such poor brakes. Together with the Pershings of the Bundeswehr, there are 180 missiles, mostly with a nuclear explosive charge of 400 kilotons, corresponding to 30 times the destructive power of the Hiroshima bomb. The fact that this nuclear missile force on its self-propelled guns changes locations almost non-stop on West German roads and forest paths is due to the nature of its strategic mission: 60 of each, i.e. one third of all Pershing missiles stationed in the Federal Republic, are permanently ready for action with their nuclear warhead mounted. They stand ready to fire at a total of five - three American and two German - permanently surveyed launch sites, the so-called Combat Alert Sites (CAS). "A mixture of forest sanatorium and penal camp" is how a reporter of the "Neue Zürcher Zeitung" described his impression of an American Pershing alert base 30 kilometres southeast of Ulm. The place, to which an inconspicuous forest road without signposts leads, is called "Lehmgrube"; the Americans call it "von Steuben", after the German general of their war of independence. Two other similar facilities for nuclear quick reaction alert ("QRA") are located in Waldheide near Heilbronn and in Inneringen near Schwäbisch Gmünd. The Pershing soldiers, including women, are on duty in the forest isolation for four days a week, then they are given two days' leave at their station in Neu-Ulm. The psychological tension in the QRA quarters is apparently considerable - the proportion of drug addicts who have to be segregated is high. In 1980 alone, according to an investigative report of the American Congress on the drug problem in the army, "5324 army personnel were discharged from units in the nuclear sector for lack of reliability", every third one of them for drug abuse. A "dangerous balancing act", according to the report, had to be performed by some S.32 commanders, "balancing between tolerating drug use and losing key personnel": in a missile unit stationed in West Germany, the company commander failed to follow up on indications of narcotics use for three months because "his military mission was more important to him than compliance with drug laws". Commanders in West German Pershing squadrons struggle with a different kind of psychological problem. The nuclear warheads are still under the supervision of American soldiers - and there is apparently frequent friction. "It often comes to disputes, which come from Americans," it says in the minutes of the shop stewards' meeting of a Pershing squadron in the summer of 1980. "They often take knives to help and threaten Germans with them." Frequently, the cars of German comrades in arms were also "damaged or destroyed by Americans". Every 14 days, the Pershing units in the five permanently surveyed alert positions are relieved. But the other 120 Pershing missiles are also frequently on the move. At least once a week, each Pershing platoon has an alert exercise in which the missiles are brought into position and made ready for action in some clearing in the forest. Mobility is the ultimate goal of the exercise. The Pershing crews stationed in the QRA positions would also fan out in case of tension: In addition to their three alert positions, the Americans have prepared 45 other launch positions on West German soil. Moreover, six years ago, a technical improvement was introduced in the Pershing-1A that makes it possible to guide missiles into the pre-programmed targets in the GDR, Poland and the CSSR even from positions that have not been surveyed beforehand, i.e. from practically any camouflage position. After a preparation time of ten minutes - the vehicle must be pointed at the target with an accuracy of plus/minus six degrees - the countdown to firing takes 20 minutes. Fifty per cent of the shots, according to the projections, do not deviate more than 400 metres from the point of aim. The military is aware that accidents can happen during the frequent castles of Pershing batteries. There are precise rules of conduct, for example, in the event that Pershing vehicles catch fire. According to the corresponding service instructions for the German Pershing squadrons, the "fire is fought as long as it is justifiable, taking into account the following points: 1) Life and limb of the soldiers must not be endangered. 2) Protection from fragmentation and/or nuclear contamination must be provided". The US soldiers are required to fight the fire directly, the Germans assist them. If they are not needed directly at the source of the fire, they have another task: It is their responsibility to "immediately form a security belt at a distance of 610 m around the convoy, making use of every possible cover". In the worst case, the burning projectile is finally left to its own devices: "If it is necessary for the soldiers fighting the fire to leave the source of the fire, they retreat to a distance of 430 m." This command was apparently also followed by the crew of that Pershing semitrailer tractor that went up in flames in Sechselberg near Backnang on 24 February last year. After an engine failure, the vehicle had started to burn. Attempts to extinguish the fire failed. An hour later, the solid fuel of the two rocket stages burned explosively and with a tremendous hiss. The foam-like mass is not as flammable as the contents of a petrol tanker, for example. Normally it is ignited by a spark discharge (voltage: 20 000 volts) when the rocket is fired. Nevertheless, in the Pershing accident in Sechselberg, parts of the missile's navigation system flew several hundred metres. However, what is decisive for the danger to the population is the question of what happens if the nuclear warhead belonging to the Pershing missile is damaged or destroyed. Last week, assurances were given that only the missile propellant was on the crashed truck, not a warhead. Whether the warhead was in another of the four vehicles of the Pershing train, however, remained unclear. Theoretically, a nuclear warhead could also have been on the semitrailer with the missile; a suitable

transport container is part of the standard equipment of the US self-propelled gun. The damage that a Pershing warhead destroyed by fire or collision could cause is foreshadowed by the fire-fighting regulations: It is true that the accidental triggering of the nuclear explosive charge would be impossible. However, the conventional explosive device inside the warhead needed to ignite the nuclear chain reaction could detonate, scattering the radioactive charge over a wide area. Fear of such radioactive contamination was probably the reason for the evacuation measures after the accident on Tuesday last week. The immediate cordoning off of the accident site is routine anyway - mainly out of fear that such a transport incident could be exploited by terrorists or even brought about in order to gain possession of a nuclear explosive charge. Even before the fear of terrorists, however, there must be concern, at least among the American Pershing units, about the poor condition of the self-propelled guns and the lack of skill of their drivers. One day before the accident near Waldprechtsweier, one had already skidded: At the entrance to Schwäbisch Gmünd, a US transporter carrying a Pershing missile crashed into a garden. The driver explained that the brakes had failed. 57)
2 November 1982: On an incline near Karlsruhe, the brakes of a US missile transporter fail, causing it to crash into the town of Waldprechtsweier, crushing several cars and killing one driver. Before the wreckage can be salvaged, the entire village is evacuated because it is feared that the missile could explode. Police patrol otherwise deserted streets. After hours of clean-up work, a US convoy with the wreckage of military vehicles and missile parts leaves the village on the afternoon of 3.11.82. The accident heightens fears of "rearmament" with Pershing 2 missiles, because the missile is the predecessor type Pershing 1a, which is also designed as a nuclear delivery weapon, but can only deliver the warheads up to 750 kilometres. The photo montage shows the evacuated village of Waldprechtsweier on the left with the head of the military convoy transporting the wreckage away. The container for the nuclear missile warhead can be clearly seen on one of the vehicles. Next to it is a damaged house that the missile transporter had scraped past. On the right, two shots of a protest demonstration in which about a thousand people took part three days later in neighbouring Ettlingen. The day before, a rally with about 2000 participants took place in Karlsruhe on the same occasion. 58)

1983

1983-09-26: SOW: (ES) Stanislav J Petrov ignored 5 missile attacks, Serpukhov-15, false alarms, day/night boundary interference IR sensors of satellites.

Stanislav Yevgrafovich Petrov (Russian: Станисла́в Евгра́фович Петро́в; 7 September 1939 – 19 May 2017) was a lieutenant colonel of the Soviet Air Defence Forces who played a key role in the 1983 Soviet nuclear false alarm incident. On 26 September 1983, three weeks after the Soviet military had shot down Korean Air Lines Flight 007, Petrov was the duty officer at the command center for the Oko nuclear early-warning system when the system reported that a missile had been launched from the United States, followed by up to five more. Petrov judged the reports to be a false alarm, and his decision to disobey orders, against Soviet military protocol, is credited with having prevented an erroneous retaliatory nuclear attack on the United States and its NATO allies that could have resulted in a large-scale nuclear war. An investigation later confirmed that the Soviet satellite warning system had indeed malfunctioned. Early life and military career: Petrov was born on 7 September 1939 near Vladivostok. His father, Yevgraf, flew fighter aircraft during World War II. His mother was a nurse. Petrov enrolled at the Kiev Higher Engineering Radio-Technical College of the Soviet Air Forces, and after graduating in 1972 he joined the Soviet Air Defence Forces. In the early 1970s, he was assigned to the organization that oversaw the new early warning system intended to detect ballistic missile attacks from NATO countries. Petrov was married to Raisa, and had a son, Dmitri, and a daughter, Yelena. His wife died of cancer in 1997. Incident: According to the Permanent Mission of the Russian Federation to the UN, nuclear retaliation requires that multiple sources confirm an attack. In any case, the incident exposed a serious flaw in the Soviet early warning system. Petrov has said that he was neither rewarded nor punished for his actions. Had Petrov reported incoming American missiles, his superiors might have launched an assault against the United States, precipitating a corresponding nuclear response from the United States. Petrov declared the system's indication a false alarm. Later, it was apparent that he was right: no missiles were approaching and the computer detection system was malfunctioning. It was subsequently determined that the false alarm had been created by a rare alignment of sunlight on high-altitude clouds above North Dakota and the Molniya orbits of the satellites, an error later corrected by cross-referencing a geostationary satellite. Petrov later indicated that the influences on his decision

included that he had been told a US strike would be all-out, so five missiles seemed an illogical start; that the launch detection system was new and, in his view, not yet wholly trustworthy; that the message passed through 30 layers of verification too quickly; and that ground radar failed to pick up corroborative evidence, even after minutes of delay. However, in a 2013 interview, Petrov said at the time he was never sure that the alarm was erroneous. He felt that his civilian training helped him make the right decision. He said that his colleagues were all professional soldiers with purely military training and, following instructions, would have reported a missile launch if they had been on his shift. Petrov underwent intense questioning by his superiors about his judgment. Initially, he was praised for his decision. General Yury Votintsev, then commander of the Soviet Air Defense's Missile Defense Units, who was the first to hear Petrov's report of the incident (and the first to reveal it to the public in the 1990s), states that Petrov's "correct actions" were "duly noted". Petrov himself states he was initially praised by Votintsev and promised a reward, but recalls that he was also reprimanded for improper filing of paperwork because he had not described the incident in the war diary. He received no reward. According to Petrov, this was because the incident and other bugs found in the missile detection system embarrassed his superiors and the scientists who were responsible for it, so that if he had been officially rewarded, they would have had to be punished. He was reassigned to a less sensitive post, took early retirement (although he emphasized that he was not "forced out" of the army, as is sometimes claimed by Western sources), and suffered a nervous breakdown. In a later interview, Petrov stated that the famous red button was never made operational, as military psychologists did not want to put the decision about a nuclear war into the hands of one single person. The incident became known publicly in 1998 upon the publication of Votintsev's memoirs. Widespread media reports since then have increased public awareness of Petrov's actions. There is some confusion as to precisely what Petrov's military role was in this incident. Petrov, as an individual, was not in a position where he could have single-handedly launched any of the Soviet missile arsenal. His sole duty was to monitor satellite surveillance equipment and report missile attack warnings up the chain of command; top Soviet leadership would have decided whether to launch a retaliatory attack against the West. But Petrov's role was crucial in providing information to make that decision. According to Bruce G. Blair, a Cold War nuclear strategies expert and nuclear disarmament advocate, formerly with the Center for Defense Information, "The top leadership, given only a couple of minutes to decide, told that an attack had been launched, would make a decision to retaliate." Petrov later said "I had obviously never imagined that I would ever face that situation. It was the first and, as far as I know, also the last time that such a thing had happened, except for simulated practice scenarios." Later career: In the aftermath of the incident, the Soviet government investigated the incident and determined that Petrov had insufficiently documented his actions during the crisis. He explained it as "Because I had a phone in one hand and the intercom in the other, and I don't have a third hand"; nevertheless, Petrov received a reprimand. In 1984, Petrov left the military and got a job at the research institute that had developed the Soviet Union's early warning system. He later retired so he could care for his wife after she was diagnosed with cancer. A BBC report in 1998 stated Petrov had suffered a mental breakdown and quoted Petrov as saying, "I was made a scapegoat." Petrov died on 19 May 2017 from hypostatic pneumonia, though it was not widely reported until September. Awards and commendations: On 21 May 2004, the San Francisco-based Association of World Citizens gave Petrov its World Citizen Award along with a trophy and $1,000 "in recognition of the part he played in averting a catastrophe." In January 2006, Petrov travelled to the United States where he was honored in a meeting at the United Nations in New York City. There the Association of World Citizens presented Petrov with a second special World Citizen Award. The next day, Petrov met American journalist Walter Cronkite at his CBS office in New York City. That interview, in addition to other highlights of Petrov's trip to the United States, was filmed for The Man Who Saved the World, a narrative feature and documentary film, directed by Peter Anthony of Denmark. It premiered in October 2014 at the Woodstock Film Festival in Woodstock, New York, winning "Honorable Mention: Audience Award Winner for Best Narrative Feature" and "Honorable Mention: James Lyons Award for Best Editing of a Narrative Feature." For his actions in averting a potential nuclear war in 1983, Petrov was awarded the Dresden Peace Prize in Dresden, Germany, on 17 February 2013. The award included €25,000. On 24 February 2012, he was given the 2011 German Media Award, presented to him at a ceremony in Baden-Baden, Germany. On September 26, 2018 he was posthumously honored in New York with the $50,000 Future of Life Award. At a ceremony at the Museum of Mathematics in New York, former United Nations Secretary General Ban Ki-Moon said: “It is hard to imagine anything more devastating for humanity than all-out nuclear war between Russia and the United States. Yet this might have occurred by accident on September 26 1983, were it not for the wise decisions of Stanislav Yevgrafovich Petrov. For this, he deserves humanity’s profound gratitude. Let us resolve to work together to realize a world free from fear of nuclear weapons, remembering the courageous judgement of Stanislav Petrov.” As Petrov had passed away the award was collected by his daughter, Elena. Petrov’s son

Dmitry missed his flight to New York because the US embassy delayed his visa. On the same day that Petrov was first honored at the United Nations in New York City, the Permanent Mission of the Russian Federation to the United Nations issued a press release contending that a single person could not have started or prevented a nuclear war, stating in part, "Under no circumstances a decision to use nuclear weapons could be made or even considered in the Soviet Union or in the United States on the basis of data from a single source or a system. For this to happen, a confirmation is necessary from several systems: ground-based radars, early warning satellites, intelligence reports, etc." But nuclear security expert Bruce G. Blair has said that at that time, the U.S.–Soviet relationship had deteriorated to the point where "the Soviet Union as a system—not just the Kremlin, not just Andropov, not just the KGB—but as a system, was geared to expect an attack and to retaliate very quickly to it. It was on hair-trigger alert. It was very nervous and prone to mistakes and accidents. The false alarm that happened on Petrov's watch could not have come at a more dangerous, intense phase in US–Soviet relations." At that time, according to Oleg Kalugin, a former KGB chief of foreign counterintelligence, "The danger was in the Soviet leadership thinking, 'The Americans may attack, so we better attack first.'" Petrov said he did not know whether he should have regarded himself as a hero for what he did that day. In an interview for the film The Man Who Saved the World, Petrov says, "All that happened didn't matter to me—it was my job. I was simply doing my job, and I was the right person at the right time, that's all. My late wife for 10 years knew nothing about it. 'So what did you do?' she asked me. 'Nothing. I did nothing.'" 4a)

The Man Who Saved the World is a 2013 feature-length Danish documentary film by film maker Peter Anthony about Stanislav Petrov, a former lieutenant colonel of the Soviet Air Defence Forces and his role in preventing the 1983 Soviet nuclear false alarm incident from leading to nuclear holocaust. The film premiered in October 2014 at the Woodstock Film Festival in Woodstock, New York, winning; "Honorable Mention: Audience Award Winner for Best Narrative Feature" and "Honorable Mention: James Lyons Award for Best Editing of a Narrative Feature." On February 22, 2018 the film premiered in Russia at the Documentary Film Center in Moscow. Synopsis: On 26 September 1983, the computers in the Serpukhov-15 bunker outside Moscow, which housed the command centre of the Soviet early warning satellite system, twice reported that U.S. intercontinental ballistic missiles were heading toward the Soviet Union. Stanislav Petrov, who was duty officer that night, suspected that the system was malfunctioning and managed to convince his superiors of the same thing. He argued that if the U.S. was going to attack pre-emptively it would do so with more than just five missiles, and that it was best to wait for ground radar confirmation before launching a counter-attack. Production notes: In the film, footage of Petrov today is intertwined with re-enactments of the dramatic moments in 1983. Sergey Shnyryov plays Petrov in the re-enactments. Peter Anthony made the film over a decade; the process was difficult because of Petrov's reluctance to open up. Anthony said: "He is quite difficult to work with, as in his day, you could still go to the gulag for disclosing unauthorised information, and as an ex-soldier, he wasn't really interested in discussing his personal feelings. That though, is the beauty of the story." Awards: 2013: Hot Docs Canadian International Documentary Festival: Nominated, Best International Documentary. 2014: CPH:DOX: Nominated, Politiken's Audience Award. Nominated, Nordic Dox Award. Woodstock Film Festival: Won, Honorable Mention. Audience Award for Best Narrative Feature. Won, Honorable Mention, James Lyons Award for Best Editing of a Narrative Feature. Nominated, Jury Prize, Best Narrative Feature. 2015: Nordisk Panorama: Nominated, Nordic Documentary Film Award. Sunscreen Film Festival, US: Won, Festival Prize, Best Feature Film. 2016: Robert Festival / Danish Film Academy Award: Won, Robert, Best Documentary (Årets dokumentarfilm). Nominated, Robert, Best Original Score (Årets score). Nominated, Audience Award, Bodil Awards / Danish Film Critics Award: Won, Bodil, Best Documentary (Bedste dokumentarfilm). 4b)

A satellite of the Russian early warning system reports five attacking intercontinental missiles. As the correct function of the satellite is established, the Russian officer on duty, Stanislav Petrov, should have passed on the warning message according to regulations. However, he considered an attack by the Americans with only five missiles unlikely and therefore decided that it must be a false alarm before this could be verified. This false alarm was caused by special reflections from the sun. The incident occurred during an unstable political situation: medium-range missile rearmament was pending and a few weeks earlier the Soviets had shot down a Korean passenger plane over international waters. For his decision not to pass on the alert, Petrov has since become quite famous and is portrayed in the Western press as "the man who saved the world". He received the German Media Prize in February 2012 and the Dresden Prize in February 2013. Petrow, who died in May 2017, was awarded the World Citizen Award by the United Nations and received an award from the Future of Life Institute in October 2018. 5)

26 September 1983: Soviet nuclear false alarm in 1983. A few weeks after Korean Air Lines Flight 007 was shot down over Soviet airspace, a satellite early warning system

near Moscow reported the launch of an American Minuteman ICBM. A short time later, it reported that five missiles had been shot down. Believing that a real American offensive would involve many more missiles, Lieutenant Colonel Stanislav Petrov of the Air Defence Forces refused to recognise the threat as legitimate and continued to convince his superiors that it was a false alarm until this could be confirmed by ground radar. 6)

September 26, 1983: Soviet Union Detects Incoming Missiles: A Soviet early warning satellite showed that the United States had launched five land-based missiles at the Soviet Union. The alert came at a time of high tension between the two countries, due in part to the U.S. military buildup in the early 1980s and President Ronald Reagan's anti-Soviet rhetoric. In addition, earlier in the month the Soviet Union shot down a Korean Airlines passenger plane that strayed into its airspace, killing almost 300 people. Stanislav Petrov, the Soviet officer on duty, had only minutes to decide whether or not the satellite data were a false alarm. Since the satellite was found to be operating properly, following procedures would have led him to report an incoming attack. Going partly on gut instinct and believing the United States was unlikely to fire only five missiles, he told his commanders that it was a false alarm before he knew that to be true. Later investigations revealed that reflection of the sun on the tops of clouds had fooled the satellite into thinking it was detecting missile launches (Schlosser 2013, p. 447; Hoffman 1999). This event was turned into the movie "The Man Who Saved the World", and Petrov was honored at the United Nations and given the World Citizen Award. This example comes from the UCS. 7)

In 1983, the Soviet early warning system finally reported the launch of American nuclear missiles. Only because Colonel Stanislav Petrov correctly identified the supposed attack as a false alarm did the world escape the nuclear inferno. 10)

Case 4: Autumn sunbeams: Moscow, 26 September 1983, shortly after midnight: A Soviet early warning satellite reports the attack of a handful of US missiles on the Soviet Union. The sun, satellite and US missile fields were aligned in such a way that the sun's rays were misidentified by the satellites. Fortunately, Soviet Colonel Stanislav Petrov decided not to relay the alert to his superiors because he considered it strange to be attacked with only five missiles instead of 500. This decision saved our planet. 20)

Historical evidence shows that on 26 September 1983, the sun once again came within a hair's breadth of triggering a nuclear war. At that time, there was an alarm in the command centre of the Soviet satellite surveillance that numerous US nuclear missiles were approaching. The officer in charge, Stanislav Petrov, had the nerve to trust his radar, which confirmed none of this. Only later did it become clear that it had been a rare astral constellation. Sun rays produced reflections in the satellite sensors that looked like rocket launches. In the paranoia of the Cold War, a natural phenomenon could have led to disaster. Fortunately, some people kept their cool: "Just when everything seemed to be going horribly wrong, some things worked right in an exemplary way," says Delores Knipp. 36)

Stanislav Petrov and the Mystery of the Red Button. What really happened in September 1983? Historians in East and West are now largely agreed that the most risky phase of the Cold War was the autumn of 1983. During this tense situation between the superpowers, an incident occurred in the Russian control centre for the early detection of American attacks which, according to the American expert Bruce Blair, had brought mankind closest to nuclear war: a computer message about approaching intercontinental missiles made a decision on a counterattack necessary within minutes. The officer on duty, Stanislav Petrov, kept his nerve and assessed the plausible information from the system, which was considered reliable, as a false alarm based on a gut feeling. In recent weeks, the author has had ample opportunity to speak with Petrov about the fatal night in September, which is repeatedly reported in a distorted manner. Stanislav Petrov. Screenshot 'The Man Who Saved The World'. After taking office, US President Ronald Reagan had ended disarmament talks, launched the SDI missile defence programme and in 1983, in his speeches, described the Soviet Union as an "evil empire" with which there could be no coexistence. Reagan's pathetic rhetoric was followed very closely by Yuri Andropov, the former head of the KGB, who was also old and suffering from a serious illness. Without the Americans being aware of it, Andropov was counting on an American surprise attack that would secure Reagan a place in the history books as the commander of the Third World War - how seriously Reagan meant it at the time is still disputed among historians today. The Russians had already had the experience of a surprise invasion in World War II. Not least because of this suspicion, a Korean passenger plane had just been shot down when it flew over Soviet territory for unclear reasons. Nulear's balance. According to the logic of mutual deterrence, a nuclear first strike expected by the Russians had to be retaliated against immediately, which would only have been possible within a warning time of barely half an hour at the time. To this end, the possible launch sites of intercontinental missiles were monitored with an elaborate early warning system using spy satellites. Many consider the Cuban Missile Crisis of 1962 to be the most dangerous moment of the Cold

War, but from Russia's point of view there was no real reason for a nuclear exchange at that time. But Petrov leaves no doubt that the Russians were serious. As a young soldier in the Red Army, he himself had been put on high combat readiness. Engineer Petrov's speciality had been the ballistics of satellites. He had already gained experience in observing military celestial bodies when he tracked the then secret American spy high-altitude balloons that the USA had sent in fleets over the Soviet Union to detect atomic bomb tests. Later, satellites took over this task on both sides. Even two decades after the Cuban Missile Crisis, which was eventually followed by a thaw, the military stood ready to launch an immediate nuclear counter-strike: Service in the still secret control centre of space-based observation near Moscow was called "combat watch", which was explicitly regarded as a "combat situation". Every change of duty was introduced with military rituals, including a twice-daily roll call with the national anthem. In addition to the border forces, the enemy observation facilities were considered the "front". Petrov, as a lieutenant colonel, was then deputy head of the facility that evaluated the signal of the Russian "Sputniks". The satellites orbited the Earth elliptically in a so-called Molniya orbit and observed the North American continent both with infrared and visually. Another observation stage was based on radar. The system set up in the 1970s had about ten satellites, two of which were currently covering the observation area at a 40-degree angle. In contrast to geostationary observation directly from above, an ascending missile could be observed from the side in this way, which made it possible to draw conclusions about its trajectory. Ballistic missiles such as Minuteman could best be seen immediately at launch, as the first stage burned brightest. As soon as the missile left the shaft, the system could automatically report the launch with a delay of 15 seconds by means of 5 images per 3 seconds and already calculate the possible trajectory. Petrow considers it almost impossible that an American rocket launch could have been overlooked. Chess game in the dark. As the officer in charge of determining an enemy attack, Petrov had been familiar with the atomic strategy of the time. In his opinion, the hydrogen bomb would not have been used, as it was only suitable for total destruction, which was not the aim. The destruction of the civilian population had not been the actual goal of the Russian strategy. In fact, work had been done on the accuracy of the nuclear missiles, which had been aimed at strategic targets. This explicitly did not include the American missile bases, since in an emergency the missiles would either already have been on their way or would have been launched within three minutes of the discovery of a Russian attack. (The fact that a nuclear strike would be carried out in two waves according to the NATO concept at the time was not known to the Russian side at the time, see below). According to the "need to know" principle common in the military and intelligence services, Petrov had been primarily informed about his affairs. Petrov only learned about the RYAN programme, for example, in which spies in the West were urged to immediately report any signs of concrete war preparations in the most elaborate KGB action to date, in 2006 - from the former enemy. Petrov regarded Reagan as a foreign-controlled actor whose talk he did not pay much attention to. Andropov, who like his advisers had never been to the West and did not know the American mentality first-hand, took Reagan literally and the belief in an imminent surprise attack with him to the grave. (The CIA had become aware of the paranoia of the then Politburo through KGB defector Oleg Gordiewski in early 1984 - that is, only after the actual RYAN crisis). The spy satellite programme had been extremely costly, both financially and technically. Surveillance had been modernised in 1981 with more powerful satellites, with constant improvements. There was a complex of buildings near Moscow on a base that is still secret today, with a communications centre, including a kind of "main bridge" and two other identical evaluation units that worked in parallel as a back-up. Because of the frequent computer failures due to weather-related heat, for example, these back-up systems had been of considerable practical importance. Petrow was the author of the manual for the system and, ironically, had himself contributed to the emergency regulations that he had to override in September 1983. No regulations existed for what was happening at the time. In order to make a decision as far-reaching as that on a nuclear counter-attack, false alarms should be excluded as far as possible. Therefore, an infrared signal captured by the satellites that indicated a missile launch had to fulfil numerous criteria in the computer, such as having a certain brightness. Since the new systems, which had been put into operation a few years ago, worked perfectly and were equipped with the most modern technology, there was no understandable reason to distrust their displays. On 26, 27 or 28 September 1983 - the exact date is not certain - the purpose of the system seemed to have been fulfilled. One night in September 1983. Stanislav Petrov: "One day in September I am on duty as a watch officer in the command centre of the missile early warning system. I have the night shift from 8:00 in the evening to 8:00 in the morning. It is, as always, an ordinary routine job. The workflow is set to the second. The operators sit at the screens in the darkened room, on two floors. On my display I can see the earth - focused on the area of the USA - and a representation differentiated into day and night areas. We have developed the system to such an extent that it would have been highly unlikely to launch a missile unnoticed - the moment the missile leaves the shaft, we see it. The electronic clock shows 0:15 when the unexpected happens: suddenly the alarm goes off and a shrill siren

wails terribly. A huge display, which I notice for the first time ever, shows the word START in red. The surveillance system has most probably detected the launch of an intercontinental ballistic missile from an American base! It's like a bolt from the blue. Although we have often trained for such a situation, the alarm is a shock to us all. It takes a few seconds before we realise what it means. The computer has also sent the missile launch to the General Staff of the Army and the political leadership of the Soviet Union. We must act immediately. I have to confirm or refute the missile launch. The missile takes 25 to 27 minutes to reach us. Many have jumped up from their seats and everyone is looking up at me with questioning faces. It is a critical situation. I don't think much and act like a machine. Over the PA system I say gruffly and sternly, 'Everyone sit back down and work. My orders are to be carried out.' In accordance with my service regulations, I give various orders. The information from the military satellite has gone to the main computer and to the visual observation officers in the other buildings. The visual observation can see with their own eyes the missile base in the US. Observation is complicated because the launch base is right on the border between day and night. Visual observation cannot confirm the launch. Although from past experience, visual observation has always been reliable. But the computerised alarm is also reliable. Numerous criteria must be met before the computer evaluates a signal as a rocket launch. The computer shows a light signal exactly above an American missile base. Still, I have to make a decision. Fifty-fifty. There's no rule about how quickly I have to make a decision. But the longer I think about it, the less time there is for the higher authorities to react. I am the first to have to deal with this information. I don't have the right to steal even a second of thinking time from the policy makers." At that time, the warning time would have been reduced by the time needed for concrete launch preparations. It would have taken about three minutes to bring the gyroscopes up to the required speeds before take-off. Chicken coop effect. Stanislaw Petrov: "But first of all, I don't want to create the 'henhouse effect'. Once the first rooster crows in the morning, even though the sun has not yet risen, all the others will still crow along ... Secondly, in the event of an attack, I have always learned that the American strategy is not to launch one missile, but to attack with all missiles at once. Thirdly, I bear in mind that it could also be the deliberate provocation of one individual to provoke a nuclear war." In 1979 - during a more relaxed phase of East-West relations - there had been the reverse case in the USA: NORAD had reported first hundreds and then thousands of approaching missiles to President Jimmy Carter due to a software error - in fact, it was phantom data from a simulation. Stanislav Petrov: "So far, about three minutes have passed since the alarm. I do not want to be responsible for the beginning of the Third World War. I am not sure of my decision, but I am picking up the phone to give my assessment as a false alarm." At that moment, a second missile launch is displayed.... . I think: why do the Americans launch each missile separately? After all, you empty the bucket of water all at once and don't spoon it out with a teaspoon. That's why I report to my superiors: No sooner have I reported the false alarm on the phone than a third, fourth and fifth missile are displayed ... . With the fifth rocket, the huge red display changes from START to RAKET ATTACK. But visual observation still sees no rockets. That's why I don't change my mind." What Petrov did not know at the time was that the alarm triggered by the computer had already been automatically passed on to the state leadership, so Andropov had already been woken up. Stanislav Petrov: "Now we can only wait. Because in addition to our early warning system, there is also the radar system, but it can only detect the missiles ten to twelve minutes after launch. Our tension is getting higher and higher. The first missile would hit in 20 minutes. I knew that the Americans would use nuclear missiles that could split into 12 warheads in flight. The Americans would have destroyed 100 million people in Russia - about half the population. They assumed that a Soviet counter-attack would have cost 'only' 25 million American lives. That's how you calculate animals, but not people. In fact, we too would have wiped out at least half the American population. A blow always leads to a counter-blow - I was aware of that. There was only one difference: the one who delivers the first strike lives 20 minutes longer. After 13 minutes of waiting, the radar system gives the signal: No missiles. I had made the right decision. All my colleagues said afterwards that they would have acted the same way in my situation. Actually, I had only been in the right place at the right time. However, I had to spend four more days there before they let me go home. A superior reprimanded me for not taking written notes during the incident, to which I asked him with which hand I should have done that?I think I had more urgent things to do. Immediately, an elaborate investigation was carried out by a commission, whereby the results were kept secret from us for a long time - probably so that we wouldn't laugh too loudly! What looked to us and the computer exactly like a rocket launch were reflections of the sun in the atmosphere, a kind of mirage that reflected into the satellite's lens. As we know today, such a reflection only occurs in a highly rare constellation of the celestial bodies involved. Even more improbable is that the reflections occurred exactly above a rocket base with the required brightness - a devilish coincidence, but there it was." . Press tale. Petrov regrets that there were some inaccuracies and lies in the Western press because journalists always need "their sensational story". He was described as the man who saved the world, but he was simply doing his job.

Such relativising words were often cut out of interviews, which, much to his annoyance, brought him into disrepute with some colleagues. Stanislav Petrov: "The whole story remained unknown for about 10 years until my name appeared in a Russian newspaper. You should have seen my wife's eyes when a journalist asked the questions for the first time. Until then, everything had remained completely secret. For me, it was not at all difficult to remain silent for 10 years, because I did not attach that much importance to the whole thing". Moreover, it was falsely claimed practically everywhere that Petrov had been discharged from the army. The only thing that goes in this direction is that a medal originally planned for his prudent actions failed to materialise, because when the reason for the system's vulnerability became apparent, superiors preferred secrecy in order to save their own face. However, he later received a medal for other services to the construction of the system and was eventually even promoted. He left the military the following year for purely family reasons, but eventually even returned to his former post as a civilian. Neither is Petrov a broken man, nor are the other claims copied from each other true. On the contrary, the now 70-year-old is a friendly, approachable, very humorous and warm contemporary. Scurrilous thanks. After the incident became known, Petrov suddenly received a lot of mail from people in the West thanking him for his achievement. One sent a map of Hawaii, for example, where he had marked his family's place of residence ("We live here!"). Another family had lived next to a US missile base. A woman from England sent him a kilo of coffee. Another lady apparently thought he could do with a pair of household scissors. Americans sent cassettes with an English learning course and a tape recorder to play them. He also found a corresponding German language course in the post. Someone composed a piece of music in his honour. The film actor Kevin Costner spontaneously transferred $500 to Petrow, which he tried in vain to return. One day he had the opportunity to thank him in person. An association of world citizens from San Francisco invited Petrow to the USA in 2006 and presented him with an award for his services to the preservation of the world in front of the UN in New York. This was designed as a hand holding a glass globe. It was on this occasion that he first met in person his American counterpart at the time, Bruce Blair, with whom he got on well straight away. The award ceremony as such seemed strange to the Russian, who said that everyone was just promoting themselves. He therefore did not give a speech, but simply asked for questions, which he answered willingly. With great interest, Petrov visited one of the American underground missile silos in South Dakota that he had previously observed from space, impressing the crew with his knowledge of their workplace. A rocket launch requires the simultaneous turning of the ignition keys of the two guards on duty in each individual silo, and the teams of about 150 rockets stationed at this base monitored each other through monitors, allowing them to abort launches if necessary. Petrov was particularly fascinated by the food lift set up especially for lunch! Petrow's achievement was also recognised in the English documentary A Brink of Apocalypse (2007). This year, a Danish documentary about Petrov will be released: The Man Who Saved The World. The "red button". Petrov still refuses to be called a hero. Any of his colleagues would have acted the same way. Before the confirmation by radar surveillance, a "counter-attack" would probably hardly have taken place, even though a "chicken coop effect" may have considerably increased the risk of such a mistake. The decision on the counter-strike had been a matter for the politicians. It was often written in the press that Petrov was the man who did not press the "red button". How the journalists knew (or wanted to know) about the existence of such a button was always a mystery to Petrov. The famous red button really did exist! It had been retrofitted into the console and was dramatically protected with a sealed box. Everyone always assumed that the 'first strike or counter-strike' had been carried out with this button. In reality, they had simply set up a dummy: There was only a hole under the box, the cables were cut off, there was no connection anywhere. Psychologists had found out that only very few people would have been able to carry a nuclear mass murder by their own hand. The button would therefore most likely never have been pressed, and for that reason alone would have been useless. The entire system had only the task of informing the political leadership whether the senior officer would confirm an attack or not. A decision as far-reaching as that on the nuclear annihilation of the West would hardly have been left to an individual. Whether the state leadership, which had already been automatically informed of the computerised alert without Petrov's knowledge, would have reacted quickly enough to order the counterattack within the warning time will remain a mystery of history. Who all would have received a positive alert, even Petrov does not know. Dangerous illusions. Prudent action is by no means a matter of course in comparable situations. Three weeks before the incident, the Russians had shot down an off-course Korean passenger plane that had previously crossed radar shadows with a similar US spy plane and, according to Soviet accounts, violated Russian airspace for about an hour in poor visibility. In 1988, a US cruiser shot down an Iranian passenger plane that the computer had interpreted as an attacking aircraft. In October 1983, Reagan surprisingly occupied the spice island of Grenada without military cause and without consultation with NATO partners, which confirmed Andropov in his suspicion of the man he trusted with everything. With the particularly elaborate autumn manoeuvre ABLE ARCHER 83, NATO offered the East a 1:1

simulation of a nuclear attack, which Moscow thought was preparation for a real surprise strike. With the deployment of the Pershing II in Western Europe, Reagan again dramatically shortened the warning time, which not only increased the impression of concrete first-strike plans, but also the risk of a false alarm that could no longer be corrected. Petrow's accurate assessment of the false alarm was based not only on his instinct but also on the then prevailing theory that a first strike by the West would be carried out with the entire nuclear potential. A little later, however, he became aware of NATO's actual planning through the intelligence services: A nuclear strike would have been carried out in two waves. First, a decapitation strike against Moscow would have been carried out in order to force the Soviet Union to surrender. In the event of resistance, nuclear annihilation would have been launched. So an attack with only five missiles with 12 warheads each would have made perfect sense. If I had known that at the time, I would have decided differently. Stanislav Petrov. So the nuclear war that was not fought, which would have been based on illusions, was averted not least by an illusion. 72)

1983-11-2/7/11: US/SOW: (HDG/HDM) Soviet Union considers NATO staff nuclear exercise "Able Archer 83" as an attack, plans nuclear first strike after "RJaN".

A NATO simulation exercise simulating a nuclear attack on the Soviet Union is interpreted by the Soviets as preparation for an attack. The Soviets put the nuclear missiles on alert and prepare them for a launch. In addition, the Soviets intercept a NATO message on 11/11 stating that nuclear missiles had been launched at them. Only later did the Americans realise how dangerous this situation was. This incident is covered in the documentary "TheBrick of Apocalypse" and is probably one of the most dangerous situations since the Second World War. 5)
7-11 November 1983: Able Archer 83: Able Archer 83 was a command post exercise conducted by NATO forces and political leaders between 7 and 11 November 1983. The exercise simulated a Soviet conventional attack on European NATO forces three days before the exercise began (D-3), which transitioned into full-scale chemical warfare (D-1), and on Day 1 (D+1) of the exercise, NATO forces sought political guidance on the use of nuclear weapons to halt the Soviet advance, which was approved by political leaders. NATO then began simulating preparations for a transition to nuclear war. These simulations included 170 radio-assisted flights to move 19. 000 US troops to Europe, the regular redeployment of military commands to avoid a nuclear attack, the use of new procedures to release nuclear weapons, the use of nuclear command, control and communications (C3) networks to relay nuclear orders, the redeployment of NATO forces in Europe through each of the alert levels from DEFCON 5 to DEFCON 1, and the participation of political leaders such as Margaret Thatcher, Helmut Kohl and Ronald Reagan. The problem was compounded by leaders calling B-52 deployments a "nuclear strike", increased use of coded diplomatic channels by the US and UK, and a false alarm of a nuclear attack in September. In response, Soviet nuclear-capable aircraft were refuelled and armed and ICBMs were put on alert. The Soviet leadership believed that the exercise was a decoy to disguise NATO's preparations for a nuclear first strike and frantically sent a telegram to their residences seeking information about NATO's preparations for an attack. The exercise coincided exactly with Soviet time estimates that a NATO first strike would take 7 to 10 days from political decision to execution. Soviet forces withdrew after 11 November when the exercise ended and NATO was unaware of the full Soviet response until British intelligence officer Oleg Gordievsky passed on the information. 6)
November 2, 1983 — November 11, 1983: Soviets Misinterpret US Nuclear War Games: NATO conduced a massive command post exercise simulating a period of conflict escalation November 2-11 1983. This culminated with a simulation of the highest military alert status, DEFCON 1, and a coordinated nuclear attack against the Soviet Union. The exercise was highly realistic and debuted a new, unique format of coded communication, radio silences, and the participation of heads of government. Unbeknownst to NATO, this triggered extreme alarm on the Soviet side, where analysts feared that it was a cover for an actual nuclear attack, conveniently timed to coincide with their Revolution Holiday. Soviet nuclear missiles were placed on high alert and readied for launch. The climax came on the morning of November 11, when the Soviets intercepted a NATO message saying that US nuclear missiles had been launched against them. Robert Gates, then deputy director of intelligence at the CIA, later said: “We may have been at the brink of nuclear war and not even known it.” This incident is the subject of the British 1988 documentary The Brink of Apocalypse. It is sobering to consider what might have happened if an independent incident such as the September 26 1983 false alarm or the 1995 Norwegian Rocket Launch would have randomly occurred on November 11 1983 instead. 7)

Deutschland is a German television series. While the first season was released with the title Deutschland 83 (also stylised as Germany 83), the series was given the title Deutschland 86 with the second season. The third season is called Deutschland 89. The series tells the story of a GDR border guard (portrayed by Jonas Nay) who is infiltrated into the Bundeswehr as a spy ("Kundschafter des Friedens"). The series depicts the tension between East and West during the Cold War and the heightened danger of a Third World War that existed at the time. It was produced by UFA Fiction with showrunners Jörg Winger and Anna Winger, and directed by Edward Berger, Samira Radsi, Florian Cossen, Arne Feldhusen, Randa Chahoud and Soleen Yusef. Divided Germany at the height of the Cold War. When the NATO autumn manoeuvre Able Archer is announced in 1983, the leaderships in Moscow and East Berlin suspect that the manoeuvre could serve as a cover for a first strike against the Warsaw Pact. The Main Reconnaissance Office (HVA) of the GDR's Ministry of State Security therefore sends a spy to the West to spy on the Bundeswehr and NATO plans. The first sergeant of the border troops of the GDR, Martin Rauch, is chosen; in the Federal Republic of Germany he infiltrates the Bundeswehr under a false identity as Oberleutnant Stamm and Ordonnanzoffizier (adjutant) of General Edel. The aim of his mission is to uncover the positions of the American Pershing II missiles and other NATO plans. 13)

Beginning on 2 November 1983, the NATO General Staff held an annual military exercise called Able Archer. This Europe-wide ten-day manoeuvre simulated a nuclear war. But in the tense political situation, the routine exercise almost escalated into a nuclear catastrophe under real conditions. The Soviets were particularly suspicious of a serious nuclear first strike by the USA due to the fact that a new coding format for message transmission was used for the first time during this manoeuvre. In addition, the stationing of new Pershing missiles in Europe by US President Ronald Reagan had provided new food for the already latent Soviet mistrust and fuelled the arms race. Despite numerous demonstrations of peace, Reagan stuck to his hard line. In a speech in March 1983, he spoke of the "evil empire". In the same month, he launched the "Star Wars" programme, which envisaged the construction of a belt of weapons to intercept Soviet intercontinental missiles. On the Soviet side, Leonid Brezhnev died in June 1983, and the USSR's new strongman became Yuri Andropov as General Secretary of the CPSU, who had been head of the KGB secret service from 1967 to 1982. The old and sick Andropov did not want to show weakness towards the West at any price. And the entire Politburo did not want to be caught off guard again in such a devastating way as during Hitler's surprise attack in June 1941. Under Andropov, mistrust on the Soviet side reached a peak. For the general staff of the Soviet Union, the alarm signals multiplied. Until the moment when a military satellite reported - by mistake - the launch of several missiles. But the prudent behaviour of Soviet military personnel prevented the catastrophe. Using archive images and scenic re-enactments, the documentary sheds light on an extremely critical moment in the Cold War. It tells the breathtaking story of the November days of 1983 and shows in flashback the most important moments that accompanied this escalation, such as Ronald Reagan's speech about the "evil empire", the "Star Wars programme", the European peace demonstrations and the incident of a South Korean passenger plane shot down by Soviet interceptors. Among others, Ted Bliss, then head of NATO's nuclear operations, Ronald Reagan's security advisor Robert Bud McFarlane, General Jesin of the Soviet nuclear forces, KGB General Kalugin, Robert Gates, Deputy Chief of British Intelligence, Major Gennadi Osipovich, the pilot of the Soviet fighter-bomber that shot down the South Korean Boeing, KGB spy Oleg Gordiewski, who defected to the West, and Rainer Rupp, an agent of the GDR Foreign Intelligence Service who worked in the Political Department at NATO headquarters in Brussels from 1977 to 1993 and spied successfully. 14)

A large-scale NATO military exercise "Able Archer" from 2 to 11 November 1983 is said to have almost led to nuclear war. This was because the Soviet Union interpreted the simulation as a real nuclear attack. The Europe-wide exercise simulated the highest alert level - DEFCON 1 - in a coordinated attack against the Soviet Union under strict secrecy. The exercise was very realistic and used new encrypted communications. Even the heads of state played along. Unnoticed by NATO, the exercise caused panic on the Soviet side. They feared that the exercise was hiding an actual nuclear attack and readied their nuclear weapons. According to Rainer Rupp, who was employed by the GDR as a spy in the West, his information revealed the truth that it was only a game. This case remains officially unconfirmed, but declassified documents from the USA and Great Britain in 2013 show that the world has come close to nuclear war here. 20)

New documents on ABLE ARCHER 83. 07 November 2018 Markus Kompa. The Soviet fear of war was real. Between 7 and 11 November 1983, the final exercise of the annual autumn manoeuvre was underway in Western Europe. Code-named ABLE ARCHER, the final escalation was to be practised: The nuclear annihilation strike. At the time, US President Ronald Reagan had poisoned the atmosphere with aggressive rhetoric in which he demonised Russia as "the evil empire". Moreover, after the

shooting down of Korean Airline 007 and the surprise invasion of Grenada, the Cold War had become as hot as during the Cuban Missile Crisis - but only behind the scenes. Former KGB chief Yuri Andropov, who had risen to head of state, feared that the exercise was really just a cover for a surprise nuclear attack on Moscow openly advocated by Pentagon powers. In the West, the 1983 Soviet war scare is downplayed by conservative historians. However, since the US released in 2015 the hitherto top-secret 1990 investigation report for President Bush, at least a large part of the US sources are open, where the situation was definitely classified as high-risk (By a hair's breadth). Unlike the USA, the British and Russians are still stonewalling. Now, among other things, files discovered in a KGB archive in Ukraine have come to light, which provide information about the eastern perspective of the 1983 drama. The StaSi records office also proved fruitful. The National Security Archive at George Washington University has now put much of the previously unknown material online. Ever since Reagan ended the thaw in the Cold War and pushed for rearmament in space, the Soviets had been worried about a surprise strike. Therefore, in 1981, under Leonid Brezhnev, Moscow launched the KGB's largest undertaking to date, Operation RYaN. Both the intelligence service and the military were to report any sign that indicated concrete preparations for war, such as the hoarding of blood donations or the behaviour of church leaders. While the programme was supposed to bring clarity to US intentions, it ironically did the opposite by gathering fears of an attack into an echo chamber. In a top-secret conversation with East German intelligence chief Erich Mielke in July 1981, Andropov thanked him for obtaining sensitive documents on NATO. Foreign intelligence at the time had an agent who had access to all NATO secrets (The NATO Spy). Andropov was inclined to think at the time that the US was preparing for war but did not wish to wage one. He was not sure, however. To the Russian ambassador Anatoly Dobrynin, Andropov announced in confidence that the Reagan administration was preparing for war and that Reagan should be trusted with everything. At a Warsaw Pact meeting in Prague in January 1983, Andropov warned against US President Reagan, who did not even conceal that his missile systems were meant for future wars. Reagan believed he could survive and win a nuclear war. It was difficult to distinguish between the rattle of war and an actual readiness to take the final step. Although he did not officially fear a first strike, according to historians of the US National Security Agency (NSA), he did believe in it. Also in January 1983, Andropov discussed the danger of nuclear war by accident with Hans-Jochen Vogel. A drunk or drug-addicted US soldier could launch a nuclear missile and trigger a chain reaction. It has also happened that Americans have fired missiles at flocks of birds. If such a missile fell on Soviet territory, it could lead to war. He feared that the planned stationing of the Pershing II missile in Germany at that time would reduce the reaction time to an attack from 30 to six minutes. In response, he now deployed the SS-20 missile aimed at targets in Germany. It was wiser to withdraw as many missiles as possible from Europe to avoid sliding into nuclear war. In April 1983, a series of provocations took place, for example in the Pacific. The USA carried out mock attacks on a Soviet base on the Pacific island of Zeleny, for example, and the Soviets in turn violated US airspace over the island of Nunivak for the first time since 1969. Andropov personally ordered that any violation of Soviet airspace be met with a shootdown. The tragic consequence of this policy was apparently the shooting down of Korean Airline 007 (Japan: USA knew in 1983 that the Soviets thought flight KAL 007 was a spy plane). After the shooting down of KAL 007, Andropov lost his doubts that the current US leadership was willing to turn the ideological confrontation into a military one and thus endanger humanity. At a Warsaw Pact meeting in Berlin in October 1983, Defence Minister Ustinov announced that the Pershing II, whose actual range was secret, could reach Moscow. It was a first-strike weapon. In October 1983, the KGB chief gave orders to increase vigilance, surveillance and control of the media. More than 300,000 men were involved in the autumn manoeuvre REFORGER in 1983. As we know today, nuclear bombers were being readied for launch in the GDR, for example, and the mobile launching bases of the SS-20 were stationed in the forests. Although the alarm for the SS-20 was set to combat-ready, it was far from being launched. The then Chief of the General Staff later stated that the 1983 autumn manoeuvre had been NATO's most dangerous exercise of the Cold War. On 7 November, the start of ABLE ARCHER, Kryuchkov, the deputy head of the KGB, met with Markus Wolf, the head of the GDR's foreign intelligence service. The spy chiefs discussed organisational issues of Operation RYaN. There were a thousand indicators for assessing whether a nuclear war, which could theoretically be prepared within 24 hours, was imminent in six months or a year. Influence on the peace movement could be counterproductive if "our hand" was revealed. ABLE ARCHER ended peacefully on 11 November (The Last Day). A week after, Defence Minister Ustinov warned in PRAWDA that it was increasingly difficult to distinguish between a military exercise and an actual threat. This is likely to confirm Air Force intelligence officer Leonard Peroots, who disobeyed orders to set the alert level to DEFCON 2 during the exercise at Ramstein Airbase. It would have been impossible for the Soviets to tell whether this highest alert level below nuclear war was a game or deadly serious. Ustinov's public assessment was consistent with the internal view. Another document from the East German secret service from 1987 evaluates the efforts

of Operation RYaN. While ZDF viewers are still fed abstruse propaganda tales of the friendly cowboy Ronald Reagan, who ordered restraint during ABLE ARCHER due to alleged CIA indications, there is no evidence as far as research goes that the CIA had even substantiated knowledge of Soviet war fears before May 1984. 44)
Operation RYAN (or RYaN, Russian: РЯН, IPA: [rʲæn]) was a Cold War military intelligence program run by the Soviet Union during the early 1980s when they believed the United States was planning for an imminent first strike attack. The name is an acronym for Raketno-Yadernoe Napadenie (Russian: Ракетно-ядерное нападение, "Nuclear Missile Attack"). The purpose of the operation was to collect intelligence on potential contingency plans of the Reagan administration to launch a nuclear first strike against the Soviet Union. The program was initiated in May 1981 by Yuri Andropov, then chairman of the KGB. Background. Andropov suffered from a "Hungarian complex" from his personal experience of the Hungarian Revolution in 1956 according to the historian Christopher Andrew. Andropov had, as the Soviet ambassador to Hungary, "watched in horror from the windows of his embassy as officers of the hated Hungarian security service were strung up from lampposts". Andropov remained haunted for the rest of his life by the speed with which an apparently all-powerful Communist one-party state had begun to topple. Leonid Brezhnev and Yuri Andropov, then Chairman of the KGB, justified the creation of Operation RYaN because, they claimed, the United States was "actively preparing for nuclear war" against the Soviet Union and its allies. According to a newly released Stasi report, the primary "Chekist work" discussed in the May 1981 meeting was the "demand to allow for 'no surprise.'" Operation. The Soviet defector Oleg Gordievsky divulged a top-secret KGB telegram sent to the London KGB residency in February 1983. It stated: "The objective of the assignment is to see that the Residency works systematically to uncover any plans in preparation by the main adversary [USA] for RYAN and to organize a continual watch to be kept for indications of a decision being taken to use nuclear weapons against the USSR or immediate preparations being made for a nuclear missile attack." An attachment listed seven "immediate" and thirteen "prospective" tasks for the agents to complete and report. These included: the collection of data on potential places of evacuation and shelter, an appraisal of the level of blood held in blood banks, observation of places where nuclear decisions were made and where nuclear weapons were stored, observation of key nuclear decision makers, observation of lines of communication, reconnaissance of the heads of churches and banks, and surveillance of security services and military installations. RYAN took on a new significance after the announcement of plans to deploy Pershing II nuclear-armed missiles to West Germany. These missiles were designed to be launched from road-mobile vehicles, making the launch sites very hard to find. The flight time from West Germany to European Russia was only four to six minutes (approximate flying time from six to eight minutes from West Germany to Moscow), giving the Soviets little or no warning. On 23 March 1983 Ronald Reagan publicly announced development of the Strategic Defense Initiative. The Soviet government felt that the purpose of SDI technology was to render the US invulnerable to Soviet attack, thereby allowing the US to launch missiles against the USSR without fear of retaliation. This concern about a surprise attack prompted the sudden expansion of the RYAN program. The level of concern reached its peak after the Soviets shot down KAL 007 near Moneron Island on 1 September 1983, and during the North Atlantic Treaty Organisation exercise Able Archer 83. The Soviet Union believed that a United States first strike on the Soviet Union was imminent. Although Andropov died in February 1984, RYAN continued to be maintained and developed under the direction of Victor Chebrikov. Consultations held in August 1984 between the STASI's head of the Main Directorate of Reconnaissance, Markus Wolf and KGB experts discussed the early detection of potential war preparations in adversaries and indicated that the First Chief Directorate of the KGB was proposing to create a new division to deal exclusively with RYAN. 300 positions within the KGB were earmarked for RYAN of which 50 were reserved for the new division. Operation RYAN continued to be maintained until at least April 1989. 45)
Able Archer 83 1. Able Archer 83 was a ten-day NATO command exercise which began on 2 November 1983 and covered western Europe. The exercise was controlled by the Alliance Armed Forces Command from its headquarters in Mons, north of the Belgian town of Casteau[en]. Able Archer trained the Alliance in the event of an escalation of conflict leading to nuclear war. The 1983 exercise involved the first use of unique new communication codes and total radio silence; NATO heads of state were involved in the exercise and DEFCON 1, the maximum operational capability for the use of nuclear weapons was practised. The realism of the 1983 exercise, coupled with the deterioration of US-Soviet relations during the Cold War, the US invasion of Grenada, the planting of Pershing-2 intermediate-range ballistic missiles in Europe, and the increasing frequency of provocations by the US and NATO countries, led some members of the Soviet leadership to take the exercise seriously as a disguised preparation for a preventive nuclear strike against the Soviet Union. In response, the Soviet government put the Soviet Strategic Missile Forces on alert No. 1 and deployed additional Soviet Air Force aircraft to the GDR and the People's Republic of Poland. A number of historians noted that the world, for the first time since the 1962 Caribbean

crisis, was on the brink of nuclear war. The threat of nuclear war ended only at the end of exercise Able Archer 83 on 11 November 1983. The events leading up to the exercise. To understand how close the world was to nuclear war, it is necessary to consider a series of events leading up to the exercise. Operation RYAN. Main article: Operation RYAN. In May 1981, a closed meeting of the Politburo of the CPSU Central Committee with high-ranking officers of the KGB took place. At the meeting, where L.I. Brezhnev, General Secretary of the CPSU Central Committee, and Y.V. Andropov, Chairman of the KGB, were also present, it was announced that the US was preparing a nuclear attack on the USSR. Andropov announced Operation RYAN (Nuclear Missile Attack) by the KGB and GRU to devise means to counter the attack[note 1]. Operation RYAN was the largest and most complex intelligence-gathering operation in Soviet history. Despite the name, the main objective of the NRS operation was to discover the intent to use nuclear weapons, and only then to find means to prevent the use of nuclear weapons. So far, the means of carrying out the NRS operation are unknown. The main source of information is Oleg Gordievsky, the highest-ranking KGB officer who worked in secret for Britain. Official CIA historian Benjamin B. Fischer has identified several specific events leading up to the NRC operation. First on the list is the NATO Double Decision (made on December 12, 1979) to deploy missiles in Western European countries in response to the deployment of RSD-10 (SS-20) missiles by the USSR which started in 1976. The second was Psychological Operations (abbreviated PSYOP). West-81. Main article: Zapad-81. The largest strategic exercise in the history of the Soviet Armed Forces. On the scale of involved resources it was comparable to offensive operations of World War II. It took place from September 4 to 12, 1981. Shield-82. Main article: Shield-82. Strategic exercises of the army and navy of the USSR and Warsaw Pact countries. They practiced full-scale nuclear war with NATO bloc. It took place from June 14 to September 30, 1982. Korean Air flight 007. Main article: South Korean Boeing incident (1983). Tragedy struck a South Korean airliner on Korean Air Flight 007 (KAL 007) on 1 September 1983. The plane was in Soviet airspace for many hours outside the corridor provided to civil aviation. As a result, it was shot down by a Soviet fighter jet south of Sakhalin, and this mass killing severely complicated relations between the USSR and the Western world. Race . On 23 March 1983, Reagan unveiled a plan for a strategic defence initiative, subsequently dubbed "Star Wars" by critics and the media alike. Although Reagan saw the plan as a defence system against the outbreak of nuclear war, Soviet leaders clearly perceived it as an attempt to move away from nuclear parity and the détente of international tensions, as well as an attempt to militarise outer space. V. Andropov, who became General Secretary of the CPSU Central Committee after Leonid Brezhnev's death in November 1982, harshly criticised Reagan's initiative to "develop new plans to start a nuclear war so as to win it". Despite the hysteria surrounding the Star Wars programme, the Soviet government's greatest concern was the US Pershing-2 medium-range ballistic missiles, deployed in Western Europe since November 1983, that is, not deployed by the start of the exercise. These missiles were to be deployed as a response to the Soviet SS-20 Pioneer medium-range missiles deployed on the western border of the USSR, which posed the greatest threat to NATO's European countries. "The Pershings were capable of destroying hardened targets such as silo launchers and buried command bunkers. The missiles could be primed and launched in minutes, and their homing system was ideally suited to a first strike. Moreover, missiles launched from West Germany reached targets in the European part of the Soviet Union in just six minutes after launch. The Soviet Union had only two possibilities to withstand these missiles: an urgent deployment of the Perimeter system, symbolically called "Dead Hand" according to NATO classification (introduced into service in 1985) or a preventive war. According to CIA historian Benjamin Fischer, it was the danger of a surprise missile strike by the Pershingami that was the immediate reason for launching the RYAN operation: to reveal the US decision to launch a nuclear war and, it may be assumed, to pre-empt it. False triggering of the nuclear warning system. Main articles: Cases of false triggering of the NWS and Petrov, Stanislav Evgrafovich. On September 26, 1983, the Soviet first-generation Oko (Oko-K) satellite warning system, which was put on alert in 1982, issued a message about an attack by the United States. But radar surveillance could not confirm it, as the "missiles" were still too far away. The alarm was deemed false by the decision of Lieutenant Colonel S.E. Petrov, the operational duty officer. Subsequent investigations determined that the reason for the alarm was that the satellite's sensors had been illuminated by sunlight reflected from high-altitude clouds. Thus, the false triggering of the space-based early-warning system revealed its inadequate effectiveness in anticipation of nuclear war. There was no certainty that another sensor glow was not an attack. It was not until 1987 that the system was rid of the possibility of such false alarms by increasing the space-based early-warning system from four to nine spacecraft. Able Archer 83 2. 1. Able Archer 83 exercise. Thus, on 2 November 1983, with the beginning of the exercise, the Soviet intelligence agencies did their best to detect the intent of preparing a nuclear attack, NATO began rehearsing the latter. Codenamed "Able Archer", the exercise involved a number of member countries of the Alliance. The exercise was a NATO exercise in Command, Control, and Communications in Nuclear War (C^3 for

Command, Control, and Communications). Based on the events leading up to the exercise and their realism, some Soviet leaders, in full accord with Soviet military doctrine, took Able Archer seriously as a cover-up of attack preparations. Indeed, a February 17 telegram to the KGB and GRU residence described such a scenario as follows: Since the state of "Orange Alert"[note 2] was introduced under conditions of utmost secrecy (under the pretext of manoeuvres, training, etc.) and at short notice and without publicising operational plans, it follows with a high degree of probability that the alert was declared to prepare a surprise RYAN in peacetime conditions. On 17 February 1983, the Operational Directorate of the KGB ordered agents to monitor several potential indicators of preparations for a nuclear attack. The order was to take under surveillance "military personnel involved in the preparation and execution of the RYAN, as well as a group of people, including maintenance and technical personnel ... who work in the control centres involved in making and executing the RYAN decision; personnel in the communication centres that ensure the operation of facilities and their interaction". Since Able Archer 83 practiced the use of nuclear weapons, the personnel mentioned in the telegram were summoned to the exercise. It also drew attention to the fact that British Prime Minister Margaret Thatcher and West German Chancellor Helmut Kohl had participated (even if not willingly) in the nuclear exercise. US President Ronald Reagan, Vice President George H.W. Bush and Secretary of Defense Caspar Weinberger were also involved in the exercise. Robert McFarlane, who took over as presidential security adviser just two weeks before the exercise, anticipating serious international problems, suggested limiting its scope. A number of civilian and military experts were withdrawn from the exercise, but even on a reduced scale, the exercise was shockingly realistic. Another indicator noted by Soviet analysts was the increase in encrypted communications between Britain and the US. Soviet intelligence agencies were informed "that the so-called NATO nuclear consultations might be one stage in the immediate preparations of the enemy RYAN". To Soviet analysts, the explosive increase in the number of talks between the US and Britain a month before Able Archer began meant that these could be consultations about the use of nuclear weapons. In reality, however, the recorded increase in communications was due to the diplomatic efforts made by Britain's Queen Elizabeth II in relation to the American invasion of Grenada on 25 October 1983 (Grenada is sovereign to the British Crown). A further shocking fact reported to the First Chief Directorate of the KGB by agents of the USSR was the ciphers and communications equipment used by NATO during the exercise. According to instructions from Moscow dated 17 February 1983: It is most important to monitor the functioning of communication networks and systems, because through them the adversary transmits information about his intentions, and mainly about the intentions to use nuclear weapons and the practical implementation of the plan. In addition, changes in communication methods and encryption facilities may themselves be indicative of the state of preparations for the RLOAD. Soviet intelligence authorities discovered that, to confirm their suspicions, NATO had indeed moved to use unique, previously never-used message encryption codes, much more sophisticated than in previous exercises, which may have been an indication of an imminent nuclear attack. During Able Archer 83, NATO forces practiced consecutive redeployments from DEFCON 5 (peacetime) to DEFCON 1 (state of war). As each readiness level was practiced sequentially, KGB informants perceived them as an actual combat alert. According to intelligence information, NATO military doctrine stated: "Operational readiness No. 1 is declared when there are clear preconditions for a military operation. When it has been clearly established that war is imminent and may break out at any moment". Having learned that US nuclear forces were put on alert for a hypothetical nuclear attack, on 8 or 9 November (Oleg Gordievsky could not recall the exact date), Moscow sent its residents an urgent cipher that demanded to identify further US plans for a pre-emptive nuclear strike. The degree of heightened alert was interpreted as a 7-10 day readiness to use nuclear weapons. These days were the peak of tension. Western historians have suggested that the leadership of the Soviet Union believed that the only chance of withstanding a NATO strike was to get ahead of it. In this regard, the CIA noted increased activity in the Baltic military district, Czechoslovakia, and the nuclear weapon carrier sites in the PRC and GDR: "all troops were raised on alert, nuclear weapons storage facilities were opened". Former CIA analyst Peter Vincent Pry went further in his reasoning, suggesting that the alert was just the tip of the iceberg. He suggested that, in accordance with Soviet military doctrine and military history, intercontinental ballistic missiles had also been put on minute alert. Soviet leaders only calmed down after the end of the Able Archer exercise on 11 November. After scrutinising the Soviet reaction to Able Archer 83, as revealed by Oleg Gordievsky, a double agent for the KGB and the British Secret Intelligence Service (MI6), President Reagan said: I cannot understand how they could believe such a thing - it takes a lot of thought. Soviet reaction. US President R. Reagan and O. Gordievsky Double Agent Oleg Gordievsky was a KGB resident in London and is the only publicly available source of information about the Soviet reaction to Able Archer 83. Oleg Kalugin and Yuri Shvets[en], who were also KGB officers in 1983, published material on Operation RYAN but made no mention of Able Archer 83. Gordievsky and other residents of the Warsaw Pact intelligence services were very skeptical that

NATO was preparing a nuclear attack. Nevertheless, the agents were ordered to report observations rather than their own conclusions, and it was this flaw in Soviet intelligence ("you just observe there, and I will draw conclusions") that led to a misunderstanding of the situation and fear of nuclear aggression by the US. Not a single Soviet politician lifted the veil of secrecy over Able Archer 83. Soviet Marshal Sergei Akhromeyev, who was Chief of the General Staff at the time, told Cold War historian Don Oberndorfer that he had never heard anything about the Able Archer 83. The lack of any official Soviet reaction to the exercise has led many historians to suggest that Able Archer 83 was not seen as an immediate threat from the US. U.S. reaction. In May 1984, Fritz W. Ermarth, CIA analyst in the Soviet Union Affairs section, wrote a report, "Results of Recent Military and Political Activity in the USSR", which stated: "We have every reason to believe that the actions of Soviet leaders and their perception are not based on a genuine fear of imminent conflict with the United States. Robert Gates, who was Deputy Director for Intelligence at the CIA in 1983. Robert Gates, as Deputy Director for Intelligence of the CIA, later to become Director of Central Intelligence, published his thoughts in his book: The bizarre and highly skewed sentiments of Soviet leaders at the time, emerging with the collapse of the USSR, make me think that it is very likely - given all the events of 1983 - that they really believed that an attack from NATO was at least possible and took some measures to increase their alertness, except for a general mobilisation. Looking back at the environment of those days, reviewing the analysis of events and now the documents, I don't think the Soviets were sounding a false alarm. They may not have believed a NATO attack in November 1983 was imminent - but they seemed to believe the situation was very dangerous. And the American intelligence services failed to appreciate the real extent of their concern]. Historians talk about the still classified report provided by Nina Stewart to the US State Department which, in confirmation of Gates's conclusions, says that the CIA information is not credible and that further analysis of the Soviet military and political leadership actually points to real fears of possible US aggression[34]. Some historians, including Beth B. Fischer in her book, The Reagan Reversal, have identified Able Archer 83 as one of the most important reasons for President Reagan to shift from confrontation to rapprochement. Most other historians, however, believe that Reagan first sought to increase US defence capabilities in order to then speak to the Soviet Union from a position of strength. The statements of Reagan and his entourage shed important light on the existing fear of atomic warfare and its consequences. On October 10, 1983, just a month before Able Archer 83, President Reagan watched the television movie "The Day After" about the city of Lorenz, Kansas, destroyed by the atomic bombing. In his diary, the president wrote that the film "put me in a depressing state". Later in October, Reagan was persuaded to attend a Pentagon briefing on nuclear war. During the first half of his presidential term, he declined to attend such meetings, believing it inappropriate to rehearse a nuclear apocalypse. Administration officials believe the meeting was a "punishment" for Reagan. Weinberger recalls, "[Reagan] had a deep abhorrence of the very idea of using nuclear weapons... The exercise made clear to everyone what fantastically terrifying events would accompany such a scenario." Reagan himself would later describe the meeting as follows: "It was very sobering to meet with Casper Weinberger and General Wessey in the White House Situation Room on our plan of action in the event of a nuclear attack." These two brief visions of nuclear war prepared Reagan for a clear understanding of the Able Archer 83 situation and its possible consequences in the event of escalation. After receiving intelligence from various sources, including Gordievsky, it became apparent that Soviet leaders were putting troops on alert. Although American officials were seriously concerned about such serious retaliatory preparations for a nuclear conflict, they refused to believe that an attack by the Soviet Union was a distinct possibility. US Secretary of State George Shultz said that "it was incredible, at least for us," that the Russians actually believed a likely American strike was possible. Reagan did not, however, share his secretary's confidence that sober heads would prevail in the Soviet leadership: We had many plans for a likely response to a nuclear attack. However, events would happen so quickly that I highly doubt that any planning or analysis would be possible in such a crisis situation... Six minutes to decide whether to react to the mark on the radar screen and launch Armageddon or not! Would anyone be able to reason soberly at such a moment? According to McFarlane, the president was "genuinely alarmed" at the disbelief that a routine NATO exercise could lead to an armed attack. According to him, a still-classified retrospective analysis of 1990 shows that the president was right to react with far more concern than some reckless members of his administration. For Andropov's Politburo, the originator of the RYAN operation, it seemed "that the US was preparing ... a surprise nuclear attack against the Soviet Union". In his memoirs, Reagan, who did not mention Able Archer 83 because he did not think it possible to publish classified information at the time, writes of his condition in 1983: Three years brought me to a surprising conclusion regarding the Russians. Many individuals at the top of the Soviet hierarchy were quite genuinely afraid of America and the Americans. Perhaps that shouldn't have surprised me, but it surprised me nonetheless... During my first term in Washington, many in our administration were convinced that the Russians were as convinced as we were of the absurdity of assuming

that the US would strike against them first. But the more I interacted with Soviet leaders and with heads of other countries who knew them well, the more I began to realize that Soviet officials perceived us not just as a political rival, but as a potential aggressor ready to use nuclear weapons in a pre-emptive strike... Well, in that case I wanted even more in a room alone with a Soviet leader and tried to convince him that we were not plotting anything against the Soviet Union and that Russians had absolutely no need to fear us. Original text[edit]. In popular culture. The exercises and the events surrounding them were the basis for the plot of the German television series Germany-83. 46)

Top Spy "Topas" The Hot Line to the Nato Council. He was the GDR's most dangerous agent, code name "Topas": From 1977 to 1989, Rainer Rupp delivered highly secret documents from Nato headquarters in Brussels to East Berlin - and thus possibly prevented a nuclear war. By Norbert F. Pötzl. 30.07.2008, 19.43. Rainer Rupp always expected that he would be exposed at some point. The three years between the end of the GDR and his arrest were "a leaden time", he later recounted, but he did not want to put his family through a life on the run. With the help of the central file of the GDR foreign intelligence service HVA (Hauptverwaltung Aufklärung), captured by the American intelligence service CIA after the fall of communism in "Operation Rosenholz", Rupp was finally unmasked: when the bearded man with glasses visited his mother for her 70th birthday near Trier on 31 July 1993, a detachment of the State Protection Department of the Federal Criminal Police Office stormed the party. On 17 November 1994, the Düsseldorf Higher Regional Court sentenced Rupp, who had lived with his wife and three children in the diplomatic quarter in Tervuren near Brussels until the end, to twelve years in prison for aggravated treason. Born in Saarlouis in 1945, Rainer Rupp's career as an agent began in 1968 with a plate of goulash soup. After a demonstration against the emergency laws, the student was sitting with fellow students in a restaurant in Mainz and couldn't pay his bill - he was 50 pfennigs short. A friendly man at the next table, who introduced himself as Kurt, donated the shortfall and invited the group to another round. He was, as it later turned out, a recruiter for the GDR secret service. In the period that followed, Rupp travelled to East Berlin again and again and was trained as a spy. He learned to operate the agent's radio and to load dead letter boxes. The student became the secret agent "Mosel" - the cover name was probably chosen because of his origins. Rupp passed an excellent exam in economics, married and quickly made a career for himself. He became a director for an English merchant bank in Brussels and successfully applied for a post at Nato in 1977. "In the inner sanctum of Nato". The HVA had, as Rupp later recounted, "not expected at all at the time and had certainly not planned for me to make it to the inner sanctum of Nato headquarters". In 1979, he was given a new code name: "Topas" - like the agent thriller by Alfred Hitchcock. At first he wondered "if they were still quite clever in East Berlin", but then he saw the positive side: If suspicion ever fell on him, he could have said, "You must have seen too many Hitchcock films". As one of the chairmen of the Current Intelligence Group in the Nato Situation Centre, he had to report regularly to ambassadors and generals on his own and the enemy's situation during Nato staff exercises or in crisis situations - in the evening, he spoke his situation lectures held during the day on tapes, and he sent the recordings encrypted with a special device from a telephone booth to East Berlin. He photographed secret documents with a micro-camera, and sometimes he transmitted messages "in the classic way with secret writing", as he said. "Mostly with the usual methods", but not always with the same ones. "You have to vary so as not to make it easier for the other side to detect you." The spectrum of his information, Rupp said in an interview, "ranged from East-West policy to the armament planning of all Nato countries down to details such as stationing, arming, etc." Rupp's most spectacular coup was probably the transmission of the NATO study MC 161, classified as "Cosmic Top Secret", a series of documents that contained the entire knowledge of the Western defence alliance about the militarily relevant facts of the Warsaw Pact. "Nuclear war prevented". In retrospect, Rupp believes that his espionage activities contributed to the avoidance of a nuclear war - a thesis that is not entirely dismissed by American intelligence experts either. During the years of the Cold War, the Soviet Union and its allies were firmly convinced that the West was planning a nuclear missile attack. Soviet war hysteria reached its peak in the autumn of 1983 with the NATO manoeuvre "Able Archer", in which a coordinated release of nuclear weapons was simulated. At the time, the Kremlin put its own strategic nuclear forces on alert; an oversight could have triggered a catastrophe. GDR clients would have "reassured the recipients in Moscow" with the help of the information they had obtained and thus "prevented a nuclear war", says Rupp, referring to a US strategist. Although an HVA defector, former Colonel Heinz Busch, gave the Bundesnachrichtendienst (BND) tips about a top source in Nato as early as 1990, it took more than three years before Rupp was unmasked. The BND informant, who worked in the evaluation department of the HVA, did not know any scouts in the West himself. On the basis of the materials supplied, however, the ex-colonel was able to narrow down quite precisely where "Topas" had to be in Nato - but the investigators still did not find anything. Fight continued. Rupp felt flattered when the representative

of the Federal Prosecutor's Office ironically called him the "permanent representative of the Warsaw Pact at NATO" during the trial before the Düsseldorf Higher Regional Court. The presiding judge, Klaus Wagner, made a sober judgement: "Topas" had provided the East with a "comprehensive overview" above all of the Western alliance's force planning. In an emergency, this could have been "devastating and decisive for war" for the Federal Republic and Nato, Wagner said. With its verdict - 12 years imprisonment - the State Security Senate remained below the request of the Federal Prosecutor's Office, which had demanded 15 years. Already from the Saarbrücken prison where Rupp was imprisoned, the ex-spy worked regularly as a writer for the daily newspaper "Junge Welt", which in the GDR was the central organ of the SED youth FDJ. He continues his anti-imperialist struggle there as a commentator to this day. In July 2000, Rupp was released from prison on parole. At the end of the nineties, while still on parole, Rupp served for a time as an adviser on foreign and security policy to the PDS parliamentary group in the Bundestag. However, he left the PDS in 2003 because, according to Rupp, it had become "a bourgeois party from the bottom up". 55)

Dear Mr Schierhorn, Mr Rainer Rupp sent me your question on "Able Archer" by e-mail and asked me to dig into my memories. In the time before 1990, I was in a responsible position in the HVA in Department XII, which was responsible for the operational processing of NATO. I knew all the information from our source "Topas" (R. Rupp). Now 38 years have passed since the events of 1983 and the knowledge is no longer quite fresh. Nevertheless, a few thoughts: As far as I remember, in 1983, like every year, the exercise "Able Archer" was used to train the release of the use of A-weapons by the USA / NATO. There were some changes in the preparation, but especially during the execution of the exercise. Radio silence was ordered, medium-range missiles were involved, for the first time the heads of state of the NATO countries were involved in the action, etc. The Soviet services wrongly assumed that the USA had declared the highest alert level. The Soviet leadership's agitation had a history. Since about 1980/81, due to the aggressive policy of the USA (Reagan), it was assumed that NATO was preparing for a war against the Warsaw Treaty. Therefore, the KGB and GRU residencies were oriented accordingly. So were the friendly intelligence services. The closer the exercise came in 1983, the more nervous Moscow reacted. Especially when a new coding system was introduced before and during the exercise, the anxiety increased. The defector Gordievsky, as a KGB resident in London, was of course aware of the activities of his service. Our IM network in the area of operations was instructed according to the KGB's demands. Before and from the beginning of the manoeuvre, we received information almost daily, mainly in the form of NATO documents, and immediately made them available to the KGB. In the beginning we had the impression that Moscow did not really want to believe our statement that no war would take place. If there are any protocols or similar documents at all on the situation at that time and the decisions that resulted from it, then it is most likely to be with the successor to the KGB, the FSB. The general decisions were taken by the General Secretary of the CPSU. Whether there were protocols on this is beyond my knowledge. Presumably, only the members of the Politburo who were concerned with security were involved in the situation at the time. The Supreme Soviet was in no way involved. The army leaderships of the GDR and CSSR, on whose territory the Soviet armed forces had been placed on high alert, were not informed of the details either. Nor was it, as was occasionally claimed, a general reaction of the Soviet armed forces to the NATO manoeuvre, but an activity that went far beyond that. The strategic forces of the Soviet Union and those stationed in the GDR and CSSR were put on high alert. If it is now claimed that Gordievsky contributed to the US forces moderating the exercise on the basis of his information, this is unlikely to be true. For according to our knowledge at the time, "Able Archer" was realised to its full extent. For reasons of source protection, British intelligence had not informed the USA comprehensively. In my view, Gordievsky could not have had information from NATO either; the British secret service certainly did not treat its source so generously. Rainer Rupp, with his extraordinarily extensive supply of documents and other information on the exercise, undoubtedly made a contribution to de-escalation on the Soviet side and thus ultimately to the preservation of peace. In the course of our activities, we naturally sensed that the KGB was moving away from its scepticism and acknowledging the truthfulness of our information. Finally, I would like to point out that many years later the US intelligence services declared that they had not been aware of the dangerousness of the situation at that time. They were not aware of measures taken by the Soviet side. Directly or indirectly, there are statements on this by the high-ranking CIA employees Milton Bearden (former head of the CIA Soviet Union Division), Benjamin Fischer (chief historian of the CIA) and the scientist Prof. Vojtech Mastny. Dear Mr Schierhorn, my memories are certainly incomplete. But perhaps they will help you in your research. Best regards. 71)

Section 3: Military Espionage. Strategic Military Reconnaissance. By Karl Rehbaum, Head of Department XII of the HV A. Born 1937 in Schraplau (Mansfelder Seekreis); 8th grade education; learned agricultural trade; 1955 MfS, 1955-1957 Potsdam-Eiche Law School; 1957-1965 Eisleben District Office, First Lieutenant, Head of the

Mansfeld Combine Operative Group. 1965-1990 Officer, head of unit, deputy head of department III/B or department XII of HV A; 1977 graduated from the Institute for International Relations of the Academy for State and Law Potsdam-Babelsberg, Diplom-Staatswissenschaftler; from January to March 1990 head of department XII/HV A; colonel. Military reconnaissance is the collection and evaluation of all information on the plans, intentions, forces, strength, material resources, etc. of the enemy. Military reconnaissance has existed ever since there were armies and wars. It already existed in antiquity, at the time of the Persian Wars, and developed with the art of war, which, as is well known, is determined by the character of the respective social formation. Military intelligence is very diverse. We distinguish between strategic, operational and tactical reconnaissance, reconnaissance of the branches of arms, radio-electronic and satellite reconnaissance. We know from intelligence practice about working with sources in enemy objects, staffs, government offices, etc., the actual and only prerequisite for strategic military reconnaissance. But we also know the practice of agency observation of military objects, manoeuvre areas, marching routes and other transport routes, even searching rubbish dumps in military locations, etc. A practice especially of the BND and the CIA. Irresponsible towards recruited agents. For such operations on a considerable scale inevitably led to unmasking, arrest, conviction or surrender. An unparalleled disproportion of effort and benefit, also morally unjustifiable. Finally, I would like to mention the provocative reconnaissance activities of the military liaison missions. Daredevil and at the same time, in the majority of cases, pointless and fruitless undertakings. This was certainly also due to the situation at the time. Work from legal positions, as intensively pursued by the majority of intelligence services, should also be mentioned here, although not very effective in terms of fruitful military reconnaissance, not even by means of the military attaché apparatus. Independent of the actual military reconnaissance of the NVA, from the mid-1950s the HV A was given the task of carrying out and increasingly pushing military reconnaissance in addition to political and scientific-technical reconnaissance. The main reasons for this were, on the one hand, the formation of NATO in 1949 and its systematic development and expansion as an instrument of the Cold War under the leadership of the USA. On the other hand, the remilitarisation of the FRG and its active inclusion in NATO. It must be emphasised here that with the formation of structural elements of military reconnaissance in the HV A, the orientation was towards strategic military reconnaissance from the very beginning. A very wise decision, as it turned out. Initially, one unit was transformed into a department for the operational processing of the Federal Ministry of Defence and all subordinate staffs and offices. Since HA II of the HV A was already responsible for processing the armed forces and agencies of the Western Allies stationed in the FRG, the processing of NATO and US forces in the FRG and West Berlin was concentrated in one unit each in Department III. In 1970, the departments XI (USA) and XII (NATO and EC) were created from these units. While Department XII, along with Department IV, was almost exclusively concerned with military reconnaissance and political and economic projects and activities affecting it, only a few units in Department XI were concerned with this. The departments and units in charge of strategic military reconnaissance worked from the beginning and almost exclusively from illegal positions, had and wanted no legally covered practice. Cooperation with "legals" was kept to a mandatory minimum. The HV A units concerned with strategic military reconnaissance were tasked with penetrating the military-political and military leadership of the Federal Republic, the US armed forces and political institutions of the USA in Europe and NATO. These were primarily the Federal Ministry of Defence and its subordinate central offices and high staffs, the Supreme Command of the US Armed Forces in Europe, the staffs of the US Vth and VII Corps, the 17th Air Fleet and the NATO Supreme Command Europe, the NATO General Secretariat, including the Military Committee with IMS and AFCENT. The task was to rule out any political and military surprises, to explore the adversary's plans and intentions in the field of military policy, force and armament development, strategic conceptions, nuclear policy, capacity for surprising actions, etc. Preventing war through the greatest possible transparency was the top priority of HV A military intelligence. This was an undoubtedly important contribution to guaranteeing the approximate military-strategic balance between NATO and the Warsaw Treaty that existed from about the second half of the 1960s. The staff of the departments in charge of military reconnaissance was relatively small. Department XII, for example, had only one per cent of the staff of HV A at its disposal. However, this was not an obstacle to highly effective reconnaissance. At this point, I would like to make a few remarks on the methodical procedure and the securing of personnel and material. Here, too, we did not reinvent the bicycle in terms of intelligence. In order to gain positions in military objects/staffs, there were essentially two ways: - the infiltration of existing IM - the elicitation of suitable persons employed in the object. The prerequisite was the exact knowledge/analysis of the political, personnel and administrative regime of the target object. Suitable IM were recruited using the generally known methods of the intelligence services. Recruitment bases were mainly: - political-ideological agreement - foreign flag - material interest - compromising material. Sometimes also the combination of several methods. Naturally, the most effective basis for cooperation was the political-ideological views that were essentially

in agreement. In order to be able to create source positions in the well-secured objects/staffs, a whole series of preconditions were required. I would like to mention only a few essential ones. The IM to be infiltrated had to have extraordinarily high qualifications (professional, language skills), fulfil certain criteria (no relatives in the East, no trips there, no ascertainable left-wing activities, etc.). Pre-employment security checks were often lengthy and thorough. Impatience was out of place; it sometimes took many years from recruitment to employment in the property. A decidedly perspective-oriented approach was a prerequisite for success. In this respect, we were also well advised to ensure long-term specialisation among the staff at the head office. It is in the nature of things that a promotion was completely different. Here, a very thorough clarification of the person was the prerequisite for success. Above all, motives and a possible basis for cooperation had to be worked out. Finally, such projects placed high demands on the quality of the advertiser. The verification of reliability was a challenge for the staff involved. In addition to the sources working with a high degree of effectiveness, work was done constantly and systematically to recruit new positions. Thus, it would only have been a matter of time that we would have succeeded in positioning more sources in SHAPE and General Secretariat and elsewhere. The conditions were there. In the case of military and above all international objects, we had to take into account various peculiarities. For example, we had to distinguish between so-called local forces and delegates (temporarily transferred) from member countries or units. In the case of delegated persons, we were confronted from time to time with transfers of the same, which could also take place to informatively uninteresting positions. So it took special operational activities to get from a good source position to a similarly useful one. Another peculiarity was that the degree of the position attained was not always decisive for the effectiveness of information gathering. Middle positions with a high workload, preferably in so-called cross-sectional departments, were to be preferred. The methods of practical realisation of intelligence work were essentially little different from those of other intelligence services. Nevertheless, due to the extraordinary effectiveness of our sources and the volume of documents obtained, we were also obliged to be innovative. For the important sources, for example, there were several personal connections to headquarters. In addition to the obligatory instructor connection, there was a courier and a liaison office equipped with operational technology, as well as a trained radio operator in case of tension and emergency. The impersonal connection to headquarters and vice versa was also guaranteed at all times. The operational equipment was of high quality and had excellent usability characteristics. It should also be emphasised that in all our efforts to obtain a high volume of information, the safety of our sources and other IM had the highest priority. We certainly took risks, but the operational risk always had to remain acceptable. We placed a high value on thorough consultation with the sources about the possibilities of obtaining documents and other information, and on this basis relied on the initiative of our sources. After 1990, Western politicians, lawyers, military officers, historians, and, of course, clueless chatterers, often on behalf of secret services, claimed with supposed expertise that the HV A was exaggerating its contribution to maintaining and securing peace, to guaranteeing the military-strategic balance, to disarmament and arms limitation, thus putting itself in the right light, and that in reality this work was not of such great importance. So we would only be glossing over it, wanting to pretend to be important. The fact that the latter does not correspond to the truth has been proven many times over, and can even be read in the files of the Higher Regional Courts. The following examples prove the correctness of our presentation: 1. the contradictory nature of the policy and strategy of the NATO states demanded our utmost attention. In May 1978, at its summit meeting in Washington, NATO decided on a Long Term Defence Programme (LTDP) for a period of 15 years - i.e. until 1993. In the process, it was and is repeatedly claimed that NATO allegedly only rearmed. So why an LTDP at a time when disarmament negotiations were on the agenda? In the 1970s, the political components gained in importance. Let us mention the Conference on Security and Cooperation in Europe (CSCE), the Mutual Military Reduction Treaty (MBFR), the Strategic Arms Limitations Treaty (SALT I and II), the Basic Treaty between the GDR and the FRG, and other treaties with states of the Warsaw Treaty. Our observation: Despite the disarmament negotiations, the improved political coexistence, the military situation hardly eased. If you like, a new round of the arms race began at the end of the 1970s and with it a new phase of confrontation. To illustrate, the ten priorities of the LTDP were: - Combat power and operational readiness - Bringing in reinforcements - Increasing mobilisation capabilities - Expanding naval forces - Strengthening air defences - Improving command and intelligence - Perfecting radio-electronic warfare - Coordinating arms cooperation - Increasing rear security - Modernising nuclear weapons. Incidentally, an East-West study was adopted at the same NATO summit. A document which analyses long-term trends in East-West relations and reformulates principles of NATO's policy towards the East. The NATO decision of December 1979 on the deployment of nuclear medium-range systems (Pershing II and Cruise Missiles) did not contribute to détente either and should always be seen in the context of other NATO activities. Ultimately, it was about changing the balance of power. 2 NATO force planning was, of course, the focus of our interest. The force planning process dealt

with planning periods of five years and consisted of the following parts: - Ministerial Directive. The Defence Ministers' directive for the next two years. A summary of political, military and economic considerations. - Member country force objectives, i.e. country chapters in detail for each NATO member. - General Force Objectives Report: a summary of the main considerations of the country chapters, economic data and force proposals for the next six years. - Annual Defence Review for each country. Answers on the current state of the armed forces, concentrated presentation of the elements of the national plans, military assessment by the NATO Supreme Commanders. An analysis of defence policy and defence spending. Statistical annexes. - Summary defence planning report. All this was concentrated in the Defence Planning Committee (DPC). Allow me to say that we did not have any gaps in the military planning and as-is status of the armed forces of all NATO countries. The strengths and weaknesses of NATO forces could be assessed in real terms and very accurately. The fact is that in the two decades before the end of the bloc confrontation, NATO had significantly increased the combat power of its armed forces. 3. the military intelligence of the HV A was also aware of NATO's knowledge of the Warsaw Treaty forces, its strategic conception, etc.. In NATO, a document on this subject was regularly updated in the IMS, document MC 161. A document of around 500 sheets. It contains NATO's reconnaissance results and thus NATO's knowledge of the Warsaw Treaty's military potential, political and strategic considerations, early warning system, command structure, equipment, operational concepts, resources, etc.. From these intelligence findings, it was apparent to NATO that the Warsaw Treaty had no intentions to attack. It was also recognisable where NATO had made misjudgements about the weaknesses of the Warsaw Treaty forces. These misjudgements could of course be used to deceive the enemy. On the other hand, actual weaknesses could be eliminated covertly. 4 Some thoughts on the critical year 1983 and the Able Archer exercise. In no period of the Cold War was the threat of war greater than in the early 1980s. As is well known, after the NATO Double Decision, the Cold War intensified. There were clear threatening gestures by NATO by means of navy and air force. Psychological warfare was intensified. Reagan announced the start of SDI in the spring of '83. The USA increased spending on biological weapons sixfold. In November '83, the Europe-wide NATO manoeuvre "Able Archer" took place. It was characterised by a high degree of secrecy and realism and was seen by the Soviet leadership as a possible military aggression. Among other things, the complete process of nuclear weapons release was practised. For this reason, the Eastern armed forces were also put on alert. This dangerous situation has gone down in history as RYAN. The fact is that the KGB and CIA had considerable information gaps. KGB Colonel Oleg Gordievsky, recruited by MI 6, had informed about the dangerousness of the situation, but the British did not pass this information to the CIA. Our information sufficiently proved that NATO did not have sufficient guarantees to escalate the exercise to an emergency, i.e. to war with the Warsaw Treaty. These findings of ours met with scepticism in Moscow and were only very slowly convinced, if at all. I will simply add here: we knew the complete NATO alert plan and also partly the so-called crisis manuals (the Indicator and Warning System). 5 A final example: Exercises of the "Wintex/Cimex" series. This command staff exercise took place every two years (in odd years). Much has been written about the scenarios. WINTEX/CIMAX was NATO's largest staff exercise at the highest command level. The specifications, procedures and fundamentals of the exercises were extraordinarily realistic. There was no exercise where the first use of nuclear weapons did not occur in the scenario. The use of nuclear weapons became more extensive from exercise to exercise. Although, overall, the intelligence on NATO's operational planning and nuclear targeting was our weak point, very precise conclusions could be drawn from the exercises, with the inclusion of other documents. These conclusions had a high probability. One very important finding was that there were no aggressive strategic plans on either side, but that there were very different operational concepts and strategic considerations that were misunderstood or made into such. In connection with the strategic concepts and the balance of power between NATO and the Warsaw Treaty, there was permanently, although internally the approximate military-strategic balance was seen as reality by leading military officers, above all in the political argumentation, the assertion of the threat from the East. We called this a threat lie. On this problem, a competent Western voice. The former state secretary in the Federal Ministry of Defence, Andreas von Bülow, made the following statement in the 1980s: - NATO is much stronger in conventional defence than according to its self-representation. - NATO has more soldiers under arms than the Warsaw Treaty countries. - NATO outnumbers the Warsaw Treaty countries 2:1 in larger combat ships, 7:1 in aircraft carriers, 4:1 in naval infantry. - The view that NATO is inferior in terms of the number of divisions and manpower is usually arrived at by deliberately omitting the French and Spanish formations. - The balance of power in short and medium range nuclear tactical weapons, as drawn by the West, needs to be supplemented. (Frankfurter Rundschau, 13/14 September 1985) This refuted the main argument of the proponents of the threat legend. Of course, the Eastern side was not immune to the propagation of threat legends either. It was therefore based on reciprocity. This also became clear in connection with the particularly critical situation at the beginning of the 1980s. The examples

of the effectiveness of the HV A's military reconnaissance could be considerably extended. Even historians working in the Birthler authority have paid tribute to us. Let us leave it at that. I would like to take this opportunity to address the views of Western intelligence experts and historians on the results and effectiveness of the HV A's military reconnaissance. There have been misjudgements, deliberate misinterpretations and considerable ignorance of the former significance of the information provided by the Warsaw Treaty States' intelligence services by Western intelligence services up to recent times. Let me quote Colonel Zöller of the counterintelligence unit of the MAD on this assertion: "The Federal Ministry of Defence came [...] to the conclusion that the political leadership bodies of the Soviet Union and Warsaw Pact countries had been deliberately deceived about the potential and intentions of NATO. Contrary to intelligence-acquired knowledge, military potential and intentions were greatly exaggerated. In the GDR and also within the NVA, all information about NATO's armed forces and operational planning was concealed and suppressed, which had to make the defensive orientation of the alliance conspicuous or which could have called into question its own offensive planning." Elsewhere, Colonel Zöller states: "To what extent would NATO have been weakened in a military confrontation with the Warsaw Pact countries by the information obtained by the GDR intelligence services? Of course, this question cannot be answered with certainty, since the intelligence results of the Soviet Union and Warsaw Pact countries are not known. After all, they were familiar with the General Defence Plans and knew of the lack of logistical staying power. Nevertheless, it must be assumed that the Warsaw Pact, despite its extensive knowledge of NATO's capabilities and intentions, did not make any significant changes in military planning." To this it should be noted: 1. The information (NATO documents) was neutralised but not selected. They were passed on in full - even to Moscow. 2. I am not aware of any example of manipulation. 3. NATO had also registered a change in Warsaw Treaty strategy in the mid-1980s (see MC 161). 4. the information we obtained would have significantly influenced possible armed conflicts between NATO and the Warsaw Treaty in favour of the Warsaw Treaty. The coordinator of the Parallel History Project (PHP) on NATO and the Warsaw Pact, Prof. Vojtech Mastny, in an article dealing with the danger situation at the time of the Able Archer exercise ("Did East German Spies Prevent A Nuclear War?") stated: "What inadvertently helped stabilise relations was not what the East German spies were able to find out about NATO, but more what they could not find because it did not exist. NATO defence doctrine and strategy was an open book to them; but for evidence of an imminent attack by the enemy, they searched in vain. Heinz Busch, who was responsible for analysing and passing on their reports to Stasi headquarters, testifies incessantly in his unpublished memoirs that 'at no time did the highest organs of the Warsaw Pact receive clear evidence that would have proved conclusively that NATO doctrine and strategy had been changed'." Apart from the fact that this statement by Colonel Dr. Busch, who defected to the BND, is only true for a very limited period of time, NATO was constantly working on changing and thus qualifying NATO doctrine and strategy. Prof. Mastny's assertion is therefore more than a very simplified view of the situation at the time and is not entirely correct. As is well known, we had the mandate to exclude any political and military surprise. In the extremely tense situation in 1983, with the supposed possibility of a devastating nuclear war, we had a different position from the KGB from the very beginning of the escalation of the situation, based on information from our sources. We did not have to look for changes in NATO defence doctrine and strategy at that time (Prof. Mastny), because we knew that there were no such changes. A third example: The well-known journalist Dr. Schlomann, who is always playing the intelligence expert, published an article in the monthly magazine Schweizer Soldat (Swiss Soldier, January 2007) on alleged Soviet blitzkrieg plans. Western secret services would have been well informed about this during the Cold War. Quote: "In view of the many documents found, it is known that the Warsaw Pact troops wanted to be at the Channel within weeks in the form of a blitzkrieg - as once under Hitler." In addition, a map with an alleged war scenario from 1949 is published (without citing the source). However, the available forces of the Soviet Union and the GDR are presented according to figures from the 1980s. Schlomann claims that this blitzkrieg would not have spared Switzerland either. Now, one could overlook such unqualified publications if they were not part of a psychological warfare that has continued up to the present time. Dr Schlomann is a specialist in this field. Here, untruths are simply being spread. The only interesting thing is the admission that the Swiss intelligence service was always well and quickly informed by Western intelligence services. Not only, but especially, the results of the strategic military reconnaissance of the HV A and its allied intelligence services led to the realisation that NATO and the Warsaw Treaty could only have waged a war in Europe on pain of their own destruction, their demise. The material conditions for such a war were abundant. Paradoxical as it may sound, the military-strategic balance, or balance of terror, that existed at a high level was a kind of stability factor between East and West. However, both sides were constantly trying to change the balance of power in their favour. Together with the NVA's Reconnaissance Department, we were able to cover the majority of the military information needs in documentary form from the 1960s onwards, increasingly in terms of

quality and quantity. And in the areas where this was not possible (nuclear target planning and operational plans), we were able to determine the given possibilities/intentions/plans of the Western side with a very high degree of probability through qualified analytical work. We had very extensive information based on secret documents. As a rule, these were highly topical, available to us at the same time as the NATO and Federal Defence Ministry executives, often even earlier. Both the political and military leaders of the GDR and the Warsaw Treaty were comprehensively informed about the situation in NATO, its intentions and plans, its personnel and technical capabilities. There was thus the real possibility, and here especially in the military-political and military field, to draw necessary conclusions for one's own policy and for military-strategic considerations. Unambiguously, the contribution of strategic military intelligence was the basis for an accurate assessment of forces, for transparency, for proposals for disarmament and arms limitation. To put it in a nutshell: a contribution to the preservation of peace in Europe. That this corresponded to reality and was not an overestimation of one's own capabilities is shown by the development after the Warsaw Treaty ceased to exist. Our fundamental view on the aggressiveness of imperialism is continuously confirmed. NATO has a New Strategic Concept. The world power aspirations of the USA and the EU, especially in the struggle for spheres of influence and sources of raw materials, are the main content of its policy. Serious scientists claim that the 3rd World War has long since begun. In the end, the question arises, do secret services still have a justification or has military reconnaissance come to an end at all? Of course, military reconnaissance has not ceased to exist. As long as wars are conceived and waged by states such as the USA or the EU, as long as war is seen as a means of politics, and as long as unimaginable armament builds up for this purpose, as long as international law is trampled underfoot, there must be intelligence gathering, above all by those states that are directly and indirectly threatened. And here, human sources in enemy centres have absolute priority. 77)

NATO reconnaissance. By Rainer Rupp, publicist. Born 1945 in Saarlouis; 1959 primary school in Schwalbach; grammar school in Saarlouis, Trier and Saarburg, 1966 A-levels, from 1966 studied economics at the University of Mainz, 1969/70 guest student at the Free University of Brussels, from 1970 studied at the University of Bonn, 1974 graduate economist, 1974/75 worked for the Internat. Realtions Consulting Company (IRELCO) in Brussels; 1976/77 Director of the Companie Europeene pur le Developpement Industriel et Finanzier (CEDIF Commercial Bank) in Brussels; 1977-1993 worked in the Economic Directorate of the Political Department of the NATO General Secretariat in Brussels. 1968-1979 IM "Mosel", 1979-1990 IM "Topas"; 1977-1989 source in NATO; 1993 imprisonment; 1994 sentenced to twelve years imprisonment by Düsseldorf Higher Regional Court; released 2000; journalist working for various newspapers. Publications: Policy fort he Next Decade. Boston 1984; Politics and Security in the southern Region of the Atlantic Alliance. Houndsmill 1988; The Future of the European Alliance Systems. The fact that this conference, originally planned for Berlin, had to be cancelled due to massive political pressure from reactionary forces and is now taking place here in Odense, Denmark, shows the level at which, 17 years after the end of the Cold War, the discussion about the historical realities of that time is being conducted in Germany. This level is dictated by an unholy alliance of professional, so-called victims' associations, the so-called Birthler Authority and the political parties and business associations that support them. They determine the "politically correct" view of the GDR and its secret services. Detached from the historical context, they determine ex-cathedra how the GDR and its secret services are to be evaluated. What they all have in common is their inveterate anti-communism. GDR = unjust state = socialism = Stasi = terror! Burning this formula into people's heads is the goal of the ruling class in uniformly capitalist Germany, where the rich get richer and the poor get poorer and more numerous. This formula is to hammer into people's heads that there is no alternative to capitalism and neoliberal globalisation and that the working masses are better off submitting to the "natural laws" of the free market instead of indulging in socialist illusions. In order to get this formula into people's heads, the largely mediatised conformity already shows totalitarian features. It was this totalitarian spirit, coupled with intolerance and arrogance, that finally forced the University of Odense to cancel the conference originally planned in Berlin and move it to Denmark. It was insulting how the German side suggested to the University of Odense that it was incapable of scientifically dealing with the project at hand. At the same time, the claim was implicitly made that only under the auspices of the Birthler authority is a scientific treatment of the GDR secret services possible at all. This is understandable, because it is the only way to guarantee that "the political results desired from above" will emerge, namely the delegitimisation of the GDR and its secret services. In no serious political-scientific discourse would anyone think of questioning the foreign intelligence service or the counterintelligence of a sovereign state, especially not under the conditions of the Cold War. And if someone did and, for example, fundamentally doubted the raison d'être of the British, Danish, Spanish or Polish secret services, their common sense would rightly be questioned. Yet this is exactly what has been happening for 17 years in reunified Germany with the secret

services of the GDR. In the process, the accusations are becoming ever more grotesque; worse than in the coldest times of the Cold War. Of all people, the most reactionary circles in Germany that made wars from German soil possible again, of all people, these circles have made it their political goal to delegitimise, ridicule and criminalise the GDR's foreign intelligence service, the HV A. The fact that they have so far quite succeeded in doing so is a sign that they are not satisfied. The fact that they have not quite succeeded so far also has to do with the fact that the HV A is accorded respect even by the former enemy, not only because of its extraordinary efficiency and great professionalism, but also because of its success in securing peace during the most dangerous times of the Cold War. An example of this is Milton Bearden, who was, among other things, the CIA's station chief in Germany and later advanced to become the head of the Soviet and Eastern European Division at CIA headquarters. On the occasion of the International Spy Conference on 7 May 2004 in Berlin, Bearden said in his lecture that during the Cold War, dangerous "miscalculations" and "serious miscalculations" occurred time and again in dangerous situations on the part of both the USA and the Soviet Union. Literally, he said, "Indeed, the question is appropriate here how much the general level of understanding (of mutual knowledge) that kept the Cold War cold was further promoted by the intelligence gathered by the HV A [...]." He concluded by also conceding to the HV A that it had not only served the GDR well, "but also the cause of peace". "Did East German Spies Prevent A Nuclear War?" - "Did East German Spies Prevent a Nuclear War?" This is the title of a study by US strategist Vojtech Mastny in which he examines the highly dangerous RYAN crisis in connection with the US-led, provocative NATO manoeuvre "Able Archer" in 1983. He refers to the documentation published on the websites of the Parallel History Project (PHP) on the 20th anniversary of this manoeuvre, which testify to an "incredible penetration of NATO by agents of the Warsaw Treaty", but especially of the GDR. Professor Mastny is a historian and foreign policy expert who has taught at renowned US universities such as Columbia and the Johns Hopkins School of Advanced International Studies. And as a professor of strategy at the US Naval War College, he is certainly no leftist or even friend of the GDR. On the contrary, the fact that he received the first "Manfred Woerner Scholarship" for a study project speaks for itself. Of the almost 30 East-West crises during the Cold War, the Cuban Missile Crisis is commonly seen as the most dangerous confrontation between the blocs. This is easy to understand, as the crisis was played out in the open and the whole of humanity was anxious along with it. However, not only was the Ryan/Able-Archer crisis completely hidden from the public eye, but most politicians and military leaders did not learn about it either. Nevertheless, in no other East-West crisis "has the world come as close to nuclear war as in the 'Able Archer' incident", writes Mastny. And he is not alone in this assessment, neither in the West nor in the East. The former head of the KGB's I. Main Administration (Foreign Intelligence) at the time, Vladimir Alexandrovich Kryuchkov, also made this clear last year when he was interviewed on the subject of RYAN for the German documentary film "Agents in the Cold War". This film, which also concludes that HV A scouts may have "prevented the Third World War", was recently awarded the bronze prize in the TV documentary category at the renowned Eastern European Film Festival. On German television, however, it was shown very late, shortly before midnight, when there are hardly any viewers left. RYAN is the Russian acronym for Operation RAKETNO-YADERNOYE NAPADENIE, which means "nuclear missile attack", which the Soviet leadership expected at any moment from 1981 - one year after US President Ronald Reagan and his ice-cold warriors took office. Moscow had good reasons for this, because under Reagan the policy of détente was declared dead. At the same time, aggressive measures such as the military invasion of the independent island republic of Grenada poisoned international relations. A gigantic rearmament was initiated, including SDI (Star Wars), with the aim of "arming the Soviet Union to death" and thus tipping the strategic balance in Washington's favour. At the same time, the neoconservatives who came to power in Washington with Reagan, such as Richard Perle, then "Assistant Secretary of Defence for Defence Planning and Policy", boasted of ready-made plans for "limited nuclear war" that was "winnable and waged" for the USA. Worse still, within the framework of the so-called "nuclear modernisation" of NATO, the warmongers in Washington had set the course to create for themselves, with the help of the stationing of Pershing II medium-range missiles in Europe, an excellent first-strike potential for the surprise nuclear strike on the civilian and military command, control and communications centres of the Soviet Union. It should be recalled here that not only the Soviets were highly alarmed by these developments, but also the European public. In West Germany in particular, hundreds of thousands took to the streets at the time out of concern about an impending war that would have destroyed not only our country but all of Europe. In the West, the Greens, who had only been founded as a party in 1979, mobilised against NATO policy. In April 1981, they filed a criminal complaint against the German government with the Federal Prosecutor General in Karlsruhe, stating, among other things: "Since the new US weapons [...] possess exclusively and unequivocally the characteristics of first-strike weapons which break the hitherto prevailing nuclear balance, the German Federal Government is guilty of preparing a war of aggression by its approval of this

deployment decision." - It is a sad irony of history that years later, in March 1999, it was the Greens, of all people, who, as coalition partners of the SPD in the Red-Green federal government, for the first time since the downfall of the Nazis in 1945, again gave the order to participate in a war of aggression against Yugoslavia in violation of international law, without a UN mandate. Within the framework of Operation RYAN, which started in April 1981 as the largest joint operation of the civilian KGB and the military GRU in peacetime, an attempt was made to gather as much information as possible about NATO's alarm and war planning and its preparations for attack, in order to be able to react in time on this basis in case of emergency. However, it was already assumed in Moscow that, due to the US nuclear pre-emptive and pre-emptive strike capacities stationed in Europe, one had only 5 to 8 minutes warning or reaction time. Even a misunderstanding could threaten nuclear catastrophe, for the Soviets were not prepared to simply absorb the threat of an American first strike without first retaliating in kind. KGB Instruction No. 6282/PR/52 of 17 February 1981 therefore stated:

"The fact that the enemy keeps a considerable part of its strategic forces in heightened combat readiness [...] makes it necessary to detect indications of preparation for a nuclear missile attack at a very early stage, even before the order to use nuclear weapons has been given to the troops. Therefore, Soviet intelligence branches abroad were instructed to watch for the slightest hint of an imminent nuclear attack." Thus, on 17 February 1983, KGB residents received Directive No. 374/PR/52, which listed twenty indicators of an imminent start of war, including: "Keep under constant surveillance the main government institutions, headquarters and other installations involved in the preparation of a nuclear missile attack. [...] Determine the 'normal activity level' of these targets during and outside working hours, e.g. the external characteristics of their daily activities under normal conditions (differences in the number of cars parked there during the day and in the evening, the number of lighted rooms during and after working hours, and activities around these targets on non-working days). Find out, on the basis of the established 'normal levels of activity', any change in these characteristics during special conferences in a crisis situation." The culmination of Soviet war anxiety came in the autumn of 1983 with the NATO Able Archer exercise. And at the very time when Soviet reconnaissance was on high alert for signs of a nuclear first strike, NATO, under US leadership, began a manoeuvre in which such a first strike was practised under very realistic conditions. Already in the run-up to the manoeuvre, it became apparent that "Able Archer" would follow the scenario which, in Moscow's view, was the preparatory phase for a nuclear first strike. Therefore, Moscow feared that under the cover of the regularly recurring routine manoeuvre "Able Archer", the surprise nuclear attack was to be presented. According to the Soviet leadership, these fears were also reinforced by unusual innovations in "Able Archer '83". The ten-day NATO manoeuvre began on 2 November 1983 and spanned the whole of Western Europe. The purpose of the exercise was to simulate the coordinated release of nuclear weapons and their deployment. This was routine. What was alarming, however, were the new elements of the exercise. For example, medium-range nuclear weapons were brought into the field, and at the same time absolute radio silence was ordered. In addition, for the first time, a new coding format was used for messaging. In addition, the heads of state of the NATO member countries were involved in the exercise for the first time, which led to the conclusion in Moscow that the exercise had an unusually high political significance. Last but not least, the Soviets assumed - wrongly - that the USA had declared its highest alert level DEFCON 1, which stands for an imminent attack. In fact, however, DEFCON 1 was only simulated during Able Archer. The Soviet leadership was obviously convinced of the imminent US attack and they had put their own strategic nuclear forces on alert and also alerted their air forces in East Germany and Poland. The slightest oversight, and disaster would have been unstoppable. It was certainly "no exaggeration" that the HV A had "covered NATO quite well" during the Cold War. Ex-CIA department head Milton Bearden had noted this in his speech in Berlin mentioned earlier. The aforementioned Professor Mastny also writes that "East German spies even got hold of NATO's best-kept secrets" in order to pass them on to the Soviet Union. In this context, he then poses the "exciting question" of whether GDR spies might have "reassured the recipients in Moscow" with the help of the information they obtained and in this way "prevented a nuclear war". Under the code name Topas, the author of these lines sat in the Political Department at NATO headquarters in Brussels from 1977 to 1993. His duties included chairing the CIG (Current Intelligence Group) in the NATO Situation Centre. The Situation Centre was the "innermost sanctum", the "holy of holies", where all the nerve cords of NATO converged. At normal times, when the CIG started work in the early morning, its members would sift through the messages that had come in from the intelligence services of NATO member countries over the previous 24 hours. Under my chairmanship, which I held on a weekly rotational basis, a summary of key developments and intelligence was then prepared and sent to the relevant NATO services and to all member countries. During NATO staff exercises such as WINTEX/CIMEX or in crisis situations, the CIG was permanently manned, as the group represented NATO's nerve centre. In such cases, its chairman had the task of regularly briefing the NATO DPC (Defence Planning Council), which normally met at the highest level, on its own and the

enemy situation. Thus I was in an excellent position to recognise in good time all current developments and indicators that might have pointed to a surprise nuclear strike by NATO, to secure them in documentary form and to transmit them to East Berlin. (However, a solo action by the USA, bypassing NATO, would not have been recognisable to me). At the same time, I was fully involved in NATO's annual integrated defence planning cycle. This meant that I always had all the relevant documents at my disposal, which I was also able to secure for the HV A in their entirety. At the annual meetings with my HV A command officers, they had already brought to my attention the great concerns of the Soviet comrades in connection with RYAN. But nothing in my environment pointed to the immediate preparation of a NATO first strike, which I tried to document with the help of the secured documents. Then came the autumn of 1983 and "Able Archer" drew nearer. Through my courier, the urgency of the Soviet fears was once again made emphatically clear to me. Since it was virtually impossible to prove the absence of the danger of a first strike through protestations, I proceeded to systematically secure all CIG documents and Intelligence Memoranda from the Situation Centre, along with all other NATO documents on current political developments, and send them to the HV A. I did not leave out a single document, no matter what it was. Since I did not omit any document, no matter how important or unimportant, and also included my personal assessments, the comrades in the HV A were on the same level of knowledge as I was and they were therefore able to take a correspondingly clear position vis-à-vis our Soviet friends. As Werner Großmann, Markus Wolf's successor at the head of the HV A, makes clear in his book Bonn im Blick (Bonn in Focus), other HV A reconnaissance officers also sent warning reports. Nevertheless, even after Able Archer ended, the Soviets were reluctant to "relax" and return to the "normal" rhythm of the Cold War. Decades later, the aforementioned former head of KGB foreign intelligence, Vladimir Kryuchkov, will publicly acknowledge the special role of HV A in mastering this grave crisis in the ARD documentary also mentioned above. In his study of the "Ryan/Able Archer" crisis entitled "A Cold War Conundrum" published on the official CIA website, CIA historian Ben Fischer confirms that the American leadership knew nothing at all about the Soviet alarm and only learned much later from the British about how close we were to World War III. However, there is no trace of self-reflection or even self-criticism in the CIA's first official evaluation of the crisis. The study: "Implications of Recent Soviet Military-Political Activities", written in May 1984 by CIA Sovietologist Fritz W. Ermarth, states: "We conclude that neither Soviet actions are inspired by a serious threat of imminent conflict with the United States, nor does the Soviet leadership assume such a threat." Instead, the CIA study dismisses all reports of alleged Soviet "war fears" as anti-US "propaganda". Robert Gates, deputy CIA chief during the Able Archer episode and currently President George W. Bush's defence secretary, came to a different conclusion, but not until many years later. After the end of the Cold War, and after consulting a number of documents from that period that Moscow had made available, Gates admitted that the situation at the time was "very dangerous" and that in 1983 the Soviet leadership "believed that a NATO attack was at least possible". The mistake of the US intelligence services, according to Gates, was "not to have grasped the true extent of their (the Soviets') fears". Another study of this crisis was prepared by Nina Stewart for the "President's Foreign Policy Council". However, the document is still classified. Only this much has leaked out, that Ms Stewart agrees with Gates that the Soviets seriously feared an attack by the US at that time. With typical American arrogance and self-righteousness, however, Robert Gates does not seek to blame himself for this grave crisis. Instead, in his book he blames "the peculiar and remarkably twisted mental state of Soviet leaders" for the fears in Moscow. Other NATO authors also blame the near disaster on Soviet "hysteria" and Moscow's "exaggerated reaction" to what is supposed to be perfectly normal US behaviour. But is the threat of limited nuclear wars part of the normal behaviour of states? This is a question that the government in Tehran must be asking itself very intensively at the moment. Or were the American threats not meant seriously at all? Just a joke between friends? The Soviet government had quite correctly understood the aggressive military policy of the neo-conservative warmongers like Paul Wolfowitz, Richard Perle, Dick Cheney, Caspar Weinberger and George Herbert Walker Bush, etc., who had moved into the leading positions of the US government with Ronald Reagan. Meanwhile, these people themselves proved their ruthlessness and also carried out the threatened but unprovoked war of aggression against Iraq. As the architects of the Iraq war, the neoconservatives have kept the world on tenterhooks for the last few years, while bringing death and chaos to many more countries. The conquest of Iraq was to be only the first part of the "global war on terror" they propagated for the purpose of consolidating US hegemony worldwide. These US war criminals are the same people who in the early 1980s had made the destruction of the Soviet Union and the Warsaw Pact their declared goal. And they were willing to use any means to achieve this. There is no reason to believe that they were not serious about this. Against this background, there can be no denial of the dangerousness of the concept presented by the neo-conservatives in the early 1980s, with which they advocated the waging and winning of a limited nuclear war with tactical nuclear weapons. They wanted to impose this concept on the horrified NATO Europeans. To

this end, the NATO doctrine of first use of nuclear weapons as a result of major conventional combat operations was to be transformed into a pre-emptive nuclear first strike doctrine. (NATO's concept of first use of nuclear weapons, by the way, is still an integral part of NATO's New Strategic Concept, approved in 1999.) In discussions at the time, the neocons raved how a surprise strike with tactical nuclear weapons would wipe out Soviet command, control and communications centres and that the Red Army would "run around the farm like a chicken with its head cut off" without firing a single missile at the US. The destruction caused by tactical nuclear weapons in the Soviet Union would be relatively small, at least compared to an attack with strategic nuclear bombs. Whoever would get Soviet command in the chaos after the attack would be faced with the question of whether to counterattack against the USA with the very limited means left to him (only to get the full brunt of the US strategic weapons), or whether to capitulate and negotiate with Washington. No one in Moscow, the neoconservatives reasoned, would opt for a retaliatory strike against the US in this situation. In any case, it was much more likely that the Soviet peoples would use the general chaos and the widespread elimination of the political and military elite by the attack to sweep away the unloved Soviet regime. The "communist threat" would thus be settled once and for all for Washington. (Important elements of these neoconservative plans against the Soviet Union can be found again today in the framework of the war against Iran planned by the neoconservatives and the regime change sought there). Also important for understanding the reaction of the Soviet leadership in the context of the Ryan-Able-Archer crisis is the fact that the neoconservatives were not content with talking about limited nuclear war, but were obviously also systematically preparing for it. From mid-February 1981, they began a policy of constant military provocations along Soviet borders. In the process, US units repeatedly penetrated deep into Soviet territorial waters and Soviet airspace as part of top-secret operations, as can be read in the aforementioned CIA historian Ben Fischer. Especially in the weakly defended Soviet north, there were constant advances by American bombers, which often penetrated many kilometres into Soviet airspace before turning away. These forays were intended not only to test the capabilities of Soviet radar and air defence systems, but also to use satellite reconnaissance to locate the command and communications centres of the Soviet Union's strategic air defences, which was crucial in preparing for a war of aggression. In his study "A Cold War Conundrum" Fischer quotes, among others, a Dr William Schneider, who at the time was undersecretary of state in the US State Department, and got to see the reports of border violations by the US Air Force. "They (the Soviets - R. R.) had no idea what it all meant. A squadron would fly directly into Soviet airspace. Radar stations would light up and other units would be put on alert. Then, at the last moment, the squadron would turn off and come home." The DIA, the Pentagon's military intelligence agency, usually analysed the satellite images of these advances and secured the coordinates of the radar and command centres. They were then entered into the strategic targeting coordinate system. Some of these findings were shared by the DIA with NATO and they also crossed my desk as part of my function in the Current Intelligence Group CIG. I became suspicious when, some time after the shooting down of the Korean passenger plane KAL-007 on 1 September 1983, I heard from American colleagues about the "resounding success" in the reconnaissance of the hitherto largely unknown strategic command, control and communication centres and their functioning in the Siberian Far East by the US spy satellites. Allegedly, these findings, which are invaluable for attack planning, fell into the lap of American long-range reconnaissance virtually as a by-product of the shooting down of the Korean aircraft. The KAL-007 had "mistakenly" penetrated deep into Soviet airspace, of all places, where important bases of the Soviet Union's strategic deterrent potential were suspected. Moreover, Soviet air defences assumed that it was still the American RC-135 spy plane that had flown directly towards Russian airspace from the Pacific. One does not need imagination to imagine that when the alleged American spy plane penetrated the far east of Siberia, all the "lights" went on, i.e. the command, control and communication centres of both the strategic air defences and the strategic nuclear forces were working at full speed. No problem for the US spy satellites to locate the coordinates and functioning of the hitherto largely unknown strategic nodes and centres. For the Americans, this was a unique "stroke of luck", the background to which, however, has not been clarified to this day. The American RC-135 spy plane was a converted Boeing 707 with four jet engines. As usual, it flew from the Pacific towards the Russian coast. And as usual, it would turn south off the coast and continue along the coast towards Korea. Meanwhile, flight KAL-007, a Boeing jumbo, came over the polar route to fly parallel to the coast towards Korea. The reconstruction of the tragic accident has revealed that the two flights crossed at a certain point over the Pacific. The American RC-135 then turned south along the coast. However, for reasons that have not yet been explained, the KAL-007 did not continue south but turned west, thus entering highly sensitive Soviet airspace. To Russian air traffic controllers, the manoeuvre must have looked as if the American spy plane had maintained its course to provoke another airspace violation. The big jumbo with its four engines has the same radar signature as the smaller Boeing 707, so there is hardly any difference. Radio contact with KAL-007 was also impossible to establish.

Moreover, everything happened in deep night under bad weather conditions, which made the task of the Soviet interceptor pilot more difficult. He was unable to make contact with the aircraft using the usual methods. Moreover, the aircraft was darkened, so the pilot did not recognise it as a passenger plane. Moreover, the KAL did not even react to warning shots. Finally, the Soviet interceptor was ordered to shoot it down. With KAL-007, the US was able to celebrate a double success, not only because of the newly acquired strategic data from the Soviet Union, but also because of the "inhuman act" that this Soviet "evil empire" had deliberately committed. The Reagan administration knew how to make good use of the KAL-007 launch for an international propaganda campaign to discredit the Soviet Union. A few years later, when the US Navy shot down an Iranian airline jumbo full of passengers, the typical US double standard came into play. On 3 July 1988, the US missile cruiser "Vincennes" had provocatively entered Iranian territorial waters in the Persian Gulf in violation of international law. The jumbo with the flight number 655 of Iran Air was mistaken by the captain of the US cruiser for an Iranian fighter plane and was immediately destroyed without hesitation. All passengers died. Meanwhile, Washington justified the shooting down and confirmed that the US captain had acted in a militarily correct manner. Washington's allies showed understanding and the case disappeared from the media. How very different it was five years earlier, when Moscow was branded a monster because of KAL-007. 78)

1984

1984-XX-XX: US: (EC) Computer error, Minuteman missile tried to launch by mistake, armoured vehicle on silo prevented it.

Also very disturbing is the story of the Minuteman missile from 1984 that tried to launch "without permission". Due to a computer error, the missile received the launch order in Cheyenne, Wyoming. To prevent the launch, an armoured car was parked on the silo. 20)

1984-XX-XX: GB: (HM) Bruggen: A WE 177 nuclear bomb fell down while being loaded into an aircraft, temporary closure of the base.

Bruggen, 1984: A WE 177 nuclear bomb fell down while being loaded onto an aircraft. This caused a temporary closure of the base. 21)

1985

1985-01-11: DEU: (EWL) Heilbronn-I: Electrostatic discharge, fire, explosion of a Pershing-II missile, parts flew 120 m, 3 dead, 16 seriously injured.

Heilbronn, Waldheide, 1985: On 11 January 1985, the first stage of a Pershing II missile caught fire during a routine exercise and burned up explosively. Parts of the missile flew up to 120 metres. Only 250 metres from the explosion site were battle-ready Pershing-II missiles with nuclear warheads. Three US soldiers were killed and 16 seriously injured in the accident. 21)
Missile accident on 11 January 1985. At around 2 p.m. on 11 January 1985, the first stage of a Pershing II missile exploded on Waldheide during assembly. The accident claimed the lives of three soldiers and injured 16 people. As a result of the accident, the attention of the German peace movement was increasingly focused on Waldheide. Moreover, at the communal level, Pershing deployment lost its support in conservative circles. The safety of the Pershing missile system was strongly debated in public. The US Army reacted to the incident by making technical adjustments to the missiles and increasing the lockdown of its Pershing facilities. Accident sequence. The accident occurred on Friday, 11 January 1985, a particularly cold and dry winter day, when about two dozen soldiers were assembling a Pershing II missile in a tent during a routine exercise. The individual sections (1st stage, 2nd stage, control section, warhead and radar section) were in transport containers and were to be assembled on the mobile launcher using the tractor crane provided for this purpose. When the first stage was lifted out of its transport container shortly before 2 p.m. and came into contact with

metal girders of the container, it suddenly burnt explosively and burst sideways. The flying debris and the fire caused several deaths and injuries. Two soldiers died at the scene of the accident and another died on the way to hospital. In addition, there were six seriously and seven slightly injured. Due to the low temperatures, the soldiers were warmly clothed, which prevented extensive burns and resulted in the victims suffering mainly facial burns. Parts of the fuel and the missile were thrown up to 125 metres and damaged a civilian vehicle parked outside. The QRA site with nuclear missiles ready for launch was located at a distance of about 250 metres. The fire, which had a temperature of around 3000 °C, completely destroyed the assembly tent, the tractor and two other vehicles. The second missile stage suffered heat damage but did not burst into flames. A cloud of black smoke, visible from afar, formed over the forest heath. Since the US Army was neither able to provide sufficient emergency medical care nor to fight the fire adequately, civilian emergency forces of the German Red Cross, the Arbeiter-Samariter-Bund and the Heilbronn professional fire brigade had to provide assistance as part of a large-scale operation, although they officially had no knowledge of the Pershing missiles. Accordingly, no disaster control plan existed for such an event. Cause. The cause of the accident was unclear for a long time. It was only obvious that the stage had not been ignited by the regular mechanism, as the igniter was found undamaged under the debris. In order to clarify the matter, an investigation commission was set up with representatives from government agencies, the manufacturer Martin Marietta and research institutes. The commission initially considered an operating error, a terrorist attack, technical defects in various components and electrostatic discharge. After evaluating the eyewitness reports, examining the debris and technical tests, the investigations focused on electrostatic effects. In the investigation report of 15 November 1985, the accident was described as follows: On the day of the accident there was cold weather with particularly low humidity. The air temperature was -7 °C. The jacket of the rocket stage was made of Kevlar, the solid propellant was a mixture of HTPB as a supporting substance, ammonium perchlorate as an oxidiser and aluminium as a reducing agent. When the rocket stage was lifted out of the transport container, it became charged by the triboelectric effect. The cold, dry air initially shielded the electrical charge. When the electrostatically charged rocket part touched a steel strut of the container during further lifting, the charge suddenly flowed off. This led via a breakdown of the potential field in the supporting substance to an activation of the oxidising agent and thus to an ignition of the propellant charge. Reactions and reprocessing. After the accident, official agencies confirmed for the first time that Pershing II nuclear missiles were stationed on Waldheide. At the time of the missile fire, 63 of the total of 108 planned Pershing II missiles were installed. Politics and media. Over the weekend of 12/13 January, the accident dominated US media coverage. The latter recognised that the accident could give a boost to left-wing political forces in Germany and criticised the Kohl government for not taking a stand on the accident. The Defence Committee of the German Bundestag dealt with the accident in its session of 16 January 1985. The SPD opposition moved for a moratorium on missile exercises until the cause of the accident was clarified, but failed with a tie vote. The missile accident led to increased opposition to Waldheide as a Pershing site in local and regional politics in all parties. On 24 January 1985, the Heilbronn city council unanimously decided - now also with the votes of the CDU - to "immediately remove the missile site". The city council received this order "because missile sites should always be removed from conurbations". The transport of missiles and nuclear warheads through inhabited areas and over the steep Jägerhaussteige should be dispensed with immediately. Furthermore, until the cause of the accident is clarified, all exercises in the field should be stopped. Other communities in the Unterland made similar demands; in total, 30 of 46 communities passed corresponding resolutions. As a reminder against the weapons of mass destruction on the Waldheide, Heilbronn's Kaiser-Wilhelm-Platz, formerly the site of the Peace Church, which was blown up in 1952 after war damage, was renamed Friedensplatz in 1985. The government, on the one hand, and the press and scientists, on the other, took different positions on the potential danger of the accident: In an advertising campaign in the Heilbronner Stimme, the Federal Ministry of Defence asserted that at no time had there been any danger to the population. Scientists, on the other hand, did not see that there could have been an accidental nuclear detonation, but considered it possible that a bursting of one of the nearby nuclear warheads could have contaminated the surrounding area with plutonium or tritium. The accident ignited a heated public debate in Germany about whether the Pershing II system had not been hastily developed and deployed. For example, its development and testing phase was shortened from 74 to 52 months in order to be able to station the first missiles in Germany as late as 1983. The fuel had not been tested for its electrostatic sensitivity at low temperatures. Ernst Pfister, a member of the FDP opposition in the Baden-Württemberg state parliament, formulated his concerns, for example, as follows: "A weapons system that is not safe itself can hardly contribute to our security." Investigation into the cause of the accident. On 25 April 1985, the then Federal Minister of Defence, Manfred Wörner, and the Under Secretary of the US Department of Defence, James Ambrose, presented the preliminary investigation report in Heilbronn's town hall. At the same time, about 2000 people protested on the market square

against the Waldheide as a Pershing site. Wörner affirmed that there had been no danger to the population as a result of the accident and furthermore declared that Heilbronn would remain a Pershing site. After the accident, the US forces refrained from movements outside the depots, Wörner assured that this would apply until the missiles had been reworked. Regardless of this, however, the Ulm unit had already continued normal operations the day before. 300 demonstrators temporarily prevented Wörner's departure with a blockade and engaged in a scuffle with the police. To protect against electrostatic charge, the Pershing II missiles were subsequently provided with an antistatic coating, and instructions for grounding during their handling were revised. Against sabotage, for example by shelling, additional Kevlar plates were attached to the missiles. Since the facilities were also given additional protection, rumours arose among the soldiers that the accident had been an attack. Peace movement. The accident not only brought the Waldheide closer to the attention of the peace movement, but in Heilbronn the protest also gained broad support from the entire population. On 2 February 1985, about 10,000 people gathered for a silent march on Waldheide, despite pouring rain, about three weeks after the accident. From 8 February onwards, the access roads were blocked for an extended period. On 16 March, 1069 citizens from the region travelled by special train to Bonn to protest against the Pershing stationing. The nationwide Easter march led 15,000 demonstrators to Waldheide for a human chain on 8 April 1985. Again and again, protest demonstrations, blockades and vigils took place, attended by numerous prominent representatives of the peace movement, such as Gert Bastian and Petra Kelly in September 1985, who called for civil disobedience and non-violent resistance. In mid-December 1985, the second Heilbronn meeting of prominent members of the peace movement took place, including Günter Grass, Peter Härtling, Walter Jens, Robert Jungk and Alfred Mechtersheimer. After the accident in 1985, the blockades of the peace movement continued to concentrate on the depot on the Mutlanger Heide. In Mutlangen there were a total of 2998 provisional arrests with 731 multiple offenders, whereas in Heilbronn there were only 244 arrests with 38 multiple offenders. With the signing of the INF Treaty in 1987, the sit-ins on the Waldheide came to an end. INF Treaty and dissolution of the missile base. In the summer of 1985, the US Army began to hermetically seal off Waldheide, for which 55 million DM were invested. The QRA site was now secured - starting from the outside - by a wire mesh fence with a spiked crest, a signal fence, NATO wire, another wire mesh fence, concrete gunner stands, a 3.5-metre-high concrete wall and armoured guard towers. At times, the Americans used guard geese. With the INF Treaty of late 1987, the USA renounced, among other things, the stationing of all Pershing II missiles. In July 1988, a delegation from the Soviet Union inspected the facility for the first time, which is listed in the INF Treaty as Missile Operating Base Waldheide-Neckarsulm. On 1 September 1988, the first nine missiles were withdrawn, and the last missile left Waldheide on 26 April 1990. On 10 August 1990, during a ceremony attended by the US Ambassador to Germany Vernon A. Walters, the Heilbronn battalion was disbanded as the first Pershing battalion. By 1991, the Americans had completely cleared the Waldheide. The INF Treaty and the end of the Cold War ultimately led not only to the dissolution of Waldheide as a military installation, but also to the complete withdrawal of the US Army from Heilbronn and from Neckarsulm by 1992. 59)

33 years ago today: Three dead on Waldheide. Heilbronn On 11 January 1985, the engine of a US nuclear missile exploded on Heilbronn's Waldheide. Three soldiers died. A memorial service will be held on Sunday, 14 January, at 2 pm: Lest We Forget. 4 December 1944, the day of Heilbronn's almost total destruction at the end of the Second World War, went down in history as the city's fateful day. This date is also engraved in the collective consciousness: 11 January 1985. 33 years ago today, on a Friday, the engine of a Pershing II nuclear missile exploded on the Waldheide. The town was the focus of world attention and became the Mecca of the peace movement at the height of the Cold War between Nato and the Soviet Union. From US fort to local recreation area. A political thaw set in just a few years later. Nevertheless, the fort continued to be expanded until 1990. Shortly afterwards, the last soldiers left. In 1992, the city bought the 50-hectare site in the middle of the city forest from the federal government and soon began to restore it. In the meantime, nature has almost completely reclaimed the former Fort Redleg, and the former base for weapons of destruction serves the population as a local recreation area. Last witnesses of the Cold War. Only at the former Gate 2 not far from Donnbronner Strasse above the Jägerhaus restaurant is one last US building still standing. Hall number 901, on which "No smoking" signs can still be seen, has been converted into a sheep pen. The asphalted forecourt merges seamlessly into the idyllic heath landscape. 100 metres away, along a footpath, is a stone field enclosed with cobblestones. It looks like a burial ground. A natural rock sits between boxwood and thuja bushes. On a metal plaque are the words "Lest we forget" and the names John Leach, Todd A. Zephir and Darryl L. Shirley. The soldiers were killed here on 11 January 1985. Also interesting: When the whole world was looking at Heilbronn. Memorial service this Sunday. The International Veterans Association Neckarsulm will hold a memorial service on Sunday, 14 January, at 2 pm at the memorial on the Waldheide. The association has erected a monument and a flagpole in

memory of three young American soldiers who died on 11 January 1985 when the engine of a Pershing II missile exploded at the then US missile base Fort Redleg on Waldheide. Historical outline. Waldheide is located between Heilbronn and Weinsberg. Originally used as a field and pasture, it was partially afforested in the 19th century. It has always been used for local recreation, and from 1883 also as a parade ground. In 1935 it also became an airfield. In 1953, the US Army extended the runway, in 1977 the first Pershing missiles arrived, but it was not until the accident in 1985 that the stationing of nuclear weapons became public. 60)

25 April 1985: An official report is presented at Heilbronn City Hall on the causes of the missile accident that occurred on 11 January 1985 at the US base "Waldheide": The first stage of a Pershing II missile had caught fire during a routine exercise and had burnt off explosively. Parts of the missile flew up to 120 metres. Only 250 metres from the explosion site, battle-ready Pershing II missiles with nuclear warheads were stationed. Three US soldiers were killed and 16 seriously injured in the accident. While the people of Heilbronn demand the removal of the US missile base in front of the town hall (pictures on the left), Federal Defence Minister Manfred Wörner and US Secretary of the Army Ambrose explain the preliminary results of the investigation in the town council hall. Lieutenant Colonel Kremer of the Federal Ministry of Defence shows photographs documenting the course of the accident (picture top right). A demonstrator wearing a Reagan mask associates the Pershing-2 missiles with the upcoming ceremony with which US President Reagan and Chancellor Kohl plan to commemorate the dead of the Second World War on 5 May at graves of former members of the Waffen SS near Bitburg in the Eifel region, of all places (picture bottom left). 61)

On the anniversary, new findings on the Pershing accident of 1985. Heilbronn 21 January 2021by Kilian Krauth, HSt. On 11 January 1985, the world held its breath when the engine of a nuclear missile exploded on Heilbronn's Waldheide. A fireman secretly took photos and now reports. "Fire of a truck. Ammunition explosion on a truck in the cordoned-off missile area. There are serious injuries and deaths." This is the wording of a message received by the Heilbronn fire brigade control centre at 2.02 p.m. on Friday, 11 January 1985. When the first emergency forces arrive at the snow-covered Waldheide at 2.09 p.m., they cannot believe their eyes: the gates of the 55-hectare nuclear weapons base are wide open, the checkpoints are deserted. Soldiers with burns are wandering around, some are lying on the ground, three are dead, crushed, burnt. US soldiers took cover. "All the others had disappeared because they knew about the danger," Günter Baumann tells the Heilbronner Stimme. "And when they came out of cover heavily armed with machine guns, we were treated like felons. That was brutally dangerous, at minus seven degrees everything was slippery as glass because of the extinguishing water." The retired firefighter was there at first hand. He was only able to smuggle a roll of film with photos out of the high-security wing by using a trick under his helmet. The pictures remained under lock and key for a long time. What Baumann experienced on that "Black Friday" is described by the 69-year-old in a new publication of the city archive: "The 1980s in Heilbronn". In it, two dozen contemporary witnesses shed light on a multi-faceted decade. 11 January 1985 not only marks the low point of the 1980s. It stands for one of the darkest days in the history of the city and the world. In the middle of the Cold War between NATO and the so-called Eastern Bloc, between the USA and the Soviet Union, the engine of a Pershing II nuclear missile explodes in Heilbronn's city forest. One of the most densely populated conurbations in Europe narrowly escapes a nuclear catastrophe. According to Baumann, completely assembled missiles with warheads are stored right next to the burning parts. "We extinguished continuously until 10 pm. It's hard to imagine if they had caught fire.". Hardly any traces left from that time. Unimaginable. Anyone approaching Waldheide today will find hardly any traces of those days. At the main entrance near the Donnbronner Straße car park, behind the barrier, a concrete stele with information boards documents the eventful history. In the meantime, the former base for weapons of destruction is used for local recreation, not only in summer, but also in winter, as the many traces in the snow show. However, there are hardly any traces of the disaster and its earlier use. Old flyer at the entrance. Behind the barrier at the main entrance, a transparent sheet with a wet leaflet on it catches the eye. It announces a church service, a tour and an evening event with Erhard Eppler - who died in 2019 - for Sunday, 10 January. It quickly becomes clear that the paper, signed by all kinds of peace groups, dates back to 1988. A few steps further on, an effectively staged board shows hiking trails and contact points in the city forest. "Wald-Heide" is written there in large letters. There is no reference to the Pershing accident site anywhere. On the off chance, we follow the tracks in the snow. Memorial stone at the accident site. At some point in the north, a building emerges: a helicopter hangar that has long since been used as a sheep pen. Not far from the hangar, a flagpole rises into the sky. It is fixed on a concrete block that looks like a miniature bunker. A natural stone is placed right next to it. Everything is enclosed with paving, as if it were a resting place. And indeed it is. A brass plaque is attached to the front of the rock. Someone has stuck two small Stars and Stripes flags behind it. "Lest we forget" it says: John Leach, Todd A. Zephir and Darryl L. Shirley. The names of the three American soldiers who lost their lives here 36

years ago. 62)

1986

1986-06-30: ???: (HM) Accident with a Pershing missile. The nuclear warhead fell from the missile onto the ground.

Unknown location, 1986: A human error caused an accident with a Pershing missile on 30 June 1986. The nuclear warhead fell from the missile onto the ground. 21)

1986-10-03: US/SOW: (HR) Collision US/USSR nuclear submarine, fire 2 missiles, near meltdown, boat sunk, Matr. Sergei Preminin and 7 others dead.

A meeting between Ronald Reagan and Mikhail Gorbachev was scheduled for 11 October 1986 in Reykjavik, Iceland. Also on the agenda was the growing threat of a dangerous cat-and-mouse game between Soviet and American nuclear submarines in the North Atlantic. A few days before the summit, an incident occurred off the east coast of the USA that jeopardised the plans for this historic meeting and the lives of millions of people. The drama "Hostile Waters"/"Hostile Waters - A Submarine Thriller, (In) the Fairway of Death" is a reconstruction of these events. It is based on the accounts of those involved and interviews with high-ranking officers of the Soviet Union and the U.S. Navy. To this day, the U.S. government denies that the incident took place. The evidence says otherwise. The Soviet nuclear submarine K-219 collides with the U.S. Los Angeles-class submarine USS Aurora after a risky manoeuvre. As a result of the accident, toxic gases are released in the hull of the Russian ship. Fire breaks out and the ship surfaces. The Russian chief engineer warns the captain of the possibility of a nuclear explosion. The Americans notice the problems and fear contamination of the east coast of the USA. They prepare to sink K-219. Captain Britanov dives and floods the burning parts of the ship, but the Americans initially interpret his descent as preparation for launching missiles with nuclear weapons. The fire is extinguished and K-219 resurfaces. As the safety system of the nuclear reactors fails, one of the Russian sailors has to manually lower the control rods into the reactor cores. He is successful, but cannot be evacuated afterwards. After solving further problems, the survivors are evacuated and the submarine is sunk. The sailor Sergei Preminin is posthumously awarded a medal, Captain Britanov is discharged from the Soviet Navy. The entire incident is kept secret by both sides. The Iceland conference with Ronald Reagan and Mikhail Gorbachev, which takes place a little later in Reykjavík, begins as planned, but is unsuccessful and is broken off. Ronald Reagan and Mikhail Gorbachev met in Reykjavík/Iceland as planned. When it became clear that there would be no possibility of agreement on the topics of discussion, the negotiations were broken off after only 2 days. The United States government denied any involvement in the sinking of K-219. After returning to the Soviet Union, the crew of K-219 was split up and assigned to different ships in the North Atlantic. Captain Britanov was discharged from the Soviet Navy. Almost a decade after the end of the Cold War, nuclear submarines still patrol the North Atlantic. To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea. 2)
Hostile Waters is a British 1997 television film about the loss of the Soviet Navy's K-219, a Yankee I class nuclear ballistic missile sub. The film stars Rutger Hauer as the commander of K-219 and claims to be based on the true story, also described in the 1997 book of the same name. The film was produced by World Productions for the BBC and HBO, in association with Invision Productions and UFA Filmproduktions. It was written by Troy Kennedy Martin and directed by David Drury, and was first transmitted on BBC One on 26 July 1997. Plot: K-219 performs a Crazy Ivan, and USS Aurora collides with her, causing a rupture of the seal on one of its ballistic missile tubes. The leaking seawater causes a corrosive reaction which floods the sub with toxic gas. The corrosive reaction starts a fire that floods the sub with more toxic gas, and smoke. The captain surfaces the boat and moves the crew out to the deck, and attempts to vent the sub. The chief engineer informs the captain that the fire may cook off the nukes and cause a nuclear explosion. The launch doors are opened on the sub to vent smoke. Aurora ascertains that a fire is aboard K-219, and informs the Pentagon. The Pentagon, fearing radiological contamination of the Eastern Seaboard, orders Aurora to prepare to sink K-219. The fact that the launch doors are open on the SLBMs causes consternation in Washington D.C., with calls for the immediate sinking of the sub, should it appear to be preparing to launch. The captain of K-219 prepares a bold plan to

dive with the launch doors open, to flood the missile bay and quench the fires. As the captain dives the sub, Aurora prepares to fire, assuming K-219 is setting about to launch its missiles. After a brief but heated argument the U.S. commander is convinced to wait before launching and realises that the Soviet sub is diving, rather than launching its SLBMs. K-219's tactic works, and the sub resurfaces with the fires out. A new crisis develops: Both nuclear reactors are overheating, and the cooling rods must be lowered manually by two crew members who have only limited oxygen left. The rods are lowered, and both reactors are shut down, averting disaster, but one crew member remains locked inside the reactor room, running out of oxygen. With seawater flooding the submarine, the captain of K-219 decides to abandon ship. Throughout the crisis, Washington insists that no information on the possibility of nuclear fallout along the eastern American coastline be leaked to the Governors and no evacuation plans be activated to protect the population, in order not to derail the forthcoming Reykjavik Summit between Soviet leader Mikhail Gorbachev and U.S. President Ronald Reagan. Capt. Britanov and his surviving crew members return safely to Moscow with some crew decorated and he being dismissed from the navy. The Reykjavik Summit takes place as planned. The film's postscript details that as a legacy almost a decade after the end of the Cold War, fifty one nuclear war heads and seven nuclear reactors from nuclear submarines litter the North Atlantic ocean floor. 2a)
To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1987

1987-05-05: DEU: (HM) Heilbronn-II: Pershing missile landed one in a ditch after a traffic accident.

Heilbronn, 1987: On 5 May 1987, a Pershing missile landed in a ditch after a traffic accident near Heilbronn. 21)

1988
1989

1989-04-07: SOW: (EWS) North Sea: nuclear submarine K-278 "Komsomolets", fire, at 1700 m, 2 nuclear torpedoes, reactor, 42 dead, slightly contaminated.

Most of the highly dangerous weapons lie at the bottom of the sea. For example, the nuclear submarine "Komsomolets" sank in April 1989 after a fire on board at a depth of 1700 metres in the North Sea, along with two torpedoes and their nuclear warheads. 8)
North Cape Basin, 1989: On the line between the North Cape and the Bear Islands, the nuclear-powered Soviet submarine K-278 "Komsomolets" (Mike-class) went off course on 7 April 1989 and sank after several hours of overwater travel. Burns, injuries, suffocation and hypothermia killed 42 crew members. A nuclear reactor and two torpedoes with nuclear warheads lie at a depth of 1685 metres, almost 480 kilometres from Norway's coast. 21)
Soviet submarine K-278 Komsomolets. The K-278 Komsomolets was the Project-685 Plavnik (Russian: проект-685 плавник, meaning "fin", also known by its NATO reporting name of "Mike"-class), nuclear-powered attack submarine of the Soviet Navy— the only submarine of her design class. In the inventory of the Soviet military, K-278 was unique for her design and the technological feat, having reached a record depth of 1,020 metres (3,350 feet) in the Norwegian Sea on 4 August 1984. Although K-278 was commissioned in the Soviet Navy to evaluate the technology for the fourth-generation of the Russian nuclear submarines, she was fully capable of combat maneuvering and deployment. During her third operational patrol in Arctic ocean in 1989, a serious fire accident in aft compartments led her to sinking in the sea off the coast of Norway. Despite the fire in the engineering compartment, K-278 was able to surface and remained afloat for approximately five hours before sinking. However many of the crew perished before rescue, leading to 42 total dead. The wrecked submarine is on the floor of the Barents Sea, about 1.7 km (1 mile) deep, with its nuclear reactor and two nuclear warhead-armed torpedoes still on board. Design. The Project 685 was designed by the Rubin Design Bureau in response to a challenge to develop

an advanced submarine that could carry a mix of torpedoes and cruise missiles with conventional or nuclear warheads. The order to design the submarine was issued in 1966 and design was completed in 1974. The keel was laid down on 22 April 1978 at Severodvinsk. K-278 was launched on 3 June 1983 and commissioned on 28 December 1983. K-278 had a double hull, the inner one being composed of titanium, which gave her an operating depth far greater than that of the best American submarines. The pressure hull was composed of seven compartments with the second and third protected by stronger forward and aft bulkheads creating a "safety zone" in case of an emergency. An escape capsule was fitted in the sail above these compartments to enable the crew to abandon ship in the event of an underwater emergency. Initial Western intelligence estimates of K-278's speed were based on the assumption that it was powered by a pair of liquid-metal lead-bismuth reactors. When the Soviet Union revealed that the submarine used a single OK-650b-3 conventional pressurized-water reactor, these speed estimates were lowered. Crew. According to Norman Polmar and Kenneth J. Moore, two Western experts on Soviet submarine design and operations, the Project 685's advanced design included many automated systems which, in turn, allowed for fewer crew members than would be expected for a submarine of its size. The manning table approved by the Soviet Ministry of Defense in 1982 called for a crew of just 57 men. This was later increased to 64: 30 officers, 22 warrant officers, and 12 petty officers and seamen. At the time of its sinking 69 were aboard. Name. In October 1988, K-278 was honored by becoming one of the few Soviet submarines to be given an actual name: Komsomolets (Комсомолец, meaning "a member of the Komsomol"), and her commanding officer, Captain 1st rank Yuriy Zelenskiy was honored for diving to a depth of 1,020 meters (3,350 feet). Sinking. On 7 April 1989, while under the command of Captain 1st Rank Evgeny Vanin and running submerged at a depth of 335 metres (1,099 ft) about 180 kilometres (100 nmi) southwest of Bear Island (Norway),[6] fire broke out in an engineering compartment due to a short circuit, and even though watertight doors were shut, the resulting fire spread through bulkhead cable penetrations. The reactor scrammed and propulsion was lost. Electrical problems spread as cables burned through, and control of the boat was threatened. An emergency ballast tank blow was performed and the submarine surfaced eleven minutes after the fire began. Distress calls were made, and most of the crew abandoned ship. The fire continued to burn, fed by the compressed air system. At 15:15,[8] several hours after the boat surfaced, it sank in 1,680 metres (5,510 ft) of water, about 250 kilometres (135 nmi) SSW off Bear Island. The commanding officer and four others who were still on board entered the escape capsule and ejected it. Only one of the five to reach the surface was able to leave the capsule and survive before it sank again in the rough seas. Captain Vanin was among the dead. Rescue aircraft arrived quickly and dropped small rafts, but winds and sea conditions precluded their use. Many men had already died from hypothermia in the 2 °C (36 °F) water of the Barents Sea. The floating fish factory B-64/10 Aleksey Khlobystov (Алексей Хлобыстов) arrived 81 minutes after K-278 sank, and took aboard survivors. Of the 69 crewmen, 27 survived the incident while the remaining 42 died: 9 during the accident and the subsequent sinking itself, 30 in the water of hypothermia or injuries, and three aboard the rescue boat. The crew were awarded the Order of the Red Banner after the incident. Aftermath. In addition to her eight standard torpedoes K-278 was carrying two torpedoes armed with nuclear warheads. Under pressure from Norway, the Soviet Union used deep sea submersibles operated from the oceanographic research ship Keldysh to search for K-278. In June 1989, two months after the sinking, the wreck was located. Soviet officials stated that any possible leaks were insignificant and posed no threat to the environment. In 1993, Vice Admiral Chernov, commander of the submarine group of which the Komsomolets was part, founded the Komsomolets Nuclear Submarine Memorial Society, a charity to support the widows and orphans of his former command. Since then, the Society's charter has expanded to provide assistance to the families of all Soviet and Russian submariners lost at sea, and 7 April has become a day of commemoration for all submariners lost at sea. An expedition in mid-1994 revealed some plutonium leakage from one of the two nuclear-armed torpedoes. On 24 June 1995, Keldysh set out again from Saint Petersburg to the Komsomolets to seal the hull fractures in Compartment 1 and cover the nuclear warheads, and declared success at the end of a subsequent expedition in July 1996. Furfurol, the jelly-like sealant, was projected to make the wreck radiation safe for 20 to 30 years, that is, until 2015 or 2025. Norwegian authorities from the Marine Environmental Agency and Radiation Agency are taking water and ground samples from the vicinity of the wreck on a yearly basis. In July 2019, a joint Norwegian-Russian expedition found "clouds" emitted from a ventilation pipe and a nearby grille. They took water samples from the pipe and from several meters above, and analyzed them for caesium-137. That pipe had been identified as a leak in several Mir missions up to 1998 and 2007. The activity levels in the six samples out of the pipe were up to 800 Bq/l (9 July). No activity could be detected in the free-water samples. Due to dilution, there is no threat to the environment. The Norwegian limit on caesium-137 in food products is 600 Bq/kg. The background activity of caesium-137 in the water body is as low as 0.001 Bq/l. More sensitive measurements of the samples are underway. 63)

To date, 51 nuclear warheads and 7 nuclear reactors have been lost at sea.

1990 till 1999
1990
1991
1992
1993
1994
1995

1995-01-25: NOR/RUS: (HCI) Norweg.-US research missile Black-Brant XII mistaken for intercontin. ballistic missile, exploded, Pres. Yeltsin on "nuclear case".

25 January 1995 began under bad omens. In cooperation with the USA, Norway launched a weather rocket into the stratosphere. The Russians had been informed of this, but their radar teams had never received the message. An unusually powerful launch was recorded by the Russians. The object flew higher and faster than a weather rocket. The radar teams could not make sense of all this. They had not been informed. The missile resembled in shape and trajectory an American Trident missile, like those carried by the nuclear submarines of the USA. And it was fired from an area where American submarine patrols were suspected. Russia had unilaterally stopped its submarine patrols in American waters, but the Americans had not followed suit. In the eyes of the Russians, this was a serious threat to the nuclear balance. If World War III were to start, it would be by American submarines, the Russians said. Now it looked that way. Those on duty were in a difficult situation. If they kept quiet and the missile crashed into Russian territory, who would be to blame? They had to decide. They had only a few seconds to do so. They alerted their commanding general. He, in turn, immediately informed President Boris Yeltsin by means of a nuclear briefcase. This briefcase is a remote-controlled communicator with which Russia's head of state can fire nuclear weapons at any time. The President of the United States had a similar device, it is called a "football". For the first time in history, an alarm signal had reached the nuclear suitcase. It looked as if an American missile was already hurtling towards Russia. Now it was up to President Yeltsin to react to this supposed first strike. And he did so with all the means at his disposal. This included the SS-18, his most powerful missile, tellingly named "Satan". Each SS-18 has ten warheads. One warhead can take out New York City. Yeltsin could destroy any American missile launching pad and still have the means to cripple the rest of the country. On 25 January 1995, the responsibility for this was in Boris Yeltsin's hands. On 25 January 1995, Boris Yeltsin was faced with a decision of extreme volatility. An unidentifiable missile had been reported to him and Yeltsin had to ask himself if this was the harbinger of the end of the world. For a few minutes, the President, the Defence Minister and the Commander-in-Chief were very worried, if not stressed by the situation. What happens if it is a live missile? What happens if it falls on our heads? Yeltsin preferred to wait and see. For 9 minutes, the destruction of the US depended on a man with a drinking problem. Finally, the true destination of the missile could be seen. It was moving away from Russia. The danger was averted for the time being. Boris Yeltsin later said that the West had only wanted to test Russia's advance warning systems. However you want to interpret it, the Norwegian incident is a rude reminder that global catastrophe still lurks on many launch pads. 1)
The launch of a Norwegian research rocket leads to an attack message in the Russian early warning system. The Norwegians had informed Russia about the launch of the research rocket. However, this information was not forwarded correctly on the Russian side. The Russian army went on high alert. Russian President Boris Yeltsin activated the nuclear suitcase and prepared the launch codes for a retaliatory strike. 5)
25 January 1995: Norwegian missile incident: Russian President Boris Yeltsin became the first head of state in the world to activate a nuclear suitcase after Russian radar systems detected the launch of a Norwegian Black Brant XII research missile that had been deployed to study the Northern Lights. Russian ballistic missile submarines were put on alert in preparation for a possible retaliatory strike. When it became clear that the missile posed no threat to Russia and was not part of a larger attack, the alert

was lifted. Russia was in fact one of several countries that had previously been informed about the launch; however, the information had not reached the Russian radar operators. 6)

January 25, 1995: Norwegian Rocket Mistaken for ICBM: After the Cold War had ended… "A Russian early warning radar detected a missile launch off the coast of Norway with flight characteristics similar to those of a U.S. submarine launched ballistic missile. Fearing that it could be the first move in a larger attack, Russian nuclear forces quickly went on full alert. Russian President Boris Yeltsin activated his "nuclear football" and retrieved launch codes, preparing for a retaliatory launch. Fortunately Russian satellites monitoring U.S. missile fields did not show any additional launches, and Russian leaders declared the incident a false alarm. The event detected was actually the launch of a Norwegian scientific rocket on a mission to study the aurora borealis. Norway had notified countries, including Russia, in advance of the launch, but the information had failed to reach the correct Russian personnel (Schlosser 2013, p. 478)." This example comes from the UCS. 7)

On 25 January 1995, the USA launched a rocket from Norway to study the aurora borealis. We informed the Russians about the launch of this missile, but someone in Moscow forgot to pass on the information. When they noticed the 4 stages of this missile, they first thought they were 4 warheads from one of the American nuclear submarines that we often station off the Norwegian coast. And they suspected that the warheads had been launched towards Moscow. That fitted exactly into the pattern of an incipient nuclear strike. First comes a single missile that explodes in the atmosphere and sends out an electromagnetic pulse. This knocks out all electronics, radar, surveillance systems and computers in the attacked country. Then it's nuclear bombs. And for the first time in the age of nuclear weapons, the Russians actually opened the nuclear case. They went to President Yeltsin, opened the containers with the command and launch codes, put the red button on the table and said: "We are under attack!". Boris Yeltsin was practically given 5 minutes to make his decision. Fortunately, Yeltsin was not drunk. And he didn't believe what the military told him. He said, "This must be a mistake!". Both the US, and Russia, adhere to a doctrine called "Launch-On-Warning" in their nuclear counter-strikes. This means that even if you think you are under attack, you launch your missiles. You don't wait until the enemy's have hit. According to Russian military doctrine, Boris Yeltsin should have launched an all-out nuclear attack on the US that morning. We don't know what was going on in the Kremlin. We only know that he did not. 12)

Case 5: The weather rocket: On 25 January 1995, Norwegian scientists, together with their colleagues from the USA, launched a large rocket. Its purpose was to collect data on atmospheric conditions from different altitudes. The rocket's trajectory appeared to Russian radar technicians to match that of a US Trident missile. For a few minutes, Russia was on the verge of launching a full-scale nuclear attack on the US. The day after, Boris Yeltsin said he had activated his "nuclear football" for the first time - a device that allows him to communicate with his top military advisers. 20)

A weather satellite became a Pershing: even decades later, when the control and guidance systems of nuclear weapons had reached far higher levels of complexity, there were curious near-misses between the superpowers. Four years after the end of the Cold War, on 25 January 1995, Russian President Boris Yeltsin had only six minutes to retaliate against a Pershing II missile allegedly aimed at Moscow from an American submarine. Caution prevailed. The launch of a Norwegian weather satellite, announced to the Russians weeks earlier through the usual diplomatic channels, had played nuclear war. The notification of the military had been forgotten. 35)

Norwegian rocket incident. For the 2009 event thought to be a missile failure, see 2009 Norwegian spiral anomaly. The Norwegian rocket incident, also known as the Black Brant scare, occurred on January 25, 1995 when a team of Norwegian and US scientists launched a Black Brant XII four-stage sounding rocket from the Andøya Rocket Range off the northwestern coast of Norway. The rocket carried scientific equipment to study the aurora borealis over Svalbard, and flew on a high northbound trajectory, which included an air corridor that stretches from Minuteman III nuclear missile silos in North Dakota all the way to the Russian capital city of Moscow. The rocket eventually reached an altitude of 1,453 kilometers (903 mi), resembling a U.S. Navy submarine-launched Trident missile. Russian nuclear forces were put on high alert as a result, fearing a high-altitude nuclear attack that could blind Russian radar, and Russia's "nuclear briefcase" the Cheget was brought to Russian President Boris Yeltsin, who then had to decide whether to launch a retaliatory nuclear strike against the United States. Russian observers determined that there was no nuclear attack and did not retaliate. Background. The Norwegian rocket incident was a few minutes of post-Cold War nuclear tension that took place nearly four years after the end of the Cold War. While not as well known an incident as the Cuban Missile Crisis of October 1962 (nor the Stanislav Petrov Incident of 1983, which was still classified), the 1995 incident is considered to be one of the most severe. The 1995 incident occurred in the post-Cold War era, where many Russians were still very suspicious of the United States and

NATO. In contrast, the Cuban Missile Crisis of October 1962 had a much longer build-up. Detection. As the Black Brant XII rocket gained altitude, it was detected by the Olenegorsk early-warning radar station in Murmansk Oblast, Russia. To the radar operators, the rocket appeared similar in speed and flight pattern to a U.S. Navy submarine-launched Trident missile, leading the Russian military to initially misinterpret the rocket's trajectory as representing the precursor to a possible attack by missiles from submarines. EMP rocket scenario. One possibility was that the rocket had been a solitary missile with a radar-blocking electromagnetic pulse (EMP) payload launched from a Trident missile at sea in order to blind Russian radars in the first stage of a surprise attack. In this scenario, gamma rays from a high-altitude nuclear detonation would create a very high-intensity electromagnetic pulse that would confuse radars and incapacitate electronic equipment. After that, according to the scenario, the real attack would start. Post-staging. After stage separation, the rocket launch appeared on radar similar to Multiple Reentry vehicles (MRVs); the Russian control center did not immediately realize that the Norwegian scientific rocket was headed out to sea, rather than toward Russia. Tracking the trajectory took 8 of the 10 minutes allotted to the process of deciding whether to launch a nuclear response to an impending attack; a submarine-launched Trident missile from the Barents Sea would be able to reach mainland Russia in 10 minutes. Response. This event resulted in a full alert being passed up through the military chain of command all the way to President Boris Yeltsin, who was notified and the "nuclear briefcase" (known in Russia as Cheget) used to authorize nuclear launch was automatically activated. Yeltsin activated his "nuclear keys" for the first time. No warning was issued to the Russian populace of any incident; it was reported in the news a week afterward. As a result of the alert, Russian submarine commanders were ordered to go into a state of combat readiness and prepare for nuclear retaliation. Soon thereafter, Russian observers were able to determine that the rocket was heading away from Russian airspace and was not a threat. The rocket fell to earth as planned, near Spitsbergen, 24 minutes after launch. The Norwegian rocket incident was the first and thus far only known incident where any nuclear-weapons state had its nuclear briefcase activated and prepared for launching an attack. Prior notification. The Norwegian and U.S. scientists had notified thirty countries, including Russia, of their intention to launch a high-altitude scientific experiment aboard a rocket; however, the information was not passed on to the radar technicians. Following the incident, notification and disclosure protocols were re-evaluated and redesigned. 64)

1996
1997
1998
1999
2000 till 2009
2000
2001
2002
2003
2004
2005

2005-03-01: DEU: (HM) Büchel/Nordhorn, 1 practice bomb lost: Pilot released the bomb 900 metres too early. Missed drop.

Nordhorn: Bundeswehr Tornado loses training bomb. Nordhorn (Germany), 10.11.2005 - In Grafschaft Bentheim near the district town of Nordhorn, a Bundeswehr fighter jet lost a practice bomb on Tuesday. The bomb hit a meadow only a few metres away from a house. A small crater formed at the impact site. About 60 metres away, an employee of a pig farm was working. He was not injured, but the mayor of Nordhorn, Meinhard Hüsemann, said: "His knees are still shaking now." Tornado No2 (AC)

Sqm.jpg. Air Force spokesman Hartmut Beilmann has since commented on the incident. He ruled out a defect in the Tornado and attributed the dropping to human error. Presumably, the pilot had released the bomb 900 metres too early. The Nordhorn Range air force training area is located at about this distance from the town of Nordhorn. However, he also confirmed that it had been lucky that no persons had been hit. Beilmann ruled out negligence or intent, saying it was purely human error. The city of Nordhorn does not want to be satisfied with this explanation. The situation is much more serious. Moreover, there is a primary school within 500 metres of the training area. Mayor Hüsemann pointed out the consequences that could have been caused by the false dropping. The city then passed a note of protest to the Luftwaffe: "The integrity of the people in this region must not be dependent on a 'lucky' or 'unlucky' course of a training flight." As there have already been frequent incidents involving Bundeswehr jets, the protest note simultaneously called for the closure of the air force training area. Of course, a complete investigation of Tuesday's incident is also expected. 66)

2006
2007

2007-08-29: US: (HS) Minot Air Force Base/North Dakota: 6 misguided nuclear missiles secondarily missing, B-52 unguarded at night (until 30.8.).

August 29, 2007 — August 30, 2007: Six Mis-Routed Nukes: “Six nuclear-armed cruise missiles were mistakenly loaded onto a B-52 bomber at Minot Air Force Base in North Dakota. Although there were multiple instances when the crew should have verified that the cruise missiles were not armed, no one followed required protocol to check for live weapons. The plane sat overnight on the tarmac at Minot, unguarded. It then flew 1,500 miles to a base in Louisiana where it sat unguarded for another nine hours until a maintenance crew there realized that the weapons were live. In total, there were 36 hours during which no one in the Air Force realized that six live nuclear weapons were missing (Schlosser 2013, p. 473). In response to the incident, retired Air Force General Eugene Habiger, commander of U.S. Strategic Command from 1996 to 1998, said, “I have been in the nuclear business since 1966 and am not aware of any incident more disturbing” (Warrick and Pincus 2007).” This example comes from the UCS. 7)
2007 United States Air Force nuclear weapons incident. On 29 August 2007, six AGM-129 ACM cruise missiles, each loaded with a W80-1 variable yield nuclear warhead, were mistakenly loaded onto a United States Air Force (USAF) B-52H heavy bomber at Minot Air Force Base in North Dakota and transported to Barksdale Air Force Base in Louisiana. The nuclear warheads in the missiles were supposed to have been removed before the missiles were taken from their storage bunker. The missiles with the nuclear warheads were not reported missing, and remained mounted to the aircraft at both Minot and Barksdale for 36 hours. During this period, the warheads were not protected by the various mandatory security precautions for nuclear weapons. The incident was reported to the top levels of the United States military and referred to by observers as a Bent Spear incident, which indicates "an unexpected occurrence involving nuclear weapons or nuclear components that does not fall under the NUCFLASH or BROKEN ARROW categories" or "a nuclear incident involving a nuclear weapon/warhead or nuclear component. In the Army and Air Force, this term includes a 'significant incident' as defined in DoD Directive 5100.52". In response to the incident, the United States Department of Defense (DoD) and USAF conducted an investigation, the results of which were released on 19 October 2007. The investigation concluded that nuclear weapons handling standards and procedures had not been followed by numerous USAF personnel involved in the incident. As a result, four USAF commanders were relieved of their commands, numerous other USAF personnel were disciplined or decertified to perform certain types of sensitive duties, and further cruise missile transport missions from—and nuclear weapons operations at—Minot Air Force Base were suspended. In addition, the USAF issued new nuclear weapons handling instructions and procedures. Separate investigations by the Defense Science Board and a USAF "blue ribbon" panel reported that concerns existed on the procedures and processes for handling nuclear weapons within the Department of Defense but did not find any failures with the security of United States nuclear weapons. Based on this and other incidents, on 5 June 2008, Secretary of the Air Force Michael Wynne and Chief of Staff of the Air Force General T. Michael Moseley were asked for their resignations, which they gave. In October 2008, in response to recommendations by a

review committee, the USAF announced the creation of Air Force Global Strike Command to control all USAF nuclear bombers, missiles, and personnel. Background. In August 2007, Minot Air Force Base was the home of the 5th Bomb Wing (5 BW) and Barksdale Air Force Base was the home of 2nd Bomb Wing (2 BW), both of which fell under the 8th Air Force (8 AF), also based at Barksdale. At the time, the 5 BW, the 2 BW, and the 8 AF were all subordinate organizations of Air Combat Command (ACC Both bomb wings and 8 AF had previously been units of the Strategic Air Command (SAC) until a 1992 reorganization of the Air Force's major commands (MAJCOMs) had resulted in the disestablishment of SAC and the reassignment and merger of its manned bomber force with the former Tactical Air Command (TAC), which was primarily the USAF's fighter aircraft force. The new organization was named Air Combat Command (ACC), although it retained both TAC's organizational insignia and TAC's former headquarters at Langley AFB, Virginia. At the time of the incident, the 5th Bomb Wing was commanded by Colonel Bruce Emig, the 2nd Bomb Wing by Colonel Robert Wheeler, the 8th Air Force by Lieutenant General Robert Elder Jr., and ACC by General Ronald Keys. The 5th Bomb Wing, according to the USAF's statement on the wing's mission, served with its B-52H bombers as part of the USAF's conventional and strategic combat force. The "strategic" portion of the 5th's mission included the ability to deliver nuclear weapons against potential targets worldwide. Thus, Minot Air Force Base stored and maintained a ready arsenal of nuclear bombs, nuclear warheads, and associated delivery systems, including the AGM-129 Advanced Cruise Missile. The AGM-129 was fielded in 1987 as a stealthy cruise missile platform to deliver the W80-1 variable yield nuclear warhead. Although originally designed to equip the B-1B Lancer bomber, the AGM-129 was redesignated so that it would only be carried by the B-52H, mounted on external pylons on the wings or internally in the bomb bay. In March 2007, the USAF decided to retire its AGM-129 complement in order to help comply with international arms-control treaties and to replace them with AGM-86 missiles. In order to do so, the USAF began to transport its AGM-129s stored at Minot to Barksdale Air Force Base in Louisiana by B-52s for ultimate disposal. According to The Washington Post, by 29 August 2007, more than 200 AGM-129s had been shipped from Minot to Barksdale in this manner. Incident. Between 08:00 and 09:00 (local time) on 29 August 2007, a group of USAF airmen, called the breakout crew, entered one of the weapons storage bunkers at Minot to prepare AGM-129 missiles for transport to Barksdale. That day's missile transport, the sixth of twelve planned ferry missions, was to have consisted of twelve AGM-129s, installed with training warheads, with six missiles per pylon and one pylon mounted under each wing of a Barksdale-assigned, 2nd Bomb Wing B-52 aircraft. When the airmen entered the bunker, six live warheads were still installed on their missiles, as opposed to having been replaced with the dummy training warheads. A later investigation found that the reason for the error was that the electronic production system for tracking the missiles "had been subverted in favor of an informal process that did not identify the pylon as prepared for the flight." The airmen assigned to handle the missiles used outdated materials that contained incorrect information on the status of the missiles. The missiles originally planned for movement had been replaced by missiles closer to expiration dates for limited life components, which was standard procedure. The change in missiles had been reflected on the movement plan but not in the documents used for internal work coordination processes in the bunker. Although the breakout crew in the weapons storage began to inspect the missiles, an early-arriving transport crew hooked up the pylons and towed them away without inspecting or ensuring that the missiles had been inspected or cleared for removal. The munitions control center failed to verify that the pylon had received proper clearance and inspection and approved the pylon for loading on the B-52 at 09:25. After taking eight hours to attach the pylons, the aircraft with the missiles loaded then remained parked overnight at Minot for 15 hours without the special guard required for nuclear weapons. On the morning of 30 August one of the transport aircraft's flight officers, a Barksdale-assigned B-52 instructor radar navigator, closely inspected the six missiles on the right wing only, which were all properly loaded with training warheads. The B-52 command pilot did not do a final verification check, before signing the manifest listing the cargo as a dozen unarmed AGM-129 missiles to depart Minot. The B-52 departed Minot at 08:40 and landed at Barksdale at 11:23 (local times) on 30 August. The aircraft remained parked and without special guard until 20:30, when a munitions team arrived to remove the missiles. After a member of the munitions crew noticed something unusual about some of the missiles, at 22:00 a "skeptical" supervisor determined that nuclear warheads were present and ordered them secured and the incident reported, 36 hours after the missiles were removed from the bunker at Minot. The incident was reported to the National Military Command Center as a Bent Spear incident. General T. Michael Moseley, Chief of Staff of the United States Air Force, quickly called United States Secretary of Defense Robert Gates, on 31 August to inform him about the incident. Gates requested daily updates regarding the investigation and informed President Bush about the incident. The USAF has yet to officially designate what type of incident actually occurred, Bent Spear or otherwise. The incident was the first of its kind in 40 years in the United States and was later described by the media as "one of

the worst breaches in U.S. nuclear weapons security in decades". Response by the U.S. government. The USAF and Department of Defense at first decided to conceal the incident, in part because of the USAF policy not to comment on the storage or movement of nuclear weapons and an apparent belief that the incident would not generate much public concern. In fact, the initial DoD incident report contained the statement, "No press interest anticipated." Details of the incident were then leaked by unknown DoD officials to the Military Times newspaper, which published a small article about the incident on 5 September 2007. In response, a 5 September news briefing at the Pentagon by Press Secretary Geoff Morrell stated that at no time was the public in any danger and that military personnel had custody of the weapons at all times. The USAF announced that within days of the incident, the USAF relieved the Minot munitions squadron commander of duty and eventually disciplined 25 airmen. USAF Major General Doug Raaberg was assigned by General Keys to lead an investigation into the incident. The USAF inventory of nuclear warheads was checked to ensure that all warheads were accounted for. In addition, the DoD announced that a Pentagon-appointed scientific advisory panel, called the Defense Science Board, would study the mishap as part of a larger review of procedures for handling nuclear weapons. On 28 September, the USAF announced that General Keys was retiring and would be replaced as ACC commander by General John Corley, effective 2 October. On 19 October 2007, United States Secretary of the Air Force Michael Wynne and USAF Major General Richard Newton, deputy chief of staff for operations, plans, and requirements, announced the investigation report findings, stating that "there has been an erosion of adherence to weapons-handling standards at Minot Air Force Base and at Barksdale Air Force Base" and that "a limited number of airmen at both locations failed to follow procedures." Colonel Emig, the commander of the 5th Bomb Wing, Colonel Cynthia Lundell, the commander of the 5th Maintenance Group at Minot, and Colonel Todd Westhauser, the commander of Barksdale's 2d Operations Group, and four senior non-commissioned officers from the 5th Munitions Squadron "received administrative action" and were relieved of their commands or positions and reassigned.All of the 5th Bomb Wing personnel were stripped of their certifications to handle nuclear and other sensitive weaponry and to conduct "specific missions".Sixty-five airmen of varying ranks lost their Personnel Reliability Program certifications. Tactical ferry operations were suspended. The inspector general offices of all USAF Major Commands that handle nuclear weapons were directed to conduct immediate "Limited Nuclear Surety Inspections (LNSIs) at every nuclear-capable unit" with oversight provided by the Defense Threat Reduction Agency. The new ACC commander, General Corley, referred the matter to USAF Lieutenant General Norman Seip, commander of the 12th Air Force, as a court-martial convening authority to determine if additional charges or actions would be taken against any of the personnel involved in the incident. Seip later closed the investigation without recommending criminal charges against anyone involved. Retired USAF Chief of Staff General Larry Welch was asked by Gates, who had reportedly raised concerns with USAF officials that the original investigation may have unfairly limited blame to midlevel officers, to lead the Defense Science Board advisory panel that would study the mishap as part of a larger review of procedures and policies for handling nuclear weapons. In addition, the USAF chartered a "blue ribbon" review chaired by USAF Major General Polly Peyer and consisting of 30 additional personnel to "make recommendations as to how we can improve the Air Force's capability to safely and securely perform our nuclear weapons responsibility". Furthermore, the United States Congress requested that the DoD and the United States Department of Energy conduct a bottom-up review of nuclear procedures. Aftermath. USAF actions. On 24 October 2007, Secretary of the Air Force Wynne told the House Armed Services Committee that he believed that the 5th Bomb Wing could be recertified and could resume ferrying the AGM-129 cruise missiles to Barksdale for retirement. He did not provide a timeline for that recertification process. On 1 November 2007 Colonel Joel Westa took command of the 5th Bomb Wing. That same day, General Keys retired from the Air Force. Personnel from Barksdale's 2d Bomb Wing temporarily took over maintenance duties of Minot's nuclear stockpile until the 5th Bomb Wing could be recertified. A nuclear surety inspection (NSI), required for recertification, originally scheduled for the 5th Bomb Wing for 23 January 2008 was postponed after the wing failed an initial NSI that took place on 16 December 2007. Another initial NSI was completed on 29 March and Corley recertified the wing on 31 March 2008. A full NSI was scheduled for May 2008. The wing needed to regain its certification in order to hold the full NSI. Units handling nuclear weapons must pass NSIs every 18 months in order to retain their certifications. The USAF issued a new policy directive regarding the handling of nuclear weapons and delivery systems, which prohibits the storing of nuclear armed and nonnuclear armed weapons in the same storage facility. The directive further instructs that all nonnuclear munitions and missiles must be labeled with placards clearly stating that they are not armed with nuclear warheads. Wing commanders are now charged with approving any movement of nuclear weapons from weapons storage areas and must appoint a single individual as a munitions accountability system officer and weapons custodian. All units that handle nuclear weapons must develop a coordinated visual inspection checklist. The policy

further directs that airmen charged with handling or maintaining nuclear weapons cannot be on duty for longer than 12 hours, unless during an emergency, when their duty period can be extended to a maximum of 16 hours. The USAF has since instituted a program of surprise inspections at nuclear-armed bases. Review reports. Welch and Peyer briefed the results of their reviews before the United States Senate Committee on Armed Services on 12 February 2008. In addition to Welch and Peyer, Lieutenant General Daniel Darnell, USAF Deputy Chief of Staff for Air, Space and Information Operations, and Major General Raaberg testified and answered questions from the Senate committee's members. During the hearing, Welch stated that "the military units responsible for handling the bombs are not properly inspected and, as a result, may not be ready to perform their missions." He added, "If you look at all the areas and all the ways that we have to store and handle these weapons in order to perform the mission, it just requires, we believe, more resources and more attention than they're getting." Welch's report concluded that the combining of DoD nuclear forces with nonnuclear organizations has led to "markedly reduced levels of leadership whose daily focus is the nuclear enterprise and a general devaluation of the nuclear mission and those who perform the mission." Nevertheless, neither Welch's nor Peyer's reports found any failures with the security of United States nuclear weapons. Responding to Welch's and Peyer's reports, USAF officials stated that they were already implementing many of the recommendations contained in the reports but added that existing regulations governing nuclear procedures were satisfactory. During his testimony before the senate committee, Darnell stated that "the Air Force portion of the nuclear deterrent is sound, and we will take every measure necessary to provide safe, secure, reliable nuclear surety to the American public.". Inspections, resignations, and further discipline. Minot's full NSI took place beginning on 17 May 2008, and was conducted by inspectors from the Defense Threat Reduction Agency (DTRA) and the USAF's Air Combat Command (ACC). On 25 May, the DTRA issued the 5th Bomb Wing an "unsatisfactory" rating, the lowest rating possible, from the inspection. The 5th passed the inspection in nine of ten areas, but failed in the area of nuclear security. Following the inspection, Westa stated, "Overall, their assessment painted a picture of some things we need to work on in the areas of training and discipline". The 5th Bomb Wing Security Forces Squadron Commander, Lieutenant Colonel John Worley, was replaced by Lieutenant Colonel Stephen Weaver on 16 June 2008. In spite of failing the NSI, the wing kept its nuclear certification. Said Hans Kristensen, director of the Nuclear Information Project at the Federation of American Scientists about the 5th's failure in the inspection, "It makes you wonder what's going on elsewhere, like the nuclear weapons stationed at bases overseas, and at Barksdale Air Force Base and Whiteman Air Force Base." Minot passed the follow-up inspection on 15 August 2008. On 5 June 2008, Robert Gates announced the results of an investigation into the incorrect shipment in 2006 of four Mk 12 forward-section reentry vehicle assemblies to Taiwan. The investigation, conducted by Admiral Kirkland H. Donald, director of U.S. Naval Nuclear Propulsion, found that the Taiwan missile incident was, in Gates' words, "a degradation of the authority, standards of excellence and technical competence within the nation's ICBM force. Similar to the bomber-specific August 2007 Minot-Barksdale nuclear weapons transfer incident, this incident took place within the larger environment of declining Air Force nuclear mission focus and performance" and that "the investigation identified commonalities between the August 2007 Minot incident and this [the Taiwan] event." In his investigation report, Donald stated that the issues identified by his investigation were "indicative of an overall decline in Air Force nuclear weapons stewardship, a problem that has been identified but not effectively addressed for over a decade. Both the Minot-Barksdale nuclear weapons transfer incident and the Taiwan misshipment, while different in specifics, have a common origin: the gradual erosion of nuclear standards and a lack of effective oversight by Air Force leadership.". As a result of the investigation, Gates announced that "a substantial number of Air Force general officers and colonels have been identified as potentially subject to disciplinary measures, ranging from removal from command to letters of reprimand," and that he had accepted the resignations of Secretary of the Air Force Michael Wynne and USAF Chief of Staff T. Michael Moseley. Gates added that he had asked James R. Schlesinger to lead a senior-level task force to recommend improvements in the stewardship and operation of nuclear weapons, delivery vehicles and sensitive components by the Department of Defense. Members of the task force came from the Defense Policy Board and the Defense Science Board. On 13 September 2008, Gates announced Schlesinger's task force's recommendations by calling on the USAF to place all nuclear weapons under a single command. The task force suggested that the new command be called Air Force Strategic Command, which would replace the current Air Force Space Command, and make it accountable for the nuclear mission. It also called for all USAF bombers to be placed under a single command. In addition, the task force recommended that the USAF move an additional 1,500 to 2,000 airmen into nuclear-related jobs. Gates announced that acting Air Force Secretary Michael B. Donley and Chief of Staff General Norton A. Schwartz were "reviewing the recommendations" for disciplinary action against USAF officers previously involved in the nuclear mission. The task force found an "unambiguous, dramatic and

unacceptable decline in the Air Force's commitment to perform the nuclear mission and, until very recently, little has been done to reverse it.". On 25 September 2008, the United States Department of Defense announced that six Air Force generals, two Army generals, and nine colonels had received letters of reprimand, admonishment, or counseling. Two Air Force major generals were asked to stay in their current position and the others either retired, planned to retire, or were removed from their position. Air Force Chief of Staff Norton Schwartz met with each officer personally before issuing the letters. He noted that they had committed no offense under the UCMJ, but "did not do enough to carry out their leadership responsibilities for nuclear oversight" and "for that they must be held accountable." The Air Force stated that the discipline was in response to the mistaken shipment of nuclear fuzes to Taiwan, not for the Minot nuclear weapons incident. The Air Force generals who were disciplined were: -Lt. Gen. Kevin J. Sullivan, Air Force Deputy Chief of Staff for Logistics, Installations and Mission Support at the Pentagon. Sullivan was demoted and retired at the rank of major general in November 2008. -Lt. Gen. Michael A. Hamel, who was commander of the Space and Missile Systems Center. He received a letter of admonishment and was allowed to retire in November 2008. -Maj. Gen. Roger W. Burg, commander of 20th Air Force, who received a letter of admonishment. He was allowed to remain in his position to correct problems. -Maj. Gen. Kathleen D. Close, commander of the Ogden Air Logistics Center. She received a letter of admonishment and was allowed to stay on. -Maj. Gen. Francis M. Bruno, director of logistics for Air Force Materiel Command. He received a letter of admonishment and was allowed to retire. -Brig. Gen. Arthur B. Cameron III, was commander of the 309th Maintenance Wing. He received a letter of admonishment and was reassigned. The Army generals were: -Brig. Gen. Lynn A. Collyar, who commanded the Defense Distribution Center from August 2006 to June 2008. He was allowed to stay in his position. -Brig. Gen. Michael J. Lally III, who commanded the center from August 2004 to August 2006. In addition, five colonels received letters of reprimand, including two who were removed from commands. Three other colonels received letters of admonishment, and one colonel received a letter of counseling. In November 2008, the 341st Missile Wing at Malmstrom Air Force Base failed its nuclear surety inspection. The 90th Missile Wing at F. E. Warren Air Force Base failed its nuclear surety inspection one month later. In November 2009 at Kirtland Air Force Base the 377th Air Base Wing, commanded by Colonel Michael S. Duvall, and 498th Nuclear Systems Wing, commanded by Colonel Richard M. Stuckey, failed their nuclear surety inspections. On 30 October 2009, Westa was relieved as commander of the 5th Bomb Wing by Major General Floyd L. Carpenter, commander of 8th Air Force under "perfection is the standard" philosophy. Carpenter stated that Westa was relieved for his "inability to foster a culture of excellence, a lack of focus on the strategic mission, and substandard performance during several nuclear surety inspections, including the newly activated 69th Bomb Squadron.". On 8 January 2009, Schlesinger's task force released its report regarding the overall DoD's management of the country's nuclear weapons mission. The report criticized the DoD for a lack of focus and oversight on its nuclear weapons programs and recommended that the DoD create a new assistant secretary position to oversee its nuclear management. The task force found that within the DoD only the United States Navy was effectively managing its nuclear arsenal. The panel stated that it found "a distressing degree of inattention to the role of nuclear weapons in deterrence among many senior DoD military and civilian leaders.". New command. On 24 October 2008 new USAF Secretary Michael Donley announced the creation of Air Force Global Strike Command, which became operational on 7 August 2009. The USAF's intercontinental nuclear missile force was moved from Air Force Space Command to the new command. Barksdale Air Force Base was selected as the location of the new command's headquarters. The new major command is led by General Robin Rand and controls all USAF nuclear-capable bombers, missiles, and personnel. 65)

2008
2009
2010 till 2019
2010

2010-10-23: US: (ECS) 1 hr loss of control over 50 Minuteman III intercontinental ballistic missiles, high alert, improperly installed computer smart card.

October 23, 2010: Lost Contact with 50 Missiles: “A launch control center at Warren Air Force Base, WY, lost contact with the 50 Minuteman III ICBMs under its control

for nearly an hour in what is known as a “launch facilities down” incident. The missiles were on high alert and carrying nuclear warheads. According to at least one report, there may have been previous communication problems at the site. A spokesperson said the site was still able to monitor the security of the missiles but “We’ve never had something as big as this happen . . . we’ve never lost complete command and control functionality of 50 ICBMs” (Ambinder 2010). The cause of the problem was later found to be a circuit card in one of the computers that had been improperly installed during routine maintenance. While much of the discussion of this incident focused on whether it had affected U.S. readiness, Bruce Blair—an analyst and former ICBM launch officer—noted that “the more important concern should be that for the better part of an hour, the safeguards that protect against unauthorized launch of America’s missiles were compromised” since “the remote underground launch centers that control them lost their ability to detect and cancel any unauthorized launch attempts” (Blair 2010).” This example comes from the UCS. 7)

2011
2012
2013

2013-01-01: US: (HS/HAD) 1 year command totally out of control: hacking defence, unfit for duty, ecstasy, speed, alcohol, women, fraud.

January 1, 2013 — January 31, 2014: Command Out of Control: When nuclear forces were under scrutiny for a year, the reports weren't good: -The Defense Science Board questioned the nuclear command-and-control system’s ability to withstand a major hacking attack. -19 missileers werere deemed unfit for duty and forced to surrender their launch authority. -While investigating two launch officers for use of ecstasy and speed, the Air Force Brass discovered evidence of cheating by numerous launch control officers on proficiency tests. -Maj. General Michael Carey [was] removed as commander of the ICBM program after an official trip to Russia, where he engaged in "inappropriate behavior," including heavy drinking, rudeness to his hosts, and associating with "suspect" women. -More than half of Malmstrom's 183 missileers were implicated in the cheating scandal. Nine officers overseeing nuclear weapons were ultimately fired over the cheating. All of this begs the question: How different was 2014 from other years in which the military's nuclear forces weren't under close watch? These incidents all come directly from the wonderful, comprehensive piece on Mother Jones, That Time We Almost Nuked North Carolina. 7)

2014

2014-01-16: DEU: (C) Büchel/Laubach, Tornado without nuclear weapons crashed on night approach in flight path.

Drucksache 16/3286, 13. 02. 2014, LANDTAG RHEINLAND-PFALZ, 16.Wahlperiode, Kleine Anfrage der Abgeordneten Nils Wiechmann, Jutta Blatzheim-Roegler und Dietmar Johnen (BÜNDNIS 90/DIE GRÜNEN) und Antwort des Ministeriums des Innern, für Sport und Infrastruktur - Tornado-Absturz bei Laubach. The small question 2115 of 23 January 2014 has the following wording: On 16 January 2014, a Bundeswehr Tornado of the Tactical Air Force Squadron 33 crashed on approach to Büchel Air Base. Against this background, we ask the state government: 1. what information does the state government have so far on the course of events and causes of the crash of the Bundeswehr Tornado near Laubach on 16 January 2014? 2. was the night exercise of Air Force Squadron 33 announced? 3. how will the population be informed about the further clarification of the accident? 4. what are the disaster plans for possible scenarios of a Tornado crashing in populated areas, hitting vehicles on the nearby motorway and/or carrying live ammunition? The Ministry of the Interior, Sports and Infrastructure answered the minor question on behalf of the Land government - essentially on the basis of information from the Federal Ministry of Defence and its subordinate agencies - as follows in a letter dated 12 February 2014: Regarding Question 1: At 9:20 p.m. on 16 January 2014, a Luftwaffe TORNADO fighter aircraft crashed between Laubach and Kaisersesch, one kilometre south-west of the Federal Motorway

48 - Laubach junction and about five kilometres north-east of Büchel air base in the Eifel region. The aircraft belonged to Tactical Air Force Squadron 33 in Büchel and was on a training flight at the time of the accident. It was on an instrument approach to its home airfield during a planned night flight. No ammunition or weapons were on board. The pilot and co-pilot were able to eject. One crew member, the pilot, was slightly injured when landing with the rescue parachute in a tree. Both received short-term medical treatment or were examined at the Bundeswehr Central Hospital in Koblenz. Civilians were not affected. The main accident site (where most of the large wreckage was found) was in an uninhabited area (forest), there was damage to the land and the 48 motorway, about 50 metres away, had to be temporarily closed because most of the tree fragments had been hurled there. Fortunately, there was no danger to citizens in the actual crash situation, as the plane crashed in undeveloped terrain. The flight recorder of the crashed Tornado aircraft was found. The air accident investigation was initiated immediately. It is being conducted by the police, the public prosecutor's office and air traffic control. An air accident investigation team from the General Air Safety in the German Armed Forces was immediately deployed to the accident site. The investigations took place or are taking place at the accident site. Printed Matter 16/3286 Rhineland-Palatinate State Parliament - 16th Election Period and in the affected squadron. The accident site has been cleared in the meantime, contaminated soil was removed over a wide area for environmental reasons, and the excavation work was accompanied by independent civilian experts. The excavated soil was taken to Büchel airbase, where it was examined for debris and then disposed of. At present, the cause of the accident is still unknown and no further details are available on how it happened. According to initial findings, the Bundeswehr does not assume technical causes. A final investigation report on Bundeswehr air accidents is usually drawn up within six months. In this case, the report is therefore not expected before the end of July this year. Regarding question 2: No. Basic regulations on flight operations are published in the German Military Aviation Manual and are binding for all military air traffic participants. According to this, military flight operations are generally permitted from Monday 6.01 a.m. to Friday 11.59 p.m.. In Büchel or at Tactical Air Force Squadron 33, flights are flown in the 2-round model or 3-round model, depending on the availability of airspace, firing ranges and runways, as well as on demand and conditions: 1st round: 9.30 am to 12.30 pm 2nd round: 2.30 pm to 5.30 pm 3rd round: 7.30 pm to 10.30 pm. Thus the flight belonged to the 3rd round until the crash at 21.20 hrs. The round models are not static and can be adjusted in time if necessary depending on training and exercise requirements. Regarding question 3: Public relations work in this regard is the responsibility of the Bundeswehr or the Air Force. A final investigation report by the Bundeswehr is not expected before the end of July 2014. Apart from that, I assume that the Bundeswehr will clarify the incident comprehensively. Regarding question 4: The municipalities and districts fulfil their tasks in fire protection and disaster control as mandatory tasks of self-government. They are therefore also responsible for drawing up and updating alarm and deployment plans for the various danger situations. The state supports them in this task, in particular by providing framework alarm and deployment plans for different hazard situations. At its meeting on 4 September 2013, the fire brigade working group decided that a special framework alarm and operations plan for air accidents is not considered necessary by the state. There is no nationwide requirement, but only selectively in the vicinity of airfields. The municipalities concerned were advised to use the Birkenfeld district administration's alarm and operations plan in relation to airfields for their own planning, if required. In all other respects, the General Alarm and Deployment Plans of the municipalities and districts apply in conjunction with the Special Alarm and Deployment Plans for Motorways, Health and the "Training and Deployment Instructions for Fire Departments and Civil Protection in the Event of Incidents Involving Ammunition and Explosives". Roger Lewentz Minister of State 79)

2014-03-01: DEU: (EWA) Büchel/Nordhorn, 3 practice bombs lost: technical malfunction caused misdrop

In March, a Tornado of Tactical Air Wing 33 from Büchel had lost three practice bombs during a training mission at the Nordhorn air-ground firing range near the municipality of Wietmarschen in Emsland. Now the Federal Ministry of Defence has stated that a technical malfunction in the aircraft's weapon system led to the unintentional dropping of the practice bombs. 30)

2015
2016

2016-03-18: US: (HAD) Over 3 months of substance abuse, 19 soldiers, 150 nuclear missiles, 90th Missile Wing at F. E. Warren Air Force Base.

March 18, 2016 — June 15, 2016: Drug Use and Nuclear Security: 19 airmen from the 90th Missile Wing at F. E. Warren Air Force Base are under investigation for illegal drug use. The base operates 150 nuclear missiles, and the airmen who are being charged were responsible for ensuring the security of the weapons. This information comes from the Washington Post and the Air Force Times. 7)

2016-06-19: WORLD: (…) Rising risk: cyber, tensions USA-CHI/RUS, China "hair-trigger alert".

June 19, 2016: Gambling with the Future: the Growing Risk: Don't be fooled by the decreasing number of events in recent years. For one thing, the military doesn't have to declassify recent events, so there's certainly a chance mistakes have occurred in recent years that we just don't know about yet. But more worrisome is the evidence piling up that the risk of an accidental nuclear war is actually growing. For example, General James Cartwright, who oversaw the U.S. nuclear arsenal, and others highlight the potential threat due to cyberattacks. They note that the increased frequency and sophistication of cyberattacks leads to concerns about attacks on military warning systems or nuclear command and control systems that could result in false alarms or unauthorized missile launches. And that's on top of growing concerns about Russia and China. Both countries are listed as potential cyber and nuclear threats in the 2016 Worldwide Threat Assessment of the U.S. Intelligence Community. Tensions with both countries are growing, which increases the risk that false warning will be interpreted as a real attack and lead to a retaliatory strike. Meanwhile, China is showing signs that it may adopt a hair-trigger alert policy, similar to that of the U.S. And it would be relying on a new warning system that may be more susceptible to bugs and human errors. With all of this combined, it becomes clear that the risks of a small problem escalating into a full-scale nuclear war are much greater than most people realize. 7)

2016-06-20: WORLD: (...) Unknown incidents, nuclear deterrence unsuitable, more dead than saved with nuclear war risk greater than zero.

June 20, 2016: The Incidents We DON'T Know About: The annual probability of accidental nuclear war is poorly known, but it certainly isn’t zero: John F. Kennedy estimated the probability of the Cuban Missile Crisis escalating to war between 33% and 50%, and near-misses keep occurring regularly — probably more frequently than we are aware of: Although most of these incidents on our timeline were reported by US sources, there is no reason to believe that the opposing superpower had fewer incidents, or that there have been zero incidents in China, the UK, France, Israel, India, Pakistan or North Korea. Although some argue that the superpowers should keep their current nuclear arsenals forever, simple mathematics shows that nuclear deterrence isn’t a viable long-term strategy unless the risk of accidental nuclear war can be reduced to zero: Even if the annual risk of global nuclear war is as low as 1%, we’ll probably have one within a century and almost certainly within a few hundred years. This future nuclear war would almost certainly take more lives than nuclear deterrence ever saved. 7)
According to Sandia National Laboratories, there were more than 1,200 such false alarms between 1950 and 1968 alone. The US author Eric Schlosser documented many of these incidents and accidents over the last 70 years in his book "Command and Control". xh (sources). Edited: January 2019. 20)

2017

2017-02-14: DEU/US: (C) US-Spangdahlem/Eifel: Test message missile warning with shelter, on all "live" screens. After 8 min all-clear.

At the US base in Spangdahlem in the Eifel region, there is a missile warning with a request to seek shelter immediately. A missile message sent for test purposes accidentally

appears on all screens. After eight minutes, the all-clear is given. 5)

2018

2018-01-13: NKOR/US: (HM/HDM) Hawaii-II: 'Warning' intercontinental ballistic missile, wrong button pressed, advance nuclear threats North Korea.

Hawaii is warned of an attack by an intercontinental ballistic missile. The emergency notification is sent to the population via mobile phones. There are conflicting reports about the causes. First, it is said that a civil protection employee accidentally pressed the wrong button. A few days later, there is information that the person responsible for the alarm actually believed in an attack on the USA. Due to the mutual nuclear threats that existed in advance between North Korea and the USA, this action could also have been understood by North Korea to mean that the USA was planning an attack on North Korea and wanted to take its citizens to safety in anticipation of the expected North Korean counterattack. 5)
For 38 minutes in 2018, the people of Hawaii were anxious because there was a missile false alarm. Someone had pressed the wrong button. Residents of the islands received a text message from the Emergency Management Agency: "Impending ballistic missile. Seek shelter immediately. This is not a drill." The message caused panic. People scrambled to find a safe place or try to find their family. More than half an hour later, the all-clear was given. 20)
USA. False missile alarm in Hawaii. A false alarm warning of an imminent missile strike in the US state has caused a stir in Hawaii. The warning was sent out by text message by the emergency services. A spokesperson for the US Pacific Command explained that the warning sent to the mobile phones of Hawaii residents was an oversight. In fact, there were no missiles approaching the US island chain in the Pacific Ocean. Governor David Ige also denied such a threat. US President Donald Trump was informed about the incident, according to the White House. According to CNN, an agency employee had pressed the wrong button during a shift change, setting off the alarm. The Honolulu branch of the National Weather Service, on the other hand, said the alarm was a test message sent by mistake. Some mobile phone users had previously received a message with an urgently worded warning. "Ballistic missile threat within Hawaii," it read. "Seek shelter immediately. This is not a drill." The message, photographed from a mobile phone screen, was further circulated via online social networks. Hawaii has a population of about 1.4 million. In November, authorities there had said they would resume monthly test runs of the alert sirens that warn of a nuclear attack. The message was sent via the emergency alert system Amber Alert, which US authorities use nationwide to disseminate important messages. It took US authorities more than half an hour to give the all-clear. Within reach of North Korea. The false alarm caused panic among the people of Hawaii against the backdrop of recent tensions in relations with North Korea. Pyongyang had declared at the end of November, after the test of a missile with a particularly long range, that the entire US territory was now within range of the North Korean army. In recent months, North Korea's ruler Kim Jong Un had alarmed the international community with missile tests and the most powerful nuclear test to date. In addition, Kim engaged in a verbal exchange of blows with US President Donald Trump, who in turn threatened North Korea with total destruction. All of this triggered international fears of nuclear war. 67)

2019

2019-08-08: RUS: (C) Arkhangelsk, test area/sea, explosion rocket stage?, hypersonic nuclear missile Zirkon? 5 dead? 3 injured? DMH/radioactivity?

Explosion at a Russian missile test range causes increased radioactivity. People in the region are told to buy iodine, speculation is rife that the cause is a mishap with a hypersonic missile or even a nuclear missile. Yesterday, people were injured again in an explosion at an ammunition depot for mines and missiles near Atchinsk in the Krasnoyarsk region. The cause is said to have been a lightning strike. On Monday, there had already been fire-triggered explosions there in which several people were injured and one killed. There are said to be 40,000 shells stored there, but more details are unknown. The authorities had evacuated 16,000 people living within a 20 km

radius of the depot, air traffic was temporarily suspended and a state of emergency was declared. According to Deputy Defence Minister Dmitry Bulgakov, the cause was human error. More mysterious, however, is the explosion of a missile stage at a test site in Russia's Arkhangelsk region on the White Sea on Thursday. Two people are said to have been killed and six injured, and the nearby town of Severodvinsk, with a population of 185,000, experienced a brief spike in radioactivity at midday, according to authorities, but this has returned to normal. The Russian Ministry of Defence announced, however, that the radioactivity was normal and that no toxic gases had escaped. It was a test of a liquid propulsion system that had exploded. Greenpeace Russia points to the measurement of the city authorities and says that with an increase to 2 µSv/h (microsievert), the normal background radiation was exceeded by a factor of twenty. There could be alpha and beta emitting radionuclides in the air that could be potentially dangerous. Greenpeace demands clarification from the consumer protection and health authority Rospotrebnadzor about how high the radiation at the accident site had risen, which radionucleotides were released, whether there was a danger to people and what caused the increase in radioactivity. According to Kommersant, the radioactivity levels were elevated for half an hour and then dropped again to 0.1 microsievert. The city authorities gave the all-clear accordingly. According to media reports, people in the cities of Arkhangelsk and Severodvinsk apparently do not believe the reassuring information from the Ministry of Defence and are said to have bought iodine en masse today to protect themselves from radioactive radiation. Wild speculation. Meanwhile, due to the silence of the Defence Ministry, there is wild speculation about what might have blown up. It is not even entirely clear whether the explosion really occurred at the missile test site or not at sea. The navy is also testing cruise missiles at the site. Some of the injured are said to have been taken to Moscow for treatment. Rumours are circulating that it may have been a new Typa Zirkon hypersonic missile. Said to have been in use since 2017, Russian President Vladimir Putin said in February it could hit targets at sea and on land, had a range of over 1000 km and a speed of up to Mach 9. Warships and submarines are equipped with it. Andrei Frolov, co-chairman of the Association of Moscow Environmental Protection Organisations, even thinks that torpedoes with nuclear warheads could have been tested. Kommersant reports that in connection with the incident, Dvina Bay was closed to civilian shipping for a month. An officer told the newspaper that the closure may have been due to a mishap in which the highly flammable 1,1-dimethylhydrazine leaked from the rocket fuel and caused an explosion. When burned, toxic poisons are formed that can be inhaled or absorbed through the skin and have numerous consequences, including fatal toxic pulmonary oedema. Tonnes of dimethylhydrazine may have entered the sea. The ban on shipping could serve to stop fishing so as not to endanger people. This is what used to happen when missiles fell into the sea. After three or four weeks, the poison is diluted to such an extent that it is no longer dangerous. The British media in particular are hyping up the incident and speculatively playing with a nuclear accident. The Express headlines: "What is Putin hiding? Emergency closure of Russian base after mishap with 'nuclear missile'." You put nuclear missile in inverted commas, thus raising it ominously in the title, but can do no more than pass on conjecture. Daily Mail can't do without the personalisation with Putin either: "Is Putin covering up a nuclear disaster?" Ankit Panda of FAS thinks there may have been an accident involving a nuclear propulsion system for a cruise missile. Update: Rosatom has confirmed the accident and speaks of 5 dead and 3 injured. The explosion was caused by testing isotope current sources in a liquid propulsion system. However, it does not say whether there is a connection with the brief increase in radioactivity. No radioactivity is released in a liquid propulsion system. 73)

2020 till 2029
2020

2020-12-12: DEU/US: (C) Ramstein conceals cause over false alarm linked to 4 Russian practice missiles in Sea of Okhotsk (Pacific)

"Air Attack" - False Alarm at U.S. Ramstein Air Base Sends Army Members into Panic. Thousands of U.S. Army personnel at Ramstein Air Base heard the alarming "Big Voice" in mid-December: "Air attack, air attack, take cover, take cover!". The reason for the alarm was said to be the launch of four intercontinental ballistic missiles from a Russian nuclear submarine in the Sea of Okhotsk. Early in the morning of Dec. 12, something remarkable happened at Ramstein Air Base in Rhineland-Palatinate, Germany. Personnel at Ramstein Air Base, the largest U.S. military complex abroad, received frightening instructions to take cover from an imminent missile

attack. Accompanied by wailing sirens, the so-called "Big Voice" warned, "Air attack, air attack, take cover, take cover!" Nothing unusual when it comes to an exercise. But the appropriate notice was missing, which sent the soldiers into a momentary panic. The all-clear was given only after the reported missile launch was assessed by the command center "as part of a training exercise and not a threat to the Kaiserslautern Military Community (KMC) area." "The Ramstein Air Base command post was informed via a U.S.-German alert system of a real missile launch in the European area. The command post followed the prescribed procedure and informed military personnel in the Kaiserslautern military community via loudspeaker announcements," the command center announced the same morning on the air base's official Facebook page. U.S. media did not report the incident until the following Monday. In doing so, they quoted several Facebook users who reported a state of anxiety. One pilot wrote, "I ran into [the military base headquarters] and yelled for people to take cover ... When you hear over the loudspeaker 'This is not a drill,' your stomach turns." Another wrote, "My heart stopped for a moment." However, many U.S. residents reported they received no warning. In some cases, loudspeakers could not be heard on the base's vast grounds, and in others, personnel received incorrect instructions or no messages by cell phone. More than 8,000 military personnel are employed at the Ramstein U.S. base, and KMC has a total of about 54,000 U.S. personnel. Later, Defense Department officials quoted by CNN were forced to acknowledge that "the warning at Ramstein Air Base led to several minutes of uncertainty and alarm until there was an all-clear." Although there was no official Pentagon statement on the incident last week, U.S. military officials linked the false alarm to the missile launch during a Russian military exercise. "Top-secret U.S. military satellites tracking the infrared trail of ballistic missiles determined that a submerged Russian submarine test-fired four intercontinental ballistic missiles Saturday from its underwater position in the Sea of Okhotsk off eastern Russia," CNN wrote. The Russian exercise did indeed take place. Four days before its start, Russia had issued the usual "notice to pilots" to avoid the area, indicating that such an exercise was taking place. On December 12, the Russian Defense Ministry announced that the nuclear-powered submarine "Vladimir Monomakh" of the Pacific Fleet had launched four Bulava ballistic missiles from the waters of the Sea of Okhotsk. According to the ministry, the salvo launch was carried out from an underwater position at the Chisha firing range in the Arkhangelsk region at a distance of 5,500 kilometers. Thus, the "real missile launch" reported by Ramstein Air Base on Saturday did not take place "in the European area" as stated, but in the Far East. Earlier last week, when the incident was reported in the U.S. media, it was not yet clear from the U.S. side why the large-scale alert at Kaiserslautern was triggered despite Russian advance warning. "U.S. Strategic Command was able to quickly confirm that the missiles did not pose a threat, so it is not clear why the warning was triggered," said anonymous sources in the Defense Department cited by CNN. "One official noted that the incident is concerning because there is always potential for misjudgment given tensions with Russia. But there was no indication of a threat this time," the U.S. media outlet said. Given this lack of clarity in a "worrisome situation," U.S. author and anti-war activist Bill Van Auken questions how close this incident has brought the world to the brink of nuclear war. In his article at wsws.org, he points out the laudatory words used by General Timothy Ray, commander of Air Force Global Strike Command to describe the readiness of the U.S. Air Force for nuclear war just two days before the incident: "Our bomber crews are better prepared today than at any time in the history of Air Force Global Strike Command. Our intercontinental ballistic missiles were absolutely steadfast in this entire endeavor.... They never faltered. I could hardly be more pleased." There was no alternative to nuclear weapons, he stressed. Also noteworthy is another article published in the main U.S. foreign policy journal Foreign Affairs just three days after the false alarm at Ramstein. In the article, "Sleepwalking to the Nuclear Abyss," former Energy Secretary Ernest Moniz and former senator and longtime Armed Services Committee Chairman Sam Nunn drew a direct comparison between current global tensions and the situation prior to World War I. The authors call on the Biden administration to advocate for the extension of the Strategic Arms Reduction Treaty (New START). The article was written before the events in the German state of Rhineland-Palatinate. There were also reports in Russia about the false alarm that occurred on German soil during a Russian exercise in the North Pacific. Russian military analyst Mikhail Khodaryonok points out in an article that the space and ground levels of the United States' nuclear missile warning system operate in a fully automatic mode. "In the event of a massive nuclear missile attack, both the U.S. early warning system about a missile attack and the Russian one must give a "missile attack" signal to the top military and political leadership with very high reliability." Since the U.S. had all the necessary information about the Russian missile launch, he said, he sees no room for error. So the talk that there was "uncertainty and alarm for a few minutes" at Ramstein Air Base does not seem to be true, Hodarjonok said. In contrast to media in the U.S. and Russia, the major false alarm at Ramstein was not a topic for German media. Only one local portal devoted a few lines to the incident the following day. 24)

2021

2021-01-07: US: (...) Perry calls for abolition of president's sole decision-making power over nuclear weapons after Washington riots.

Ex-Pentagon chief calls for reform of access to nuclear weapons: After the unrest in Washington, ex-Pentagon chief William Perry is calling for a reform of access to nuclear weapons in the USA. The US president should no longer be the only one to decide whether to use them. In the debate over the US president's power over the country's nuclear weapons, former Pentagon chief William Perry has called for a reform of the current system. As soon as future US President Joe Biden is sworn in, he should announce "sharing his authority to use nuclear weapons with a select group in Congress", Perry wrote in a joint guest article with political expert Tom Collina for the magazine "Politico". Perry and Collina called it "outdated, unnecessary and extremely dangerous" that in the United States the president still has sole control over the nuclear arsenal. The current system gives the current president the "god-like power to wreak global destruction in the blink of an eye". The authors also appealed to Biden to publicly declare that the US would never launch a nuclear war and would only use a nuclear bomb if attacked. Perry served as Secretary of Defence from 1994 to 1997 under then Democratic President Bill Clinton. No say for defence secretaries: Perry and Collina also pointed to the danger posed by outgoing President Donald Trump. "Do we really think Trump is responsible enough for us to entrust him with the power to decide the end of the world?" the post said. Presidents have the "absolute authority" to launch nuclear war, it continues. "Within minutes, Trump can set off hundreds of nukes, or just one. He doesn't need a second opinion. The Secretary of Defence has no say. Congress doesn't matter. Why are we taking this risk?" Trump threatens second impeachment: On Friday, House Democratic Leader Nancy Pelosi said she had discussed with US Chief of Staff Mark Milley how to stop Trump from a possible nuclear attack in his final days in office. The conversation was about how to prevent "an unstable president from initiating military combat operations or accessing launch codes and ordering a nuclear strike", Pelosi explained in a letter to Democratic lawmakers. A few days before Donald Trump has to leave the White House, the Democrats want to launch a second impeachment trial as soon as possible. The trigger is the storming of the Capitol by Trump supporters. The initiation of impeachment proceedings alone would be historic: never before in US history has a president had to answer to Congress twice for alleged serious misdemeanours. Trump had already been impeached in December 2019 for abuse of power and obstruction of congressional investigations. In February 2020, the Republican-dominated Senate acquitted him. 38)

2021-03-02: DEU: (C) Büchel/Nordhorn, 2 practice bombs lost: cause still under investigation.

During training in Nordhorn Tornado accidentally loses two practice bombs. During training over the Nordhorn Range in Lower Saxony yesterday, an Air Force Tornado lost two practice bombs. The German Armed Forces have collected the dummy bombs and are investigating what happened. It was not the first case of this kind in Nordhorn. The Nordhorn air-ground firing range near the Dutch border is the largest Luftwaffe training area in Germany. Accordingly, the fighter aircraft of the German Armed Forces and neighbouring NATO partners are often active there: Eurofighters from Nörvenich and Tornados from Büchel and Jagel share the training area with Belgian and Dutch F-16s. Last Tuesday, the Nordhorn Range, as the area was officially called until 2001, was again busy. Two Luftwaffe Tornados practised dropping bombs at the site. However, on approach to the firing range, one of the two swing-wing aircraft accidentally lost two practice bombs. The bombs "prematurely separated from the aircraft" and fell "into the immediate surveillance area of the firing range", the air force announced yesterday evening via Twitter. The Bundeswehr would not comment on the origin of the Tornado that suffered the mishap, citing ongoing investigations. Based on available radar data from yesterday, however, it seems likely that it was an aircraft from Tactical Air Force Squadron 33 from Büchel. Don't touch anything, rather go to the police. The Luftwaffe initially advised the public not to "touch any objects found" in the area, but instead to notify the police. The bomb dummies were filled with smoke cartridges for display purposes, "which produce a white-grey cloud when they hit the ground." However, they did not contain explosives. Both bomb dummies have since been found, Team Air Force said on Twitter this afternoon.

Fighter jets accidentally dropping ammunition during training is not an everyday occurrence, but it has happened several times in Nordhorn. In 2014, for example, a Tornado of TLG 33 lost a practice bomb in the area of the municipality of Wietmarschen, about ten kilometres away from the training area. A similar incident occurred in November 2005 in Grafschaft Bentheim, also with a Tornado. An air force spokesman commented at the time that the pilot had probably released the practice bomb about 900 metres too early. The dummy went down only a few metres away from a house, NDR wrote at the time. 69)
Tornado loses practice bombs in Nordhorn. A Tornado in Nordhorn accidentally lost two practice bombs during a training approach to Nordhorn Range on Tuesday. This is reported by the Grafschafter Nachrichten. As the air force announced via Twitter, the practice bombs had prematurely detached from the aircraft and fallen into the immediate surveillance area of the drop zone. According to the statement, there was no danger of explosion. A Bundeswehr search party collected the lost training weapons. 70)

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XXXX-XX-XX: (...) Accidents involving nuclear weapons: To date, at least 50 nuclear warheads and 9 nuclear reactors have been lost at sea.

Accidents with nuclear weapons: "Broken arrows" and "faded giants": No matter how one assesses the current danger of nuclear war, the serious problems of accidental use or accidents with nuclear weapons still remain. History shows that nuclear weapons accidents have been a serious problem from the beginning of the nuclear age. Moreover, this past is so fraught with secrecy and inconsistencies that it is difficult to document objectively. Public information is sparse, and often the official line is "neither confirm nor deny" that nuclear weapons were involved in an accident. Since 1980, the Pentagon has not published another list of nuclear weapons accidents. The latest publication lists 32 accidents between 1950 and 1980: That is more than one serious nuclear accident per year. This list is certainly not complete, nor does it include "incidents" involving nuclear weapons, only serious accidents. However, the General Accounting Office (GAO) reported that the number of accidents and incidents involving nuclear weapons in the Navy alone from 1965 to 1983 was 563, with 330 incidents possibly being only security breaches. Thus, according to official figures, the number for the US Navy alone is at least 233 accidents. A 1973 Sandia Nuclear Laboratory report was based on a secret military document stating that there had been a total of 1,250 incidents involving US nuclear weapons between 1959 and 1973, including 272 accidents involving an impact and sometimes even an explosion of the conventional explosive. Even less information is available for other nuclear-weapon states. It was only in 2003 that a parliamentary ombudsman managed to obtain from the British Ministry of Defence a list of 20 accidents for the period from 1960 to 1991. The accidents were cases in which nuclear weapons fell from a great height or their tractors were involved in traffic accidents. In some cases, nuclear weapons collided with each other and in one case a truck carrying nuclear weapons slid down a hill and overturned. The list shows that trucks carrying nuclear weapons overturned on British roads in two cases and two nuclear convoys were involved in serious car accidents. The naval history of the two superpowers is extremely marked by secrecy and lies. Neither the US nor Russian navies want the truth about the accident record to come out. Nevertheless, Greenpeace and the Norwegian environmental foundation Bellona have been able to discover quite a lot: at least 1,200 serious accidents up to 1989, about one every fortnight. They included shipwrecks, collisions of ships or with submarines, collisions with icebergs, explosions and fires. They have happened on the open sea, in coastal waters, in shipyards and in ports all over the world. Many people have lost their lives. As a result of these accidents, more than 50 nuclear warheads and nine nuclear reactors are on the seabed. All these accidents could have turned into catastrophes, some of them have, without it being possible to determine exactly what the actual consequences are. The greatest catastrophe, however, would be a nuclear war triggered by a mistake. The Cuban Missile Crisis is the world's best-known example of a near nuclear war. However, there are at least five other examples, all different from the Cuban Missile Crisis: They occurred because US or Russian leaders responded to a false alarm caused by a malfunction of warning systems or a misinterpretation of events. All of these incidents were brief - no more than 10 minutes long. Senior military leaders had to decide in a very short period of time whether to initiate a nuclear "strike back" before their own nuclear weapons would have been destroyed. So far, they have decided correctly. However, they are just people who have to work over-long shifts under extremely stressful and unhealthy conditions.

Today, there are still about 1,800 nuclear weapons on high alert. A wrong decision would mean the end of civilisation on planet Earth. 40)

Sources

Technical note:
In the "Sources" section, you will find the type of source, a link if it exists, the name of the source and a short list of all events that the source otherwise contains - by time and keyword put in brackets at the end of the respective source.

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71) E-MAIL vom 08.05.2021/E-MAIL from 08.05.2021 …zu "Able Archer" von Rainer Wolfgang Rupp. Übermittelt von Rupp's Führungsoffizier der HVA, Karl Rehbaum, der vor 1990 zuständig war für die operative Bearbeitung der NATO in der zuständigen Abteilung XII. Er kannte also alle Informationen der Quelle "Topas" (Rainer Wolfgang Rupp) ...on "Able Archer" by Rainer Wolfgang Rupp. Transmitted by Rupp's senior officer at the HVA, Karl Rehbaum, who before 1990 was responsible for the operational processing of NATO in the responsible Department XII. He therefore knew all the information from the source "Topas" (Rainer Wolfgang Rupp) (1983-11-2/7/11: AbleArcher83/RJaN)

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