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A SUMMARY OF ACCIDENTS AND SIGNIFICANT INCIDENTS

INVOLVING U.S. NUCLEAR WEAPONS

AND NUCLEAR WEAPON SYSTEMS (U)

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Title: Manager, Date: June 2, 1990
Nuclear Safety Department

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TABLE 1 - SUMMARY OF ACCIDENTS INVOLVING US NUCLEAR WEAPONS

ACCIDENT NUMBER	DATE	LOCATION	WEAPON CONFIGURATION: ASSEMBLED WEAPONS	WEAPON CONFIGURATION: UNASSEMBLED WEAPONS	WEAPON CONFIGURATION: COMPONENTS ONLY	TYPE OF ACCIDENT	NUCLEAR WEAPON RESPONSE: HE RESPONSE: HE BURN	NUCLEAR WEAPON RESPONSE: HE RESPONSE: HE DETONATE	NUCLEAR WEAPON RESPONSE: CONTAMINATION
1	02/13/50	Puget Sound, WA	-	X	-	Jettison, 8000'			
2	04/11/50	Manzano Base, NM	-	X	-	Crash into mountain			
3	07/13/50	Lebanon, OH	-	X	-	Crash in dive			
4	08/05/50	Fairfield-Suisan AFB, CA	-	X	-	Emergency landing, fire			
5	11/10/50	Over water, outside US	-	X	-	Jettison			
6	03/10/56	At sea (Mediterranean)	-	-	X	Aircraft lost			
7	07/27/56	SAC Base	-	X	-	B-47 crashed into bunker			
8	05/22/57	Kirtland AFB, NM	-	X	-	Inadvertent jettison			
9	07/28/57	At sea (Atlantic)	-	X	-	Jettisons, 4500' & 2500'			
10	10/11/57	Homestead AFB, FL	-	X	-	Crash on takeoff, fire			
11	01/31/58	SAC base overseas	X	-	-	Taxi exercise, fire			
12	02/05/58	Savannah, GA	-	X	-	Mid-air collision, jettison			
13	03/11/58	Florence, SC	-	X	-	Accidental jettison			
14	11/06/58	Dyess AFB, TX	X	-	-	Crash on takeoff			
15	11/26/58	Chenault AFB, LA	X	-	-	Fire on ground			
16	01/08/59	US base, Pacific	-	X	-	Ground alert, fuel tanks on fire			
17	07/06/59	Barksdale AFB, LA	X	-	-	Crash on takeoff, fire			
18	09/25/59	Off Whidbey Is., WA	-	X	-	Navy aircraft ditched			
19	10/15/59	Hardinsburg, KY	X	-	-	Mid-air collision, impact			
20	06/07/60	McGuire AFB, NJ	X	-	-	Missile fire			
21	01/24/61	Goldsboro, NC	X	-	-	Mid-air breakup			
22	03/14/61	Yuba City, CA	X	-	-	Crash after abandonment			
23	11/13/63	Medina Base, TX	-	-	X	Storage igloo at AEC plant			
24	01/11/64	Cumberland, MD	X	-	-	Mid-air breakup, crash			
25	12/05/64	Ellsworth AFB, SD	X	-	-	Missile re-entry vehicle fell			
26	12/08/64	Bunker Hill AFB, IN	X	-	-	Taxi crash, fire			
27	10/11/65	Wright-Patterson AFB, OH	-	-	X	Transport a/c fire on ground			
28	12/05/65	At sea, Pacific	X	-	-	Aircraft rolled off elevator			
29	01/17/66	Palomares, Spain	X	-	-	Mid-air collision, crash			
30	01/21/68	Thule, Greenland	X	-	-	Crash after abandonment			
31	Spng '68	At sea, Atlantic	X	-	-	Lost weapons			
32	09/19/80	Damascus, AK	X	-	-	Missile fuel explosion			

NOTES:

1. USAF 09/19/77 press release to Richard Panter, Eye-Witness News Boston, obtained under the Freedom of Information Act, supplemented by DOD per Appendix 1.

2. The term "Assembled Weapon" means either that the separable nuclear capsule was installed but was not in the bomb's pit or a sealed-pit type of weapon with the nuclear material integral with the HE subsystem. "Unassembled Weapons" means that the separable nuclear capsule was not installed in the weapon. (The USAF press release for accidents 1-13 used the term "assembled weapon" for the above plus where a capsule was on the aircraft.

3. Contamination from all accidents except 29 & 30 was low in radioactivity and highly localized in area affected.

4. In the parentheses, the first number indicates the number of weapons that had the named response, and the second number gives the total involved in the accident.

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Accident #29 Palomares, Spain 7/17/66:

1. A B-52 Aircraft carrying four Mk 28 Y1 Mod 2 War Reserve Weapons in an MHU-20/C Clip-in Assembly collided with a KC-135 Tanker at an altitude of approximately 30,500 feet during an overwater refueling operation. Both aircraft were destroyed.

2. The first weapon was found to be relatively intact with the loading lugs still engaged in the MB-3 Release mechanism. The tail closing plate was torn away from the rear case and the pilot chute had deployed. The bomb nose was depressed slightly and three of the fins had been torn away. The Arm-Safe Switch indicated SAFE. In accordance with rendering safe procedures, the weapon battery was removed. DOE b(3)

3. The primary of the second weapon which impacted in the village apparently underwent a low order detonation. DOE b(3) The afterbody was fairly intact and the pilot chute had deployed. The weapon case and internal weapon components were badly broken and mangled by impact and detonation. DOE b(3)

4. The third weapon which impacted in rocky hills also experienced a low order detonation of the primary explosives. DOE b(3) The crater measured approximately 20 feet across and six feet deep. The afterbody and parachute pack were blown approximately 100 yards from the crater. The mild detonating fuze had detonated and the pilot chute had spilled out. The main chute was out of the ruptured afterbody case but was retained in the chute cover. DOE b(3)

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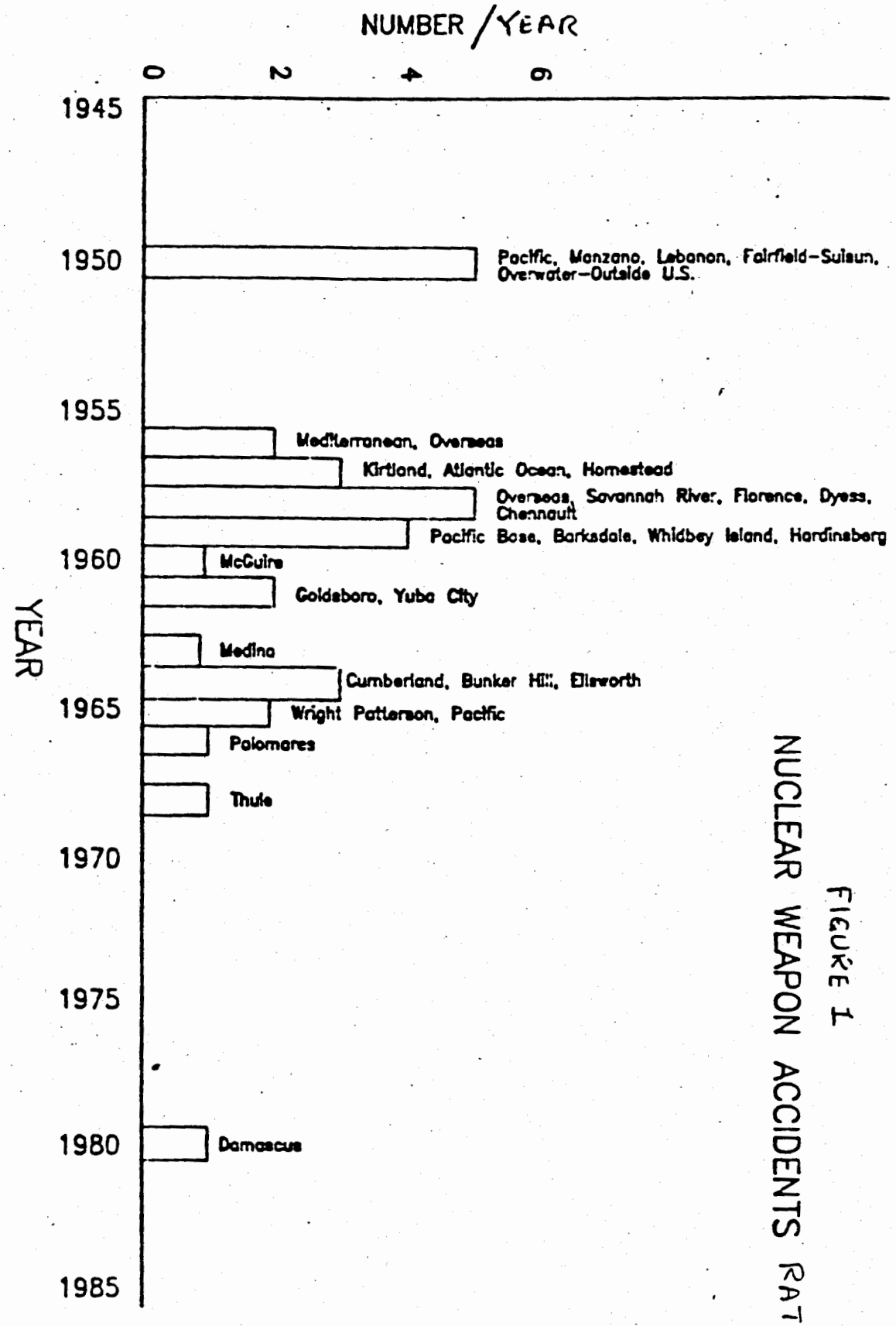

FIGURE 1
NUCLEAR WEAPON ACCIDENTS RATE

summary, of the nuclear weapons involved in the accidents since 1950:

...One of the 16 weapons (accident 4, Table I) involved in accidents with liquid hydrocarbon fuel fires (7 accidents) or missile propellant fuel fires (1 accident) experienced high-order HE detonation.

...Five of the 11 weapons involved in aircraft crashes (6 accidents) experienced HE detonation.

...Five of the ten weapons involved in accidents with free-falls (8 accidents) experienced HE detonation on impact. Free falls resulted from ejected missiles (1 accident), aircraft which broke-up in mid-air (2 accidents), jettisons (5 accidents). Neither of the two weapons involved in aircraft ditching (1 accident) or aircraft rolling off of a ship (1 accident) detonated.

...None of the three bombs involved in accidents (2 accidents) with retarded falls from high altitudes experienced HE detonation on impact.

.. [redacted] DOE b(3)

In this total accident experience, there were two instances where extensive decontamination was performed: the Palomares, Spain, and Thule, Greenland accidents which involved dispersal of plutonium by detonation of the weapons' HE on impact. For the two instances where the plutonium melted as a result of the HE burning, only minor local decontamination (mostly washing and removing asphalt) was performed. None of the seven incidents involving uranium dispersal required decontamination.

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