

**1 OCTOBER 1997**



**Safety**

**SAFETY RULES FOR NUCLEAR LOGISTICS  
TRANSPORT BY THE PRIME NUCLEAR  
AIRLIFT FORCE**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

---

**NOTICE:** This publication is available digitally on the SAF/AAD WWW site at: <http://afpubs.hq.af.mil>. If you lack access, contact your Publishing Distribution Office (PDO).

---

OPR: HQ AFSC/SEWN (Maj Bruce T. Kelley)

Certified by: HQ USAF/SE (MGen Francis C. Gideon, Jr.)

Supersedes AFI 91-115, 1 July 1994.

Pages: 7

Distribution: F

---

This instruction implements AFD 91-1, *Nuclear Weapon Systems Surety* and Department of Defense (DoD) Directive 3150.2, *Safety Studies and Reviews of Nuclear Weapon Systems*, December 23, 1996. It applies to Prime Nuclear Airlift Force (PNAF) operations with C-141B and C-130E/E\*/H aircraft transporting nuclear weapons. Section A assigns responsibilities. Section B contains the nuclear weapon system safety rules for PNAF operations. The safety rules in Section B may only be changed or supplemented using procedures in AFI 91-102, *Nuclear Weapon System Safety Studies, Operational Safety Reviews, and Safety Rules*. Paragraph 11.3 applies to the Air Force Reserve and Air National Guard.

**SUMMARY OF REVISIONS**

Moved weapon authorized to be air transported to Section B - Safety Rules. Included B61-11 in this list of weapons. Added rules on B53 air transportation, operation with chaff or flares, and airfield and airspace requirements. MAJCOM-approved Emergency Nuclear Airlift Force plan requirements. Changed material from previous edition is indicated by a |.

**Section A—Authority and Responsibilities**

- 1. Joint Chiefs of Staff (JCS) Direction.** The JCS directs the Chief of Staff, US Air Force, to implement the safety rules.
- 2. Temporary Limitations.** The Air Force may impose restrictions on application of safety rules.
- 3. Functional Responsibilities:**
  - 3.1. The Commander, Air Force Safety Center:

- Ensures that the safety rules work, providing maximum safety consistent with operational requirements.
- Ensures that units follow the safety rules.

3.2. Using major commands:

- Ensure that their units follow the safety rules.
- Ensure that safety standards and procedures agree with the safety rules.
- Inspect for compliance.

3.3. Air Force Materiel Command ensures that its manuals, checklists, and technical orders (TO) do not conflict with the safety rules.

***Section B—Safety Rules***

**4. Safety Rules During Emergencies:**

4.1. Safety rules always apply, even during war.

4.2. A commander may deviate from a specific rule in an emergency, but must maintain US custody of nuclear weapons. DoD Directive 3150.2, defines an emergency as "an unexpected occurrence or set of unexpected circumstances in which personnel or equipment unavailability, due to accident, natural event, or combat may demand immediate action that may require extraordinary measures to protect, handle, service, transport, jettison, or employ a nuclear weapon."

**5. Nuclear Weapons Movements:**

5.1. Keep the movement of nuclear weapons to a minimum consistent with operational requirements. Comply with DoD Directive 4540.5, *Movement of Nuclear Weapons by Noncombat Delivery Vehicles*, June 14, 1978.

5.2. Move nuclear weapons by the safest, most secure means and routes.

5.3. Custody and transfer of nuclear weapons must be according to TO 11N-45-51C, *Transportation of Nuclear Weapons Material*.

5.4. The following weapons are authorized to be transported aboard the C-130E/E\*/H and C-141B:

- B53-1
- B61-3, -4, -7, -10, -11
- W62
- W78
- W80-0, -1
- B83-0, -1
- W84
- W87

5.5. Do not transport the B53 on the same PNAF aircraft with any other nuclear weapon type.

5.6. Do not air transport nuclear weapons containing conventional high explosive (CHE), (i.e., B53, W62, W78) unless ground transport is not feasible. Air transport of CHE weapons requires approval by the Secretary of the Military Department or the Commander of the Unified or Specified Command or their designated representatives.

5.7. Do not transport the W80 mated to its missile.

**6. Safety Standards Compliance.** These rules, aircraft and weapon design safety and security features, operational and administrative controls, and technical procedures ensure nuclear logistics airlift by PNAF meets the Nuclear Weapon System Safety Standards in AFI 91-101, *Air Force Nuclear Weapons Surety Program*, and DoD Directive 3150.2.

**7. Using Equipment, Procedures, and Checklists:**

7.1. Use only equipment, procedures, and checklists that are consistent with US Air Force-approved publications for any operation directly associated with nuclear weapons.

7.2. Approved publications must conform to the safety rules in this instruction and the DoD Nuclear Weapon System Safety Standards as described in DoDD 3150.2.

**8. Security Criteria.** DoD Directive 5210.41, *Security Policy for Protecting Nuclear Weapons*, September 23, 1988; DoD C-5210.41-M, *Nuclear Weapons Security Manual (U)*, April 1994; AFI 31-101, *The Air Force Physical Security Program*; AFI 31-401, *Information Security Program Management*; and AFI 10-1101, *Operations Security (OPSEC) Instructions*, apply. Security provided by non-US military services must meet DoD and US Air Force standards.

**9. Tamper Control and Detection.** AFI 91-104, *Nuclear Surety Tamper Control and Detection Programs*, which defines the Two-Person Concept, applies.

**10. Personnel Reliability.** DoD Directive 5210.42, *Nuclear Weapon Personnel Reliability Program (PRP)*, May 25, 1993, and AFI 36-2104, *Nuclear Weapons Personnel Reliability Program*, apply.

**11. Personnel Qualifications and Certification:**

11.1. Use only airlift squadrons and aircrews designated for PNAF by Air Mobility Command or United States Air Forces in Europe.

11.2. Crewmembers who occupy a primary crew position when any nuclear weapon is aboard must be qualified and current in:

- The mission aircraft.
- Recurring PNAF training.

11.2.1. "Qualified" means that the crewmember:

- Is PNAF and PRP certified. **EXCEPTION:** PRP-certified crewmembers in PNAF qualification training may occupy a primary crew position when directly supervised by a qualified instructor counterpart.
- Has a minimum final SECRET security clearance.

11.3. The Secretary of Defense must approve the use of US Air Force Reserve and Air National Guard C-141 or C-130 crewmembers for PNAF operations.

11.4. The courier must be a commissioned officer.

## **12. Passengers and Additional Crewmembers:**

12.1. Only allow the following passengers when any nuclear weapon is aboard:

- Couriers, shipper escorts, and permissive action link teams authorized in the mission directive.
- Authorized inspectors, observers, crew chiefs, and security police.

12.2. Commanders at all levels must rigidly control the number of people on nuclear weapon airlift missions.

12.3. Additional crewmembers must have a specific in-flight duty to perform.

12.4. Authorize mission-essential ground personnel status only for specific individuals who:

- Are on a specific mission.
- Have a valid requirement to observe, inspect, or participate in the nuclear weapon airlift mission.

**13. Weapon Configurations.** Use shipment configurations in the applicable weapon -1 TO.

**14. Plutonium Limits.** TO 11N-20-7, *Nuclear Safety Criteria*, applies.

## **15. Maintenance and Servicing Procedures:**

15.1. Select the safest, most reliable aircraft available for PNAF missions.

15.2. Consider all available safety and structural enhancements when selecting an aircraft.

15.3. Do not select aircraft that have a history of uncorrected repeat or recurring system malfunctions.

15.4. Do not select C-130 aircraft with in-tank maintenance deferred due to suspected or actual foam fire.

15.5. The aircrew performs or controls all maintenance activities on aircraft with any nuclear weapon aboard.

15.6. Do not perform any maintenance that increases the probability of fire on an aircraft with any nuclear weapon aboard. This prohibition includes:

- Using flame-producing or uncontrolled heat-producing items.
- Repairing the fuel system, fuel cells, or fuel tanks.
- Performing other maintenance where significant fuel spills are likely.

15.7. Complete fueling, oxygen servicing, and any loading of external chaff or flares before loading nuclear weapons.

- Do not load external flares or chaff unless required for the PNAF mission.
- Do not transport replenishment chaff or flares.

15.8. Do not service aircraft during weapon loading or unloading.

15.9. With any nuclear weapon aboard, do not:

- Refuel C-130 aircraft.
- Park aircraft in hangars.
- Jack aircraft, except for temporary lifting of one set of landing gear for minor maintenance.

## **16. Fuel Requirements:**

16.1. When possible, fuel PNAF aircraft with low-volatility fuel, compatible with aircraft engine operation.

16.2. Use the best available fuel in this order of preference:

- JP-8.
- JP-5.
- Commercial Jet A-1 with appropriate anti-ice additive.
- JP-4.

**17. Firefighting Support Requirements.** Ensure that the required firefighting support is available for:

- Weapon loading and offloading.
- Aircraft engine starts, taxi, takeoff, and landing.
- Fuel and oxygen servicing of nuclear weapon-laden aircraft.
- Any replenishment of external chaff or flare dispensers on nuclear weapon-laden aircraft.

**18. Airfield and Airspace Requirements.** Do not allow overflight of the hot cargo pad during PNAF operations.

## **19. Aircraft Configurations:**

19.1. Do not load any nuclear weapon on an aircraft unless it is mission capable and has been serviced and prepared for loading.

19.2. Before an aircraft is loaded with nuclear weapons:

- Remove all nonessential personnel and nonmission-related hazardous materials.
- Search and sanitize the aircraft.
- Establish Type I security.

## **20. Loading, Tiedown, and Unloading:**

20.1. The aircrew members are responsible for the safety and security of each nuclear weapon in their physical possession. Weapon possession begins at the start of loading aboard the aircraft and continues until weapons are offloaded.

20.2. Do not load nuclear weapons on PNAF aircraft unless a loading procedure is published in the aircraft -16 series TO.

20.3. Do not load materials that are incompatible with nuclear weapons.

20.4. Load aircraft in a way that permits the aircrew to offload, or jettison in flight, any opportune cargo without moving any nuclear weapon.

20.5. Unused space on nuclear weapon airlift missions may be used for other cargo only if the cargo is searched and security is maintained before loading it on the aircraft and the cargo will not cause:

- Mission delay.
- Mission rerouting.
- Extra landings.
- Additional handling or movement of nuclear weapons.
- Security problems due to aerial port onloading or offloading.

## **21. Flight Restrictions:**

21.1. The US Air Force Special Weapons Overflight Guide (SWOG) applies.

21.2. Aircraft transporting any nuclear weapon must not fly within an unsafe distance of unfriendly borders as defined in the SWOG.

21.3. Positive measures are required to prevent overflight or landing in unfriendly territories or countries where such actions are prohibited.

21.4. Aircraft transporting any nuclear weapon must avoid flying over heavily populated areas when possible.

21.5. Aircraft with any nuclear weapon aboard must not take off until all destinations and planned divert stations acknowledge that they are capable of meeting security requirements.

## **22. Air Refueling:**

22.1. Conduct air refueling only to reduce ground exposure of nuclear weapons.

22.2. Do not delay missions for air-refueling considerations. If the mission is delayed, manage the mission in the most effective manner possible without degrading nuclear surety.

22.3. Air refuel over open ocean at least 12 nautical miles offshore.

- Maneuver the aircraft only as needed to transfer fuel.
- Do not conduct air-refueling training when any nuclear weapon is aboard.

## **23. Contingency Transfer:**

23.1. PNAF crews are authorized to perform PNAF aircraft crossloads.

23.2. Park the two aircraft as close together as possible in a single priority A restricted area.

## **24. Disable/Destruct:**

24.1. When applicable, use the command disable system (CDS), if available, before crash landing or jettisoning a nuclear weapon. (Refer to the US Air Force SWOG for jettison restrictions.)

24.2. CDS codes and at least one individual knowledgeable in CDS procedures must remain on the aircraft:

- Until Type I security is established after arrival.
- When ropes and stanchions are removed for taxi and departure.

24.3. Use the CDS if capture of any nuclear weapon is imminent.

24.4. Aircrews must not use emergency destruct procedures on nuclear weapons.

**25. Emergency Nuclear Airlift Force (ENAF).** MAJCOM-approved ENAF plans will be written to comply with these weapon system safety rules to the maximum extent possible.

FRANCIS C. GIDEON, JR., Major General, USAF  
Chief of Safety