

22. STORAGE AND TRANSPORTATION OF EXPLOSIVES

1. Introduction

The term *explosives* is used throughout this chapter to include all items of an explosive nature. The term includes ammunition, detonators, blasting capsules, detonating cord, safety-fuse and all types of igniters. It also includes mines and unexploded ordnance found during field operations.

Rules and Regulations (RAR) of ANAMA about the handling, transportation and storage of explosives should comply with Azerbaijan State Communication Rules and Regulations.

Demining and EOD/UXO teams are warned that situations may arise when the implementation of parts of this regulation could not be possible. This could occur when demining or EOD teams are moved/operating in emergency situations. In such situations, it is the responsibility of the Supervisor or, in his absence, the Team Leader to ensure that all possible measures are taken to provide adequate safety and security.

2. Qualifications

All drivers and storage personnel, involved with the handling, storage and transportation of explosives, are to have attended Explosives Storage and Transportation Course, authorized by ANAMA.

3. General Storage

The storage of explosives and accessories must be governed by strict regulations, based on the following considerations:

- a) The possibility of the detonation of explosives;
- b) Life and property hazards, created by the presence of explosives;
- c) Security and access;
- d) Heat and fire hazards;

The following general safety rules should apply when storing explosives:

- e) Careful handling;
- f) Avoidance of dampness and heat above 40° C;
- g) Protection from direct sunlight and precipitation;
- h) Explosives and accessories should be kept in their packages until ready for use;
- i) The store or other facilities must be clean and free from all other materials. Under no circumstances should paint, oil, petroleum, rags, packing waste and other flammable materials be stored with explosives;
- j) An area of at least 50m around the store or facility must be cleared of all vegetation. This area must be frequently maintained to ensure no overgrowth in the immediate area of the store;
- k) No smoking or naked flame should be permitted within a safety area of 100m;
- l) Fire fighting equipment (extinguishers, fire blankets, brooms, etc) are to be positioned outside all explosive stores in vicinity. A second set is to be positioned and easily accessible at a safe distance from the stores.

4. Siting of permanent explosive store

The siting of a permanent explosive store will depend on the quantity of explosives being stored. The following minimum requirement will be enforced:

- a) 200m distance from any inhabited building, sleeping accommodation or POL (Petrol, Oil and Lubricant) installation;
- b) Remote from airfields, pipelines, overhead electric power lines or high output radio transmitters.

5. Storage buildings/Facilities

A variety of accommodations and facilities may be used for the storage of explosives. These include:

- a) Existing buildings;
- b) Sea Cargo Containers;
- c) Bunkers and bomb shelters;
- d) Galvanized iron shelters;
- e) Sub-terrain shelters.

6. Placement of explosives

The following regulations must be adhered to when storing explosives:

- a) Explosive:
 - i. Must be stored in stacks by type, nature and lot number;
 - ii. Should be raised off the ground on suitable bedding, such as pallets (to allow free air circulation around and also to prevent dampness coming up through the floor);
 - iii. Should be stored in cool dry place with good ventilation and sheltered from the penetration of hostile elements;
- b) Detonators and accessories must be separated from other explosive types;
- c) Mines, munitions and UXOs should never be stored together with bulk explosives.

7. Bunds/Blast walls

Bund/blast wall is a means of shielding explosives from accessories or from infrastructure, personnel and livestock in order to protect them from the effects of blast and fragmentation. These may be constructed using available earth or by filling sandbags and should be of a minimum thickness of 60 cm. The height is determined by the height of the explosive packages, which must always be lower than the bund/blast wall.

8. Fire safety regulations

In order to maintain a high standard of fire safety within storage areas for explosives, the following regulations must be adhered to:

- a) Fire hazard, NO Smoking and Explosives symbols are to be displayed at all storage locations;
- b) Smoking is prohibited within one hundred (100) meters radius of any explosive storage area;
- c) Naked flame lanterns are not to be used for illumination in/or around storage area.

Suitable fire fighting equipment should be easily accessible. Personnel, guarding the area, should be thoroughly briefed on the actions to be taken in the event of fire.

9. Control and security measures

The following security measures must be in place:

- a) Locks: Security locks / padlocks to be fitted to all doors;
- b) Fencing: Security fence will surround the storage facility;
- c) Warning Signs: Suitable warning signs, minimum size of 24cm x 60cm with white background and red letters, must be placed around the storage areas at appropriate intervals to provide adequate warning to trespassers. Warning signs are to be waterproof and contain the following words in English and Azeri:
 - DANGER
 - EXPLOSIVES
 - NO SMOKING
- d) Guarding. Explosive storage areas will be guarded at all times. Depending on the storage location, either a static guard post or roving guard patrols will be used. Specific instruction shall be given to personnel, assigned to guard the area, and they must fully understand their duties;
- e) Use of Radios. Radio transmission is not permitted within 100m of the storage area;
- f) Accounting Procedures. All transactions of explosives are to be recorded and checked by the appropriate authorized person;
- g) Inspections. Frequent inspections are required for all explosives. Unusable or expired explosives should be documented, removed and destroyed;
- h) Personnel: A suitable and qualified person must be responsible for the management of the store and explosives.

10. Transportation of explosives

When carrying explosives by vehicles, considerations should be given to the following:

- Have adequate capacity, security and be suitable for the intended use;
- Be mechanically reliable with good tires;
- Be clean and carry no other cargo;

- Must have hazard warning signs and red flags, positioned at the front and rear;
- Have adequate fire fighting equipment;
- Vehicles are to have their electrical system earthed.

Driver, Driving and Security:

1. The driver, supervisor and security guard (if required) are to be the only personnel in the vehicle;
2. Drivers and guard must have adequate training in safe handling, security of load and emergency procedures;
3. Vehicles should travel with a minimum safety distance of 100m when in convoy and at a speed not exceeding 60 km/h;
4. Where possible, routes should be selected to avoid heavily populated or built up areas;
5. The organization must provide the driver with a written instruction on procedures to be undertaken in the event of an accident/uincident.

Safety:

1. Bulk explosives (>20kg) and detonators (>50 items) should not be transported in the same vehicles;
2. Explosives should always be in transportation packages. Where this is not possible, electric or non-electric detonators must be placed into specially designed detonator boxes;
3. Explosives are to be loaded away from vehicle exhaust pipes;
4. No smoking is allowed within 100m of the transport;
5. When loading explosives on vehicles, they should be handled with great care. Under no circumstances should explosives be thrown (this should be a part of the written instruction for drivers).