

GLOSSARY OF TERMS

To avoid conflict with general usage, terms in this manual which have particular meanings are listed in the succeeding paragraphs. Further definitions may be found in Australian Defence Glossary (ADG).

A

Above-ground storage

Storage in magazines, with or without earth-cover, or in open stacks at surface level.

Note: An accidental explosion at the storage site results in blast, fire and projections.

Accident

An unintended event or sequence of events that cause death, injury, environmental or material damage.

Active Surveillance

Those surveillance activities which are conducted to monitor critical parameters and are typically tailored for the specific item of explosive ordnance (EO), such activities may include propellant testing or proofing.

Aerosol

A dispersion of particles in a gas, eg smoke.

Air Termination Network

(Lightning Protection) the part of a lightning protection system that is intended to intercept lightning discharges.

Airworthiness Standards Representatives (ASR)

A Commonwealth employee with delegated authority from the Technical Airworthiness Regulator to prescribe and revise airworthiness standards for the ADF.

Aircraft Safety Point (ASP)

An authorised location where aircraft stores delivery systems are changed to a state of readiness or where the fitment of safety devices or the disconnection of energy sources reduces the state of readiness. Additionally, aircraft stores which have malfunctioned or have not been released due to a malfunction of the aircraft stores delivery system may be unloaded at an ASP if this is considered necessary for safety reasons.

Ammunition

Any contrivance charged with explosives, propellants, initiating composition or nuclear, biological or chemical material for use in connection with offence or defence including demolitions.

Notes:

1. Certain ammunition can be used for training, ceremonial or non-operational purposes.
2. Is restricted to conventional ammunition and the conventional explosive components of nuclear ammunition or ammunition containing toxic chemical agents.
3. Includes explosives in made up charges; explosives (chemical fillings and incendiary,

smoke or pyrotechnic material) in bulk; non explosive projectiles of all natures; non explosive stores and components for use in the initiation or assembly of projectiles or explosives charges; and dummy, imitation, instructional and other inert items intended to represent any of the munitions of war referred to above.

Comments

1. The term 'ammunition' in its restricted meaning is used throughout this manual in the same sense as explosive article is used by United Nations (UN) and International Maritime Organisation (IMO), in the Orange Book—*Recommendations on the Transport of Dangerous Goods—Model Regulations*, ST/SG/AC.10/1 and International Maritime Dangerous Goods (IMDG) Code respectively, to mean an article containing one or more explosive substances.
2. The term 'ammunition and explosives' is used as a generic term by European countries (and in the Allied Ammunition Storage and Transport Publication 1 (AASTP-1) :2010 Manual of NATO Safety Principles for the Storage of Military Ammunition and Explosives¹ in the same sense as the term 'explosive ordnance' is used by American and Australian forces.

Ammunition/Explosive Ordnance Lot

A quantity of ammunition by weight, eg propellant, or number, eg fuzes which should possess identical functioning and keeping properties. **Ammunition/Explosive Ordnance Produce**

Ammunition packages, components, links, cartridge cases, etc, resulting from range practices or demolitions.

Ammunition with a Propelling Charge

Is assembled with a propelling charge, or packed with a propelling charge in the same package or palletised with a propelling charge on the same pallet.

Antistatic (Adjective)

Used to indicate that a material is, by virtue of its low resistivity, incapable of retaining a significant static charge when in contact with earth.

Anti-static Floor

A floor designed to be sufficiently electrically conductive to disperse charges of static electricity, but to have sufficient electrical resistance to minimise the danger from electric shock.

Antistatic Footwear

Footwear having a resistance range between 100×10^3 Ohm and 50×10^6 Ohm.

Arming

The process by which explosive ordnance changes from a safe condition to a state of readiness for initiation.

Assembly place

An assembly place is a building or place where it is customary for people to assemble, eg a church, school, sports stadium.

¹ The continued use of AASTP 1: 2010 is under review

Authorised Engineering Organisation (AEO)

An organisation that has been certified (awarded an Engineering Authority Certificate) by the Technical Airworthiness Regulator to provide design or engineering management services to the ADF.

B

Ball Ammunition

Small arms cartridges with a general-purpose solid core bullet.

Barricade

A natural ground feature, artificial mound, traverse or wall which for storage purposes is capable of preventing the direct communications of explosion from one quantity of explosives to another although it may be destroyed in the process.

Barrier Bag

The inner package that protects the contents from the atmospheric or RF environment likely to be encountered in storage.

Note: Provided it meets the requirements of the relevant packaging drawing or other instruction, the bag need not necessarily be completely impervious to air or moisture, as it will have been designed to afford the contents adequate protection for the likely period of storage.

Base

That part of the projectile to the rear of the driving band.

Base Cover

(US term) A device to prevent propellant gases from coming into contact with the filling of HE projectiles through flaws in the metal of the base. It is either welded into position or secured by caulking. It is equivalent to the British base plate.

Basic Load

Is that quantity of non-nuclear explosive ordnance which is authorised and required to be on hand within a unit or formation at all times.

Note: It is expressed in rounds, units or units of weight as appropriate.

Basic Module

Basic Module is applicable to field storage of explosive ordnance and consists of 5000 kg Net Explosives Quantity (NEQ) of EO stored in any storage facility or open stack.

Batching

A method of controlling the assembly of components by lots into complete rounds of fixed or semi fixed ammunition which consists of a number of components, eg. fuze, projectile, propellant and primer.

Batch/Lot

A definite quantity of explosive ordnance or explosive substance manufactured or produced under conditions that are presumed homogenous.

Batten

A wooden lath used when stacking ammunition to achieve stability within a stack and assist ventilation of the contents of the stack.

Blank Ammunition

A cartridge case or cloth bag containing propellant, normally gunpowder, without a projectile.

Note: Its function is to produce a loud noise on firing when used in training, signalling or salutes.

Blast

A destructive wave produced in the surrounding atmosphere by an explosion. The blast includes a shock front, high-pressure gas behind the shock front and a rarefaction following the high pressure.

Blasting Cap

Sometimes synonymously used for detonator.

Blind

A prepared explosive store which, though initiated, has failed to arm as intended or which has failed to explode after being armed (see Misfire). Alternately, an explosives item that fails to function correctly after initiation.

Boattail

The conical section of a ballistic body that progressively decreases in diameter towards the tail to reduce overall aerodynamic drag.

Boiling/Steaming Out

The processes involving the removal of explosives from containers using jets of hot water or steam.

Bomb

An explosive article which is dropped from aircraft. It may contain a flammable liquid with bursting charge, a photo-flash composition or bursting charge. The term excludes aerial torpedos.

Bond

A physical and electrical connection between a metal object and a lightning protection system.

Notes:

1. A bond produces electrical continuity, minimises electro-magnetic potential differences and prevents side-flash.
2. There are mechanical, compression and thermal types of bonds.

Bonding, Electrical

A conductor intended to provide electrical connection between the Lightning Protection System and other metalwork and between various metal parts of a structure or between earthing systems.

Booster

The process of connecting two or more conducting objects together by means of a conductor.

Breakdown

The mechanical process of dismantling or disassembling explosive ordnance according to a pre-determined plan.

Bulk Explosives

Service charges of explosives which are generally removed from their containers before use, such as Charges Demolition PE4.

Bunker-Type Building

A bunker-type building is one intended to hold explosive ordnance and having protection in the form of a substantial covering of earth.

Note: Sometimes the building is partly sunk below ground level for extra protection.

Buried storage

Buried storage is storage in chambers or magazines below ground surface level. In the case of an accidental explosion at the storage site, the hazard of low-angle, high velocity projections is reduced significantly. The other hazardous effects are similar to those in above-ground storage, but are gradually reduced as the cover is increased.

Burning

The energetic material ignites and responds, non-propulsively.

Notes:

1. The case may open, melt or weaken sufficiently to rupture non-violently, allowing mild release of combustion gases.
2. Debris stays mainly within the area of the fire.
3. This debris is not expected to cause fatal wounds to personnel or be a hazardous fragment (having an impact energy of 79 joules or greater) beyond 15 m.

Burning ground

A burning ground is an enclosed area within a Defence facility used for the disposal of explosive ordnance by fire.

Note: Fires may be in the open, in burning pits or in specially constructed incinerators.

C

Cable – Armoured

Electrical cable provided with an overall metallic sheath of steel wire or steel tape, usually polyvinyl chloride (PVC) served, providing mechanical protection to the cable cores.

Note: Screening overall or of individual cores or pairs as in communication cables to mitigate noise is not to be confused with armouring.

Calibration

A process of comparing equipment of unknown accuracy against standard equipment of known accuracy.

Calibre (CAL)

The diameter of a smooth bored weapon or distance between opposing lands of a barrel.

Cannon

The name given to all weapons firing artillery ammunition.

Note: Covers guns and howitzers.

Cartridge

Ammunition, ready for firing, wherein the propelling charge(s), its primer, with or without the projectile with its fuze are assembled in one unit for handling and firing.

Note: Examples of cartridge ammunition are gun, cannon, howitzer, Mortar, small calibre ammunition, blank cartridges for training, saluting or starter pistols.

Cartridge Case

The metal container that holds the propellant and primer of a fixed, semi fixed or separate cartridge, normally made of brass or steel.

Centre of Expertise (CoE)

An AEO in which the Senior Design Engineer position is a designated Airworthiness Standards Representative (ASR) appointment.

Certification

The end result of a process which formally examines and documents compliance of a product, against predefined standards, to the satisfaction of the certifying authority.

Certified inert

An item of inert explosive ordnance that has been certified as inert EO by a competent and authorised person.

Charge

The explosive filling of a munition or a munition component.

Classification

See Hazard Classification.

The assignment of a type of ammunition to the correct hazard division, according to tests or other assessment, and the appropriate compatibility group.

Notes:

1. Thus there are two components in the complete hazard classification.
2. Frequently, classification is used as a short form of hazard classification.

Clean Area

That portion of an Explosives Building from which it is essential to exclude extraneous grit or dust, ie inside the barrier of the shifting lobby.

Clean Conditions

The conditions necessary to minimise the special risks associated with the storage and maintenance (including inspection) of certain natures of explosives.

Compartment

A room within an explosive ordnance building with walls of sufficient strength to prevent the direct propagation of the explosion or ignition of the contents of the room to those of the adjacent rooms.

Compartmented Building

A building with separate rooms, without connecting doors, in which the dividing walls are constructed of brick or concrete blocks not less than 230 mm thick.

Note: Walls less than 230 mm thick are not to be considered as efficient partitions.

Compatibility

1. **General:** Capability of two or more items or components of equipment or material to exist or function in the same system or environment without mutual interference (AAP-6).
2. **Munitions:** Absence of reactions between explosives and other components within a munition, leading to unacceptable changes in physical properties, sensitiveness or sensitivity of explosives in the munition.

3. **Classification:** Capability of explosives, including ammunition, to be stored or transported together without significantly increasing either the probability of an accident or, for a given quantity, the magnitude of the effects of such an accident.

Compatibility (groups)

Letter designation assigned to indicate what may be shipped and transported without significantly increasing either the probability of an accident or, for a given quantity, the magnitude of the effects of such an accident.

Competent Authority

A person being either a Senior Executive Officer within the meaning of the *Public Service Act 1999* or a Commissioned Officer of the Australian Defence Force being an officer of at least the rank of Commodore, Brigadier or Air Commodore, and appointed in writing to be a Competent Authority by the Minister for Defence for matters pertaining to the administration of the *Explosives Act 1961* and the Regulations made under this Act.

Competent Person

A person, who has acquired, through training, qualification and experience, the knowledge and skills enabling that person to perform the required task correctly.

Notes:

1. The competency of the person shall be relevant to the type of work to be undertaken.
2. For Explosives Hazardous Areas the person shall also have as a prerequisite, training and experience for conventional hazardous areas (as defined in AS/NZS 3000:2018 : Electrical installations (known as the Australian/New Zealand Wiring Rules).

Comprehensive Classification List

A list dealing with the classification of Commonwealth explosive ordnance for storage and transportation purposes and described in the *Explosives Transport Regulations 2002* Schedule 1

Note: A complete list of Defence explosive ordnance is contained in Explosives Storage and Transport Committee (ESTC) Pamphlet No 2 – Defence Explosive Ordnance Classification Listing (DEOCL).

Commercial Explosives

Any explosive designed or produced for non-military use.

Commonwealth Explosives or Explosive Ordnance

Commonwealth explosives means explosives that:

- a. are the property of, or are in the possession or control of the Commonwealth; or
- b. have been manufactured by the Commonwealth and, in pursuance of an arrangement made with the Commonwealth, are intended to be, or are being exported from the Commonwealth; or
- c. are the property of, or are in possession of, or are in possession and control of, the government or the naval, military or air forces of another country and are in the Commonwealth or a Territory with the approval of the Commonwealth for the purposes of, or a purpose related to, the defence of the Commonwealth.

Component

A component is part of guided weapons equipment, when referring to ground handling equipment or

guidance station equipment, or is part of a section of a missile or sub-assembly of other ammunition, eg fuze or primer.

Conducting Floor

Flooring having a resistance range of zero to 50×10^3 Ohm.

Conducting Shoes

Footwear having a resistance range of zero to 150×10^3 Ohm.

Cone of Protection

The space coverage provided by a vertical conductor.

Note: It is an element within a lightning protection system.

Configuration

The functional and physical characteristics of existing or planned hardware, firmware, software or a combination thereof, as set forth in technical documentation, including specifications, standards and drawings, and ultimately achieved in a product.

Consequence

The outcome of an event expressed qualitatively or quantitatively, being a loss, injury, disadvantage or gain. There may be a range of possible outcomes associated with an event.

Constraint

The imposition of a limitation or restriction in the use, transportation, carriage, issue, storage or inspection of a munition.

Contingency

Any situation that involves force elements committed to higher rates of effort than experienced in normal peacetime operations.

Corporate Governance

Corporate Governance is an integrated strategic management framework designed to support corporate objectives. It is about maximising the value of an organisation, subject to meeting the organisation's financial and other legal and contractual obligations.

Curtain Wall Construction

A building with one of four storeys or more that is constructed with external non-load bearing cladding panels on a separate subframe which is supported off the structural frame or floors for the full height of the building.

Note: Where these cladding panels are large (greater than 1 500mm) and constructed of glass or similar lightweight frangible material, which is liable to shatter producing dangerous fragments or be displaced under the effect of lateral explosive blast loads greater than the designed wind forces, the curtain walling would be considered a hazard to personnel both inside and outside the building because of flying fragments or falling panels.

D

Danger Area

The area within which debris and fragments of explosive ordnance may be expected to fall after the detonation of explosives. Also see Explosives Area.

Dangerous Goods

Articles or substances which are capable of posing a risk to health, safety, or property, and which are subject to special regulations for their storage and transport.

Dangerous Occurrence

An unplanned, unintended, unexpected and/or undesired event, or series of events, which could have resulted in death, injury, occupational illness, substantial damage to the environment or damage to equipment or property, regardless of ownership.

Notes:

1. This includes Negligent Discharges (ND) and Unauthorised Discharges (UD).
2. Air Force Examples include:
 - a. A missile falls from an aircraft in flight and is subsequently found to have fallen harmlessly into open ground, or is never found with no report or no untoward reports of the incident from the public.
 - b. An aircraft gun is accidentally fired during electrical installation checks at the aircraft flightline, but no injuries or damage are sustained.
 - c. Accidental striking of Unexploded Ordnance (UXO) by earth moving or heavy plant equipment.

Debris

Debris is any portion of the natural ground or of a structure (rocks, structural materials, fittings, equipment, barricade materials, etc.) which is propelled from the site of an explosion.

Defect

A fault, other than by fair wear and tear, which renders an item unsuitable for its intended use. The fault may be in design or deviation of a dimension, finish or other functional characteristic from specified requirements or from recognised standards of engineering practice.

Defence Storage and Transport (S&T) Network

The Defence S&T Network is described as any EO which is stored within Defence-owned or leased EO facilities (including ADF EO, foreign defence force EO or contract EO) or transported by Defence or Defence contracted organisations where there is a duty of care upon Defence.

Deflagration

Chemical explosion in which the zone of chemical reaction propagates through the initial medium at a subsonic velocity, mainly by thermal conduction.

Demilitarisation

The act of removing or otherwise nullifying the military potential of a munition. Demilitarisation is a necessary step for military items prior to their release to a non-military setting.

Demolition ground

An enclosed or otherwise well delineated area within a Defence facility used for the disposal of explosive ordnance by explosive demolition.

Note: Demolitions may be on an open surface, behind screening traverses or in pits, be buried or be conducted in specifically constructed facilities designed to contain or suppress the effects of explosion.

Departmental Concession

There are some situations when it may be impracticable to comply with the mandated requirements of this manual, yet the deviation would not directly and significantly increase risk to the safety of property and/or any person.

Note: Under these circumstances a waiver would not be warranted and the Licensing Authority may approve the activity under a Departmental Concession.

Design

The process or act of creating or changing a product and related technical process descriptions through the application of scientific and engineering effort, or the outcome of that process.

Note: the design encompasses not only the configuration of the product, but also the:

- a. testing and evaluation needed to validate that the design meets performance and safety requirements;
- b. manufacturing processes (including production test requirements) which require special control to ensure the product meets requirements;
- c. in-service monitoring requirements, maintenance processes and authorised repairs;
- d. maintenance lives and intervals and fatigue life; and
- e. operating procedures and limits.

Design Acceptance Certification

The final act of the Design Acceptance process whereby a Design Acceptance Representative (DAR) provides a certified record of the technical acceptability of a change to specified Defence materiel. The most equivalent act, within the Maritime Technical Regulatory Framework (TRF), is the issue of a Design Certificate following validation of the design by the Design Acceptance Representative.

Design Acceptance Representative (DAR)

A Commonwealth employee with delegated authority from the Technical Airworthiness Representative (TAR) to perform Design Acceptance Certification of changes to Defence materiel. Known as Design Acceptance Authority Representatives (DAAR) within the Land TRF.

Design Approval Certification

The act of approval of design output resulting from a process that formally examines and documents compliance of a design (or design change) with specified requirements and design standards. Within the Maritime TRF, the most equivalent act is the issue of a Designer's Certificate certifying that a design meets specified design requirements and is fit for service, safe and environmentally compliant.

Design Certification Basis

The suite of standards against which materiel is to be design certified, derived from or judged to be equivalent to a subset of the materiel standards approved by a TRA.

Design Change

A change to the approved configuration documentation of an item, or a proposed deviation from the approved design configuration. Known as Engineering Change within the Maritime and Land TRF.

Design Review

The act whereby a design (or design change) is independently checked by an authorised, competent person (other than the person who developed the design) to: verify the validity of the assumptions, conditions, data and methods used in design development; and to verify that the design output satisfies technical integrity requirements.

Design Support Network

A collective term used to describe a group of agencies that provide design support to an AEO. Known as a Technical Support Network within the Land Technical Regulatory Framework.

De-stuffing

The process of removing cargo and cargo bracing materials (dunnage) or other methods of restraints, from a container.

Detonation

Decomposition reaction in which the zone of chemical reaction propagates through the initial medium at a supersonic velocity behind a shock front.

Detonator (DET)

A component containing at least one high explosive which, upon receipt of a specified stimulus (mechanical, electrical, pyrotechnic or other), will produce an output (shock wave and/or fragments) which is used to initiate a high explosive charge or another component of an explosive train. It may be constructed to detonate instantaneously, or may contain a delay element.

Deviation

See Production Permit.

Dirty Area

The part of a magazine or laboratory outside the safety barrier.

Disposal

The end-of-life tasks and actions for residual materials resulting from demilitarisation operations.

Notes:

1. Disposal encompasses the process of redistributing, transferring, donating, selling, or

destroying military EO.

2. The Explosive Ordnance Disposal (EOD) activities are not included in this definition.

Down Conductor

A conductor that connects an air terminal network with an earth termination.

Dunnage

A length or lengths of timber or concrete used during storage to raise explosive ordnance from the floor surface to permit ventilation of the bottom layer of the stack of containers or projectiles.

Dust-Proof

Electrical components that are required to be constructed or protected so that dust will not interfere with their efficient operation.

Dust-Tight

Electrical components that are required to be constructed so that dust will not enter their enclosing case.

Dusts of Explosives

Dusts that are inherently explosive, as they have their own oxidant and are hazardous whether airborne or not.

E

Earthing

The process of making a satisfactory electrical connection between the structure, including the metal skin, of an object or vehicle, and the mass of the earth, to ensure a common potential with the earth.

Earth Electrode

That part of the earth termination network in a lightning protection system which makes direct electrical contact with the general mass of earth.

Earth Termination Network

That part of the lightning protection system that is intended to discharge lightning currents into the general mass of the earth. All parts below the lowest test joint in a down conductor are included.

Ejecta

Any portion of the natural ground which is projected from the site of an explosion.

Electro-Explosive Hazard (EEH)

Any explosive hazard that is caused by the inadvertent functioning of an electrically initiated device due to the uncommanded transfer of electrical energy to that device.

Electro-Explosive Device (EED)

An explosive or pyrotechnic component that initiates an explosive, burning, electrical, or mechanical train and which is activated by the application of electrical energy.

Electro-Explosive Devices (EED) Preparation Room

A room in a building authorised for the storage, maintenance, assembly, testing and preparation for issue of electro-explosive devices, eg explosive bolts, cable cutters, and demolition detonators (electrical).

Electrostatic Earthing

A specific form of bonding by means of which one or more conducting objects are connected to earth by a conductor.

Energetic Material

A substance or mixture of substances that, through chemical reaction, is capable of rapidly releasing energy.

Energetic Material Qualification (EMQ)

The assessment of explosive material by a relevant national authority to determine whether it possess properties which make it safe and suitable for consideration for use in a particular role (eg as a main charge filling, a booster, propellant, gun propellant or illuminant pyrotechnic).

Engineering Authority (EA)

The authority assigned expressly to an organisation Authorised Engineering Organisation (AEO) or to an individual within an organisation to undertake specific engineering activities.

Environmental Compliance

Following Departmental environment instructions to minimise risks and maintain accountability in relation to environmental protection matters.

Equipotential Bonding

Electrical connections intended to bring exposed conducting parts or extraneous conducting parts to the same or approximately the same potential but not intended to carry current in normal service.

Errors in Drill

Any incident or hazardous practice concerning the use of ammunition resulting from some deficiency in regulations, drill or instructions.

Essential Building or Facility

A building or facility whose destruction or severe damage would impair the operational efficiency of the establishment.

Event

Certain or uncertain occurrence of a particular set of circumstances.

Notes:

1. The event can be a single occurrence or a series of occurrences.
2. The probability associated with the event can be estimated for a given period of time.

Event Tree Analysis

Tree procedure related to a given failure (recognised), used to analyse the consequences of this failure on the system, to determine whether the final states obtained contained one or more feared potential events.

Experimental Explosive Ordnance

Any explosive ordnance which, as issued for trial or experiment, is known to contain any component or material differing from the approved service design, or in which the method of filling design departs from the approved service design.

Explosion

A nuclear, chemical or physical process leading to a sudden release of energy.

Explosive

A substance manufactured with a view to producing an explosion or pyrotechnic effect.

Note: An explosive atmosphere of gas, vapour or dust is not considered to be an explosive.

Comments: The term 'explosive' is used throughout this manual in the same sense as 'explosive substance' is used by the United Nations and International Maritime Organisation, in the Orange Book—*Recommendations on the Transport of Dangerous Goods—Model Regulations*, ST/SG/AC.10/1 and International Maritime Dangerous Goods Code respectively, to mean in its broadest sense all explosive and pyrotechnic substances. The term may be made more restrictive by qualifying it with such terms as primary or secondary. Also, for the purposes of this manual, the term 'explosive' may also include ammunition.

Explosives Hazardous Area

An area in which an explosive substance is or may be exposed to the atmosphere.

Explosives Hazardous Area Zones

Zones based upon the frequency of the occurrence and duration of the explosives dust or explosives vapour being exposed.

Explosives Hazardous Area Zones – Adjacent Zones

An area where explosives hazardous area zones and/or hazardous area zones are located adjacent to each other.

Explosives Hazardous Area Zones – Coincident Zones

Where different explosive hazardous area (EHA) and/or hazardous area (HA) zones exist in the same space.

Explosive Hazard Data Sheets

A document providing information on hazard data and safety test results for energetic material.

Notes:

1. They contain the results of specific sensitiveness and stability tests of energetic material in loose powder form.
2. Depending on the country of origin, they are also known as Explosive Safety Certificates and Hazardous Components Safety Data Statements.
3. These are not chemical Safety Data Sheets.

Explosives Limit

The permitted net explosives quantity for explosive ordnance in a building or site.

Explosive Ordnance (EO)

All munitions containing explosives, nuclear fission or fusion materials and biological and chemical agents.

Notes:

1. This includes bombs and warheads; guided and ballistic missiles; artillery, mortar, rocket and small arms ammunition; all mines, torpedoes and depth charges, demolition charges; pyrotechnics; clusters and dispensers; cartridge and propellant actuated devices; electro-explosive devices; clandestine and improvised explosive devices; and all similar or related items or components explosive in nature.
2. Used as a generic term in the same sense as the term 'ammunition and explosives' is used in the equivalent Allied Ammunition Storage and Transport Publication 1 (AASTP-1): 2010 Manual of NATO Safety Principles for the Storage of Military Ammunition and Explosives².

² The continued use of AASTP 1: 2010 is under review

Explosive Ordnance Area / Explosives Area

An explosives ordnance area or Explosives Area is an area used for the handling, processing and storing of explosive ordnance. Where there is no fence, it is taken as being the area within a radius of 50 m from any building or stack containing explosive ordnance.

Explosive Ordnance Apron

An area on an airfield, authorised by a competent authority, designated for the loading, unloading and parking of aircraft engaged in the transportation of explosive ordnance as air cargo.

Explosive Ordnance Certification

Certification which declares that an explosive ordnance (EO) capability, as directed by the capability sponsor, is supportable.

Notes:

1. EO certification may be declared by the EO management organisation executive authority (or representative) when an EO design certification is combined with an EO logistical certification.
2. The EO certificate (EOC) documents the attainment of EO certification.

Explosive Ordnance Certification Plan (EOCP)

Details explosive ordnance (EO) certification requirements ie design certification basis, organisational responsibilities for the development of assessments and the conduct of engineering activities such as integration, and test and evaluation.

Notes:

1. The plan includes schedules and activities that mitigate risk ensuring necessary engineering and logistics activities are completed when required, and prior to service release.
2. The EOCP satisfies the requirement for a certification plan, Navy Technical Regulations Manual (NTRM), technical certification plan, Technical Regulation of Army Materiel Manual (TRAMM), design plan and the Technical Airworthiness Management Manual (TAMM).

Explosive Ordnance Depot

An establishment at which large stocks of explosive ordnance are stored and maintained.

Note: Normally it contains an explosives area, ammunition process buildings, an established proof yard, a demolition ground, transport facilities, attendant offices and other facilities required for the storage, inspection, maintenance and movement of explosive ordnance.

Explosive Ordnance Design Assessment (EODA)

The EODA details the technical integrity assessment of EO within a defined environment. The EODA satisfies the requirement for a System Safety Assessment, Safety and Suitability for Service (S3) Assessment and a Safety Case Report (SCR).

Explosive Ordnance Disposal (EOD)

The detection, identification, on-site evaluation, rendering safe, recovery and final disposal of unexploded explosive ordnance. It may also include explosive ordnance which has become hazardous by damage or deterioration.

Explosive Ordnance Disposal (EOD) Procedures

Any particular course or mode of action taken by qualified (EOD) personnel to render safe, disassemble, neutralise or dispose of EO, improvised explosive device (IED) or any hazardous material associated with an EO incident.

Note: Procedures include:

- a. Render Safe Procedure. That portion of the EOD procedures which provide for the interruption of functions or separation of essential component of EO to prevent a detonation or function
- b. Disposal Procedures. That portion of EOD procedures pertaining to the final disposition of EO by EOD personnel. Disposition may be effected by demolition, burning, dumping at sea, breakdown, transfer of disarmed items or residue to the Service having logistic responsibility or by placing such items or residue in proper channels for further evaluation

Explosive Ordnance Facility

The generic designation for any building, site or area at which explosive ordnance is or is intended to be stored, packaged or unpackaged, prepared, inspected, maintained, loaded or unloaded to aircraft or vehicles of all types, eg all danger buildings such as explosives storehouses, igloos, laboratories, ready-use compartments, explosive ordnance preparation areas (EOPA) or buildings, ordnance loading aprons (OLA), explosive ordnance preload area (EOPLA), air movements explosive ordnance apron (AMEOA), aircraft safety point (ASP) and aircraft hardened shelters.

Note: This term is used interchangeably with the term's danger building and danger facility.

Explosive Ordnance Incident

An explosive ordnance related incident is an unplanned or unexpected event or series of events involving explosive ordnance and which results or could have resulted in death, injury, occupational illness, or damage to or loss of equipment or property, or damage to the environment.

Explosive Ordnance Management Organisation

Organisations which are responsible for explosive ordnance (EO) item management, ie EO acquisition organisations and in-service EO management organisations.

Explosive Ordnance Package

A re-usable item of rigid construction and of any configuration so designed as to enclose and provide protection for ammunition against impact, vibration, climatic conditions and the like, during handling, shipment and storage.

Note: It may embody integral fastenings shock absorbing media, compartments and attachments for handling; and in addition, be capable of being pressurised or hermetically sealed.

Explosive Ordnance Preload Area (EOPLA)

An area or building, authorised by a competent authority, in which prepared explosive ordnance is loaded to aircraft stores suspension equipment prior to loading to an aircraft.

Notes:

1. Such preloaded equipment may be held in the area in ready-for-use condition.
2. The area is normally combined with, or adjacent to, the explosive ordnance preparation area.

Explosive Ordnance Preparation Area (EOPA)

An area, facility or building authorised by a competent authority, in which aircraft associated explosive ordnance may be unpacked and repacked, prepared for use, loaded to ground support equipment for transportation to the explosive ordnance loading aprons or held ready for immediate use.

Notes:

1. Included in this definition are those areas where EO is palletised in preparation or held ready for loading to Aircraft as cargo.
2. Preparation areas are dedicated to the handling of particular items of explosive ordnance, are given specific titles, eg ammunition, bomb, missile or pallet preparation areas.
3. In this context
 - a. 'Ammunition' refers to aircraft gun ammunition;
 - b. 'Bomb' refers to guided and unguided HE bombs, unguided rocket ammunition (HE or practice, practice bombs (all types) and cluster bomb units);
 - c. 'Missile' refers to guided missiles only (see also Ammunition Process Building);
 - d. 'Pallet' refers to aircraft cargo pallets containing EO which is in approved packaging.

Explosive Ordnance Ready-Use Shelter (EORS)

A facility, normally of Type 3 or 4 construction situated within, or in the immediate vicinity of, an ordnance loading apron (OLA) complex, where prepared and/or preloaded explosive ordnance is held ready for use.

Explosive Ordnance Safety Assurance Board (EOSAB)

As part of the explosive ordnance (EO) safety system the EOSAB, on behalf of VCDF, provides assurances of the EO safety management within Defence.

Note: Director General Explosive Ordnance (DGEO), as Chair of the EOSAB, provides such assurances through a cyclical program comprising holistic review of the EO Safety Management System (EOSMS) and targeted reviews of the EOSMS elements; and occasional product-based review of the safety management of EO.

Explosive Ordnance Service Release

The process of permitting the actual in-service use of the design change.

Explosive Ordnance Stakeholder Working Group (EOSWG)

The group's primary role is to provide key stakeholder input into the process for the certification of explosive ordnance (EO).

Note; The EOSWG may also be utilised to meet the intent of a configuration control board (CCB) and System Safety Working Group (SSWG).

Explosive Ordnance workshop

Any structure used for the inspection, maintenance and renovation of explosives.

Explosive ordnance storehouse (EOSH)—see also magazine

A building designed and erected for the sole purpose of storing explosives or a building modified, adopted or appropriated for that purpose and approved by a competent authority. Explosives storehouses are described according to their method of construction and use:

- a. Above ground: A building at natural ground level, the roof and at least one side of which are exposed to the open air.
- b. Bunker: A building at natural ground level, the roof and sides of which are covered by earth, access being provided in one side.
- c. Igloo: A storehouse normally built at ground level, earth covered and constructed in corrugated steel or reinforced concrete, provided with a strong headwall and door(s). Earth covers the roof, the sides and the rear. The storehouse and its earth cover are designed to stringent criteria for resistance to external blast loading and attack by high velocity projectiles. The cross-section of the igloo may be semicircular, elliptical, rectangular etc.
- d. Underground: A natural or excavated space underground with a ceiling not less than 600mm below the natural ground level, specially adapted for the storage of explosives. Access is by tunnel or lift-shaft.
- e. Semi-underground: A building constructed into a hillside with the front face exposed to the open air.

Explosive Material

A substance (or a mixture of substances), which is capable by chemical reaction of producing gas at such a temperature and pressure as to cause damage to the surroundings. The term explosive material includes solid and liquid high explosives, propellants and pyrotechnics (even when they do not evolve gases). The term 'explosive' is often used in short for explosive material.

Explosives Safety

Explosives safety is the process used to prevent premature, unintentional, or unauthorised initiation of explosives and devices containing explosives; and with minimising the effects of explosions, combustion, toxicity, and any other deleterious effects.

Notes:

1. Explosives safety includes all mechanical, chemical, biological, electrical and environmental hazards associated with explosives; hazards of electromagnetic radiation to ordnance; and combinations of the foregoing.
2. Equipment, systems, or procedures and processes whose malfunction would hazard the safe manufacturing, handling, maintenance, storage, transfer, release, testing, delivery, firing or disposal of explosives are also included.

Explosives Train

An arrangement used to lead explosive reactions from one place to another.

Note: A sequential arrangement of initiator, intermediary and main charge, eg detonator, booster and main high explosive charge.

Exposed site (ES)

Any location, facility or vehicle which is exposed to the possible effects of an explosion (or fire) at the potential explosion site under consideration, and which requires a level of protection from the effects of that explosion.

Note: Examples are a magazine, cell, stack, truck or trailer loaded with explosive ordnance, explosive ordnance workshop, inhabited building, assembly place or public traffic route.

Exudation

The process through which an energetic material oozes out through opening such as screw threads, fuze cavity, etc.

F

Filling

The explosive content of a cartridge, projectile, bomb, round, component or separate part of a round.

Note: Also applies when the content is not strictly explosive in character, eg smoke or chemical.

Firing

The action to set off an explosive event.

Firing Circuits

1. **Electric/electronic fuzing systems:** The complete (sub) system including the electro-explosive device (EED), power supplies and all associated electrical and electronic components and circuitry necessary for normal EED firing.
2. **Demolition material:** The electrical and explosive circuit connecting the firing control system and the demolition charges to permit their initiation.

Firing Device

A device used to initiate mines, booby traps, demolition charges and anti lift devices.

Firing Point

The point from which the firer initiates the demolition; normally this will be from within the splinter proof shelter.

Fitness for Service

Material's ability to satisfy operational requirements. Hence it is a subset of technical integrity.

Fixed Ammunition

Ammunition with the primer and propelling charge contained in a cartridge case which is crimped or otherwise attached to the projectile, the whole being loaded into a weapon as a single unit.

Flame Arrester

A device built in to equipment in order to prevent the unrestricted propagation of flame from within the enclosure to the external surrounding atmosphere.

Flame Trap

See flame arrester.

Flare

A pyrotechnic designed to produce a source of light.

Notes:

1. It is designed primarily for illuminating or signalling and may be fired from weapons, dropped from aircraft, thrown by hand or displayed on the ground.
2. They are manufactured in various colours.

Flash

Flash is:

- a. Light radiated at the muzzle of the gun and produced by glowing hot propellant gases, or the ignition of combustible gaseous products of the burnt propellant after shot ejection.
- b. Light produced at detonation of the high explosive filling in high explosive (HE) filled stores, eg projectiles, rockets, grenades, mines, etc; or
- c. Intense light produced by the extremely rapid burning of a magnesium based pyrotechnic composition used to produce illumination for photographic work by night and usually from aircraft.

Flash Point

The lowest temperature at which a substance gives off sufficient inflammable vapour to produce a momentary flash when a spark or small flame is applied.

Fraction Packaging

Fraction Container Pack. An ammunition package containing less than the quantity of ammunition which it is designed to hold that has been packed and sealed by a competent ammunition person so that it is acceptable for storage and movement in all circumstances.

Fragment/Fragmentation

Any portion of the explosive ordnance or its package which is propelled from the site of an explosion.

Fragment Distance

Based on the number of 'hazardous fragments' which fall into a given area.

Notes:

1. A fragment is 'hazardous' when it has the impact energy to inflict a fatal wound.
2. The range at which the hazardous fragment density is not more than one per 56 m² (600 ft²) area is the fragment distance for that explosive ordnance.

Frequency

A measure of likelihood expressed as the number of occurrences of an event in a given time.

Fuse

A device for protecting a circuit against damage from an excess current by the melting of a fuse element to break the circuit.

Fuze

A device designed to control the initiation of a main charge.

G

Green Line/Zone

The envelope of the lines drawn at the public traffic route (PTR) for each potential explosion site in a facility.

Note: The Green Zone is the area within this line.

H

Hard-Standing

A prepared base, usually of concrete, on which explosive ordnance is stacked.

Hardened Aircraft Shelter (HAS)

Aircraft shelter designed to resist weapons effects.

Hazard

A condition that is a prerequisite to a mishap. Any phenomenon - environmental force or intrinsic effect - having the potential to induce an adverse effect in the munition compromising its safety or suitability for service.

Note: A hazard is characterised by its nature, severity or probability of occurrence.

Hazard classification

The assignment of a type of ammunition to the correct hazard division (HD), according to tests or other assessment, and the appropriate compatibility group. Thus there are two components in the complete classification. Frequently, classification is used as short form of hazard classification.

Hazard classification code (HCC)

An alphanumeric symbol which denotes the complete HCC for a particular nature. The code comprises two or three digits, indicating the HD, followed by a letter corresponding to the compatibility group e.g. 1.3G.

Hazard division (HD)

In accord with the UN Orange Book—*Recommendations on the Transport of Dangerous Goods—Model Regulations*, ST/SG/AC.10/1, explosives, including explosive ordnance, that are deemed not too dangerous to be accepted for transport, are categorised as Dangerous Goods Class 1.

Note: This class is divided into six divisions, commonly known as hazard divisions and are:

- a. (Hazard) Division 1.1—substances and articles which have a mass explosion hazard;
- b. (Hazard) Division 1.2—substances and articles which have a projection hazard but not a mass explosion hazard;
- c. (Hazard) Division 1.3—substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard;
- d. (Hazard) Division 1.4—substances and articles which present no significant hazard
- e. (Hazard) Division 1.5—very insensitive substances which have a mass explosion hazard;
and
- f. (Hazard) Division 1.6—extremely insensitive articles which do not have a mass explosion hazard.

Hazard Identification

The process, by which the existence, in an activity, of an event that might take place whose consequences is undesirable, is recognised.

Hazardous Area

Associated with flammable vapour-air mixtures and combustible dust-air mixtures of normal flammable materials and are divided by the Australian Standards into hazardous area 0, 1, 2, 20, 21 and 22.

Hazardous Fragment

Is one having an impact energy of 79 Joules (58ft-lb) or greater.

Hazardous Fragment Density

The density of hazardous fragments exceeding one per 56 m² (600 ft²).

Hazard Log

The continually updated record of hazard, accident sequences and accidents associated with a system. It includes information documenting risk management for each hazard and accident.

Heavy-walled building

A heavy-walled building is a building of non-combustible construction, used for explosive ordnance storage, with walls of a minimum thickness of 450 mm of reinforced concrete, or 680 mm of brick or equivalent penetration resistance of other materials, with or without a protective roof of greater than 150 mm reinforced concrete with suitable support.

High Capacity Store

An explosive store having a charge/weight ratio of 60% or higher.

High Explosive (HE)

Any explosive substance capable of being detonated.

High velocity projections

Debris or fragments at high velocity as the result of a detonation/explosion and that may have sufficient remaining energy to propagate a detonation/explosion to another stack.

Holding yard

A designated area within a military installation where trucks or rail wagons loaded with explosive ordnance are held for short periods prior to storage or shipment.

Hypergolic Liquid

May ignite spontaneously on exposure to the atmosphere or other oxidant when used as a rocket propellant.

I

Igloo

A magazine, normally built at ground level, with earth-covered roof, sides and rear, and constructed in corrugated steel or reinforced concrete, provided with a strong headwall and door(s).

Note: The magazine and its earth-cover are designed to stringent criteria for resistance to external blast loading and attack by high velocity projections. The cross section of the igloo may be semi-circular, elliptical, rectangular or a combination of these.

Ignition

The commencement of combustion, deflagration or explosion, not detonation.

Notes:

1. Means of ignition may include: propellant, primers, igniters, squibs, fuse igniters.
2. Ignition is normally achieved by an igniter. Detonation is started by initiation.

Improvised Explosive Device (IED)

A device placed or fabricated in an improvised manner incorporating explosive material, destructive, lethal, noxious, incendiary, pyrotechnic or chemicals designed to destroy, disfigure, distract or harass. They may incorporate military stores, but are normally devised from non-military components.

Incident

Is any unplanned, unintended, unexpected or undesired event, or series of events, involving explosive ordnance (EO) that is in the possession or under the control of Defence or is used in a Defence activity, which results, or could have resulted, in death, injury, occupational illness, or damage to equipment or property, or damage to the environment, or facilitates exposure to hazardous substances contained in EO-related items eg asbestos contained in EO components.

Note; Any occurrence that is considered an accident, dangerous occurrence, defect, malfunction, unauthorised discharge (UD), negligent discharge (ND) or involves unsatisfactory materiel is to be reported as an EO incident.

Incorporation

Incorporation is the act of implementing a design change.

Incorporation Approval

Incorporation Approval is the formal process of permitting a design change to proceed from the design to the incorporation phase, committing whatever resources are required for implementation. Incorporation Approval is granted by the Senior Executive or a nominated representative.

Individual Risk

The risk to an individual rather than to a population.

Inert explosive ordnance

An item that resembles EO but does not contain explosive, pyrotechnic or other type or energetic or other hazardous material.

Inert explosive ordnance – High safety risk

Uncertified Inert EO is categorised as presenting high safety risk where the item is inert, however, due to its appearance, condition, design and construction, it **is not completely obvious** that an item does not contain explosive, pyrotechnic or other type of energetic or other hazardous material. Examples of these types of items include practice warheads with expended tracer elements, combustible time fuzes and carrier projectiles.

Inert explosive ordnance – Low safety risk

Uncertified Inert EO is categorised as presenting low safety risk where the item, due to its appearance, condition, design or construction it is **completely obvious** that an item does not contain explosive, pyrotechnics or other type of energetic or other hazardous material. Examples of these types of items include empty fired cartridge cases, trench art and solid shot projectiles.

Inhabited building

A building or structure, other than an operating building, occupied in whole or in part by people.

Initiation

Initiation is the transmission of a violent chemical reaction at supersonic velocity from one explosive into an adjacent explosive so as to cause its detonation. Means of initiation may include: fuzes, primers, detonators, blasting caps.

Inner Package

A substantial case, bag, canister or other receptacle, so constructed and closed so as to prevent any explosive from escaping under normally expected Service conditions of storage and transportation for the contents.

Inter-module Quantity Distance

Applicable to field storage and prevent sympathetic reactions of adjacent basic or storage modules.

Insensitive Munitions (IM)

Insensitive Munitions are defined as those munitions which reliably fulfil their performance, readiness and operational requirements on demand, but which minimise the probability of inadvertent initiation and severity of subsequent collateral damage to weapon platforms, logistic systems and personnel when subjected to selected accidental and combat threats.

In-service Surveillance (ISS)

The process and associated activities, with defined technical integrity indicators, which can be monitored to ensure the explosive ordnance (EO) remains safe and fit for service throughout its defined life.

Inside quantity distance (IQD)

The minimum permissible distance between a potential explosion site (PES) and an exposed site inside the explosive ordnance area.

Note: There are two types of IQD, inter magazine distance (IMD) and process building distance (PBD).

Inspection

A survey of explosive ordnance by qualified and authorised explosives inspection personnel to determine its condition.

Installed Explosive Ordnance

Any item of explosive ordnance (EO) that is fitted to a fixed or removable aircraft component to provide an energy source, eg to operate a mechanism.

Note: Installed explosive ordnance comprises:

- a. Special-Role Installed EO, which is installed in the aircraft or its suspension equipment for specific missions, eg bomb ejector cartridges, suspension equipment jettison cartridges, fuel tank jettison cartridges, towed target release cartridges, gun recocking cartridges; and
- b. Common-Role Installed EO, which is fitted to an aircraft for all roles and missions, eg ejection seat cartridges, canopy jettison cartridges, crew module ejection cartridges, fire extinguisher cartridges, engine starter cartridges, signalling cartridges, helicopter winch cartridges, survival packs complete with signal cartridges and small arms ammunition.

Instructional Ammunition

Inert replicas of ammunition (which may be sectioned) used for classroom instruction only.

Integrated Weapon Facility

An integrated system of explosives resistant barricades and shelters designed to protect other weapons, equipment and personnel from the effects of an accidental blast.

Notes:

1. Special equipment and techniques are incorporated in the design to minimise the possibility of fire and to propagate the effects of blast and fire away from working areas, eg heat, gas and debris.
2. The facility consists of Test Cells (TC) and Weapon Assembly Rooms (WAR) arranged symmetrically around a central test equipment house, which functions also as the safety citadel.
3. The citadel contains essential services for maintaining the safety and security systems in the event of accidental explosion, fire or electrical power failure.
4. General services are provided either locally at the test cells or in outlying plant rooms.

Interchange yard

An area set aside where a public carrier delivers or collects railcars or vehicles from a military installation.

Intrinsically Safe

Type of protection based upon the restriction of electrical energy within equipment and of interconnecting wiring exposed to an explosive atmosphere to a level below that which can cause ignition by either sparking or heating effects.

In-Use Life

The period of time a non-explosive consumable may remain fitted to a higher assembly. (This definition is not applicable to explosive ordnance and applies to non-explosive consumables only).

Isolation

Isolated Storage. The storage of explosives in an unsafe or possibly unsafe condition in separate licensed accommodation away from all other explosives.

J

L

Laboratory

See Process Building.

Levels of maintenance

Operational Level Maintenance (OLM). Includes tasks directly related to the preparation of equipment for immediate use and recovery, minor repair of the equipment after use. OLM tasks require a small range of support equipment and may involve the limited use of workshop facilities. Previously known as Organisational level by Navy.

Intermediate Level Maintenance (ILM). Covers maintenance carried out in a workshop, and normally consists of servicing, limited repair or replacement of damaged or unserviceable parts, components or assemblies.

Deep Maintenance (DM). Covers the most extensive maintenance that can be performed on an application or an item where the primary focus is asset preservation. It includes overhaul, repair of some complex items and tasks involving major disassembly and repair of an item as well as some servicing. DLM normally requires a wide range of special general support equipment and facilities. Previously known as Depot level by Navy.

Licensing Authority (LA)

Is the nominated Defence Group appointment responsible for the authorisation and issue of licences to operate and use an explosive ordnance facility.

Life Cycle

A time-based description of the events and environments an item experiences from manufacture to final expenditures or removal from the operational inventory.

Notes:

1. It includes one or more mission profiles and disposal or demilitarisation.
2. Also refer to Manufacture to Target or Disposal Sequence (MTDS).

Light Frangible Structure

The physical characteristics of an explosive ordnance storehouse that is built of light and frangible materials so that they will not produce dangerous debris at a potential explosion site.

Note: Buildings with walls of 230 mm solid brick or with 275 mm cavity brick walls are considered light structures for inter-magazine quantity-distance purposes.

Light structure

A light structure erected to protect a stack against weather.

Likelihood

Used as qualitative description of probability and frequency.

Limited Humidity Conditions

The conditions of atmospheric humidity required to minimise the absorption of moisture by hygroscopic substances.

Load

The process involving fitting or installing munition(s) from a: weapon, weapon system, platform or item of ordnance in such a manner that it is prepared for the future use of the munition in its intended design mode of operation but currently remains unable to be functioned due to one or more mechanical or electrical safety interfaces.

Lobbed ammunition, store or explosive ordnance

Unexploded ammunition that has been projected from an exploding stack and may explode on impact.

Logistical Certification

May be provided when all logistical issues which are necessary to provide through life support of the item of EO has been appropriately planned and supportable.

Note: The EO logical certificate (EOLC) documents the attainment of EO logistical certification.

Lot

A quantity of munitions, munition components or explosives, each of which is manufactured by one manufacturer under uniform conditions, and which is expected to function in a uniform manner.

Note: A lot is designated and identified by assignment of a serial number.

Low Explosive

An explosive substance which decomposes rapidly through combustion with the evolution of heat and flash, and generates a large quantity of gaseous products.

M

Magazine—see also explosive ordnance storehouse

An enclosure designed to protect certain goods of class 1 from damage by other cargo during loading and unloading and by adverse weather conditions when in transit, and to prevent unauthorised access.

Notes:

1. A magazine may be fixed or portable structure, a closed freight container or a load-carrying compartment of a closed vehicle.
2. Details for conversion of ISO shipping containers for use as magazines are contained in AS2187.1 Explosives – Storage, transport and use, Part 1: Storage, Appendix E.

Maintenance of Explosive Ordnance (EO)

All action taken to retain explosive ordnance (EO) material in or restore it to a specified condition.

Note: The need to retain EO in serviceable condition involves many different maintenance processes including repair, assembly/disassembly, scheduled/unscheduled servicing, testing, calibration, sentencing, reconfiguration and modifications.

Malfunction.

Any failure of an item of explosive ordnance (EO) to function as designed when fired, launched or otherwise activated, or when explosive components function during a non-functional test.

Manufacture to Target or Disposal Sequence (MTDS)

Identifies and documents the major events expected to occur in the life cycle of the explosive ordnance (EO) from development to operational use or disposal and generally consists of a logistical, tactical and disposal phases.

Notes:

1. An accurate identification of the MTDS provides the basis for the determination of the design certification basis.
2. EO has two distinct, but interrelated, phases of their MTDS.
3. EO spends most of its in-service life in the 'off-platform' phase where it is stored, maintained or disposed (separated from the platform) as apposed to when the EO is combined with the weapon/platform to complete its MDTs during the 'on-platform' operational phase.

Marking

Includes basic overall colours, role and hazard colour codes, as well as the descriptive markings and symbols which identify the explosive ordnance (EO) and indicate any special features.

Marking Drawing

A 'marking drawing' details the markings to be applied to particular EO.

Marshalling yard

An area within a military installation used for receiving, dispatching and switching of railcars or trucks.

Mass Detonating Explosives

Explosive ordnance which can be expected to detonate and consume most of the entire mass virtually instantaneously.

Mass explosion

An explosion which affects virtually the entire quantity of explosives under consideration practically instantaneously.

Note: The term usually relates to detonation, but also applies to deflagration when the practical effects are similar, for example, the mass deflagration of propellants under very strong confinement so as to produce a bursting effect and a serious hazard from debris.

Mass fire

A deflagration of the entire quantity of explosives under consideration under circumstances that avoid a bursting effect and a serious hazard from debris.

Note: A typical mass fire occurs in a few seconds at most, and produces extensive flame, intense radiant heat and minor projection effects.

Means of Ignition

A general term used in connection with the method employed to ignite a deflagrating train of explosive or pyrotechnic substances (for example: a primer for a propelling charge, an igniter for a rocket motor, an igniting fuze).

Means of Initiation

Any device used to cause a detonation of an explosive. Examples include blasting cap, detonator for ammunition and detonating fuse.

Misfire

Failure to fire or launch as intended.

Missile Preparation Area, Facility or Building

See Explosive Ordnance Preparation Area.

Moderate fire

A fire, comparable with that involving an ordinary commercial warehouse, which burns comparatively slowly and with a moderate flame radius, and from which some items may be thrown out for a short distance.

Modification

A formal, documented and systematic alteration to an item or process.

Monitoring

A process, conducted by technically qualified personnel from the Defence Groups, of ensuring compliance with Defence policy for the safe storage, transport and handling of explosive ordnance.

Monitoring authority

Is the designated senior executive appointed in writing by the group head as responsible for ensuring compliance by the Group with the provisions of Defence policy for the safe storage, transport and handling of explosive ordnance.

Note: The conduct of technical inspections/audits to ensure compliance with Defence policy may be delegated to a technically competent action officer/agency who is independent of the licensing and management authorities of the inspected facility.

Munition

A complete device, (eg missile, shell, mine, demolition store, etc.) charged with explosives, for use in connection with offence, or defence, or training, or non-operational purposes, including those parts of weapon systems containing explosives. Also refer to EO.

N

National Authority

All energetic materials within an item of EO are to receive EMQ prior to use within ADF service. As part of the STANAG 4170 - Principles and Methodology for the Qualification of Explosive Materials for Military Use (4 February 2008) agreement, each participating nation is to identify their appropriate National Authority (NA) for the EMQ for military use. The Director Ordnance Safety (D,OS) has been identified as the Australian EMQ NA.

Nature

A division of ammunition or explosive ordnance in accordance with the general properties of the filling, eg high explosive (HE), incendiary, smoke.

Negligent Discharge

When a weapon is fired through negligence on the part of the operator, either as a result of a negligent act or failure to apply the correct procedures/drills.

Net explosives quantity (NEQ)

The total explosives content of an ammunition, unless it has been determined that the effective quantity is significantly different from the actual quantity. It does not include such substances as white phosphorus, war gases or smoke and incendiary compositions unless these substances contribute significantly to the dominant hazard of the hazard division concerned.

Net Explosives Weight (NEW)

The total weight of all Class1 material in an item, stack of items, ship, vehicle, aircraft, cubicle or building.

Non-explosive Dangerous Goods (NEDG)

Items that are related by function to explosives and which are used for somewhat similar purposes as certain types of explosives.

Notes:

1. NEDG are by their nature hazardous and are classified as Dangerous Goods Class 2 to 9, as appropriate.
2. In the Service environment NEDG may be managed as if they belong to the Dangerous Goods Class 1, ie they are allocated a hazardous classification code for transportation purposes and may be stored in explosives storage areas in accordance with specific handling instructions for NEDG.

Noteworthy Risk

A risk requiring DAR or higher level of authority retention in accordance with the TAR-approved SSPP. Typically with a risk level equivalent to Medium or above, as defined by MIL-STD-882C.

O

Objective Quality Evidence (OQE)

The specified documentary evidence required to validate an item for a specific application.

Off-Platform

The Off-Platform phase includes:

1. The peace-time logistical storage and transportation (over land) of explosive ordnance (EO) in Australia in accordance with the provisions of eDEOP101.
2. Off-platform maintenance activities include: inspection, condition monitoring, servicing, repair, overhaul, testing, rebuilding, modifications and other workshop activities that are to ensure that EO remains serviceable for issue to user units.
3. The logistics disposal of EO by demolition or other types of demilitarisation.

On-Platform

The On-Platform phase includes:

1. For the land environment activities such as preparation, employment, carriage, loading/unloading to weapon systems aboard land platforms and emergency response across land on-platform activities.

Note: A soldier is to be considered a land platform when appropriate.

2. For the maritime environment activities such as stowage, transport and handling aboard maritime platforms, preparation for maritime employment, employment from maritime platforms and emergency response across maritime on-platform activities.
3. For the aviation environment activities such as preparation for air employment, loading/unloading/installation/stowage to aircraft, carriage and employment from aircraft and emergency response across aviation on-platform activities.

Operational Acceptance Authority

The appointment which is responsible for providing the ADF capability towards which an item of explosive ordnance (EO) contributes.

Operational Ammunition

All ammunition designed for use in operations as contrasted to practice ammunition that is used for training only.

Operational Life

The time for which materiel may be expected to remain safe and serviceable when used under its service or training conditions, when these are different from its storage conditions, but which is within the envelope of its lifecycle.

Operational Release

The acknowledgement by the relevant capability manager that a capability system or subset has proven effective and suitable for the intended role and that in all respects is ready for operational service.

Operating Environment

The total set of all external natural and induced conditions to which a system is exposed at any given moment.

Ordnance

A weapons system with its associated munitions and auxiliary materiel needed to fire a munition.

Ordnance Loading Apron (OLA)

An area on an airfield, authorised by a competent authority, where the loading and unloading of explosive ordnance to an aircraft stores delivery system, or the stowing of explosive ordnance in an aircraft is performed, or where aircraft containing explosive ordnance (loaded and/or stowed) may be parked and where sufficient explosive ordnance may be held ready for immediate loading and stowing.

Note: OLA are sometimes designated according to the aircraft type which is normally operated from that apron, eg fighter replenishment apron (FRA), bomber replenishment apron (BRA).

Outside Quantity Distance (OQD)

The minimum permissible distance between a potential explosion site (PES) and an exposed site outside the explosive ordnance (EO) area.

Note: There are three kinds of OQD including inhabited building distance (IBD), vulnerable building distance (VBD) and public traffic route distance (PTRD).

Outer Package

A box, barrel, case or cylinder of wood, metal, or other solid materials compatible with the contents, and of such strength, construction and character that it will not be broken or accidentally opened, nor become defective or insecure thereby permitting explosive items to escape during the normally expected Service conditions of storage and transportation of the contents.

Owner

The agency responsible for the provision of and maintenance of facilities and services in support of defence capability. The agency also carries the responsibility for construction and maintenance of electrical installations. Normally this is defence Support Group but may include other agencies as appropriate.

P

Package

Any form of box, container, cylinder, or frame containing explosive ordnance (EO) during storage or transportation.

Note: The package may comprise inner package which directly contains the EO, the outer package which is the normal package used for transit and storage, any package between the inner and the outer package which is designated the intermediate package, pallets and associated packing pieces if they form part of the primary package.

Pallet

A portable item of equipment affording a platform upon which goods may be placed to form a unit load for lifting by means of rigid forks or blades.

Particle velocity

The local velocity imparted by the transmission of a shock or a reflected wave.

Partition

A dividing wall in an explosive ordnance storehouse, process building or unit ammunition store, constructed from floor to roof without a gap and from wall to wall without openings; constructed of non-flammable material of strength equivalent to a brick wall not less than 230 mm thick.

Passive Surveillance

Those surveillance activities which are conducted for all explosive ordnance (EO) as part of systematic EO monitoring, such activities may include visual inspections prior to use or incident reporting.

Plant Room

A secure general purpose room, normally located in a non-hazardous area and typically used to accommodate building services equipment for electricity, air conditioning or plumbing used in the functioning of a large building.

Potential Explosion Site (PES)

The location of a quantity of explosives that will create a blast, fragment, thermal or debris hazard in the event of an accidental explosion of its content.

Potential Risk

Theoretical risk based on an assumption that an individual resides at a given location for 24 hours/day, all year.

Preparation Room

A room in a process building for the receipt and preparation of explosive ordnance before its entry into the work room for whatever subsequent operations are to be performed on the explosive ordnance.

Primary explosive

Substance, or mixture of substances used to initiate a detonation or a burning reaction.

Notes:

1. In their intended role, these materials are sensitive to a range of thermal, mechanical and electrical stimuli like for instance heat, impact, friction, electricity, and undergo a rapid reaction upon initiation.
2. Primary Explosives are used in initial or intermediary charges in devices such as primers, detonators, caps, relays, electric matches, etc.
3. To determine the conditions under which the explosive is to be used upstream or downstream of a barrier (interrupter).
4. Examples for primary explosives are lead azide and lead styphnate.

Probability

Probability is the likelihood of a specific outcome, measured by the ratio of specific outcomes to a total number of possible outcomes. Probability is expressed as a number between 0 and 1, with 0 indicating an impossible outcome and 1 indicating an outcome is certain.

Process Building (PB)

A building or area that contains or is intended to contain one or more of the following activities:

- a. maintenance,
- b. preparation,
- c. inspection,
- d. breakdown,
- e. renovation, and
- f. test or repair of explosives.

Prohibited Articles

Articles which are not permitted within an explosive ordnance area and/or facilities.

Projectile

An object, projected by an applied exterior force and continuing in motion by virtue of its own inertia, as a bullet, shell or grenade.

Projections

Overarching term for debris, fragments, non-metallic portions of the ammunition or its package, and lobbed ammunition.

Proof

The functional testing and assessment of the performance of explosive ordnance to determine its condition.

Propagation

1. Transfer of a reaction between explosives or munitions.
2. Transfer of a form of wave energy along a path.

Propellant

Substance or mixture of substances used for propelling projectiles, or to generate gases for powering auxiliary devices.

Note: When ignited, propellants burn or deflagrate to produce quantities of gas capable of performing the intended task. However, propellants are required not to undergo a deflagration-to-detonation transition in their application.

Protective roof

A roof reinforced with a 15cm concrete or its equivalent, designed to protect the contents of a building from projections.

Note: The roof should not collapse if the walls are damaged, except in the case of earth-covered structures.

Public Traffic Route (PTR)

A public traffic route is:

- a. a road used for general public traffic;
- b. a railway outside the explosive ordnance area which is used for public passenger traffic;
- c. a waterway, such as a river having tidal water, and a canal used by passenger vessels, and other waterways where special consideration is warranted; and
- d. taxiways and runways at joint user airfields.

Purple Line

The line on a safeguarding map showing the area in which buildings of frame and glass eg curtain wall construction, would be subjected to an enhanced risk of blast.

Pyrotechnic

Explosive stores generally containing combustible materials for the production of smoke, light, fire or sound, or a combination of these effects as a result of a non-detonative self-sustaining exothermic reaction.

Pyrotechnic substance

Energetic material designed to produce an effect of heat, light, sound, delay, gas or smoke or a combination of these as a result of a non-detonative, self-sustaining, exothermic, chemical reactions.

Q

Qualified Explosive

An explosive material that has successfully completed the Energetic Material Qualification (EMQ) process of a National Authority.

Quantity Distance (QD)

The minimum permissible distance between a potential explosion site (PES) containing a given quantity of explosive ordnance and an exposed site (ES). It is based on a tolerable risk to life and property from the effects of a mass fire or an explosion.

- a. **Inside Quantity-Distance. (IQD).** There are two kinds of IQD as follows:
 - (1) **Inter-Magazine Distance (IMD).** IMD is the minimum permissible distance to be observed from a PES to any storage site containing explosive ordnance. This distance is intended to provide a specified degree of protection to the explosive ordnance at the ES; the degrees of protection are highly dependent upon factors such as sensitiveness of explosives, types of explosive ordnance, type of packaging, and the type and construction of the building at the PES or the ES or both.
 - (2) **Process Building Distance (PBD).** PBD is the minimum permissible distance between a PES and Process Buildings. This distance is intended to provide a reasonable degree of immunity for personnel within the process building from the effects of nearby explosion, such as flame, radiant heat, pressure and projections. In the event of an explosion however, light structures may be severely damaged at these distances from a PES.
- b. **Outside Quantity-Distance (OQD).** There are three kinds of OQD as follows:
 - (1) **Inhabited Building Distance (IBD).** IBD is the minimum permissible distance between a PES and inhabited buildings, caravan sites or assembly places. This distance is intended to prevent serious structural damage by flame, blast or projections to ordinary types of inhabited buildings or caravans, thereby making consequential death or serious injury to the occupants unlikely.
 - (2) **Vulnerable Building Distance (VBD).** VBD is the minimum IBD between a PES containing explosive ordnance of Hazard Division 1.1 and buildings of Vulnerable Construction. VBD provide for larger IBD (normally $44.4Q^{1/3}$) so as to afford buildings of Vulnerable Construction a similar degree of protection to that for inhabited buildings of traditional construction, ie 230 mm solid brick or equivalent.
 - (3) **Public Traffic Route Distance (PTRD).** PTRD is the minimum distance between a PES and public traffic routes. This permissible distance is intended to protect the occupants of vehicles on the route from serious danger. Two sets of distances are used depending on whether traffic on the route is considered light or dense.

R

Radiation Hazard/Radio Frequency Hazard (RADHAZ)

The risk of inadvertent ignition of electro-explosive device and inflammables, injury to personnel or malfunction of safety critical electronic systems resulting from exposure to electromagnetic radiation environment in the frequency range emitted by radio and radar installations.

Ready-use Lockup

A facility outside a designated explosive ordnance area conveniently sited for the storage of explosive ordnance for immediate use.

Reliability

Reliability is the probability that an item will perform its intended function for a specified duration given specific operating conditions.

Repair

A process by which a non-conforming item is made to conform to the interchangeability and functional criteria previously specified.

Residual Risk

The remaining level of risk after risk treatment measures have been taken.

Restricted Electrical Area (REA)

An area containing explosive ordnance (EO) where the explosives substances are not exposed and an explosive atmosphere will not exist.

Ring Conductor

That part of the earth termination network that connects the earth electrodes to each other or to the down conductors.

Risk

The combination of frequency, or probability, and the consequences of a mishap.

Risk Acceptance

An informed decision to accept the likelihood and the consequence of a particular risk.

Risk Analysis

The systematic use of available information to identify hazards and to estimate the risk to individuals or populations, property or the environment.

Risk Assessment

The overall process of risk analysis and risk evaluation.

Risk Contour

The boundary of an area outside which the probability of occurrence of a hazardous event associated with the risk is less than some specified number.

Risk Control

That part of risk management, which involves the provision of policies, standards and procedures to eliminate, avoid or minimise adverse risks facing an enterprise.

Risk Engineering

The application of engineering principles and methods to risk management.

Risk Evaluation

The process in which judgements are made on tolerability of the risk on the basis of risk analysis and taking into account factors such as socio-economic and environmental aspects.

Risk Level

A qualitative or quantitative measure of risk, resulting from: an assessment of potential damage to equipment or personnel; sub-optimal completion of mission; and damage to morale, spirit de corps or professional image associated with each identified risk.

Risk Management

The systematic application of management policies, procedures and practices to the tasks of identifying, analysing, assessing, treating and monitoring risk.

Risk Reduction

A selective application of appropriate techniques and management principles to reduce either likelihood of an occurrence or its consequences, or both.

Robust Construction

This term refers to the physical characteristics of an explosive ordnance storehouse which has the following features:

- a. a 150 mm thick concrete roof
- b. 230 mm thick brick or concrete equivalent walls
- c. no windows (unless protected by traverses)
- d. metal doors, or fire resistant doors faced with metal; and
- e. a concrete floor

Robust Shell

Those shells with an explosive content which does not exceed 20% of the total shell mass and with a shell casing sufficiently thick to prevent perforation by fragments produced by explosive ordnance of Hazard Division 1.1.

Round

A complete assembly of a projectile (with or without fuze), the propelling charge in a cartridge case, and the means of igniting the propelling charge.

S

Safe quantity Explosives (SE)

An area in laboratories and test facilities where very small quantities of explosives are prepared and tested by an authorised competent person and its ignition could not cause the subsequent initiation of other hazardous materials, significant damage to equipment or injury to personnel (Zone SE).

Safeguarding

Safeguarding is a process of planning which is designed to protect the utility of explosive ordnance facilities from encroachment by public development.

Note: The essence of safeguarding lies in the exercise of control over non-departmental land so as to prevent the construction of exposed sites which would restrict the operations of potential explosion sites.

Safeguarding map

An unclassified map depicting the safeguarding lines and zones for establishments which have licensed explosive ordnance activities.

Note: Safeguarding maps are unclassified, they do not identify potential explosion sites or the nature of any explosive ordnance related activity.

Safety and Suitability for Service (S3)

Summarises the requirements for explosive ordnance (EO) to be acceptably free from hazards and to have inherent characteristics that meet specified requirements during its agreed life cycle.

Notes:

1. Excludes operational effectiveness and lethality but may include certain performance characteristics if these aspects are deemed to be part of the item design function.
2. Within the ADF context, S3 is considered to be a subset of technical integrity.
3. Technical integrity incorporates S3 aspects plus environmental compliance.

Safety Certificate

Former title of explosive hazard data sheet (EHDS) within the UK and Australia.

Safety Critical

Applied to a condition, event, operation, process, or item whose proper recognition, control, performance, or tolerance is essential for safe system operation or use; eg safety critical function, safety critical path, safety critical component.

Safety Data Sheet (SDS)

Means a document that describes the identity, properties (that is to say chemical and physical properties and health hazard and environmental hazard information), uses, precautions for use, safe handling procedures and safe disposal procedures of a hazardous chemical.

Safety Management System

The organisational structure, processes, procedures and methodologies that enable the direction and control of the activities necessary to meet safety requirements and safety policy objectives.

Safety Risk Management

The application of safety systems in a risk management framework with the specific objective of preserving human resources or placing people first.

Salvage

The process of retrieving explosive ordnance for the purpose of repair, or of reclaiming serviceable or repairable components, and disposal of scrap.

Scheduled Servicing

Preventative maintenance carried out at predetermined intervals.

Screening Traverse

A natural ground feature, artificial mound or traverse which is capable of containing all projections inclined at 40 degrees or less to the horizontal is a screening traverse.

Notes:

1. The angle is measured from the top of the stack and the point furthest from the traverse site.
2. The primary purpose of a screening traverse is to protect personnel elsewhere from an accidental explosion within the confines of the traverse.

Secondary explosive

A substance or mixture of substances which is relatively insensitive and will detonate when initiated by a shock wave but which normally does not detonate when heated or ignited.

Notes:

1. As opposed to primary explosive.
2. The above definition applies essentially to fuzes. In this application, AOP-7 helps to determine the circumstances under which the explosive is to be used (upstream or downstream of a barrier, interrupter).

Security Incident

A security incident is any event that compromises security and/or breaches security regulations. Such events ie EO theft or loss, may be deliberate, negligent or accidental, and are often the result of a failure to comply with security policy as detailed in the Defence Security Manual (DSM).

Segregation

The act of having stored apart, but not necessarily in separate accommodation, explosive ordnance known to be other than serviceable but in a safe condition.

Self-propelled/Self-propelling

Self-propelled/self-propelling are the terms used to signify that an explosive item incorporates its own means of sustaining flight; it may also contain its own means of ignition.

Semi-fixed Ammunition

Ammunition where the projectile and cartridge are separate but in the same package.

Note: The user fits the projectile into the mouth of the cartridge that is a loose fit, before loading into

the gun.

Senior Design Engineer (SDE)

A senior professional engineer within an AEO, responsible to the senior executive for overall adequacy of the engineering activities conducted by the AEO and for ensuring compliance with the regulations. The SDE is also authorised to approve significant design changes and to assign engineering authority to other competent personnel within the AEO. Overall responsibility for the Engineering Management System (EMS) is the responsibility of the SDE.

Within the Maritime TRF the most equivalent comparison is to a Level 2 Engineer. Within the Land TRF the most equivalent comparison is to a Level 5 engineer.

Sensitiveness

Sensitiveness: Safety of an explosive or explosive item: The probability or a measure of the ease of being initiated by a specified stimulus.

Notes:

1. Sensitiveness is an inverse measure of the safety of an explosive against accidental initiation, the probability of being initiated by unintended events.
2. For the assessment of the sensitiveness of an explosive or an explosive item, the no-free level is determined.

Sensitivity

Sensitivity: Suitability for service, reliability: A measure of the stimulus required to cause reliable functioning of an explosive system in the design mode.

Notes:

1. Sensitivity is the probability of being initiated by an intended action and a specified stimulus. For the assessment, the all-fire level is determined.
2. The expression of the sensitivity towards these actions depends on the equipment and the test procedure.

Sensitivity Analysis

Examines how the results of a calculation or model vary as individual assumptions are changed.

Sentence

A written decision as to the condition of explosive ordnance and/or 'dangerous goods' as the result of an inspection.

Serious structural damage

Damage which renders building uninhabitable and is not readily repairable.

Note: Examples are serious weakening or displacement of foundation, supporting walls, interior supports, side walls, floors or ceiling structures breaking numerous rafters or other important supporting members of roofs or floors.

Service Life

The time during which materiel, in specified storage conditions and when subsequently used in its specified operational and/or training conditions, may be expected to remain safe and serviceable.

Notes:

1. Where environmental monitoring equipment is used, the service life will depend on the environmental influences to which the material has been exposed.
2. The service life does not include the elimination from service, eg disposal.

Shelf Life

The period from the date of manufacture or cure date, as stipulated by the manufacturer, up to the date at which a non-explosive consumable is not to be applied or fitted for its intended purpose. Once the consumable has been incorporated into the weapon the 'shelf life' restriction no longer applies.

Note: This definition is not applicable to explosive ordnance and applies to non-explosive consumables only.

Shifting Lobby

An entrance room in an explosive building divided by a barrier into a 'Clean Area' and a 'Dirty Area', in which personnel exchange their outer clothing for magazine clothing (and vice versa).

'Side On' Overpressure

The value of a blast wave without reflection.

Notes:

1. Minimum 'face on' pressure values are approximately double those for 'side on' because reflection occurs when the shock strikes evenly across the face of a building or other obstacle.
2. As the front moves across and around the building, the overpressure on the face drops off rapidly to the 'side on' value.
3. When the structure has been completely engulfed by the wave, the pressure exerted on all the walls and the roof will be approximately the same as 'side on' value.

Simultaneous Detonation

The detonation of two or more items or stacks of explosive ordnance which are in close proximity to one another, one item or stack detonating after the next within such a short time interval between detonations.

Notes:

1. the time in milliseconds is less than 4.15 times the cube root of the explosive weight in kilograms for lateral target positions and less than 5.9 times the cube root of the explosive weight in kilograms for axial target positions, that, for all intent and purpose, the overall detonation would appear to have emanated from a single item or stack.
2. Pressures produced by the independent detonations grow together (coalesce) within very short distances from their sources, this results in peak overpressures in excess of that of each independent source.
3. The pressure curve would be more nearly like that resulting from the total weight of explosives involved and would extend over a slightly longer time period.
4. The actual separation time between successive detonations is influenced by the spatial separation of explosives, geometry and distribution, the character of the dividing wall or other barrier between, and the sensitivity of the explosives.

Site

Sometimes used as shortened form of both potential explosion site and exposed site.

Small Arms

Firearms of small calibre including pistols, rifles, revolvers, machine guns, carbines and shot guns.

Note: The maximum calibre for small arms is 20mm.

Small Arms Ammunition (SAA)

Ammunition for small arms, ie all ammunition of less than 20 mm calibre, and all gauges of shotgun cartridges.

Small Quantity of Explosives

The net explosives quantity (normally less than 50kg) of various types of explosive ordnance that are permissible under the small quantity conditions prescribed in this manual.

Societal Risk

The relationship between frequency and the number of people suffering from a specified level of harm in a given population from the realisation of specified hazards.

Spall

Material, especially small pieces of rock, detached from a surface by the passage of a shock wave.

Spalling

The transmission of a shock wave through material that creates high-speed particles from the opposite face of that material without breaching it.

Spark Arrester

A device fitted to an internal combustion engine exhaust to prevent emission of hot particles or sparks from the exhaust system.

Note: This device will not prevent the emission of flame.

Special Precautions

Special Precautions is an EHA in an enclosed area where an exposed explosives substances is or may sublime (Zone SP). In the open the condensate will evaporate at a rate greater than the source because its surface area is much greater. Even when a build-up occurs, the quantities are typically micrograms and pose an insignificant risk. In this regard a typical bay/laboratory would be considered an open space. In closed situations this may not be true.

Special Protection Ex s

(Electrical Distribution) A concept which has been adopted in AS 1826 to permit the certification of those types of electrical equipment which, by their nature, do not comply with the constructional or other requirements specified for equipment with established types of protection, but which nevertheless can be shown, where necessary by test, to be suitable for use in prescribed zones or hazardous areas.

Stability

Explosives are liable to chemically decompose during storage, from the day they are manufactured.

Notes:

1. Such a change may effect their performance and in some cases can render them dangerous.
2. The resistance that an explosive exhibits to such change is broadly referred to as 'stability'.

Static pressure

Static pressure is the pressure due to the mass and temperature of gases inside a structure after shock effects from an explosion have ceased.

Stockholder

A person who holds on charge the unit stock of explosive ordnance or a section of it, for issue as required in accordance with approved instructions.

Storage Life

The length of time for which an item of supply, including explosives, given specific storage conditions, may be expected to remain serviceable and, if relevant, safe.

Storage Module

One to five Basic Modules.

Storage Site

Several Storage Modules.

Stuffing

The placing of cargo and cargo bracing materials (dunnage) or other methods of restraint, if required, into a container.

Sub-station

An assemblage of equipment at one place including any necessary housing for the conversion, transformation or control of electrical power.

Surveillance

The constant review of accumulating test results to ensure that the overall quality remains acceptable. The term is also applied to the continuing examination of the stores themselves.

Suspect Explosive Ordnance

Includes explosive ordnance (EO) which is considered to be in an uncertain condition because it has been misfired, malfunctioned, dropped, deteriorated or damaged.

Sympathetic Detonation

Detonation of a charge by exploding another charge adjacent to it.

System

A combination of complete operating equipments, assemblies, components, parts or accessories, including software and man/machine interfaces, integrated to perform a specific operational function.

System Integrity

(Safety Systems) The ability of a system to function correctly whilst being subjected to potentially destructive internal or external influences, and to fail safely under these conditions.

System Safety

The application of engineering and management principles, criteria, and techniques to optimise the safety of a 'system', within the constraints of operational effectiveness, time and cost throughout all phases of the life cycle.

System Safety Program (SSP)

The combined tasks and activities of system safety management and system safety engineering.

System Safety Program Plan (SSPP)

A description of the planned tasks and activities to be used to implement the required system safety program. This description includes organisational responsibilities, resources, methods of accomplishment, milestones, depth of effort, and integration with other program engineering and management activities and related systems.

T

Technical Data

All recorded information of a scientific, technical and engineering nature relating to a weapon system. Includes specifications, standards, engineering drawings, instructions, reports, manuals, tabular data, test results and software documentation used in the development, production, in-service operation and logistics support (such as maintenance, provisioning, codification, testing and modification), and disposal of a weapon system.

Technical Integrity

An item's fitness for service, safety and compliance with regulations for environmental protection.

Technical Regulation

How Service Chiefs, as capability output managers, establish confidence in the processes by which the technical integrity of Defence materiel is achieved (adapted from DI(G) LOG 4-5-012). Technical regulation is based on the principles of Defence materiel being acquired, designed, manufactured and maintained:

1. to approved standards,
2. by competent and authorised individuals,
3. who are acting as members of an authorised organisation, and
4. work is certified as correct.

Technical Regulation Authority

The appointment or organisation authorised by a single Service Chief to issue instructions for the technical regulation of a nominated type of Australian Defence Force materiel.

Technical Regulatory Framework

The TRF establishes the technical integrity environment within which internal and external organisations are to provide ADF material and services to Defence.

Test

The planned assessment of an item for the purpose of determining suitability and/or reliability, by qualification, type, performance, endurance (see AS/NZS ISO 9000:2016 - Quality management systems - Fundamentals and vocabulary) or environmental.

Test Joint

A joint designed and situated to enable resistance or continuity measurements to be made.

Thin-skinned munitions

Metal cased munitions, eg artillery projectiles, aircraft bombs and the like, are considered to be thin-skinned for the purposes of storage if their mean diameter to mean wall (excluding the base and/or fuze receptor wall) thickness ratio (D/t) is greater than 10.

TNT Equivalence

TNT Equivalent: Method of quantifying the energy released in explosives in terms of the amount of TNT (trinitrotoluene) which could release the same amount of energy when exploded.

Note: The term 'TNT Equivalent' has traditionally been used to rate energy output and thus the destructive power of nuclear weapons, or from the explosion of a given quantity of fissionable material, in terms of the amount of TNT (trinitrotoluene) which could release the same amount of energy when exploded.

Transfer Facility

An area licensed where explosive ordnance changes mode of transport.

Notes:

1. Includes areas where loaded vehicles may be parked.
2. Includes shipping yards, transit areas, marshalling yards, transshipment areas, staging areas and the like.

Transportation Explosives Quantity (TEQ)

Regarded to be the total amount, in kg, of explosive substances or, in the case of explosive articles, the total amount of explosive substances contained in all articles.

Notes:

1. In this instance the total explosives quantity is referred to as the transportation explosives quantity (TEQ).
2. TEQ is the 'net explosives quantity' referred to in the Australian Code for the Transport of Explosives by Road and Rail (AE Code).

Traverse

A natural ground feature, artificial mound, barricade or wall which is capable of intercepting high velocity low angle projections from a PES and preventing initiation of explosives stocks stored nearby. It may be destroyed in the process.

Truck Holding Area

See Transfer Facility.

Type

A division of ammunition and explosive ordnance in accordance with its general design and role, eg AP, SAP, Nose Ejection.

Type (or Final) Qualification

Type or Final Qualification relates to the use of the explosive material in a specific application or munition. Final Qualification is given when the explosive has been assessed as part of the design of the specific munition, and predicted to be safe and suitable for military operation or training use in that role.

U

Unauthorised Discharge.

An occurrence where a person intentionally and without authorisation discharges small arms ammunition (SAA).

Note: Any unauthorised discharge of a weapon system or explosive ordnance (EO) that is not SAA is to be treated as an accident or dangerous occurrence.

Underground petroleum, oil, lubricant (POL) tank

POL tank with a minimum cover of 1.2 m earth or 10 cm of concrete.

Underground pipeline

Pipeline (petroleum, oil, lubricant (POL), gas, water etc.) with a cover of at least 1.2 m of earth or 10 cm of concrete.

Underground storage

Cavern excavated into solid rock, for the purpose of storing ammunition and explosives.

Unexploded Explosive Ordnance (UXO)

Explosive ordnance which has been primed, fused, armed, or otherwise prepared for action and has been fired, dropped, launched, thrown, projected or placed in such a manner as to constitute a hazard to operations, installations, personnel or material and remain unexploded either by malfunction or design or for any other cause.

Unit load

A unit load is a load designed to be carried, stored and handled as a separate unit and able to withstand the conditions associated with the appropriate modes of transport, and comprising a number of packages or articles which are either:

- a. placed or stacked on, and secured to, a load board such as a pallet;
- b. placed in a protective outer packaging such as a pallet box; or
- c. permanently secured together in a sling.

A single large package such as a tank-container, intermediate bulk container or freight container is specifically excluded.

Unit Returns/Receipts

Explosive ordnance and associated non-explosive stores returned from a user unit to an ammunition depot are known as unit returns/receipts.

Unload

The process involving removal of all munition(s) from a weapon, weapon system, platform or item of ordnance.

Notes:

1. This includes removal of the subject munition from platform and weapon system magazines.

2. Unload changes the state of the weapon system by removing the ability to employ the munition ie removal of round from rifle chamber and removing the magazine containing rounds from the rifle will unload the rifle.

Unsatisfactory Materiel

Unsatisfactory materiel is anything that fails to meet the user's needs, but which is not defective and does not malfunction. The item may function fully in accordance with the design specification, but the operating environment might have changed to such an extent that the design no longer fulfils the role for which it was intended. Platform/launcher issues are to be reported through the appropriate single-Service materiel reporting system.

Unscheduled Servicing

Corrective maintenance identified as the result of condition monitoring.

Unserviceable Ammunition

Ammunition considered unsatisfactory for use.

User Unit/ Occupier

The ultimate responsibility for the hazardous area classification installation generally rests on the occupier (or employer) since the owner may not be the occupier.

Note: May delegate a person to classify the hazardous areas; however they must ensure that the delegated person is **competent** to carry out the task.

Unstuffing

The removal of cargo and cargo bracing materials (dunnage) or other methods of restraint from the container.

V

Vapours and Gases of Explosives

Vapours and gases that are inherently explosive, as they have their own oxidant and are hazardous whether airborne or not.

Vulnerable constructions

Buildings of vulnerable construction are of four main types as follows:

- a. **Type 1.** A building of **curtain wall construction** which has four storeys or more and is constructed with external non load-bearing panels on a separate sub-frame which is supported off the structural frame or floors for the full height of the building. Where these cladding panels are large (greater than 1500 mm square) and constructed of glass or similar lightweight frangible material, which is liable to shatter producing debris or be displaced under the effect of lateral explosive blast loads greater than the designed wind forces, the curtain walling would be considered a hazard to personnel both inside and outside the building because of flying debris or falling panels.
- b. **Type 2.** A building of **largely glass construction** which has four storeys or more and has more than 50 per cent of its wall area glazed.
- c. **Type 3.** The third type of **vulnerable construction** is impractical to define precisely. This covers any large building which employs non load-bearing cladding panels, eg glass-covered market gardens or warehouse type retail stores. The explosion effects on such buildings depend on many factors, including:
 - (1) The mass per unit area and frangibility of the cladding material.
 - (2) The detailed design of the frame structure including stiffening partitions.
 - (3) The use to which the building is dedicated.
 - (4) The local population inside and outside the building.

Note: Definition of this type of construction cannot be more precise, because of the variation in types of modern structures and the complexity of the interaction of the factors given. There is no real alternative to individual assessment of any large building within two times inhabited building distance (ie $44.4 Q^{1/3}$) which is not of traditional house construction.

- d. **Type 4.** Sensitive Structures. Building structures that may in themselves be susceptible to disproportionate damage (eg collapse, partial collapse or progressive collapse) including:
 - (1) unframed structures with limited continuity utilising non-ductile materials.
 - (2) large-span, tension or other special structures with critical load-bearing elements.
 - (3) usually weak structures (typically historic or timber framed buildings).
 - (4) buildings containing vulnerable elements such as pre-cast panel fixings, large span slender masonry panels which may be particularly susceptible to failure and lead to a falling debris hazard.

As a general guide, buildings that stand out either dimensionally or by construction type against a normal background of houses should be subject to closer examination. Cases that fall within or near the vulnerable construction guidelines above, or where it is suspected that they may be particularly vulnerable to blast, require an assessment of the potential risks.

W

Waiting Position

A site used for the temporary parking of vehicles containing explosive ordnance to provide ready-use stock for processing in a workshop, or as an assembly point to accumulate explosive ordnance before return to storage.

Waivers

A waiver is an authorisation for the performance of an explosive ordnance related activity which does not comply with the principles of this manual and which increases the implied levels of risk inherent therein.

Warhead

The portion of a projectile, rocket, missile or torpedo which contains the payload to be delivered.

Note: Generally, the payload is explosive, but it may contain telemetric or components.

Weapon System

The aggregate of the weapon, the associated launching vehicle or platform launching the munition, the available munitions and the ancillary equipment necessary to aim, launch and guide the munition, as applicable.

With a propelling charge

With a propelling charge indicates that the propelling charge is assembled to the projectile or packed with the projectile in the same package, or palletised with the projectile on the same pallet.

With its (own) means of initiation

Expression used to describe ammunition which has its normal initiating device, such as a detonator or detonating fuze, assembled to it or packed with it, and this device is considered to present a significant risk during storage and transport, but not one great enough to be unacceptable.

Without its (own) means of initiation

Expression used to describe ammunition without its normal initiating device assembled to it or packed with it. The expression also applies to ammunition packed with its initiating device, provided the device is packed so as to eliminate the risk of causing detonation of the ammunition in the event of an accidental functioning of the initiating device. In addition, the expression applies to ammunition assembled with its initiating device, provided there are protective features such that the initiating device is very unlikely to cause detonation of the ammunition under conditions that are associated with storage and transport. For hazard classification purposes, a means of initiation that possesses two independent effective protective features is not considered to present a significant risk of causing the detonation of the ammunition under conditions associated with storage and transport.

Working Area/Work Room

The actual area or room in a process building in which the inspection, repair or modification of explosive ordnance is authorised to take place.

Y

Yellow Line

A continuous line drawn on the map or plan of an ammunition storage location which encompasses the explosives area and defines the minimum permissible distance between a potential explosion site and inhabited buildings, caravan sites or assembly places.

Notes:

1. A line at inhabited building distance (IBD) within which the construction of new inhabited buildings, caravan sites and public traffic routes are restricted.
2. The area within the yellow line is known as the yellow zone.

Z

Zone 0E

An area in which the vapour or gas of explosives is present continuously, or for long periods or frequently.

Zone 1E

An area in which the vapour or gas of explosives is likely to occur in normal operation occasionally.

Zone 2E

An area in which the vapour or gas of explosives is not likely to occur in normal operation but, if it does occur, will exist for a short period only.

Zone 20E

An area in which the dust of explosives is present continuously, or for long periods or frequently.

Zone 21E

An area in which the dust of explosives are likely to occur in normal operation occasionally.

Zone 22E

An area in which the dust of explosives not likely to occur in normal operation but, if it does occur it will exist for a short period only.

Zone 33E

An area in which an explosive substance will be exposed to the atmosphere and in which the vapour or gas of explosives will not occur and the dusts of explosives will not occur.

Zone SE

See Safe quantity Explosives

Zone of Protection

The portion of space within which an object or structure is considered to be protected from a direct strike by an LPS.