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Ammunition packaging and marking

Warning

The International Ammunition Technical Guidelines (IATG) are subject to regular review and revision. This document is current with effect from the date shown on the cover page. To verify its status, users should consult www.un.org/disarmament/ammunition

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Foreword

Ageing, unstable and excess conventional ammunition stockpiles pose the dual risks of **accidental explosions at munition sites** and **diversion to illicit markets**.

The humanitarian impact of ammunition-storage-area explosions, particularly in populated areas, has resulted in death, injury, environmental damage, displacement and disruption of livelihoods in over 100 countries. Accidental ammunition warehouse detonations count among the heaviest explosions ever recorded.

Diversion from ammunition stockpiles has fuelled armed conflict, terrorism, organized crime and violence, and contributes to the manufacture of improvised explosive devices. Much of the ammunition circulating among armed non-State actors has been illicitly diverted from government forces.¹ In recognition of these dual threats of explosion and diversion, the General Assembly requested the United Nations to develop **guidelines for adequate ammunition management**.² Finalized in 2011, the International Ammunition Technical Guidelines (IATG) provide voluntary, practical, modular guidance to support national authorities (and other stakeholders) in safely and securely managing conventional ammunition stockpiles. The UN SaferGuard Programme was simultaneously established as the corresponding knowledge-management platform to oversee and disseminate the IATG.

The IATG also ensure that the United Nations entities consistently deliver high-quality advice and support – from mine action to counter-terrorism, from child protection to disarmament, from crime reduction to development.

The IATG consist of 12 volumes that provide practical guidance for ‘through-life management’ approach to ammunition management. The IATG can be applied at the guidelines’ **basic, intermediate, or advanced levels**, making the IATG relevant for all situations by taking into account the diversity in capacities and resources available. Interested States and other stakeholders can **utilize the IATG for the development of national standards and standing operating procedures**.

The IATG are reviewed and updated at a minimum every five years, to reflect evolving ammunition stockpile-management norms and practices, and to incorporate changes due to changing international regulations and requirements. The review is undertaken by the UN SaferGuard Technical Review Board composed of national technical experts with the support of a corresponding Strategic Coordination Group comprised of expert organizations applying the IATG in practice.

The latest version of each IATG module can be found at www.un.org/disarmament/ammunition.

¹ S/2008/258.

² See also the urgent need to address poorly-maintained stockpiles as formulated by the United Nations Secretary-General in his Agenda for Disarmament, *Securing Our Common Future* (2018).

Introduction

Ammunition and explosives should normally be packaged and stored in packaging that is designed to protect the contents from all foreseeable hazards of physical damage and environmental deterioration, throughout the envisaged life of the item, up to and including final disposal of the item. The packaging should also be appropriately marked to provide information to enable the explosives to be stored, handled and transported correctly; packaging is a key safety measure.

Insufficient resources means that it is not always possible to establish a unique set of criteria that dictate conventional ammunition packaging and marking standards. Instead, it is necessary to identify a framework of guidelines, which provide the options for a graduated improvement in safety in packaging, and marking of ammunition and explosives within an integrated risk management process. Such guidelines should be based on internationally accepted good practise and legislation, in this case the *UN Recommendations on the Transport of Dangerous Goods*, also known as the 'Orange Book'.³ Therefore, this IATG module contains general practical information on the requirements for ammunition packaging and marking although the national authority should determine its own system of ammunition packaging and marking most suited for its own national defence, security and industrial purposes.

³ See IATG 08.10 *Transport of ammunition*.

Ammunition packaging and marking

1 Scope

This IATG module contains general information on the requirements for ammunition packaging and marking.

2 Normative references

A list of normative references is given in Annex A. These documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

A further list of informative references is given in Annex B in the form of a bibliography, which lists documents that contain additional information related to the contents of this IATG module.

3 Terms and definitions

For the purposes of this module the following terms and definitions, as well as the more comprehensive list given in IATG 01.40 *Glossary of terms, definitions and abbreviations*, shall apply.

The term 'national technical authority' refers to *the government department(s), organisation(s) or institution(s) charged with the regulation, management, co-ordination and operation of conventional ammunition storage and handling activities.*

The term 'packaging and marking' refers to *those procedures and activities regarding the safe and secure packaging of ammunition and the associated markings on the packaging to ensure the correct information is available in line with international agreements.*

In all modules of the International Ammunition Technical Guidelines, the words 'shall', 'should', 'may' and 'can' are used to express provisions in accordance with their usage in ISO standards.

- a) **'shall' indicates a requirement:** It is used to indicate requirements strictly to be followed in order to conform to the document and from which no deviation is permitted.
- b) **'should' indicates a recommendation:** It is used to indicate that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required, or that (in the negative form, 'should not') a certain possibility or course of action is deprecated but not prohibited.
- c) **'may' indicates permission:** It is used to indicate a course of action permissible within the limits of the document.
- d) **'can' indicates possibility and capability:** It is used for statements of possibility and capability, whether material, physical or casual.

4 Ammunition packaging

4.1 Packaging requirements (LEVEL 1)

All military explosives should be packaged and stored in packaging that is designed to protect the contents from foreseeable hazards of physical damage and environmental deterioration throughout the envisaged life of the item, (up to and including the final disposal of the item).

The packaging should have undergone the tests prescribed in the UN Orange Book⁴ and any other national legislative requirements. It should only be approved for use after scrutiny of environmental and handling requirements and consideration of compatibility of packaging materials with the base explosives. As a result of these tests, the ammunition and its associated packaging should be awarded a Hazard Classification Code and accompanying UN number for the filled package. The package should then be appropriately marked and have the correct dangerous goods labels attached.

4.2 Design and safety of explosive packaging (LEVEL 1)

Any materials used in the packaging of explosives shall be chemically compatible with any explosives with which they may come into contact, either physically or via vapour from the packaging. Therefore, any repackaging task should use the original packaging material. Substitution of non-approved material could lead to an explosive incident and should be prohibited.

Failure to keep ammunition in approved packaging may present a risk in terms of either damage and/or deterioration of the explosives. Both of these may have repercussions on the service life, and functioning of the explosives, or safety of the storage facility. Additionally, the UN number may become invalid for transportation outside a State's borders.

Any explosive item, before being stored or handled, should be classified by the national technical authority for storage and transportation as per the procedures detailed in IATG 01.50 *UN Explosive hazard classification and codes* or equivalent national legislation. This classification should only be valid for ammunition in their approved packages or, if normally an unpackaged item, when fitted with their approved transit devices e.g. aircraft bombs.

4.3 Change of hazard classification code (LEVEL 2)

It should be understood that items not contained in the correct packaging may undergo a change of Hazard classification code and therefore may affect the calculations carried out under IATG 2.20 *Quantity and separation distances* and how the ammunition may be mixed during storage and transportation. These changes can be significant as they may affect the storage plan, the aggregation rules and change the explosive limit considerably.

4.4 Physical handling of ammunition packages (LEVEL 1)

All personnel involved in the physical handling of ammunition shall exercise the greatest possible care at all times.⁵

4.5 Temporary packaging (LEVEL 1)

Ammunition should be packed in its approved packaging. However, small quantities of explosive stores or items may be transported, for issues in and around a unit, in temporary packaging provided that the items are prevented from moving around inside the packaging by using suitable packing material. The exterior of the package is to be marked with the actual contents and the relevant Hazard Classification Code (HCC) label. As soon as the explosive item has been removed from the package, the information on the package is to be removed. Explosives received other than from normal sources of supply, e.g. as a result of explosive ordnance disposal (EOD) operations, may be placed in any suitable package and/or container. Suitable dunnage is to be added as required.

All temporary packaging should be marked with the nomenclature of the contents and have the relevant HCC label attached. Instructions for the handling, isolation and segregation of these types of stores are in IATG 06.50 *Special safety precautions (storage and operations)*.

⁴ See IATG 01.50 *UN Explosive hazard classification system and codes*.

⁵ See IATG 06.30 *Storage and handling*.

Temporary packaging shall not be used for transportation outside of the unit that generated it.

4.6 Special packaging (LEVEL 2)

On some occasions, explosives stores such as primary explosives, bulk propellant, sensitive electronic circuitry or sensitive Electro Explosive Devices (EED) require special packaging. In such cases, static dissipative packaging shall be used unless justification for not doing so has been accepted by the national technical authority. This is due to the fact that when these items are exposed during processing, they are also exposed to external stimuli including that from packaging. Conductive materials shall not be employed because they retain some risk of static discharge. The national authority shall decide the electrical standard of surface resistance, but it is recommended to be between 1×10^5 and 1×10^{11} Ohms.

Electro Magnetic (EM) and Radio Frequency (RF) hazard protection may be achieved by the use of metal outer packaging fitted with RF gaskets to provide continuous electrical contact around the entire peripheral interface. Other dissipative materials can be used for containers provided they meet the required level of protection over the life of the store.

Where it is not possible to use dissipative materials, containers should be provided with two adjacent earthing studs to ensure effective connection to earth and to facilitate a 'make-before-break' test and inspection procedures when required. The need for earthing is to be clearly indicated by labelling the packaging.

It is good practice to cover any exposed primary explosives, bulk propellant, sensitive electronic circuitry or sensitive EED during process work with a suitable temporary shielding to provide an extra barrier to inadvertent electrical discharge.

4.7 Marking of ammunition and its associated packaging (LEVEL 2)

As a minimum, ammunition packaging marking shall follow the requirements in the UN Orange Book and as amplified by IATG 08.10 *Transport of ammunition* and IATG 01.50 *UN Explosive hazard classification system and codes*. Markings, including manufacturing and filling details, are applied to ammunition and its packaging:

- A) to provide information to enable the explosives to be stored, handled and transported correctly;
- B) to provide ammunition nature identification;
- C) to assist in proper accounting and control procedures;
- D) to enable the correct nature and type of explosives to be issued when required;
- E) to enable ammunition to be correctly identified by the user under all circumstances; and
- F) to assist in the tracing of ammunition and aid investigation into incidents and faults.

Ammunition packages shall be marked, where required, with the Hazard Label(s), UN Number, Proper Shipping Name and will have either a UN Mark or be covered by a national authority approval. Subsidiary labelling may also be required where the ammunition nature contains substances other than explosive e.g. toxicity or corrosivity. In this case, the appropriate UN hazard labels should also be attached to the packaging.

Further marking should be applied by the national authority for specific purposes such as:

- A) inspection and repair markings;
- B) ammunition condition markings;

- C) test markings;
- D) package sealing; or
- E) to denote unserviceable items.

Examples of additional markings are shown below but the examples are not intended as a comprehensive list:

Number	Marking	Meaning
1	REP	This package contains ammunition which has been subject to: a) maintenance to improve or maintain the quality of the ammunition; b) modification of the ammunition or the package; c) a 100% inspection; or d) preparation for disposal.
2	INSP	The ammunition within the package has been subject to one of the types of inspection listed above.
3	PKD	The ammunition package holds ammunition that has been: a) fractioned for issue; or b) contains ammunition or components recovered from a repair task.
4	DES	A desiccant change has been carried out.
5	TESTED	Ammunition that has been subjected to testing by, for example: a) heat tests; b) moisture test; c) acidity test; d) plasticity test; and/or e) electrical test.
6	FAILED TEST	Ammunition that has failed test.
7	COND	The ammunition condition code. ⁶

Table 1: Additional packaging markings

After inspection, when repair or testing has taken place, technical personnel should correctly mark the item or package to identify the work that has been carried out, who performed the task and on which date. It is normal that these markings are made in white although black may be used if the item to be marked is of a light colour.

This task can be greatly simplified if individual ammunition technical personnel are issued a Unique Identifier Code (UIC), which is then marked on each package they have carried out work on. Similarly, the location the work was carried out in should be identifiable such as the use of an Identification Monogram of 3 letters and monogrammed ammunition seals. Table 2 illustrates the use of such a system:

	First Letters	UIC	Location	Date
Meaning	Activity carried out.	Unique identifier code of individual responsible for the work.	3 letter monogram of the location at which the work was carried out.	In format MM/YY
Example	REP	JS	BLU	12/20
Final Code	REP.JS.BLU.12/20			

⁶ See IATG 03.10 *Inventory management*.

Table 2: Example of marking system

The above example shows the work that was carried out, whom it was carried out by, where it was carried out and when it was carried out.

4.8 Colour coding of ammunition and its associated packaging (LEVEL 2)

Various colour coding systems exist globally. Their aim is to provide a standard identification and marking system that is universally understood by all personnel involved in the handling of ammunition and explosives.

It would be inappropriate to list them all here as this may lead to future confusion if the same colour refers to different ammunition under different systems. There is scope for mistakes to be made and it is essential that only trained ammunition technical personnel shall be involved in the interpretation of ammunition colouring that has not been previously encountered. The national technical authority should develop and direct the national policy to be adopted on the colour coding of ammunition and its associated packaging.

When purchased ammunition is marked with a variety of colour standards, education efforts, at both the technician and user levels, need to focus on making this information, and the associated hazards, well known. Similar consideration may need to be given in coalition operations where more than one colour marking scheme is in effect.

4.9 Fraction packages (LEVEL 2)

Fraction packs of ammunition are packages that are only partly filled. They may be stored and transported using the UN Number assigned to the original package under the following conditions:

- a) the original packaged items have been properly classified by the national technical authority. However, fractioning should not be permitted where the original classification was achieved by employing specific packing orientation and/or separation of stores. Fractioning of packages containing stores of UN Numbers 0059, 0439, 0440 or 0441 is therefore not permitted. If fractioning is required, packages carrying these UN numbers shall be re-classified by the national authority;
- b) gaps caused by the removal of part of the original package contents should be re-filled with sufficient compatible dunnage to prevent any significant movement of the remaining contents. If items are securely and individually fastened to packaging or contained in separate packaging compartments, these gaps may not need to be filled;
- c) no changes shall be made to the inner packaging, packaging orientation or explosives contents other than the quantity of explosives articles included and the filling as necessary of any gaps created;
- d) where there is an unavoidable significant instability in the package, this is to be indicated by the attachment of a temporary sign warning such as **WARNING – CENTRE OF GRAVITY NOT CENTRAL (PART FILLED)**; and
- e) fraction packages are to be marked as such by application of the wording **FRAC** or **FRACTION** in white, or similar light colour.
- f) If empty outer packages are used as gap fillers (as in making up a complete pallet layer), these packages are to be clearly marked as empty.

4.10 Empty ammunition packaging (LEVEL 1)

Empty ammunition packaging, whether it is to be re-used or disposed of, shall be certified as Free From Explosive (FFE)⁷. All dangerous good labels shall be removed and the proper shipping name and UN Number details on each box shall be removed or obliterated. This shall apply to both internal depot and external transportation of packages. An FFE certificate (CFFE) shall be fitted inside each ammunition container unless this is impractical (e.g. for fold flat wooden packages). In this case, a certificate shall accompany the consignment. Mixed consignments should still have individual containers CFFE.

5 Palletisation

5.1 Reasons for palletisation

Where ammunition is required to be stored and/or transported in large quantities, then consideration should be given to building packages on pallets.

A pallet of ammunition may be built up into a Unit Load Specification (ULS) which is a nationally, or regionally,⁸ agreed specification for a pallet of ammunition containing the same ammunition type(s). For example, a ULS may be made up containing High Explosive (HE) Shell, Propelling Charges and Fuzes for an artillery system.

Unit Load Containers (ULC) may also be encountered; these are simply containerised loads containing a specific number of rounds of a particular nature of ammunition.

Palletisation, (whether by utilising ULC or ULS or not), if carried out correctly, is a means of ensuring that large quantities of ammunition of the same nomenclature, lot number, batch identification key (BKI) etc can be stored and moved to the user quickly, efficiently and safely.

5.2 Palletisation system requirements

Palletisation of ammunition should not simply involve the placing of ammunition packages onto a pallet and then using banding material to restrain the packages from movement during storage and transportation. Various specifications for pallets should exist and it shall be the decision of the national technical authority to:

- A) identify the palletisation system it shall adopt;
- B) identify the weight, size and construction specification of the ULS for each ammunition nature; and
- C) identify the restraining system e.g. Tensile Steel Strapping (TSS) and the technical specification of the restraining system.

Whichever palletisation system is adopted by the national authority, it shall be compliant with the requirements of the UN Orange Book (see IATG 08.10 *Transport of ammunition*). This will invariably mean that if the national technical authority chooses to adopt a brand-new system of palletisation and not employ a current system then the entire testing regime of pallet construction shall be undertaken.

⁷ See IATG 06.50 *Special safety precautions (storage and operations)*.

⁸ A regional example is the NATO STANAG 2828 *Military Pallets, Packages and Containers*.

5.3 Ammunition palletisation restrictions

Palletisation may be adopted for all compatibility groups with the exception of Compatibility Groups K and L. White phosphorous (Group H) ammunition may be palletised subject to the conditions laid out in Clause 5.5.3 of IATG 06.30 *Storage and handling*.

Wherever possible, packages containing explosives should be palletised as per the authorised ULS. Where this is not practicable, such as when only small quantities are required for issue, or there is a mixture of different types and size of package, then the following points should be taken into account:

- A) if mixing of packages in one load is unavoidable, note shall be taken of the drop height limitations for each separate ammunition nature to ensure that packages with drop height restrictions are not mixed with those that do not;
- B) only serviceable pallets, pallets load or post/cage pallets of an approved pattern should be used;
- C) weight and size limitations of the pallet should not be exceeded; and
- D) packages should be strapped/secured to the pallet to prevent movement or spillage.

5.4 Damaged pallets/banding material (LEVEL 1)

Any damaged pallets should be repaired as soon as possible. If the damage is severe the pallet shall be discarded. Broken, missing or loose banding material should be replaced. No transport of ammunition should take place until these faults are rectified.

5.5 Identification of palletised ammunition (LEVEL 2)

It is the responsibility of the unit building the ULS or ULC to ensure that the contents can be readily identified. This should be done by ensuring the packages are arranged as per the palletisation construction specification so that the standard markings are visible. It may be that fitting of suitable weather resistant labels should be carried out, showing the relevant information. These may be stuck on or placed in a metal holder or other visible restraint.

5.6 Movement of palletised ammunition (LEVEL 2)

Before any assembled ULS, ULC or palletised load is moved or handled, the strapping should be checked for obvious slackness or damage and the pallet itself checked for damage. If slackness or damage be noted, the unit load should be re-banded and the pallet changed if necessary.

Loads containing explosives should normally only be moved singly and not while stacked. Under normal operating conditions, all unit loads should be lifted singly. Two units may be lifted simultaneously provided that the person in charge of the location is personally satisfied that there is no other approved means of positioning the load. A written risk assessment should be completed taking into account the following:

- A) pallets being moved should be sound, properly tape banded and produce a stable load;
- B) the capacity rating of the mechanical handling equipment (MHE) shall not be exceeded;
- C) the floor should be level and should be free from irregularities;
- D) the forward tilt of the MHE shall not be used;
- E) the driver's vision shall be unrestricted, and the greatest care exercised if there are overhead obstructions (e.g. roof trusses, pipes etc);

- F) the MHE shall be fitted with a carriage back guard of adequate size to prevent the upper unit load to slide off the lower when full backward tilt is used;
- G) the duration and distance travelled, and the height lifted is to be kept to the minimum necessary; and
- H) the operation is to be closely supervised.

6 Sealing of ammunition packaging (LEVEL 1)

To ensure that ammunition is maintained in a serviceable and safe condition, it should be either sealed against any ingress of atmospheric moisture, (i.e. self-sealed), or packed in a suitable hermetically sealed package. The type of sealing may vary but whatever form is employed, it should remain in place until the last possible moment before the ammunition is used.

The life of certain explosives is limited once atmospheric ingress occurs (i.e. when the seal is broken). Other types of explosives may be similarly exposed, but being less vulnerable, they will still have a useful life subject to satisfactory inspection and/or proof and resealing but only when packaged in packaging which provides the necessary degree of protection.

Stores that are unpackaged or are in non-airtight packages but are self-sealed, should only be considered to have been exposed when visual inspection indicates damage to the self-sealing devices. In some instances, monitoring is achieved by the use of humidity indicator systems, which will change, colour or provide some other visual indication of change.

The contents of an opened package may not be fully expended, or the package may be opened for a technical inspection, venting etc. Should this be the case the original method of ensuring the airtightness of the container or inner liner may not be suitable for further use. In these circumstances the airtightness should be achieved as far as possible using plastic adhesive tape or by over-packing the original store in a sealable plastic bag (but see Clause 4.6). This operation should be carried out as quickly as possible in the most favourable conditions.

6.1 Types of ammunition seals

There are two types of sealing for packages containing ammunition and associated non-explosive components.

6.1.1 Authenticity sealing (LEVEL 2)

Authenticity sealing is a security measure, which should be approved by the national technical authority. Its role is to ensure the contents remain as stated on the package and to prevent interference without leaving visible evidence.

Ideally the contractor/manufacturer of the store should apply this security device as a contractual requirement. Should a package be opened at a later stage for use, inspection, repair etc then the same requirement is achieved by means of the unit or depot applying a similar device.

These devices are seals made from materials such as linen, metal or plastic seals and locking wire. Metal or plastic seals are the most common form of sealing device and the quickest to apply but linen sealing devices may still be used and indeed may be required on older packages. Regardless of the type of seal used it should:

- a) show the unit or manufacturer/filler identification monogram or other marking required by the national authority; and
- b) be a sealing device approved by the national authority.

6.1.2 Technical staff sealing

Should the package be opened by technical personnel, then the package should be sealed using an approved seal and, if necessary, re-marking of the package.

This procedure is, in effect, another form of authenticity sealing but it is carried out by ammunition technical staff. There may be occasions when authenticity sealing is not possible or practicable such as palletised aircraft bombs, immediate use ammunition for guarding and security duties etc. There are also exemptions in the transportation of ammunition, particularly where returning from ranges or in transit between sites. EOD recoveries⁹ also fall into this category. Though exempt from formal sealing the aim should always be to secure packages such as by the use of locking wire, etc.

6.1.3 Broken seals

Broken authenticity seals are not necessarily conclusive evidence that the contents have been tampered with. The condition of the contents should be determined from inspection as necessary.

On some occasions it may be necessary for other personnel to seal packages. Examples are:

- a) where opened packages are to be consigned by a user unit to a depot or another unit;
- b) after verification of the package contents following issue of the stores;
- c) after authorised maintenance, repair or modification of the store(s); or
- d) when packages are received with broken or damaged seals.

6.1.4 Qualification and authorisation to carry out authenticity sealing

Authenticity sealing other than by the manufacturer is only to be carried out by, or under the supervision of, those personnel qualified by an appropriate technical course to certify the contents of the package and authorised to do so by the national technical authority.

6.1.5 Sealing procedure and authorised tools

Personnel detailed to carry out a sealing task should ensure that the contents are undamaged and correctly packed, that the Contractors and the Unit Packing Note (see Clause 6.1.6) are correctly compiled and affixed and that the package is correctly closed and marked. Unit seals should be affixed to the package in such a manner as to prevent it being opened without leaving visible evidence. The package markings should be amended, if necessary, to correctly describe the contents. Should there be doubt about the condition of the contents, the package shall be segregated and a request for technical inspection submitted.

Sealing tools are to be securely controlled at all times. They should only be issued, against a signature, to a named person. Only the signatory shall use the sealing tools and only for the tasks detailed. Sealing tools may form part of issued tool kits and controlled accordingly.

6.1.6 Packing notes

Packing notes should be affixed to the inside of explosives packages.

⁹ See IATG 06.50 *Special safety precautions (storage and operations)*.

The Contractor Packing Note should be a contractual requirement when purchasing new ammunition. It should be developed by the manufacturer/contractor who originally packed the explosive stores. It should identify the packer and date the package was filled, information on the use of any type of hermetic sealing employed and the signature or quality assurance stamp of the person carrying out the sealing task.

A Unit Packing Note should be used by units and depots to record the visual condition of the ammunition in the package and certify that the quantity and nomenclature of the contents equate to the information marked on the outside of the package. It also confirms that the contents are packed in an approved and certified package. The application of an authenticity seal should be required as part of the certification.

7 Ammunition in transit (LEVEL 1)

An Authorised Representative (AR)¹⁰ should be nominated by the national technical authority who is responsible for checking that packages are correctly sealed prior to transport. If a seal has been broken or damaged during transit or handling and no interference with, or damage to, the contents has occurred, the AR may have the damaged seal replaced with a seal bearing the monogram of the particular movement unit, by a person authorised in accordance with and in the manner described above.

If no authorised person is available, then the AR shall secure the package using either locking wire or a suitable fabric seal. The circumstances should then be notified to the consignee. However, if the AR considers that the package or its contents are in any way unsafe then the package shall be segregated. If this is not possible then the AR should arrange for its removal to a place of safety and request immediate technical inspection.

7.1 Staging posts

At places of shipment or temporary storage during shipment there may be no explosives specialist or AR available. In this case, the responsibility for permitting the carriage of explosives packages or their segregation should rest with the person in charge of the consignment. Where movement is by military or commercial aircraft an aircrew member should be responsible. In circumstances where the package is authorised for carriage unsealed, the fact is to be brought to the attention of the consignee. Arrangements should be made for the inspection and collection or destruction of any stores left behind.

7.2 Inspection requirements

In the circumstances above, packages in transit temporarily sealed by an unauthorised person, although fit for normal transport, shall be treated as being "open" by the consignee. If the receiving unit is an ammunition depot the stores shall be subject to technical inspection. If the packages are received at a user unit, the unit commander should ensure that the package and contents are visually examined to ascertain that they are fit for storage.

If there is any doubt that the contents are other than serviceable, they should be segregated or isolated if considered unsafe for normal storage, and technical inspection requested. After inspection the package should be correctly resealed by an authorised person. The examination and sealing task should be carried out as above and recorded.

¹⁰ An AR may not necessarily be ammunition trained and qualified but should have undergone a basic level of training on the requirements of the task.

Annex A

(normative)

References

The following normative documents contain provisions, which, through reference in this text, constitute provisions of this module. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this module are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO maintain registers of currently valid ISO or EN:

- a) IATG 01.40 *Glossary of terms, definitions and abbreviations*. UNODA;
- b) IATG 01.50 *UN Explosive hazard classification system and codes*. UNODA;
- c) IATG 03.10 *Inventory management*. UNODA;
- d) IATG 06.30 *Storage and handling*. UNODA;
- e) IATG 06.50 *Special safety precautions (storage and operations)*. UNODA; and
- f) IATG 08.10 *Transport of ammunition*. UNODA.

The latest version/edition of these references should be used. The UN Office for Disarmament Affairs (UNODA) holds copies of all references¹¹ used in this guideline and these can be found at: www.un.org/disarmament/un-safeguard/references. A register of the latest version/edition of the International Ammunition Technical Guidelines is maintained by UNODA, and can be read on the IATG website: www.un.org/disarmament/ammunition. National authorities, employers and other interested bodies and organisations should obtain copies before commencing conventional ammunition stockpile management programmes.

¹¹ Where copyright permits.

Annex B **(informative)** **References**

The following informative documents contain provisions, which should also be consulted to provide further background information to the contents of this guideline:¹²

- a) *Handbook of Best Practices on Conventional Ammunition*, Chapter 1. Decision 6/08. OSCE. 2008. www.osce.org/fsc/33371;
- b) DSA03.OME part 2 provides for the safe storage and processing of Ordnance, Munitions and Explosives (OME). UK MOD. November 2020.

The latest version/edition of these references should be used. The UN Office for Disarmament Affairs (UNODA) holds copies of all references¹³ used in this guideline and these can be found at: www.un.org/disarmament/un-safeguard/references. A register of the latest version/edition of the International Ammunition Technical Guidelines is maintained by UNODA, and can be read on the IATG website: www.un.org/disarmament/ammunition. National authorities, employers and other interested bodies and organisations should obtain copies before commencing conventional ammunition stockpile management programmes.

¹² Data from these publications has been used to develop this IATG.

¹³ Where copyright permits.

Amendment record

Management of IATG amendments

The IATG are subject to formal review on a five-yearly basis. This does not preclude amendments being made within these five-year periods for reasons of operational safety, efficacy and efficiency or for editorial purposes.

As amendments are made to this IATG module they will be given a number, and the date and general details of the amendment will be shown in the table below. The amendment will also be shown on the cover page of the IATG by the inclusion of the amendment number and date.

As the formal reviews of each the IATG module is completed, new editions will be issued. Amendments will be incorporated into the new edition and the amendment record table cleared. Recording of amendments will then start again until a further review is carried out.

The most recently amended, and thus extant, IATG module is posted on www.un.org/disarmament/ammunition

Number	Date	Amendment Details
0	01 Feb 15	Release of Edition 2 of IATG.
1	31 March 21	Release of Edition 3 of IATG.