



SAFETY SERVICES ORGANISATION



Session 6.2

Ammunition Faults & Performance Failures

Ammunition Safety and Performance Module



Lesson Objectives

By the end of the lesson, you should be able:

- Understand that Faults and Performance Failures are preventative measures to enable safe ammunition stockpile management
- Understand what constitutes an ammunition ‘fault’
- Understand what constitutes an ammunition ‘failure’

Definitions

- **Incident**
- **Fault**
- **Performance Failure**
- **Blind**
- **Misfire**



Incident

- **A generic term including all:**
 - Accidents
 - Performance failures
 - Faults



Introduction and Definitions

- **An ammunition fault:**
 - An ammunition fault is deemed to have occurred when a fault is found with the explosives or their containers, and they were sealed by the manufacturer or authorised technical personnel when received by the user unit

Introduction and Definitions

- **Examples of ammunition faults include:**
 - The safety pin is found to be missing from a mortar bomb when it is removed from its packaging
 - The quantity of rounds of ammunition in a sealed package is found to be different from that marked on the package
 - The percussion cap is found to be missing from a round of small arms ammunition

Fault



Introduction and Definitions

- **An ammunition performance failure:**
 - The failure of the ammunition or any of its constituent parts, including the explosives, to function as designed
 - Blinds and misfires are included within performance failures

Introduction and Definitions

- **Ammunition performance failures most frequently occur when user units are on a range or training area and away from their barracks**
- **Examples of what constitutes an ammunition performance failure include:**
 - After throwing a smoke grenade it bursts into flames
 - After firing a mortar round, it does not reach the required range and drops short
 - Any blinds or misfires



Blind

- **Ammunition which, although initiated:**
 - Fails to arm as intended
 - Arms but fails to explode
 - Otherwise fails to function after initiation



Blind



Misfire

- **The term ‘misfire’ refers to ammunition when initiated, fails to fire or launch as intended**



The Need for Reporting

- **Users must report all ammunition faults and performance failures to:**
 - Improve safety by preventing a reoccurrence
 - Identifying trends in ammunition degradation during storage
 - Identifying hazardous practices in the use of ammunition which can then be rectified
 - Obtain information that may lead to improvements in weapon and ammunition design
- **Personal benefit – help to keep you and your friends safe**



Reporting Process

- Organisations holding ammunition stockpiles must have an effective system of reporting and investigating ammunition and performance failures in place
- The process must be known and recognised by all
- The reporting form within IATG 01.60 or whatever the nation may have in place should be used
- It is imperative that immediate reporting of ammunition faults and performance failures takes place

Ammunition Incident / Accident Reporting Form		
Serial	IATG Form 01.60 / 11.10	
1	Person reporting the accident	
1.1	Name:	
1.2	Rank / Appointment:	
1.3	Unit:	
1.4	Unit Address:	
1.5	Unit Telephone Number:	
2	Accident details:	
2.1	Date:	
2.2	Time:	
2.3	Location:	
2.4	Point of Contact (if different from Serial 1)	
2.5	Ammunition Type (including Serial Key identity)	
2.6	Fatalities	
2.7	Injuries	
2.8	Weapon Type	
2.9	Weapon Damage	
3	Action taken by unit	
3.1	Firing stopped	
3.2	Ammunition of same type isolated	
3.3	Forensic evidence secured	
3.4	Any other information	
4	Other agencies informed	
4.1	Service Police	
4.2	Civilian Police	
4.3	Others	



Reporting Process

- **Information required for performance failures reports:**
 - Contact details for the user and reporting unit
 - Date and time of fault or performance failure
 - Location
 - Type of ammunition involved (full technical name)
 - Weapon type involved (full technical name, condition of weapons, year of manufacture, serial number etc.)
 - Batch, lot and/or serial number of the ammunition involved
 - Brief description of fault or performance failure
 - Action taken by user unit

Actions by the User (Unit)

Ammunition Fault:

- Immediately report the ammunition fault and wait for further guidance from an authorised technical investigator
- Secure all ammunition of that particular lot, batch and/or serial number for the technical investigator
- Use another batch, lot or serial number of the same type of ammunition for further training

Actions by the User Unit

Performance Failure:

- Stop firing. If there are no injuries or fatalities firing may recommence providing a different lot or batch of ammunition is used
- Cordon off the area to preserve evidence for the investigating authority
- Record the names of potential witnesses
- Make safe any weapons involved and secure them for the investigating authority
- Immediately report the performance failure and wait for further guidance from the nominated technical investigator

Investigation

- All ammunition faults and performance failures must be investigated by a nominated authority
- These aspects will be covered in depth on future courses

Actions by Investigating Authority

- **Appoint a technical investigator**
- **Examine the technical investigators' reports**
- **Consult with other appropriate organisations**
- **Make a technical judgement as to the cause**
- **Initiate remedial action to prevent reoccurrence**
- **Inform the user unit of the investigation results**
- **Maintain records**
- **Provide technical advice as appropriate**



Actions by Technical Investigator

- **Examine the scene and any weapon involved**
- **Visually inspect any pieces of ammunition**
- **Recover pieces of ammunition / destroy if unsafe**
- **Examine other ammunition of the same type**
- **Question any appropriate witnesses**
- **Make an initial technical appraisal**
- **If appropriate, impose an immediate local ban**
- **Submit a written report**



Introduction to Closure Codes

2G	Transportation – Sea
2H	Transportation – Air
2J	Handling – Air Dropped
2K	Transportation – Cross Country
2L	Handling – Cause Not Known
2M	Handling – User Negligent
2N	Handling – Crane or Overhead Gantry
2O	Handling – Vertical (VERTRAS) or At Sea (RAS) Replenishment
2P	Handling – Other
2Q	Handling – Loading on/off Operating Aircraft
3A	Design – Ammunition Item Design Fault
3B	Design – Ammunition Packaging Fault
3C	Design – Equipment (Ammunition not at fault)
3D	Design – Range Construction or Maintenance



Closure Codes

1J	Storage – Air Force Depot
1K	Storage – Air Force Unit
1L	Storage – Other
2A	Handling – Mechanical Handling Equipment - Accident
2B	Handling – Mechanical Handling Equipment - Negligent
2C	Handling – Manual Handling – Accident
2D	Handling – Manual Handling – Negligent
2E	Transportation – Road
2F	Transportation – Rail
2G	Transportation – Sea



Closure Codes

4G	Tampering – No evidence to assign other closure code
4H	Tampering – Other
5A	Error of Drill – Ammunition Loading / Unloading / Firing
5B	Error of Drill – Ammunition Handling
5C	Error of Drill – Equipment
5D	Error of Drill – Negligent Discharge
5E	Error of Drill – Incorrect Instruction(s)
5F	Error of Drill – Malicious
5G	Error of Drill – Prank
5H	Error IN Drill
5J	Error of Drill – Miscellaneous
5K	Error of Drill – Negligent Supervision
6A	Equipment / Platform Only Failure – Broken / Damaged / Unserviceable
6B	Equipment / Platform Only Failure – Poor Maintenance
7C	Equipment / Platform Only Failure – Issues of Water / Moisture



Closure Codes

O	Open – Under Investigation
OA	Not Known – Ammunition Item not available for examination
OB	Not Known – Cause can not be identified with available evidence
OC	Not Known – Cause can not be identified with available evidence, but ammunition item is suspected
OD	Not Known – Not Investigated as Fault or Performance Failure within Acceptable Limits
OE	Not Known – Cancelled – Re-categorized
OF	Not Known – Cancelled
	Not Known – Fault or Performance Failure not related to ammunition item



Questions

Lesson Objectives

You should now be able to:

- Understand that Faults and Performance Failures are preventative measures to enable safe ammunition stockpile management
- Explain and understand what constitutes an ammunition ‘fault’
- Explain and understand what constitutes an ammunition ‘failure’



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