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PREFACE

THE FIRST EDITION OF THIS AMMUNITION GUIDE WAS WRITTEN AND COMPLIED BY RW GANNON & PM WILLIAMS.

ON THIS NEW EDITION, WE SEPARATED THE MINES INTO DIFFERENT RECOGNITION GUIDE AND DEDICATED THIS BOOK ONLY TO FIELD AMMUNITION FROM SAA UP TO GUIDED WEAPONS.
THE REASON FOR THIS CHANGE WAS THE LIMITED NUMBER OF PAGES/ITEMS WE COULD ADD TO THE OLD FORMAT AND A RESPOND TO DEMAND FROM THE FIELD TEAMS.

PLEASE KEEP COLLECTING DATA AND PICTURES OF NEW ITEMS AND SEND THEM TO THE EOD OFFICER FOR USE IN FUTURE EDITIONS.

ITAMAR LEVY
August 2005

SECTION 1 - INTRODUCTION

THIS POCKET GUIDE HAS BEEN PRODUCED TO GIVE EASY ACCESS TO INFORMATION FOR RECOGNITION, DISPOSAL AND REPORTING PURPOSES. IN WRITING IT WE HAVE TRIED TO ENSURE THE INFORMATION IS ACCURATE BUT IN SOME CASES WE HAVE HAD TO RELY UPON OLD TECHNICAL MANUALS. WHERE THERE IS A CONFLICTING INFORMATION IN EXPLOSIVE CONTENT BETWEEN DIFFERT MARKS OF AMMUNITION OF THE SAME TYPE THE HIGHEST EXPLOSIVE CONTENT HAS BEEN USED.

WARNING

UNEXPLODED ORDNANCE CAN BE SUBJECTED TO VERY HIGH TEMPERATURES. THIS CAN CAUSE DETERIORATION OF EXPLOSIVES. OPERATORS SHOULD TAKE CARE TO LOOK FOR EXUDATION AROUND THE FUZE JOINT AS THE EXPLOSIVES CAN CRYSTALISE RENDERING IT VERY SENSITIVE TO FRICTION. ON NO ACCOUNT SHOULD FUZES BE UNSCREWED.

SECTION 2 – GLOSSARY OF EXPLOSIVE ORDNANCE DISPOSAL (EOD) TERMS

Access Procedure. Those actions taken to locate precisely and to gain access to the Unexploded Explosive Ordnance (UXO)/Improvised Explosive Device (IED).

Alternative Disposal Techniques. Explosive engineering techniques developed to facilitate Conventional Munition Disposal (CMD) without resorting to high order detonation.

Battle Area Clearance. The planning and systematic search and clearance of a given area after the end of hostilities. To remove or destroy all UXO, stray ammunition and their component parts which may otherwise pose a threat to the general public.

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

Booby Trap. An explosive, or non-explosive device, deliberately hidden with the intent of causing
casualties when an apparently harmless object is disturbed or a normally safe act is performed.

Brisance. The shattering effect shown by a detonating explosive to an adjacent non-explosive material.

Burning. The propagation of an exothermic reaction through an explosive/pyrotechnic material by conduction/convection/radiation.

Charge. In explosive engineering, a charge is a quantity of explosive prepared for demolition purposes.

Danger Area. The specified area and airspace in which a potential explosive hazard exists.

Deflagration.

1. A rapid chemical reaction (burning) through an explosive/pyrotechnic in which the output of heat is sufficient to enable the reaction to proceed and be accelerated without influence from an external source.

2. With reference to the response of an explosive store - Ignition and burning of the confined energetic material leads to non-violent pressure release of a low strength case or venting through case closures (leading port/fuze wells etc). The case might rupture but does not fragment; closure covers might be expelled, and unburned or burning energetic material might be thrown about and spread the fire. Pressure venting can propel an unsecured test item, causing an additional hazard. No blast or significant fragmentation damage to the surroundings; only heat and smoke damage from the burning energetic material.

Demolition. The destruction of material by the use of high explosives by detonation.

Detonation. An exothermic reaction at molecular level induced by the action of a disruptive wave through an explosive material causing a sudden violent increase in volume due to the evolution of gaseous products. There are three forms that detonation may take:

1. **High Order**. Detonation at a velocity approaching the maximum stable velocity of detonation for a system. Usually applied to NG based compositions.
2. **Low Order**. Detonation at a velocity well below the maximum stable velocity of detonation for a system. Usually applied to NG based compositions.
3. **Partial**. The incomplete detonation of a high explosive caused by a physical break or lack of chemical homogeneity within the explosive material.

Electro-Explosive Device (EED). An electrically initiated pyrotechnic or explosive.

Explosive Ordnance (EO). All munitions containing explosives, nuclear fission or fusion materials and biological and chemical agents. This includes bombs, warheads, SAA, mines, rockets and all similar or related items or components explosive in nature. Also includes clandestine and IEDs.

Explosive Ordnance Disposal (EOD). The detection, identification, evaluation, render safe, recovery
and final disposal of unexploded explosive ordnance. It may also include the render-safe and or disposal of such explosive ordnance which have become hazardous by damage or deterioration when the disposal of such explosive ordnance is beyond the capabilities of personnel normally assigned the responsibility for routine disposal. This effort may be sub-categorized by the following types of ordnance:

1. Biological and Chemical ammunition.
2. Conventional ammunition.
3. Improvized Explosive Devices.
4. Nuclear weapons.
5. Underwater ammunition.

Firing Point (FP). A remote point in the firing circuit where an electric current or signal can be
transmitted to initiate an EED.

Improvised Explosive Device (IED). Those devices placed or fabricated in an improvised manner
incorporating potentially destructive, damaging or lethal chemicals, designed to destroy, disfigure,
distract or harass. They may incorporate military stores, but are normally devised from non-military
components.

In Situ. In place, specifically applied to EO and IED as found before it has been moved or in any way
disturbed.

Misfire. A failure in the primer system to initiate the propelling charge in part or in whole.

Operator. Any HALO personnel trained and authorised to conduct EOD operations.

Planned Operation. The calculated and deliberate clearance of an EO or IED threat, after due
consideration and interpretation of all relevant factors, by discussion with all relevant agencies.

Render Safe Procedure (RSP). The application of EOD principles, techniques and or methods applied to neutralize or remove the possibility of an unacceptable explosion. Complete EOD may involve a number of RSP stages.

Soak Time (Safe Waiting Period). These are periods of time that the operator must allow to elapse before making a manual approach. These times are mandatory and are classified as primary and secondary soak periods.

> Primary Soak - A mandatory length of time to be applied by the operator during which he is NOT to make a manual approach to a CMD Demolition or Burn. The time is based upon the probability of functioning of the EO.
>
> Secondary Soak - A length of time applied at the discretion of the operator or higher authority when in a CMD situation he awaits the effect of the explosion or burn to dissipate.

Stray Ammunition. Any item of ammunition found but has not been fired.

Sub-munition. Any item of ammunition carried in and deployed from a parent projectile, dispenser,
cluster bomb unit or rocket.

Tamping. The covering of the EO and charge with sandbags filled with sand or earth (free of stones)
and designed to reduce the damaging effects of explosive blast and fragmentation to the surrounding
environment.

SECTION 3 – SAA

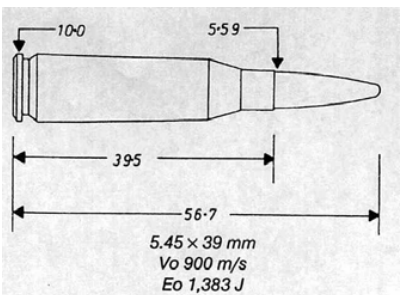
THIS SECTION CONTAINS THE MAIN TIPES OF RIFLES AND MACHINE-GUNS AMMUNITION.

THE DISPOSAL OF THESE AMMUNITION SHOULD BE DONE IN BULK DEMOLITION AS FOLLOWS: NO MORE THAN ONE BOX OF SAA AMMUNITION PER PIT AT THE BOTTOM LAYER WITH SUFFICIENT CONTACT OF EXPLOSIVE FROM ALL SIDES AND ON TOP.

OTHER METHOD IS WITH THE USE OF INCINERATOR ACCORDING TO HALO SOP's.

SAA 5.45 X 39





SPECIFICATIONS

7N6
Round length: 56.5 mm
Round weight: 10.5 g
Case length: 39.5 mm
Rim diameter: 9.97 mm
Bullet length: 25.5 mm
Bullet diameter: 5.61 mm
Bullet weight: 3.45 g

SAA	5.56X45 NATO



SPECIFICATIONS

M855 Ball
Round length: 57.4 mm
Round weight: nominal, 12.3 g
Case length: 44.7 mm
Rim diameter: 9.54 mm
Bullet weight: 4.02 g
Bullet diameter: 5.66 mm
Bullet length: 23.2 mm

SAA .30 CARBINE M1

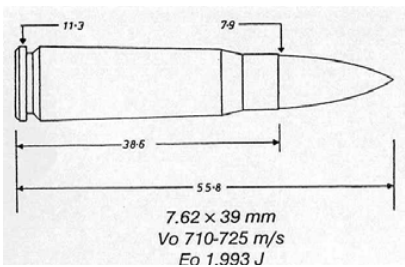


SPECIFICATIONS

Ball M1
Round length: 42.5 mm
Case length: 32.7 mm
Rim diameter: 8.99 mm
Bullet diameter: 7.78 mm
Round weight: 12.2 g
Bullet weight: 7 g

SAA	7.62X39 M1943



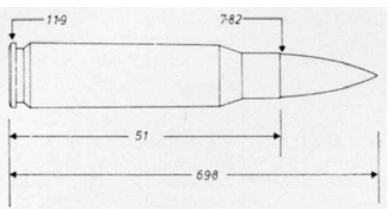


SPECIFICATIONS

Ball PS
Round length: 55.8 mm
Round weight: nominal, 16.2 g
Case length: 38.65-38.7 mm
Rim diameter: 11.35 mm
Bullet diameter: 7.9 mm
Bullet length: 26.8 mm
Bullet weight: 7.97 g
Nominal charge: 1.6 g; SSNF 50 powder

SAA	7.62X51 NATO



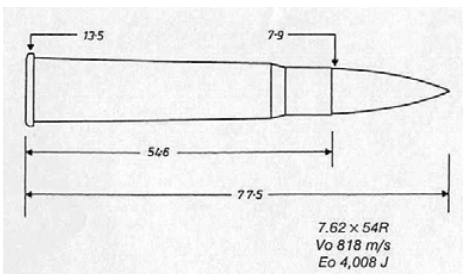


SPECIFICATIONS

US M80 Ball
Round length: 69.85 mm
Case length: 51.05 mm
Rim diameter: 11.94 mm
Bullet diameter: 7.79 mm
Bullet weight: 9.65 g

SAA 7.62X54R MOSIN NAGANT

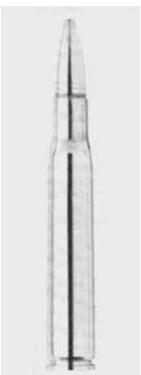


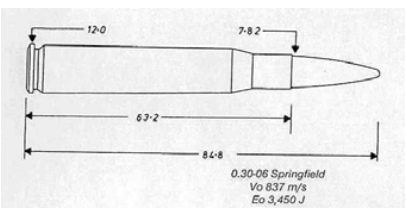


SPECIFICATIONS

Heavy Ball D
Round length: 77.16 mm
Case length: 53.6 mm
Rim diameter: 14.48 mm
Bullet diameter: 7.87 mm
Bullet length: 32.3 mm
Bullet weight: 11.98 g

SAA 30-06 SPRINGFIELD



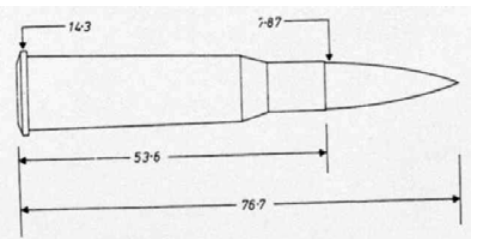


SPECIFICATIONS

Round length: 84.8 mm
Case length: 63.2 mm
Rim diameter: 12 mm
Bullet diameter: 7.82 mm
Bullet weight: 9.72 g

SAA .303 BRITISH



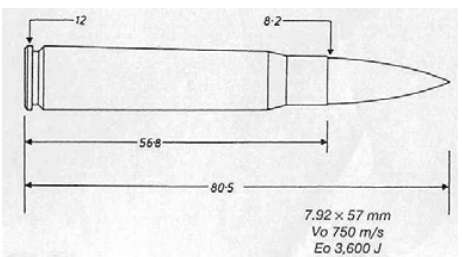


SPECIFICATIONS

Ball Mk 7
Round length: 77.47 mm
Case length: 54.61 mm
Rim diameter: 13.46 mm
Bullet diameter: 7.9 mm
Bullet weight: 11.27 g

SAA 7.92 MAUSER



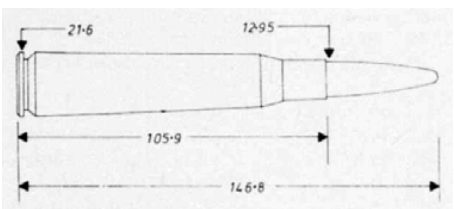


SPECIFICATIONS

Yugoslav Ball M49
Round length: 80.6 mm
Case length: 57 mm
Rim diameter: 12 mm
Bullet diameter: 8.2 mm
Bullet weight: 12.85 g

SAA 12.7X107 MACHINE GUN



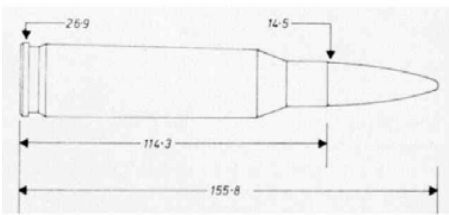


SPECIFICATIONS

API B-32
Round length: 146.8 mm
Case length: 105.9 mm
Rim diameter: 21.6 mm
Bullet diameter: 12.95 mm
Bullet weight: 48.28 g
Muzzle velocity: 840 m/s
Muzzle energy: 15,570 J

SAA 14.5X114 MACHINE GUN





SPECIFICATIONS

API B-32
Round length: 155.8 mm
Case length: 114.3 mm
Rim diameter: 26.9 mm
Bullet diameter: 14.52 mm
Bullet length: 68 mm
Bullet weight: 64.1 g

SECTION 4 - GRENADES

BLIND GRENADES MUST ***NEVER*** BE MOVED. CARE MUST BE TAKEN WHEN DEALING WITH ROCKET PROPELLED GRENADES AS THEY MAY CONTAN A PIEZO ELECTRIC FUZE WHICH IS SUSEPTABLE TO RAPID CHANGE IN TEMPERATURE AND ELECTRO-MAGNETIC CURRENTS.

TYPE

PLACING OF DISPOSAL CHARGE

AP HAND

A/T HAND

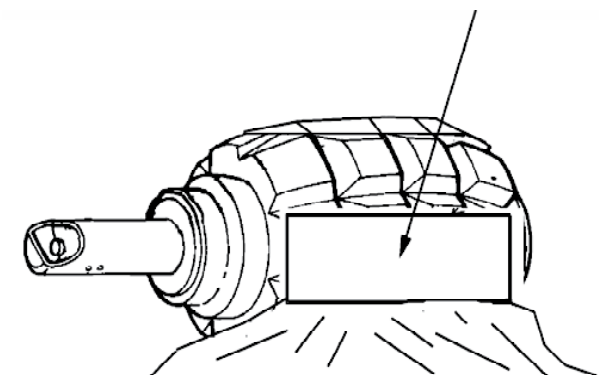
RIFLE GREN

LAUNCHED

ROCKET PROPELLED

PLACING OF DISPOSAL CHARGE

WHEN DEALING WITH HEAT GRENADES THE CHARGE MUST BE PLACED TO ENSURE THE CONE COLLAPSES.



THE CHARGE SHOULD BE PLACED WITHOUT DISTURBING THE GRENADE. IF POSSIBLE ELEVATE THE DONOR CHARGE

WHEN MOVING A GRENADE WITH THE SAFETY PIN IN PLACE, THE OPERATOR SHOULD ENSURE THE PIN IS TAPED SECURELY TO PREVENT IT ACCIDENTALLY BEING DISLODGED.

RECOGNITION POINTS

HAND GRENADE:
- SAFETY PIN ATTACHED
- FLY-OFF LEVER ATTACHED
- CHUTE DEPLOYED (A/Tk)

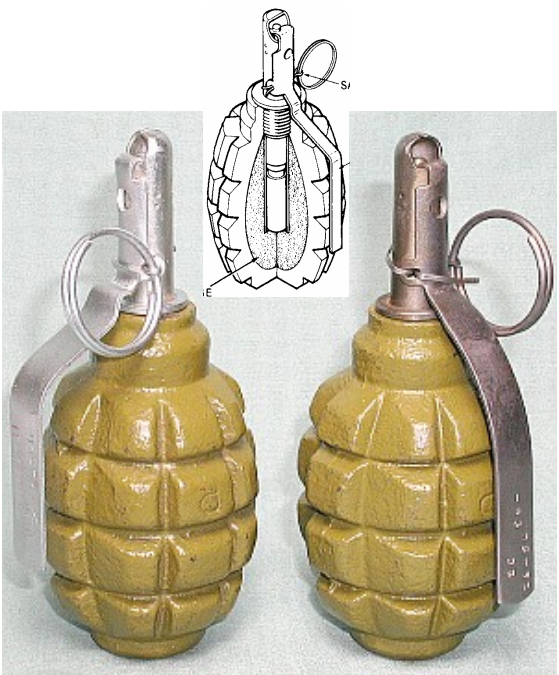
LAUNCHED GRENADE:
- CARTRIDGE CASE PRESENT
- PERCUSSION CAP STRUCK
- DRIVING BAND SCORED
- VENT HOLES BURNT THROUGH (VOG25)

RIFLE GRENADE:
- SAFETY PIN ATTACHED
- DAMAGE TO TAIL FINS

PROPELLED GRENADE:
- SAFETY PIN ATTACHED
- FUZE PROTECTION CAP ATTACHED
- PERCUSSION CAP STRUCK
- PROPELLANT PRESENT
- VENTURI BURNT OUT

ALL DEPLOYED ITEMS WILL HAVE SOME DEGREE OF DAMAGE.

HE HAND GRENADES F1



NEQ	Delay	Lethal Rad	Length-cm	Origin
60g	4-13s	20m	8.5	Russia

HE HAND GRENADES M75



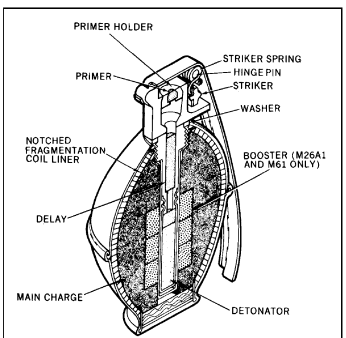
NEQ	Delay	Lethal Rad	Length-cm	Origin
43g	13s	20m	8.9	Yugo

HE HAND GRENADES | HDGR 73



NEQ	Delay	Lethal Rad	Length-cm	Origin
37g	4-6s	15m	9.1	Austria

HE HAND GREN M26 AND VARIANTS







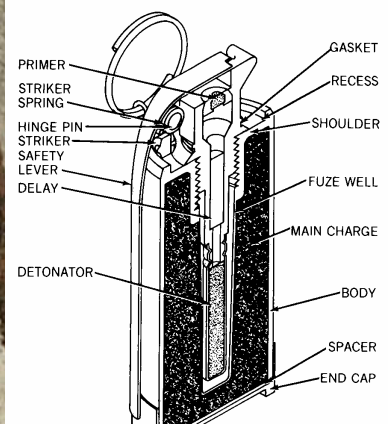


M963 is a Portuguese copy of the M26 but is larger and has a slightly different igniter housing

NEQ	Delay	Lethal Rad	Length-cm	Origin
164g	4-8s	25m+	9.9	USA

HE HAND GREN M962

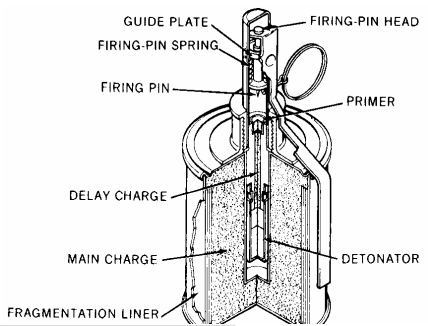




USES SAME STRIKER MECHANISM AS THE M963

NEQ	Delay	Lethal Rad	Length-cm	Origin
192g	4-8s	5m	12.7	Portugal

HE HAND GRENADES RG 42





NEQ	Delay	Lethal Rad	Length-cm	Origin
118g	3-4s	25m	12.1	Russia

HE HAND GRENADES RGD 5



ALWAYS SUPPLIED WITH ONE 0s DELAY FUZE FOR BOOBY TRAPS. THIS FUZE IS INVERTED IN THE BOX. THE DELAY TIME CAN NORMALLY BE FOUND ON THE FLY-OFF LEVER

NEQ	Delay	Lethal Rad	Length-cm	Origin
110g	13s	25m	7	Russia

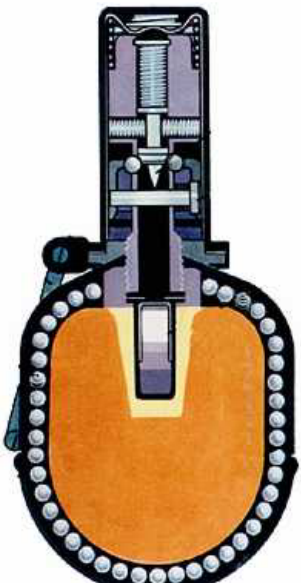
HE HAND GRENADES | RGN-86



USES DVM-78 FUZE (MOUSE TRAP TYPE) SIMILAR TO BRITISH L25 (L2 GREN) FUZE

NEQ	Delay	Lethal Rad	Length-cm	Origin
57g	3.2 - 4s	8m	9	Russia

HE HAND GRENADES TYPE 73

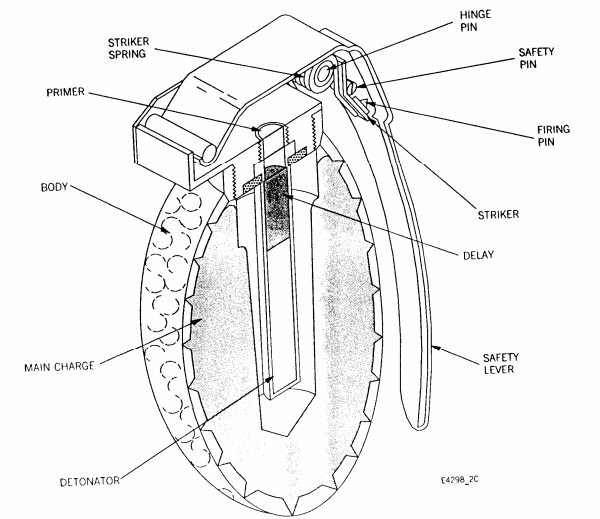




NEQ	Delay	Lethal Rad	Length-cm	Origin
62g	2-4s	6m	8.8	China

HE HAND GRENADES TYPE 82

LOOKS LIKE AN EGG.



NEQ	Delay	Lethal Rad	Length-cm	Origin
62g	3-4s	6m	7.5	China

HE HAND GRENADES TYPE 77

SIMILAR IN APPERANCE TO TYPE 82 BUT IS A "STICK" GRENADE – NOT OFTEN FOUND WITH THE STICK



AS CAN BE SEEN THE ACTUAL GRENADE IS APPROX 6cm

NEQ	Delay	Lethal Rad	Length-cm	Origin
70g	3-4s	6m	17.3cm W/STICK	China

HE HAND GRENADES No 36M

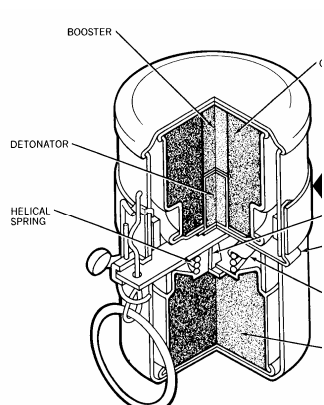


COMMONLY KNOWN AS THE MILLS BOMB, ORIGINALLY UK MANUFACTURE BUT MOST FOUND ARE OF PAKISTAN ORIGIN - AN EXACT COPY OF THE ORIGINAL DESIGN

NEQ	Delay	Lethal Rad	Length-cm	Origin
71g	7.5s	25m	10	UK

HE HAND GRENADES RG 4

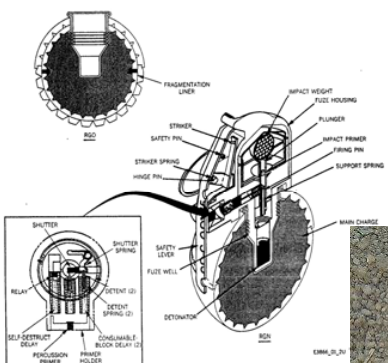
THE GRENADE PICTURED, FOUND IN SOMALILAND, IS THOUGHT TO BE AN EGYPTIAN COPY OF THE RG4 ALTHOUGH THE OBC IS WHITE THE WRITING INDICATES AN HE FILL.





NEQ	Delay	Lethal Rad	Length-cm	Origin
48g	NK	>10m	8.4	Czech

HE HAND GRENADES RGO

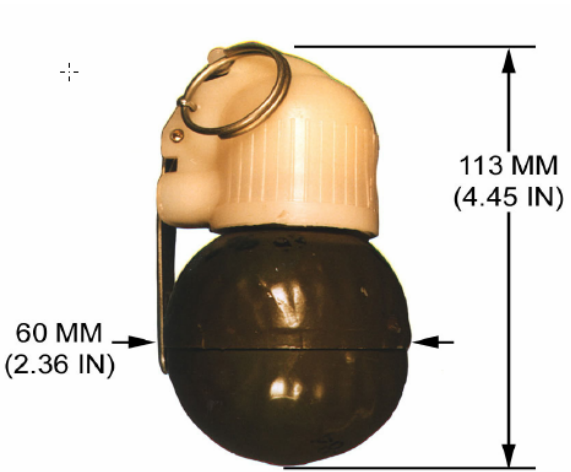




THIS IS THE LATEST SOVIET AP GRENADE, AND IS FOUND IN MOST HALO COUNTRIES. THIS GRENADE HAS AN ALLWAYS ACTING ELEMENT TO THE FUZE AS WELL AS THE NORMAL DELAY.

NEQ	Delay	Lethal Rad	Length- cm	Origin
90g	3.3-4.3 sec	15-20m	11.5	Russia

HE HAND GRENADES RGN

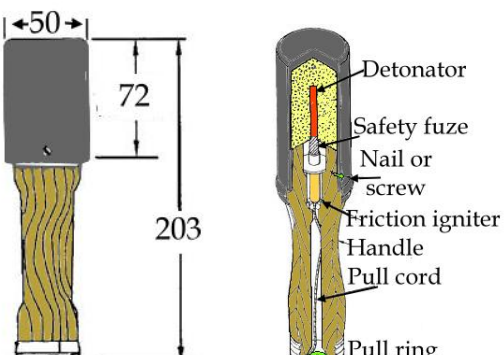


THIS AN OFFENSIVE VERSION OF THE RGO
NOTE THE ABSENCE OF THE FRAG.
FUSE OPERATION IS THE SAME AS RGO.

NEQ	Delay	Lethal Rad	Length- cm	Origin
114g	3.3-4.3 sec	N/A	11.5	Russia

HE HAND GRENADES CHINESE STICK

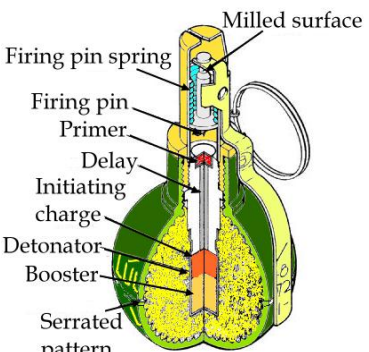




NEQ	Delay	Lethal Rad	Length- cm	Origin
26g	N/A	10-15m	20.3	China

HE HAND GRENADES MINI FRAG





NEQ	Delay	Lethal Rad	Length- cm	Origin
54g	N/A	N/A	6.4 w/o fuse	China

HE HAND GRENADES M-46





NEQ	Delay	Lethal Rad	Length- cm	Origin
49g	N/A	N/A	14.2	China

HE HAND GRENADES MODEL 82-2



The item on the right hand side is with safety/transit cap

NEQ	Delay	Lethal Rad	Length- cm	Origin
62g	N/A	N/A	8.5	China

HE HAND GRENADES MODEL 82-1



NEQ	Delay	Lethal Rad	Length- cm	Origin
62g	N/A	N/A	10	China

HE HAND GRENADES MODEL 86P



TOP VIEW



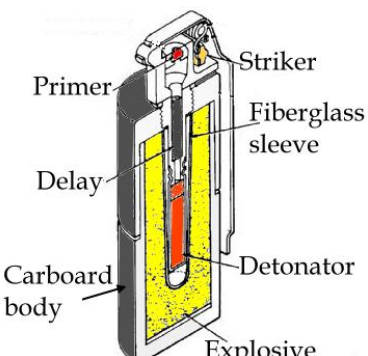
NEQ	Delay	Lethal Rad	Length- cm	Origin
39.3g	N/A	N/A	9	China

HE HAND GRENADES Mk II



NEQ	Delay	Lethal Rad	Length- cm	Origin
90g	N/A	N/A	11.4	USA

HE HAND GRENADES Mk III





OFFENSIVE GRENADE

NEQ	Delay	Lethal Rad	Length- cm	Origin
193g	N/A	N/A	13.8	USA

HE HAND GRENADES S.R.C.M



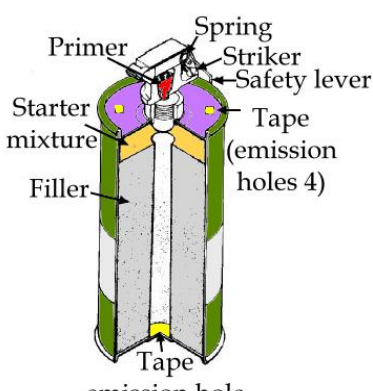
Known also as Mod 35 or “Red Devil”
Old models (WWII) designated as “Breda”
Egyptian copies can be found in north and horn of Africa.

NEQ	Delay	Lethal Rad	Length- cm	Origin
43g	N/A	12 m	8	Italy

SMK HAND GRENADES M-18







Colour Smoke

NEQ	Delay	Lethal Rad	Length- cm	Origin
326g	N/A	N/A	14.6	USA

SMK WP HAND GRENADES M-15

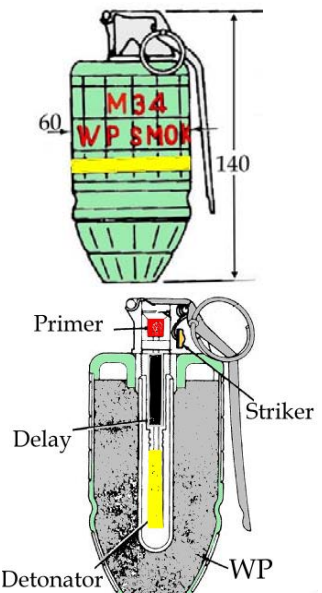




NEQ	Delay	Lethal Rad	Length- cm	Origin
135g HE+WP	N/A	N/A	11.4	USA

SMK WP HAND GRENADES M-15





NEQ	Delay	Lethal Rad	Length- cm	Origin
425g HE+WP	N/A	N/A	14	USA

INCENDIARY HAND GRENADES AN M-14





Contains Thermite Incendiary mixture

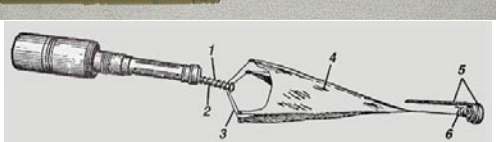
NEQ	Delay	Lethal Rad	Length- cm	Origin
48g HE	N/A	N/A	14.5	USA

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A/T HAND GRENADES RKG 3

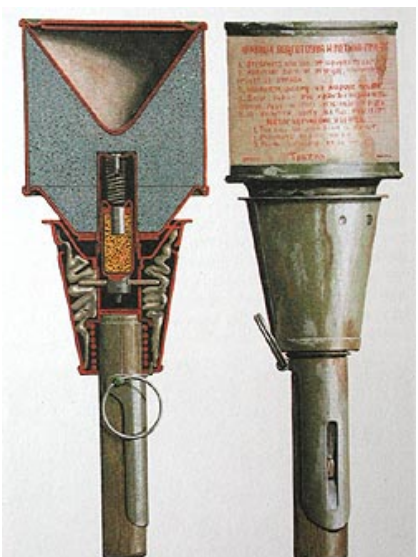






NEQ	Penetrate	Lethal Rad	Length-cm	Origin
567g	16cm	20m	36.3	Russia

A/T HAND GRENADES — RPG 43



NEQ	Penetrate	Lethal Rad	Length-cm	Origin
612g	7.5cm	N/A	29.9	Russia

A/T HAND GRENADES | HOSAM TYPE 1



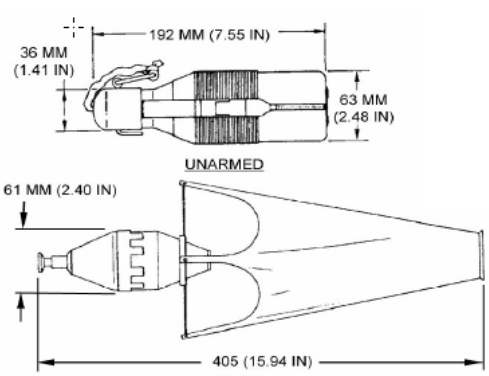
SAFE



NEQ	Penetrate	Lethal Rad	Length-cm	Origin
181g	cm	N/A	19.5 safe 40.5 armed	Egypt

A/T HAND GRENADES HOSAM TYPE 2





NEQ	Penetrate	Lethal Rad	Length-cm	Origin
143g	cm	N/A	19.5 safe 40.5 armed	Egypt

RIFLE GRENADES YUGOSLAVIA



FRAG



HEAT

Model	Type	Length	Diameter	NEQ
M60	A/Tank	390	60	235g
M60	Frag	307	30	67g
M62	Smk	330	40	N/A
M62	Illum	330	40	N/A

RIFLE GRENADES YUGOSLAVIA



Model	Type	Length	Diameter	NEQ
	A/Tank			

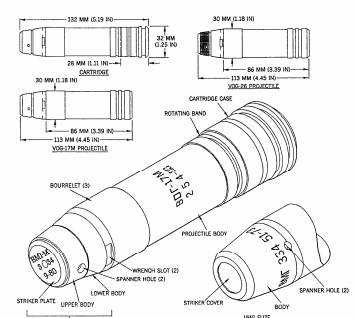
RIFLE GRENADES TYPE 67 CHINA



Model	Type	Length	Diameter	NEQ
Type 67	A/Tank	415mm	70mm	300 (?)

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LAUNCHED GREN VOG 17 –30mm



USES TWO TYPES OF FUZE – ONE WITH SELF DESTRUCT WHICH FUNCTIONS AFTER 25s.



NEQ	Fuze	Launcher	Length-cm	Origin
34.5g	Impact	AGS 17 / 30	13	Russia

LAUNCHED GREN VOG 25



BG15 or GP series UNDERSLUNG LAUNCHER FITTED TO THE AK and AN94 ASSAULT RIFLE. THE VOG 25P IS CONSTRUCTED TO JUMP INTO THE AIR BEFORE DETONATION. BOTH VOG 25s HAVE AN INTEGRAL CARTRIDGE CASE THAT MAKES FOR EASY IDENTIFICATION OF BLINDS

NEQ	Fuze	Launcher	Calibre	Origin
48g	Impact	Underslung	40mm	Russia

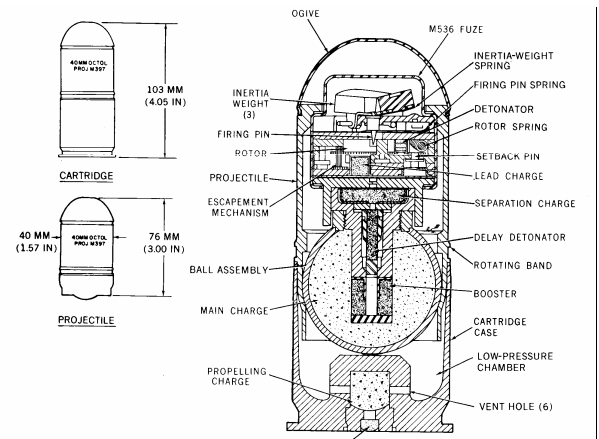
LAUNCHED GREN M381 – 40mm



M381, M386, M406 & M441 are all look alike and are HE APERS

NEQ	Fuze	Launcher	Length-cm	Origin
32g	Impact	M79 / M203	9.9	USA

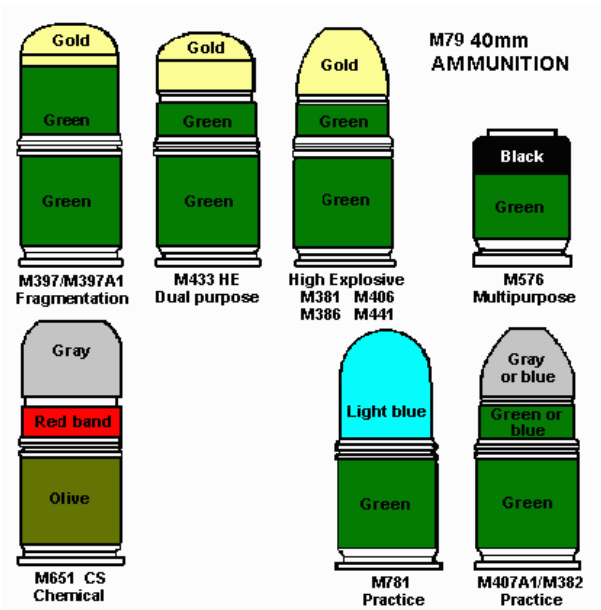
LAUNCHED GREN M397 – 40mm



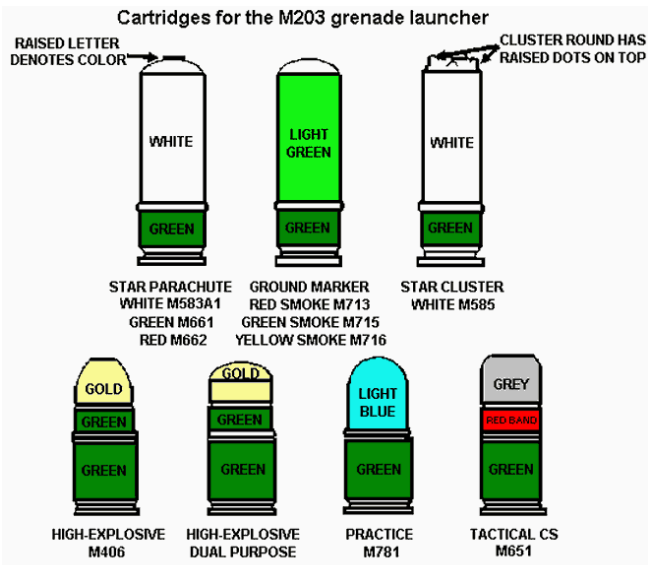
INCORPORATES A SMALL EXPELLING CHARGE TO ALLOW THE GRENADE TO EJECT THE HE FRAG BALL TO A HEIGHT OF 1.5m BEFORE DETONATING

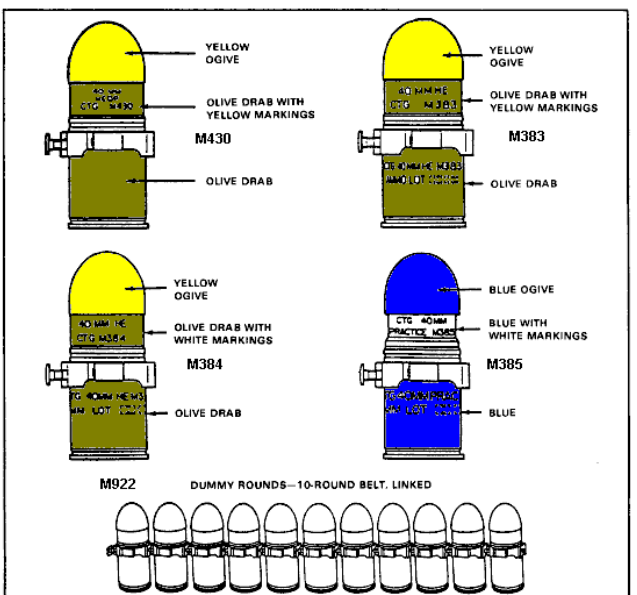
NEQ	Fuze	Launcher	Length-cm	Origin
32g	Impact	M79 / M203	10.3	USA

LAUNCHED GREN M79 Ammunition



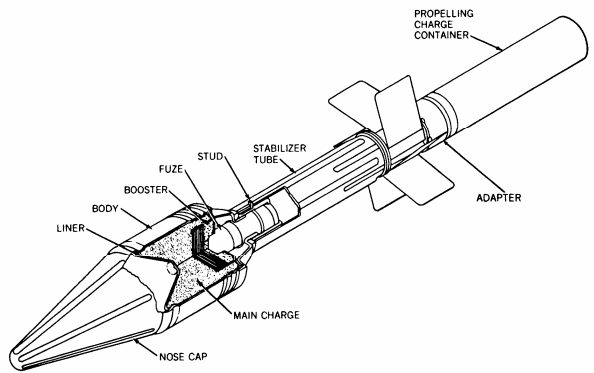
LAUNCHED GREN M203 Ammunition





MK-19 40-mm cartridges.

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NEQ	Fuze	Effect	Diameter	Length
570g	BD Impact	HEAT	40/80mm	665mm



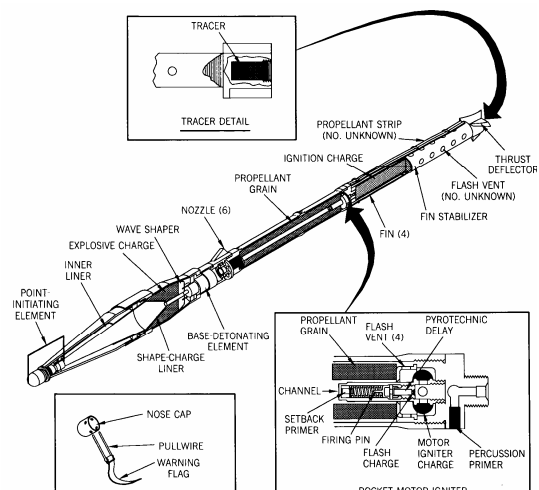
PG7G



PG7M

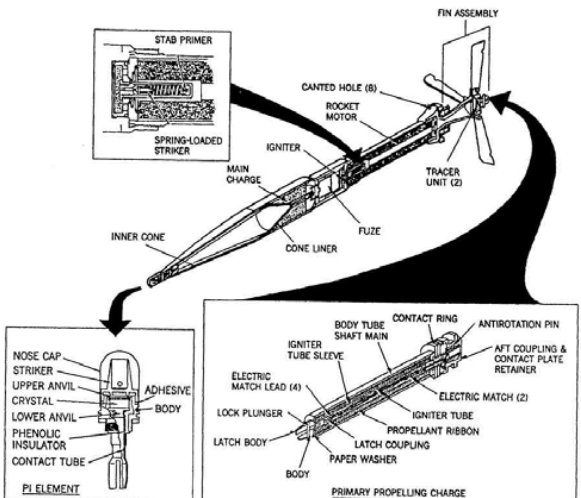


PG7L



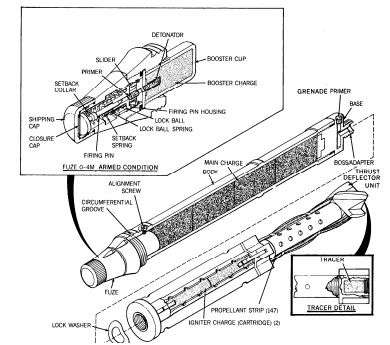
CARE MUST BE TAKEN WITH THE FUZE AS IT IS PIEZO ELECTRIC

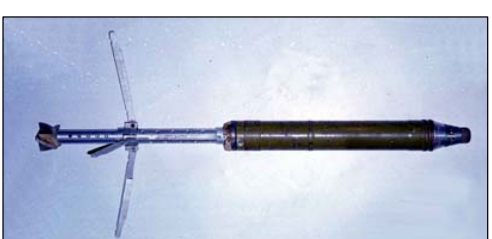
Type	NEQ	Fuze	Diameter	Length
PG7G	377g	Piezo PIBD	40/73mm	900mm
PG7M	314g	Piezo PIBD	40/70mm	950mm
PG7L	600+g	Piezo PIBD	40/93mm	955mm



NORMAL PRECAUTIONS TO BE TAKEN FOR PIEZO FUZE.

NEQ	Fuze	Effect	Diameter	Length
280g	Piezo PIBD	HEAT	58.3mm	685mm

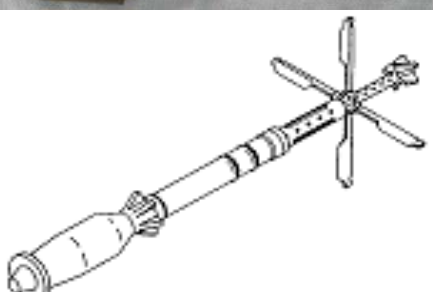




NEQ	Fuze	Effect	Diameter	Length
210g	PD Impact	FRAG	40mm	569mm

PROP GRENADE CHINESE TYPE 69





NEQ	Fuze	Effect	Diameter	Length
N/k	PD Impact	FRAG Bounding	40/75mm	825mm

PROP GRENADE	CHINESE MODEL B- 62





NEQ	Fuze	Effect	Diameter	Length
350g	PIBD Piezo	HEAT	62mm	545mm

PROP GRENADE	CHINESE MODEL B- 63



NEQ	Fuze	Effect	Diameter	Length
?300g	BD Inertia	HEAT	63mm	mm

PROP GRENADE USA LAW M-72

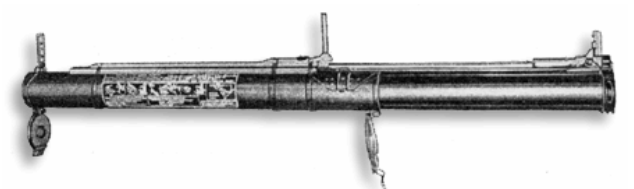




NEQ	Fuze	Effect	Diameter	Length
454g	PIBD Piezo	HEAT	66mm	508mm

PROP GRENADE USSR RPG-18







NEQ	Fuze	Effect	Diameter	Length
300g	PIBD Piezo	HEAT	64mm	668mm

PROP GRENADE USSR RPG-22



NEQ	Fuze	Effect	Diameter	Length
240g	PIBD Piezo	HEAT	72mm	N/A

PROP GRENADE RPG-75





NEQ	Fuze	Effect	Diameter	Length
300g	PIBD+BD	HEAT	68mm	N/A

PROP GRENADE	USSR RPO-A Shmel







NEQ	Fuze	Effect	Diameter	Length
2100g Liquid Exp.	BD	Thermobaric	103mm	920mm

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SECTION 5 - MORTAR BOMBS

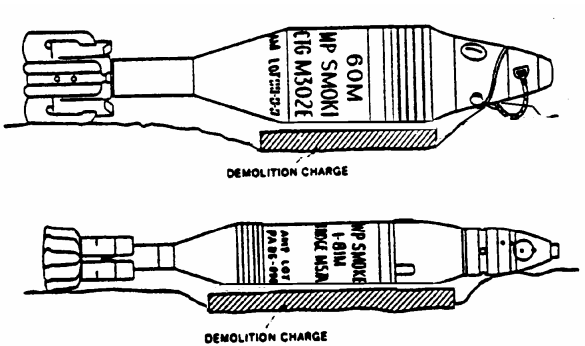
HALO POLICY:

"ALL BLINDS ARE DESTROYED IN-SITU"

BLIND MORTAR BOMBS MUST ***NEVER*** BE MOVED.

TYPE	PAGES
PLACING OF DISPOSAL CHARGE	
2 inch	
51mm	
60mm	
81mm	
82mm	
4.2 inch	
120mm	

PLACING OF DISPOSAL CHARGE



THE CHAREG MUST BE PLACED AS CLOSE AS POSSIBLE WITHOUT TOUCHING THE MORTAR. A SECOND CHARGE SHOULD BE PLACED NEXT TO THE TAIL UNIT TO REDUCE THE FRAGMENTATION EFFECT. WHEN DEALING WITH HE MOR BOMB THEN TAMPING SHOULD BE USED BUT NO TAMPING IS REQUIRED FOR WP, SMOKE OR ILLUMINATING AS THIS COULD CAUSE A FIRE HAZARD

RECOGNITION POINTS

BODY SHAPE:
- TEAR DROP – HE or WP
- STRAIGHT SIDES – CARRIER or ILLUM

PRIMARY CARTRIDGE:
- STRUCK
- BURNT OUT

FUZE:
- SAFETY PIN REMOVED
- CAP REMOVED
- SET TO ARM

TYPE OF FUZE:
- TIME FUZE – CARRIER / ILLUM
- DA FUZE – HE / WP

ALL FIRED MORTARS WILL HAVE SOME DEGREE OF DAMAGE.

2 INCH MORTAR BRITISH SERIES







MOST COMMON FOUND IS INDIAN COPIES

Type	Fuze	Tail Fins	Vent Holes	NEQ
Smk	No fuze base emit	6	3 rows	Smk Comp
Illum	No fuze nose eject	6	3 rows	Illum Comp
HE	PD	6	3 rows	170g

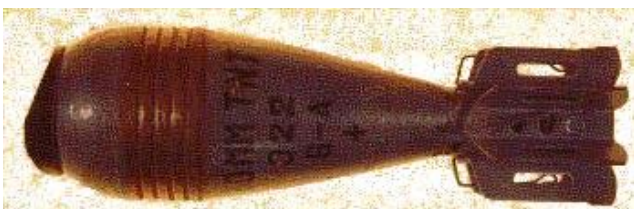
51mm MORTAR PAKISTAN HE

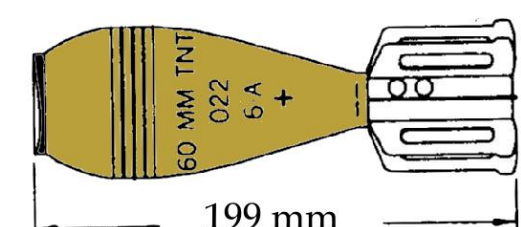


MAY HAVE BEEN MADE SPECIFICALLY FOR SOMALIA AS REPLACEMENT FOR DISCONTINUED 2" BRITISH MORTARS

NEQ	Fuze	Tail Fins	Vent Holes	Length
Approx 100g	PD	8	3 rows	tbc

60mm MORTAR Chinese Type 22 HE





NEQ	Fuze	Tail Fins	Vent Holes	Length
100g	PD	8	2 rows	199mm

60mm MORTAR | Chinese Type 27 HE





Variant of Type 27

NEQ	Fuze	Tail Fins	Vent Holes	Length
100g	PD	10	3 rows	203mm

60mm MORTAR Yugoslavia Series



HE BOMB M 73



ILLUM BOMB M67

Type	NEQ	Fuze	Fins	Vent Holes	Length
M73 HE	220g	PD	6	3 Rows	286mm
M73 Smk	190g WP	PD	6	3 Rows	2866mm
M67 Illum	_	Time	6	3 Rows	273mm

60mm MORTAR RSA M61 Series



Type	NEQ	Fuze	Fins	Vents	Length
HE	200g	Impact	8	4 rows	312mm
Smk	FM	Impact	8	4 rows	312mm
Prac	Burster	Impact	8	4 rows	312mm
M802	Illum	Time	8	4 rows	377mm

Length is for fuzed bomb

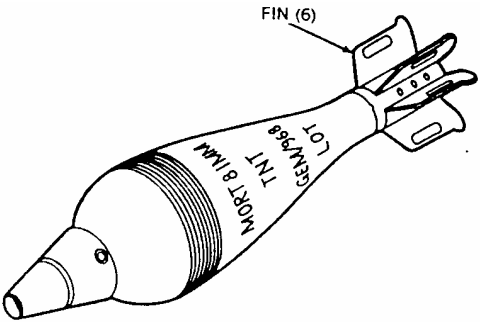
81mm MORTAR RSA M61 Series



TOP – SMOKE WITH FM FILLING
BOTTOM – HE FILLING

Type	NEQ	Fuze	Fins	Vents	Length
HE		Impact	8	5 rows	N/K
Smk	FM	Impact	8	5 rows	N/K
Prac	Burster	Impact	8	5 rows	N/K
Illum	720g	Time	8	5 rows	566mm

81mm MORTAR — Portugal M968 HE





EGYPTIAN COPY FOUND IN SOMALILAND

NEQ	Fuze	Tail Fins	Vent Holes	Length
544g	PD	6	3 rows	338mm

81mm MORTAR — USA M374 HE



NEQ	Fuze	Tail Fins	Vent Holes	Length
953g	PD/Prox	6	6	529mm

81mm MORTAR — USA M375 WP





NEQ	Fuze	Tail Fins	Vent Holes	Length
725g WP 11g RDX	PD	6	3 rows	529mm Fuzed

81mm MORTAR ILLUM / CHAFF



NEQ	Fuze	Tail Fins	Vent Holes	Length
	TIME		3 rows	

81mm MORTAR — Yug M72 HE



NEQ	Fuze	Tail Fins	Vent Holes	Length
680g	PD or Delay	6	3 rows	529mm

82mm MORTAR | Chinese Type 20 HE



VERY SIMILAR IN APPEARANCE TO THE TYPE 53 BUT SHORTER AND CONTAINS COMMERCIAL GRADE EXPLOSIVES.

NEQ	Fuze	Tail Fins	Vent Holes	Length
140g	PD	10	2 rows	312mm

82mm MORTAR | Chinese Type 53 HE



NEQ	Fuze	Tail Fins	Vent Holes	Length
392g	PD	10	3 rows	330mm

82mm MORTAR — USSR O-832 HE





EGYPTIAN COPY

NEQ	Fuze	Tail Fins	Vent Holes	Length
435g	PD	10	4 rows	329

82mm MORTAR USSR ILLUM



NEQ	Fuze	Tail Fins	Vent Holes	Length
Illum	Time	10	4 rows	345mm

82mm MORTAR USSR PROPAGANDA



NEQ	Fuze	Tail Fins	Vent Holes	Length
GP	Time	6	3	-

4.2 INCH MORTAR AMERICAN M329



This mortar is spin stabilised.

NEQ	Fuze	Fins	Vent Holes	Length
3.6kg	PD	NIL	3 Rows	55.9cm

4.2 INCH MORTAR BRITISH SERIES



SMK DS SMK WP HE

Type	NEQ	Fuze	Fins	Holes	Length
Smk	-	Time			-
WP	-	Impact	6	18/9	-
HE	1.25kg	Impact	6	24/18	-

120mm MORTAR — USSR OF-843 HE



OF-843

NEQ	Fuze	Tail Fins	Vent Holes	Length
2.68kg	PD	12	6 rows	656mm



OF-843B

NEQ	Fuze	Tail Fins	Vent Holes	Length
1.58kg	PD	10	6 rows	625mm

120mm MORTAR USSR F-843 HE



MUCH MORE STREAMLINED THAN PREVIOUS 120mm MORTARS PRODUCED BY THE SOVIETS. EASILY RECOGNISABLE FROM ITS SHAPE AND LENGTH.

NEQ	Fuze	Tail Fins	Vent Holes	Length
3.9kg	PD	12	6 rows	750mm

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SECTION 6 - PROJECTILES

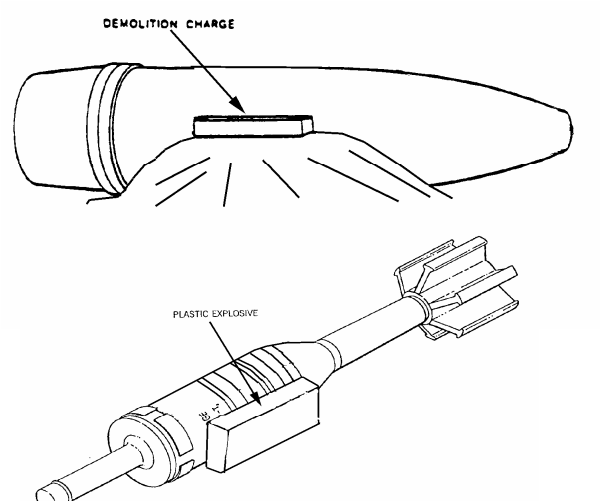
HALO POLICY:

"ALL BLINDS ARE DESTROYED IN-SITU"

BLIND PROJECTILES MUST ***NEVER*** BE MOVED.

TYPE	PAGES
PLACING OF DISPOSAL CHARGE	
CANNON	
ARTLLERY	
TANK	
RECOILESS	

PLACING OF DISPOSAL CHARGE



CARE MUST BE TAKEN TO PREVENT THE DEM CHARGE FALLING AWAY FROM THE UXO WHEN BUILDING A SANDBAG IGLOO.

RECOGNITION POINTS

BODY SHAPE:
- BOAT TAIL – HE or WP
- STRAIGHT SIDES – CARRIER or ILLUM

BASE PLATE:
- REMOVABLE FOR CARRIER / ILLUM
- WELDED FOR HE / WP

FUZE - CAP & SAFETY PIN REMOVED (RECOILESS)

TYPE OF FUZE:
- TIME – CARRIER / ILLUM
- NOSE DA – HE / WP
- PIBD / BD – HEAT
- BD - HESH / CONCRETE PIERCING

DRIVING BAND - SCORED

CARTRIDGE CASE:
- MISSING – FIXED SYSTEM?
- STRUCK – MISFIRE

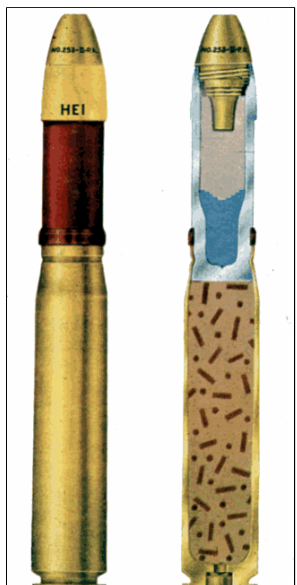
TRACER - INTACT

ALL FIRED PROJECTILES WILL HAVE SOME DEGREE OF DAMAGE.

CANNON 20mm HEI -T

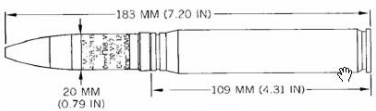


W/OUT THE CASE



NEQ	Fuze	Weapon	Role	Origin
12g	PD	Oerlikon	AA	UK

CANNON 20mm HEI









NEQ	Fuze	Weapon	Role	Origin
43.5g	PD	M55/M75	AA	Yugo

CANNON	20mm HEI-T



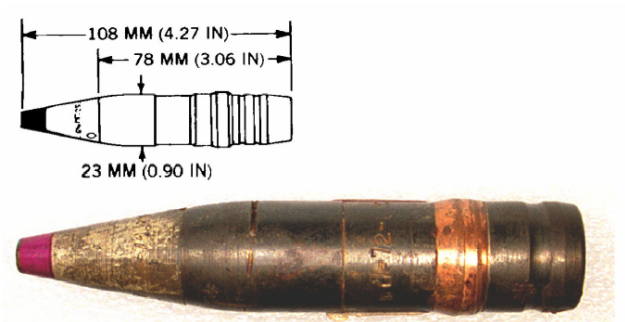
YT M57 CM TK C47628 28 BK T/3C 20mmΓAB,M55 T30,M57 C4 76Ø1 12 20mmT30M57 C47613 TK 10606 BK DOMESTIC	YTM57 CM TK C470124 BK 20mm HIS. HEI T LOT NO.70/70 20mmT30M57 C47056 TK 4944Ø BK EXPORT

Marking



NEQ	Fuze	Weapon	Role	Origin
43.5g	PD	M55/M75	AA	Yugo

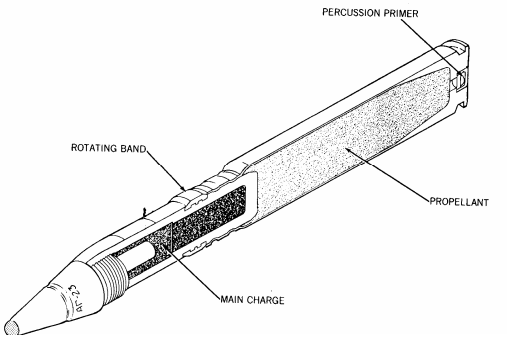
CANNON 23mm HEIT



Designated: OFZT

NEQ	Fuze	Weapon	Role	Origin
13g	PD	ZU-23	AA	Russia

CANNON 23mm HEI





NEQ	Fuze	Weapon	Role	Origin
18g	PD	ZU-23	AA	Russia

CANNON 23mm APC -T



NEQ	Fuze	Weapon	Role	Origin
N/A	N/A	ZU-23	AA	Russia

CANNON 30mm HE -T



FITTED TO THE BMP 2 & 3

NEQ	Fuze	Weapon	Role	Origin
123g	PD	2A42 and 2A72	Light armour and low flying aerial targets	Russia

CANNON 30mm APC



FITTED TO THE BMP 2 & 3

NEQ	Fuze	Weapon	Role	Origin
N/A	N/A	2A42 and 2A72	Light armour and low flying aerial targets	Russia

CANNON 37mm HEI-T

PICTURE TO FOLLOW

NEQ	Fuze	Weapon	Role	Origin
36-48g	PD	M1939	AA	Russian

CANNON 37mm APC -T

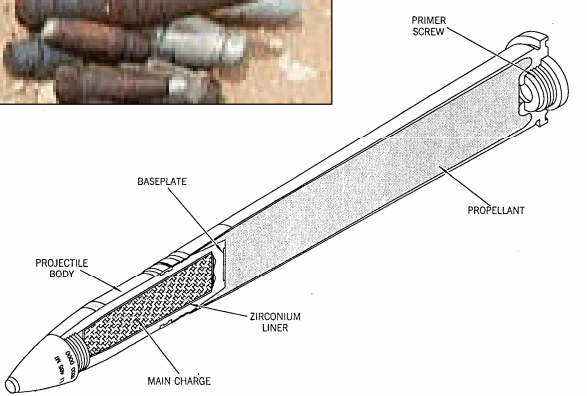


NEQ	Fuze	Weapon	Role	Origin
N/A	N/A	M1939	AA	Russian

CANNON 40mm L60 HEI



40MM (YELLOW OBC) SEEN MIXED IN WITH 37MM AMMUNITION



AMMUNITION FOUND IS PAKISTANI COPY

NEQ	Fuze	Weapon	Role	Origin
92g	PD	40/L60 Bofors	AA	Sweden

CANNON 57mm APC-T



A KINETIC ENERGY ROUND WITH A SMALL BASE CHARGE TO GIVE BETTER PENETRATION

NEQ	Fuze	Weapon	Role	Origin
10/20g	Base	S-60	AA	Russia

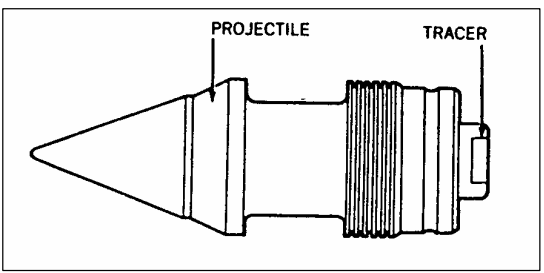
CANNON 57mm HE-T





NEQ	Fuze	Weapon	Role	Origin
168g	PD	S60	AA	Russia

CANNON 57mm HVAP-T



INERT APART FROM TRACER ELEMENT

NEQ	Fuze	Weapon	Role	Origin
-	-	S-60	AA	Russia

The AP-T Projectile will contain 20g of HE with a BD fuze.

NEQ	Fuze	Weapon	Load Type	Origin
85g	PD	Mk 9A / 10A	QF -Fixed	UK

ARTILLERY 17-Pounder

Also known as 77mm.

NEQ	Fuze	Weapon	Load Type	Origin
355g	PD	17-pr	QF-Fixed	UK



ILLUM VARIOUS SMK HESH HE

Normally 3 canisters

PAKISTAN AMMUNITION MAY BE ENCOUNTERED

Type	NEQ	Fuze	Load Type	Origin
Illum	Flare	Time	Separate	UK
Smk	Screen & coloured	Time	Separate	UK
HESH	TBC	Base	Separate	UK
HE	825g	PD/Time	Separate	UK

ARTILLERY 100mm HEAT FS BK-3





THIS ROUND IS FIRED BY A TOWED FIELD GUN. IT IS A SMOOTH BARRELLED, ANTI-TANK GUN. NOT INTERCHANGEABLE WITH OTHER 100mm AMMUNITION. USES 115mm CARTRIDGE CASE TO ALLOW THE TAIL FINS TO BE HOUSED

NEQ	Fuze	Weapon	Load Type	Origin
1kg	PIBD	T12	Fixed	Russia

ARTILLERY 100mm HE Frag



THIS ROUND IS FIRED BY A TOWED FIELD GUN. IT IS A SMOOTH BARRELLED, ANTI-TANK GUN. NOT INTERCHANGEABLE WITH OTHER 100mm AMMUNITION. USES 115mm CARTRIDGE CASE TO ALLOW THE TAIL FINS TO BE HOUSED

NEQ	Fuze	Weapon	Load Type	Origin
1.58kg	PD	T12	Fixed	Russia

ARTILLERY 122mm HEAT FS BK-6M



CARE MUST BE TAKEN TO ENSURE THE CONE IS COLLAPSED DURING DEMOLITION OF THIS PROJECTILE.

NEQ	Fuze	Weapon	Load Type	Origin
2.15kg	PIBD	D30/2S1	Separate	Russia

ARTILLERY 122mm HEAT



AS THIS IS A HEAT ROUND CARE MUST BE TAKEN WHEN DESTROYING TO ENSURE THE CONE IS COLLAPSED

NEQ	Fuze	Weapon	Load Type	Origin
2.18kg	PIBD	M-30	Separate	Russia

ARTILLERY 122mm AP-T



ALTHOUGH THIS AMMUNITION IS A KINETIC ENERGY ROUND THERE IS A SMALL BASE CHARGE TO ASSIST BETTER PENETRATION AT THE TARGET.

NEQ	Fuze	Weapon	Load Type	Origin
160g	Base	Fd A-19 SP D-25S Tank gun D-25	Separate	Russia

ARTILLERY 122mm HE FRAG



NEQ	Fuze	Weapon	Load Type	Origin
3.5kg	PD	M30 D30	Separate	Russia

ARTILLERY 122mm Flachette





NEQ	Fuze	Weapon	Load Type	Origin
250g GP	Time	M30 D30	Separate	Russia

ARTILLERY 122mm SMOKE



3.6kg WP composition

NEQ	Fuze	Weapon	Load Type	Origin
160g TNT	PD	M30 D30	Separate	Russia

ARTILLERY 122mm ILLUM



910g of Illuminating compound

NEQ	Fuze	Weapon	Load Type	Origin
20g GP	Mech Time	D30 M30	Separate	Russia

ARTILLERY 122mm PROPAGANDA



NEQ	Fuze	Weapon	Load Type	Origin
20g GP	Mech Time	D30 M30	Separate	Russia

ARTILLERY 130mm HE



NEQ	Fuze	Weapon	Load Type	Origin
5kg	PD	M46 Self Prop	Separate	Russia



THERE IS A BLEED BASE VERSION WHICH HAS A LARGER PAYLOAD – 7.8kg WHICH IS IDENTIFIED BY THE BASE BEING HOLLOW

NEQ	Fuze	Weapon	Load Type	Origin
Approx - 7kg	PD	Type D20	Separate	Russia

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BMP 1-IFV 73mm 2A28 GROM GUN

MOUNTED ON THE TURRET OF THE BMP-1 IFV. FIRED USING A STUB CARTRIDGE CASE. BASED ON THE PG/OG 9 SERIES.



PG-15



OG-15

Type	Round	NEQ	Length	Fuze
HEAT	PG-15	322g	872mm	PIBD
HEAT	PG-15N	340g	872mm	PIBD
Frag	OG-15	753g	825mm	PD
Frag	OG-15M	655g	825mm	PD

TANK 76mm HE FRAG



NEQ	Fuze	Weapon	Length	Origin
640g	PD	ZIS 3 or D56 Tank	363mm	Russia

TANK 76mm HE FRAG



NEQ	Fuze	Weapon	Length	Origin
523g	PD	ZIS 3 or D56 Tank	356mm	Russia

TANK 85mm HE FRAG



Note: Some variations may have an adapted 100mm cartridge case for higher muzzle velocity. Can be used in a anti-aircraft role.

NEQ	Fuze	Weapon	Length	Origin
780g	PD, Mech Time or Pyro Time	D-44 field gun or T34 tank	387mm	Russia

TANK 85mm HEAT



NEQ	Fuze	Weapon	Length	Origin
970g	PIBD Spit Back	D-44 field gun or T34 tank	624mm	Russia

TANK | 85mm AP-T

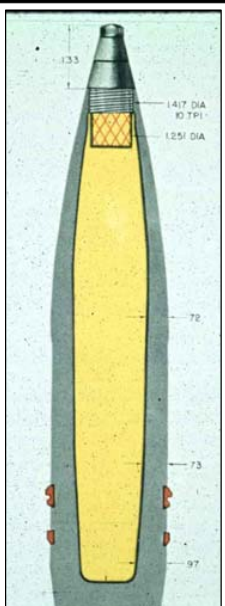


Note: Obsolete in former Warsaw Pact nations but still found in countries where Soviet aid was given. May still be produced by Romania for export.

NEQ	Fuze	Weapon	Length	Origin
48g	BD	D-44 field gun or T34 tank	300mm	Russia

TANK	100mm HE FRAG





NEQ	Fuze	Weapon	Size mm	Origin
2.16kg	PD or Mech Time	D10 series Tank gun	23.1 x 6	Russia

TANK 100mm AP-T



Base charge needs to be destroyed.

NEQ	Fuze	Weapon	Size mm	Origin
60g	BD	D10 series Tank gun	361 x 100	Russia

TANK 100mm HVAP-T



NEQ	Fuze	Weapon	Size mm	Origin
N/A	N/A	D10 series Tank gun	244	Russia

TANK | 100mm APFSDS-T



COMES AS A FIXED ROUND – WITH APPROX 6kg OF PROPELLANT.

NEQ	Fuze	Weapon	Size mm	Origin
-	-	D10 series Tank gun	490 x 38	Russia

TANK 100mm HEAT FS



COMES AS A FIXED ROUND – WITH APPROX 6kg OF PROPELLANT.

NEQ	Fuze	Weapon	Size mm	Origin
1kg	PIBD	D10 series Tank gun	1.093m Full round	Russia

TANK 115mm APFSDS-T



NEQ	Fuze	Weapon	Size mm	Origin
-	-	U-5TS Tank Gun	Length 549	Russia

TANK 115mm HEAT FS



NEQ	Fuze	Weapon	Size mm	Origin
1.55kg	PIBD	U-5TS	640 x 115	Russia

TANK 115mm HE FRAG



NEQ	Fuze	Weapon	Size mm	Origin
3.1kg	PD	U-5TS	1065 x 115	Russia

TANK 125mm HVAPFSDS-T



3BM22 STEEL PENETRATOR



3BM42 TUNGSTEN ALLOY PENETRATOR

NEQ	Fuze	Weapon	Size mm	Origin
-	-	T64, T72, T80, T90	600	Russia

TANK 125mm HE FRAG



NEQ	Fuze	Weapon	Size mm	Origin
3.15kg	PD	T-64, T72	675 x 125	Russia

TANK 125mm HEAT FS



NEQ	Fuze	Weapon	Size mm	Origin
1.85kg	PIBD	T-64, T72	680 x 125	Russia

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RECOILESS 57R HEAT M307



HAS A PRE-GROOVED DRIVING BAND AND USES SPITBACK FUZE

NEQ	Fuze	Gun	Length	Origin
181g	PIBD	M18	447mm	USA

RECOILESS 57mm HEAT TYPE 7



THIS IS A CHINESE COPY OF THE AMERICAN AMMUNITION DESIGNED FOR THE M18 GUN. IT IS NOT INTERCHANGEABLE AND CAN ONLY BE USED IN THE CHINESE TYPE 36 GUN. THERE IS AN HE FRAG PROJECTILE BUT ONLY THE HEAT PROJECTILE HAS BEEN LOCATED IN SOMALILAND

NEQ	Fuze	Gun	Length	Origin
160g	PIBD	Type 36	450mm	Chinese

RECOILESS 73mm SPG-9



PG 9 HEAT PROJECTILE



OG 9 FRAGMENTATION PROJECTILE

Type	Round	NEQ	Length	Fuze
HEAT	PG-9	322g	872mm	PIBD
HEAT	PG-9N	340g	872mm	PIBD
Frag	OG-9	753g	825mm	PD
Frag	OG-9M	655g	825mm	PD

RECOILESS 82mm 881



O-881A



BK-881 – with Chinese Version inset

NEQ	Fuze	Gun	Size – mm	Model
470g – Frag	PD	B-10	608 x 82	O-881A
550g - HEAT	PIBD	B-10	706 x 82	BK881M
460g - HEAT	PIBD	B-10	684 x 82	BK881

RECOILESS 75R



HEAT M310



HE FRAG M309

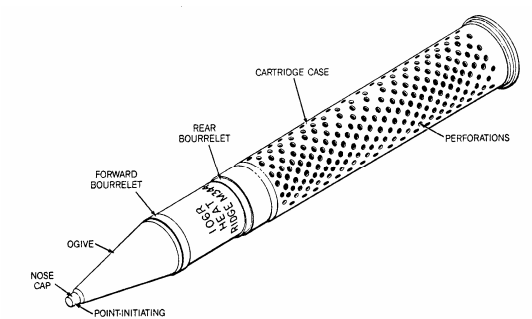
Note: Pre-grooved driving band.

NEQ	Fuze	Gun	Length	Origin
454g - HEAT	BD	M50	735mm	US
676g - Frag	PD /Time	M50	735mm	US

RECOILESS 106mm M344 Series



HAS A PIEZO ELECTRIC FUZE



NEQ	Fuze	Gun	Length	Origin
1.3kg	PIBD	M40	998mm	US

RECOILESS 107mm BK883



NEQ	Fuze	Gun	Length	Origin
1.1kg	PIBD	B11	624mm	Russia

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SECTION 7 - ROCKETS

HALO POLICY:

"ALL BLINDS ARE DESTROYED IN-SITU"

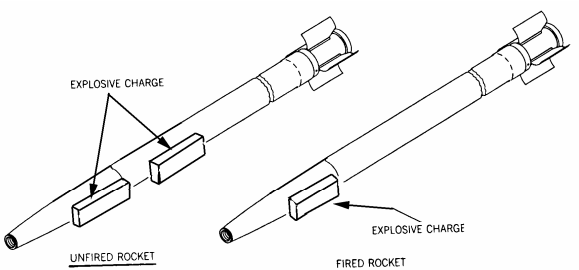
BLIND PROJECTILES MUST ***NEVER*** BE MOVED. WHEN DEALING WITH COMPLETE ROCKET SYSTEMS CARE MUST BE TAKEN TO ENSURE THE ROCKET MOTOR AND VENTURI ARE ALSO DESTROYED

TYPE

PLACING OF DISPOSAL CHARGE

107mm BM1
122mm BM21 GRAD
140mm BM14
132mm BM13
240mm BM24-12
240mm S24 FREE FLIGHT
S8 HEAT
S5 Series
CRV7

PLACING OF DISPOSAL CHARGE



CHARGE IN VENTURI OF UNFIRED ROCKET

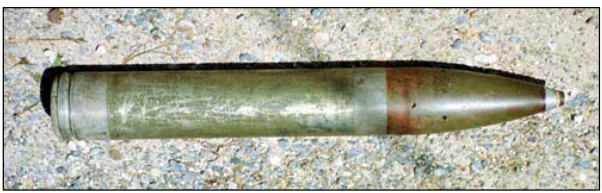
RECOGNITION POINTS

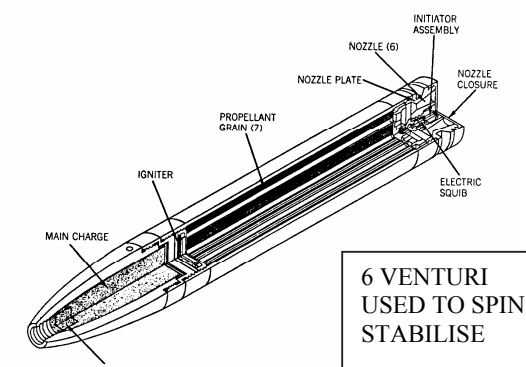
FEATURES:

IGNITER – INTACT / CONNECTION MISSING?
TAIL FINS - DEPLOYED?
VENTURI - BURNT OUT?
ROCKET MOTOR
WARHEAD – BROKEN OFF ON IMPACT?

ALL FIRED ROCKETS WILL HAVE SOME DEGREE OF DAMAGE.

Rockets 107mm HE





NEQ	Fuze	Launcher	Length	Origin
1.26kg	PD	12 pod	841mm	China
1.26kg	Prox/PD	12 pod	920mm	RSA

Rockets 122mm BM21 GRAD HE



9M22



9M22U

BOTH ARE FRAG HE

NEQ	Fuze	Launcher	Length	Motor
6.4kg	PD	12 & 40	2.87m	20.5kg
6.4kg	PD	12 & 40	3.23m	30kg

Rockets 140mm BM14 FRAG HE



Venturi are covered by a disc therefore not normally visible.
Russion markings are PP (A A) – 9, OR (К э) –14 on the cartridge case.

NEQ	Fuze	Launcher	Length	Motor
4.1kg	PD	12 or single	1.04m	kg

Rockets 132mm BM13 FRAG HE

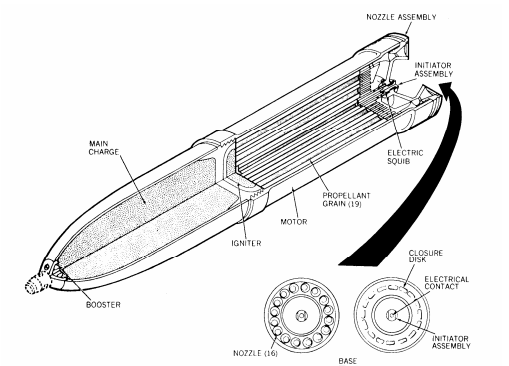


Maybe found with fins broken off on impact.
Spin and fin stabilised.

NEQ	Fuze	Launcher	Length	Motor
4.8kg	PD	-	1.45m	kg

Rockets	240mm BM24-12 FRAG HE





NEQ	Fuze	Launcher	Length	Motor
27.15kg	PD	12	1.29m	24kg

Rockets 240mm S24 FRAG HE



Fixed wing Air to Surface Rocket

NEQ	Fuze	Launcher	Length	Motor
28.9kg	PD	Air Launched	2.12m	kg

Rockets	S8 (80mm) HEAT/ FRAG HE





NEQ	Fuze	Launcher	Length	Motor
900g	PIBD	Air Launched	1.57m	NK

Rockets — Russian 57mm S5 Series



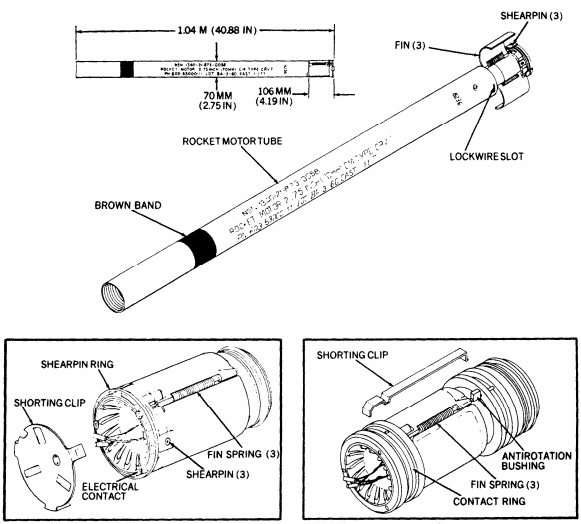




Top: S5KPB
Middle: S5K
Bottom: S5M

Air to Air
Air to Ground

Type	NEQ	Fuze	Length	Role
S5KPB	130g	PIBD	1.08m	HEAT / Frag
S5K	332g	PIBD	874mm	HEAT
S5M	454g	PD	914mm	Frag



Takes a 2.75 inch warhead fragmentation
Air to Ground weapon

Type	NEQ	Fuze	Length	Role
Mk64	635g	PD	1.3m	Frag

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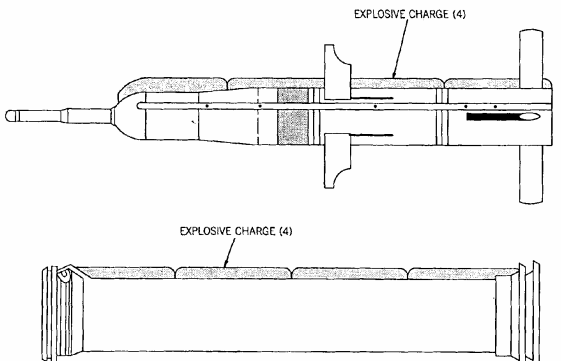
SECTION 8 - GUIDED MISSILES

HALO POLICY:

"ALL BLINDS ARE DESTROYED IN-SITU"

MISSILES BLINDS MUST ***NEVER*** BE MOVED.
WHEN DEALING WITH COMPLETE MISSILE SYSTEMS CARE MUST BE TAKEN TO ENSURE THE ROCKET MOTOR IS ALSO DESTROYED.

PLACING OF DISPOSAL CHARGE



THE TOP DIAGRAM OUTLINES THE POSITION WHERE THE CHARGE IS TO BE LAID ADJACENT-TO ON A BLIND.
THE BOTTOM DIAGRAM INDICATES THE POSITION THE CHARGE IS TO BE LAID ON A MISSILE IN ITS LAUNCHER.

GUIDED MISSILES	SAGGER AT1A SNAPPER



NEQ	Fuze	Command	Length	Missile Tracking
1.81kg	PIEZO	MCLOS	1.32mtrs	MCLOS

GUIDED MISSILES	FALANGA AT2 SWATTER



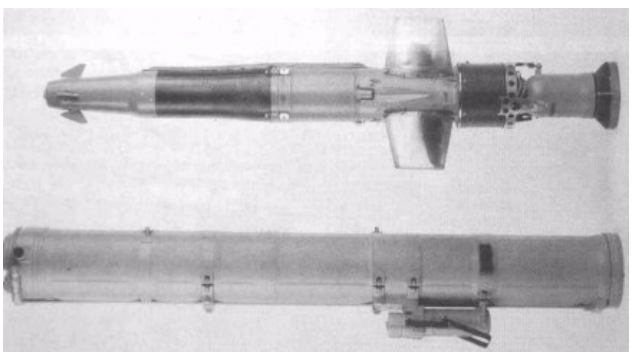
NEQ	Fuze	Command	Length	Missile Tracking
5.4kg	PIEZO	MCLOS Radio guidance	1130mm	Flare (IR)

GUIDED MISSILES	SAGGER AT3 MALYUTKA



NEQ	Fuze	Command	Length	Missile Tracking
2.7kg	PIEZO	SACLOS Wire guidance	880mm	Flare IR

Note: Early versions (AT-3A) were MCLOS wire guided.

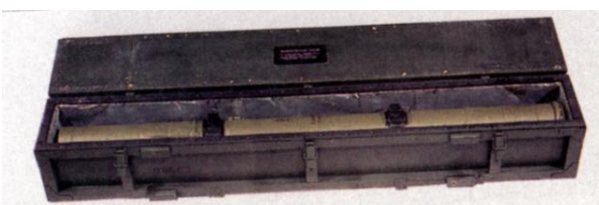


NEQ	Fuze	Command	Length	Missile Tracking
2.5kg	PIEZO	SACLOS Wire guidance	mm	Flare

Note: Can be converted to MCLOS to overcome jamming.
Ground launched or fired from BMP.

GUIDED MISSILES SPIRAL AT6





NEQ	Fuze	Command	Length	Missile Tracking
2.5kg	PIEZO	SACLOS Wire guidance	mm	Flare



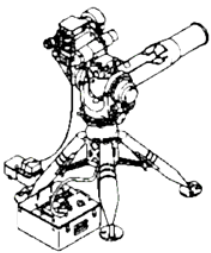
NEQ	Fuze	Command	Length	Missile Tracking
4.2kg	PIEZO	SACLOS Laser guidance	680mm	laser

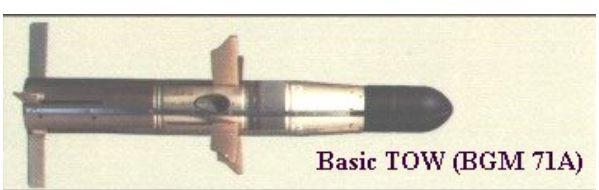
GUIDED MISSILES | USA M-47 DRAGON





NEQ	Fuze	Command	Length	Missile Tracking
1.58 Kg	Impact	SACLOS	74.4cm	Wire control





There is also TOW with extended range: BGM 71A-1 sometimes designated also as BGM 71B

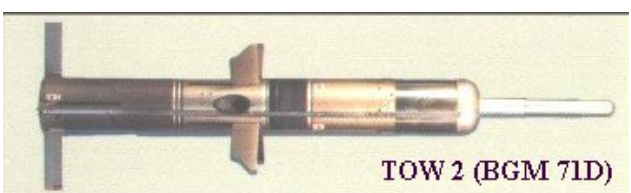
NEQ	Fuse	Command	Length	Missile Tracking
2.4 Kg Octol	Impact	SACLOS	116cm	Wire control

GUIDED MISSILES USA ITOW



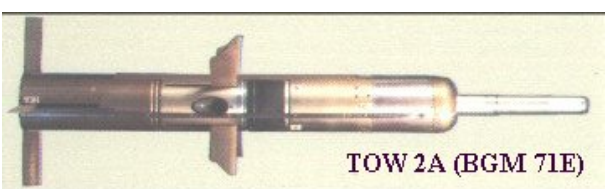


NEQ	Fuse	Command	Length	Missile Tracking
2.04 Kg HMX	Impact	SACLOS	142cm	Wire control

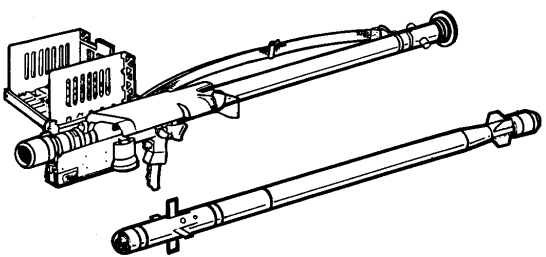


NEQ	Fuse	Command	Length	Missile Tracking
3.08 Kg HMX	Impact	SACLOS	152cm	Wire control

GUIDED MISSILES USA TOW 2A



NEQ	Fuse	Command	Length	Missile Tracking
3.09 Kg LX-14	Impact	SACLOS	117cm	Wire control





NEQ	Fuze	Command	Length	Missile Tracking
3 Kg	Impact & proximity	Shoot & Forget	1.52 m	IR/UV Passive homing

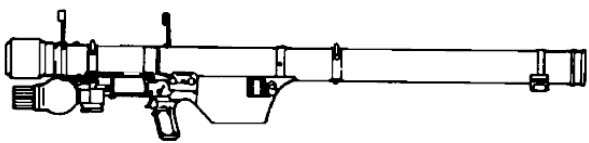
GUIDED MISSILES	STRELA 2M; SA-7b GRAIL



- There is older version (Strela 2 ; SA-7a).
- There are versions made in China and Pakistan.
- Soviet designation: 9K32M

NEQ	Fuse	Command	Length	Missile Tracking
1.15 Kg	Impact & self destruction	Shoot & Forget	1.44 m (fins folded)	IR Passive homing

GUIDED MISSILES	STRELA 3; SA-14 GREMLIN

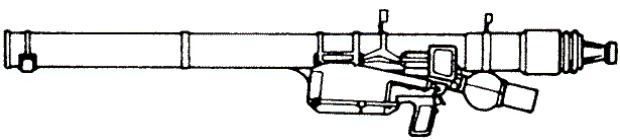




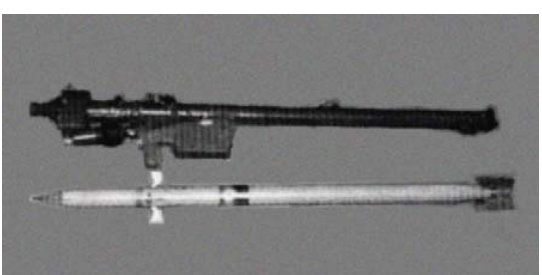
- Soviet designation: 9K34

NEQ	Fuse	Command	Length	Missile Tracking
2 Kg	Impact & Grazing	Shoot & Forget	1.47 m	IR Passive homing

GUIDED MISSILES	IGLA 1; SA-16 GIMLET



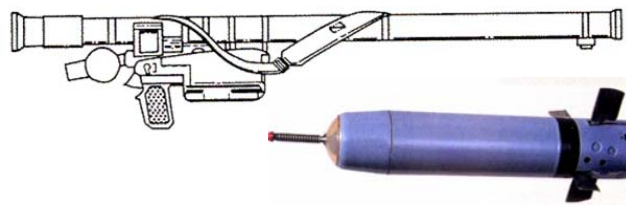




- Soviet designation: 9K310

NEQ	Fuse	Command	Length	Missile Tracking
2 Kg	Impact & Grazing	Shoot & Forget	1.55 m	Passive 2 colour IR & UV homing

GUIDED MISSILES	IGLA ; SA-18 GROUSE







- Soviet designation: 9K38

NEQ	Fuse	Command	Length	Missile Tracking
2 Kg	Impact & Grazing	Shoot & Forget	1.69M	Passive IR homing

GUIDED MISSILES AGM-87A-1 FOCUS



NEQ	Fuze	Command	Length	Missile Tracking
4.8kg	Prox or impact	Light tracking optical guidance with homing missile	2.8m	IR

Note: Has self-destruct mechanism fitted to fuze.

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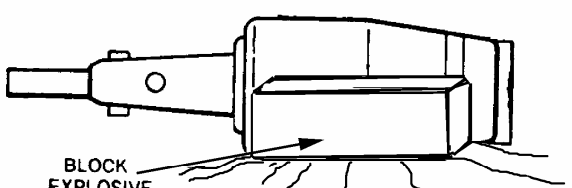
SECTION 9 - SUB-MUNITIONS

HALO POLICY:

"ALL BLINDS ARE DESTROYED IN-SITU"

SUB-MUNITIONS MUST NEVER BE MOVED.

PLACING OF DISPOSAL CHARGE



THIS ILLUSTRATION DEPICTS A GENERIC DISPOSAL METHOD USED FOR DISPOSAL OF THIS GENERAL TYPE OF UXO. THE UXO IN THE ILLUSTRATION MAY NOT BE SHAPED LIKE THE ACTUAL UXO DESCRIPTION.



HAS PEIZO ELECTRIC FUZE

NEQ	Fuze	Effect	Delivery	Origin
230g	PIBD	AT / Frag	A/C Bomb	UK

SUB-MUNITIONS BLU 97





HAS PEIZO ELECTRIC FUZE

NEQ	Fuze	Effect	Delivery	Origin
287g	PIBD	AT / Frag	A/C Bomb	USA

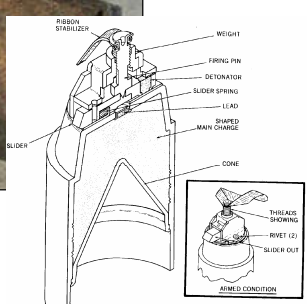


HAS PEIZO ELECTRIC FUZE

NEQ	Fuze	Effect	Delivery	Origin
183g	PIBD	HEAT	A/C Bomb	USA

SUB-MUNITIONS	M42 Bomblet Gren





NEQ	Fuze	Effect	Delivery	Origin
30.5g	Impact	AT / Frag	Projectile	USA



Has two arming windows one for striker and one for detonator.

NEQ	Fuze	Effect	Delivery	Origin
Approx 250g	BD	AT / Frag	A/C bomb	Yugo Chile

SUB-MUNITIONS — No 26 Grenade



DEVELOPED FROM THE M26 GRENADE.
DELEVERED FROM A NET UNDER A HELICOPTER

NEQ	Fuze	Effect	Delivery	Origin
164g	Time	Frag	Helicopter	Israel

SUB-MUNITIONS — Russian BLU 63

The Russian version is slightly smaller than its American counterpart – approx. 71mm, which would make it similar in size to the US Gren, Frag M74. The American version has 113g of explosives.





NEQ	Fuze	Effect	Delivery	Origin
127g	Always	Frag	Cluster AC Bomb	Russia



NEQ	Fuze	Effect	Delivery	Origin
141g	PD	Frag	RBK Cluster	Russia

SUB-MUNITIONS PTAB 1M



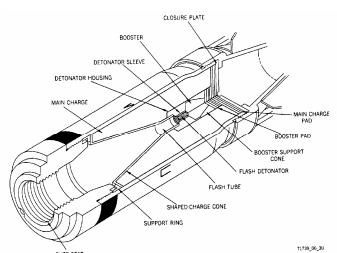




NEQ	Fuze	Effect	Delivery	Origin
454g	PIBD	ATk	RBK Cluster	Russia

SUB-MUNITIONS PTAB 2.5M

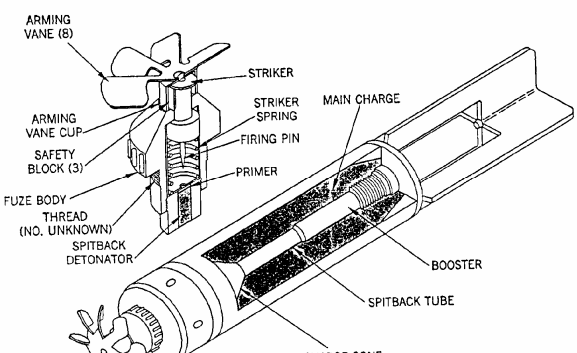




NEQ	Fuze	Effect	Delivery	Origin
450g	PIBD	AT	RBK Cluster	Russia

SUB-MUNITIONS PTAB 1.5





NEQ	Fuze	Effect	Delivery	Origin
590g	PIBD	AT	RBK Cluster	Russia

SECTION 10 - FRAGMENTATION AND EVACUATION (SAFETY DISTANCES)

Total NEQ (kg)	Safety Distance (m)
0.45	100
0.90	126
1.35	144
1.80	159
2.25	171
2.70	181
3.15	191
3.60	200
4.05	208

Total NEQ (kg)	Safety Distance (m)
4.50	215
4.95	222
5.40	228
5.95	235
6.40	241
6.85	246
7.30	251
7.75	257
8.20	262

Total NEQ (kg)	Safety Distance (m)
8.65	266
9.10	271
9.55	275
10.00	280
10.45	284
10.90	288
11.35	292
11.80	296
12.25	300

NEQ includes the UXO explosive content plus the disposal charge.
1kg = 1000g > 100g = 0.10kg
Formula for calculating safety distances greater than above is:
Cubed root(NEQ of UXO + Donor Charge x 2.2) x 100 = required distance in metres

Safety Distances for mines:
AP Blast **100m**
AP Frag **250m**
A/Tk **300m**

DANGER AREAS FOR ITEMS NOT POSITIVELY IDENTIFIED

Item	Munition Type	Danger Area		Remarks
		Surface	Buried	
(1)	(2)	(3)	(4)	(5)
1	Proj HE below 81mm	100	100	
2	Proj HE 81mm to 120mm	230	230	Includes rockets
3	Proj HE above 120mm	460	370	
4	Mor Bom HE 51mm to 82mm	100	100	
5	Mor Bom above 82mm	275	185	
6	Prop Gren HEAT and Frag	230	185	
7	Hand, rifle and launched Grenades HEAT and Frag	100	100	

Note: Tamping must be applied when operator is unsure of the item. This will reduce blast and fragmentation.

SECTION 11 - SAFETY FUZE CALCULATION

Lengths are in centimetres. Where the time you require is not listed in the table use the next greater time, NEVER REDUCE THE REQUIRED TIME ALWAYS GO UP IN TIME.

MINIMUM LENGTH TO BE USED IS 60CM.

Formula:

Travel time in seconds (pit to safe area) x 2 divided by safety fuze burning time x 30 = length required in cms.

Note:

If the safety fuze is burning outside its normal time (this is usually between 30 –55 seconds), then time three lengths of 30cm lengths to check consistency.

If all three lengths burn at the same time the fuze is consistent therefore can be used. If burning times vary DO NOT USE.

Table 1 BURNING TIME

Length	35s	36s	37s	38s
60	1:10	1:12	1:14	1:16
70	1:22	1:24	1:26	1:29
80	1:34	1:36	1:38	1:42
90	1:45	1:48	1:51	1:54
100	1:57	2:00	2:03	2:07
110	2:09	2:12	2:15	2:20
120	2:20	2:24	2:28	2:32
130	2:32	2:36	2:40	2:45
140	2:44	2:48	2:52	2:58
150	2:55	3:00	3:05	3:10
160	3:07	3:12	3:17	3:23
170	3:19	3:24	3:29	3:39
180	3:30	3:36	3:42	3:48
190	3:42	3:48	3:54	4:01
200	3:54	4:00	4:06	4:14
210	4:05	4:12	4:19	4:26
220	4:17	4:24	4:31	4:39
230	4:29	4:36	4:43	4:52
240	4:40	4:48	4:56	5:04
250	4:52	5:00	5:08	5:17
260	5:04	5:12	5:20	5:30
270	5:15	5:24	5:32	5:42
280	5:26	5:36	5:45	5:54
290	5:38	5:48	5:57	6:07
300	5:50	6:00	6:10	6:20

Table 2 BURNING TIME

Length	39s	40s	41s	42s
60	1:18	1:20	1:22	1:24
70	1:31	1:33	1:35	1:38
80	1:44	1:46	1:49	1:52
90	1:57	2:00	2:03	2:06
100	2:10	2:13	2:16	2:20
110	2:23	2:26	2:30	2:34
120	2:36	2:40	2:44	2:48
130	2:49	2:53	2:57	3:02
140	3:02	3:06	3:11	3:16
150	3:15	3:20	3:25	3:30
160	3:28	3:33	3:38	3:44
170	3:41	3:46	3:52	3:58
180	3:54	4:00	4:06	4:12
190	4:07	4:13	4:19	4:26
200	4:20	4:26	4:33	4:40
210	4:33	4:40	4:47	4:54
220	4:46	4:53	5:00	5:08
230	4:59	5:06	5:14	5:22
240	5:12	5:20	5:28	5:36
250	5:25	5:33	5:41	5:50
260	5:38	5:46	5:55	6:04
270	5:51	6:00	6:09	6:18
280	6:04	6:13	6:22	6:32
290	6:17	6:26	6:36	6:46
300	6:30	6:40	6:50	7:00

Table 3 BURNING TIME

Length	43s	44s	45s	46s
60	1:26	1:28	1:30	1:32
70	1:40	1:42	1:45	1:47
80	1:54	1:57	2:00	2:03
90	2:09	2:12	2:15	2:18
100	2:23	2:26	2:30	2:33
110	2:37	2:41	2:45	2:48
120	2:52	2:56	3:00	3:04
130	3:06	3:10	3:15	3:19
140	3:20	3:25	3:30	3:34
150	3:35	3:40	3:45	3:50
160	3:49	3:54	4:00	4:05
170	4:03	4:09	4:15	4:20
180	4:18	4:24	4:30	4:36
190	4:32	4:38	4:45	4:51
200	4:46	4:53	5:00	5:06
210	5:01	5:08	5:15	5:22
220	5:15	5:22	5:30	5:37
230	5:29	5:37	5:45	5:52
240	5:44	5:52	6:00	6:08
250	5:58	6:06	6:15	6:23
260	6:12	6:21	6:30	6:38
270	6:27	6:36	6:45	6:54
280	6:41	6:50	7:00	7:09
290	6:55	7:05	7:15	7:24
300	7:10	7:20	7:30	7:40

SECTION 12 - CHARGE PLACEMENT

Ser	Type of Munition	Position	Qty
(a)	(b)	(c)	(d)
1.	HE Projectile – Nose Fuze	Ogive	500g
2.	HE Projectile – Base Fuze	Fwd of DB	750g
3.	HE projectile over 122mm – Nose Fuze	Ogive	750g
4.	HE projectile over 122mm – Base Fuze	Fwd of DB	1000g
5.a. b.	WP Projectile Mortars 81mm and above	Adjacent to Fuze	500g
6.	60mm Mortar HE	Adjacent to Fuze	250g
7.	HEAT projectiles / rockets	Lower half of body	500g
8.	HE Hand / Launched Gren Defensive Offensive	Grenade body	 250g 125g
9.	Rifle Grenade, Projected HEAT Grenade	Base of head	250g
10.	Illum carrier projectile or mortar	Adjacent to fuze	750g
11.	Loose fuze	Over exploder	125g

The quantity in (d) is for commercial grade NG explosives, for military grade or TNT based explosives this can be reduced.

SECTION 13 - TAMPING – SANDBAG REQUIREMENT

SURFACE UXO

40 SANDBAGS FOR EVERY 1kg
(1 SANDBAG FOR 25g)

100g	4
200g	8
300g	12

400g	16
500g	20
600g	24

700g	28
800g	32
900g	36

BURIED UXO

WHEN THE UXO IS BURIED GREATER THAN 75cm THE REQUIREMENT CAN BE REDUCED TO:

20 SANDBAGS FOR EVERY 1kg
(1 SANDBAG FOR 50g)

100g	2
200g	4
300g	6

400g	8
500g	10
600g	12

700g	14
800g	16
900g	18

Note:
IT IS IMPORTANT TO USE ALL THE SANDBAGS CALCULATED TO ENSURE MAXIMUM PROTECTION. THE SANDBAGS MUST BE PLACED EVENLY AROUND THE UXO AND AS CLOSE AS POSSIBLE WITHOUT TOUCHING.

SECTION 14 - UXO PROCEDURE

1. Initial inspection alone.
2. Excavate to see fuze without moving UXO.
3. Identify by GROUP then SUB (SUB) GROUP.
4. Assess arming and propelling state.
5. Assess disposal options:
   Destroy-In-Situ, Pull and move, Make safe, Mark and leave.
6. Check or estimate explosive content.
7. Calculate safety distance and sandbag requirement.
8. Set up cordon – use assistant to control cordon.
9. Select firing point.
10. Prepare charge in safe area.
11. Place charge.
12. Build sandbag protection.
13. Ensure cordon in place and secure.
14. Det up.
15. Final confirmation.
16. After blow wait for smoke and debris to clear then check area to ensure UXO has been destroyed.
17. Proceed to conduct an area clearance of the vicinity to ensure no further UXOs. A minimum area of 150m x 150m should be checked with the position of the UXO in the centre of the area.

18. Complete task report and include BAC figure.
19. Where the area is being cultivated or lived in then request permission to conduct search or ask if any other items have been seen.

SECTION 15 – DISPOSAL OPTIONS

Ser	Method	Advantages	Disadvantages
1.	Destroy in-situ	Positive action Ideal for blinds No casualties	Damage to surrounding area
2.	Make Safe	Removes means of initiation making UXO safe – not good for base fuze Reduces damage	Care and time needed to set up task
3.	Pull & remove	Removes danger to general public when dealing with safe munitions without causing any damage	Still requires to be stored and destroyed
4.	Mark & leave	Only done where operator knows he will return sooner rather than later	Danger still remains for local people

The decision on what action to be taken is entirely the operator' – no one can second-guess. REMEMBER we are here to assist locals not make it worse for them.

SECTION 16 - ELECTRICAL INITIATION

1. Test cable for continuity. Lay cable from UXO / mine to safe area. Earth cable at both ends.
2. Place sandbag at UXO / mine. Position dem charge.
3. Ensure cordon is secure.
4. ONE MAN RISK. Go forward with elec det in a suitable container, tape and tools. ENSURE CODAN IN VEHICLE IS SWITCHED OFF.
5. Prepare tape, SWITCH OFF RADIO.
6. EARTH YOURSELF. Remove det and place under sandbag.
7. Earth det leads to same potential as firing cable.
8. CONNECT DET TO FIRING CABLE ENSURING BARE LEADS ARE TAPED WHEN TWISTED TOGETHER.
9. CONNECT DET TO DEM CHARGE.
10. Check area for tools and equipment then return to firing point.
11. Connect firing cable to safety ohmmeter and check continuity. Connect firing cable to exploder.
12. Check cordon secure, do final visual check.
13. Fire exploder. Disconnect and earth wires. Wait for smoke and debris to clear then check

for full demolition alone before declaring area clear.

Note: 10 minute waiting period to be observed in the event of a misfire.

SECTION 17 – ELECTRICAL MISFIRE

First failure:

1. Ensure all personnel remain under cover and quiet.
2. Remove key, break and remake connections to EDC.
3. Re-fire circuit.

Second failure:

4. Remove key, break connection and earth leads.
5. Ensure all personnel remain undercover.
6. Inform cordon and start 10-minute misfire period.
7. Prepare new detonator and equipment.
8. Brief nominated person to control cordon and assist with reverse cable test.
9. After 10-minutes go forward **ALONE** with:
   EDC Key
   New Detonator
   Tools and Tape
   Stopwatch
10. Check cable on route and mark any damage. DO NOT REPAIR CABLE.
11. REMOVE DETONATOR FROM EXPLOSIVES and place under sandbag.
12. SWITCH OFF RADIO AND OBSERVE STATIC PRECAUTIONS.

13. Remove tape from first connection, check and break connection, remove tape from second connection, check and break connection.
14. Earth detonator leads and firing cable leads.
15. Repair firing cable if required.
16. Conduct reverse cable test.
17. Confirm cordon still secure.
18. Repeat detting up procedure:
    a. Put on original detonator if cable was at fault.
    b. Put on new detonator if cable not at fault.
19. Return to firing point and conduct circuit test.
20. Check cordon and repeat firing procedure.

SECTION 18 - SAFETY FUZE INITIATION

1. First demolition of the day: cut and discard first 30cm fo safety fuze (SF). Cut and time second 30cm. Note time.
2. For subsequent demolitions on the same day using same SF miss step 1 above unless it is raining.
3. Time the walk FROM the UXO / mine to the safe area.
4. DOUBLE THE TIME FOR SAFETY. Go to SF tables in guide and find appropriate column for the SF burning time. Go down column until the required time is reached and go across to see the required length of SF.
5. Cut SF, one end straight and one end scarved.
6. Wearing body armour and visor, remove flash det from box, close box and inspect det.
7. Insert SF, straight end, into det. Holding det at arms length crimp det onto SF using supplied crimpers.
8. Place prepared initiator into det box
9. Ensure cordon is in place. Place dem charge and attach prepared initiator. FINAL CHECK.
10. Light SF, note time, retain match and collect all equipment. Return to safe area.
11. Countdown.

Note: 30 minute waiting period to be observed in the event of a misfire.

SECTION 19 - SAFETY FUZE MISFIRE

1. Ensure all pesonnel remain under cover
2. Inform sentries and ensure area remains secure
3. **Start 30 mins waiting period from time you expected dem to function or from last signs of smoke**
4. During waiting period prepare new initiator using same length of safety fuze
5. Nominate asssistant to control cordon and keep everyone under cover
6. **After 30 mins go forward alone,** taking with you:
   New initiator
   Watch
   Tool box and tape
   Matches
7. **Observe for signs of smoke as you move forward, if seen return immediately to safe area and wait further 30 mins**
8. **<u>Do not touch old detonator.</u> Leave old detonator in place and tape new detonator to det cord below and away from old detonator**
9. Check with assistant that the cordon is still secure and everyone under cover
10. Repeat firing procedure

SECTION 20 – CYRILLIC TABLE

THE FOLLOWING IS FOR GUIDANCE AND RELATES TO LAND SERVICE AMMUNITION

TABLE 1

Б	ANTI TANK
К	HIGH EXPLOSIVE ANTI TANK
М	SOLID SHOT
Р	EXPLOSIVE CHARGE
О	FRAGMENTATION
Ф	HIGH EXPLOSION
З	INCENDIARY
Т	TRACER
С	ILLUMINATING
Ц	COLOUR SMOKE
Д	WHITE PHOSPHORUS
Ш	FLASHETTE / SHRAPNEL
А	PROPAGANDA

TABLE 2

БР	SOLID SHOT WITH EXPLOSIVE CHARGE
БЗР	WITH INCENDIARY
БК	HIGH EXPLOSIVE ANTI TANK - HEAT
БМ	SOLID SHOT
ОФ	HIGH EXPLOSIVE (HE) FRAGMENTATION
ОЗТ	HE WITH INCENDIARY AND TRACER

SECTION 21 – AMMUNITION WEIGHT TABLES

Item	NEQ (kg)	Weight (kg)	Remarks
Small Arms Ammunition			
Round 7.62 x 39mm			Russian
Bullet		0.008	
Round 12.7 x 108mm			Russian
Bullet		0.048	
Round 14.5 x 114mm		0.170	Russian
Bullet		0.063	
Cannon Ammunition			
Round 20 x 82mm HE			
Projectile		0.110	
Round 23 x 115mm		0.329	Russian
Projectile		0.174	
Medium Calibre Air and Coastal Defence			
Round 37mm HE-I & HE-I-T		1.480	
Projectile	0.048	0.732	
Propellant	0.200		
Round 37mm AP-T & API-T		1.500	
Projectile	-	0.760	
Propellant	0.200		
Round 57mm HE-T & AP-T		6.380	
Projectile	0.168	2.810	
Propellant	1.180		
Round 57mm PFHE		6.100	
Projectile	0.380	2.400	For Bofors
Round 57mm HCER		6.500	L/70 Gun
Projectile	0.410	2.880	
Round 57mm HE		6.100	
Projectile	0.450	2.400	
Round 57mm TPPX		6.100	
Projectile	0.065	2.400	
Hand Grenades			
Grenade Hand Anti Tank RKG-3M	0.540	1.090	Russian
Grenade Hand Frag F1	0.060	0.600	Russian
Grenade Hand Impact Frag R60	0.090	0.530	Russian
Mines			
Mine Anti Personnel PMN	0.240	0.550	Russian
Mine Anti Personnel PMN-2	0.100	0.420	Russian
Mine Anti Personnel VS-50	0.043	0.185	Italian
Mine Anti Personnel TS-50	0.050	0.186	Italian
Mine Anti Personnel Bounding V69	0.420	3.200	Italian
Mine Anti Personnel POMZ-2	0.075	2.300	Russian
Mine Anti Personnel Bounding Frag PROM-1	0.425	3.000	Yugoslavian
Mine Anti Tank TC/6	6.000	9.800	Italian
Mine Anti Tank VS-1.6	1.850	3.000	Italian
Mine Anti Tank VS-2.2	2.200	3.500	Italian
Mine Anti Tank TC/3.6	3.600	6.800	Italian
Mine Anti Tank TM-62M	7.500	9.500	Russian

Item	NEQ (kg)	Weight (kg)	Remarks
Mortar Ammunition			
Bomb 60mm Mor HE (Type 63)		1.330	Chinese
Bomb 60mm Mor HE	0.190	1.470	USA
Bomb 60mm Mor HE M73	0.220	1.350	Yugoslavian
Bomb 60mm Mor Smk WP	0.340	1.700	USA
Bomb 60mm Mor Smk WP M73	0.190	1.350	Yugoslavian
Bomb 60mm Mor Illum		1.710	USA
Bomb 60mm Mor Illum M67		1.270	Yugoslavian
Bomb 81mm Mor HE L36A2	0.680	4.200	UK
Bomb 81mm Mor HE M43A1		3.240	USA
Bomb 81mm Mor Smk WP M57	1.840	5.160	USA
Bomb 81mm Mor Illum M301		4.850	USA
Bomb 82mm Mor HE (Type 53)	0.392	3.160	Chinese
Bomb 82mm Mor HE O-832	0.436	3.230	Russian
Bomb 82mm Mor HE M74	0.680	3.050	Yugoslavian
Bomb 82mm Mor Smk WP (Type 53)	0.386	3.490	Chinese
Bomb 82mm Mor Smk WP M74	0.600	3.050	Yugoslavian
Bomb 82mm Mor Illum (Type 53)	0.750	5.330	Chinese
Bomb 82mm Mor Illum M67	-	2.950	Yugoslavian
Bomb 120mm Mor HE (Type 55)	1.360	16.000	Chinese
Bomb 120mm Mor HE OF-843	2.680	18.900	Russian
Bomb 120mm Mor Smk WP (Type 55)	1.550	15.840	Chinese
Bomb 120mm Mor Illum (Type 55)	2.680	16.020	Chinese
Mortar Fuzes			
Fuze Impact MP-1B (82mm)		0.111	Chinese
Fuze Impact OFZ-2M (120mm)		0.483	Russian
Fuze Impact M12 (82 & 120mm)		0.511	Chinese
Fuze Impact/SQ MP-6 (60 & 82mm)		0.115	Chinese
Fuze Percussion M-6 (82mm)		0.127	Russian
Fuze Proximity RV-1 (120mm)		0.572	
Shoulder Launched Rockets			
Rocket AP OG-7	0.210	1.760	Russian
Rocket HEAT PG-7M	0.300	1.980	Russian
Tank and Anti-Tank Ammunition			
73mm Ammunition for Gun 2A28			
Round PG-15 HEAT-FS		3.490	
Projectile		2.610	
Warhead	0.322	0.900	
Rocket Motor		1.560	
Propelling Charge	0.875		
Round OG-15 Frag HE		4.570	
Projectile		3.680	
Warhead	0.753	2.130	
Rocket Motor	-	-	
Propelling Charge	0.890	-	

Item	NEQ (kg)	Weight (kg)	Remarks
Tank and Anti-Tank Ammunition			
Round 100mm HE		30.270	T55 Tank
Projectile		15.910	
Propellant	5.600		
Cartridge Case			
Round 100mm FRAG-HE53		30.270	T55/Anti Tank
Projectile		15.910	Gun
Explosive	2.160		
Propellant	5.600		
Cartridge Case		8.500	
Round 100mm HEAT-T	4.690	23.100	T55
Projectile		9.500	
Propellant			
Round 100mm APFSDS-T	8.750	19.900	T55
Projectile		6.550	
Propellant			
Round 106mm HESH	3.580	16.950	
Projectile		7.960	
Propellant	1.265		
Round 106mm HEAT	3.670	16.890	
Projectile		7.96	
Propellant			
	2.788		
Round 115mm HE Frag (FS) 3OF18/27/28	8.100	18.660	T62/T64
Projectile		7.030	
Propellant	1.550		
Round 115mm HEAT-FS 3UBK3/7		26.200	T62/T64
Projectile		12.200	
Propellant	5.100		
Round 115mm APFSDS-T 3UBM-S		22.500	T62/T64
Projectile Assembly		5.390	
Penetrator		3.900	
Propellant	6.000		
Round 125mm FRAG-HE (FS) 3OF19		32.500	T64/T72/T80
Projectile		23.200	
Propellant	5.885		
Stub Cartridge Case		3.400	
Round 125mm HEAT FS		29.880	T64/T72/T80
Projectile		19.080	
Explosive	1.850		
Stub Cartridge Case		3.400	
Round 125mm APFSDS 3BM9		19.700	T64/T72/T80
Projectile with Sabot		5.620	
Penetrator		3.600	
Propellant	9.980		
Sub Cartridge Case		3.400	

Item	NEQ (kg)	Weight (kg)	Remarks
Field Artillery			
Projectile 105mm HE	2.300	15.000	
Projectile 105mm Smk WP	1.700	14.700	
Projectile 105mm Smk HC	5.570	14.000	
Projectile 105mm Illum	0.789	15.000	
Projectile 122mm HE	4.050	21.760	
Projectile 122mm Smk WP	3.600	22.550	
Projectile 122mm Illum	1.000	21.960	
Projectile 130mm HE	3.640	33.240	
Projectile 130mm Smk WP	3.230	32.800	
Projectile 130mm Illum	3.180	25.800	
Projectile 152mm HE	6.800	43.560	
Projectile 152mm Smk WP	6.620	43.520	
Projectile 152mm Illum	2.350	40.600	
Projectile 155mm HE M107	6.620	40.820	
Projectile 155mm HE BB M795	10.800	35.420	
Projectile 155mm HE ERFB	8.710	45.270	
Projectile 155mm HE ER M1A1		47.000	
Projectile 155mm Smk WP M825A1	5.780	46.720	
Projectile 155mm Smk BE ERFB		45.500	
Projectile 155mm Smk WP ERFB	7.600	47.700	
Projectile 155mm Illum M485	2.480	42.480	
Projectile 155mm Illum ERFB		45.500	
Artillery Fuzes			
Fuze PD M557/M572/M739		0.950	USA
Fuze PD V-429/ML-4/ML-5		0.438	Chinese
Fuze PD M6 No3		0.200	Russian
Fuze Proximity KM M131E		0.270	
Fuze Proximity TDA Minnie		0.300	
Artillery Rockets			
Rkt RFAS 122mm BM-21 Grad (Hail) 9M22		66.000	
Warhead Complete		18.300	
Warhead Explosive	6.400		
Rocket Motor		20.500	
Missiles			
Missile SA-9 SAM "Gaskin"	3.000	30.000	
Missile AT-3 "Sagger"	2.600	10.900	
Missile SA-7 Surface to Air "Grail"	1.170	4.170	
Missile SA-14 Surface to Air "Gremlin"	1.150	10.300	

N	Name	Subgroup	Weight (kg)
1	100mm	Artillery projectile	15.6
2	105mm	Tank projectile	6.2
3	106mm	Recoilless projectile	5
4	107mm	Rocket	18.9
5	115mm	Tank projectile	15.5
6	120mm	Mortar	16
7	122mm	Artillery projectile	21.75
8	130mm	Artillery projectile	33.25
9	152mm	Artillery projectile	43.5
10	20mm	Cannon	0.3
11	23mm	Cannon	0.35
12	25mm	Cannon	0.36
13	30mm	Cannon	0.85
14	37mm	Cannon	1.45
15	57mm	Artillery projectile	2.5
16	57mm	Cannon	6.4
17	60mm	Mortar	1.3
18	75mm	Recoilless projectile	3
19	76mm	Artillery projectile	6.2
20	81mm	Mortar	3.5
21	82mm	Mortar	3.2
22	82mm	Recoilless projectile	3.9
23	85mm	Artillery projectile	7.4
24	AO-2.5	Sub-munition	2.9
25	BLU-97	Sub-munition	1.5
26	BM-13 132mm	Rocket	66
27	BM-14 140mm	Rocket	60
28	BM-21 122mm	Rocket	66
29	BM-24 240mm	Rocket	280
30	BM-27 220mm	Rocket	280

N	Name	Subgroup	Weight (kg)
31	Claymore	AP Mine	1.6
32	F-1	Grenade hand	0.6
33	FAB-250	Air-dropped bomb	250
34	FROG-7	Rocket	550
35	fuze	Fuzes	0.25
36	Grenade	Grenade	0.25
37	illumination	Rocket	0.25
38	KZ-6	Shaped Charge	1.8
39	KZU	Shaped Charge	180
40	LO-6	AP Mine	1
41	M-16	AP Mine	3.75
42	M-19	AT Mine	12.5
43	M-36	Grenade	0.5
44	M-60	Rifle Grenade	0.5
45	Milan	Guided Missile	7
46	MK-5	AT Mine	5.7
47	MK-7	AT Mine	13.6
48	MON-200	AP Mine	0.2
49	MON-50	AP Mine	2
50	N-4	AP Mine	0.2
51	OG-15	Recoilless projectile	4.6
52	OG-7	Grenede propelled	1.76
53	OG-9	Recoilless projectile	5.4
54	Other	Grenade	0.5

N	Name	Subgroup	Weight (kg)
55	Other	AP Mine	1
56	Other	AT Mine	8
57	OZM-3	AP Mine	3
58	OZM-4	AP Mine	5
59	OZM-72	AP Mine	5
60	P-2	AT Mine	6.5
61	P-3	AP Mine	0.3
62	P-4	AP Mine	0.14
63	PFM-1	AP Mine	0.08
64	PG-15	Recoilless projectile	3.5
65	PG-16	Grenade propelled	3
66	PG-18	Grenade propelled	3
67	PG-2	Grenade propelled	1.84
68	PG-7	Grenade propelled	1.98
69	PG-9	Recoilless projectile	4.4
70	PMN	AP Mine	0.55
71	PMN-2	AP Mine	0.42
72	POMZ	AP Mine	1.8
73	POMZ-2	AP Mine	1.8
74	PPMISR	AP Mine	3.2
75	PTAB	Sub-munition	2
76	RGD-5	Grenade hand	0.3
77	RGN-86	Grenade hand	0.3
78	RKG-3	AP Mine	1.1
79	S-5	Rocket	4
80	SA2M	Rocket	

N	Name	Subgroup	Weight (kg)
81	SA-7	Guided Missile	10
82	SAB-250	Air-dropped bomb	250
83	AT3/Sagger	Guided Missile	11
84	TC-2.2	AT Mine	3.5
85	TC-6	AT Mine	9.6
86	TM-46	AT Mine	8.6
87	TM-57	AT Mine	8.47
88	TM-62	AT Mine	7.5
89	Type-69	AP Mine	1.35
90	Type-72	AP Mine	0.14
91	VOG-17	Grenade launched	0.35
92	VOG-25	Grenade launched	0.25
93	YM-1	AP Mine	0.19
94	YM-2	AT Mine	3.2
95	YM-3	AT Mine	7

SUPERVISORS' NOTES

Please make use of these pages to note details of items photographed including:
No of tail fins, No of venturi, length (approx), diameter, driving band details etc which will help us identify the item.



AMMUNITION GUIDE

Edited & Updated by Itamar Levy