



THE  
**HALO**  
TRUST

# **AMMUNITION GUIDE**

**Written and Compiled  
by RW Gannon  
&  
PM Williams**

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## SECTION 2 - TEAM DEMOLITION KIT

THE TEAM DEMOLITION KIT SHOULD PREFERABLY CONTAIN THE FOLLOWING ITEMS:

Ser	Item	Max Qty	Min Qty	Remarks
1.	Flash Detonator	10	4	In det box
2.	Electric Detonator	10	4	In det box
3.	Safety Fuze	30m	6m	Main box
4.	Detonating Cord	40m	5m	Main box
5.	Expl Chges	3kg	0.5kg	Main box
6.	Matches	3 box	1 box	Main box
7.	Firing Cable	1 reel	-	
8.	Exploder	1	-	
9.	Safety Ohmmeter	1	-	
10.	3m Tape Measure	1	-	Main box
11.	Crimpers	1	-	Main box
12.	Insulating Tape	5	2	Main box
13.	Sharp Knife	1	-	Main box
14.	Crackerbarrel	4	1	Main box
15.	Sandbags	300	80	

IT IS THE RESPONSIBILITY OF THE TEAM LEADER TO ENSURE THE TEAM DEMOLITION KIT IS REPLENISHED AND THE BOX KEPT TIDY.

## SECTION 1 - INTRODUCTION

THIS POCKET GUIDE HAS BEEN PRODUCED BY THE HALO TRUST FOR ALL HALO SUPERVISORS. IT HAS BEEN WRITTEN TO GIVE HALO PERSONNEL EASY ACCESS TO INFORMATION FOR RECOGNITION, DISPOSAL AND REPORTING PURPOSES. THE INFORMATION IS THE BEST CURRENTLY AVAILABLE AND WILL BE UPDATED AS MORE INFORMATION BECOMES KNOWN. WHERE THERE IS A DIFFERENCE IN EXPLOSIVE CONTENT BETWEEN DIFFERENT MARKS OF AMMUNITION OF THE SAME TYPE THE HIGHEST EXPLOSIVE CONTENT HAS BEEN USED.

ALL SUPERVISORS ARE REQUESTED TO PASS DETAILS OF NEW ITEMS, INCLUDING PICTURES, TO EITHER ONE OF THE TWO EOD OFFICERS FOR INCLUSION IN FUTURE COPIES.

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



SECTION 3 - MINES

HALO POLICY:

**“ALL MINES ARE TO BE DESTROYED  
IN-SITU”**

ONLY IN EXTREME CIRCUMSTANCES WILL  
PERMISSION BE GIVEN TO DISARM OR  
NEUTRALISE MINES.

TYPE

AP BLAST

AP BOUNDING FRAGMENTATION

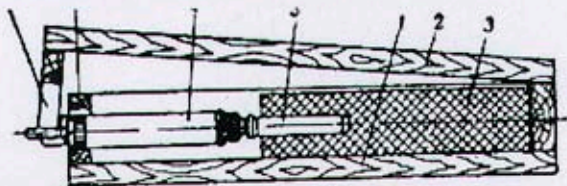
AP DIRECTIONAL FRAGMENTATION

AP FRAGMENTATION

ANTI TANK

AP BLAST

PMD 6



WIDELY COPIED THROUGHOUT THE WORLD  
USING WOOD AND PLASTIC CONTAINERS.

NEQ	Metal content	Operation	Size (cm)	Origin
200g	High	Pressure	19x6.5x9	Russia

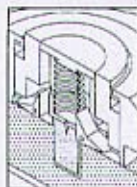
**AP BLAST****PMN2**

VERY EASILY RECOGNISED BY THE BLACK CROSS ON TOP.

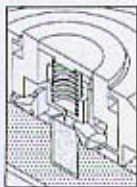
NEQ	Metal content	Operation	Size (cm)	Origin
100g	High	Pressure	12 x 5.3	Russia

# AP BLAST

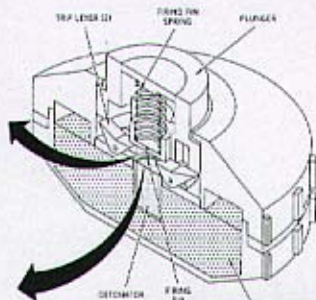
MAI 75



TRAP LEVEL IN  
WITH TRAP LEVEL VERTICAL



TRAP LEVEL IN  
WITH TRAP LEVEL HORIZONTAL



NEQ	Metal content	Operation	Size (cm)	Origin
120g	Low	Pressure	9.5 x 6.1	Romania

**AP BLAST****TYPE 72**

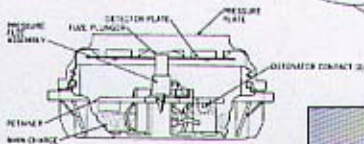
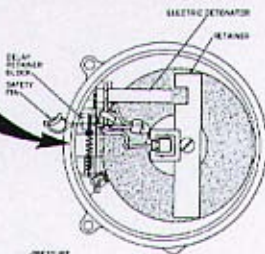
Identical in appearance to electronic variants Type 72 B & C when armed. Only difference in appearance is the type of ring on the arming pin. The metal content of these makes them easier to detect therefore acts as good indicator to type located.



Never attempt to disarm, move or touch. ALWAYS destroy in-situ.

NEQ	Metal content	Operation	Size (cm)	Origin
51g	Low	Pressure	7.8 x 33.8	China

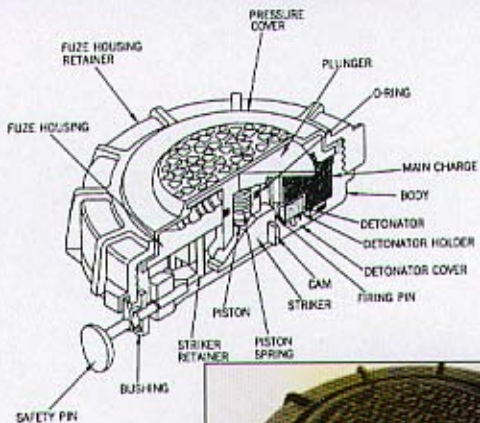


**AP BLAST****PPM-2**

NEQ	Metal content	Operation	Size (cm)	Origin
110g	High	Pressure	13.4 x 6	German

# AP BLAST

# VS - MK2



NEQ	Metal content	Operation	Size (cm)	Origin
33g	Low	Pressure	9 x 3.2	Italy

AP BLAST

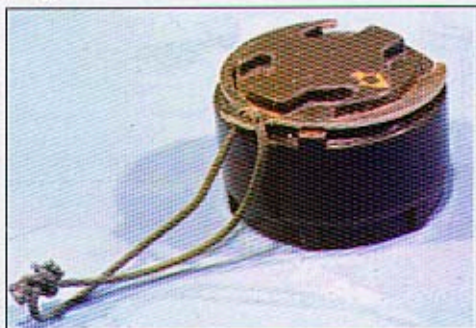
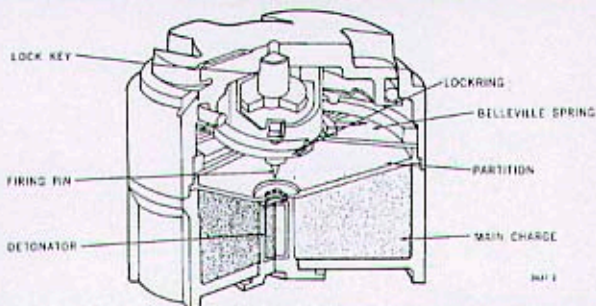
PRB M409 (M/969)



ILLUSTRATION  
IS PORTUGUESE  
COPY, M/969  
FOUND IN  
MOZAMBIQUE

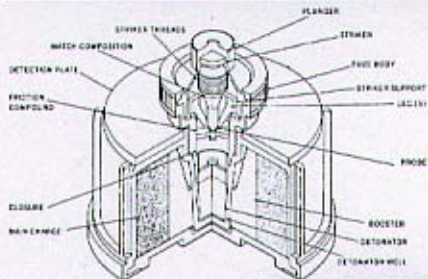


NEQ	Metal content	Operation	Size (cm)	Origin
80g	Low	Pressure	8.2 x 2.8	Belgium

**AP BLAST****M14 / MN79**

NEQ	Metal content	Operation	Size (cm)	Origin
29g	Low	Pressure	5.6 x 4	USA

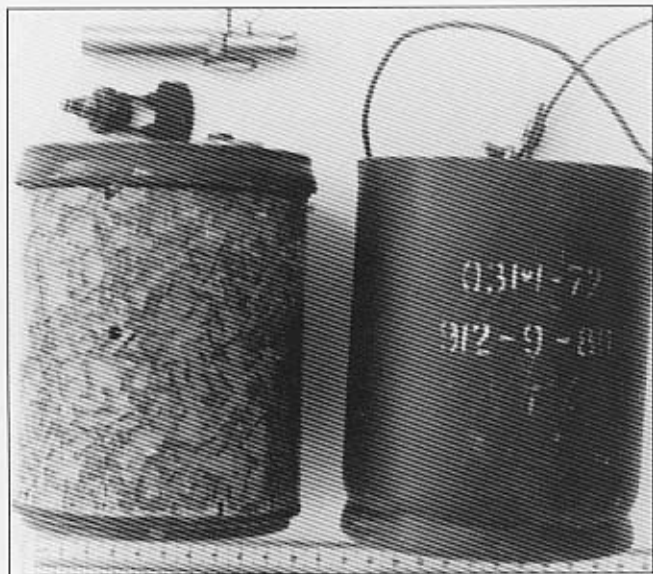
MN79 IS VIETNAMESE COPY USA M14

**AP BLAST****MI AP DV 59**

NEQ	Metal content	Operation	Size (cm)	Origin
70g	Low	Pressure	6.2 x 5.5	France

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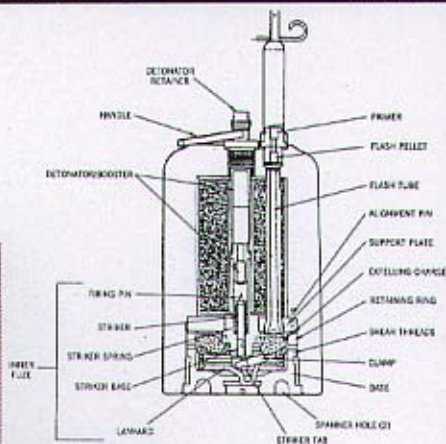
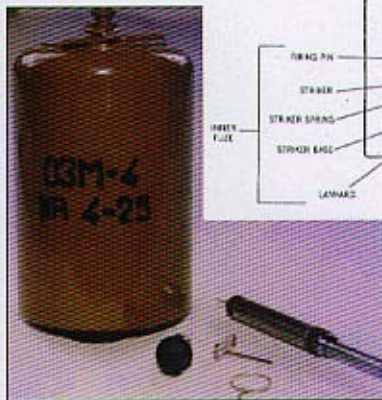
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**AP BOUNDING FRAG****OZM-72**

NEQ	Lethal Radius	Operation	Size (cm)	Origin
500g	25-30m	Trip/Pres/Elec	10.6 x 17.2	Russia

# AP BOUNDING FRAG

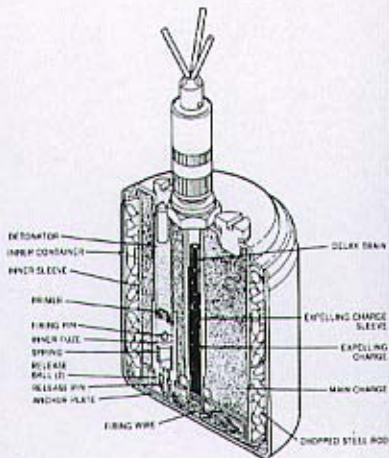
# OZM-4



NEQ	Lethal Radius	Operation	Size (cm)	Origin
170g	15m+	Trip/Pres/Elec	9.1 x 14	Russia

# AP BOUNDING FRAG

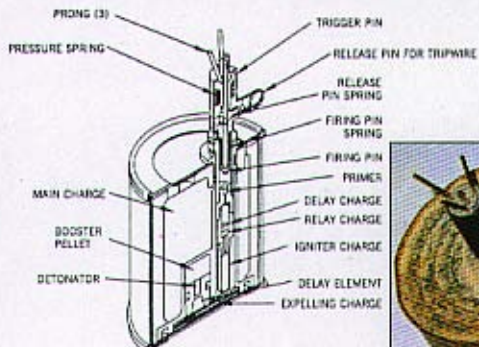
# PP Mi-Sr



NEQ	Lethal Radius	Operation	Size (cm)	Origin
360g	20m+	Trip/Elec	10.2 x 15.2	Czech

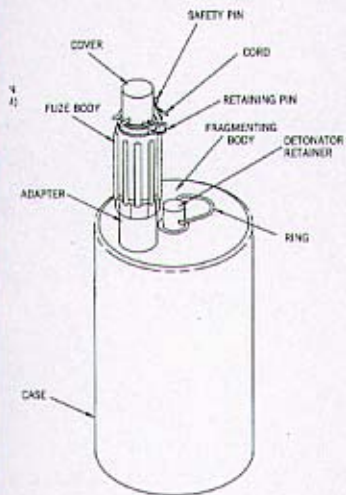
# AP BOUNDING FRAG

M16



NEQ	Lethal Radius	Operation	Size (cm)	Origin
575g	10m+	Trip/Pres	10.3 x 20.3	USA

USES A COMBINATION MINE M60 FUZE

**AP BOUNDING FRAG****TYPE 69**

NEQ	Lethal Radius	Operation	Size (cm)	Origin
105g	11m	Trip/Pres	6.1 x 16.8	China

AP BOUNDING FRAG

M/966

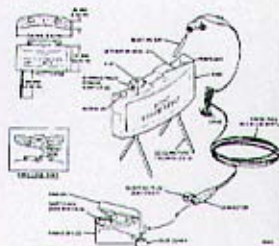


NEQ	Metal content	Operation	Size (cm)	Origin
154g	High	Trip/Press	10x24.4	Portugal

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## AP DIRECTIONAL FRAG CLAYMORE

THE AMERICAN M18, COMMONLY KNOWN AS THE CLAYMORE, IS ONE OF THE MOST COPIED DESIGNS IN THE WORLD. THE TABLE BELOW INDICATES THE VARIATIONS ENCOUNTERED.



Type	NEQ	Lethality	Size (cm)	Origin
MS-803	460g	15m	22x7x3.5	RSA
No2	680g	50m	21.6x8.1x3.6	RSA
M18	682g	50m	21.6x8.1x3.6	USA
Type 66	680g	50m	21.6x8.3x3.5	China
MON 50	700g	50m	21.6x14.6x6.4	Russia
Claymore	700g	50m	22x12x3	Egypt
LI 12	700g	50m	10x17	Sweden
MON 90	6.45kg	90m	33.7x16.4x13	Russia

**AP DIRECTIONAL FRAG****MON-100**

NEQ	Lethal Dist	No of Fragments	Size (cm)	Origin
2kg	100m	400	23.6 x 8.3	Russia

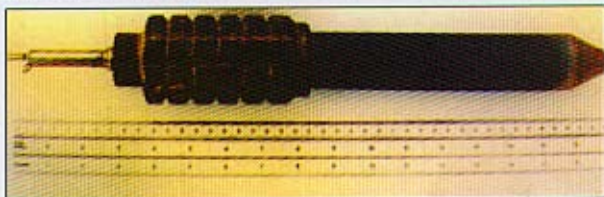
**AP DIRECTIONAL FRAG****MON-200**

NEQ	Lethal Dist	No of Fragments	Size (cm)	Origin
12kg	200m	900	43.4x13	Russia

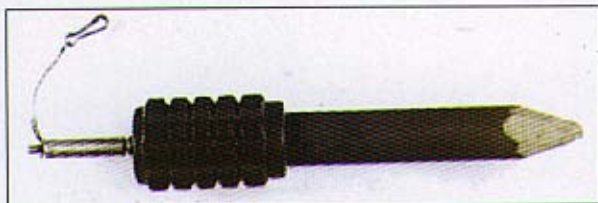
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## AP FRAGMENTATION



POMZ-2



POMZ-2M

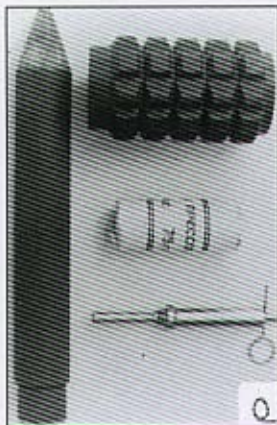


TYPE 59

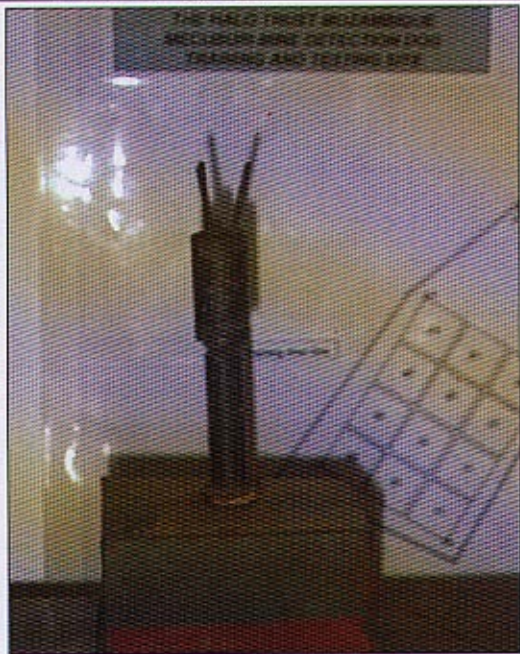


PMFH 1

ALL MINES  
CONTAIN SIMILAR  
KIT AND ARE  
NORMALLY  
FOUND LYING ON  
THE GROUND AS  
THE STAKE  
QUICKLY ROTS  
AWAY



Type	NEQ	Lethal Dist	Size (cm)	Origin
POMZ-2	75g	25m+	6 x 13	Russia
POMZ-2M	75g	25m+	6 x 10.7	Russia
Type 59	75g	25m+	6 x 10.7	China
PMFH-1	75g	25m+	6 x 13	Cuba

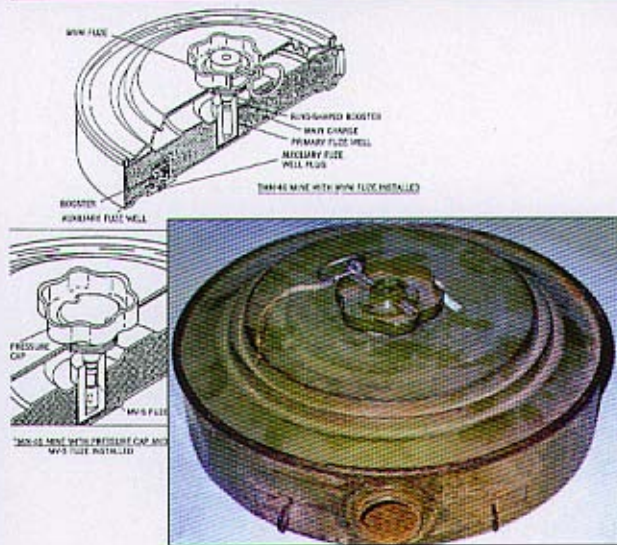
**AP FRAGMENTATION****M/966-B**

NEQ	Metal content	Operation	Size (cm)	Origin
300g	High	Tripwire	9x5x7	Portugal

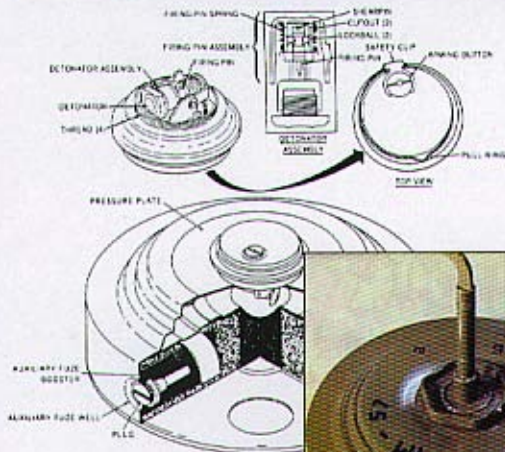
**AP FRAGMENTATION****M3**

NEQ	Metal content	Operation	Size (cm)	Origin
410g	High	Pressure / Pull	8.9 x 8.9 x13.7	USA

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**ANTI-TANK****TM46 and TMN46**

Fuze Options	NEQ	Anti-handling	Size (cm)	Origin
Press/Tilt	5.7kg	Yes – TMN46	30.5x10.8	Russia

**ANTI-TANK****TM57**

Fuze Options	NEQ	Anti-handling	Size (cm)	Origin
Press/Tilt	6.3kg	Yes	31.6 x 10.2	Russia

**ANTI-TANK****TM62 Series**

TM-62M METAL CASE

TM-62T CAST BODY  
(with waterproof cover)

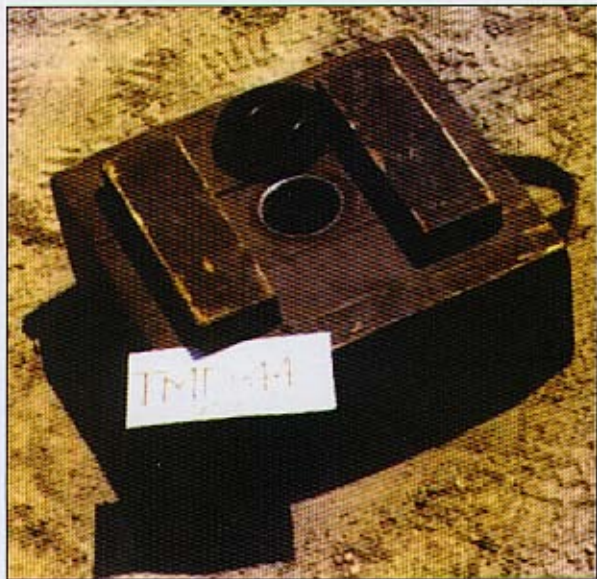
TM-62P2 BAKELITE CASE



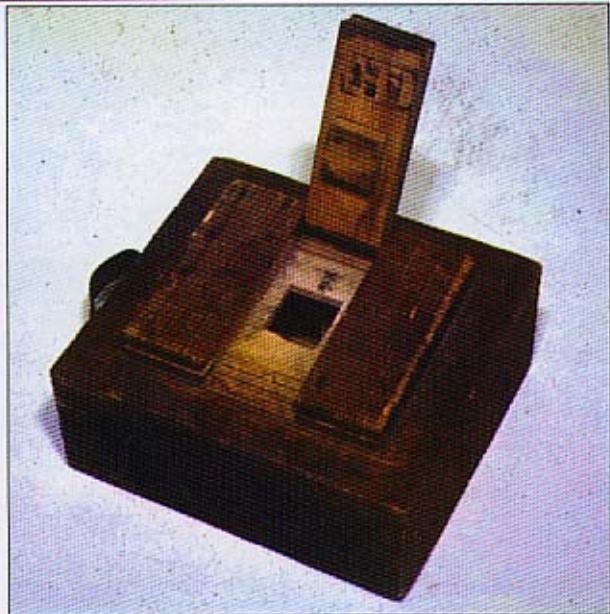
TM-62P3 PLASTIC CASE

THERE ARE A NUMBER OF VARIANTS AVAILABLE,  
MOST ARE DEPLOYED USING THE MVCh-62 FUZE

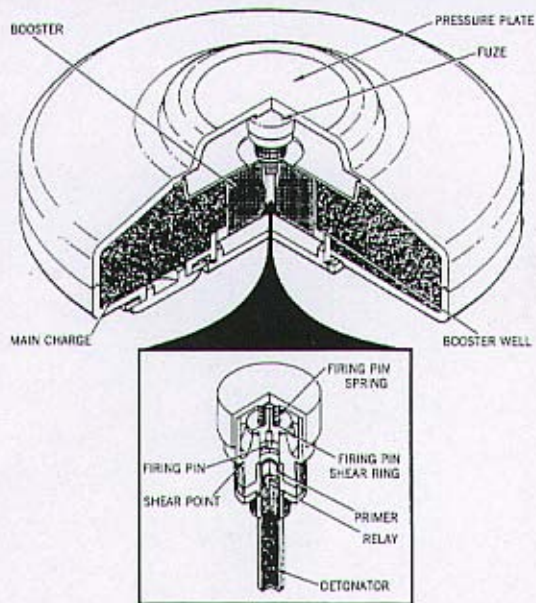
Fuze Options	NEQ	Anti-handling	Size (cm)	Origin
Press/Tilt/Magnetic	7.2kg	No	32 x 11.2	Russia

**ANTI-TANK****TMD-44**

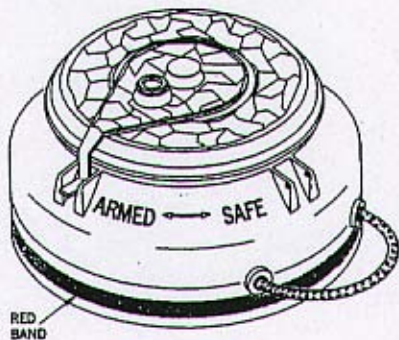
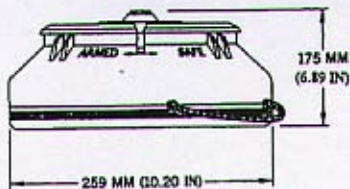
Fuze Options	NEQ	Anti-handling	Size (cm)	Origin
Pressure	5-7kg	None	32x16x29	Russia

**ANTI-TANK****TMD-B**

Fuze Options	NEQ	Anti-handling	Size (cm)	Origin
Pressure	5-7kg	None	32x16x29	Russia

**ANTI-TANK****PT Mi Ba-III**

Fuze Options	NEQ	Anti-handling	Size (cm)	Origin
Pressure	7.2kg	Possible	33 x 10.1	Czech

**ANTI-TANK****No 8**

Fuze Options	NEQ	Anti-handling	Size (cm)	Origin
Pressure	7kg	Possible	25.9 x 17.5	RSA

**ANTI-TANK****Mk 7**

Fuze Options	NEQ	Anti-handling	Size (cm)	Origin
Pressure	8.89kg	None	32.5x 13	UK

**ANTI-TANK****M15**

Fuze Options	NEQ	Anti-handling	Size (cm)	Origin
Pressure	10.3kg	Yes	33.3x 15	USA

**ANTI-TANK****PRB M3**

Fuze Options	NEQ	Anti-handling	Size (cm)	Origin
Pressure	6kg	M3A1 has anti-lift	23 x 13	Belgium

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## SECTION 4 - GRENADES

HALO POLICY:

***"ALL BLINDS ARE DESTROYED IN-SITU"***

BLIND GRENADES MUST *NEVER* BE MOVED. CARE MUST BE TAKEN WHEN DEALING WITH ROCKET PROPELLED GRENADES AS THEY MAY CONTAIN 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

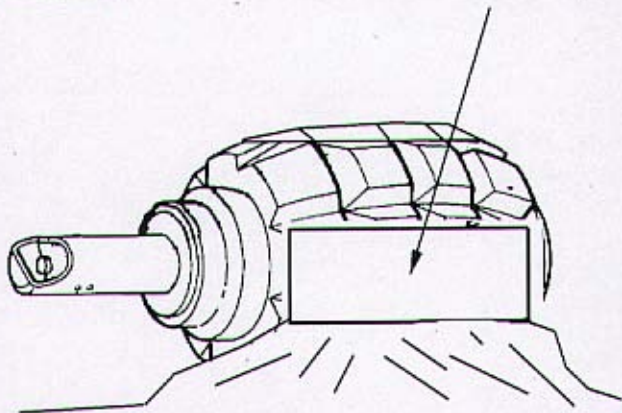
LAUNCHED

ROCKET PROPELLED

## PLACING OF DISPOSAL CHARGE

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

Demolition Charge



THE CHARGE SHOULD BE PLACED  
WITHOUT DISTURBING THE GRENADE.

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

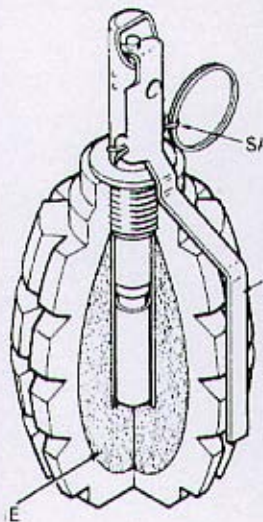
PROPELLED GRENADE:

SAFETY PIN ATTACHED  
FUZE CAP ATTACHED  
PERCUSSION CAP STRUCK  
PROPELLANT PRESENT  
VENTURI BURNT OUT

ALL DEPLOYED ITEMS WILL HAVE SOME DEGREE  
OF DAMAGE.

# HE HAND GRENADES

F1



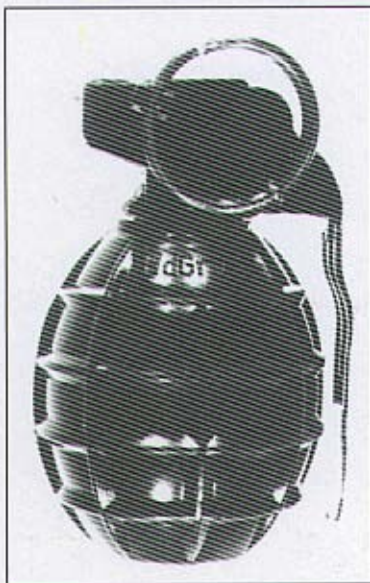
NEQ	Delay	Lethal Rad	Length-cm	Origin
60g	4-13s	20m	8.5	Russia

## HE HAND GRENADES

M75



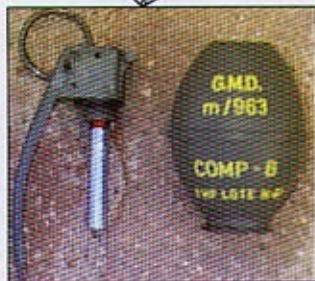
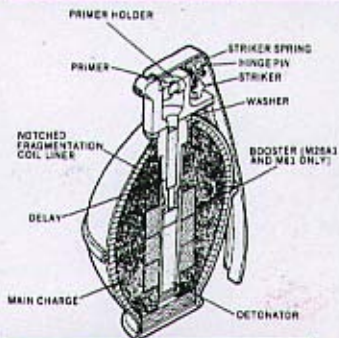
NEQ	Delay	Lethal Rad	Length-cm	Origin
43g	13s	20m	8.9	Yugo

**HE HAND GRENADES****HDGR 73**

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

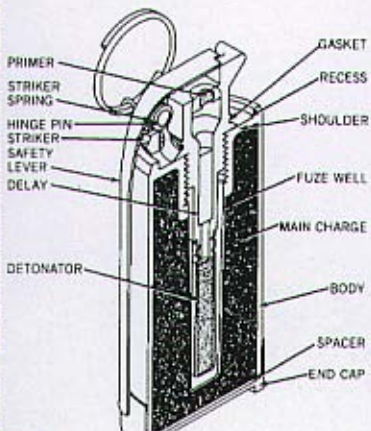
# HE HAND GREN

# 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

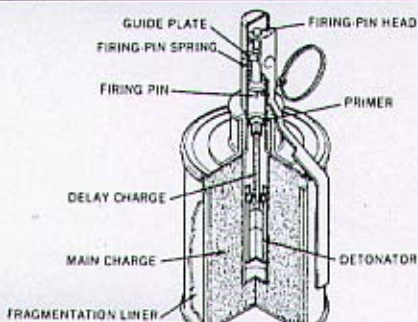
**HE HAND GREN****M962**

USES SAME STRIKER MECHANISM AS THE M963

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

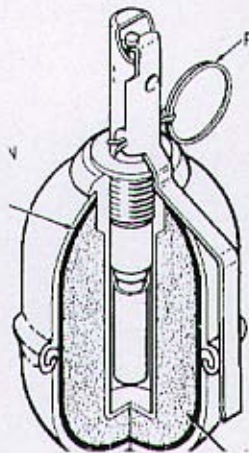
# HE HAND GRENADES

# RG 42



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

USES UZRGM IGNITER - DELAY 3.3 TO 5.5 SECS

**HE HAND GRENADES****RGD 5**

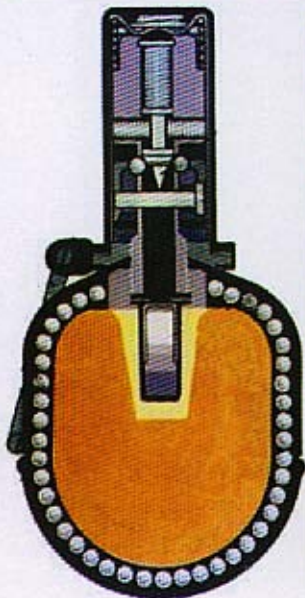
ALWAYS SUPPLIED WITH ONE 0s DELAY FUZE FOR BOOBY TRAPS. THIS FUZE IS INVERTED IN THE BOX. THE DELAY TIME CAN NORMALLY BE FOUND ON THE FLY-OFF LEVER

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

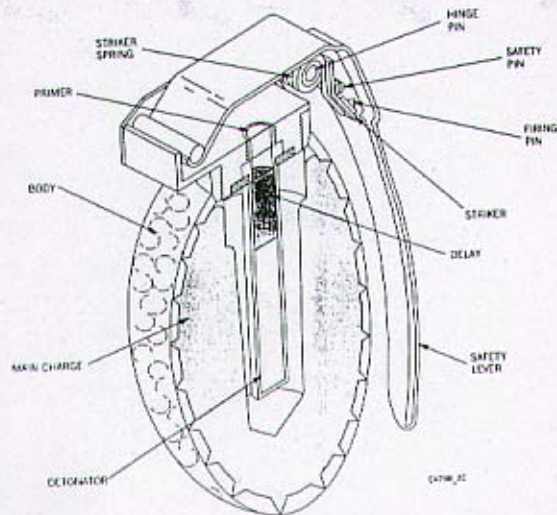
**HE HAND GRENADES****TYPE 73**

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 APPEARANCE TO TYPE 82 BUT IS A "STICK" GRENADE - NOT OFTEN FOUND WITH THE STICK

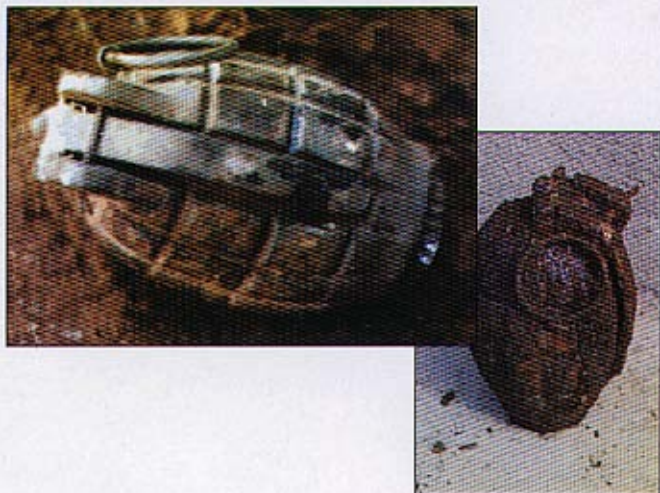


AS CAN BE SEEN THE ACTUAL GRENADE IS APPROX 6cm

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

## HE HAND GRENADES

No 36M



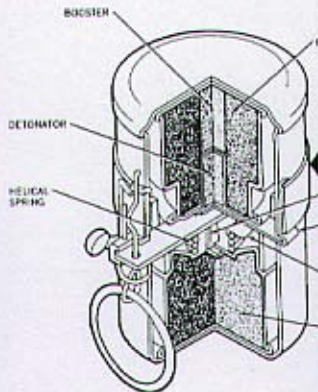
COMMONLY KNOWN AS THE MILLS BOMB,  
ORIGINALLY UK MANUFACTURE BUT MOST  
FOUND ARE OF PAKISTAN ORIGIN - AN EXACT  
COPY OF THE ORIGINAL DESIGN

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.

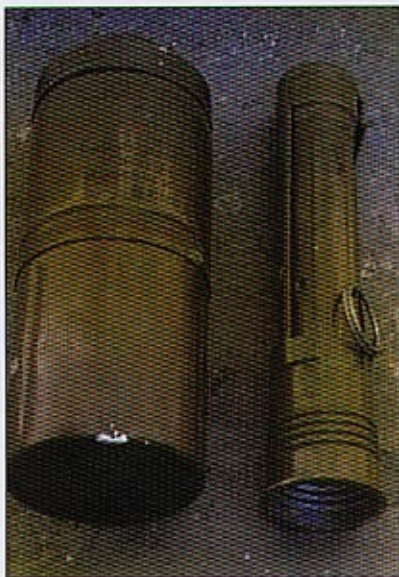
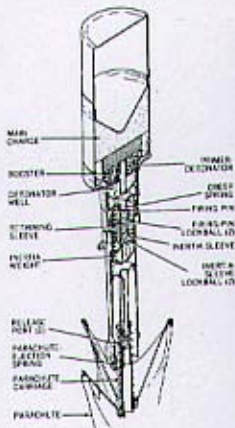


NEQ	Delay	Lethal Rad	Length-cm	Origin
48g	NK	>10m	8.4	Czech

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# A/T HAND GRENADES

## RKG 3



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

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**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			

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**LAUNCHED GREN**

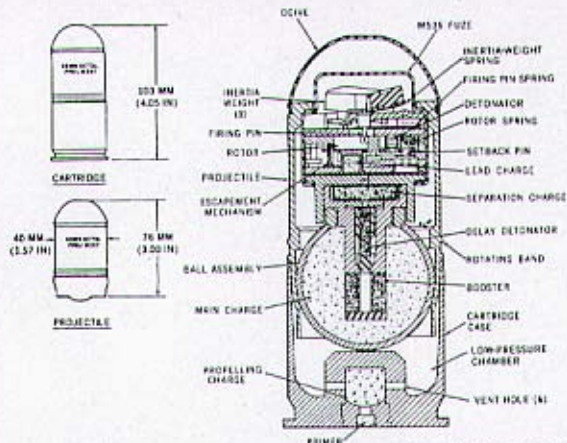
**M381 – 40mm**



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

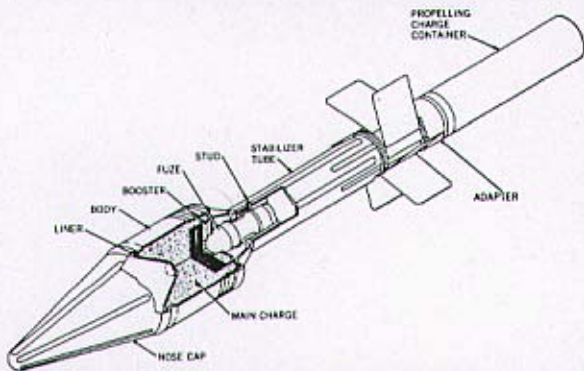


**LAUNCHED GREN****VOG 25**

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

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**RPG****PG-2**

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

**RPG**

**PG-7 Series**



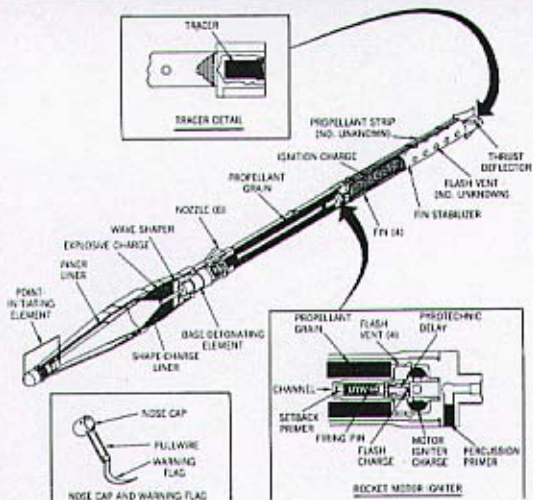
PG7G



PG7M

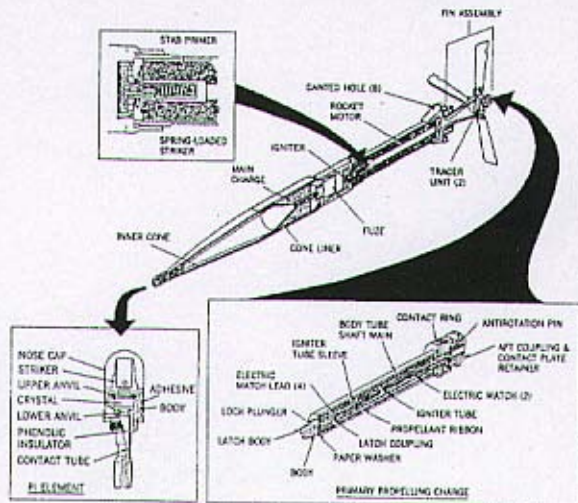


PG7L

**RPG****PG-7 Series**

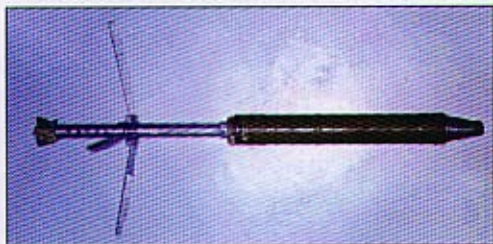
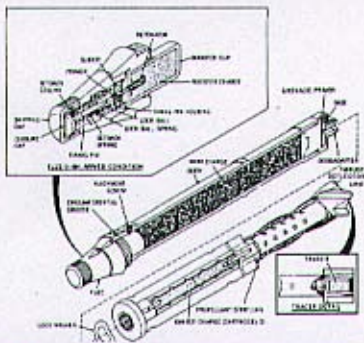
**CARE MUST BE TAKEN WITH THE FUZE AS IT IS  
PIEZO ELECTRIC**

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

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SECTION 5 - MORTAR BOMBS

HALO POLICY:

**"ALL BLINDS ARE DESTROYED IN-SITU"**

BLIND MORTAR BOMBS MUST *NEVER* BE MOVED.

TYPE

PLACING OF DISPOSAL CHARGE

2 inch

51mm

60mm

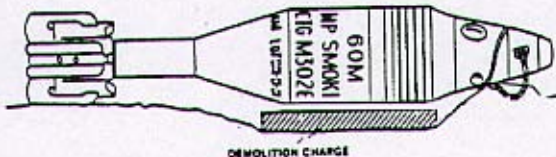
81mm

82mm

4.2 inch

120mm

## PLACING OF DISPOSAL CHARGE



THE CHARGE 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 BOM 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 27 HE



Variant of Type 27

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

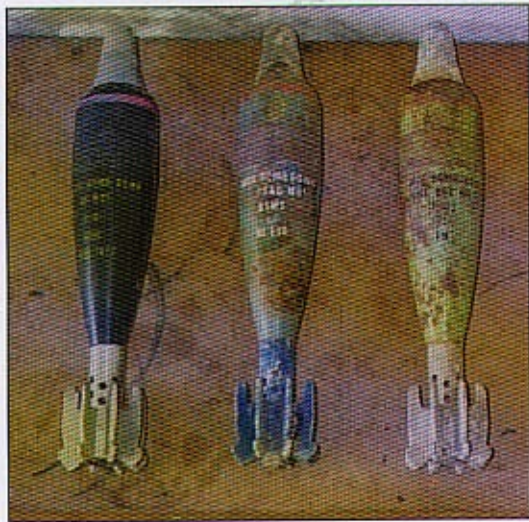
**60mm MORTAR****Yugoslavia Series**

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**

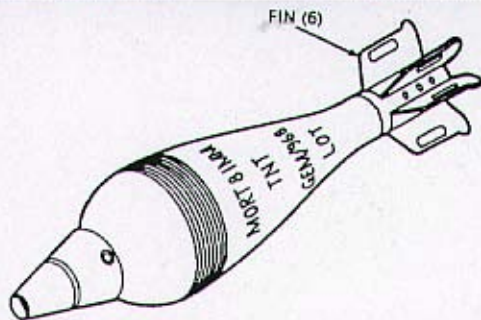
TOP – SMOKE WITH FM FILLING

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

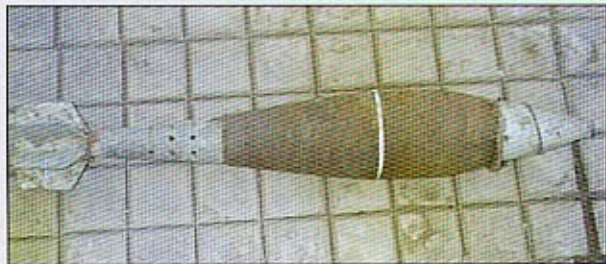
USA M374 HE



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

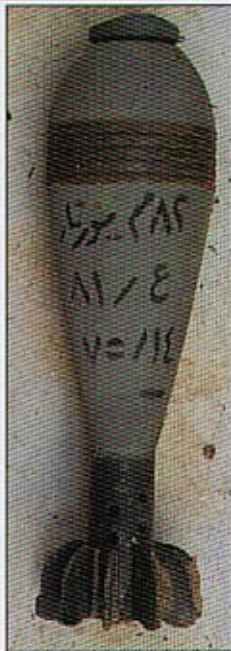
Chinese Type 53 HE



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

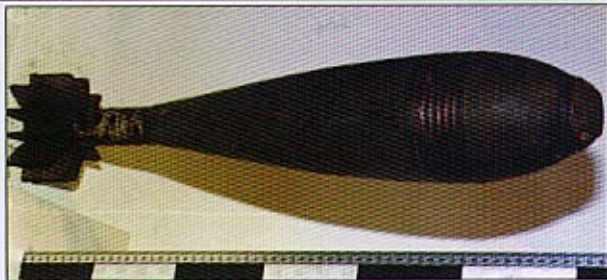
**4.2 INCH MORTAR****BRITISH SERIES**

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

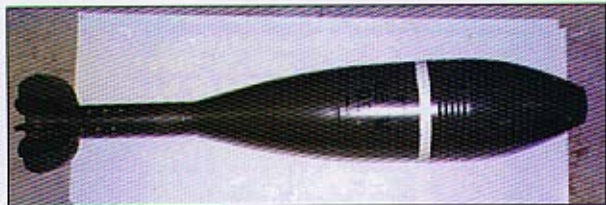


OF-843B

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

PLACING OF DISPOSAL CHARGE

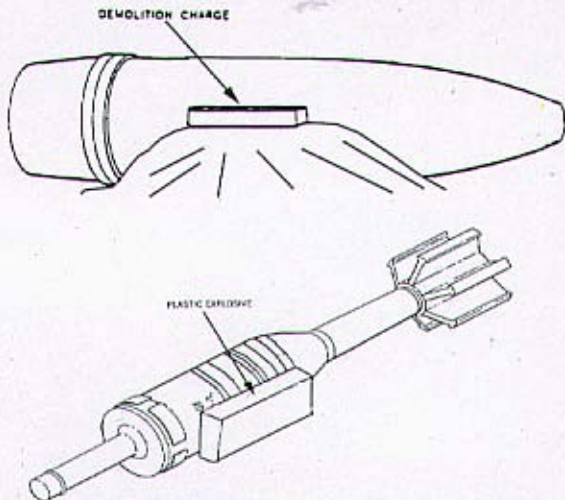
CANNON

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

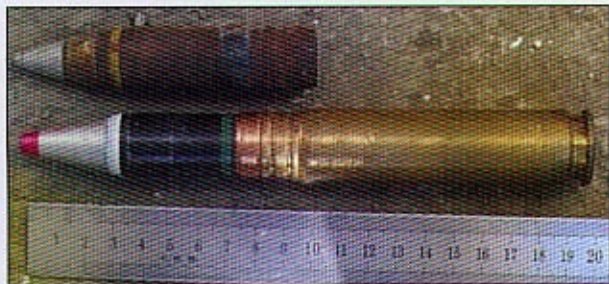
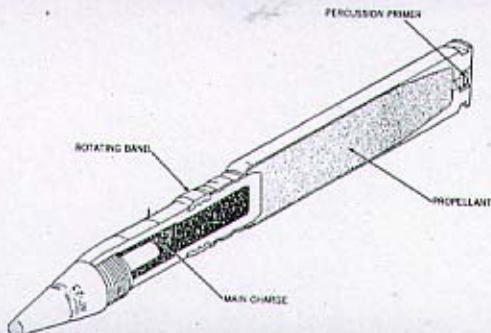
CARTRIDGE CASE:

MISSING - FIXED SYSTEM?

STRUCK - MISFIRE

TRACER - INTACT

ALL FIRED PROJECTILES WILL HAVE SOME  
DEGREE OF DAMAGE.

**CANNON****23mm HEI**

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

**CANNON****20mm HEI -T**

W/OUT THE CASE



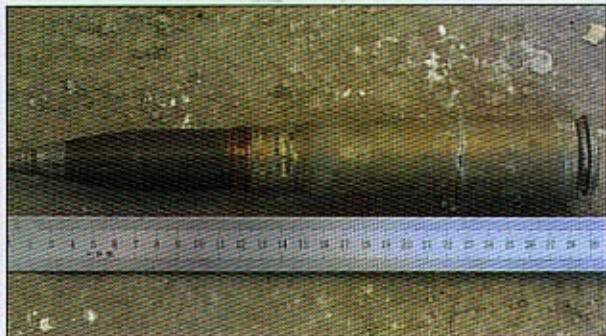
NEQ	Fuze	Weapon	Role	Origin
12g	PD	Oerlikon	AA	UK

CANNON

23mm APC -T

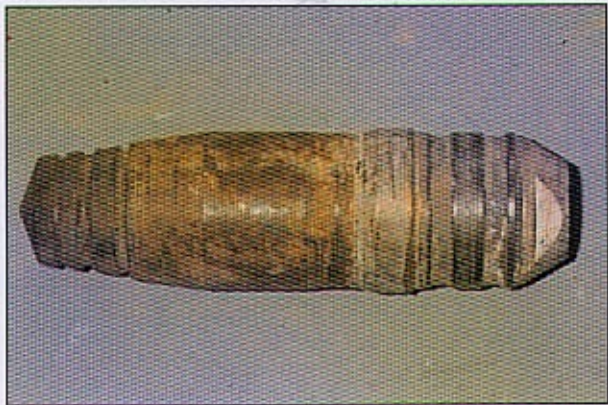


NEQ	Fuze	Weapon	Role	Origin
N/A	N/A	ZU-23	AA	Russia

**CANNON****30mm HE -T**

FITTED TO THE BMP 2 &amp; 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 &amp; 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**

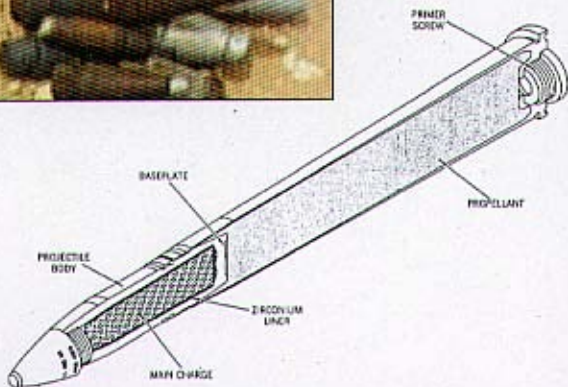
**37mm APC -T**



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

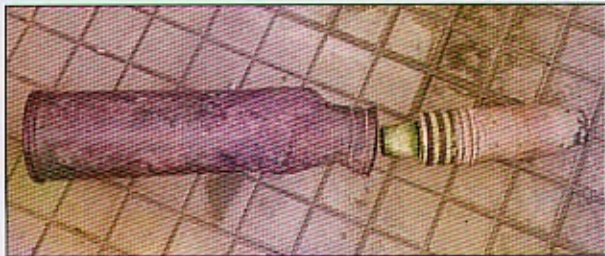
**CANNON**

**57mm APC-T**



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

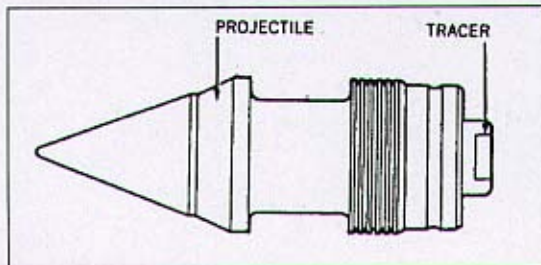
NEQ	Fuze	Weapon	Role	Origin
10/20g	Base	S-60	AA	Russia

**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

**ARTILLERY****2 POUNDER**

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****25-Pounder**

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****17-Pounder**

Also known as 77mm.

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

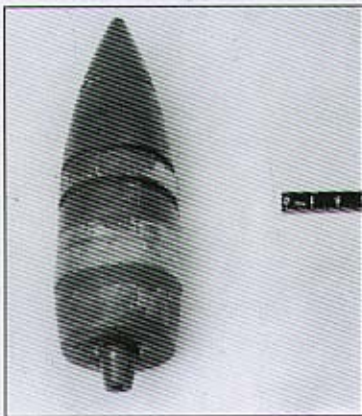
CARE MUST BE TAKEN TO ENSURE THE CONE IS COLLAPSED DURING DEMOLITION OF THIS PROJECTILE.

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

**ARTILLERY****122mm HEAT**

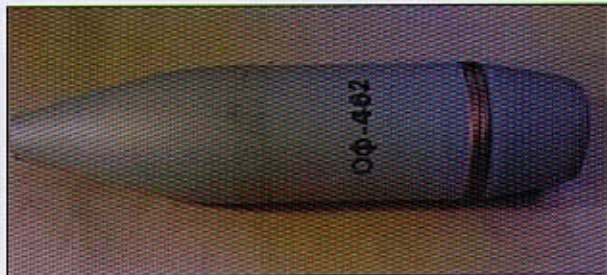
AS THIS IS A HEAT  
ROUND CARE MUST  
BE TAKEN WHEN  
DESTROYING TO  
ENSURE THE CONE IS  
COLLAPSED

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.

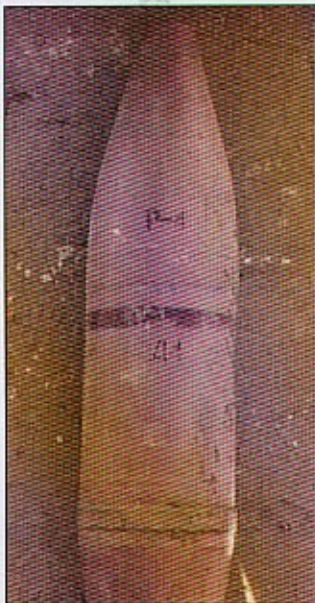
NEQ	Fuze	Weapon	Load Type	Origin
160g	Base	Fd A-19 SP D-25S Tank gun D-25	Separate	Russia

**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	Mech	D30	Separate	Russia
GP	Time	M30		

**ARTILLERY****122mm PROPAGANDA**

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

**ARTILLERY****130mm HE**

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

**ARTILLERY****152mm HE**

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

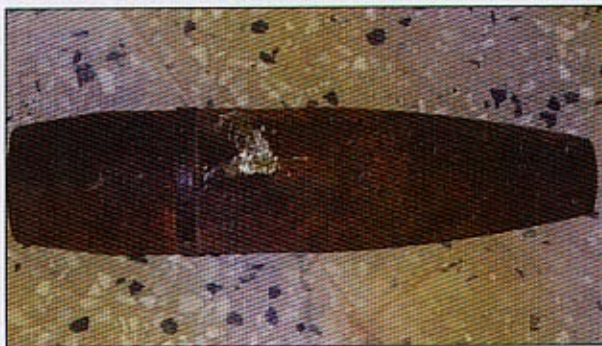


OG-15

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

**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

**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

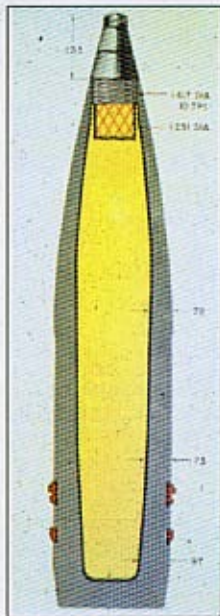
**TANK****85mm HEAT**

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

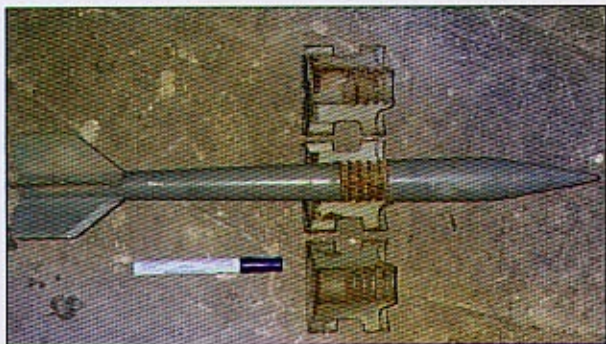
**TANK****100mm AP-T**

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

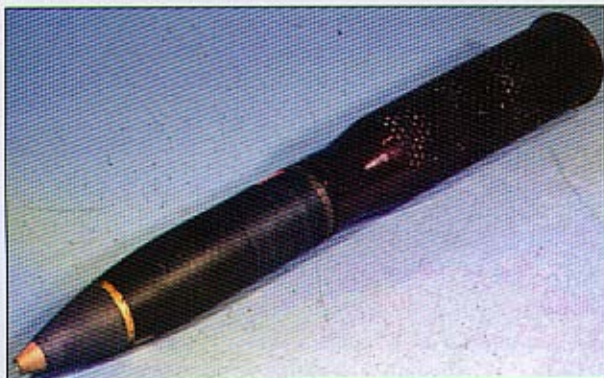
**RECOILLESS****82mm 881**

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



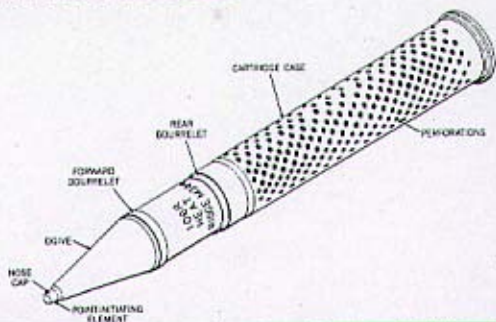
HE FRAG M309

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"**

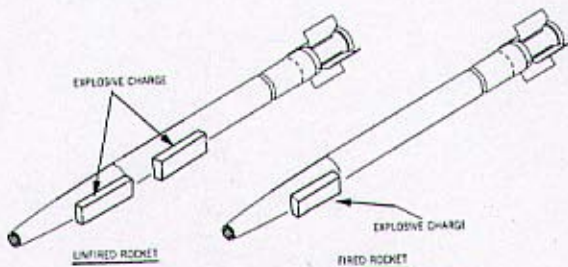
BLIND PROJECTILES MUST *NEVER* BE MOVED.  
WHEN DEALING WITH COMPLETE ROCKET  
SYSTEMS CARE MUST BE TAKEN TO ENSURE THE  
ROCKET MOTOR AND VENTURI ARE ALSO  
DESTROYED

TYPE

PLACING OF DISPOSAL CHARGE

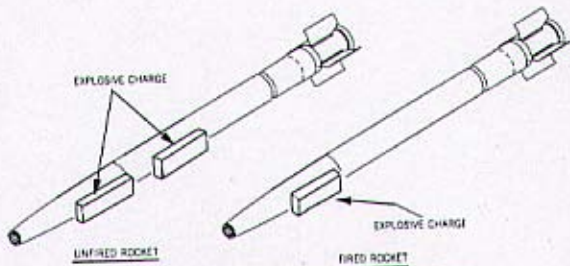
107mm BM1  
122mm BM21 GRAD  
140mm BM14  
132mm BM13  
240mm BM24-12  
240mm S24 FREE FLIGHT  
S8 HEAT  
S5 Series  
CRV7

## PLACING OF DISPOSAL CHARGE



CHARGE IN VENTURI OF UNFIRED  
ROCKET

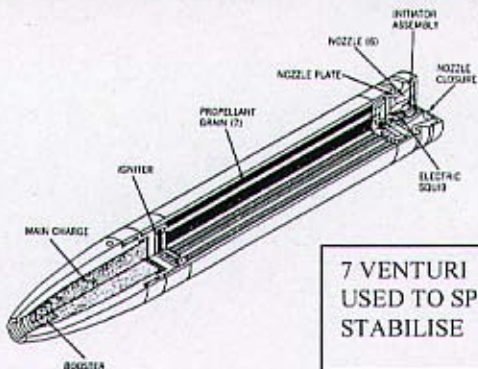
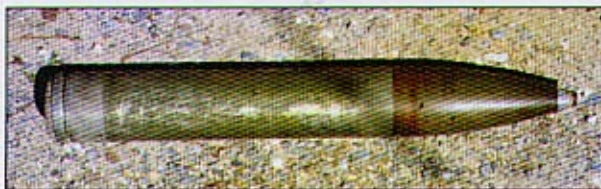
## PLACING OF DISPOSAL CHARGE



CHARGE IN VENTURI OF UNFIRED  
ROCKET

# Rockets

# 107mm HE



7 VENTURI  
USED TO SPIN  
STABILISE

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

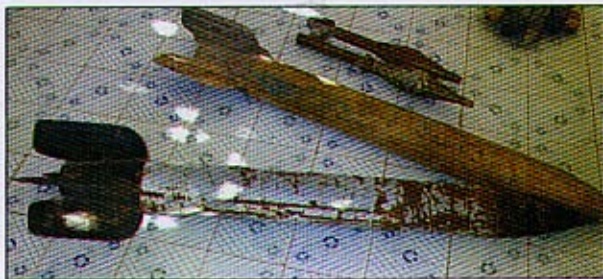
NEQ	Fuze	Launcher	Length	Motor
6.4kg	PD	12 & 40	2.87m	20.5kg
6.4kg	PD	12 & 40	3.23m	30kg

**Rockets****140mm BM14 FRAG HE**

Venturi are covered by a disc therefore not normally visible.

Russian markings are PP ( П ) - 9, OR ( П ) - 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



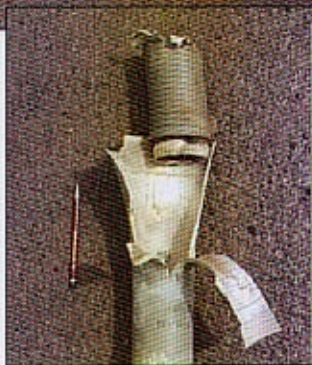
**Rockets****240mm S24 FRAG HE**

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**

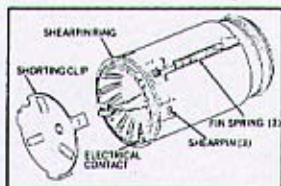
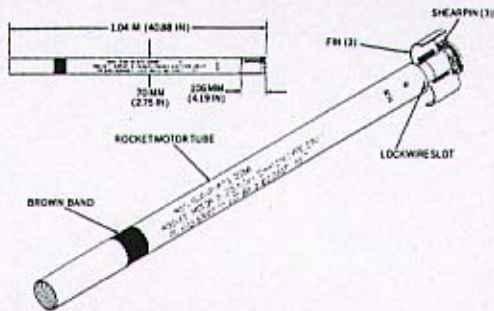
Top: S5KPB  
Middle: S5K  
Bottom: S5M

Air to Air  
Air to Ground

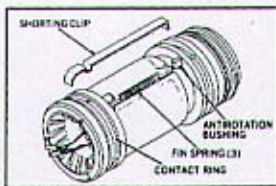
Type	NEQ	Fuze	Length	Role
S5KPB	130g	PIBD	1.08m	HEAT / Frag
S5K	332g	PIBD	874mm	HEAT
S5M	454g	PD	914mm	Frag

# Rockets

# Type CRV7 Canadian



E 22 AND C 12



FIN AND NOZZLE ASSEMBLIES

E 28

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.

TYPE

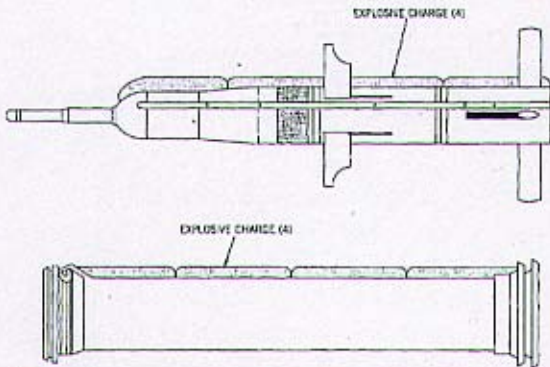
PLACING OF DISPOSAL CHARGE

SAGGER AT3

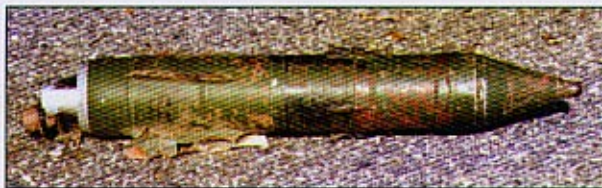
FAGGOT / SPIGOT AT4

AGM 87A1

## 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 AT3  
MALYUTKA**

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

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

**GUIDED MISSILES****SPIGOT AT4  
FAGOT**

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****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.

SECTION 9 - SUB-MUNITIONS

HALO POLICY:

***"ALL BLINDS ARE DESTROYED IN-SITU"***

SUB-MUNITIONS MUST NEVER BE MOVED.

TYPE

PLACING OF DISPOSAL CHARGE

BL 755

M42 BOMBLET GRENADE

PM1

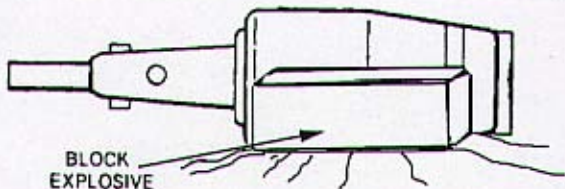
No 26 GRENADE,

BLU 63

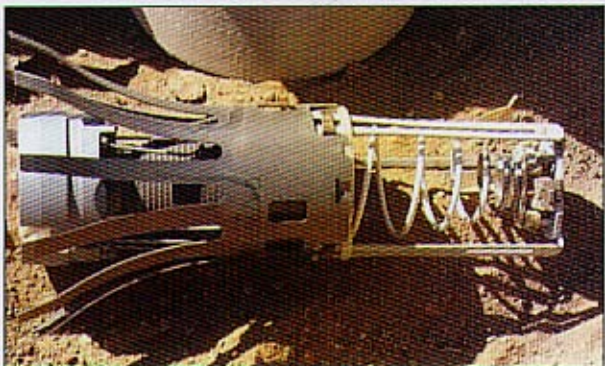
PTAB 2.5M

PTAB 1.5

PLACING OF DISPOSAL CHARGE



CARE MUST BE TAKEN NOT TO DISTURB  
OR SET UP A MAGNETIC FIELD NEAR  
PIEZO ELECTRIC FUZES.

**SUB-MUNITIONS****BL 755**

HAS PEIZO ELECTRIC FUZE

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



**SUB-MUNITIONS****PM1**

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

**SUB-MUNITIONS****No 26 Grenade**

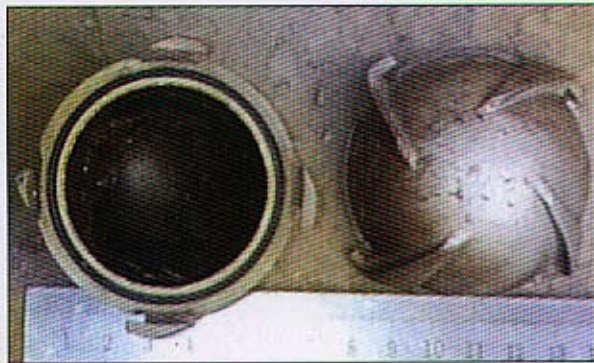
DEVELOPED FROM THE M26 GRENADE.  
DELEVERED FROM A NET UNDER A HELICOPTER

NEQ	Fuze	Effect	Delivery	Origin
164g	Time	Frag	Helicopter	Israel

## SUB-MUNITIONS

## Russian BLU 63

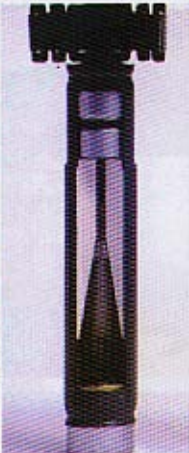
The Russian version is slightly smaller than its American counterpart – approx. 71mm, which would make it similar in size to the US Gren, Frag M74. The American version has 113g of explosives.



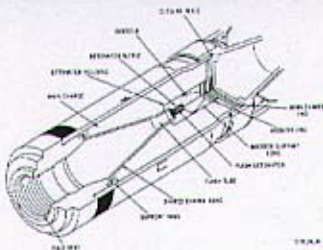
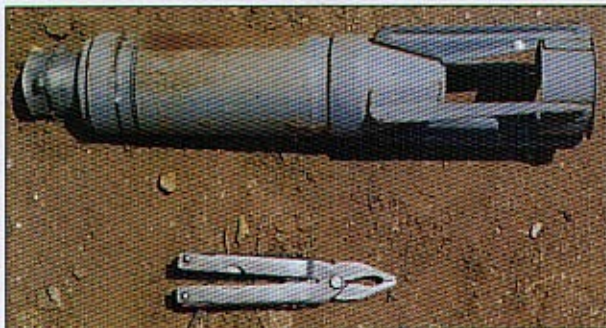
NEQ	Fuze	Effect	Delivery	Origin
127g	Always	Frag	Cluster AC Bomb	Russia

**SUB-MUNITIONS****AO1 Sch**

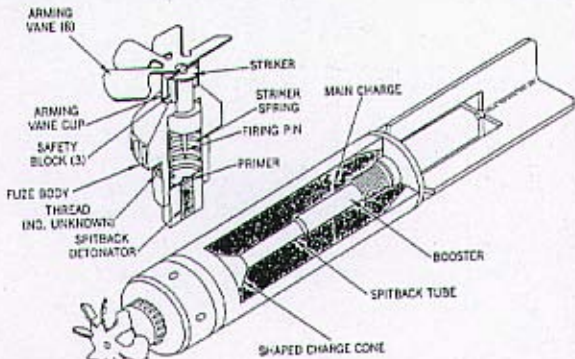
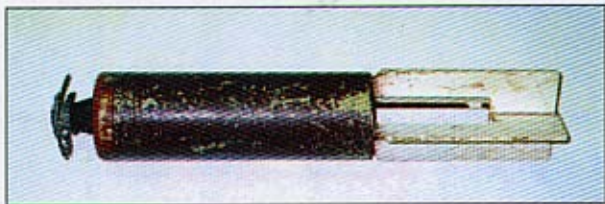
NEQ	Fuze	Effect	Delivery	Origin
141g	PD	Frag	RBK Cluster	Russia

**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	<b>100m</b>
AP Frag	<b>250m</b>
A/Tk	<b>300m</b>

## 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.	WP Projectile	Adjacent	500g
b.	Mortars 81mm and above	to Fuze	
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 of 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 personnel 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 assistant 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. **Do not touch old detonator. 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

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

TABLE 2

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

## 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.