

MILLENNIUM'S END  
COMPENDIUM  
OF  
EXPLOSIVES

RESEARCH  
HENRIK SODERBERG AND ROB THOMAS (alias MathesonT)

WRITTEN BY  
HENRIK SODERBERG

# Hand Grenades

## AUSTRIA

### HG 77

|              |                              |
|--------------|------------------------------|
| TYPE         | : Fragmentation Hand Grenade |
| ATTACK NR.   | : 5                          |
| DMG FACTOR   | : 18                         |
| BURST RADIUS | : 25m                        |
| DMG TYPE     | : Puncture                   |
| FUSE DELAY   | : 4 sec                      |
| WEIGHT       | : 0.48kg                     |

### OFF HG 77

|              |                                 |
|--------------|---------------------------------|
| TYPE         | : Blast/Concussion Hand Grenade |
| ATTACK NR.   | : 1                             |
| DMG FACTOR   | : 18*                           |
| BURST RADIUS | : 18m                           |
| DMG TYPE     | : Concussive                    |
| FUSE DELAY   | : 4 sec                         |
| WEIGHT       | : 0.21kg                        |

\* Add 10 additional columns to stun effect

### HG 78

|              |                              |
|--------------|------------------------------|
| TYPE         | : Fragmentation Hand Grenade |
| ATTACK NR.   | : 5                          |
| DMG FACTOR   | : 18                         |
| BURST RADIUS | : 25m                        |
| DMG TYPE     | : Puncture                   |
| FUSE DELAY   | : 4 sec                      |
| WEIGHT       | : 0.52kg                     |

### OFF HG 78

|              |                                 |
|--------------|---------------------------------|
| TYPE         | : Blast/Concussion Hand Grenade |
| ATTACK NR.   | : 1                             |
| DMG FACTOR   | : 18*                           |
| BURST RADIUS | : 18m                           |
| DMG TYPE     | : Concussive                    |
| FUSE DELAY   | : 4 sec                         |
| WEIGHT       | : 0.23kg                        |
| PRICE        | : \$130                         |

\* Add 10 additional columns to stun effect

### HG 79

|              |                              |
|--------------|------------------------------|
| TYPE         | : Fragmentation Hand Grenade |
| ATTACK NR.   | : 3                          |
| DMG FACTOR   | : 15                         |
| BURST RADIUS | : 15m                        |
| DMG TYPE     | : Puncture                   |
| FUSE DELAY   | : 4 sec                      |
| WEIGHT       | : 0.37kg                     |

### **OFF HG 79**

TYPE : Blast/Concussion Hand Grenade  
ATTACK NR. : 1  
DMG FACTOR : 15\*  
BURST RADIUS : 15m  
DMG TYPE : Concussive  
FUSE DELAY : 4 sec  
WEIGHT : 0.16kg

\* Add 10 additional columns of stun effect

### **HG 80 Mini**

TYPE : Miniature Fragmentation Hand Grenade  
ATTACK NR. : 2  
DMG FACTOR : 12  
BURST RADIUS : 10m  
DMG TYPE : Puncture  
FUSE DELAY : 4 sec  
WEIGHT : 0.17kg

### **OFF HG 80 Mini**

TYPE : Miniature Blast/Concussion Hand Grenade  
ATTACK NR. : 1  
DMG FACTOR : 12\*  
BURST RADIUS : 12m  
DMG TYPE : Concussive  
FUSE DELAY : 4 sec  
WEIGHT : 0.07kg

\* Add 5 additional columns to stun effect

### **HG 85**

TYPE : Fragmentation Hand Grenade  
ATTACK NR. : 4  
DMG FACTOR : 16  
BURST RADIUS : 20m  
DMG TYPE : Puncture  
FUSE DELAY : 4 sec  
WEIGHT : 0.34kg

### **OFF HG 85**

TYPE : Blast/Concussion Hand Grenade  
ATTACK NR. : 1  
DMG FACTOR : 16\*  
BURST RADIUS : 16m  
DMG TYPE : Concussive  
FUSE DELAY : 4 sec  
WEIGHT : 0.15kg

\* Add 10 additional columns to stun effect

### **HG 86 Mini**

TYPE : Miniature Fragmentation Hand Grenade  
ATTACK NR. : 2  
DMG FACTOR : 12  
BURST RADIUS : 10m  
DMG TYPE : Puncture  
FUSE DELAY : 4 sec  
WEIGHT : 0.18kg

### **OFF HG 86 Mini**

TYPE : Miniature Blast/Concussion Hand Grenade  
ATTACK NR. : 1  
DMG FACTOR : 12\*  
BURST RADIUS : 12m  
DMG TYPE : Concussive  
FUSE DELAY : 4 sec  
WEIGHT : 0.08kg

\* Add 5 additional columns to stun effect

### **SHG 60**

TYPE : Fragmentation Hand Grenade  
ATTACK NR. : 5  
DMG FACTOR : 18  
BURST RADIUS : 25m  
DMG TYPE : Puncture  
FUSE DELAY : 4.5 sec  
WEIGHT : 0.58kg

### **SplHGr 80**

TYPE : Fragmentation Hand Grenade  
ATTACK NR. : 5  
DMG FACTOR : 15  
BURST RADIUS : 25m  
DMG TYPE : Puncture  
FUSE DELAY : 4.5 sec  
WEIGHT : 0.59kg

### **HC 75 Smoke**

TYPE : Burning Type HC Smoke Hand Grenade  
EFFECT : Creates a dense cloud of whitish-grey screening smoke  
BURN TIME : 120 sec  
AREA OF EFFECT :  
FUSE DELAY : 4.5 sec  
WEIGHT : 0.57kg

### **LHG-40 Illuminating**

TYPE : Illuminating Hand Grenade  
BURN TIME : 35 sec  
AREA OF EFFECT : 150m  
FUSE DELAY : 4.5 sec  
WEIGHT : 0.5kg  
NOTES : This flare burns at 1800 degrees C (secondary incendiary effect) illuminates at 280 000 candela over 150 meters.

## **BELGIUM**

### **NR 423**

TYPE : Fragmentation Hand Grenade  
ATTACK NR. : 4  
DMG FACTOR : 16  
BURST RADIUS : 20m  
DMG TYPE : Puncture  
FUSE DELAY : 4 sec  
WEIGHT : 0.23kg

## **NR 446**

TYPE : Blast/Concussion Hand Grenade  
ATTACK NR. : 1  
DMG FACTOR : 18\*  
BURST RADIUS : 18m  
DMG TYPE : Concussive  
FUSE DELAY : 4 sec  
WEIGHT : 0.25kg

\* Add 10 additional columns to stun effect

## **FRANCE**

### **TYPE 241 BLINDING**

TYPE : Flash/Dazzle Hand Grenade  
EFFECT : Brilliant flash of light, 5 000 000 candelas for .002 seconds  
Temporary blindness 10-120 seconds  
ATTACK NR. : 1  
DMG FACTOR : -  
BURST RADIUS : 20m  
DMG TYPE : Temporary Blindness (10-120 seconds)  
FUSE DELAY : 1,5 Seconds  
WEIGHT : 0,1kg  
NOTES : The grenade has a plastic body that does not fragment and a flash compound that does not cause blast damage. When the grenade fires, it creates an intense dazzling flash of light that lasts for a few hundredths of a second. The dazzle effect on a group of targets will last up to two minutes, preventing any sighted action on the part of the targets. The fuze on the Type 241 is also unusual. A safety cap is removed from the top of the grenade, exposing a push button with a safety clip.

## **GERMANY**

### **M-DN 11**

TYPE : Fragmentation Hand Grenade  
ATTACK NR. : 3  
DMG FACTOR : 15  
BURST RADIUS : 15m  
DMG TYPE : Puncture  
FUSE DELAY : 4 sec  
WEIGHT : 0.47kg

### **M-DN 21**

TYPE : Fragmentation Hand Grenade  
ATTACK NR. : 3  
DMG FACTOR : 14  
BURST RADIUS : 15m  
DMG TYPE : Puncture  
FUSE DELAY : 4 sec  
WEIGHT : 0.23kg

### **M-DN 31**

TYPE : Fragmentation Hand Grenade  
ATTACK NR. : 2  
DMG FACTOR : 14  
BURST RADIUS : 10m  
DMG TYPE : Puncture  
FUSE DELAY : 4 sec  
WEIGHT : 0.25kg

## **M-DN 61**

|              |                              |
|--------------|------------------------------|
| TYPE         | : Fragmentation Hand Grenade |
| ATTACK NR.   | : 4                          |
| DMG FACTOR   | : 18                         |
| BURST RADIUS | : 20m                        |
| DMG TYPE     | : Puncture                   |
| FUSE DELAY   | : 4 sec                      |
| WEIGHT       | : 0.44kg                     |

## **DM 51**

|              |                                                                                                                                       |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------|
| TYPE         | : Fragmentation Hand Grenade (Blast/Concussion Hand Grenade)                                                                          |
| ATTACK NR.   | : 5 ( 1 )                                                                                                                             |
| DMG FACTOR   | : 17 ( 17* )                                                                                                                          |
| BURST RADIUS | : 25m ( 17m )                                                                                                                         |
| DMG TYPE     | : Puncture (Concussive)                                                                                                               |
| FUSE DELAY   | : 4 sec                                                                                                                               |
| WEIGHT       | : 0.44kg (0.29kg)                                                                                                                     |
| NOTES        | : This is the standard issue German hand grenade. It can be used as an offensive grenade simply by removing the fragmentation jacket. |

\*Add 10 additional columns to stun effect

## **NICO SOUND/FLASH**

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TYPE         | : Stun Hand Grenade                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| EFFECT       | : 8 Flashes in a random pattern @ 1 000 000 candela and 175db causing 5-15 seconds of disorientation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| ATTACK NR.   | : 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| DMG FACTOR   | : 10*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| BURST RADIUS | : 10m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| DMG TYPE     | : Concussive                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| FUSE DELAY   | : 2,5 Seconds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| WEIGHT       | : 0,27kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| NOTES        | : The grenade is a canister type, carrying eight submunitions that ejects out of the top. It will cause no dangerous fragmentation when the grenade functions. At the end of the time delay, the eight submunitions eject from the top of the body as the fuze and cover blow away. Each of the submunitions is a cardboard cased thunderflash that is self-propelled and has a very short fuze. Each of the thunderflashes flies off in a random pattern and flashes after 0.5 seconds. The flashes are each 175 to 185 decibels and 1 000 000 candela in intensity. The thunderflashes are carefully engineered to be above the temporary disabling level but not of such intensity as to cause permanent physical damage. |

\* Add 15 Additional Columns To Stun Effect

## **NETHERLANDS**

### **NWM V-40 Mini**

|              |                                        |
|--------------|----------------------------------------|
| TYPE         | : Miniature Fragmentation Hand Grenade |
| ATTACK NR.   | : 2                                    |
| DMG FACTOR   | : 12                                   |
| BURST RADIUS | : 10m                                  |
| DMG TYPE     | : Puncture                             |
| FUSE DELAY   | : 4 sec                                |
| WEIGHT       | : 0.12kg                               |

## **ISRAEL**

### **No. 5 Smoke**

TYPE : Burning Type Smoke Hand Grenade  
EFFECT : Creates a dense cloud of screening smoke  
BURN TIME : 90-130 sec  
AREA OF EFFECT :  
FUZE DELAY : 2 sec  
WEIGHT : 0.8kg  
NOTES : Available in white-grey, red, yellow or green smoke.

### **No. 14 Offensive**

TYPE : Blast/Concussion Hand Grenade  
ATTACK NR. : 1  
DMG FACTOR : 24\*  
BURST RADIUS : 24m  
DMG TYPE : Concussive  
FUZE DELAY : 4.5 sec  
WEIGHT : 0.33kg

\* Add 15 additional columns to stun effect

## **ITALY**

### **MU-50**

TYPE : Fragmentation Hand Grenade  
ATTACK NR. : 3  
DMG FACTOR : 15  
BURST RADIUS : 15m  
DMG TYPE : Puncture  
FUZE DELAY : 4 sec  
WEIGHT : 0.14kg

### **OD/82**

TYPE : Blast/Concussion Hand Grenade  
ATTACK NR. : 1  
DMG FACTOR : 18\*  
BURST RADIUS : 18m  
DMG TYPE : Concussive  
FUZE DELAY : 4 sec  
WEIGHT : 0.23kg

\*Add 10 additional columns to stun effect

## **RUSSIA**

### **RDG-5**

TYPE : Fragmentation Hand Grenade  
ATTACK NR. : 6  
DMG FACTOR : 18  
BURST RADIUS : 30m  
DMG TYPE : Puncture  
FUZE DELAY : 3-4 sec  
WEIGHT : 0.31kg

## **RGO**

TYPE : Fragmentation Hand Grenade  
ATTACK NR. : 4  
DMG FACTOR : 18  
BURST RADIUS : 20m  
DMG TYPE : Puncture  
FUSE DELAY : 4 sec  
WEIGHT : 0.53kg

## **RGN**

TYPE : Blast/Concussion Hand Grenade  
ATTACK NR. : 1  
DMG FACTOR : 18\*  
BURST RADIUS : 18m  
DMG TYPE : Concussive  
FUSE DELAY : 4 sec  
WEIGHT : 0.31kg

\*Add 10 additional columns to stun effect

## **F1**

TYPE : Fragmentation Hand Grenade  
ATTACK NR. : 4  
DMG FACTOR : 15  
BURST RADIUS : 20m  
DMG TYPE : Puncture  
FUSE DELAY : See notes  
WEIGHT : 0.6kg  
NOTES : Fuse delays ranging from 0-13 seconds, partial disassembly required to confirm delay.

## **UNITED KINGDOM**

### **L2A2**

TYPE : Fragmentation Hand Grenade  
ATTACK NR. : 6  
DMG FACTOR : 24  
BURST RADIUS : 30m  
DMG TYPE : Puncture  
FUSE DELAY : 4.5 sec  
WEIGHT : 0.4kg

### **KILGORE/SCHERMULY**

TYPE : Stun Hand Grenade  
EFFECT : Blast and flash, 1 000 000 candela and 175db causing 5-15 seconds of disorientation.  
ATTACK NR. : 1  
DMG FACTOR : 10<sup>1)</sup>  
BURST RADIUS : 10m  
DMG TYPE : Concussive  
FUSE DELAY : 1,5-2 Seconds  
0,5-1 Second for submunition fuse

WEIGHT : 0,23kg

NOTES : The grenade is roughly the same size and shape as an M26A1 grenade, but has a smooth plastic body with a flat bottom. After the delay, a paper submunition is ejected from the base of the grenade where, after less than a second's delay, it detonates with a brilliant flash and loud report. With the submunition being made of paper and detonation far, 2 or 3 meters, from the plastic grenade body, there is little damage the blast can do unless an individual is actually in contact with the submunition when it goes off. A drawback of this grenade is that the flash may set fire to fabric or other easily ignited material it contacts.

<sup>1)</sup> Add 10 additional columns to stun effect

## USA

### **Mk 2 "Pineapple"**

|              |                              |
|--------------|------------------------------|
| TYPE         | : Fragmentation Hand Grenade |
| ATTACK NR.   | : 3                          |
| DMG FACTOR   | : 24                         |
| BURST RADIUS | : 15m                        |
| DMG TYPE     | : Puncture                   |
| FUSE DELAY   | : 4-5 sec                    |
| WEIGHT       | : 0.59kg                     |

### **M67 "Baseball Frag"**

|              |                              |
|--------------|------------------------------|
| TYPE         | : Fragmentation Hand Grenade |
| ATTACK NR.   | : 6                          |
| DMG FACTOR   | : 24                         |
| BURST RADIUS | : 30m                        |
| DMG TYPE     | : Puncture                   |
| FUSE DELAY   | : 4-5 sec                    |
| WEIGHT       | : 0.4kg                      |

### **M68**

|              |                              |
|--------------|------------------------------|
| TYPE         | : Fragmentation Hand Grenade |
| ATTACK NR.   | : 6                          |
| DMG FACTOR   | : 24                         |
| BURST RADIUS | : 30m                        |
| DMG TYPE     | : Puncture                   |
| FUSE DELAY   | : Impact                     |
| WEIGHT       | : 0.39kg                     |

### **M61**

|              |                              |
|--------------|------------------------------|
| TYPE         | : Fragmentation Hand Grenade |
| ATTACK NR.   | : 6                          |
| DMG FACTOR   | : 23                         |
| BURST RADIUS | : 30m                        |
| DMG TYPE     | : Puncture                   |
| FUSE DELAY   | : 4 sec                      |
| WEIGHT       | : 0.45kg                     |

### **M26A2**

|              |                              |
|--------------|------------------------------|
| TYPE         | : Fragmentation Hand Grenade |
| ATTACK NR.   | : 6                          |
| DMG FACTOR   | : 23                         |
| BURST RADIUS | : 30m                        |
| DMG TYPE     | : Puncture                   |
| FUSE DELAY   | : 4 sec                      |
| WEIGHT       | : 0.45kg                     |

### **M18 Colored Smoke**

|                |                                           |
|----------------|-------------------------------------------|
| TYPE           | : Burning Type Colored Smoke Hand Grenade |
| COLORS         | : Green, Red, Violet and Yellow           |
| AREA OF EFFECT | : 18 x 4 x 2 m                            |
| FUSE DELAY     | : 2 sec                                   |
| BURN TIME      | : 50-90 seconds                           |
| WEIGHT         | : 0.54kg                                  |

### **M34 White Phosphorous**

TYPE : Bursting-type White Phosphorus Smoke/Incendiary Hand Grenade  
ATTACK NR. : 5  
DMG FACTOR : 18  
BURST RADIUS : 25m  
DMG TYPE : Burn  
FUSE DELAY : 4-5 sec  
BURN TIME : 60 sec  
WEIGHT : 0.77kg  
NOTES : White phosphorus ignites spontaneously on contact with air creating a dense hot cloud of smoke while it burns at over 2600° C.

### **AN-M14 TH3**

TYPE : Incendiary Hand Grenade  
EFFECT : Intense heat (2200° C) and brilliant light w/ molten iron spray.  
ATTACK NR. : None  
DMG FACTOR : 18  
BURST RADIUS : (1.5-2m spray/sparks radius)  
DMG TYPE : Burn  
FUSE DELAY : 0.7-2 Seconds  
BURN TIME : 40 Seconds  
WEIGHT : 0.91kg  
NOTES : This is a canister-style incendiary grenade. Grenades of this type are used to destroy materials and ordnance. It can burn through a 1.3mm steel plate and will burn underwater after ignition.

### **AN-M8 HC**

TYPE : Burning Type HC Smoke Hand Grenade  
EFFECT : Creates a dense cloud of white screening smoke  
BURN TIME : 125 Seconds  
AREA OF EFFECT : 288m<sup>3</sup> (18 x 4 x 2m cloud)  
FUSE DELAY : 0.7-2 Seconds  
BURN TIME : 105-150 seconds  
WEIGHT : 0.68kg  
NOTES : This is a canister style, burning smoke grenade that is used with the U.S. armed forces. The sheet steel canister holds the smoke mixture and supports fuze assembly. There are four tape covered holes of the body to emit the smoke created by the burning composition.

### **M7A3 CS**

TYPE : Burning Type Canister CS Gas Hand Grenade  
EFFECT : Produces a large cloud of CS gas  
BURN TIME : 25 Seconds  
AREA OF EFFECT : 240m<sup>3</sup> (18 x 4 x 4m cloud)  
FUSE DELAY : 0.7-2 Seconds  
BURN TIME : 15-35 seconds  
WEIGHT : 0.43kg  
NOTES : This is a canister style, burning type CS gas grenade. The filler consists of a pyrotechnic mixture made up of a type of nitrocellulose powder that produces a large amount of dense white smoke as it burns. The CS agent (Orthochlorobenzalmonitrile) is a white powder contained in gelatine capsules spreads throughout the pyrotechnic mixture.

### **M25A2 CS**

TYPE : Bursting Type CS Gas Plastic Hand Grenade  
EFFECT : Instantaneous release of CS gas cloud  
AREA OF EFFECT : 5m burst radius, 20 x 4m cloud downwind  
FUSE DELAY : 1.4-3 Seconds  
WEIGHT : 0.22kg  
NOTES : The M25AS grenade was developed to allow CS to be used in situations where the danger of fire is too great to allow burning type canister grenades to be used. The bursting type M25A2 grenade releases all of its chemical agent in an instantaneous cloud, giving the CS a more immediate effect and preventing any possible throwback of a burning CS canister.

### **MK-3A2 Offensive Grenade**

TYPE : Blast (Concussion) Offensive Hand Grenade  
EFFECT : Blast and shock wave  
ATTACK NR. : 1  
DMG FACTOR : 15\*  
BURST RADIUS : 15m  
DMG TYPE : Concussion  
FUSE DELAY : 4-5 Seconds  
WEIGHT : 0,44kg  
NOTES : The body of this grenade is made of cardboard and produce no fragmentation. They are used by hostage rescue team and in urban combat situationss where close quaters fighting. (The SEAL Teams considered the Mk3A2 to be a small demolition charge, though as a concussion grenade it also had its uses in after-invasion bunker cleaning.)  
\* Add 10 additional columns to stun effect

### **M6A1 CN-DM**

TYPE : Burning-type CN-DM Tear/Vomit Gas Hand Grenade  
EFFECT : Release a cloud of CN and DM gas.  
AREA OF EFFECT : Approx. 18 x 4 x 2 m  
FUSE DELAY : 0.7-2 Seconds  
BURN TIME : 20-60 Seconds  
WEIGHT : 0,57kg  
NOTES : CN (Chloroacetophenone) causes a very heavy flow of tears and strong pain in the eyes and upper respiratory passages whitin 15 to 30 seconds. DM (Diphenylaminochloroarsine) increases the flow of tears and pain in the resiratory tract as well as cusing sneezing and coughing. Syntoms increase with exposure to include headache, acute pain and tightness in the chest. After about 1 minute's exposure, syntoms include nausea and vomiting. DM syntoms last about 30 minutes after removal from exposure. Exposure to heavy concentrations of DM can cause the effect to last for up to 3 hours. DM takes about 1 minute to become effective and the CN is used to increase the immediate effects of the grenade. Exposure to very heavy concentrations of DM, such as in a closed room or bunker, can be toxic as the gas is an arsenic salt.

### **UNKNOWN**

### **Multi-Purpose Grenade MPG-120 (CS)**

TYPE : Flameless "soft delivery" CS Gas Hand Grenade  
EFFECT : Instantaneous release of CS gas cloud  
AREA OF EFFECT : 5m burst radius  
18 x 4m cloud downwind  
FUSE DELAY : 2 or 5 Seconds  
WEIGHT : 0,42kg  
LENGHT : 16.5cm  
WIDTH : 8.1cm  
NOTES : The fuze uses the familiar pull ring and safety lever but also has a selector switch for determine the time delay. The lever is pushed so that the pointer at its opposite end points at either the raised number 5 or 2 on the grenade's top for either a five or two second fuze delay.

# RIFLE GRENADES

## AUSTRIA

### SGG 84

|              |                                               |
|--------------|-----------------------------------------------|
| TYPE         | : Fragmentation Rifle Grenade w/ Rocket Boost |
| ATTACK NR.   | : 5                                           |
| BURST RADIUS | : 25m                                         |
| DMG FACTOR   | : 18                                          |
| DAMAGE TYPE  | : Puncture                                    |
| FUZE DELAY   | : Impact                                      |
| RANGE        | : 200m (7.62mm ver.), 135m (5.56mm ver.)      |
| WEIGHT       | : 0.64kg                                      |

### SGG 85

|              |                                                                |
|--------------|----------------------------------------------------------------|
| TYPE         | : Fragmentation Rifle Grenade w/ Rocket Boost (w/ Bullet Trap) |
| ATTACK NR.   | : 4                                                            |
| BURST RADIUS | : 20m                                                          |
| DMG FACTOR   | : 16                                                           |
| DAMAGE TYPE  | : Puncture                                                     |
| FUZE DELAY   | : Impact                                                       |
| RANGE        | : 250m (7.62mm ver.), 200m (5.56mm ver.) (220m (5.56mm ver.))  |
| WEIGHT       | : 0.47kg                                                       |

### SGG 86

|              |                                                                |
|--------------|----------------------------------------------------------------|
| TYPE         | : Fragmentation Rifle Grenade w/ Rocket Boost (w/ Bullet Trap) |
| ATTACK NR.   | : 2                                                            |
| BURST RADIUS | : 10m                                                          |
| DMG FACTOR   | : 12                                                           |
| DAMAGE TYPE  | : Puncture                                                     |
| FUZE DELAY   | : Impact                                                       |
| RANGE        | : 380m (7.62mm ver.), 280m (5.56mm ver.) (300m (5.56mm ver.))  |
| WEIGHT       | : 0.3kg                                                        |

## BELGIUM

### Telgram

|              |                                              |
|--------------|----------------------------------------------|
| TYPE         | : Fragmentation Rifle Grenade w/ Bullet Trap |
| ATTACK NR.   | : 3                                          |
| BURST RADIUS | : 15m                                        |
| DMG FACTOR   | : 15                                         |
| DAMAGE TYPE  | : Puncture                                   |
| FUZE DELAY   | : Impact                                     |
| RANGE        | : 400m (7.62mm ver.), 300m (5.56mm ver.)     |
| WEIGHT       | : 0.3kg                                      |

### M260 AP

|              |                                               |
|--------------|-----------------------------------------------|
| TYPE         | : Armor Piercing Rifle Grenade w/ Bullet Trap |
| ATTACK NR.   | : 1                                           |
| BURST RADIUS | : 5m                                          |
| DMG FACTOR   | : 5*                                          |
| DAMAGE TYPE  | : Concussive                                  |
| PENETRATION  | : 140mm (armor), 300mm (concrete)             |
| FUZE DELAY   | : Impact                                      |
| RANGE        | : 400m (7.62mm ver.), 300 m (5.56mm ver.)     |
| WEIGHT       | : 0.39kg                                      |

\* Add 5 additional columns to stun effect

### **M262 HE**

TYPE : Fragmentation Rifle Grenade w/ Bullet Trap  
ATTACK NR. : 3  
BURST RADIUS : 15m  
DMG FACTOR : 12  
DAMAGE TYPE : Puncture  
FUZE DELAY : Impact  
RANGE : 400m (7.62mm ver.), 300m (5.56mm ver.)  
WEIGHT : 0.4kg

### **M261 HE/D**

TYPE : Fragmentation Rifle Grenade w/ Bullet Trap  
ATTACK NR. : 2  
BURST RADIUS : 10m  
DMG FACTOR : 14  
DAMAGE TYPE : Puncture  
FUZE DELAY : 4 sec, See notes  
RANGE : 320m (7.62mm ver.), 320m (5.56mm ver.)  
WEIGHT : 0.34kg  
NOTES : This is an HE round with a 4 delay fuze instead of impact so that it can penetrate walls, windows, or heavy foilage before detonating.

### **M258 Smoke**

TYPE : Smoke Generating Rifle Grenade w/ Bullet Trap  
EFFECT : Creates a dense cloud of screening smoke  
AREA OF EFFECT : ?  
FUZE DELAY : 2 sec  
RANGE : 300m (7.62mm ver.), 300m (5.56mm ver.)  
WEIGHT : 0.48kg  
NOTES : The smoke screen begins while the grenade is still in flight and continues for 80 seconds.

### **M259 Para Flare**

TYPE : Illuminating Para Flare Rifle Grenade w/ Bullet Trap  
EFFECT : Illuminating Parachute Flare  
AREA OF EFFECT : ?  
FUZE DELAY : ?  
RANGE : 85m (7.62mm ver.), 85m (5.56mm ver.)  
WEIGHT : 0.42kg  
NOTES : This paracute flare burns at 100 000 candela for 30-35 seconds.

### **M287 HE**

TYPE : Fragmentation rifle grenade w/ bullet trap and rocket assist  
ATTACK NR. : 6  
BURST RADIUS : 30m  
DMG FACTOR : 18  
DAMAGE TYPE : Fragmentation  
MIN RANGE : 25m  
MAX RANGE : 700m (5.56mm and 7.62mm version)  
WEIGHT : 0.79kg (5.56mm and 7.62mm version)

### **M288 Incen/Smoke**

TYPE : Smoke Generating and Incendiary Rifle Grenade w/ Bullet Trap  
ATTACK NR. : 2  
BURST RADIUS : 10m  
DMG FACTOR : 18  
DAMAGE TYPE : Burn  
FUZE DELAY : 4 sec  
RANGE : 300m (7.62mm ver.), 300m (5.56mm ver.)  
WEIGHT : 0.42kg  
NOTES : This white phosphorous round generates an instantaneous smoke screen and covers the burst radius with fragments burning at 1000 degrees C.

### **Super Energa**

TYPE : Armor Piercing Rocket Propelled Shaped Charge  
ATTACK NR. : 1  
BURST RADIUS : 5m  
DMG FACTOR : 8\*  
DAMAGE TYPE : Concussive  
FUZE DELAY : Impact  
RANGE : See notes  
PENETRATION : 275mm (armor), 600mm (concrete)  
WEIGHT : 0.77kg  
NOTES : Booster cartridges make an effective range of 150m vs moving targets and 200m vs stationary targets. This rocket propelled shaped charge is fired from the underarm position.  
\* Add 5 additional columns to stun effect

## **BRAZIL**

### **M2**

TYPE : Fragmentation Rifle Grenade w/ Bullet Trap  
ATTACK NR. : 5  
BURST RADIUS : 25m  
DMG FACTOR : 18  
DAMAGE TYPE : Puncture  
FUZE DELAY : Impact  
RANGE : 380m  
WEIGHT : 0.55kg

### **M3**

TYPE : Armor Piercing Rifle Grenade w/ Bullet Trap  
ATTACK NR. : 1  
BURST RADIUS : 5m  
DMG FACTOR : 8\*  
DAMAGE TYPE : Concussive  
FUZE DELAY : Impact  
RANGE : 260m  
PENETRATION : 76mm (armor)  
\* Add 5 additional columns to stun effect

## **FRANCE**

### **AT**

TYPE : Armor Piercing Rifle Grenade w/ Rocket Boost (w/ Bullet Trap)  
ATTACK NR. : 2  
BURST RADIUS : 10m  
DMG FACTOR : 10\*  
DAMAGE TYPE : Concussive  
PENETRATION : 350mm (armor), 1000mm (concrete)  
FUZE DELAY : Impact  
RANGE : 100m (7.62mm ver.) (100m (5.56mm ver.))  
WEIGHT : 0.5kg

\*Add 5 additional columns to stun effect

### **AP-AV**

TYPE : Armor Piercing / Fragmentation Rifle Grenade w/ Rocket Boost (w/ Bullet Trap)  
ATTACK NR. : 3  
BURST RADIUS : 15m  
DMG FACTOR : 15  
DAMAGE TYPE : Puncture  
PENETRATION : 70mm (armor)  
FUZE DELAY : Impact  
RANGE : 300m (7.62mm ver.) (300m (5.56mm ver.))  
WEIGHT : 0.5kg  
NOTES : This grenade combines a small shaped charge and fragmentation sleeve.

## **SPAIN**

### **M70**

TYPE : Fragmentation Rifle Grenade w/ Bullet Trap  
ATTACK NR. : 3  
BURST RADIUS : 15m  
DMG FACTOR : 15  
DAMAGE TYPE : Puncture  
FUZE DELAY : Impact  
RANGE : 325m  
WEIGHT : 0.4kg

## **ISRAEL**

### **AP67 Frag**

TYPE : Fragmentation Rifle Grenade w/Bullet Trap  
ATTACK NR. : 6  
BURST RADIUS : 30m  
DMG FACTOR : 15  
DAMAGE TYPE : Puncture  
FUZE DELAY : Impact  
RANGE : 240m (5.56mm ver.)  
WEIGHT : 0.64kg

## USA

### **140mm RAW (Rifleman's Assault Weapon)**

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TYPE         | : Blast and Light Fragmentation Grenade w/ Rocket Boost                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| ATTACK NR.   | : 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| DMG FACTOR   | : 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| BURST RADIUS | : 30m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| DMG TYPE     | : Puncture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| PENETRATION  | : Creates a 35cm hole in 20cm thick double reinforced concrete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| MIN RANGE    | : 10m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| MAX RANGE    | : 200m (Direct fire), 2000m (Indirect fire)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| TYPE OF FIRE | : Single-shot disposable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| SIGHTS       | : Uses aperture/post sights on M16 rifle.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| WEIGHT       | : 2.72kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| NOTES        | : The RAW launcher mounts on the standard M16 rifles and secures itself to the bayonet lug and flash hider. With the arming switch set to safe, the firearm can continue to be used with ball ammunition. When set to arm, the RAW projectile is launched when the rifle is fired. A small amount of gas is tapped from the muzzle to operate a firing pin inside the RAW launcher to fire the rocket. As the motor ignites, the exhaust is guided through two turbine nozzles which spin the the mounting while the warhead is still attached. When the rocket motor reaches full thrust, it breakes away from the mounting while spinning. The spin recieved from the turbine stabilizes the projectile through out the flight. |

# GRENADE LAUNCHERS

30mm

## RUSSIA

### AGS-17 Automatic Grenade Launcher

|           |                                                                                                                                                                                                                             |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IA        | : 24                                                                                                                                                                                                                        |
| SPEED     | : 10                                                                                                                                                                                                                        |
| WEIGHT    | : 8kg (load and tripod 35kg)                                                                                                                                                                                                |
| ROF       | : 6                                                                                                                                                                                                                         |
| MAGAZINE  | : 29-Round belt                                                                                                                                                                                                             |
| MIN RANGE | : ?                                                                                                                                                                                                                         |
| MAX RANGE | : 1200m                                                                                                                                                                                                                     |
| NOTES     | : Called "Plamya" (flame), this weapon is surprisingly conventional in design. Firing from a disintegrating belt (unlike most Russian automatic weapons), a section of two provide fire support for every infantry company. |

35mm

## GERMANY

### "Handflammpatronen" HAFLA DM-34

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TYPE           | : Disposable Incendiary/Smoke Grenade Launcher                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| SPEED          | : 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| IA             | : 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| ATTACK NR.     | : See notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| DMG FACTOR     | : 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| AREA OF EFFECT | : 5-8m (stuck target)<br>15m long x 10m wide (self destruct)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| DMG TYPE       | : Burn                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| BURN TIME      | : 120 seconds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| MIN RANGE      | : 10m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| MAX RANGE      | : 70m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| WEIGHT         | : 0.63kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| NOTES          | : The rifling handle is folded over the trigger at the rear of the launcher. Depressing a safety button allows the handgrip to rotate 90 degrees downward, locking to the rear and exposing the trigger. Unlike white phosphorus, which ignites spontaneously on exposure to air, red phosphorus has to be ignited by outside means; the pyrotechnic fuze accomplishing this in the HAFLA. The fuze delay allows the capsule to travel 70 meters before it ruptures the case, spreading the filler over a 15 meter long and 10 meter wide oval. If the capsule should strike a target with a hard surface from 10 to 70 meters from the launcher, the capsule will burst with a brilliant flash and blinding smoke covering an area from 5 to 10 meters wide. The red phosphorus burns for two minutes, creating a large cloud of smoke that clears within a few minutes of the phosphorus burning out. The fragments burn at 1300 degrees C and will quickly ignite combustible materials. |

37x112mmRb

## UK

### ARWEN-37 Grenade Launcher

|           |                                                                                                                                                                                  |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OPERATION | : Manual                                                                                                                                                                         |
| SPEED     | : 9                                                                                                                                                                              |
| IA        | : 23                                                                                                                                                                             |
| ROF       | : 2                                                                                                                                                                              |
| MAGAZINE  | : 5-Round Open Cylinder                                                                                                                                                          |
| RANGE     | : 100m (also see ammo)                                                                                                                                                           |
| WEIGHT    | : 3.82kg                                                                                                                                                                         |
| COST      | : \$1000                                                                                                                                                                         |
| NOTES     | : The ARWEN (Anti-Riot Weapon, Enfield) is a multi-shot grenade launcher designed to give security forces the ability to fire more than one round without having pause and load. |

40mm

## **RUSSIA**

### **BG-15 40mm Grenade Launcher**

|           |                                                                                                                                                                                                                                                                                                                                                       |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OPERATION | : Manual, muzzle loaded                                                                                                                                                                                                                                                                                                                               |
| SPEED     | : +1                                                                                                                                                                                                                                                                                                                                                  |
| IA        | : 17                                                                                                                                                                                                                                                                                                                                                  |
| ROF       | : 1/3                                                                                                                                                                                                                                                                                                                                                 |
| RANGE     | : See Ammo                                                                                                                                                                                                                                                                                                                                            |
| WEIGHT    | : 1.166kg                                                                                                                                                                                                                                                                                                                                             |
| COST      | : Unknown                                                                                                                                                                                                                                                                                                                                             |
| NOTES     | : This is a small, very short barreled grenade launcher that can be attached to almost any member of the AK family. Rounds are muzzle loaded, and have no means of retention in the barrel, so great care should be taken in carrying a loaded weapon. The barrel also acts as the low pressure chamber, in the high-low ammunition propellant system |

40 x 46mmR

## **GERMANY**

### **H&K HK69**

|                |                                                                        |
|----------------|------------------------------------------------------------------------|
| OPERATION      | : Manual, break open                                                   |
| SPEED          | : 5                                                                    |
| IA             | : 17                                                                   |
| ROF            | : 1/5                                                                  |
| RANGE          | : See Ammo                                                             |
| MAGAZINE       | : Single-shot                                                          |
| WEIGHT         | : 2,62kg w/sling                                                       |
| OVERALL LENGTH | : 46cm/68cm                                                            |
| PRICE          | : Unknown                                                              |
| NOTES          | : This is the German answer to the American 40mm M79 grenade launcher. |

### **H&K HK79**

|                |                                                    |
|----------------|----------------------------------------------------|
| OPERATION      | : Manual, slide open                               |
| SPEED          | : +2                                               |
| IA             | : 17                                               |
| ROF            | : 1/4                                              |
| RANGE          | : See Ammo                                         |
| MAGAZINE       | : Single-shot                                      |
| WEIGHT         | : 1.5kg                                            |
| OVERALL LENGTH | : Unknown                                          |
| PRICE          | : Unknown                                          |
| NOTES          | : The HK79 GL can be mounted on the H&K G3 or G41. |

## **USA**

### **M79**

|                |                                                                                                                                                                                                                                                                           |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OPERATION      | : Manual, break open                                                                                                                                                                                                                                                      |
| SPEED          | : 6                                                                                                                                                                                                                                                                       |
| IA             | : 19                                                                                                                                                                                                                                                                      |
| ROF            | : 1/5                                                                                                                                                                                                                                                                     |
| RANGE          | : See Ammo                                                                                                                                                                                                                                                                |
| MAGAZINE       | : Single-shot                                                                                                                                                                                                                                                             |
| WEIGHT         | : 2,7kg                                                                                                                                                                                                                                                                   |
| OVERALL LENGTH | : 74cm                                                                                                                                                                                                                                                                    |
| PRICE          | : \$975 (1998)                                                                                                                                                                                                                                                            |
| NOTES          | : This was the first grenade launcher to use high-low pressure system and it was first fielded by the U.S. military in the late 50's. The basic design of the M79 was intentionally derived from single shot sporting shotguns allowing easy familiarity by new recruits. |

### **M203**

|                   |                                                                                          |
|-------------------|------------------------------------------------------------------------------------------|
| OPERATION         | : Manual, slide open                                                                     |
| SPEED             | : +2                                                                                     |
| IA                | : 17                                                                                     |
| ROF               | : 1/4                                                                                    |
| RANGE             | : See Ammo                                                                               |
| MAGAZINE          | : Single-shot                                                                            |
| WEIGHT (UNLOADED) | : 1,36kg                                                                                 |
| OVERALL LENGTH    | : 40.5cm                                                                                 |
| COST              | : \$875 (1998)                                                                           |
| NOTES             | : The M203 can be mounted on almost any rifle/carbine, but it takes an armorer to do it. |

### **TALON (product improved M203)**

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OPERATION      | : Manual, slide open                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| SPEED          | : +2 (on rifle)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| SPEED          | : 4 (w/shoulder stock)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| IA             | : 18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| ROF            | : 1/4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| RANGE          | : See Ammo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| MAGAZINE       | : Single-shot                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| WEIGHT         | : 1,36kg (unloaded)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| WEIGHT         | : 1,95kg (w/shoulder stock)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| OVERALL LENGTH | : 38cm (w/o stock)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| OVERALL LENGTH | : approx 75cm (w/ stock)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| PRICE          | : Unknown (approx \$1200 (\$300 for the stock))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| NOTES          | : The Talon is equipped with a quick release for the weapon combined with a universal mounting bar. By simple modifications to the mounting bar, it may be attached to most rifles/carbines, and a light folding stock for the launcher. Use of the mounting bar system has resulted in an unusual addition weapon that can be mounted under the rifle/carbine. The Itchaca Stakeout shotgun in .12g will fit on the mounting rail when fitted with the proper brackets. The obvious firepower is tremendous and is an especially good entry weapon for opening doors, using the shotgun for the hinges and lock while still having a fully loaded rifle/carbine at the ready. |

### **Itchaca Stakeout**

| <u>cost</u> | <u>name</u>     | <u>sk</u> | <u>ia</u> | <u>spd</u> | <u>rof</u> | <u>rng</u> | <u>wgt</u> | <u>action</u> | <u>cal</u> | <u>cap</u> | <u>notes</u>        |
|-------------|-----------------|-----------|-----------|------------|------------|------------|------------|---------------|------------|------------|---------------------|
| 550         | Ithaca Stakeout | 1         | 15        | +3         | 1          | 60         | 1.6        | pump          | 12g        | 4I         | cost incl. brackets |

40 x 53mmR

## USA

### MARK-19 MODEL 3

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OPERATION      | : Blowback                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| SPEED          | : 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| IA             | : 22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| ROF            | : 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| RANGE          | : See Ammo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| FEED           | : Flexible metal disintegrating link belt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| WEIGHT         | : 34kg (Tripod mount Wt: 29.5kg)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| OVERALL LENGTH | : 103cm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| COST           | : Unknown                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| NOTES          | : The Mark-19 Model 3 is a heavy automatic grenade launcher capable of being tripod mounted and firing the 40 x 53mmR family of high-velocity grenades originally designed for helicopter guns. The rounds fired use the high-low pressure system but are loaded to much higher velocities than the 40 x 46mmR rounds. Any attempt to fire the high velocity grenades in a low velocity weapon usually results in the destruction of the weapon and injury or death of the operator. Low velocity rounds could be fired in the Mark 19, but they would have to be singly loaded and would not operate the action. |

## 40mm "Special"

## SOUTH AFRICA

### ARMSCORE MGL-6

|                   |                                                                                                                                                                                                                                                                                 |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OPERATION         | : Manual, spring loaded                                                                                                                                                                                                                                                         |
| SPEED             | : 9/10                                                                                                                                                                                                                                                                          |
| IA                | : 21                                                                                                                                                                                                                                                                            |
| ROF               | : 1                                                                                                                                                                                                                                                                             |
| RANGE             | : 400                                                                                                                                                                                                                                                                           |
| MAGAZINE          | : 6 round (Cylinder)                                                                                                                                                                                                                                                            |
| WEIGHT (Unloaded) | : 5.3kg                                                                                                                                                                                                                                                                         |
| OVERALL LENGTH    | : 57cm/80cm                                                                                                                                                                                                                                                                     |
| PRICE             | : Unknown                                                                                                                                                                                                                                                                       |
| NOTES             | : The ARMSCORE Multishot Grenade Launcher (MGL) is a native South African design for a multishot 40mm grenade launcher. The MGL has a rotating cylinder that holds six 40mm grenades of any type (except the 40 x 53mmR rounds) as long as their overall length is under 120mm. |

## USA

### MM-1 MGL

|                |                                                                                                                                                                                                                                    |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OPERATION      | : Manual, spring loaded                                                                                                                                                                                                            |
| SPEED          | : 9                                                                                                                                                                                                                                |
| IA             | : 18                                                                                                                                                                                                                               |
| ROF            | : 1                                                                                                                                                                                                                                |
| RANGE          | : Depends on which grenades it fires.                                                                                                                                                                                              |
| MAGAZINE       | : 12 round (Cylinder)                                                                                                                                                                                                              |
| WEIGHT         | : 5.7kg (unloaded)                                                                                                                                                                                                                 |
| OVERALL LENGTH | : 64cm                                                                                                                                                                                                                             |
| COST           | : Unknown                                                                                                                                                                                                                          |
| NOTES          | : The MM-1 is a 12-round revolver-styled grenade launcher that can easily and quickly loaded using any 40mm grenade upto 101mm in length (except the 40 x 53mmR shells). Constructed of aluminum, steel and high strength plastic. |

# GRENADE LAUNCHER SHELLS

30mm (AGS-17)

## RUSSIA

### HE Fragmentation

|              |            |
|--------------|------------|
| ATTACK NR.   | : 3        |
| DMG FACTOR   | : 15       |
| BURST RADIUS | : 15m      |
| DMG TYPE     | : Puncture |
| IMPACT       | : Impact   |
| WEIGHT       | : 0.275kg  |

37 x 112mmRb

## UK

### AR1 Kinetic Energy Baton

|            |                                                                                                               |
|------------|---------------------------------------------------------------------------------------------------------------|
| TYPE       | : Plastic Impact Grenade Launcher Shell                                                                       |
| DEL.DAMAGE | : 14                                                                                                          |
| DMG TYPE   | : Impact                                                                                                      |
| MIN RANGE  | : 20m                                                                                                         |
| MAX RANGE  | : 100m                                                                                                        |
| WEIGHT     | : 0.144kg                                                                                                     |
| COST       | : \$13                                                                                                        |
| NOTES      | : Unlike most other baton rounds, this projectile is streamlined for better ballistic stability and accuracy. |

### AR2 Irritant Smoke CS

|                |                                                                                                                                                                                                                                |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TYPE           | : Burning Type Multiple Source CS Gas Grenade Launcher Shell                                                                                                                                                                   |
| EFFECT         | : Scatters 4 burning CS submunitions at 85-95m                                                                                                                                                                                 |
| FUZE           | : 1 seconds                                                                                                                                                                                                                    |
| SCATTER RADIUS | : 5m                                                                                                                                                                                                                           |
| AREA OF EFFECT | : 135m <sup>3</sup>                                                                                                                                                                                                            |
| BURN TIME      | : 12 seconds                                                                                                                                                                                                                   |
| WEIGHT         | : 0.144kg                                                                                                                                                                                                                      |
| COST           | : \$20                                                                                                                                                                                                                         |
| NOTES          | : When this round is fired, a 1-second fuse is initiated, which when it detonates (typically at 85-95m) releases four burning CS submunitions. The submunitions burn for about 12 seconds releasing a white cloud of CS smoke. |

### AR3 Crush-Nose Baton

|                |                                                                                                                                                                                                                                                                                                                                 |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TYPE           | : Plastic Impact Round w/ CS Agent Grenade Launcher Shell                                                                                                                                                                                                                                                                       |
| DMG FACTOR     | : 14                                                                                                                                                                                                                                                                                                                            |
| DMG TYPE       | : Impact                                                                                                                                                                                                                                                                                                                        |
| AREA OF EFFECT | : 10cm area                                                                                                                                                                                                                                                                                                                     |
| MIN RANGE      | : 20m                                                                                                                                                                                                                                                                                                                           |
| MAX RANGE      | : 50m                                                                                                                                                                                                                                                                                                                           |
| WEIGHT         | : 0.116                                                                                                                                                                                                                                                                                                                         |
| COST           | : \$19                                                                                                                                                                                                                                                                                                                          |
| NOTES          | : This is a variation of the AR1 in which the nose of the projectile has been hollowed out and quantity of powdered CS powder installed under a styrofoam cap. When the round hits, the nose shatters, spreading the Cs over a small 10cm area. The Cs will affect the target struck, but not contaminate the surrounding area. |

#### **AR4 Screening Smoke**

|                 |                                                                                                                                                                                                                                                            |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TYPE            | : Burning Type Multiple Source Screening Grenade Launcher Shell                                                                                                                                                                                            |
| EFFECT          | : Scatters 4 burning smoke canisters at 85-95m                                                                                                                                                                                                             |
| FUZE            | : 1 second                                                                                                                                                                                                                                                 |
| SCATTER RADIUS  | : 5m                                                                                                                                                                                                                                                       |
| AEREA OF EFFECT | : 420m <sup>3</sup>                                                                                                                                                                                                                                        |
| BURN TIME       | : 12 seconds                                                                                                                                                                                                                                               |
| WEIGHT          | : 0.178kg                                                                                                                                                                                                                                                  |
| COST            | : \$19                                                                                                                                                                                                                                                     |
| NOTES           | : This is a much like the AR2 but each of the four submunitions creates a dense cloud of white smoke. The smoke is non-toxic and is about three times as dense as the CS smoke from the AR2 round. Other colors are available on special order, cost \$21. |

#### **AR5 Barricade Penetrator**

|                |                                                                                                                                             |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| TYPE           | : Penetrating, Bursting Typr CS Gas Grenade Launcher Shell                                                                                  |
| EFFECTS        | : Penetrates target and releases powdered CS                                                                                                |
| PENETRATION    | : Auto Windshield @ 30m<br>Plywood @ 40m<br>Door (Interior) @ 60m<br>Window pane @ 80m                                                      |
| AREA OF EFFECT | : 100m <sup>3</sup>                                                                                                                         |
| WEIGHT         | : 0.13kg                                                                                                                                    |
| COST           | : \$19                                                                                                                                      |
| NOTES          | : This round is based on the streamlined projectile of the AR1, the intent being to penetrate and then release the contents of powdered Cs. |

40mm (BG-15)

### **RUSSIA**

#### **HE Fragmentation (Short)**

|              |                                                       |
|--------------|-------------------------------------------------------|
| TYPE         | : High Explosive Fragmentation Grenade Launcher Shell |
| FUZE TYPE    | : Impact                                              |
| ATTACK NR    | : 3                                                   |
| DMG FACTOR   | : 14                                                  |
| BURST RADIUS | : 15m                                                 |
| DMG TYPE     | : Puncture                                            |
| MIN RANGE    | : 5m                                                  |
| MAX RANGE    | : 420m                                                |
| WEIGHT       | : 0.25kg                                              |

#### **HE Fragmentation (Long)**

|              |                                                       |
|--------------|-------------------------------------------------------|
| TYPE         | : High Explosive Fragmentation Grenade Launcher Shell |
| FUZE TYPE    | : Impact                                              |
| ATTACK NR    | : 3                                                   |
| DMG FACTOR   | : 12                                                  |
| BURST RADIUS | : 15m                                                 |
| DMG TYPE     | : Puncture                                            |
| MIN RANGE    | : 5m                                                  |
| MAX RANGE    | : 300m                                                |
| WEIGHT       | : 0.26kg                                              |

40 x 46mmR

## AUSTRIA

### No. 92 Smoke/Incendiary

|              |                                           |
|--------------|-------------------------------------------|
| TYPE         | : Smoke/Incendiary Grenade Launcher Shell |
| ATTACK NR.   | : 1                                       |
| DMG FACTOR   | : 18                                      |
| BURST RADIUS | : 5m                                      |
| DMG TYPE     | : Burn                                    |
| BURN TIME    | : 20 sec                                  |
| MIN RANGE    | : Unknown                                 |
| MAX RANGE    | : 400m                                    |
| WEIGHT       | : 0,23kg                                  |
| NOTES        | : This grenade burn at 1200 degrees C.    |

## GERMANY

### DM-41 HE-FRAG

|            |                                                                                                                                                                                                                                                                                                                                                                                  |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TYPE       | : High Explosive Fragmentation Grenade Launcher Shell                                                                                                                                                                                                                                                                                                                            |
| ATTACK NR  | : 2                                                                                                                                                                                                                                                                                                                                                                              |
| DMG FACTOR | : 18                                                                                                                                                                                                                                                                                                                                                                             |
| DMG TYPE   | : Puncture                                                                                                                                                                                                                                                                                                                                                                       |
| MIN RANGE  | : 14m                                                                                                                                                                                                                                                                                                                                                                            |
| MAX RANGE  | : 400m                                                                                                                                                                                                                                                                                                                                                                           |
| WEIGHT     | : 0.23 kg                                                                                                                                                                                                                                                                                                                                                                        |
| NOTES      | : A particular complex fuze was developed for the DM-41 that is released by the setback created when the round is fired and arms from the centrifugal force of the round's spinning flight. The force of firing also ignites a delay fuze that burns for about 4 seconds, equivalent to a range of 400 meters. The self destruct feature of the fuze normally prevents any duds. |

## USA

### M381 HE (M386 HE)

|              |                                                                                                                                                                                                                                                                                                                                                |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TYPE         | : High Explosive Fragmentation Grenade Launcher Shell                                                                                                                                                                                                                                                                                          |
| ATTACK NR.   | : 2                                                                                                                                                                                                                                                                                                                                            |
| DMG FACTOR   | : 18                                                                                                                                                                                                                                                                                                                                           |
| BURST RADIUS | : 10m                                                                                                                                                                                                                                                                                                                                          |
| DMG TYPE     | : Puncture                                                                                                                                                                                                                                                                                                                                     |
| MIN RANGE    | : 3m (14m (M386))                                                                                                                                                                                                                                                                                                                              |
| MAX RANGE    | : 400m                                                                                                                                                                                                                                                                                                                                         |
| WEIGHT       | : 0,22kg                                                                                                                                                                                                                                                                                                                                       |
| NOTES        | : The M386 round is the more commonly issued round for standard troops because of its much longer safety zone. Both rounds have a small, ball-shaped grenade attached to the base of the fuze containing the explosive charge. The ball contains spherical coil of rectangular steel wire, notched every quarter of an inch for fragmentation. |

### M576 MP

|             |                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TYPE        | : Multi-Projectile Grenade Launcher Shell                                                                                                                                                                                                                                                                                                                                                                               |
| DEL. DAMAGE | : 18                                                                                                                                                                                                                                                                                                                                                                                                                    |
| DMG TYPE    | : Hydrostatic Shock                                                                                                                                                                                                                                                                                                                                                                                                     |
| MIN RANGE   | : -                                                                                                                                                                                                                                                                                                                                                                                                                     |
| MAX RANGE   | : 15m                                                                                                                                                                                                                                                                                                                                                                                                                   |
| WEIGHT      | : 0,11kg                                                                                                                                                                                                                                                                                                                                                                                                                |
| NOTES       | : The round is very short and the projectile consists of a squat plastic cylinder. Inside the cylinder sabot is a small cup holding 20 number 4 buckshots and being sealed with a snap-off cap. As the projectile leaves the muzzle, the several drilled air scoops along the circumference of the sabot cause it to quickly to loose speed. As the sabot falls away, the buckshots are free continue on to the target. |

### **M397A1 HE Airburst**

TYPE : High Explosive Fragmentation Grenade Launcher Shell w/ Rebound for Airburst  
FUSE DELAY : 80 milliseconds  
ATTACK NR. : 3  
DMG FACTOR : 18  
BURST RADIUS : 15m  
DMG TYPE : Puncture  
MIN RANGE : 14m  
MAX RANGE : 400m  
WEIGHT : 0,23kg  
NOTES : As most fragmentation grenades detonate at ground level, much of the fragmentation is absorbed by the ground, and so, the round is less efficient. A much more effective round would detonate in the air as an airburst and that is what the M397A1 attempts to do. When the projectile strikes the ground, the fuze fires an ejection charge and ignites an 80 millisecond pyro-technic fuse in the grenade. The grenade ball is blown into the air when the delay fuze detonates is about 1.5 m above the ground.

### **M433 HEDP**

TYPE : High Explosive Fragmentation and Armor Penetrating Grenade Launcher Shell  
ATTACK NR. : 2  
DMG FACTOR : 18  
BURST RADIUS : 10m  
DMG TYPE : Puncture  
PENETRATION : 5cm steel  
MIN RANGE : 14m  
MAX RANGE : 400m  
NOTES : This is a dual purpose impact type round intended to cause casualties from fragmentation, as well as penetrate up to 5cm of steel. The charge has a conical copper liner at its front to shape the blast into an armor piercing jet. This type of explosive charge is called a shaped charge and greatly increases the penetration effect of the round. The copper liner is vaporized into an armor piercing jet which actually causes the armor steel to flow away from it. The base and sides of the explosive charge are made up of serrated steel which fragments, giving this round its dual effect.

### **M583A1(WHITE), M661(GREEN), M663(RED) Star Parachute Flare**

TYPE : Illuminating/Signaling Colored Parachute Flare Grenade Launcher Shell  
EFFECT : Ejects a burning parachute flare at altitude illuminating an area w/  
90 000cp(M583A1), 8 000cp(M661), 20 000cp(M662)  
BURN TIME : 40 Seconds  
AREA OF EFFECT : 100m<sup>2</sup>  
WEIGHT : 0,22kg  
NOTES : Each of these rounds fires a long projectile containing a single pyrotechnic star attached to a small parachute assembly. When the round is fired, a small pyrotechnic delay fuze is ignited from the propellant gas. After the four to five second delay, the round has reached an altitude of 150 to 200 meters and an ejection charge is fired by the fuze. The ejection charge ignites the flare candle and ejects it through the top of the aluminum body. The flare lowers itself by a 50cm wide parachute which slows its descent rate to about 2 meters/second.

### **M713(RED), M715(GREEN), M716(YELLOW) Smoke Ground Markers**

TYPE : Burning Type Colored Signaling Grenade Launcher Shell  
BURN TIME : 8 Seconds  
AREA OF EFFECT : 620m<sup>3</sup>  
MIN RANGE : 45m  
MAX RANGE : 400m  
WEIGHT : 0,22kg  
NOTES : These rounds are used to mark areas and indicate targets with colored smoke. The fuze is a combination pyrotechnic and mechanical which ignites when the round is fired, but will not fire the smoke mixture until the round has traveled 45 meters to centrifugally arm the fuze. On impact, the fuze ignites the smoke mixture and blows open an escape hole at the back of the round. If the impact is insufficient to fire the fuze, the pyrotechnic portion will ignite the smoke charge after a delay of 8 to 10 seconds.

## **RP 707 CS**

TYPE : Burning Type CS Gas Irritant Grenade Launcher Shell  
BURN TIME : 10 Seconds  
AREA OF EFFECT : 250m<sup>3</sup>  
MIN RANGE : -  
MAX RANGE : 400m  
NOTES : The pyrotechnic fuze in the base of the projectile ignites when the round is fired and has a delay of three seconds. When the delay is over, an ignition device fires which ignites the CS/pyrotechnic mix and blows off the nose plug releasing the CS smoke. The body and the nose of the projectile are made of heavy aluminum to allow the round to penetrate double-thick windows, wooden doors, and barricades. The round will penetrate 4cm of fiberboard at 100 meters.

## **FERRET**

TYPE : Shattering Type Liquid CS Gas Irritant Grenade Launcher Shell  
AREA OF EFFECT : 125m<sup>3</sup>  
PENETRATION : 25mm Pineboard at 10m  
Auto Windshield at 50m  
Hollow Core (interior) Door at 100m  
MIN RANGE : -  
MAX RANGE : 100m  
WEIGHT : 0,12kg  
NOTES : The Ferret is a barricade penetrating, bursting-type CS round with little or no fragmentation potential and no possibility of fire. The casing is of polycarbonate plastic and the entire package is waterproof. The projectile is fin stabilized and is of a bore diameter that prevents it from engaging the rifling to a great extent but the round does spin in flight. The projectile shatters after penetration but will penetrate fully a given list of materials. The accuracy of this round is such that 90 percent of the rounds will group inside a 1 meter circle at 100 meters.

## **RUBBER IMPACT**

TYPE : Rubber Baton Grenade Launcher Shell  
DEL. DAMAGE : 10  
DMG TYPE : Impact  
MIN RANGE : 10m  
MAX RANGE : 30m  
NOTES : This is a baton type round designed to deliver a punishing but not damaging blow (blunt trauma). The projectile is a four-armed, right-angled cross that is folded under tension to a cylindrical form. The outer surfaces of the projectile are teflon coated to reduce bore friction. When fired, the arms unfold and the projectile takes up a cross-shaped form. The form of the projectile spreads the energy of its impact over a much larger area than conventional munitions of the type reducing the possibility of serious damage.

40 x 53mmR

## **USA**

### **M384 HE**

TYPE : High explosive fragmentation high velocity grenade launcher shell  
ATTACK NR. : 3  
DMG FACTOR : 18  
BURST RADIUS : 15m  
DMG TYPE : Puncture  
MIN RANGE : 20-35m  
MAX RANGE : 2200m  
WEIGHT : 0.34kg  
NOTES : Belted together as a 48-round belt carried in a metal box the entire package weight 24kg.

### **M433 HEDP**

TYPE : High explosive fragmentation and armor penetrating dual purpose high velocity grenade launcher shell  
ATTACK NR. : 2  
DMG FACTOR : 18  
BURST RADIUS : 10m  
DMG TYPE : Puncture  
PENETRATION : 5cm of steel  
MIN RANGE : 20-30m  
MAX RANGE : 2200m  
WEIGHT : 0.34kg  
NOTES : This dual purpose round has both an anti-personnel fragmentation effect as well as an armor penetrating capability, and is considered the standard combat round of the Mark 19.

### **M677 HE-T**

TYPE : High explosive fragmentation shell w/ tracer for high velocity grenade launcher  
ATTACK NR. : 3  
DMG FACTOR : 18  
BURST RADIUS : 15m  
DMG TYPE : Puncture  
MIN RANGE : 20-35m  
MAX RANGE : 2200m  
WEIGHT : 0.34kg  
NOTES : The M677 has a pyrotechnic tracer composition in the base its projectile that ignites when the round is fired. The tracer burns for about 10 seconds with a bright red light.

# HEAVY WEAPONS

## AUSTRIA

### LAT-500

|              |                                                |
|--------------|------------------------------------------------|
| SPEED        | : 10                                           |
| IA           | : 14                                           |
| CALIBER      | : 82mm                                         |
| TOTAL WEIGHT | : 7 kg                                         |
| LENGTH       | : 900mm                                        |
| RANGE        | : approx 300m                                  |
| PENETRATION  | : >500mm (armor), >1000mm (concrete)           |
| NOTES        | : Disposable shoulder-fired anti-armor weapon. |

## FINLAND

### M-55

|               |                                                                           |
|---------------|---------------------------------------------------------------------------|
| SPEED         | : 11                                                                      |
| IA            | : 16                                                                      |
| CALIBER       | : 55mm                                                                    |
| LENGTH        | : 1240mm                                                                  |
| WEAPON WEIGHT | : 8.5 kg                                                                  |
| ROUND WEIGHT  | : 2.5 kg                                                                  |
| RANGE         | : 200m                                                                    |
| PENETRATION   | : 200mm (armor)                                                           |
| NOTES         | : RPG-styled reloadable anti-armor weapon of more elaborate construction. |

## FRANCE

### LRAC-89

|         |                                                                  |
|---------|------------------------------------------------------------------|
| SPEED   | : 11                                                             |
| IA      | : 18                                                             |
| CALIBER | : 88.9mm                                                         |
| LENGTH  | : 1600mm                                                         |
| WEIGHT  | : 8.2 kg                                                         |
| NOTES   | : Reloadable recoilless rifle type weapon. Current French issue. |

#### **AT Round**

|             |                                    |
|-------------|------------------------------------|
| RANGE       | : 600m                             |
| PENETRATION | : 400mm (armor), 1300mm (concrete) |

#### **AP/AV Round**

|              |                 |
|--------------|-----------------|
| ATTACK NR    | : 6             |
| DD           | : 24            |
| BURST RADIUS | : 30m           |
| DMG TYPE     | : Puncture      |
| RANGE        | : 600m          |
| PENETRATION  | : 100mm (armor) |

#### **Smoke Round**

|            |          |
|------------|----------|
| RANGE      | : 450m   |
| SMOKE DUR. | : 35 sec |

#### **Illumination Round**

|              |                   |
|--------------|-------------------|
| RANGE        | : 450m            |
| ILLIMINATION | : 300,000 candela |
| DURATION     | : 30 sec          |

### **Wasp-58**

SPEED : 8  
IA : 14  
LENGTH : 800mm  
WEIGHT : 3 kg  
RANGE : 300m  
PENETRATION : 700mm (armor)  
NOTES : Disposable anti-armor weapon that uses the countershot method.

### **DARD-120**

SPEED : 11  
IA : 18  
LENGTH : 1600mm  
WEIGHT : 14 kg  
RANGE : 300m  
PENETRATION : 820mm (armor)  
NOTES : This is a heavy reloadable anti-armor weapon that is designed to defeat main battle tanks. An advanced sight is under development that adds 6 kg to weight and increases range to 600m

### **Eryx**

SPEED : 10  
IA : 11  
LENGTH : 925mm  
WEIGHT : 11 kg  
RANGE : 25-600m (3.6 sec to max range)  
PENETRATION : 900mm (armor)  
NOTES : This is a man-portable shoulder fired wire-guided anti-tank missile. This is one of the few anti-tank missiles that can be fired from enclosed spaces.

### **MILAN 2**

SPEED : 10  
IA : 11  
LENGTH : 769mm  
WEIGHT : 6.65 kg  
RANGE : 25-2000m  
FLIGHT TIME : 13sec (to max range)  
PENETRATION : 1060mm (armor)  
NOTES : One of the best and most common medium anti-tank missiles. Wire-guided.

### **APILAS**

SPEED : 11  
IA : 17  
CALIBER : 112mm  
LENGTH : 1290mm  
WEIGHT : 9 kg  
RANGE : 330m  
PENETRATION : 700mm (armor), 2000mm (concrete)  
NOTES : This is one of the new generation of heavy disposable anti-tank rockets.

## GERMANY

### Panzerfaust 3

SPEED : 11  
IA : 16  
CALIBER : 110mm (There are also 90 and 125mm HEAT rounds)  
LENGTH : 1200mm  
WEIGHT : 12kg  
RANGE : 300m (moving), 500m (stationary)  
PENETRATION : 700mm (armor) (110mm HEAT)  
NOTE : This is a shoulder fired reloadable RPG-type anti-armor weapon. There are also HESH, IR Smoke, Smoke, and Illumination rounds. With the addition of a infra-red sensor this is used as the Panzerfaust Off-route Mine System. German service.

### Armbrust (Crossbow)

SPEED : 10  
IA : 14  
LENGTH : 850mm  
WEIGHT : 6.3 kg  
RANGE : 300m  
PENETRATION : 300mm (armor)  
NOTES : This disposable anti-armor rocket is unique for the almost lack of signature (no flash or smoke, noise less than a pistol shot). It also uses the countershot method so it can be fired from enclosed spaces.

## ISRAEL

### B-300

Speed : 11  
IA : 17  
Caliber : 82mm (the USMC version might be 84mm)  
Length : 1400mm  
Weight : 8 kg (loaded)  
Range : 400m  
Penetration : 400mm (armor)  
NOTES : A fairly typical example of modern rocket launchers, in which a sealed round is attached to the rear of the firing unit and discarded after firing. The USMC uses a modified version intended as a bunker buster as the SMAW.

## SPAIN

### M65 Rocket Launcher

SPEED : 11  
IA : 18  
CALIBER : 88.9mm  
LENGTH : 1640mm  
WEIGHT : 8.5 kg (loaded)  
RANGE : 450m  
PENETRATION : 400mm (armor)  
NOTES : No info.

## **C-90C**

|             |                                                                                                           |
|-------------|-----------------------------------------------------------------------------------------------------------|
| SPEED       | : 10                                                                                                      |
| IA          | : 14                                                                                                      |
| CALIBER     | : 90mm                                                                                                    |
| LENGTH      | : 840mm                                                                                                   |
| WEIGHT      | : 3.9 kg                                                                                                  |
| RANGE       | : 400m                                                                                                    |
| PENETRATION | : 400mm (armor), 1000mm (concrete)                                                                        |
| NOTES       | : This is a fair representative of the current generation of large caliber disposable anti-armor weapons. |

## **SWEDEN**

### **Miniman**

|             |                                                                      |
|-------------|----------------------------------------------------------------------|
| SPEED       | : 7                                                                  |
| IA          | : 14                                                                 |
| CALIBER     | : 74mm                                                               |
| LENGTH      | : 900mm                                                              |
| WEIGHT      | : 2.9 kg                                                             |
| RANGE       | : 150m                                                               |
| PENETRATION | : 340mm (armor)                                                      |
| NOTES       | : One of the older generation of smaller caliber disposable weapons. |

### **AT-4**

|             |                                                                                                                                                                                                                                                                                                |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SPEED       | : 10                                                                                                                                                                                                                                                                                           |
| IA          | : 15                                                                                                                                                                                                                                                                                           |
| CALIBER     | : 84mm                                                                                                                                                                                                                                                                                         |
| LENGTH      | : 1000mm                                                                                                                                                                                                                                                                                       |
| WEIGHT      | : 6 kg                                                                                                                                                                                                                                                                                         |
| RANGE       | : 300m                                                                                                                                                                                                                                                                                         |
| PENETRATION | : See notes                                                                                                                                                                                                                                                                                    |
| NOTES       | : The AT4 fulfils all the fighting man's requirements for a light, effective, preloaded, weapon. It is rugged, easy to use and functions in all environments. With its high hit probability and specially developed behind armour effect the AT4 is an anti-armour system to be reckoned with. |

The AT4 consists of the basic disposable weapon that can be preloaded with any of the following warheads:

- HEAT with a penetration capability in excess of 420 mm and devastating behind armour effect .
- HEDP for anti-armour, support and for knocking out the enemy in buildings, bunkers or fortifications. This unique warhead can be set to impact action or delayed action .
- HP high penetration warhead for defeating tanks with 500- 600 mm armour.

The AT4 CS can be fired from confined spaces and fitted with an HP warhead. It is extremely effective in urban warfare.

### **RBS-56 BILL-2**

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SPEED       | : 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| IA          | : 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| DIAMETER    | : 150mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| LENGTH      | : 900mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| WEIGHT      | : 27 kg (firing unit)<br>16 kg (missile)<br>11 kg (sight unit)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| RANGE       | : 150-2000m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| FLIGHT TIME | : 200 m/s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| PENETRATION | : approx 525mm (armor)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| NOTES       | : The BILL-2 man-portable, anti-tank missile system can defeat any MBT on the battlefield and will be just as effective on the battlefields of the future. It has an effective range of 150-2200m, refined overfly top-attack (OTA) technology, gained from the highly successful BILL-1, and double warhead arrangement with interacting shaped charge warheads. By utilizing an advanced sensor system that either recognizes the turret or centre of the target and determines the exact position for the two vertically fired warheads to ignite, BILL attacks the weakest point, destroying the add-on armour protection and the complex main armour. |

### **M3 Carl Gustav**

SPEED : 11  
IA : 16  
CALIBER : 84mm  
LENGTH : 1130mm  
WEIGHT : 9 kg (unloaded)  
NOTE : The most widespread western recoilless rifle, which has been around for decades and is used by most everyone. There are also HE, DP, Smoke and Illuminating ammunition.

#### **84mm HEAT**

WEIGHT : 2.6 kg  
RANGE : 450m  
PENETRATION : 400mm (armor)  
NOTES : This is the standard anti-armor warhead for the Carl Gustav range of weapons.

#### **84mm FFV597 HEAT**

MOD. LENGTH : 1500mm  
WEIGHT : 9.5 kg  
RANGE : 300m  
PENETRATION : 900mm (armor)  
NOTES : This is a new heavy rocket boosted anti-armor round intended to go against MBTs. The rocket booster is loaded into the rear of the weapon like other rounds, but the oversized warhead (120mm) is loaded from the front and connected internally.

## **USSR**

### **RPG-2**

SPEED : 11  
IA : 18  
DIAMETER : 40mm (launch tube), 82mm (warhead)  
LENGTH : 1494mm  
WEIGHT : 4.67 kg (loaded)  
RANGE : 150m  
PENETRATION : 180mm (armor)  
NOTES : This is the first Soviet RPG and was developed directly from the German Panzerfaust of WW2.

### **RPG-7V**

SPEED : 11  
IA : 17  
DIAMETER : 40mm (launch tube), 85mm (warhead)  
LENGTH : 1400mm  
WEIGHT : 7kg  
PROJECTILE WEIGHT : 2.25kg  
RANGE : 300m (moving target), 500m (stationary target)  
PENETRATION : 330mm (armor)  
NOTES : The RPG-7 is the most common anti-armor weapon in the world. The V variant is simply an updated version.

### **RPG-18**

SPEED : 10  
IA : 15  
CALIBER : 64mm  
LENGTH : 1000mm  
WEIGHT : 2.7 kg  
RANGE : 200m  
PENETRATION : 375mm (armor)  
NOTES : This appears to be a Russian copy of the M72 LAW.

## **SPG-9**

SPEED : 11  
IA : 20  
CALIBER : 73mm  
WEIGHT : 59.5 kg  
LENGTH : 2110mm  
RANGE : 1300m  
PENETRATION : 390mm (armor)  
NOTES : A widely distributed recoilless rifle that is crew served and thanks to its long range is often used in bombardments.

## **AT-4 Sagger**

SPEED : 10  
IA : 11  
WEIGHT : 11.3 kg  
LENGTH : 880mm  
RANGE : 300m  
PENETRATION : 400mm (armor)  
NOTES : One of the first man-portable anti-armor guided missiles. Uses a very early guidance system where the user actually maneuvered the round onto the target (modern wire guided missiles simply require the user to keep the crosshairs on the target and the computer makes course corrections).

## **AT-4 Spigot**

SPEED : 11  
IA : 11  
WEIGHT : 40 kg  
RANGE : 2500m  
FLIGHT TIME : 200 m/s  
PENETRATION : 600mm (armor)  
NOTES : This appears to be a copy of the Milan. Wire-guided.

## **United Kingdom**

### **LAW-80**

SPEED : 11  
IA : 18  
CALIBER : 94mm  
LENGTH : 1000mm (folded) / 1500mm (firing position)  
WEIGHT : 9.6 kg (carrying configuration) / 8.8 kg (firing configuration)  
MIN RANGE : 20m  
MAX RANGE : 500m  
PENETRATION : 650mm (armor)  
NOTES : One of the most extreme of the large caliber disposable anti-armor weapons. A sporting rifle is used with the system, which contains five rounds – any one of which can be fired without revealing position. The 9mm ammunition used is matched ballistically to the main projectile marked by a tracer and by flash head to record a hit on the hard target. The operator can select and fire the main projectile at any time.

## **USA**

### **M18A1**

SPEED : 11  
IA : 18  
CALIBER : 57mm  
LENGTH : 1564mm  
WEIGHT : 20.15 kg  
RANGE : 450m  
PENETRATION : approx 250mm (armor)  
NOTES : This is a small caliber recoilless rifle. Has not been produced in the US in decades, but exact copies are made in China and several South American countries.

### **M72A3 LAW**

|             |                                                                                                                             |
|-------------|-----------------------------------------------------------------------------------------------------------------------------|
| SPEED       | : 6                                                                                                                         |
| IA          | : 14                                                                                                                        |
| CALIBER     | : 66mm                                                                                                                      |
| LENGTH      | : 893mm                                                                                                                     |
| WEIGHT      | : 2.36 kg                                                                                                                   |
| RANGE       | : 150m                                                                                                                      |
| PENETRATION | : 305mm (armor)                                                                                                             |
| NOTES       | : The first and most widespread of the disposable anti-armor weapons. More often used against fortifications than vehicles. |

### **M20 Super Bazooka**

|             |                                                                                                                               |
|-------------|-------------------------------------------------------------------------------------------------------------------------------|
| SPEED       | : 11                                                                                                                          |
| IA          | : 18                                                                                                                          |
| CALIBER     | : 89mm                                                                                                                        |
| LENGTH      | : 1549mm                                                                                                                      |
| WEIGHT      | : 9.5kg                                                                                                                       |
| RANGE       | : 110m                                                                                                                        |
| PENETRATION | : approx 350mm (armor)                                                                                                        |
| NOTES       | : Entering service shortly after WW2 this rocket launcher is simple, rugged, and still widely encountered in the third world. |

### **M47 Dragon**

|             |                                                                                                                                                                                                                                                                                  |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SPEED       | : 11                                                                                                                                                                                                                                                                             |
| IA          | : 16                                                                                                                                                                                                                                                                             |
| LENGTH      | : 1154mm                                                                                                                                                                                                                                                                         |
| WEIGHT      | : 13.8 kg                                                                                                                                                                                                                                                                        |
| RANGE       | : 1000m                                                                                                                                                                                                                                                                          |
| FLIGHT TIME | : 100 m/s                                                                                                                                                                                                                                                                        |
| PENETRATION | : approx 500mm (armor)                                                                                                                                                                                                                                                           |
| NOTES       | : This is the US medium anti-armor weapon. Unique in that instead of using a sustainer engine and maneuver fins, it uses a series of maneuver rockets that are fired as maneuver commands are sent. Generation 3 rounds in current service weight 21.5 kg, have a range of 1500m |

### **M202A1 FLASH**

|                   |                                                                                                                                                                                                                                                                                                              |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SPEED             | : 10                                                                                                                                                                                                                                                                                                         |
| IA                | : 30                                                                                                                                                                                                                                                                                                         |
| ROF               | : 2                                                                                                                                                                                                                                                                                                          |
| CALIBER           | : 66mm                                                                                                                                                                                                                                                                                                       |
| LENGTH            | : 670 / 880 mm                                                                                                                                                                                                                                                                                               |
| WEIGHT (UNLOADED) | : 5.2 kg                                                                                                                                                                                                                                                                                                     |
| NOTES             | : The M202A1 is intended as a replacement for the M9A1-7 and other flame-throwers. Using a four-round clip and having four tubes the M202A1 can place an incendiary rocket up to 750 m away one rocket each second. The danger space of the backblast area is 15 meters long and 15 meters wide at its base. |

#### **M74 Incendiary Rocket**

|              |                                                                                                                                                                                                                                                                                                                                                               |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TYPE         | : Bursting Type Incendiary Rocket                                                                                                                                                                                                                                                                                                                             |
| ATTACK NR    | : 4                                                                                                                                                                                                                                                                                                                                                           |
| BURST RADIUS | : 20 m                                                                                                                                                                                                                                                                                                                                                        |
| DEL DAMAGE   | : 18                                                                                                                                                                                                                                                                                                                                                          |
| DMG TYPE     | : Burn                                                                                                                                                                                                                                                                                                                                                        |
| BURN TIME    | : 8-9 seconds                                                                                                                                                                                                                                                                                                                                                 |
| MIN RANGE    | : 9 m                                                                                                                                                                                                                                                                                                                                                         |
| MAX RANGE    | : 750 m                                                                                                                                                                                                                                                                                                                                                       |
| WEIGHT       | : 6.85 kg (4-round clip)                                                                                                                                                                                                                                                                                                                                      |
| NOTES        | : This is the standard round for the M202A1 FLASH. On impact with the target, the detonator fires a burster which ruptures the casing of the warhead, spraying the filler over the burst radius. The filler consists of TPA (TriethylaluminumPyrophoricAgent) which ignites spontaneously on exposure of air and burns with an temperature of 1000 degrees C. |

**M96 CS Rocket**

TYPE : Bursting Type CS Gas Rocket  
EFFECT : Spreads powdered CS agent over area creating a large dust cloud.  
AREA OF EFFECT : 12m burst radius  
9 x 64m cloud downwind  
MIN RANGE : 9 m  
MAX RANGE : 750 m  
WEIGHT : 7 kg (4-round clip)  
NOTES : The base detonating fuze arms after launch and detonates on impact. When the fuze fires, a burster ruptures the warhead spreading the CS dust in a large cloud.

**TOW**

SPEED : 11  
IA : 11  
LENGTH : 1675mm  
WEIGHT : 25.7 kg (missile)  
93 kg (launcher)  
RANGE : 3750m  
FLIGHT TIME : 200 m/s  
PENETRATION : approx 850mm (armor)  
NOTES : Tube-launched, Optically sighted, Wire-guided. This is the west's standard heavy anti-armor missile. Barely man portable, this is primarily a vehicle mounted system.

**M67 Recoilless Rifle**

SPEED : 11  
IA : 26  
SIGHT : M103 3x Telesopic sight  
CALIBER : 90 x 414mmR  
WEAPON LENGTH : 135cm  
RANGE : See Ammo  
WEIGHT : 15.9kg  
NOTES : The M76 is the largest shoulder fired recoilless rifle produced in the United States. In use since the 1950's for antitank purposes, the M67 has been replaced for that job by the wire guided missile, specifically, the M47 Dragon. The danger area of the M67 is cone shaped. The blast spreads out in a 120 degrees cone 25m long and 50m wide. It can be carried by one man but is normally used by a two man crew, one acting as the gunner and the other as the loader.

**M371 HEAT**

TYPE : High Explosive Antitank Shell  
EFFECT : Heavy Steel Penetration, Secondary Blast and Fragmentation  
ATTACK NR : 3  
DD : 24  
DMG TYPE : Puncture  
PENETRATION : 200mm+ (armor)  
MIN RANGE : 20m  
MAX RANGE : 2100m  
WEIGHT : 4.2kg

**M591 HE**

TYPE : High Explosive Fragmentation Shell  
ATTACK NR : 7  
DD : 24  
BURST RADIUS : 35m  
DMG TYPE : Puncture  
MIN RANGE : 30m  
MAX RANGE : 2100m  
WEIGHT : 6kg

### **30mm ASP**

|                |                                                                                                                                                                                                                                                                                                                                                                               |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CALIBER        | : 30 x 113mmB                                                                                                                                                                                                                                                                                                                                                                 |
| AMMUNITION     | : M789 HEDP, M799 HEI                                                                                                                                                                                                                                                                                                                                                         |
| TYPE OF FIRE   | : Selective                                                                                                                                                                                                                                                                                                                                                                   |
| ROF            | : 4 / 7                                                                                                                                                                                                                                                                                                                                                                       |
| SPEED          | : 11                                                                                                                                                                                                                                                                                                                                                                          |
| IA             | : 26                                                                                                                                                                                                                                                                                                                                                                          |
| SIGHT          | : None                                                                                                                                                                                                                                                                                                                                                                        |
| DEL DAMAGE     | : See Ammo                                                                                                                                                                                                                                                                                                                                                                    |
| PENETRATION    | : See Ammo                                                                                                                                                                                                                                                                                                                                                                    |
| MIN RANGE      | : 150m                                                                                                                                                                                                                                                                                                                                                                        |
| MAX RANGE      | : 4000m                                                                                                                                                                                                                                                                                                                                                                       |
| FEED           | : Flexible Disintegrating Metal Link (M29)                                                                                                                                                                                                                                                                                                                                    |
| MAGAZINE       | : 80 rnd belt                                                                                                                                                                                                                                                                                                                                                                 |
| OVERALL LENGTH | : 202.7cm                                                                                                                                                                                                                                                                                                                                                                     |
| WEIGHT         | : 48 kg                                                                                                                                                                                                                                                                                                                                                                       |
| NOTES          | : The ASP is an automatic, self powered machine cannon firing 30mm shells and capable of being mounted on any mounting that will accept the M2HB machinegun, including the M3 tripod. The ASP uses the same 30mm ammunition developed for the M230 Chain Gun used in the Apache Gunship. There is no integral sight on the weapon and sighting systems are mounted as needed. |

McDonnell-Douglas has developed a variable, reflex sight for it (IA +5).

#### **M789 HEDP**

|              |                                                              |
|--------------|--------------------------------------------------------------|
| TYPE         | : High Explosive Dual Purpose Armor Penetrating Cannon Shell |
| EFFECT       | : Blast and Fragmentation w/ Steel Penetration               |
| ATTACK NR    | : 2                                                          |
| BLAST RADIUS | : 10m                                                        |
| DD           | : 24                                                         |
| DMG TYPE     | : Puncture                                                   |
| PENETRATION  | : 70mm + (armor)                                             |
| WEIGHT       | : 33kg (80 rnd belt)                                         |
| NOTES        | :                                                            |

#### **M799 HEI**

|              |                                                                                                                                                                                                                                                                                                                                                                       |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TYPE         | : High Explosive Incendiary Cannon Shell                                                                                                                                                                                                                                                                                                                              |
| EFFECT       | : Blast and Fragmentation w/ Incendiary Effect                                                                                                                                                                                                                                                                                                                        |
| ATTACK NR    | : 3                                                                                                                                                                                                                                                                                                                                                                   |
| BLAST RADIUS | : 15m                                                                                                                                                                                                                                                                                                                                                                 |
| DD           | : 18                                                                                                                                                                                                                                                                                                                                                                  |
| DMG TYPE     | : Burn                                                                                                                                                                                                                                                                                                                                                                |
| WEIGHT       | : 33 kg (80 rnd belt)                                                                                                                                                                                                                                                                                                                                                 |
| NOTES        | : The incendiary effect is obtained by mixing a powdered pyrophoric metal with the explosive. When the fuze detonates the filler on impact with the target, the shell casing is shattered, providing the antipersonnel fragments. The heat of the explosion ignites the metallic particles mixed in with it and drives the burning particles out with the shock wave. |