

AIRCRAFT AMMUNITION

30 X 113 MM

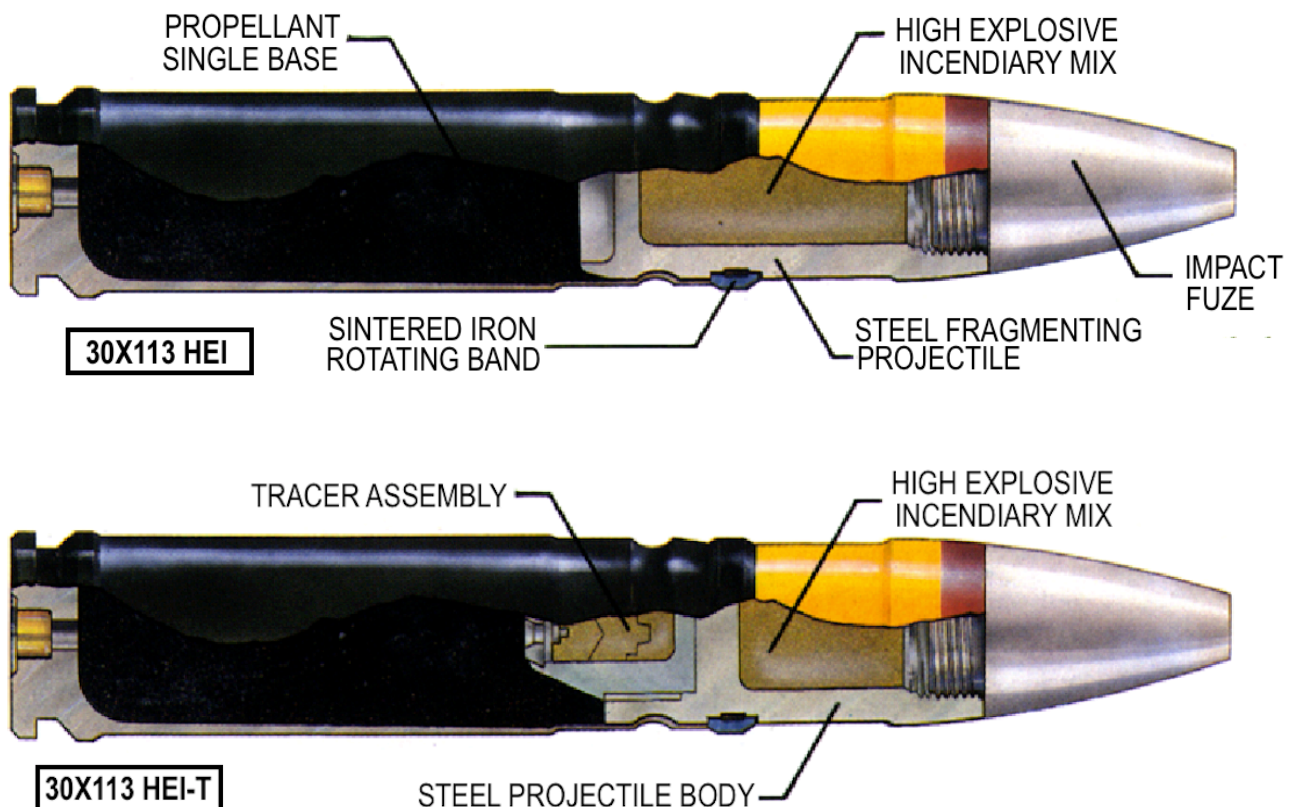


-1- GENERAL

Ammunition calibre 30X113 mm was developed to effectively counter targets in the AIR-TO-AIR and AIR-TO-GROUND roles.

The range of fuzes allow the rounds to penetrate well into the target before detonating, thereby causing maximum damage due to overpressure, blast, fragmentation and incendiary effects.

Fuzes comply to all MIL-331-A safety requirements and have an extended muzzle safety distance of 8 meters.



-2- COMPATIBLE AIRCRAFT CANNONS

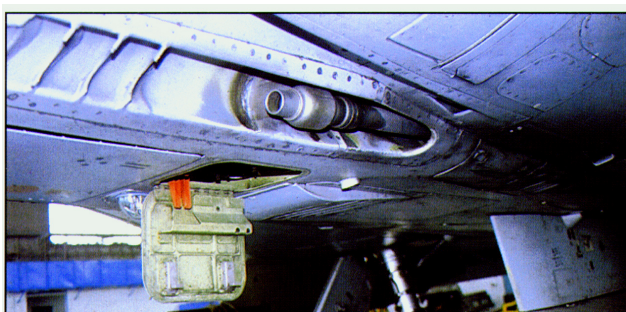
MAUSER MG213

DEFA 550 SERIES (551, 552, 552B, 552C, 553, 554)

DEBO-30-M2

GENERAL ELECTRIC M230

Mk164



-3- TYPES OF 30X113 MM AMMUNITION

The range of ammunition comprises the following types:

TP	Target Practice
TP-T	Target Practice Tracer
HEI	High Explosive Incendiary (NOSE FUZE)
HEI-T	High Explosive Incendiary Tracer (NOSE FUZE)
SAPHEI	Semi Armour Piercing High Explosive Incendiary
APCI	Solid Cored Armour Piercing Incendiary
APCI-T	Solid Cored Armour Piercing Incendiary Tracer

Depending on the type of targets to be engaged, these rounds may be linked as mixed types to ensure optimal terminal effects. Examples of mixes are:-

Air-to-Air : 1 HEI, 1 SAPHEI or
LH feed HEI and RH hand feed SAPHEI

Air-to-Ground

Anti-personel : HEI
Medium targets : HEI and SAPHEI
Hard targets : SAPHEI and APCI / APCI-T



-4- 30X113 MM SPECIFICATIONS

Round Length	200 mm
Round Mass	447 g
Shell Mass (Filled and Fuzed)	237 g
Muzzle Velocity	820 m/s
Driving Band	Soft Iron
Primer Cap Type	Electric
Chamber Pressure Maximum	336 Mpa
Chamber Pressure Average	300 Mpa
Cartridge Case Material	Steel
Cartridge Case Length	113 mm
Fuze Action	Impact
Fuze Arming Distance	8 m min
Fuze Self Destruct Time	5-13 s
Penetration	25 mm of armour plate (110 Kg / mm ²) at 0° deg (NATO) & range of 100 m
Packing	60 linked rounds in a box (mass: 60 Kg) dimensions: 40 cm x 30 cm x 28 cm One 20 ft container takes 500 boxes
Hazzard Class	1.2G UN # 0093



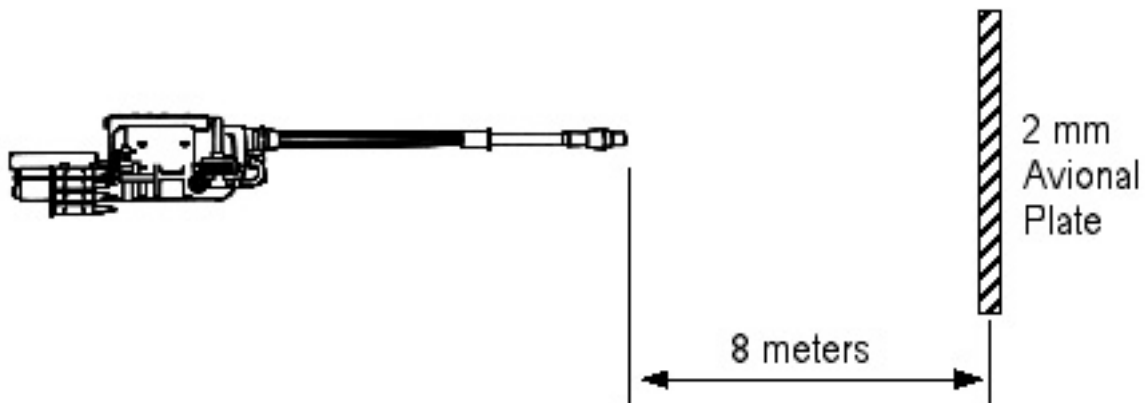
-5- 30X113 MM SAFETY AND PERFORMANCE TESTS

A series of very stringent tests during production of ammunition are performed in order to ensure maximum safety.

-5.1- HEI and SAPHEI rounds

Muzzle safety

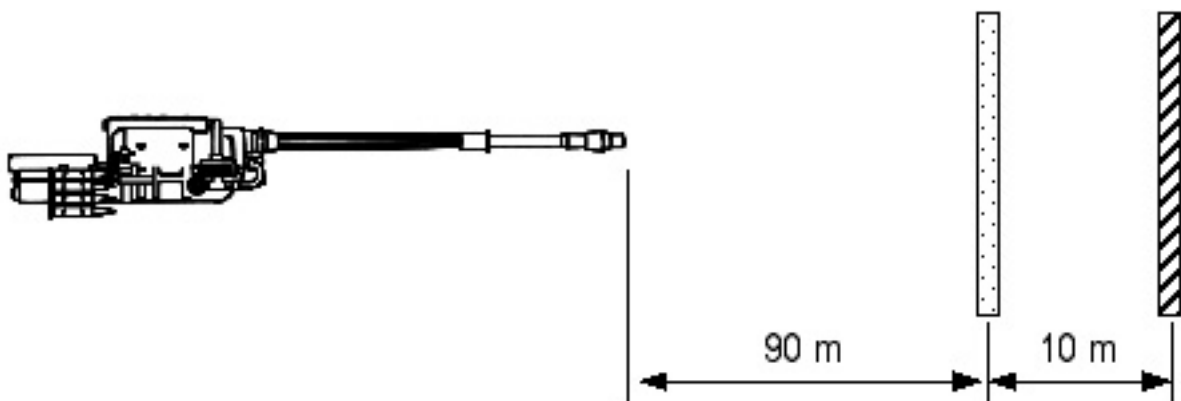
The fuze must not fully arm before 8 m. This is demonstrated by the following test: firing at a 2 mm avional plate placed 8 meters in front of the cannon (muzzle).



Rain safety

This test shows that the fuze can safely be used in heavy rain without the shell. The 800 gm/m² cardboard represents a 6 mm diameter raindrop and is placed at 90 meters from the cannon, where the fuze is fully armed.

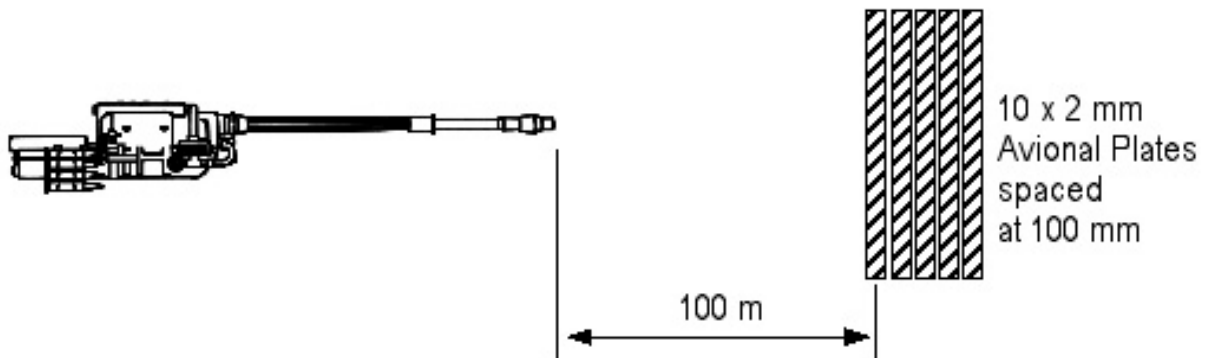
A second target plate of 2mm Avional is placed 10 meters behind the cardboard target to prove that the fuze was fully armed.



-5.2- Terminal effects - HEI, SAPHEI and APCI rounds

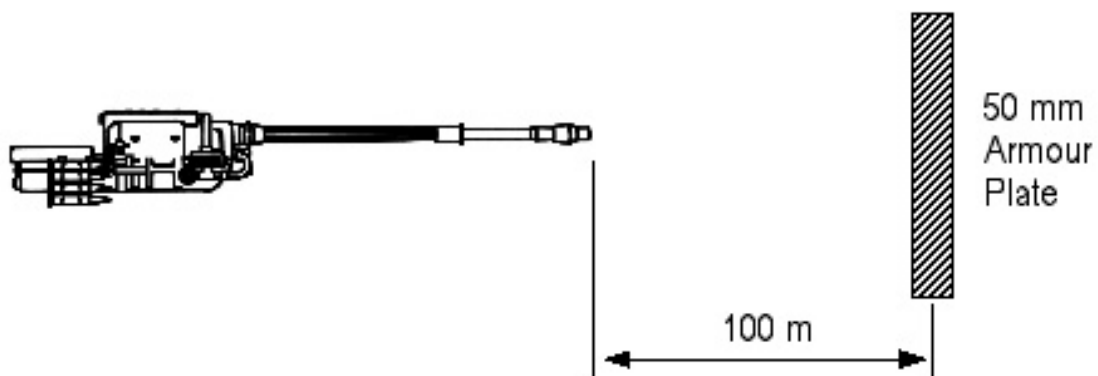
Fragmentation, Blast and Incendiary effects

To demonstrate the terminal effects of HEI and SAPHEI rounds, these rounds are fired against multiplate targets constructed out of 2 mm Avional plates spaced 100 mm apart at 100 meters from the barrel.



Armour Penetration and Incendiary effects

This penetration and incendiary test entails firing a SAPHEI round at a 15 mm armour plate and a APCI round at a 50 mm armour plate placed at 100 meters. A diesoline soaked cloth will be suspended behind both plates to show the incendiary capabilities.



Automatic firing

A short burst of HEI and SAPHEI rounds test demonstrates the devastating fire power of the 30 mm weapon and ammunition system in its intended firing mode.

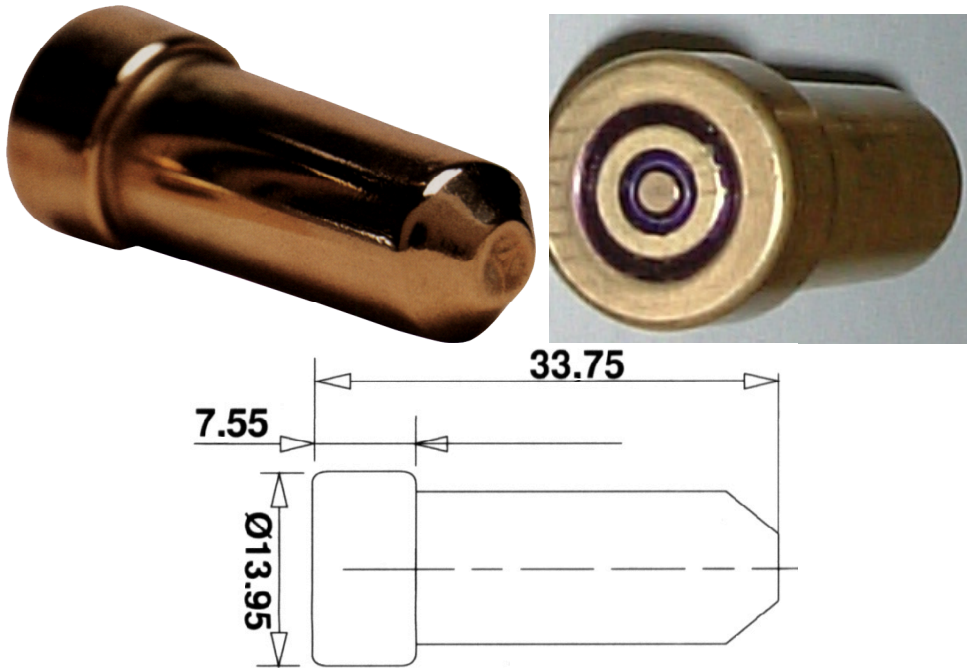


Self Destruct and Tracing Time

With the weapon elevated at approximately 18° the self destruct time of 10 ± 5 sec and tracing time of 4 seconds minimum is observed.



-6- IN-FLIGHT RE-ARMING / RECOCKING CARTRIDGE



The rearming cartridge allows multiple in-flight recocking, up to six times in the DEFA 554 and DEBO-30-M2 cannons and up to two times in older models (552 / 553 / Mk164) in case that a cartridge of ammunition in the revolver chamber misfires for any reason (faulty primer or other reasons).

The rearming cartridge produces 1294 KJ (Kilo-Joules), impulse energy, which is sufficient to rotate the five chambers revolver drum (index) to the next chamber position.

The cartridge is manufactured from 70:30 brass and features an electric primer and double base propellant.