

# M109A4 BE 155mm SELF-PROPELLED MEDIUM HOWITZER

The M109 family is the most common Western indirect-fire support weapon of armored and mechanized infantry divisions. The M109 was first introduced in the early 1960s and has been upgraded a number of times.

The Belgian M109A2/A3 were upgraded in 2008 to M109A4 BE standard through the "MLU M109 program" (Mid-life Update).



## **This upgrade included :**

- Semi-automatic loader (SAL)
- Installation of 1,2 Kw diesel generator (APU)
- New stowage racks
- Improved hydraulic system (MHS) for traversing mechanism
- Improved NBC/RAM kits with air-filter
- Generator 180 amp
- Improved Ballistic Turret (IBC) by RDM (the Netherlands)
- Gun mount M178

## **The standard upgrade from M109A2/A3 to A4 includes :**

### **NBC/RAM**

The installation of “Nuclear, Biological, and Chemical/Reliability, Availability, and Maintainability” product improvement kits.

Air purifier and heaters are mounted in the cab for the crew.

### **Hydraulic traversing mechanism**

The traversing mechanism is operated with a hydraulic clutch instead of an electric.

A clutch valve with override valve provides for power traversing in the event of an electrical failure to the clutch valve solenoid.

### **Electrical improvements**

A combat override switch allows emergency starting.

The 100 amp alternator has been replaced by a 180 amp alternator.

### **Subfloor drains**

Crew compartment subfloor drains have been added

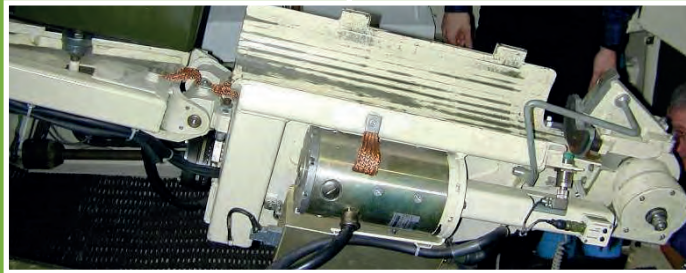


## Improvements specific for the Belgian M109A4 BE

**SAL:** Semi Automatic Loader with Breech Activating Device (BAD) and Temperature Measurement System (TMS)

The SAL increases the firing rate to 3 rounds within the first 20 seconds and a total of 6 rounds within the first minute.

In addition a Breech Activating Device (BAD) makes sure that the breech is closed and opened in any position (elevation) of the canon. A Temperature Measurement Sensor helps the crew to recognize a "cook off" of a propellant charge.



**MHS:** Metric Hydraulic System

The MHS consists of standardized elements with metric measures. All tubes and connections are in Cr-Ni Alloy for better flow and low maintenance.

**APU:** Auxiliary Power Unit

The APU that provides 1.2Kw at 28VDC improves the availability of the M109 and conserves battery power.

With the main engine switched off the M109 howitzer is still operational.



**SSPC:** Stowage System Propellant Charges

The SSPC enables the crew to store in a very safe way 38 propellant charges in the howitzer.

**Bag storage:** Installation of two external storage allowing each 3 back packs.

## TECHNICAL DETAILS M109A4 BE

**Land of origin :** United States

### Dimensions :

- Length : 9.12 m
- Width : 3.15 m
- Height : 3.28 m
- Ground clearance : 0.45 m
- Weight : 23.586 kg (empty)  
24.948 kg (combat loaded)

**Crew :** 6 persons (2 loaders, 1 gunner, 1 assistant gunner, 1 commander, 1 driver)

### Main armament (Howitzer M185, 155mm with gun mount M178)

- Caliber : 155mm L - 39 caliber
- Max Range : 18,50 to 23,50 km
- Max fire rate : 3 rounds first 20 seconds  
6 rounds first minute (SAL)
- Elevation : -5° to 75°
- Travers : 360°

### Secondary armament :

- Machine gun : caliber .50 (M2 Heavy Barrel)
- Panoramic telescope M117

### Mobility :

- Engine : Detroit Diesel 8V-71Turbo
- Transmission : Allison XTG411-series
- Speed : 64 km/h
- Range : 349 km
- Fuel content : 133 gallons – 502,74 liters
- Tracks : Diehl (model 109.2)

### Condition Equivalent Full Charge:

The total EFC life of a tube is 6375 EFC, 1 EFC represents one round from the highest normal charge used. The average EFC of the available vehicles is 286,33 which corresponds with a remaining barrel life of 95%.

**Quantity available:** 22 EA M109A4 BE

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