

# ARCHIVED REPORT

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## 155 GH 52 APU 155mm Howitzer

### Outlook

- Licensed production by Egypt was reportedly completed in 2012
- Patria continues to promote the 155 GH 52 APU on the international market, despite a lack of sales beyond the Egyptian licensed production contract
- Renewed production for possible Egyptian follow-on procurement remains the only realistic prospect for this weapon system

### Orientation

**Description.** A towed 155mm artillery system.

**Sponsor.** The Finnish Ministry of Defense sponsored the development and Finnish Army procurement of the 155 GH 52 APU.

**Status.** Development through serial production.

**Total Produced.** Through 2023, we estimate the prime contractor and Egyptian licensee produced two

prototypes and 324 service-delivery 155 GH 52 APU pieces.

**Application.** Indirect fire artillery support for maneuver forces at the battalion through division levels.

**Price Range.** In 2024 U.S. dollars, the 155 GH 52 APU carries an estimated unit price of \$820,300.

### Contractors

#### Prime

<b>Patria Land Systems Oy</b>	<a href="http://www.patria.fi">http://www.patria.fi</a> , Naulakatu 3, Tampere, Finland, Tel: + 358 20 4691, Fax: + 358 20 469 2695, Email: <a href="mailto:vammas@patria.fi">vammas@patria.fi</a> , Prime
<b>Abu Zaabal Engineering Industries Co</b>	<a href="http://www.aze.com.eg">http://www.aze.com.eg</a> , Abu Zaabal El Balad Kaliyobiya, PO Box 5888 Heliopolis, West Cairo, Egypt, Tel: + 20 2 228 16237, Fax: + 20 2 228 13647, Email: <a href="mailto:aza@aze.com.eg">aza@aze.com.eg</a> , Licensee

#### Subcontractor

<b>Deutz AG</b>	<a href="http://www.deutz.com">http://www.deutz.com</a> , Ottostrasse 1, Koln-Porz (Eil), Germany, Tel: + 49 221 822 0, Fax: + 49 221 822 5850, Email: <a href="mailto:info@deutz.com">info@deutz.com</a> (78-kW Diesel APU)
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Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 75 Glen Road, Suite 302, Sandy Hook, CT 06482, USA; [rich.pettibone@forecast1.com](mailto:rich.pettibone@forecast1.com)

## 155 GH 52 APU 155mm Howitzer

### Technical Data

**Crew.** Nine.

**Muzzle Brake.** Single-baffle.

**Recoil System.** Hydropneumatic.

**Breech Mechanism.** Automatic horizontal sliding wedge.

**Carriage Type.** Split-trail.

**APU.** A Deutz 78-kilowatt (104.6-hp) air-cooled, supercharged diesel engine mounts on the front of the carriage. This engine drives a hydrostatic mechanism,

which in turn drives four hydraulically operated motors (one for each roadwheel).

Another hydraulic motor operates the ordnance traverse and elevation mechanism.

**Shield.** None.

**Ammunition.** The 155 GH 52 APU is compatible with all NATO-standard separate-bagged 155mm ammunition, as well as Extended Range Full Bore / Base Bleed (ERFB/BB) projectiles.

**Dimensions.** The following data reflect the latest production standards.

	<u>SI Units</u>	<u>U.S. Units</u>
Caliber	155 mm	6.10 in
Length overall	11 m	36.08 ft
Barrel length	52 cal/8.06 m	52 cal/26.44 ft
Traveling width	2.82 m	9.25 ft
Firing width	8.89 m	29.17 ft
Traveling height	2.25 m	7.38 ft
Firing height	2.25 m	7.38 ft
Traveling weight	13.51 tonnes	14.89 tons
Firing weight	13.50 tonnes	14.88 tons

**Performance.** The ordnance range data reflect firing ERFB/BB projectiles. The 155 GH 52 APU can accommodate a maximum tow speed of 80 kmph (49.7 mph).

	<u>SI Units</u>	<u>U.S. Units</u>
Elevation	+70 deg	+70 deg
Depression	-5 deg	-5 deg
Traverse	35 deg left/35 deg right	35 deg left/35 deg right
Maximum range	41,300 m	45,165.7 yd
Maximum rate of fire	10 round/m	10 round/m
Sustained rate of fire	8 round/m	8 round/m

The barrel has a rated service life of at least 3,600 equivalent full charges.

### Variants/Upgrades

**Variants.** The prime contractor has developed (albeit only to the prototype stage) a 45-caliber version without the APU, designated 155 GH 45.

**Modernization and Retrofit Overview.** Not applicable at this time.

### Program Review

**Background.** In 1989, (then) Patria Vammas began to privately develop the 155 GH 52 APU as a replacement for the 155 K83 in Finnish Army service. The 155 GH 52 APU addressed the lack of an APU on the 155 K83, as well as conformed to the latest 52-caliber/23-liter artillery standard of the Quadrilateral Ballistics Agreement between France, Germany, Italy, the United Kingdom, and the United States.

#### *Finnish Procurement*

The development program for two KX prototypes ran through the mid-1990s. In 1996, the Finnish Defense Forces designated the definitive design model the 155 GH 52 APU. The Finnish Army ordered 27 pieces in 1997; deliveries began the following year. Patria completed this initial serial production run in 2003. The

## 155 GH 52 APU 155mm Howitzer

155 GH 52 APU also carries the Finnish Army designation 155 K98. The Finnish Army placed a follow-on order for 155 additional GH 52 APUs in November 2000. At least one more follow-on order is possible.

**Description.** The distinguishing feature of the 155 GH 52 APU is the 52-caliber barrel, mounting a single-baffle muzzle brake and a fume extractor.

### *Design Simplifies Operation*

A semi-automatic, horizontally sliding breech mechanism secures the 23-liter chamber. The firing

mechanism employs electric primers and an automatic primer loading-and-cocking device. The loading tray and pneumatic flick rammer hinge off the right side of the cradle; the crew must load the bag charge manually.

The 155 GH 52 APU requires a crew of nine for the towing vehicle and ordnance; actual loading and firing requires seven or eight crewmembers. In an emergency, two people can bring the piece into action. The design incorporates a backup hydraulic system, as well as the capability to slave off another piece's power source.



Finnish 155mm Artillery in Action

Source: Finnish Defense Forces

## Funding

The Finland Ministry of Defense funds the development and Finnish Army procurement of this ordnance.

## Worldwide Distribution/Inventories

**Export Potential.** Patria secured an export sale to Egypt in August 1999. Egypt reportedly completed a licensed production run of the 155 GH 52 APU in 2012. This speaks well of the 155 GH 52 APU, which combines leading-edge ordnance technology with a mid-range unit price. The 155 GH 52 APU may score further sales.

**Countries.** Finland; Egypt.

**155 GH 52 APU 155mm Howitzer****Forecast Rationale**

The Finnish Army procured 54 towed 155 GH 52 APU howitzers. The Forecast International Weapons Group projects no further procurement by the Finnish Army at this time.

However, Vladimir Putin's expansionist ambitions, and particularly Russia's incursion into Ukraine, have shaken Finland's traditional neutral stance between NATO and Russia. Indeed, Finland formally joined NATO in April 2023. Whether this move precipitates a significant increase in Finnish defense spending remains to be seen. Still, the 155 GH 52 APU program could benefit from such an increase.

In the meantime, the 155 GH 52 APU program must look to resurrecting its export sales potential.

***A Lone Export Customer***

In 2012, Abu Zaabal Engineering Industries of Egypt completed its licensed serial production of the 155 GH 52 APU howitzer for the Egyptian Army. We estimate the Egyptian Army procured 270 units.

To date, Egypt remains the only known export customer for the 155 GH 52 APU howitzer. However, we believe that the Egyptian program might still lead to additional export sales.

Without renewed Finnish procurement or Egyptian licensed production, the 155 GH 52 APU program remains on life support, with no other viable sales prospects on the horizon.