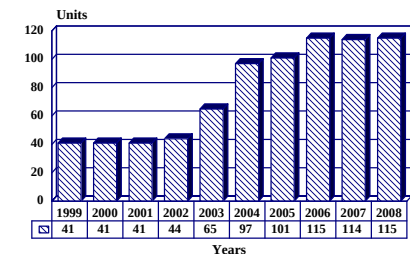


Panzerhaubitze 2000 155 mm Self-Propelled Howitzer - Archived 4/2000

Outlook

- Serial production of this advanced design self-propelled artillery system underway, with service deliveries ongoing
- A total of 594 systems to be manufactured for Germany
- Italy to manufacture the Panzerhaubitze 2000 under license
- System being further promoted on the export market

10 Year Unit Production Forecast
1999 - 2008



Orientation

Description. A tracked 155 millimeter self-propelled artillery system

Sponsor. The development and procurement of the Panzerhaubitze 2000 is being sponsored by the Federal Republic of Germany's Ministry of Defense through the Rüstungsabteilung (Armament Department), the Bundeswehrverwaltungsamt (Federal Office of Defense Administration) and the Bundesamt für Wehrtechnik und Beschaffung (Federal Office for Military Technology and Procurement).

Contractors. This self-propelled artillery system has been developed and is being manufactured by the "Northern" team consisting of Wegmann & Company of Kassel and MaK System Gesellschaft of Kiel; this production team is also called WECO. Wegmann is considered to be the prime contractor. These firms are located in the Federal Republic of Germany. Blohm + Voss, Bodenseewerke Gerätetechnik, Daimler Benz Aerospace, Diehl Remscheid, Motoren- und Turbinen-Union, Otobreda, Renk and Rheinmetall Industrie are the principle subcontractors.

Licensees. In the mid-nineties, negotiations began with Otobreda of Italy for the license production of the

Panzerhaubitze 2000. This agreement was finalized in late 1998.

Status. Two competitively developed test beds were fabricated and tested over a three-year period by the teams involved in the development program. Under a separate contract, Rheinmetall Industrie has developed the 52 caliber cannon. In September 1990, the selection of the winning design was made and development of four definitive prototypes begun. The operational testing of these prototypes is nearly complete as the initial serial production is ongoing. The first service deliveries are expected in the immediate future.

Total Produced. As of January 1, 1999, one pre-prototype and four prototype systems had been fabricated under the development program. In addition, the first 20 serially produced systems had been completed.

Application. A mobile medium to long range artillery support system for the field army at the battalion level.

Price Range. In equivalent 1999 United States dollars, the serially produced Panzerhaubitze has a projected unit price of \$4.2448 million.

Technical Data

Design Features. Very advanced design featuring a 52 caliber cannon, automatic loading with a 60 round magazine and state-of-the-art fire control. As of 1999, the Panzerhaubitze 2000 is considered by most analysts as being the best self-propelled artillery system of any type in the world.

Crew. The Panzerhaubitze 2000 has a five-man crew: commander, layer, shell loader, charge loader and driver. Three men can operate the system in an emergency.

Muzzle Brake. A multi-slot design is fitted.

Recoil System. A hydropneumatic recoil system is used in the new 52 caliber cannon.

Breech Mechanism. A vertical sliding block breech mechanism is used.

Ammunition. The 52 caliber cannon is compatible with all NATO standard 155 millimeters ammunition, including the latest technology rounds now in development.

Dimensions. As of early 1999, the following technical data are applicable to the production standard systems.

	<u>SI units</u>	<u>US units</u>
Length overall	11.67 meters	38.29 feet
Width	3.58 meters	11.74 feet
Height	3.46 meters	11.35 feet
Combat weight	55.33 tonnes	60.99 tons
Fuel capacity	520 liters	138.3 gallons
Ordnance caliber	155 millimeters	6.10 inches
Ordnance length	52 calibers/8.06 meters	52 calibers/26.43 feet

Performance. The maximum speed and range of the vehicle is on a metalled road. The maximum cannon range is with the standard M107 projectile; 40 km (43,744 yd) can be achieved with assisted projectiles.

	<u>SI units</u>	<u>US units</u>
Maximum speed	60 kilometers/h	37.26 miles per hour
Maximum range	427 kilometers	265.17 statute miles
Step	1.0 meters	3.28 feet
Trench	3.0 meters	9.84 feet
Slope	26%	26%
Gradient	50%	50%
Fording	1.5 meters	4.92 feet
Elevation	+65°	+65°
Depression	-2.5°	-2.5°
Traverse	360°	360°
Maximum ordnance range	30 kilometers	32,808.33 yards
Maximum rate of fire	3 rounds in 10 seconds	3 rounds in 10 seconds
Sustained rate of fire	8 rounds per minute	8 rounds per minute

Engine. The Motoren- und Turbinen-Union MT 881 supercharged eight-cylinder diesel engine is used in the Panzerhaubitze 2000. This engine is rated at 736 kW (986.99 hp) at 50 revolutions per second (3,000 rpm). The power-to-weight ratio is 13.37 kW per tonne (16.26 hp per tonne). A 24 volt electrical system is fitted.

Gearbox. The Renk HSWL 284 automatic gearbox is used in this self-propelled artillery system. This automatic gearbox has four forward and two reverse gear ratios and features an integrated clutch and steering mechanism.

Suspension and Running Gear. The Panzerhaubitze 2000 uses a torsion bar type suspension with seven dual tired roadwheels on each side with the drive sprocket at the front and idler at the rear. Three track return rollers and four linear shock dampers are fitted on each side.

Fire Control. The Panzerhaubitze 2000 is designed for autonomous and automatic operation. This artillery system employs an advanced computer-based fire control system called the GPA 2000; Bodenseewerk Gerätetechnik and Sondertechnik provide this equipment. The GPA 2000 features an attitude heading

reference unit, control and display unit and odometer unit. A digital ballistic computer and automated gun control system are incorporated. A roof mounted

thermal sight with integral laser rangefinder is fitted. Mechanical backup systems are included.

Variants/Upgrades

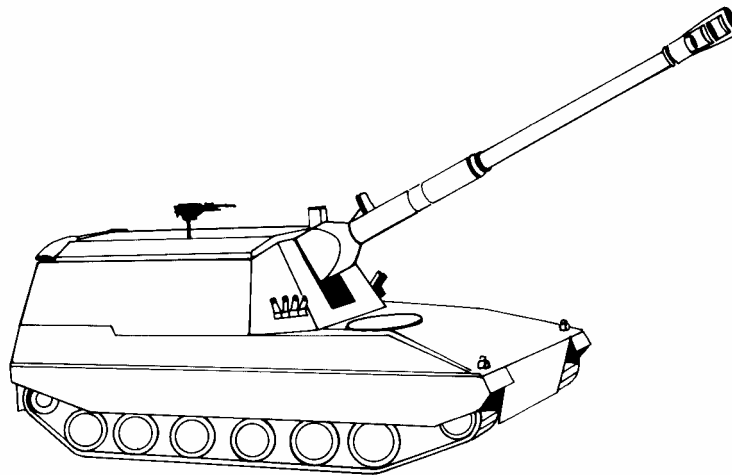
Variants. None at this time although the Panzerhaubitze 2000 has been proposed for Sweden's requirement for a new coastal artillery system. A major requirement for this potential mission area is for the system to interface with the Swedish ARTE 734 fire control system. For the operational evaluations, two of the Panzerhaubitze 2000 pre-prototype systems were suitably modified and sent to Sweden; this was in May 1996 with Swedish testing following.

In order to address a Polish requirement for a new 155 millimeters self-propelled howitzer, the contractor Wegmann has teamed with Huta Stola Wola to offer the Panzerhaubitze 2000 turret on the T-72 tank chassis.

Modernization and Retrofit Overview. Despite the fact that the first serially produced systems have yet to be delivered as this was being written, a number of

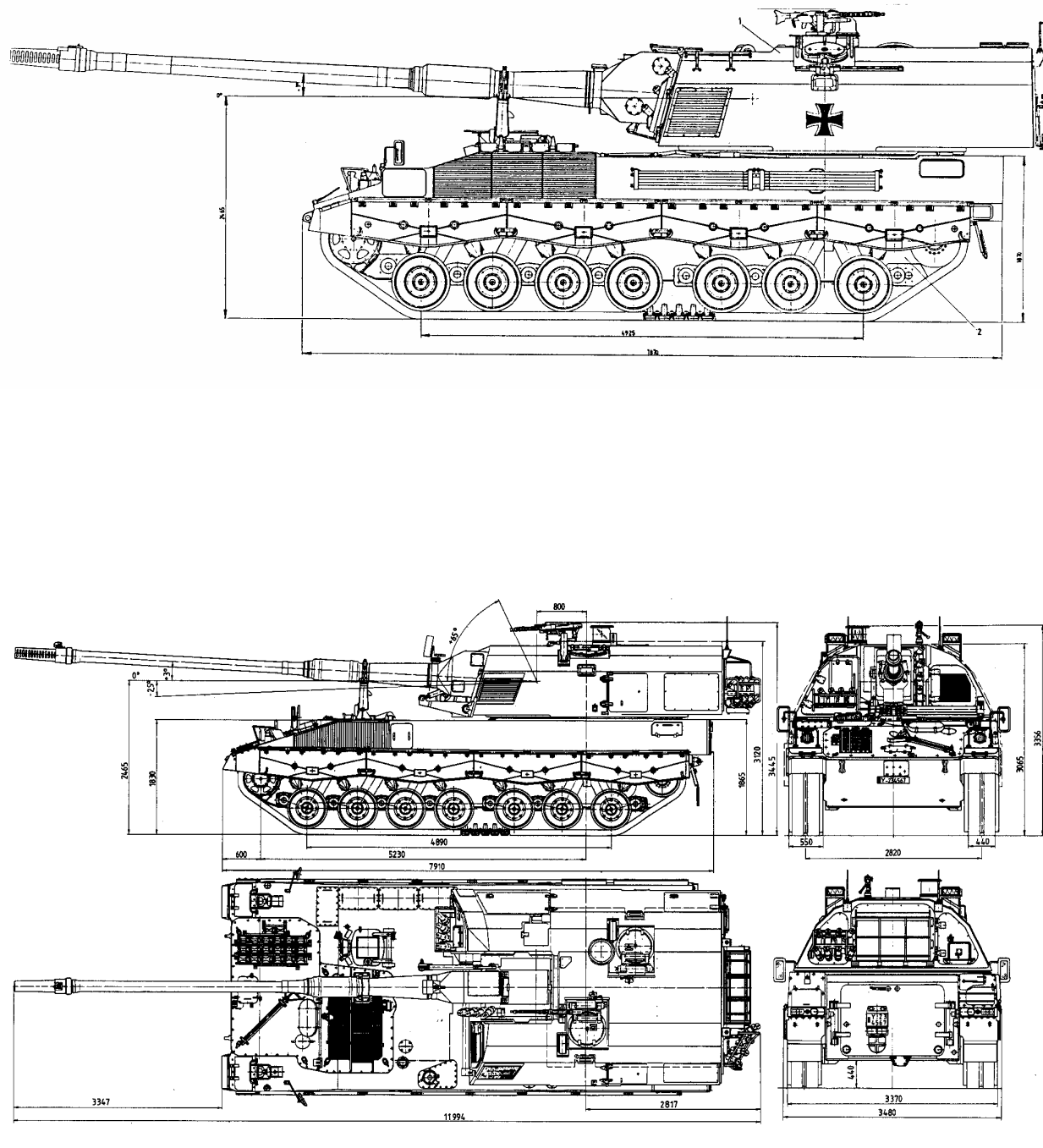
improvements are already being planned for the Panzerhaubitze 2000 system. Among the items being investigated are improved ammunition handling and loading components and an automatic charge loader for a faster rate of fire, a more powerful engine (with reduced emissions) and new gearbox with five forward gear ratios for increased on-road and off-road speeds, new, more modern fire control components, decision aids and fire control system self-diagnostics, addition of an air conditioning system, and increased armor protection. Also being investigated is the potential use of special coatings that will help to reduce the system's radar and thermal signatures. These coatings may well be integrated with a new lower visibility camouflage system. It is also desired to further improve the already impressive Multiple Round Simultaneous Impact capability of the Panzerhaubitze 2000 system.

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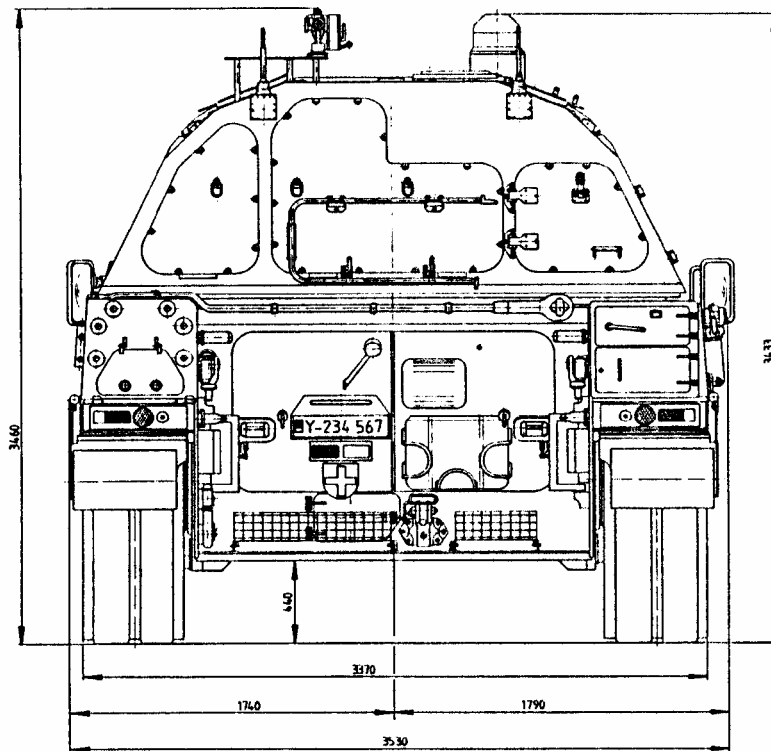
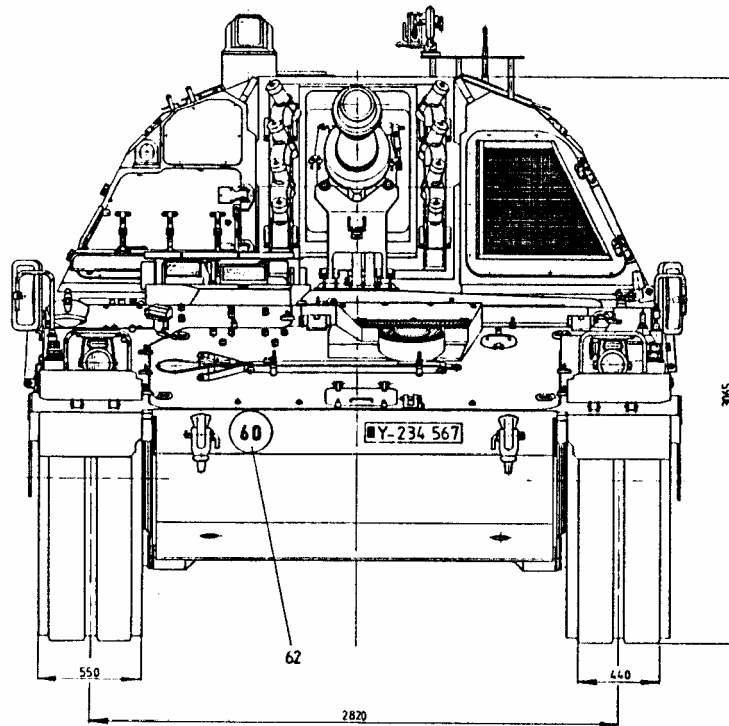
Northern Team concept for PANZERHAUBITZE 2000

Source: Forecast International



Panzerhaubitze 2000

Source: Wegmann



Panzerhaubitze 2000

Source: Wegmann

