

ARCHIVED REPORT

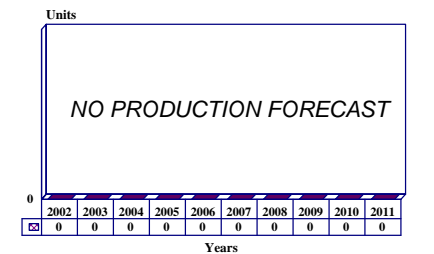
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Mathogo - Archived 3/2003

Outlook

- Production concluded
- Argentina is the only operator of the Mathogo
- Spending shortfalls long hindered Argentina's defense research efforts
- Argentina has ceased its anti-armor research program
- Foreign systems expected to meet Argentine anti-armor missile needs

10 Year Unit Production Forecast
2002 - 2011



Orientation

Description. Wire-guided anti-tank missile system.

Sponsor. The Argentinian Ministry of Defense through the Argentinian Army.

Contractors. Instituto de Investigaciones Cientificas y Tecnicas de las Fuerzas Armadas (CITEFA), Buenos Aires, Argentina, is the prime contractor for the Mathogo program. The CITEFA is the armed forces' scientific and technical research center and Argentina's only organization developing missiles. CITEFA also manufactures an array of howitzers, rockets, and rocket launchers.

Status. Production for the Argentinian Army is complete. The Mathogo entered service with the Argentinian Army in 1979.

Total Produced. Approximately 2,134 Mathogo missiles are believed to have been produced through the end of 1992. Annual fabrication rates and totals are speculative, although some 2,000 were said to be in inventory by 1991-92. Production concluded in 1992.

Application. The destruction of armored vehicles and main battle tanks from ground-based (vehicle mounted) and airborne launch platforms (helicopters and aircraft).

Price Range. No specific Mathogo per unit price has been released by the Argentinian government. Estimates place the cost of this missile at \$49,800. The cost of the CIBEL-2K-equipped weapons was roughly \$3,950 for the missile and another \$24,750 for the firing post.

Technical Data

	<u>Metric</u>	<u>US</u>
Dimensions		
Length:	998 mm	3.27 ft
Diameter:	102 mm	4.02 in
Weight (missile):	11.3 kg	24.86 lb
Weight (launcher):	8.2 kg	18.04 lb
Performance		
Speed:	90 m/s	295.2 ft/s

	<u>Metric</u>	<u>US</u>
Range:	3,000 m	9,840 ft
Penetration:	400 mm	1.31 ft

Propulsion. The Mathogo uses a solid-propellant booster and sustainer rocket motors.

Control & Guidance. The Mathogo uses command to line-of-sight wire guidance in conjunction with a control unit outfitted with a telescope sight. Commands are transmitted via the control wire and are effected by means of spoilers in the wings.

Launcher Mode. The Mathogo can be launched from the ground by infantry troops, as well as from vehicles, helicopters, and light aircraft launchers.

Warhead. The Mathogo is equipped with a 2.8-kilogram shaped charge warhead.

Variants/Upgrades

There are only two versions of the Mathogo: one with a range of 2,000 meters and another capable of 3,000 meters. Both systems use the same fire control unit.

Argentina is continuing its research into the development of anti-armor weapon systems, but production of a Mathogo follow-on has not occurred.

Program Review

Background. Argentina has developed a fairly extensive national arms industry and is the only Latin American country to actually put indigenous missile systems into production. One of its systems is the Mathogo anti-tank missile. Developed in the late 1970s by CITEFA, the Mathogo is a first-generation wire-guided anti-armor weapon designed to meet the specific requirements of the Argentinian Army. Development was completed in 1978 after some 100 test launches.

The Mathogo, somewhat similar in appearance to the British Vigilant, is composed of a watertight container and launcher, 50 meters of cable, a control unit, and binocular sight. Each control unit can be connected to four missiles and can be augmented by a distributor unit. The system can be carried by an infantryman or mounted on vehicles, helicopters, or slow-flying light

aircraft. However, the airborne applications suffer from poor accuracy due to the relatively low sophistication of the guidance system.

After the Mathogo entered service with the Argentinian Army, deficiencies were discovered in the missile's control unit operation and sighting system. There were also problems with its slow speed.

CIBEL-2K. To fix the problems in the Mathogo, Argentina developed an improvement package known as CIBEL-2K. This package provided a semi-automatic control unit and increased the missile's speed beyond the 200 mph rate of the original. The improvement package also enhanced the missile's ballistic performance. Development of this improvement package has been concluded with no production having taken place.

Funding

No specific information is available concerning funding levels or procurement quantities for the Mathogo. Procurement of the system commenced around 1979.

Recent Contracts

No specific contract awards have been announced by CITEFA or the Argentinian government.

Timetable

<u>Year</u>	<u>Major Development</u>
1970s	Mathogo development commenced
1978	Mathogo development completed
1978-79	Mathogo procurement commenced

<u>Year</u>	<u>Major Development</u>
1992	Mathogo production concluded
1997(est.)	Argentina developing CIBEL-2K upgrade package
2001(est.)	Argentina ceases anti-armor missile development effort

Worldwide Distribution

There are no known export customers for Mathogo, although Argentina is said to have offered the system to foreign countries.

User Country. The **Argentinian Army** is the only known operator of the Mathogo anti-tank missile system.

Forecast Rationale

Argentina's economic meltdown has left little funding for military research or procurement programs. If it had not already been terminated, Argentina's present plight would most assuredly have spelled the end of its anti-armor missile program. Sometime in the future Argentina could again become involved in missile research, but for now its limited budget is unable to support such an effort.

Mathogo production has long since been concluded, and the missile system is still believed to be in active service with the Argentinian military. The Mathogo occupies a unique position within Latin America, being among an extremely small number of regional missile systems to actually complete development and then enter an extended manufacturing phase.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR PRODUCTION

Missile	(Engine)	thru 01	<u>High Confidence Level</u>				<u>Good Confidence Level</u>				<u>Speculative</u>		Total 02-11	
			02	03	04	05	06	07	08	09	10	11		
CITEFA														
MATHOGO	UNSPECIFIED	2134	0	0	0	0	0	0	0	0	0	0	0	0
Total Production		2134	0	0	0	0	0	0	0	0	0	0	0	0