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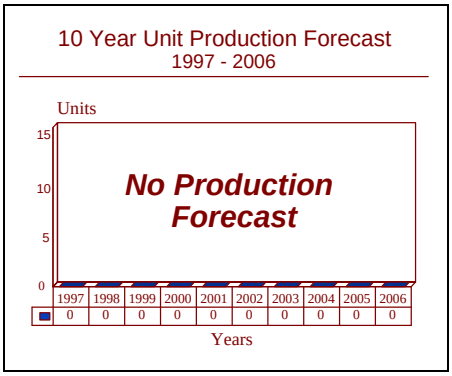
AMX 13 - Archived 1/97

Outlook

- Out of production but in widespread service around the world
- Several modernization and retrofit programs in various stages of implementation
- This tank has been increasingly traded on the international market



Orientation

Description. A light tank.

Sponsor. The development and French procurement of this tank was sponsored by the French Ministry of Defense through the Direction Technique des Armements Terrestres and the French Army.

Contractors. The AMX 13 was originally developed by the Atelier de Construction d'Issy-les-Moulineaux and initially manufactured by the Atelier de Construction Roanne, both firms being owned by the French government as part of the Ministry of Defense. In 1962, the entire program was transferred to Creusot-Loire Industrie, Paris, France; this firm was subsequently absorbed by Giat Industries and now operates as a component of that firm's Mobilité division. Major subcontractors include Detroit Diesel Corporation, Fives-Cail Babcock, Moteurs Baudouin, Rockford Powertrain and SOMA Minerva.

Licensees. The government of Argentina had a license to manufacture the AMX 13; as of 1989, this license was dormant and has almost certainly lapsed.

Status. Production of the AMX 13 light tank ran for almost 40 years, finally going dormant in 1992. For a while, the sales effort in the light-tank area was redirected to the light-tank version of the MARS 15, but since the demise of that program, the AMX 13 light tank was again made available for new orders. However, all marketing was stopped in 1992 and the tank is no longer available for new production orders. The AMX 13 remains in service in France (albeit only in reserve formations) as well as in a number of other nations. The development and integration of various modernization and retrofit programs for this tank continues.

Total Produced. As of January 1st, 1997, a total of 3,128 AMX 13 light tanks had been manufactured. This figure does not include the AMX Vehicule Transport de Troupe, AMX Vehicule de Combat d'Infantrie, the Mark F3 self-propelled artillery system, or any other derived vehicle.

Application. The AMX 13 was for a long time the lightest tank in the world that could mount a 105-millimeter cannon; the AMX 13 also serves as the basic chassis for self-propelled howitzers, anti-aircraft artillery systems and various other troop transport, combat and support vehicles.

Price Range. In equivalent 1991 United States dollars, the last known sale for the AMX 13 light tank equipped with the 105-millimeter cannon was $1.398 million. If production were resumed today, the unit price would be $1.606 million in equivalent 1997 United States dollars.

Technical Data

Design Features. A light tank using an oscillating turret which mounted (in its later versions) an automatically loaded 105-millimeter cannon.

Crew. Three: commander, gunner, and driver.

Armor. Conventional with a maximum thickness of 2.5 centimeters (0.98 inch) at 45° on the mantlet, and the same thickness on the turret sides. Late production tanks increased this protection level to four centimeters (1.57 inches).

Dimensions. The following data are for the AMX 13 armed with the 90-millimeter CN-90-F3 cannon.

	SI units	**US units**
Length	6.36 meters	20.86 feet
Width	2.51 meters	8.23 feet
Height	2.30 meters	6.96 feet
Combat weight	15.0 tonnes	16.53 tons
Fuel capacity	480 liters	127.65 gallons

Performance. The maximum speed and range figures are on a metalled road.

Maximum speed	63 kilometers per hour	39.15 miles per hour
Maximum range	381 kilometers	236.7 statute miles
Step	65 centimeters	2.13 feet
Trench	1.6 meters	5.24 feet
Slope	58%	58%
Gradient	60%	60%
Fording	60 centimeters	1.96 feet

Engine. The early production examples of the AMX 13 use the SOFAM Model 8Gxb eight-cylinder, liquid-cooled, spark-ignition engine rated at 186.4 kilowatts (250 horsepower) at 53.34 revolutions per second (3,200 revolutions per minute). The power-to-weight ratio with this engine is 12.43 kilowatts per tonne (15.12 horsepower per ton). The electrical fit is a 24-volt system with four 12 volt, 190 ampere-hour batteries.

Gearbox. SOMA Minerva supplies the Gravina manual gearbox with six gear ratios — five forward and one reverse. A Cletrac type controlled differential is used for the skid steer operation.

Suspension and Running Gear. A torsion-bar-type suspension system is used on this tank; the running gear consists of five road wheels with the idler at the front and three (on some early vehicles two) track return rollers. The return rollers support the inner portion of the track only. The first and last road wheel stations are equipped with hydraulic shock dampers.

Armament. The first production AMX 13 tanks mount the CN-75 75 millimeter cannon in the FL-10 oscillating type turret from Fives-Cail Babcock; 37 rounds of 75 millimeter ammunition are carried. While there are still some AMX 13 tanks equipped with this cannon, most of the worldwide inventory has been upgraded to the 90 millimeter CN-90-F3 cannon in the FL-10 oscillating turret also provided by Fives-Cail Babcock. The elevation of the CN-90-F3 in this turret is +12.5° while the depression is -5.5°; all operations are hydraulically controlled with a manual backup and both the commander and gunner can control these operations. No stabilization system is fitted. A total of 32 or 34 rounds of 90 millimeter ammunition is carried. Secondary armament can vary as to the user but usually consists of either a 7.5 millimeter or 7.62 millimeter machine gun, with a secondary machine gun an option; a total of 5,000 rounds can be carried for the machine gun(s). Two electrically operated smoke grenade launchers are mounted on each side of the turret.

Fire Control. The AMX 13 was originally fitted with the basic optical fire control suite consisting of a stadiometric rangefinder, M213 or L682 telescopic day sight for the gunner and M212 or L961 dual magnification (x1.5 and x6) telescopic day sight for the commander. Eight periscopes are also provided for the commander and two for the gunner.

AMX 13 Model 1987

Dimensions. The following data are for the last production version, the AMX 13 Model 1987 armed with the 105/G1 105 millimeter cannon.

	SI units	US units
Length	6.36 meters	20.86 feet
Width	2.51 meters	8.23 feet
Height	2.18 meters	7.15 feet
Combat weight	16.0 tonnes	17.64 tons
Fuel capacity	480 liters	127.65 gallons

Performance. The maximum speed and range figures are on a metalled road.

Maximum speed	63 kilometers per hour	39.15 miles per hour
Maximum range	572 kilometers	355.42 statute miles
Step	65 centimeters	2.13 feet
Trench	1.6 meters	5.24 feet
Slope	58%	58%
Gradient	60%	60%
Fording	60 centimeters	1.96 feet

Engine. The 6V-53T supercharged diesel engine from Detroit Diesel Corporation is the standard power plant for the this version of the AMX 13. This engine is rated at 208.8 kilowatts (280 horsepower) at 46.67 revolutions per second (2,800 revolutions per minute). The power-to-weight ratio with this engine is 12.82 kilowatts per tonne (15.59 horsepower per ton). The Moteurs Baudouin 6 F 11 SRY engine, also rated at 208.8 kilowatts (280 horsepower) was offered as an option. The electrical system is a 24-volt type with four 12 volt, 190 ampere-hour batteries.

Gearbox. SOMA Minerva supplies the Gravina manual gearbox with five forward and one reverse gear ratios. An automatic gearbox with four forward gear ratios from Rockford Powertrain is an option.

Suspension and Running Gear. A hydro-pneumatic suspension system is used on this tank; it was introduced in 1987. The running gear consists of five road wheels with the idler at the front and three (on some earlier vehicles two) track return rollers; the return rollers support the inner portion of the track only. The first and last road wheel stations are equipped with hydraulic shock dampers.

Armament. The primary armament consists of the 105-G1 rifled 105 millimeter semi-automatic cannon from Giat Industries with 32 rounds available. A thermal sleeve is fitted to this cannon, which is mounted in FL-12 or, most recently, the FL-15 oscillating turret provided by Fives-Cail Babcock. The elevation is +12.5° while the depression is -5.5°; all operations are hydraulically controlled with a manual backup. Secondary armament can vary but usually consists of either a 7.5 millimeter or 7.62 millimeter machine gun with a secondary machine gun an option; a total of 5,000 rounds is carried for the machine gun(s).

Fire Control. The fire-control options on the Model 1987 version of the AMX 13 have been considerably enhanced over the earlier versions; while some of the components of the earlier model are retained, the manufacturer has incorporated a TVC 107 laser rangefinder, automatic display of battle sight equipment, and night-vision equipment including a TN2-12 imaging intensification telescope for the gunner and night-driving equipment for the driver. As an option, Fives-Cail Babcock provided an infrared searchlight and infrared sight for the gunner on some of the recent production tanks. An imaging intensification device is also optionally available for the driver's position.

Variants/Upgrades

Variants. The variants of the AMX 13 now total at least 23, the most important of which are listed below:

Model 51. The standard model equipped with the obsolete CN-75 75 millimeter cannon.

Model 51/FL-10. The basic model with the CN-75 75 millimeter cannon in the FL-10 turret. Developed for French use in Algeria.

Model 51/SS-11. The basic model fitted with four SS-11 anti-tank missiles in addition to the basic 75 millimeter cannon.

Model 51/HOT. As above, but with three HOT anti-tank missiles, a much more modern fit.

AMX 13/90. This version, equipped with a the CN-90-F3 cannon, entered production in 1961 and remained available throughout the production run on an as-needed basis. The CN-90-F3 cannon is mounted in a Fives-Cail Babcock FL-10 turret.

AMX 13/105. This model, described above, mounts the 105/G1 cannon in a Fives-Cail Babcock FL-15 turret.

AMX 13 ARV (Model 55). An armored recovery vehicle equipped with an A-frame, crane and other recovery equipment.

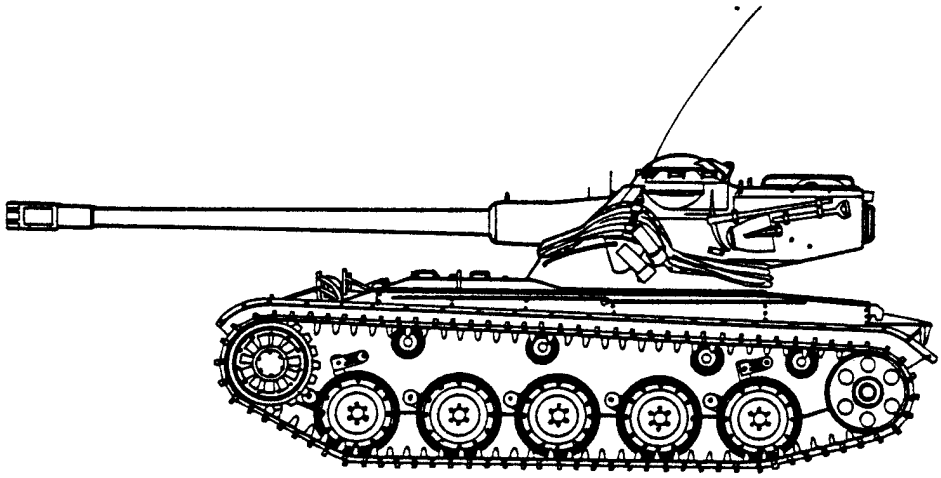
AMX/VCG. The basic chassis equipped with a dozer blade, shear legs, winch and other equipment for a combat engineer vehicle.

AMX 13 CPP. This armored-vehicle-launched bridge is fitted with a 14.01 meter bridge.

AMX 13 Driver Training Tank. The basic vehicle without the turret.

AMX VTT. The basic vehicle is fitted with a number of turret/armament options and is also available as a mechanized infantry combat vehicle, armored ambulance, command post, cargo vehicle, engineer vehicle, radar vehicle of several types, or mortar carrier, among others. This vehicle, including its variants, is covered in the Light Tracked Vehicle tab of this book.

Mark F3 155-millimeter Self-Propelled Gun. This artillery system is covered in a separate report in the Munitions/Ordnance book that is a companion volume to this.



AMX 13/FL 10

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