

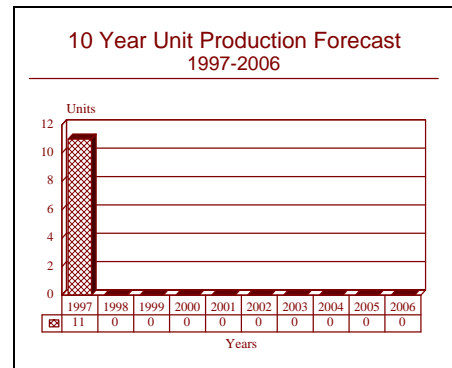
ARCHIVED REPORT

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4K 7FA G127 - Archived 6/98

Outlook

- Serial production of this vehicle is presently dormant in Austria; it is no longer being marketed
- The license production program in Greece is nearing completion
- No additional production is forecast
- There are presently no significant modernization or retrofit programs for this vehicle



Orientation

Description. A tracked vehicle

Sponsor. The 4K 7FA is a private development program funded by the contractor; some minimal support has come from the Austrian Ministry of Defense through the Austrian Army.

Contractors. This vehicle was developed and has been manufactured by Steyr-Daimler-Puch AG Spezialfahrzeug; Vienna, Austria. Major subcontractors include Diehl Group/Diehl Remscheid, Electronique Marcel Dassault, and Zahnradfabrik Friedrichshafen.

Licensees. Hellenic Vehicle Industry SA (formerly Steyr Hellas SA), Thessalonika, Greece manufactures this vehicle under license. Nigerian Defence Industries Corporation, Boshni, Nigeria has done some assembly work under license and has negotiated over a production license.

Status. The production of the 4K 7FA G127 and its variants is presently dormant in Austria but can be resumed if new orders are received. The license production program in Greece is winding down as it nears the completion of the latest order. The vehicle is in service with several export nations.

Total Produced. As of January 1, 1997, a total of 777 4K 7FA G127 vehicles had been manufactured by all sources.

Application. A family of tracked vehicles for transport of personnel, command and control, ambulance use, transport of weapons, mortar carrier and multiple rocket launcher mounting.

Price Range. In equivalent 1997 United States dollars, the basic 4K 7FA G127 vehicle has a unit price of \$1,259,000; some specialized versions are considerably more.

Technical Data

Crew. Two: driver and gunner, plus eight men.

Armor. The 4K 7FA is fabricated from conventional steel armor with a maximum thickness of 2.5 centimeters (0.98 inch) on the hull.

Dimensions. The following data are for the 4K 7FA G127 basic vehicle.

	SI units	US units
Length	5.87 meters	19.25 feet
Width	2.5 meters	8.20 feet
Height	1.69 meters	5.54 feet
Combat weight	14.8 tonnes	16.31 tons
Fuel capacity	360 liters	95.74 gallons

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

Maximum speed	70 km/h	43.47 miles per hour
Maximum range	520 km	322.92 statute miles
Step	80 centimeters	2.62 feet
Trench	2.1 meters	6.88 feet
Slope	40%	40%
Gradient	75%	75%
Fording	1.01 meters	3.31 feet

Engine. This vehicle uses a Steyr six-cylinder, super-charged, liquid cooled diesel engine. Designated 7FA, this engine is rated at 238.72 kilowatts (320 horsepower) at 38.34 revolutions per second (2,300 revolutions per minute). The power-to-weight ratio is 16.13 kilowatts per tonne (19.62 horsepower per ton). A 24 volt electrical system with two 12 volt/180 ampere hour batteries is the standard electrical fit.

Gearbox. The 4K 7FA G127 uses a Zahnradfabrik Friedrichshafen S6-80/3 manually operated unit with six forward and one reverse gear ratios.

Suspension and Running Gear. This vehicle uses a torsion bar type suspension system with five dual tired road wheels and three track return rollers on each side. The first and last road wheel stations are fitted with hydraulic shock dampers.

Armament. The basic armament is a 12.7 millimeter M2HB machine gun. Other options include a 20 millimeter twin anti-aircraft mount on an Electronique Serge Dassault TA20/RA20 turret or a Giat Industries TS90 turret with several optional 90 millimeter cannon and 20 rounds of ammunition.

Variants/Upgrades

Variants. As with the earlier 4K 4FA, a number of production models and variants of the 4K 7FA vehicle exist. The basic model is the 4K 7FA G127 described above. Other models include:

4K 7FA-KSPz	The basic vehicle with two ball mountings for the StG77 or MP69 rifles and telescopes for aiming.
4K 7FA MICV 127	A developed version of the model above with M2HB 12.7 millimeter and 7.62 millimeter machine guns in a Steyr one-man turret. Another turret with 20, 25 or 30 millimeter cannon is available.
4K 7FA MICV 2/300	Another development of the 4K 7FA KSPz fitted with a 30 millimeter RARDEN cannon and a 7.62 millimeter machine gun in a one-man turret.
4K 7FA-KUPz 1/90	A fire support vehicle with the TS90 turret/90 millimeter cannon.
4K 7FA-KUPz 2/90	A fire support vehicle with the Textron Marine & Land Systems (Cadillac Gage) 90 millimeter turret.
4K 7FA-KUPz 3/90	A fire support vehicle with the Cockerill CS90 turret.
4K 7FA-KUPz 4/90	A fire support vehicle with the Societe d'Applications des Machines Motrices TTB 190 turret.
4K 7FA-FÜ	A command vehicle with a seven-man crew and two radios.

4K 7FA-SAN	An armored ambulance with a two-man crew and a capacity of four sitting and two stretcher patients.
4K 7FA GrW 81	A mortar carrier with a crew of five and an 81 millimeter mortar with 100 rounds of ammunition.
4K 7FA GrW 120	Similar to the above, but with a 120 millimeter mortar.
4K 7FA SPAAG 1/2.20	Also called the 4K 7FA FLA 1/2A, this model features twin 20 millimeter anti-aircraft cannon in the Electronique Serge Dassault TA20/RA20 turret.
4K 7FA SPAAG 3/2.30	Also called the 4K 7FA FLA 3/2, this model is a twin 30 millimeter anti-aircraft artillery system with the Thomson-CSF Sabre turret.

Modernization and Retrofit Overview. As of mid-1997, no major modernization and retrofit programs had been developed for this vehicle.

Program Review

Background. In 1956, Österreichische Saurer Werke began development of a tracked armored vehicle initially designated 3K 3H. A number of production models and variants have since appeared up to the ultimate basic model, the 4F 4KA, which itself was offered in at least eight variations with differing armament. Production of the 4F 4KA was terminated in 1969 with 445 vehicles being produced. The only customer was the Austrian Army.

In 1970, Saurer was taken over by Steyr-Daimler-Puch, which has been involved in the manufacture of vehicles and armament since 1864. The company is Austria's leading manufacturer of vehicles and the country's largest industrial enterprise. In 1980, one of the best years for the firm, Steyr-Daimler-Puch had total sales of some 17.0 billion Austrian Schillings (equivalent to 1.13 billion United States dollars), and 70 percent of these sales were earned in the export market. The tracked vehicle portion of this market has historically garnered some 15-20 percent of these sales. Steyr's market segment has long been composed of armored fighting vehicles and the SK 105 Kürassier light tank/tank destroyer. Steyr has a maximum production capacity of some 200 units per year, and company officials have stated that this production level was maintained through the eighties. The prime reason for this high production is the favorable delivery terms that Steyr has been able to arrange by customizing the vehicle to a client's requirements.

Historically, Steyr has built its families of tracked vehicles on the same (albeit heavily modified) chassis, hull, and suspension system. All the light armored vehicles that have been manufactured to date are armed with machine guns or cannon for close support or air defense. This is due to the fact that the 1955 Austrian treaty and government policy prohibited the use of guided missiles, although the 1988 decision to reverse this statute has eased this marketing hindrance.

In the early seventies, Steyr began work on a new armored personnel carrier for the Austrian Army. The manufacture of this vehicle, which is essentially an up-armored and

modernized 4K 4FA, began in 1977. The new vehicle, designated 4K 7FA, is of all-welded steel construction and is protected against 20 millimeter armor-piercing ammunition over the frontal arc of the vehicle.

Vehicle Description. The all-welded steel hull offers ballistic protection from 20 millimeter armor piercing projectiles over the frontal arc as well as ballistic fragments all around. The driver is seated at the front of the vehicle to the left; the driver is provided with three periscopes and a two piece access hatch. The engine and gearbox are to the front right of the vehicle opposite the driver. The gunner is seated behind the driver and is provided with a cupola with periscopes. The 12.7 millimeter machine gun and four smoke grenade launchers are mounted on the cupola. The personnel compartment, with two bench type seats on each side, is to the rear; it is provided with two access hatches and mountings for two 7.62 millimeter MG 74 machine guns. The section leader's position is provided with a periscope. Entrance to and exit from the personnel compartment is normally via twin doors at the rear of the vehicle. Two hatches are mounted in the roof of the vehicle.

A 12.7 millimeter machine gun is fitted as standard equipment, and firing ports can be fitted as an option. In a major improvement over its predecessor, the 4K 7FA has a passive night vision system, a collective type nuclear, biological and chemical protection system and a highly efficient heating and ventilating system. Spikes can be fitted to the Diehl tracks for operations on ice-covered surfaces. An automatic fire detection and suppression system is mounted in the engine compartment.

Licensed Production. In 1977, it was announced that Greece would undertake the licensed production of the 4K 7FA by Steyr Hellas. The first vehicles, designated Leonidas 1 by the Greek Army, were completed in 1982. Subsequently, Steyr Hellas was absorbed by Hellenic Vehicle Industry SA. In April 1987, a follow-on order was placed for 100 Leonidas 1 vehicles as well as a 344 unit

order for a modified version called Leonidas 2. This production was completed in mid-1995.

In 1981, concurrent to its initial purchase of the 4K 7FA in several variants, Nigeria acquired the license production rights to the vehicle. This was part of the country's efforts to develop an indigenous armaments industry; at the time,

Nigeria was benefiting from a massive influx of oil revenues. The Nigerian Defense Industries began setting up a production facility at Bauchi for the production. However, due to the volatility in oil prices, Nigeria's economy has suffered severely and this program is not expected to ever get under way.

Funding

The funding for the development of the 4K 7FA G127 was provided by the contractor with some assistance from the Austrian Ministry of Defense through the Austrian Army.

Recent Contracts

Not available as contractual information is not released.

Timetable

This timetable relates to the 4K 7FA G127 and its various production models and variants, but includes some data in relation to the 4K 4FA and other programs which led to the 4K 7FA G 127.

	1956	Saurer started development of the 4K 4FA
	1958	3K 3H prototype completed
	1959	4K 3H prototype completed
Late	1959	Initial low-rate production began (4K 4F)
Apr	1961	4K 4F production completed
	1963	4K 3FA production began
Late	1965	4K 3FA production terminated; 4K 4FA production began
Early	1969	4K 4FA production completed
	1970	Steyr-Daimler-Puch took over Saurer
Late	1971	Development of new armored personnel carrier began
Mar	1976	Prototype 4K 7FA G127 completed
Aug	1977	4K 7FA G127 production began
	1981	Proposed licensed production program in Nigeria announced
Mid	1997	Available for new production orders; production winding down in Greece

Worldwide Distribution

Export Potential. While the 4K 4FA did not have any export sales, it is possible that, when the Kampfschützenpanzer 90 is employed fully within the Austrian Army, the earlier vehicle could be put on the export market. Steyr-Daimler-Puch has developed the 4K 7FA with differing armaments, turrets and various other accessories. Even though the chances for successfully marketing the vehicle were greatly enhanced by Austria's recent decision to adopt defensive missile systems in its arsenal, this has not yet translated to any sales of the 4K 7FA. The lack of an anti-tank missile system was a major problem, as the worldwide trend in this class vehicle is to mount missiles either as standard equipment, or at least as an option. The result is that Steyr-Daimler-Puch, while known for its high-quality vehicles, saw many potential customers turn elsewhere (usually to France, the United Kingdom, Brazil or the United States) for their needs of light tracked vehicles. Even though this hindrance is now gone, the horse has run from the stable, and the glutted market conditions now prevailing should preclude any additional sales.

Countries. The 4K 7FA in some model has been sold to **Bolivia** (6), **Cyprus** (92), **Greece** (500), and **Nigeria** (170).

Forecast Rationale

As of mid-1977, the serial production of the 4K 7FA is dormant in Austria. However, the vehicle is still available for new orders, though the marketing effort has been suspended in favor of the newer and much more capable Kampfschützenpanzer 90 (sometimes also known as the ASCOD). All the available evidence supports our forecast for no additional production in Austria. Any Austrian procurement of light tracked vehicles should be related to the Kampfschützenpanzer 90, which is also being heavily promoted on the export market. However, we will continue to monitor the Austrian aspect of the 4K 7FA program, especially in relation to unexpected export sales.

The license production program of the vehicle in Greece is now winding down. While our research does not support any additional production in Greece, another small follow-on order for the Leonidas 2 is not impossible. The license production program in Nigeria has never gotten off the ground and is not expected to do so. The existing inventory of 4K 7FA vehicles was supplied from Austria, with a minimal amount of license assembly in Nigeria; this should be sufficient for the foreseeable future. Therefore, we will continue to withhold a forecast for any license assembly or production program in Nigeria, although again, we will continue to monitor all aspects of this program and update this report on an interim basis if warranted.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR PRODUCTION

Vehicle	(Engine)	through 96	High Confidence Level			Good Confidence Level			Speculative			Total 97-06
			97	98	99	00	01	02	03	04	05	
STEYR-DAIMLER-PUCH A.G.												
4K 7FA G127(a)	MODEL 7FA	185	0	0	0	0	0	0	0	0	0	0
Subtotal - STEYR-DAIMLER-PUCH A.G.		185	0	0	0	0	0	0	0	0	0	0
HELLENIC VEHICLE INDUSTRY SA (Licensee)												
4K 7FA G127(b)	MODEL 7FA	592	11	0	0	0	0	0	0	0	0	11
Subtotal - HELLENIC VEHICLE INDUSTRY SA (Licensee)		592	11	0	0	0	0	0	0	0	0	11
NIGERIAN DEFENSE INDUSTRIES (Licensee)												
4K 7FA G127(c)	MODEL 7FA	0	0	0	0	0	0	0	0	0	0	0
Subtotal - NIGERIAN DEFENSE INDUSTRIES (Licensee)		0	0	0	0	0	0	0	0	0	0	0
Total Production		777	11	0	0	0	0	0	0	0	0	11

(a)The through 1996 production includes nine prototype/development vehicles. The production includes all production models and variants.

(b)No prototype or development vehicles were manufactured. Production that began in late 1989 was for the slightly different Leonidas 2. The production includes 92 vehicles sold to Cyprus.

(c)Any future production should be with major components from the prime contractor.