

ARMORED CAR

THE WHEELED FIGHTING VEHICLE JOURNAL



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PANDUR ARSV 25 Armored Reconnaissance Scout Vehicle

DEVELOPMENT

In the development of modern armored vehicles, when you think of Austria, the first vehicles that come to mind are the Steyr SK-105 *Kurassier* series of tank destroyers (a Steyr designed chassis matched to the French AMX-13/FL-13 oscillating turret), and the matching 4K 4FA G1 armored personnel carrier (*at least some of the latter have been adopted by the Greek Army*).

Besides these two groups which have been in production for some time; is the Steyr Pandur series of 6x6 wheeled armored vehicles. In the mid-'70s, the Austrian Federal Army developed a requirement for a wheeled armor vehicle to perform reconnaissance and battlefield personnel transport duties. In 1979, Steyer-Daimler-Puch AG decided to try developing such a series as a private venture. Six years later in

1985 the prototype was released. The main purpose of the new vehicle was to supply a basic chassis to provide the mounting for a whole family of related vehicles. From the start provisions were made to maximize operational flexibility and make provisions for fitting a wide assortment of turreted and non-turreted weapons installations up to 1900 kg (4,189 lbs).

DESCRIPTION

The hull of the Pandur is made of welded steel armor plate capable of withstanding .50 caliber ammunition. Along with the main armament in the turret, two gun ports are supplied on each side of the hull along with periscopes for sighting the weapons.

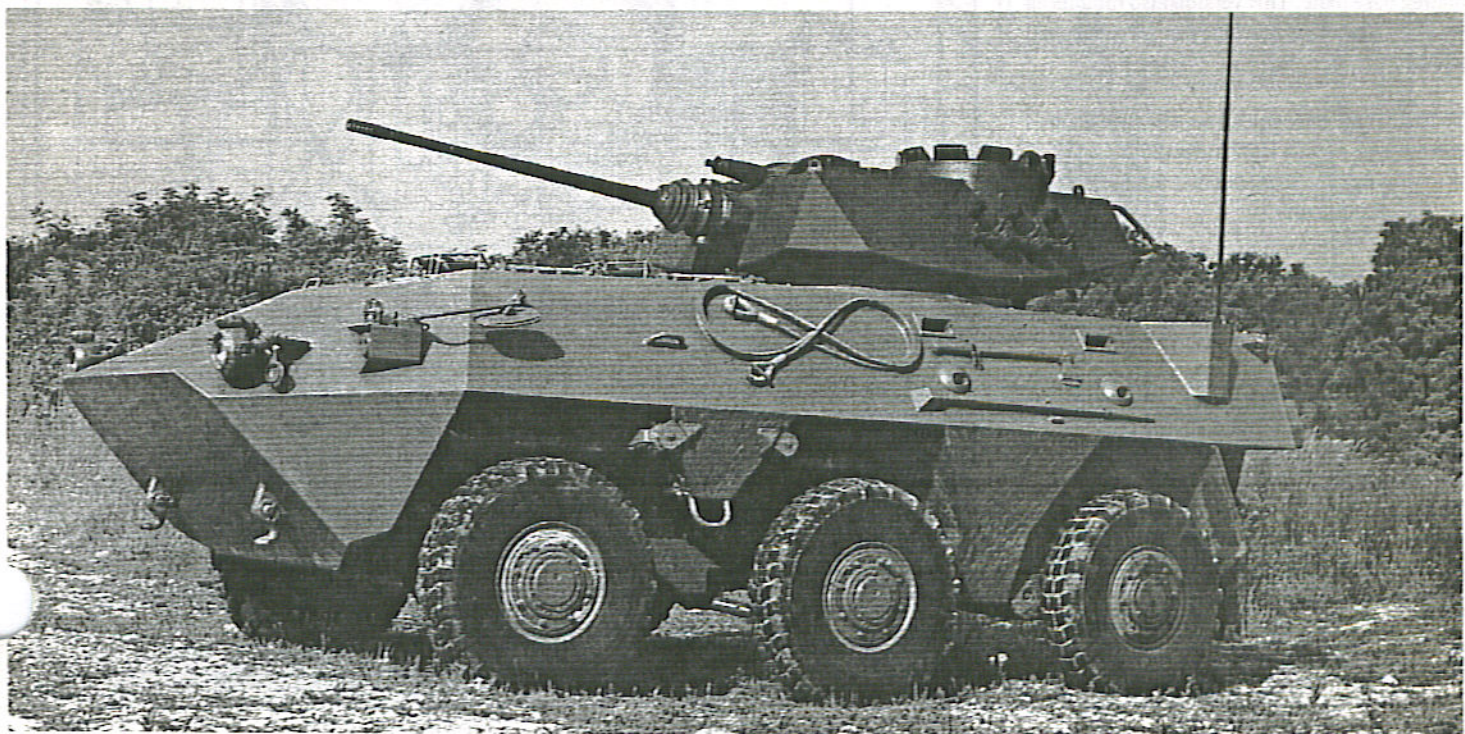
The engine fitted is the Steyr WD 612 turbo-charged 6-cylinder diesel, developing 245 hp at 2400 rpm. This is combined with an automatic



transmission and torque converter with 5-forward and 1-reverse gear. This unit will drive the Pandur along at a top speed of 105 km/h (65 mph).

All six wheels are driven, with the front two pairs being steerable as well. As is usual today all wheels have independent suspension and a central tire inflation system.

Top and bottom: Pandur ARSV 25 (Steyr Photos)



... continued from page 1

OPERATIONS

Still under development, Pandurs have been tested in arctic and desert climates. At least a few Pandurs were in Kuwait just prior to the invasion by Iraq, and probably were captured and returned to Iraq during the occupation.

VARIANTS

PANDUR APC. This is the basic chassis laid out as a personnel carrier, with a crew of two and eight to ten soldiers carried in the troop compartment (the standard version seats eight troops, a stretched version seats ten). The vehicle driver and commander sit one behind the other to the left of the engine compartment. A .50 caliber machinegun turret is available for this model.

ARFSV-90. An armored reconnaissance fire-support vehicle mounting a 90mm cannon in a MECAR KEWS turret.

ARSV-30. Armored reconnaissance scout vehicle mounting a 30mm Mauser Mk 30 cannon with a coax 7.62mm machinegun in a specially designed turret with power traverse and elevation. This vehicle was originally intended to fit the turret from the ALVIS Fox, but a purpose built turret was fitted instead.

ARSV-25. Armored reconnaissance scout vehicle. Fitted with the two man Creusot-Loire T-25 turret mounting a 25mm Oerlikon-Buhrie cannon and 7.62mm coax in a fully powered turret.

AMC-81. 81mm mortar carrier with an internal rotating base plate. This version also mounts an external .50 caliber machinegun for additional defense.

ATGMC. Anti-tank guided missile carrier fitted with the Euromissile HCT turret mounting HOT anti-tank missiles. Spare missiles for the launcher are carried internally.

AAMB. Armored ambulance. This is the unarmed basic personnel carrier version fitted out to carry casualties.

SPECIFICATIONS ARSV-25

General:

Combat weight: 11500 kg (25378 lbs)

Crew: 3

Fuel cap: 195 Liters (51 gals)

Cruising range: 650 k/road (404 miles)

Power to weight ratio: 21.3 hp/ton

Dimensions:

Length: 5697mm (18.69 feet)

Height hull: 1810mm (5.94 feet)
Height overall: 2650mm (8.69 feet)
Width: 2500mm (8.2 feet)
Ground clearance: 420mm (16 inches)

Turret and weapons:

Main armament: 25mm automatic cannon with dual feed (Oerlikon KBA)

Secondary armament: 7.62mm machinegun (MG3)

Smoke dischargers: (6) 76mm barrels

Ammunition capacity:

Main gun: 135 HE/35 APDS

Machinegun: 400 rds 4/1

Smoke grenades: 6

Gunner's sight:

Type: Daysight periscope, AERITALIA P204
8 power and 9 degree vision

Vision:

Commander: 9 periscopes (P137)

Driver: 2 periscopes (F-134) and 1 (M17)

Turret:

Traverse: 360 degrees

Operation: Electric

Elevation/depression: -10 to +50 degrees

Operation: Electric

Chassis:

Engine: Steyr WD 612/245hp @ 2400 rpm

Transmission: Allison MT 653 DR automatic
5 forward-1 reverse gear

Suspension: Independent

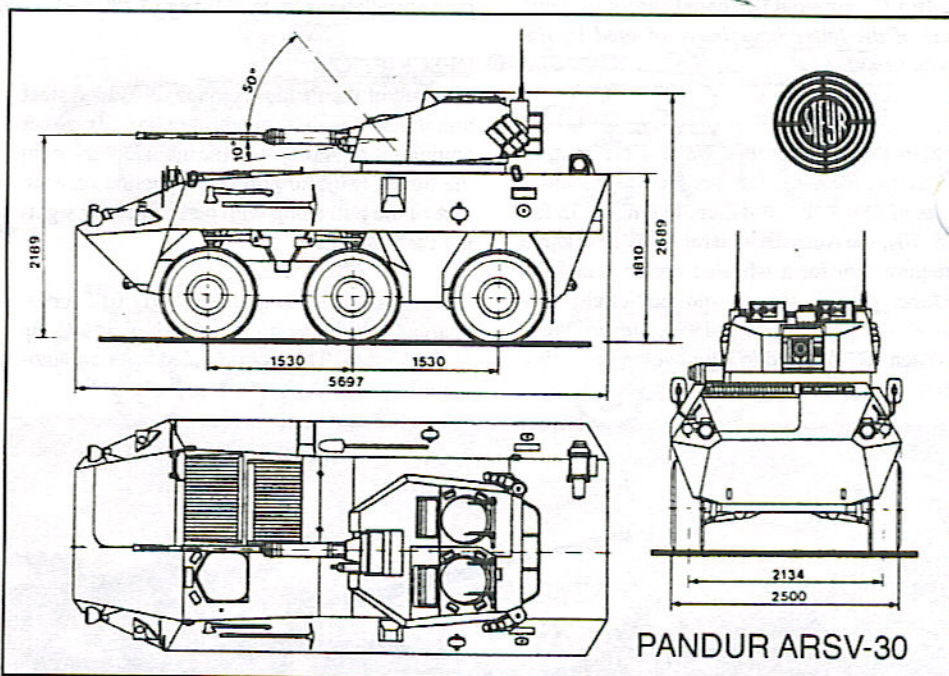
Wheels: 6x12.5 R 20 runflat tires

Brakes: Power discs on each wheel

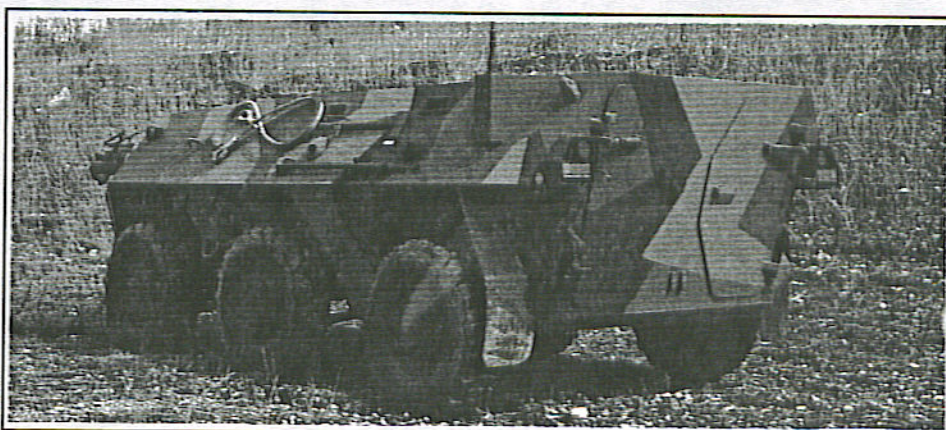
Steering: Power steering on the first and second axles

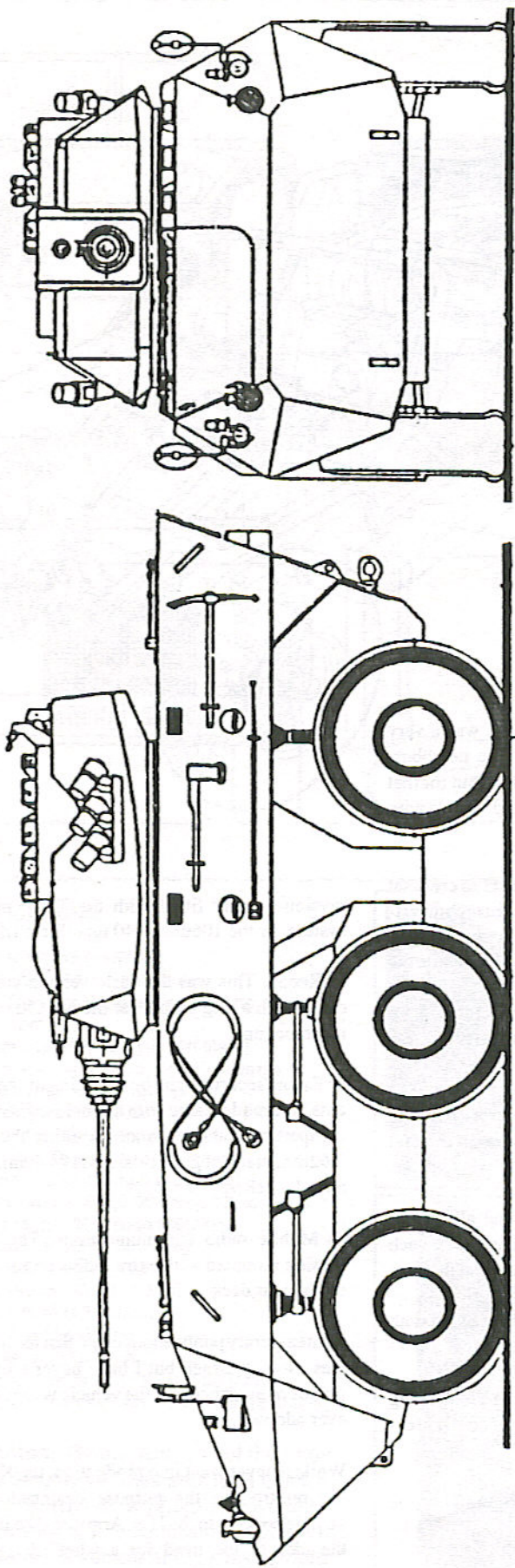
Cooling: Liquid cooled, fan driven

Photo below: The basic Pandur APC, Steyr photo.



PANDUR ARSV-30

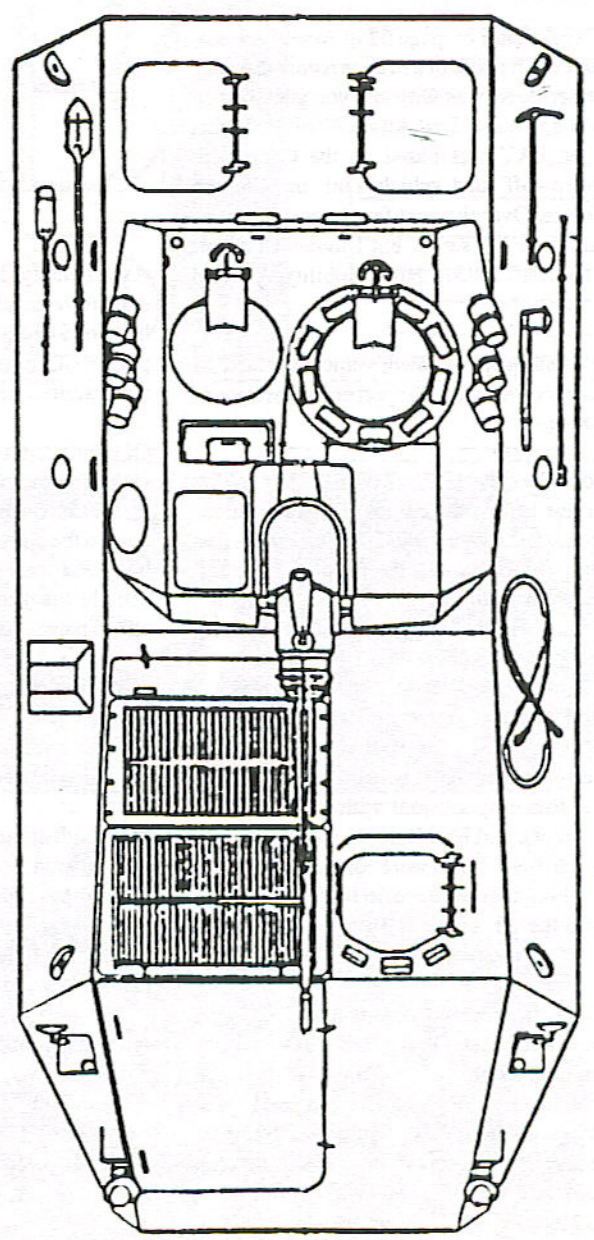




PANDUR ARSV 25

Armored
Reconnaissance
Scout Vehicle

**Steyr-Daimler-Puch
Spezialfahrzeug Ges.m.b.H.**
P.O. Box 100, A-1111 Vienna, Austria



Scale 1/35th

FMC Defense
Equipment

XR311

AN IDEA BEFORE ITS TIME

by David R. Haugh

The just finished Gulf War has proven once again that predicting the future is a chancy thing. In early March of this year an article appeared in *Soldiers* magazine announcing the demise of the dune buggy based Fast Attack Vehicle (FAV). The FAV had been a project under more or less continuous development for the army since the mid-'70s. According to the article, the FAV was no more and existing vehicles had been sold for scrap.

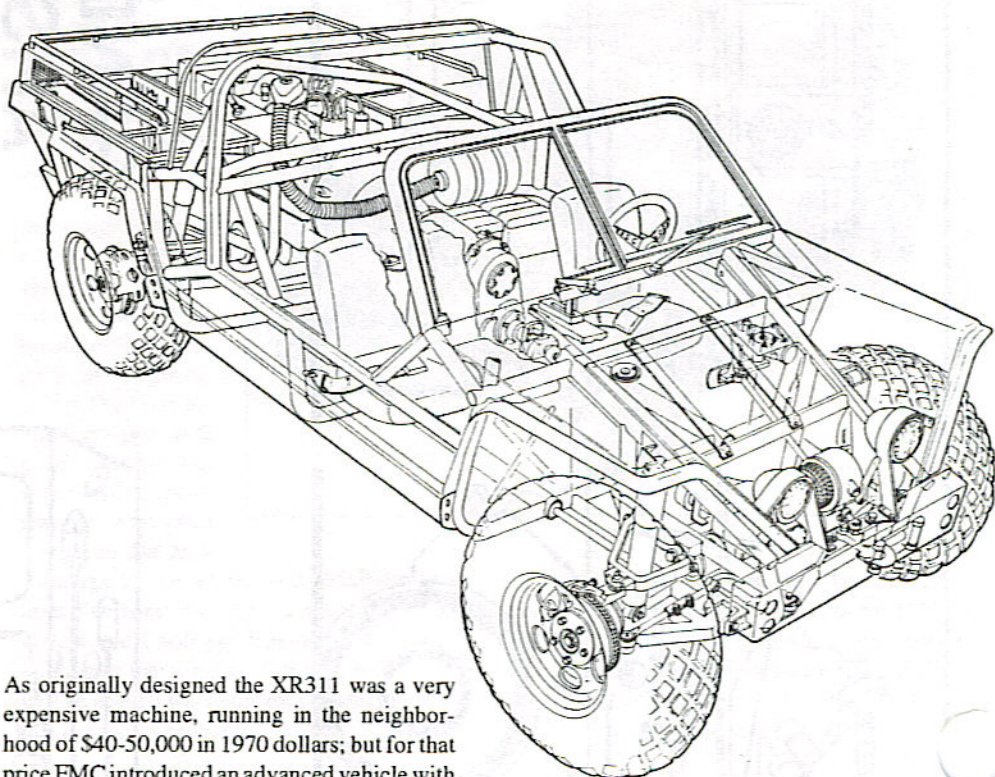
Two weeks later on page 32 of *Newsweek* appeared a color photo of a Marine reconnaissance unit entering Kuwait City in... you guessed it, a dune buggy based Fast Attack Vehicle. In this case the FAV was based on the Chenoweth *Sandaire* off road vehicle built in Southern California. Over the next few issues I'll be exploring the FAV series, but I thought I'd start with the FMC XR311 High Mobility Wheeled Vehicle.

A well built, sophisticated, vehicle the XR311 represented the high tech approach to fast reconnaissance.

Based on the successful off-road vehicles of the era, a test bed model of the idea was demonstrated to the U.S. Army in 1970. Its impressive performance convinced the Combat Development Command that its military potential should be evaluated further; and ten vehicles were purchased for test and evaluation.

Beginning in December of 1971, the XR311 series was tested at Fort Benning (4 TOW/106mm Recoilless Rifle versions); Fort Gordon (3 escort/security versions with crew compartment armor); and Fort Knox (3 reconnaissance scout vehicles). Trials were completed in 1972, when all vehicles were sent to Fort Hood, Texas to join the 2d Armored Division for further trials.

The XR311s remained at Fort Hood for at least the next two years (1974). Eventually an unknown number of the test vehicles reached the 9th Infantry Division (Motorized) at Fort Lewis, Washington where they were used for further comparison tests. At least one vehicle (a scout version) survived to find its way into the Fort Lewis Museum collection, where it is today, still in excellent condition.



As originally designed the XR311 was a very expensive machine, running in the neighborhood of \$40-50,000 in 1970 dollars; but for that price FMC introduced an advanced vehicle with innovations ahead of its time.

Of tubular construction, the three man crew sat abreast in the center, with the engine compartment immediately to the rear. The frame wrapped around the crew and acted as a roll bar, while the body was covered in steel panels. On the escort vehicle the steel body was supplemented by armor panels for the crew compartment.

A low flat design, the XR311 had the engine (a Chrysler V-8) and automatic transmission with torque converter located at the rear. This unit delivered power to a permanent 4-wheel drive.

Independent suspension was fitted all around with torsion bars and shock absorbers at each station. A stabilizer bar was included at the rear.

Large high flotation tires were used along with disc brakes and power assisted steering.

A towing pintle was located at the rear along with a cargo space above the engine deck capable of handling 850 pounds.

There were four possible configurations the XR311:

1) Anti-armor. This vehicle came in two

versions; either fitted with the TOW missile system, or the 106mm M40 recoilless rifle.

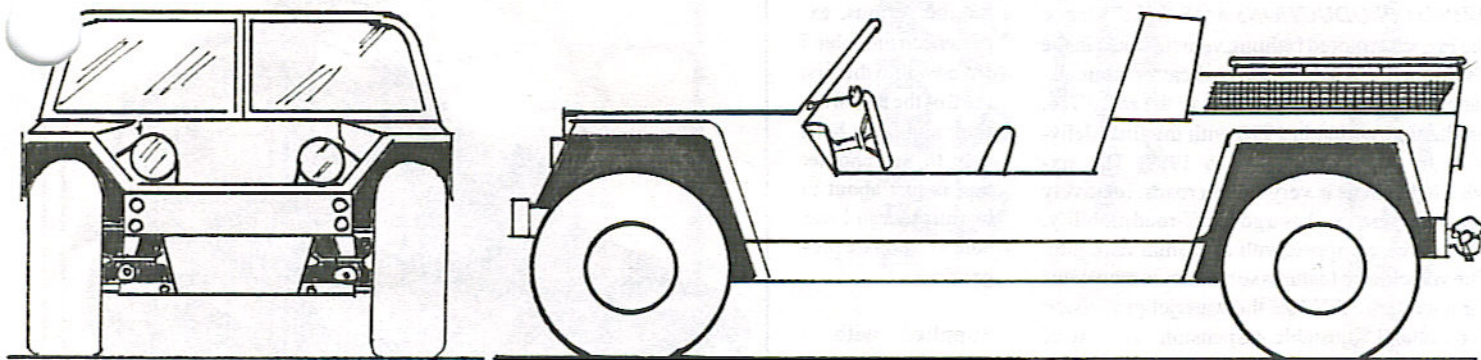
2) Recon. This was the basic version stripped down with a ring mount for the M2 .50 caliber machinegun.

3) Escort/security. The best looking of the variants, this model came with an enclosed armored compartment and a mount for either the M60 7.62mm machinegun or the XM174 40mm grenade launcher.

4) Mobile radio communications. The basic version mounted with extra radios and antenna on the rear deck.

Contemporary publications claim that the XR311 was used by Israel, but I have never seen any photos or evidence that the vehicle was actually ever adopted.

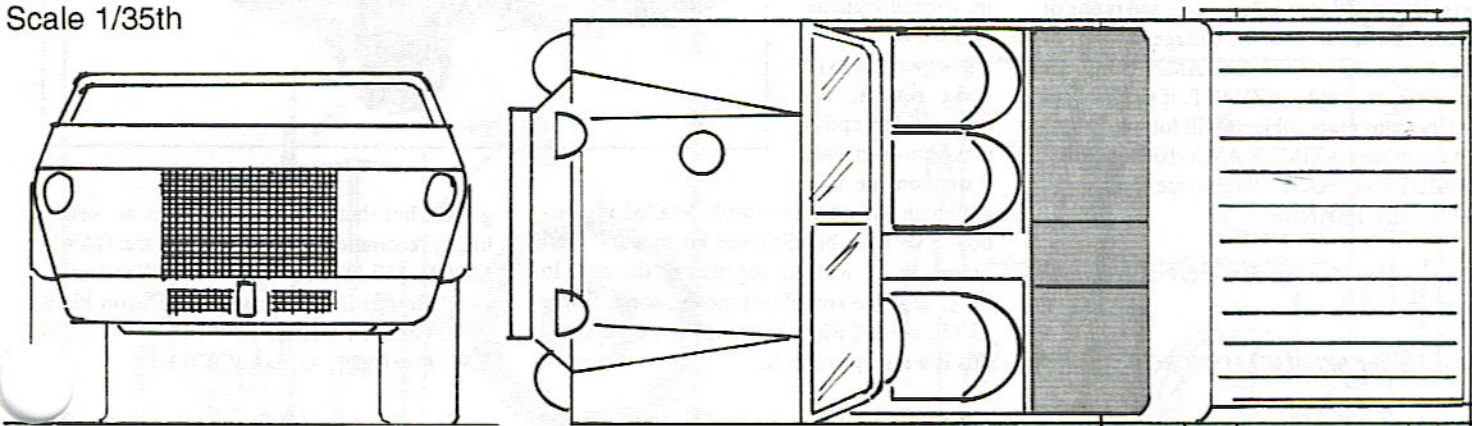
While it never went into production, the XR311 did reintroduce the purpose designed scout vehicle concept to the U.S. Army, and kept alive the idea of the need for a wheeled fighting vehicle for special operations.



XR311

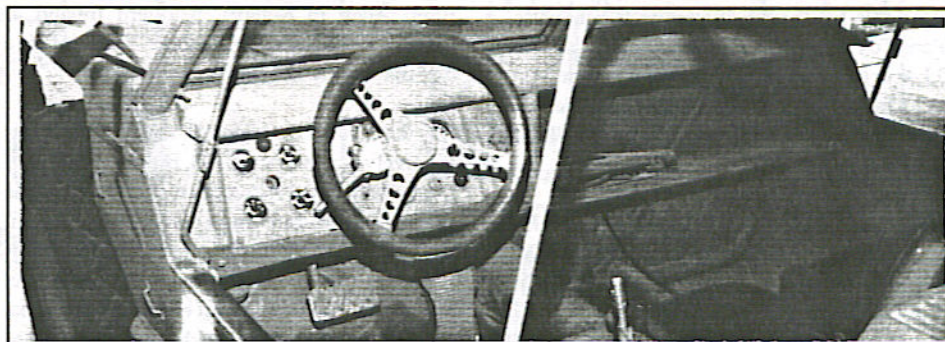
Drawn by David R. Haugh, July 1991

Scale 1/35th



SPECIFICATIONS:

- Crew: 3
- Weight: 6300 lbs (2857 kg)
- Grd pressure: 7.1 lbs per sq in
- Engine: Chrysler V8, gasoline, 187 hp @ 4000 rpm
- Fuel capacity: 26 (US) gals (98 liters)
- Transmission: Automatic 3-fwd/1-reverse
- Horsepower to weight: hp/ton 61
- Electrical system: 24V dc
- Gradeability: Frd/reverse slope 60 degrees
Side slope 50 degrees
- Maximum speed: 80 mph (130 kmh)
- Acceleration 0 to 60 (0-96 kmh): 12 seconds
- Cruising range: 300 miles (480 km)
- Vert Obstacle: 20 in (500 mm)
- Fording depth: 30 in (750 mm)
- Turning radius: 43 ft (13.1 m)
- Length: 171 in (4340 mm)
- Width: 74 in (1880 mm)
- Height: 63 in (1600 mm)
- Clearance at front axle: 11 in (280 mm)
- Clearance at central skid plate: 14 in (360 mm)



Photos: Below right, one of the three scout/security vehicles sent to Ft Gordon or testing. (US Army photo). Above right, the interior of a reconnaissance XR311, this is the vehicle at Ft Lewis. (Photo: Paul Hansen)

U.S. Army Photo

Reviews

AZIMUT PRODUCTIONS AMX-10RC. One of the French armored fighting vehicles used in the Gulf War, the AMX-10RC is a heavy reconnaissance vehicle. First developed in the early '70s, production started in 1978 with the final deliveries to the French army in 1987. The six-wheeled vehicle is very fast on roads, relatively silent in operation, has a good off-road mobility, and is well equipped with a 105mm tank gun. The vehicle also features some uncommon items for a western AFV like the waterjet propulsion system, and adjustable suspension. A crew of four is usually carried.

The model from AZIMUT PRODUCTIONS is completely cast in resin with white metal small parts. The model is to 1/35th scale and is one of the few new items from the cottage industry of a modern western AFV. The AMX-10RC is a test of the market by AZIMUT, if the kit does well, perhaps more subjects will follow. (photo of a completed AZIMUT AMX-10RC below) AZIMUT PRODUCTIONS 8, rue Baulant, F-75012 Paris, FRANCE.

-reviewed by Matthias Roth, OT Immenrode, Germany

...more on the AZIMUT AMX-10RC

Censorship still exists: just following "Desert Storm", Azimut Productions released an AMX-10RC kit (resin - 1/35th scale) at the end of March '91 for the '91 "Salon de la Maquette" (Paris Toy Fair) but after a few hours of sales, the G.I.A.T. (related with the French Defense Ministry) forbade further sales, "too sensible! too new!" *-Patrice DeBucquoy, LYS lez LANNOY, FRANCE.*

Our second review this issue is of the DART-MOOR MILITARY MODELS SARACEN MKII APC in 1/35th scale. When I first received this kit in its very heavy box, my first reaction was, "this is a modelers kit. Made completely out of white metal, there are over 250 parts. This kit is

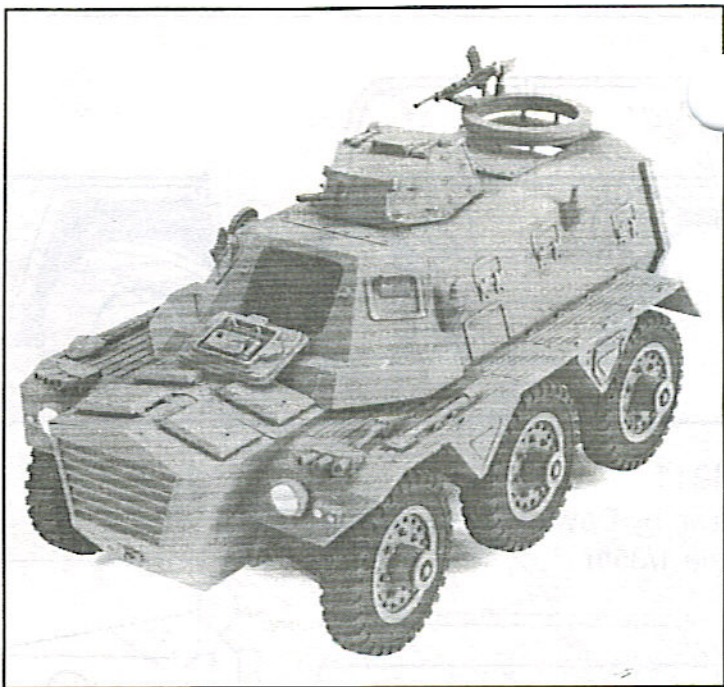
for the serious, experienced modeler. I am now into the first third of the construction, and have been able to see another that is just about to be finished, so I was able to compare progress.

Supplied with a beautiful suspension, and detailed interior, you'll want to add some figures for a small vignette. So far I've been using superglue with good results, but some A/B epoxy may be needed when I start on the hull.

Although the kit comes with detailed instructions I've been building the kit in small sub-groups that I will put together at the end. In looking at the completed model, some filling will be needed where the roof fits the sides, but this is a minor problem.

The Saracen, along with the Saladin and Ferret armored car are probably the most seen British wheeled AFVs during the last twenty years. From Aden to Malaya, Northern Ireland to Germany, the Saracen was there. This kit fills a real hole in the range of kits available.

Are there some drawbacks? Yes, first the kit is relatively expensive at \$113. But there isn't anything else like it, and it does make up into a fine model. Second, building a completely metal kit may be beyond the modeling skills of some new modelers. (I haven't had any problems so far, but you do have to think about each step, and what you are trying to accomplish. You also have to be careful not to glue your fingers to-



gether, but that's true of resin kits as well. I highly recommend this kit. Sources are: DART-MOOR MILITARY MODELS, Woodmanswell House, Brentor, Tavistock, Devon PL19 0NE, Great Britain, or AMM Review, 17525 S.W. Alexander, Aloha OR 97006.

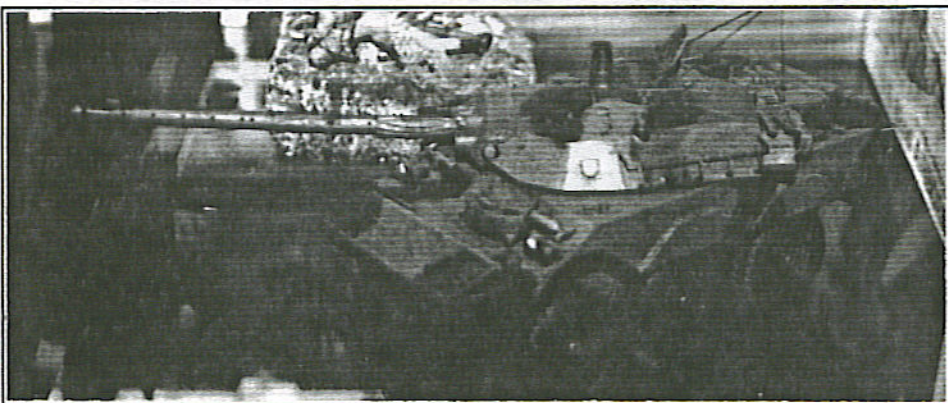
-reviewed by David R. Haugh, Woodburn, OK, USA

AZIMUT PRODUCTIONS M8 Greyhound armored car.

I just received my kit from ADV today (7 June 1991). I ordered back in August of 1990. The kit comes in ADV's typical yellow resin:

- Lower hull with details molded on; front plate; rear plate; lights.
- Top hull and photo etched light guards; front and side fenders separate.
- Separate driver's "cage" - closed up though.
- No driver's positions but you do get drivers bulkheads, no seats, steering wheel, gear shift, etc.
- You do get, a radio; gunner/commander's seat, and ammo rack for turret, as well as a gun mantlet; barrel; .30 caliber machinegun, 37mm gun breech, sighting device, seats, etc.
- There is also a complete suspension and wheels.

All in all, a nice looking kit. What's not here? 1) a machinegun ring and .50 caliber machinegun. 2) driver/co-driver's seats, steering wheel, gear, etc. 3) no open driver's position. Cost me 41£ - about \$72 (includes shipping) with prices varying with value of the dollar. They take VISA. reviewed by Doug Somers, Arlington Heights, IL, USA



Letters

Dear Dave:

My new catalogue will be available this fall (November), the current one has been discontinued. In the meantime, coming soon: #2-009 SDKFZ 263 Funkwagen conversion; #2-012 SDKFZ 265 Befehlswagen conversion; and 2-016 Italian Anseldo conversion. *Ted Paris, Commanders Models, 551 Wegman Rd, Rochester, NY 14624.*

Dear Dave:

I've been enjoying the early issues of ARMORED CAR, it's good reading and very informative. I'm also pleased to see information on French subjects, which have been often overlooked. Some things of note:

1) I have a Tamiya 1/35th M8 I'd be happy to sell for \$27 including postage.

2) I would like to model the Sahariana mounting the Breda 20mm MG, but I have not had much luck finding any details about the gun. I have the Schmidt vacuform which has a few sketches and some books with marginal photos, but that's about it. Any suggestions? *-David M. Hansen, 10441 Cedar Lake Dr SE, Olympia WA 98501-9718*

Dear Dave:

If anyone can help I need the following for my 1941 M3A1 Scout car. Complete (both sides) door handles (inside and out) and latch mechanism left and right sides. Will a half track mechanism work? Will they bolt on? Where can I get them? Help! Right now I'm holding my doors shut with bungy cords!! *-Bruce F. Morgan, 4411 West Twilight Drive, Salt Lake City, UT 84109.*

Dear Dave:

I would like to ask the readers if anyone can translate from French to English. I have a number of pages of a French language book that I would like to have translated. If anyone is interested please contact me. *-James A. Massey, 208 Manchester Dr #55, Euless TX 76039.*

-Scott has quite a collection of armor, including a Daimler Scout car "Dingo", ed.

Dear Dave:

I would be grateful for any suggestions or help in locating any of the items listed below. While I am interested in all panzer related items, I am especially seeking anything found on, or used in Panther tanks. This includes any vehicle radio equipment, as I am trying to complete my FuG5 (the standard German tank radio combination).

ARMORED CARS IN GREEK SERVICE, ADDENDUM

by T. Metsovitis

It's a pity the photos last issue didn't print better. I've included some sketches to help clarify things and answer some questions.

The number plate prefix on Greek armored vehicles changed from ΕΣ to ΕΑ some time in the early '60s, but when exactly I can't say. The prefixes EA and EX used on some vehicles are special ones used only on a few islands.

A couple of comments on photo captions last issue. The Daimler scout cars, aren't Daimler's, they're the Ford Lynx. Daimlers weren't used by the Greek Army. On page 6, the two camouflaged M8s and the M3 all date from after 1976, possibly even the early '80s. Their colors and patterns are supposed to be MERDC type. This helps illustrate the great difference among vehicles. Anything camouflaged in the Greek Army dates from after 1976.

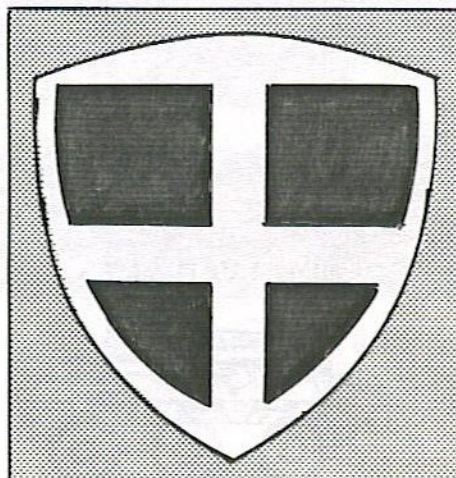
As far as current police armored cars are concerned, the Athens police must have over 30 MOWAG vehicles. The police use ACs in all cities where there is a need for good security. Before 1983 the police were segregated into city police and gendarmerie. Gendamerie vehicles were painted a light grey-green color and city police armored cars were light grey. After unification they were all refinished in dark blue.

Also a few new bits of information have come to light since the last issue. It's possible that Greek forces fighting in North Africa during WWII had a number of Marmon-Herrington MK III's. These were painted

Panzer items wanted:

- Any armored vehicle, complete or otherwise.
- Armored vehicle parts: engines, roadwheels, track, optics, radios, gun mounts, tools, etc.
- Crews' uniforms: tunics, berets, boots, etc.
- Ammunition: projectiles or casings, 20mm and larger. Also ammunition storage and shipping containers.
- Manuals, charts, wartime photographs, crews' equipment and I.D. papers, etc.

-Scott O. Clark, 2068 Broken Arrow Trail N, Lakeland FL 33813-3704.



in sand and a darker color and carried South African numbers prefixed by the letter U.

Greek forces first received MH MK IVs in Italy during WWII.

The Greek Air Force used at least one M3 scout car for airbase security. This vehicle was finished in a three color camouflage of aircraft colors and had a Greek Air Force roundel on the fender. Colors were two greens and a tan as used on U.S. aircraft in Vietnam.

If you look closely the Minerva badge can be seen on the wheeled carrier last issue.

Dear Dave:

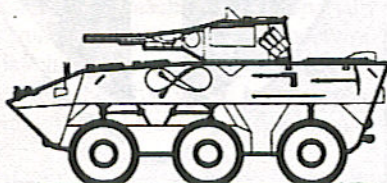
I have picked up the Cromwell 1/76th scale Laffly 80 AM armored car and the 1/76th scale Popworth Panhard 165/175. But, I don't have any references on them so I hesitate to build them. (I am always looking for info on softskins of "other" WWII countries such as France, Belgium, Holland, Italy, etc.) so I'm hoping that one of the readers can help with the Laffly and Panhard. *-Tom Whitehouse, 24 Ludwig St., Staten Island NY 10310.*

ARMORED CAR

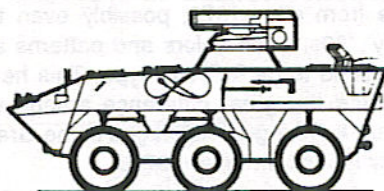


556 N 3rd Street, Woodburn, OR, 97071 U.S.A.

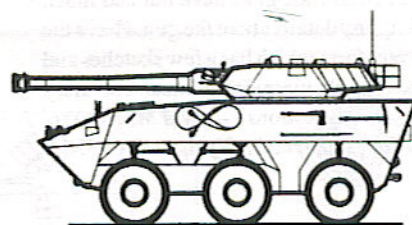
PANDUR VARIANTS



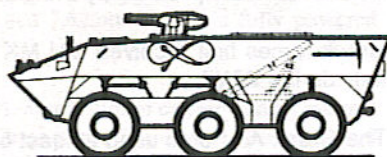
MICV 1/127 Mechanized Infantry Combat Vehicle



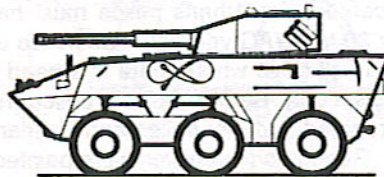
ATGMC Anti Tank Guided Missile Carrier



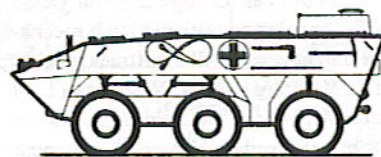
ARFSV 90 Fire Support Vehicle



AMC 81 Mortar Carrier



ARSV 30 Reconnaissance Vehicle



AAMB Armoured Ambulance

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