

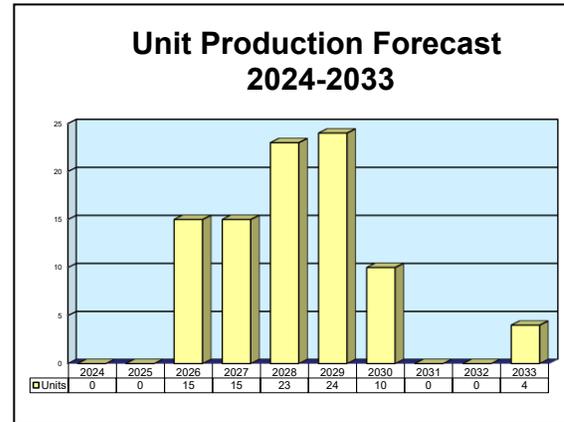
ARCHIVED REPORT

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Armored Infantry Fighting Vehicle

Outlook

- Turkish licensed-production program remains the primary active AIFV line
- Produced by Turkey on an as-needed basis for domestic procurement and potential export
- Forecast reflects Turkish licensed production for export and domestic follow-on orders



Orientation

Description. A tracked infantry combat vehicle.

Sponsor. FMC Corporation/United Defense LP (now operating as BAE Systems Land & Armaments) pursued the Armored Infantry Fighting Vehicle (AIFV) program as a private venture.

Status. Development through serial production.

Total Produced. Through 2023, the prime contractor and licensees produced at least 6,141 units of the AIFV, in various configurations.

Application. A mechanized infantry combat vehicle, optimized for transporting infantry during both offensive and defensive operations.

Price Range. In 2024 U.S. dollars, the Turkish Land Forces Command (TLFC) ACV series of the AIFV carries an estimated average unit price of \$2.62 million.

Contractors

Prime

Northrop Grumman Defense Systems, Armament Systems	http://www.northropgrumman.com , 3309 N Reseda Circle, Mesa, AZ 85215 United States, Tel: + 1 (480) 324-8600, Fax: + 1 (480) 324-8758, Prime
CMI Defence, Cockerill Mechanical Industries	http://johncockerill.com/en/defense , Avenue Greiner 1, Seraing, Belgium, Tel: + 32 4 330 2444, Fax: + 32 4 330 2582, Licensee
DRB-Hicom Defence Technologies Sdn Bhd, DefTech	Lot 26, Jalan Pengapit 15/19, Shah Alam, Selangor, Malaysia, Tel: + 60 603 5522 8888, Fax: + 60 603 5513 3100, Licensee
FNSS Savunma Sistemleri AS	http://www.fnss.com.tr , 37 Golbasi, Ankara, Turkey, Tel: + 90 312 497 43 00, Fax: + 90 312 497 43 01, Email: info@fnss.com.tr , Licensee
Fokker Landing Gear	http://www.gkn.com , Grasbeemd 28, PO Box 366, Helmond, Netherlands, Tel: + 31 492 575151, Fax: + 31 492 575149, Email: info.flg@fokker.com , Licensee

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Subcontractor

Allison Transmission Division, General Motors Corp	http://www.allisontransmission.com , One Allison Way, PO Box 894, Indianapolis, IN 46222-3271 United States, Tel: + 1 (317) 242-5000 (X-200-4 Automatic Gearbox)
Detroit Diesel Corp	http://www.demanddetroit.com , 13400 Outer Dr W, Detroit, MI 48239-4001 United States, Tel: + 1 (313) 592-5000, Fax: + 1 (313) 592-5158, Email: defense@detroitdiesel.com (Silver 6V-53T Diesel Engine)
Nexter Training	http://www.nexter-group.fr , 11 Allée des Marronniers, Versailles, France, Tel: + 33 1 39 49 30 00, Fax: + 33 1 39 49 34 89, Email: presse@nexter-group.fr (25mm Model 811 Cannon)
Rheinmetall Air Defence AG	http://www.rheinmetall-defence.com , Birchstrasse 155, Zurich, Switzerland, Tel: + 41 44 316 2211, Fax: + 41 44 311 3154, Email: info@ocag.ch (25mm KBA BO2 Cannon)

Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 75 Glen Road, Suite 302, Sandy Hook, CT 06482, USA; rich.pettibone@forecast1.com

Technical Data

ACV-300/ACV-15

Crew. Three: commander, driver, and gunner. The vehicle can carry from 7-10 fully equipped infantrymen, depending on the configuration.

Armor. Conventional aluminum alloy, with an additional layer of spaced laminate steel armor bolted to the hull.

Dimensions. The following data reflect the current Turkish ACV-300/ACV-15 production models. The height is to the top of the periscope. Data for the ACV-15 are in parentheses where different.

	<u>SI Units</u>	<u>U.S. Units</u>
Length	5.26 m	17.26 ft
Width	2.82 m	9.25 ft
Height	2.97 m	9.74 ft
Combat weight	13.69 (18.00) tonnes	15.09 (19.84) tons
Fuel capacity	416 liters	110.64 gal

Performance. The automotive performance data reflect use on a paved road.

	<u>SI Units</u>	<u>U.S. Units</u>
Maximum speed	61.2 kmph	38 mph
Maximum water speed	6.3 kmph	3.91 mph
Maximum range	490 km	304.47 stat mi
Step	74 cm	2.10 ft
Trench	1.63 m	5.35 ft
Slope	30%	30%
Gradient	60%	60%
Fording	Amphibious	Amphibious

Engine. Detroit Diesel Corporation 6V-53T two-stroke supercharged diesel engine. This powerplant generates 196.94 kilowatts (264 hp), with a power-to-weight ratio of 14.38 kilowatts per tonne (17.49 hp/ton). The 28-volt electrical system features a 200-ampere alternator and two 6TN batteries. After the initial 200 vehicles, the Turkish ACV-300 versions of the AIFV mounted the so-called Silver version of the 6V-53T engine. This enhanced powerplant generates

223.71 kilowatts (300 hp), with a power-to-weight ratio of 16.34 kilowatts per tonne (19.88 hp/ton).

The ACV-15 version also mounts a Detroit Diesel Corporation 6V-53T two-stroke supercharged diesel engine. However, the powerplant has been enhanced to generate 261 kilowatts (350 hp).

The ACV-15 can also optionally mount a Detroit Diesel 6V-53TIA powerplant, generating 298 kilowatts (400 hp).

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Gearbox. Allison Transmission Division TX-100-1A automatic gearbox, with one reverse and four forward gears. The AIFV employs the BAE Systems (United Defense) DS 200 differential steering unit.

After production of the initial 200 vehicles, the Turkish ACV-300 versions of the AIFV mounted the Allison X-200-4 gearbox, with one reverse and four forward gears.

Suspension and Running Gear. Torsion bar suspension, with five dual-tired roadwheels on each side. Like the M113, the AIFV does not mount track return rollers. The drive sprocket mounts to the front. The first and last roadwheel stations feature hydraulic shock dampers.

Armament

Main Armament. Oerlikon Contraves 25mm KBA BO2 cannon, mounted in the Stork SP Aerospace (formerly DAF Special Products) one-man turret. The AIFV carries a total of 180 ready rounds (105 High Explosive and 75 Armor Piercing), with another 147 rounds in reserve.

The Turkish ACV-300 IFV version of the AIFV was originally to have mounted the M242 in the BAE Systems (UDLP) one-man turret. However, due to contractual problems, the initial 135 vehicles mounted the KBA BO2 ordnance in a Stork SP Aerospace one-man turret.

In September 1992, Turkey selected the (then) Giat Industries 25mm Model 811 cannon in the Giat Industries Dragar turret for the remaining ACV-300 IFV production run. Turkey produces this ordnance and turret under license from Nexter (formerly Giat Industries).

The enhanced ACV-15 version of the vehicle mounts a one-man "Sharpshooter" turret system developed by BAE Systems and FNSS. The standard Sharpshooter turret configuration mounts a 25mm M242 automatic cannon and 7.62mm coaxial machine gun.

Secondary Armament. One coaxially mounted 7.62x51mm NATO (.308 Winchester) MAG 58/M240C machine gun, with 230 ready rounds and 1,610 stowed rounds. The Turkish ACV-300 mounts a license-produced 7.62x51mm NATO MG3 machine gun.

ACV-S/ACV-19

Crew. Three: commander, driver, and gunner. The vehicle can carry from 7-12 fully equipped infantrymen, depending on the configuration.

Armor. Conventional aluminum alloy, with an additional layer of spaced laminate steel armor bolted to the hull.

Dimensions. The following data reflect the current Turkish ACV-S/ACV-19 production models.

	<u>SI Units</u>	<u>U.S. Units</u>
Length	6.02 m	19.75 ft
Width	2.94 m	9.64 ft
Height	2.70 m	8.85 ft
Combat weight	18.00 tonnes	19.84 tons
Fuel capacity	476 liters	125.74 gal

Performance. The automotive performance data reflect use on a paved road.

	<u>SI Units</u>	<u>U.S. Units</u>
Maximum speed	65 kmph	40.39 mph
Maximum water speed	6.3 kmph	3.91 mph
Maximum range	490 km	304.47 stat mi
Step	70 cm	2.30 ft
Trench	1.83 m	6.00 ft
Slope	30%	30%
Gradient	60%	60%
Fording	Amphibious	Amphibious

Engine. Detroit Diesel Corporation 6V-53T two-stroke supercharged diesel engine. This powerplant generates 261 kilowatts (350 hp).

Depending on customer requirements, the ACV-S/ACV-19 series can also be outfitted with a Detroit Diesel 6V-53TIA powerplant, generating 298 kilowatts (400 hp).

Gearbox. Allison X-200-4 gearbox, with one reverse and four forward gears.

The AIFV employs the BAE Systems (United Defense) DS 200 differential steering unit.

Suspension and Running Gear. Torsion bar suspension, with six dual-tired roadwheels on each side.

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The drive sprocket mounts to the front. The first and last roadwheel stations feature hydraulic shock dampers.

Armament. The ACV-S/ACV-19 can be outfitted with an array of weapons systems and turret

configurations. See the **Variants/Upgrades** section for more information.

The base ACV-19 APC variant is equipped with a single hatch-mounted 12.7mm machine gun, along with eight automatic smoke grenade launchers.



Turkish ACV-300 Infantry Fighting Vehicle

Source: FNSS Savunma Sistemleri AS

ACV-30

Crew. Three: commander, driver, and gunner.

Armor. Conventional aluminum alloy, with an additional layer of spaced laminate steel armor bolted to the hull.

Dimensions. The following technical specifications are derived from documents released by the prime contractor.

	<u>SI Units</u>	<u>U.S. Units</u>
Length	7.07 m	23.20 ft
Width	3.90 m	12.80 ft
Height	3.62 m	11.88 ft
Combat weight	29.50 tonnes	32.51 tons
Fuel capacity	495 liters	130.77 gal

Performance. The automotive performance data reflect use on a paved road.

	<u>SI Units</u>	<u>U.S. Units</u>
Maximum speed	65 kmph	40.39 mph
Maximum water speed	6.0 kmph	3.72 mph
Maximum range	500 km	310.69 stat mi
Step	90 cm	2.96 ft
Trench	2.0 m	6.57 ft
Slope	30%	30%
Gradient	60%	60%
Fording	Amphibious	Amphibious

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Engine. Unspecified two-stroke supercharged diesel engine. This powerplant generates 447 kilowatts (600 hp).

Gearbox. Unspecified automatic gearbox with one reverse and four forward gears. The AIFV employs an unspecified differential steering unit.

Suspension and Running Gear. Torsion bar suspension, with six dual-tired roadwheels on each side. The drive sprocket mounts to the front. The first and last roadwheel stations feature hydraulic shock dampers.

Armament. The ACV-30 can be outfitted with an array of weapons systems and turret configurations. See the **Variants/Upgrades** section for more information.

Variants/Upgrades

Variants. Belgium, Malaysia, the Netherlands, and Turkey have developed a number of AIFV variants, as follows:

<u>Designation</u>	<u>Country</u>	<u>Description</u>
AIFV-B	Belgium	Basic AIFV
AIFV-B	Belgium	Mounts 25mm KBA BO2 ordnance in enclosed weapon station
AIFV-B	Belgium	Mounts MILAN anti-tank guided missile and M113A1 cupola for 12.7x99mm (.50-cal) M2HB machine gun
AIFV-B CP	Belgium	Command post vehicle with M113A1 cupola
YPR-765	Netherlands	Basic AIFV
YPR-765 PRCO-B	Netherlands	Command post vehicle with nine-man crew
YPR-765 PRAT	Netherlands	Anti-tank vehicle mounting BGM-71 TOW anti-tank guided missile, with four-man crew
YPR-806 PRBRG	Netherlands	Armored recovery vehicle with four-man crew and crane
YPR-765 PRRDR-C	Netherlands	Radar and command vehicle
YPR-765 PRGWT	Netherlands	Ambulance with four-man crew
YPR-765 PRVR-A/B	Netherlands	Cargo vehicle with two-man crew
YPR-765 PRMR	Netherlands	Mortar carrier with M113A1 cupola and seven-man crew; tows Thomson-Brandt 120mm mortar
YPR-765 PRRDR	Netherlands	Radar vehicle, mounting ZB298 battlefield surveillance radar
YPR-765 PRCO-C1	Netherlands	Battalion command post vehicle with M113A1 cupola and nine-man crew
YPR-765 PRCO-C2	Netherlands	Battalion gunnery center with M113A1 cupola and 7/9-man crew
YPR-765 PRCO-C3	Netherlands	Mortar fire control center with M113A1 cupola and seven-man crew
YPR-765 PRCO-C4	Netherlands	Anti-aircraft command vehicle with M113A1 cupola and five-man crew
YPR-765 PRCO-C5	Netherlands	Observation vehicle with M113A1 cupola and four-man crew
YPR-765 PRI/I	Netherlands	Squad vehicle with M113A1 cupola and 10-man crew
ACV-300 AAPC	Turkey	Advanced Armored Personnel Carrier; one-man turret, mounting 12.7x99mm (.50-cal) M2HB and 7.62x51mm NATO (.308 Winchester) MG3 machine guns
81mm Mortar Vehicle	Turkey	Mounts 81mm mortar on turntable and an MG3 machine gun; six-man crew
ACV-15 TOW Vehicle	Turkey	Mounts two BGM-71 TOW anti-tank guided missiles in ALT turret; four-man crew
ACV-300/ACV-15 IFV	Turkey	Infantry Fighting Vehicle; mounts stabilized 25mm M242 ordnance and coaxial MG3 machine gun in the one-man Sharpshooter turret; Malaysia took delivery of 211 ACV-300 IFVs. Now generally designated the ACV-15

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<u>Designation</u>	<u>Country</u>	<u>Description</u>
Adnan	Malaysia	Malaysian variant of the ACV-300/ACV-15 developed in a cooperative venture between FNSS and DRB-Hicom Defence Technologies. The variant is outfitted with an array of communications and digital systems produced in Malaysia
ACV-15 AFOV	Turkey	ACV-300/ACV-15 variant intended to operate as a mobile forward observation post for artillery spotting. It is outfitted with an array of specialized reconnaissance and communications equipment, including a sensor-equipped mast
ACV-15 Fitters	Turkey	ACV-300/ACV-15 variant outfitted with a hydraulic crane for protected recovery and maintenance operations
HELLFIRE AIFV	Turkey	Mounts four AGM-114 HELLFIRE anti-tank guided missiles in the manned HELLFIRE turret system; vehicle carries four more AGM-114 missiles in reserve; turret features 360-degree traverse and +20-degree elevation
ACV-S/ACV-19 CFV	Turkey	Stretched version of the ACV-300 IFV, featuring six roadwheels per side and a two-man turret; available with two main armament package options: a single 30mm cannon and a TOW 2 launcher
ACV RCT	Turkey	ACV-15 and ACV-S/ACV-19 variant outfitted with a CLAW remotely controlled turret module. The module can equip either a 25mm or 30mm cannon, and also features a 7.62mm MG3 coaxial machine gun
ACV-19 IFV25	Turkey	ACV-S/ACV-19 variant outfitted with a one-man Sharpshooter turret module mounting a 25mm automatic cannon and 7.62mm coaxial machine gun
ACV-19 DFS90	Turkey	ACV-S/ACV-19 variant intended to provide a direct-fire support capability. The ACV-19 DFS90 mounts a 90mm cannon in a two-man turret, and includes a loader's position
ACV-19 DFS105	Turkey	ACV-S/ACV-19 variant intended to provide a direct-fire support capability. The ACV-19 DFS105 mounts a 105mm cannon in a two-man turret, and includes a loader's position
ACV-19 RECCE	Turkey	ACV-S/ACV-19 variant intended to perform a reconnaissance role. The variant is outfitted with an array of specialized intelligence and recon systems, including an electro-optical mast. The variant is equipped with a remotely operated weapons system mounting a 12.7mm machine gun. The vehicle includes two crew positions for reconnaissance personnel in addition to the driver, commander and gunner
ACV-19 SPM120	Turkey	ACV-S/ACV-19 variant intended to operate as a self-propelled mortar carrier and provide troops with mobile, indirect fire support. The vehicle integrates a 120mm mortar system into the rear vehicle cabin
ACV-19 AESV	Turkey	ACV-S/ACV-19 variant intended to provide protected engineering support on the frontline. The variant is equipped with a front-mounted push-barrier for obstacle clearance and features a specialized rear cabin space for engineering equipment and combat transport
ACV-19 SPAD	Turkey	ACV-S/ACV-19 variant intended to perform as a mobile air defense platform. It mounts a low-altitude surface-to-air missile system and unspecified cannon configuration on a two-man turret
ACV-S/ACV-19 CPV	Turkey	ACV-S/ACV-19 variant intended to operate as a mobile command station. The variant has a modified rear cabin featuring specialized command & control and intelligence systems. The variant can also be modified to perform as a mobile forward-observation post for artillery direction
ACV AMEV	Turkey	ACV-15 or ACV-S/ACV-19 variant intended to provide protected transport for battlefield wounded. The variant features a specialized rear cabin configuration and is equipped with two stretchers, patient seating, medical equipment storage, and positions for medical personnel

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<u>Designation</u>	<u>Country</u>	<u>Description</u>
ACV-S/ACV-19 TLC	Turkey	Tracked Logistics Carrier; a cargo-carrying version of the ACV-S, mounting a 1,600-kilogram (3,520-lb) capacity crane in place of the two-man turret. ACV-S TLC can carry a 6,000-kilogram (13,200-lb) load in its 6.2-cubic-meter (20.34-cu-ft) cargo area
ACV-30 Korkut	Turkey	ACV-30 variant intended to operate as a self-propelled air defense gun system. It is outfitted with an MKEK 35mm automatic anti-air cannon in a remotely controlled turret module
ACV-30 Command and Control	Turkey	ACV-30 variant intended to perform as a mobile command post. The rear cabin space is modified to serve as a command space and is outfitted with an array of specialized communications and intelligence systems and equipment

In addition to the above AIFV variants, BAE Systems Land & Armaments offers a number of kits to convert the basic AIFV to ambulance, cargo, command post, mortar, recovery (ARV), and TOW variants.

FNSS Savunma Sistemleri AS (the Turkish joint venture between the U.S. prime contractor and Nurol Savunma Sanayii for AIFV licensed production in Turkey) has also developed two prototype armored mortar vehicles for two potential customers in the Middle East. One of the prototypes mounts the 120mm General Dynamics Turreted Mortar Under Armor System, with a Mauser fire control and land navigation system. The other vehicle mounts the 120mm Thomson-DaimlerChrysler Armaments

(Thomson-Brandt) 2R2M rifled mortar, with an automatic loading system.

Modernization and Retrofit Overview. The ACV-15/19 series remains an effective and frontline-capable armored vehicle.

Nevertheless, it is likely that the Turkish Army and prime contractors will begin more extensive efforts to modernize the country's existing AIFV fleet during the forecast period, particularly in relation to weapons and fire control systems and survivability levels, in order to ensure the series remains an important part of Turkey's mechanized force structure for many years to come.

Program Review

Background. In 1967, the U.S. Army awarded (then) FMC Corporation a contract to develop the advanced XM765 Mechanized Infantry Combat Vehicle (MICV), based on M113 components. Although U.S. Army commitments in Southeast Asia precluded definitive funding of the program, FMC continued the program as a private venture. In 1977, FMC began production of its M113-based Armored Infantry Fighting Vehicle (AIFV) for the Foreign Military Sales (FMS) market.

Keeping It in the Family

In 1994, FMC Corporation and BMY Combat Systems merged to form United Defense Limited Partnership. In 2005, BAE Systems plc acquired UDLP. The contractor now operates as BAE Systems Land & Armaments.

The Turkish licensee for the AIFV program, FNSS Savunma Sistemleri AS, operates as a joint venture between the U.S. prime contractor and Nurol Savunma Sanayii.

Description. The Armored Infantry Fighting Vehicle is essentially a vastly improved M113, featuring an Oerlikon Contraves 25mm KBA BO2 cannon and a 7.62x51mm NATO (.308 Winchester) MAG 58/M240C machine gun in a new turret. The AIFV also features

spaced laminate steel armor, which is bolted over the base aluminum armor.

Improving the M113 Design

The driver sits in the left forward hull; the commander's station is located immediately to the rear of the driver. The driver's station features a single-piece hatch cover and four M27 day periscopes; the center periscope is interchangeable with a passive night-driving unit. The commander's station features an M113A1 cupola with four M17 day periscopes and one M20A1 periscope (1x to 6x magnification); the M20A1 is interchangeable with a passive night vision periscope.

The engine, gearbox, and drivetrain compartment occupy the right forward portion of the hull. The AIFV features more robust components (e.g., radiator and universal joints) than the basic M113. The basic AIFV also features a torsion bar in a tube suspension system for a greatly improved ride over the M113. However, the Belgian and Turkish vehicles feature a conventional straight torsion bar system.

The one-man enclosed weapon station of the basic AIFV mounts on the right side of the vehicle behind the engine compartment. The welded turret features an

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additional layer of the same type of armor as on the hull. The gunner's station features four M27 day periscopes and a Philips day/night sight (2x-6x day magnification; 6x night magnification). Operation of the turret and KBA BO2 ordnance is electrohydraulic, with manual backup.

The troop compartment occupies the rear of the hull. The compartment features three seats on each side and one seat between the commander and the turret. A single-piece roof-mounted hatch cover and a power-operated rear ramp (incorporating a secondary door hatch) provide troop access and egress. Each side of the troop compartment features two firing ports; the rear of the compartment features a single firing port. The side firing ports each feature an M17 periscope; the rear firing port features an M27 periscope.

The two fuel tanks, both armored, mount at the rear of the vehicle on each side of the ramp. The AIFV is amphibious with minimal preparation; the T130E1 track assembly provides water propulsion.

Turkish Variations on the Theme

The Turkish licensee has further developed the basic AIFV beyond the original American design. FNSS Savunma Sistemleri currently offers the ACV-300 series in a vast multitude of configurations. Core variants include:

- The ACV-300 Advanced Armored Personnel Carrier (AAPC), essentially the licensed copy of the original AIFV.

- The ACV-300/ACV-15 IFV, which mounts a stabilized 25mm M242 ordnance and a coaxial MG3 machine gun in the one-man Sharpshooter turret.
- The ACV-S/ACV-19, a stretched version of the ACV-300 IFV featuring a two-man turret. Two primary armament options are available. In this version, the two-man turret, mounted along the centerline of the vehicle, replaces both the commander's station and the one-man turret of earlier designs. Although the vehicle was initially unveiled as the ACV-S, the contractor now generally refers to this variant as the ACV-19 as part of a wider rebranding initiative. Also, under this effort, the initial ACV-300 version was enhanced with some performance and technical modifications and redesignated the ACV-15.
- The ACV-30 variant, unveiled by FNSS in 2013. The variant features improved armored protection and mine/IED survivability, vehicle performance, and weapons integration capability. The prime contractor has prominently marketed the variant as a potential platform for heavy weapons systems, such as turret-mounted 105mm cannon or air defense modules.
- The ACV-S/ACV-19 Tracked Logistics Carrier, a cargo-carrying version of the stretched ACV-S mounting a 1,600-kilogram-capacity (3,520-lb-capacity) crane in place of the two-man turret. The ACV-S TLC can carry a 6,000-kilogram (13,200-lb) load in its 6.2-cubic-meter (20.34-cu-ft) cargo area.



Turkish ACV-S/ACV-19 Armored Infantry Fighting Vehicle

Source: FNSS Savunma Sistemleri AS

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Funding

The U.S. Department of Defense, through the U.S. Army Tank-automotive Research and Development Command, provided initial developmental funding under the XM765 MICV program. The prime contractor and licensees have since funded the AIFV as a private venture.

Selected Acquisition Reports (SARs)

The Department of Defense (DoD) periodically releases Selected Acquisition Reports (SARs) that summarize the latest estimates of cost, schedule, and performance status for Major Defense Acquisition Programs (MDAP). These reports are prepared annually in conjunction with submission of the president's budget. (Subsequent quarterly exception reports are required only for those programs experiencing unit cost increases of at least 15 percent or schedule delays of at least six months.)

The total program cost estimates provided in the SARs include research and development, procurement, military construction, and acquisition-related operations and maintenance. Total program costs reflect actual costs to date as well as future anticipated costs.

See below for instructions on how to view the annual SAR related to this particular report.

Online and DVD Clients – Click link below.

Hard-Copy Clients – Insert the CD located in the sleeve at the front of the binder. (Electronic version updated quarterly.)

Worldwide Distribution/Inventories

Export Potential. The Armored Infantry Fighting Vehicle has done well on the international market, despite the worldwide glut of armored vehicles. Turkey adopted the AIFV at a critical time in the program's life. Until 1988, only three nations (Belgium, the Netherlands, and the Philippines) employed the AIFV. Turkey's licensed-production effort (under the FNSS Savunma Sistemleri joint venture) opened new markets in the Middle East and Asia for the AIFV as a lower-price alternative to high-end combat vehicles. In effect, FNSS has become the primary international player for the AIFV program.

In the mid-2000s, some reports suggested that FNSS had concluded the final details on a contract with Pakistan for the licensed assembly of some 700 AIFVs by an unspecified Pakistani contractor. However, such a deal does not appear to have materialized, with Pakistan instead continuing to pursue domestic alternatives.

Pakistan's Heavy Industries Taxila currently manufactures two indigenous APC designs derived from the M113 concept, dubbed the Talha and the Saad. Although the Talha and Saad designs share many features with the ACV-15 and other modernized M113 developmental derivatives, they are distinct vehicle series.

In addition, in 2007, Saudi Arabia was rumored to have placed an order for a considerable quantity of AIFV series vehicles. However, subsequent reporting revealed that the contract in question involved FNSS modernizing existing Saudi M113 inventories to a similar technical and performance standard.

Although reports suggest that Brunei has expressed interest in acquiring AIFVs, no orders have been reported at this time.

Like the Piranha wheeled armored vehicle, the AIFV has earned much more revenue for the licensees than for the prime contractor. While (then) FMC/United Defense LP actually produced only 49 vehicles, we estimate the various licensees have produced over 6,000 vehicles to date. FNSS Savunma Sistemleri alone has produced more than 3,000 vehicles.

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In 2012, the Royal Netherlands Army phased the last of its YPR-765 AIFVs out of active service. These retirements marked the completion of a multiyear effort by the RNLA to modernize its mechanized capabilities by replacing its aging YPR-765 AIFV inventories with newly purchased BAE Systems CV9035NL vehicles.

Countries. Belgium, Egypt, Malaysia, the Philippines, Turkey, and the United Arab Emirates.

Forecast Rationale

In Turkey, licensed production of AIFV series vehicles by FNSS Savunma Sistemleri AS (a joint venture between BAE Systems and Nurol Savunma Sanayii) occurs on an as-needed basis for the domestic requirements of the Turkish Army and potential export.

The Forecast International Weapons Group anticipates that low quantities of Turkish Army follow-on orders and intermittent export sales will continue to sustain the ACV-15 and ACV-19 series.

Cornerstone of the Turkish Fleet

The ACV-15 series of vehicles has dutifully fulfilled the Turkish Army's APC and AIFV requirements, and the ACV-15 design remains capable. FNSS and other Turkish contractors are continually modernizing the Turkish ACV-15 fleet to a suitable operational and technical standard. Nevertheless, the core design is beginning to show its age.

The Turkish Ministry of Defense plans to implement an array of ambitious force modernization initiatives, made possible by increased levels of military spending and the maturation of Turkey's domestic defense industry.

The Turkish Army is likely to begin supplementing, and in time replacing, some of its ACV-15 series vehicle inventories with more modern indigenous designs like

the Otokar Tulpar and FNSS's own ACV-30 series. Nevertheless, the ACV-15's prominent role in the Turkish Army's mechanized force structure and continual efforts to modernize the vehicles to meet new requirements will ensure that the series remains in active service in considerable numbers.

Enter the ACV-30

In 2013, FNSS Savunma Sistemleri AS introduced a new vehicle design into the AIFV family, designated the ACV-30.

The ACV-30 is an evolutionary development of the AIFV series and derives significant design inspiration from the prior ACV-S/ACV-19 line of vehicles.

The ACV-30's heavier weight, improved powerplant and suspension, and revamped armored protection allow it to perform in a variety of operational roles beyond the capabilities of its predecessor through the integration of more potent weapons systems and enhanced passenger survivability, both of which are assets when deployed to asymmetric combat environments.

FNSS intends to utilize the ACV-30 as a foundational platform for the eventual development of an extensive family of specialized variants, just as the company did with the prior ACV-15 and ACV-19 designs.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR UNIT PRODUCTION												
Designation or Program	High Confidence					Good Confidence			Speculative			Total
	Thru 2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	
FNSS Savunma Sistemleri AS												
ACV-300/ ACV-S												
	842	0	0	15	15	23	24	10	0	0	4	91
Total	842	0	0	15	15	23	24	10	0	0	4	91