

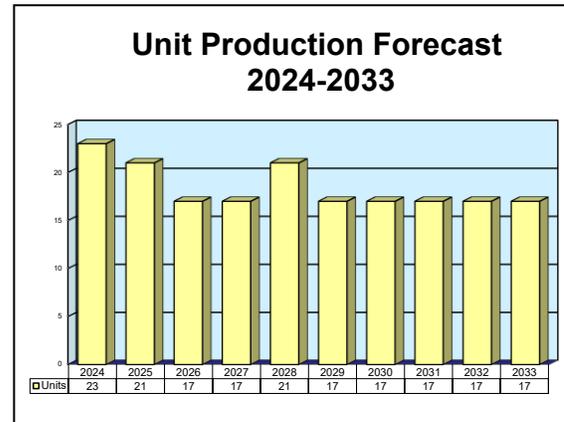
ARCHIVED REPORT

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Fahd

Outlook

- Production of Fahd 240 ongoing for additional procurement by Egypt and possible exports
- Fahd 300 model likely to see greater procurement by the Egyptian armed forces and higher export potential
- Production forecast reflects procurement by Egypt, as well as the contractor's expectations for sporadic export sales



Orientation

Description. A wheeled 4x4 armored vehicle.

Sponsor. The Egyptian Ministries of Defense and Military Production sponsor the development and Egyptian Army procurement of the Fahd.

Licensees. None.

Status. Development through serial production.

Total Produced. Through 2023, we estimate AOI produced 1,719 Fahd 240, 313 Fahd 30, and 35 Fahd 300 vehicles.

Application. A wheeled armored personnel carrier (APC), optimized for transporting infantry during both offensive and defensive operations.

Price Range. The base-model Fahd 240 reportedly maintains a unit price of \$203,310 in 2024 U.S. dollars.

Contractors

Prime

Arab Organization for Industrialization, Helwan El Hammamat - AOI Engine Factory	http://www.aoi.org.eg/en , PO Box 73, Helwan, Cairo, Egypt, Tel: + 20 255 60392, Fax: + 20 255 61236, Email: marketing@enginefactory.com.eg , Prime
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Subcontractor

Benha Company for Electronic Industries	Benha, Al Qalyubiyah, Egypt, Tel: + 20 201 3222891, Fax: + 20 201 3224237 (Vehicular Radio & Associated Equipment)
Daimler AG	http://www.daimler.com , Mercedesstrasse 137, Stuttgart, Germany, Tel: + 49 711 17 0, Fax: + 49 711 1722 244, Email: dialog@daimler.com (OM 336 LA Diesel Engine)
Federal State Unitary Enterprise, Rosoboronexport, Rosoboronexport State Corp	http://www.roe.ru , 27/3 Stromynka St, Moscow, Russian Federation, Tel: + 7 495 534 6183, Fax: + 7 495 534 6153 (BMP-2 Turret)

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KBP Instrument Design Bureau	http://www.kbptula.ru , 59 Shcheglovskaya Zaseka St, Tula, Russian Federation, Tel: + 7 4872 41 0210, Fax: + 7 4872 42 6139, Email: kbkedr@tula.net (Kliver Turret Assembly)
KNDS France SA	http://www.knds.fr/ , 13, rue de la Minière, Versailles, France, Tel: + 33 1 39 49 30 00, Fax: + 33 1 30 97 39 00, Email: presse@nexter-group.fr (TLI Turret)
Tulamashzavod JSC	http://www.tulamash.ru , 2 Mosin St, Tula, Russian Federation, Tel: + 7 4872 32 10 09, Fax: + 7 4872 50 51 89, Email: sekretar@tulamash.ru (30mm 2A42 Automatic 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



Fahd 240 Anti-Riot Vehicle

Source: Arab Organization for Industrialization (AOI)

Fahd 240

Crew. Two: commander and driver, plus 10 infantrymen.

Configuration. 4x4.

Armor. Steel alloy armor providing protection against 7.62mm armor-piercing projectiles and ballistic fragments. Enhanced armor protection against land mines is also available.

Design Features. The current production-standard Fahd 240 mounts a modern commercial truck (Mercedes LAP 1424/32) chassis, reducing the unit cost. The contractor based the original Fahd vehicles on the Mercedes LAP 1117/32 truck chassis.

Dimensions. The following data reflect the production-standard Fahd 240 armored personnel carrier.

	<u>SI Units</u>	<u>U.S. Units</u>
Length	6.06 m	19.88 ft
Width	2.45 m	8.04 ft
Height	2.11 m	6.92 ft
Combat weight	13.50 tonnes	14.88 tons
Fuel capacity	320 liters	85.11 gal

Fahd

Performance. The speed and range data reflect use on a paved road.

	<u>SI Units</u>	<u>U.S. Units</u>
Maximum speed	81 kmph	50.30 mph
Maximum range	700 km	434.70 stat mi
Step	50 cm	1.64 ft
Trench	90 cm	2.95 ft
Slope	30%	30%
Gradient	70%	70%
Fording	70 cm	2.30 ft

Engine. DaimlerChrysler (Mercedes-Benz) OM 366 LA inline six-cylinder, four-stroke, supercharged, liquid-cooled diesel engine. This powerplant generates 178.97 kilowatts (240 hp), with a power-to-weight ratio of 13.26 kW/tonne (16.13 hp/ton). A 24-volt electrical system supports vehicle operations.

Gearbox. Unspecified German manually operated unit, with one reverse and five forward gears. The drivetrain features a two-gear-ratio transfer case. Steering is power-assisted.

Suspension and Running Gear. Leaf-spring suspension system with hydraulic shock dampers at each wheel station. A central tire pressure regulation system is standard.

Armament. The basic Fahd APC can mount up to three machine guns of any caliber on the vehicle roof. The vehicle also features firing ports for the infantrymen's weapons. Four 76mm smoke grenade launchers mount on each side of the hull.

The vehicle can also accommodate a variety of cannon and anti-tank guided missile systems.



Fahd 30

Source: Arab Organization for Industrialization (AOI)

Fahd 30

Crew. Two: commander and driver, plus eight infantrymen.

Configuration. 4x4.

Armor. Same as Fahd 240.

Design Features. The Fahd 30 integrates the complete BMP-2 turret and armament with the base Fahd vehicle.

Fahd

Dimensions. The following data reflect the production-standard Fahd 30 vehicle.

	<u>SI Units</u>	<u>U.S. Units</u>
Length	6.06 m	19.88 ft
Width	2.45 m	8.04 ft
Height	2.71 m	8.89 ft
Combat weight	12.51 tonnes	13.78 tons
Fuel capacity	320 liters	85.11 gal

Performance. The speed and range data reflect use on a paved road.

	<u>SI Units</u>	<u>U.S. Units</u>
Maximum speed	85 kmph	52.79 mph
Maximum range	750 km	465.80 stat mi
Step	50 cm	1.64 ft
Trench	90 cm	2.95 ft
Slope	30%	30%
Gradient	70%	70%
Fording	70 cm	2.30 ft

Engine. Early-production vehicles mount a DaimlerChrysler (Mercedes-Benz) OM 352 A, inline, six-cylinder, supercharged, liquid-cooled diesel engine. This powerplant generates 125.32 kilowatts (168 hp), with a power-to-weight ratio of 10.02 kW/tonne (12.19 hp/ton). The Fahd 30 retains the 24-volt electrical system.

Later-production vehicles integrate the same OM 366 LA powerplant as the Fahd 240 (see above) as a production cut-in.

Gearbox. Same as Fahd 240.

Suspension and Running Gear. Same as Fahd 240.

Armament. Complete turret of the Russian BMP-2 mechanized infantry combat vehicle, featuring the 30mm 2A42 cannon, coaxially mounted 7.62x54mm PKT machine gun, and 9M113 Konkurs (AT-5 Spandrel) anti-tank guided missile launcher. Three 81mm smoke grenade launchers mount on each side of the turret.

Fahd 300

Crew. Three: commander, gunner, and driver, plus 10 infantrymen.

Configuration. 4x4.

Armor. Improved ballistic- and explosive-protection armor.

Design Features. The Fahd 300 integrates a new Tatra chassis for greater mobility, powered by a Cummins engine. New V-shaped hull design and enhanced armor improves protection against ballistics and explosives.

Dimensions. The following data reflect the production-standard Fahd 300 vehicle.

	<u>SI Units</u>	<u>U.S. Units</u>
Length	6.55 m	21.5 ft
Width	2.6 m	8.5 ft
Height	2.6 m	8.5 ft

Performance. The speed and range data reflect use on a paved road.

	<u>SI Units</u>	<u>U.S. Units</u>
Maximum speed	105 kmph	65.2 mph
Maximum range	700 km	435 mi

Engine. A Cummins ISBe2 300 diesel engine generates 293 hp at 2,500 rpm.

Armament. Vehicles in service with the Egyptian Ministry of the Interior are fitted with a manned turret mounted to the roof, equipped with a 7.62mm machine gun. The machine gun is fitted with all-day periscopes with a traverse of 360 degrees and an elevation ranging between -8 degrees and +45 degrees.

Variants/Upgrades

Variants. The contractor has developed the following variants of the Fahd vehicle. It is unclear if all variants listed came into production.

Designation	Description
Fahd	Original 4x4 armored personnel carrier design.
Fahd 30	Basic Fahd 240, integrating a Russian BMP-2 turret. See Technical Data , above.
Fahd 240/30	A Fahd 30 mounting the DaimlerChrysler OM 366 LA engine of the Fahd 240; a total of 61 built.
Fahd 240	Current production standard. See Technical Data , above.
Fahd Police Security Vehicle	Basic Fahd mounting Giat Industries' TLI turret with two machine guns. Available options include smoke grenade launchers, a dozer blade, a loudspeaker system, air conditioning, a siren, and a searchlight.
Fahd Combat Vehicle	Basic Fahd 240 mounting Giat Industries' one-man turret with a 20mm cannon.
Fahd AT Vehicle	Accommodates several types of anti-tank missile systems.
Fahd Minelaying Vehicle	Fully armored crew compartment; forward and rear flatbeds mounting six 20-tube dispenser modules; one prototype.
Fahd Armored Ambulance	Basic Fahd 240, integrating an emergency medical and evacuation suite in the rear cabin compartment.
Fahd Armored Command Vehicle	Basic Fahd mounting an array of communication equipment, including radio and telephone systems. The rear cabin has a command table, storage and board space for maps and intelligence data, and spotlights powered by an electric generator.
Fahd 280	Fahd 240 variant mounting a one-man turret. The turret integrates 12.7mm and 7.62mm machine guns.
Fahd Armored Recovery Vehicle	Fahd variant designed to recover damaged or otherwise inoperable vehicles from hazardous environments. Outfitted with a hydraulic crane.
Fahd 300	Modernized Fahd variant revealed in 2018 with greater mobility, protection, and interior space.
Fahd 300-MD	Armored ambulance variant of the Fahd 300. Can be fitted with air conditioning, stretchers, air pressure unit, first aid kits, and a 200-volt medical light.

In addition to the above variants, the contractor is reportedly investigating a number of Fahd design proposals, including missile carrier and reconnaissance vehicle variants.

Modernization and Retrofit Overview. All Egyptian original Fahd models were converted to Fahd 240s. Reports indicate that the Egyptian military has converted some of its base model Fahd 240s to the Fahd 240/280-30 infantry fighting vehicle (IFV) standard through the integration of a BMP-2 turret module. The Fahd-300 model, not yet in extensive use, is currently the most advanced variant available. A number of retrofit packages may emerge at some point.

Fahd

Program Review

Background. In the late 1970s, Egypt began to develop an indigenous vehicle to replace the obsolescent Walid vehicle and the obsolete armored personnel carriers from the Soviet Union.

Indigenous, with German Assistance

German contractor Thyssen-Henschel (subsequently Daimler-Benz) assisted in the development program. By 1982, Thyssen-Henschel had completed the initial prototypes in Germany. Testing of the TH 390 vehicle, designated Fahd (Leopard) by Egypt, ran through 1983 under the auspices of the Arab Organization for Industrialization (AOI). The Egyptians incorporated much of their past combat experience into the Fahd development program.

Egypt originally intended that the basic Fahd enter serial production in late 1985. A prototype vehicle was displayed at the 1984 Cairo Arms Exposition. A series of technical and other problems delayed the start of serial production until mid-1987; by early 1988, service deliveries had begun.

Foreign Sales and Developments

The Fahd made modest exports in the 1990s, primarily to Middle Eastern and sub-Saharan African nations. Algeria ordered approximately 200 units in 1992, which were delivered by 1995. Mali received approximately five in 1990. Bangladesh ordered 60 in 1993.

Iraq captured 20 vehicles owned by Kuwait in August 1990 during the Kuwait War. The vehicles were returned to Kuwait following Baghdad's defeat.

A contract was inked with Burundi in March 2019 for the sale of 19 Fahd 300 APCs, for use with the country's deployment during the African Union Mission in Somalia (AMISOM). On Nov. 6, 2019, AMISOM announced it had received new vehicles including several on-order Fahds.

By June 2023, the AOI's Kader Factory had listed Burkina Faso as an operator, indicating a likely recent purchase. Details of the sale are unknown.

A major milestone for the Fahd program was the development of the modernized Fahd 300 variant. First displayed at the Egyptian Defense Exposition (EDEX)

2018, the new model featured a Tatra chassis and V-shaped hull design offering enhanced mobility and greater protection from ballistic and explosive threats. As used by the Egyptian armed forces, the APC was equipped with a manned 7.62mm machine gun fitted to a roof-mounted turret. The first client for the Fahd 300 was the Egyptian Ministry of Defense, which reportedly began receiving an order of 25 in mid-2016.

At EDEX 2024, AOI displayed a new armored ambulance variant of the Fahd 300. The Fahd 300-MD is designed for emergency medical treatment and transportation.

An Armored Mercedes Truck

The Fahd consists of a DaimlerChrysler (Mercedes-Benz) cab-over-truck chassis with an armored body. The engine mounts to the front. The driver sits in the left-front of the cab, located over the engine compartment, with the commander sitting opposite the driver. The windscreens are of bullet-resistant construction, with armored shutters if required. The driver's station also features a day periscope, which is interchangeable with a night vision periscope.

The rear troop compartment features individual bucket seats and four firing ports along each side of the vehicle. The rear door provides primary troop access/egress. This door also features two firing ports. Four roof-mounted hatch covers provide ventilation or secondary access to the troop compartment.

Standard Commercial Components

The Fahd makes extensive use of standard, competitively priced commercial components. The centralized tire pressure system, run-flat tires, and engine are particularly well-suited for rugged desert conditions. Available vehicle options include:

- A 5-tonne (5.51-ton) capacity winch
- An overpressure nuclear, biological, and chemical (NBC) protective suite
- A ventilating system
- Smoke grenade launchers
- Passive night vision equipment

Funding

The Egyptian Ministries of Defense and Military Production fund the development and Egyptian Army procurement of the Fahd.

Fahd

Worldwide Distribution/Inventories

Export Potential. In addition to the nations listed below, Jordan, Saudi Arabia, and Syria have expressed interest in the Fahd. The contractor maintains that the Fahd could score at least 1,000 individual sales on the international market. Though this prediction may seem overly optimistic, the rugged design and low-end unit price of the Fahd will likely lead to moderate regional sales.

Countries. **Algeria** (206, some inactive), **Bahrain** (53 Fahd 240 Armored Recovery Vehicles), Burkina Faso (unknown number as of 2024), Burundi (10 Fahd 300s delivered, nine more under order), **Democratic Republic of the Congo** (seven), **Egypt** (802+, including 410 Fahd 30s, 367+ Fahd 240s and 25 Fahd 300s) and **Kuwait** (40, in storage), At least one customer remains unidentified. Small sales of this type of vehicle often go unreported.

Forecast Rationale

The Fahd 240 APC will continue to be produced at a low rate on an as-needed basis for the Egyptian Army.

Although the Fahd 280-30 IFV has failed to attract much export interest, open-source reporting suggests that the Egyptian Army has continued procurement of this model as well.

The improved Fahd 300 variant offers a greater potential for future export and higher volume production. The model and its sub-variants are likely to see wider service within the Egyptian armed forces and security services.

Regional Sales Potential

While the Fahd series was primarily designed for domestic service, the base Fahd 240 variant has enjoyed moderate export sales on the regional market. The vehicle's low unit cost and high level of interoperability

for use in both military and law enforcement roles have made it well suited to the security requirements of African and Middle Eastern states. However, the regional and international markets for armored vehicles remain deeply oversaturated and highly competitive.

The proliferation of similarly capable, and similarly inexpensive, APC models from countries like Russia and France can often make it difficult for contractors in the Middle East and Africa to distinguish their indigenous products on the export market. Nevertheless, we anticipate that the Fahd will generate a modest quantity of regional export sales.

AOI generally does not disclose information regarding the export sales of its military vehicles. Therefore, industry observers do not generally become aware of foreign acquisitions of vehicles like the Fahd until they appear in the field or at a public venue.

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	
Arab Organization for Industrialization												
FAHD 240												
	1,719	10	10	11	11	11	7	7	7	7	7	88
FAHD 30												
	313	4	2	0	0	0	0	0	0	0	0	6
FAHD 300												
	35	9	9	6	6	10	10	10	10	10	10	90
Subtotal	2,067	23	21	17	17	21	17	17	17	17	17	184
Total	2,067	23	21	17	17	21	17	17	17	17	17	184