



LEONARDO HELICOPTERS

AW109 TrekkerM

**AW109 TrekkerM
RUGGED AND
RELIABLE**





PERFORMING ANYWHERE

The AW109 TrekkerM is the new 3 tons class multi-role twin-engine military helicopter designed to provide operators with outstanding mission flexibility, hot and high performance and speed for a wide range of operations in the most challenging environments day and night.

The spacious reconfigurable cabin enabling rapid role change, state-of-the-art NVG compatible VFR/IFR glass cockpit, wide range of mission, role equipment and weapons, plus high levels of safety and performance, combined with low operating costs, make the AW109 TrekkerM the superior choice in the light utility helicopter market.

Its small footprint, rugged airframe and skid landing gear make it ideally suited for demanding operations in austere and urban environments.

Fully articulated titanium rotor & composite main rotor blades

Powerful PW 207C turbo-shaft engines with FADEC

Aluminium alloy «Cocoon type» crash resistance airframe

Modular crash-resistant fuel system

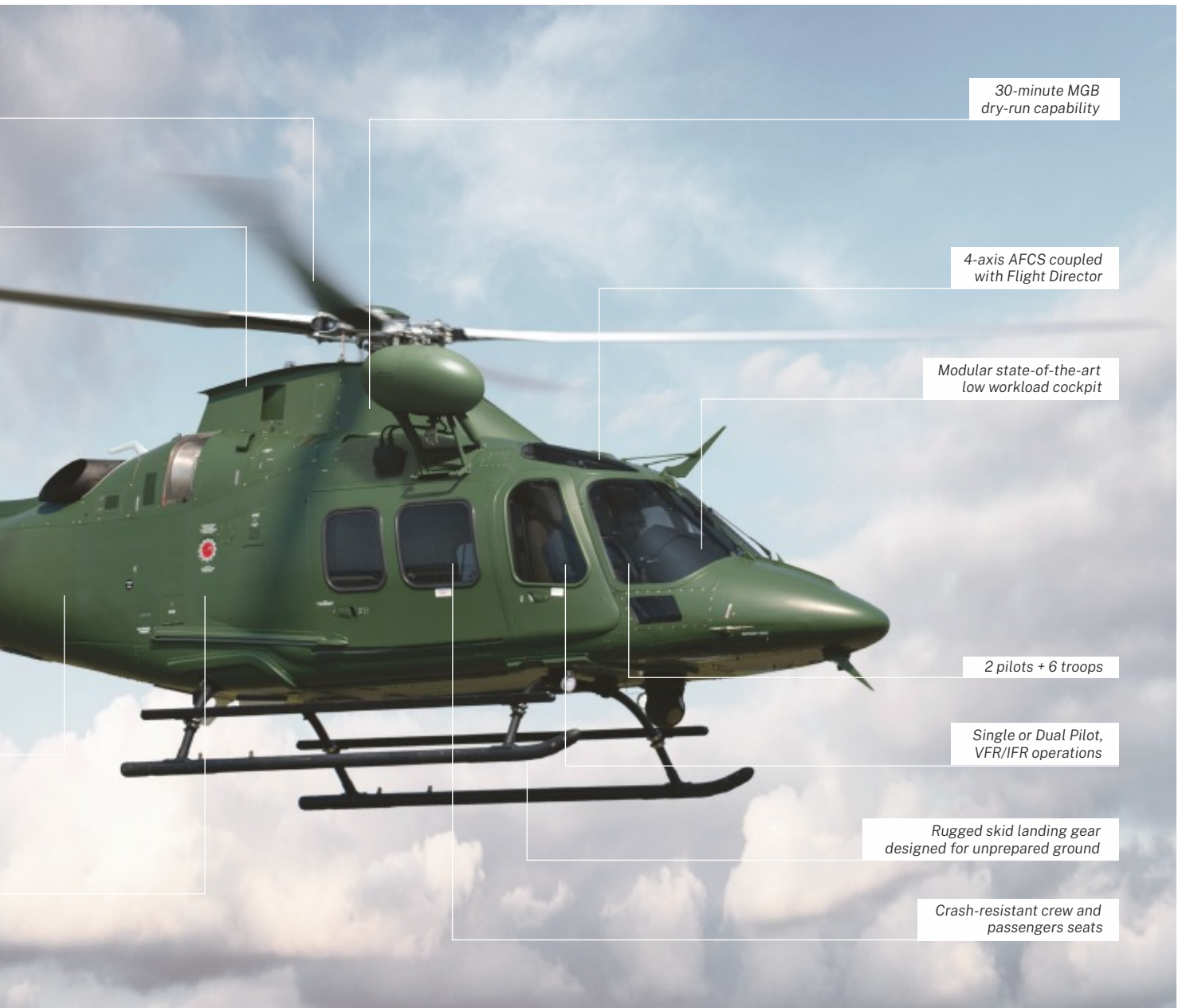
AW109 TrekkerM KEY FEATURES

AIR VEHICLE

- Small footprint for confined area operations (Length Rotor Turning 12.96 m; Rotor Diameter 10.83 m)
- Fully articulated Main Rotor provides agile handling at low level and in confined areas
- Main gearbox with 30 minute run dry capability
- Large sliding doors (1.4 m wide) on both sides
- Rugged skid landing gear and high ground clearance for rough terrain operations
- Dual electrical, fuel and hydraulic systems
- Crashworthiness compliant to CS 27 / FAR 27

CORE AVIONICS

- NVG Compatible Genesys Aerosystems™ Cockpit Display System customized to provide single or dual pilot, VFR or IFR, capability
- Three large 6" x 8" EFIS displays providing two Primary Flight Displays (PFD) and one Multi-Function Display (MFD) information for Single/Dual Pilot VFR and IFR operations
- Dual VHF/AM Communications
- Dual VOR, GPS, Transponder (Mode-S) & ADS-B Out
- Global Positioning System (GPS) augmented by Wide Area Augmentation System (WAAS)
- Fully capable Digital Map
- Integrated 3D Synthetic Vision with Highway-In-The-Sky (HITS) navigation
- Integrated Helicopter Terrain Awareness Warning System (HTAWS) with worldwide terrain and obstacle database
- NVG Lighting -Internal / External
- Standby Information System



30-minute MGB
dry-run capability

4-axis AFCS coupled
with Flight Director

Modular state-of-the-art
low workload cockpit

2 pilots + 6 troops

Single or Dual Pilot,
VFR/IFR operations

Rugged skid landing gear
designed for unprepared ground

Crash-resistant crew and
passengers seats



CABIN SPACE AND ACCESSIBILITY

The AW109 TrekkerM unobstructed cabin provides space for the rapid transport of fully equipped troops and mission equipment in support of high-tempo operations. Large sliding doors on both sides of the helicopter, long foot-steps and low floor height enable rapid ingress and egress of troops, ease of loading and unloading of internal cargo, equipment or a stretcher on the ground. Fast roping and hoist operations through the large sliding doors enables troop insertion and extraction from the hover. Cabin door mounted crew served weapons provide wide area threat suppression.

The cabin can be rapidly reconfigured from Troop Transport and Cargo Re-Supply into more demanding configurations, including MEDEVAC, CASEVAC, SAR, SF, Close Air Support and Reconnaissance/Patrolling. An equipment stowage area, located in the rear fuselage keeps the cabin space free for cabin operations.

MISSION & ROLE EQUIPMENT

A wide range of mission and role equipment can be installed on the AW109 TrekkerM, further enhancing its operational effectiveness. This includes, but is not limited to the following:

ROLE EQUIPMENT

- 177 or 213 US Gallon
- Modular Crash-Resistant Fuel System
- Engines Inlet Barrier Filters
- Ballistic Protection
- External Loudspeakers
- Searchlight (NVG Compatible)
- NVG Compatible Formation Lights
- Overwater Kit (Emergency flotation and Life Rafts)
- Snow Kit (Skid Mounted "Bear Paws")

AVIONIC EQUIPMENT

- Military Communications including Secure Radios with TACSAT capability, Combat Tactical Radios (V/UHF and HF radios with crypto), Video Downlink, Tactical Data Link
- Mode 5 IFF transponder
- Integrated Defensive Aids Suite including Missile Warning System (MWS) and Countermeasure Dispensing System (CMDS)
- Electro-Optic / Infra-Red (EO/IR) sensor with optional Laser Range Finder / Designator
- Mission Console with downlink in cabin providing Tactical Awareness
- Mission/weapons management system
- Weather Radar
- Digital Map Generator

UTILITY EQUIPMENT

- Rappelling hooks (2 LH + 2 RH)
- Cargo hook (1,250 kg)
- Dual cargo hook (1,250 kg/500 kg)
- External rescue hoist (272 kg)
- Foldable stretcher

WEAPON SYSTEMS

- Internal: 2 x Pintle Mounted Sniper Rifle (Door mounted)
- Internal: 2 x 7.62mm Pintle Mounted Machine Guns (Door mounted)
- External: 1 x 12.7 mm Pintle Mounted LH Machine Gun (Door mounted)
- External: 2 x 12.7mm Gun Pod (250 or 400 rounds)
- External: 2 x Combined 12.7mm Gun Pod / 3 Tubes 70mm Rocket Launcher
- External: 2 x 70mm Rocket Launchers (7 or 12 Tubes)
- External: 2 x ATM Launchers (2 Missiles)





AW109 TrekkerM CHARACTERISTICS

Weight (MGW)

Internal Loads	3,175 kg	(7,000 lb)
External Loads	3,350 kg	(7,385 lb)

Propulsion

Powerplant 2 x Pratt & Whitney Canada PW207C engines with FADEC

Engine Ratings

AEO Take-Off	2 x 548 kW	(2 x 735 shp)
Maximum Continuous Power	2 x 466 kW	(2 x 625 shp)

Capacity

Crew	1 to 2
Passengers	7 or 6 passengers

Dimensions

Overall Length ⁽¹⁾	12.96 m	(42 ft 06 in)
Overall Height ⁽¹⁾	3.60 m	(11 ft 09 in)
Rotor Diameter	10.83 m	(35 ft 06 in)

Performance

VNE (SL)	281 km/h	(152 kt)
Max Cruise Speed (@5,000 ft, ISA, MGW, MCP)	274 km/h	(148 kt)
HIGE (ISA, MGW, TOP)	4,609 m	(15,120 ft)
HOGE (ISA, MGW, TOP)	2,926 m	(9,600 ft)
Maximum Range (@5,000 ft, ISA, MGW) ⁽²⁾	828 km	(447 nm)
Maximum Endurance (@5,000 ft, ISA, MGW) ⁽²⁾		4 hr 19 min

⁽¹⁾ Rotors turning,

⁽²⁾ With auxiliary fuel tanks-No reserve

MULTI-ROLE CAPABILITY

TRAINING CAPABILITY

The AW109 TrekkerM is the ideal solution for the full spectrum of training missions ranging from initial stage training up to instrument flying, advanced and multi-engine training and multi crew coordination. This means military pilots can be trained and qualified in instrument procedures, multi-mission and battlefield operations. Advanced technology and inherent safety combined with high power margins and a specific cabin layout offer a forgiving environment to hone pilot skills. The unique, centrally located observer seat allows a non-flying student to fully observe the cockpit, maximizing learning and training opportunities. The high versatility of the AW109 platform allows, in addition to training operations, a high range of missions ensuring an uncommon multi-role capability, thanks to the rugged design, small footprint and skid landing gear combined with an extensive suite of mission and role.

CLOSE AIR SUPPORT / ARMED ESCORT

The AW109 TrekkerM sighting and external weapon systems provide Close Air Support and Armed Escort to offer scalable threat suppression capabilities, in order to enhance combat effectiveness. The external weapon options include heavy Machine Gun Pods, guided or unguided rockets and air-to-ground missiles, complementing door mounted crew served weapons that include one 12.7 mm or two pintle-mounted 7.62 mm machine guns. Defensive Aids Suite (DAS) systems can be fitted to improve protection from attack by surface-to-air and air-to-air missiles.

TROOP TRANSPORT / SPECIAL FORCES OPERATIONS

The rapidly reconfigurable cabin provides fore and aft facing crashworthy seating for up to 6 equipped troops. Ballistic protection as well as crew served weapons, such as 12.7 and 7.62 mm GPMG installed on pintles mounted in the cabin door, can be provided. Fore and aft bulkhead seating enables rapid egress and ingress of a Special Forces (SF) team through the large sliding doors. The rappelling hooks enables simultaneous egress of two troops per side.

CARGO RE-SUPPLY / EXTERNAL LIFT

With the ability to carry internal cargo and coupled with a 1,250 kg single cargo hook or 1,250 kg / 500 kg dual cargo hook capability the helicopter has the capacity to conduct effective resupply and lift operations.

SEARCH & RESCUE

The AW109 TrekkerM cabin enables hoist operations and personnel recovery through the large cabin door, thanks to the 272 kg external rescue hoist installed on the RH side of the cabin. An optional mission console enhances situational awareness and search capabilities to further enhance mission effectiveness.

CASEVAC / MEDEVAC

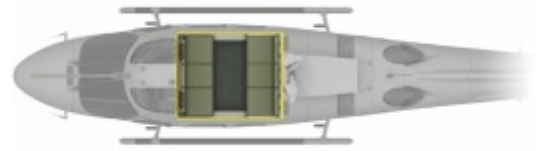
The cabin can be easily reconfigured to enable CASEVAC / MEDEVAC operations with space for 2 medical personnel and a patient on a stretcher. In flight rescue and evacuation missions can be performed thanks to external rescue hoist.

SURVEILLANCE AND RECONNAISSANCE

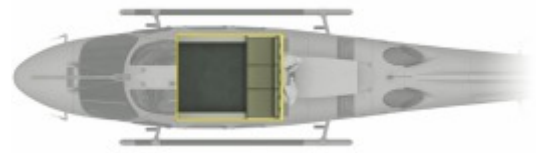
Surveillance and reconnaissance capabilities are provided by a mission console in the cabin that integrates mission systems and sensors. This enables the AW109 TrekkerM to collect, produce and disseminate time critical information to the force.

MARITIME CAPABILITY

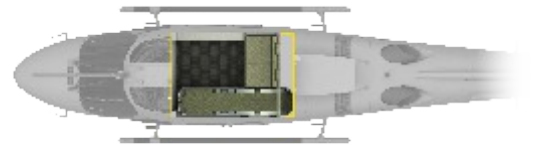
The AW109 TrekkerM provides light twin class helicopter maritime capability. Lashing points and folding main rotor blades enable the AW109 TrekkerM to be secured during adverse weather conditions and stowed in suitably sized hangars. Ground handling equipment attached to the skid landing gear enables helicopter movement using handling systems.



Typical Troop Transport Configuration



Typical Cargo Configuration



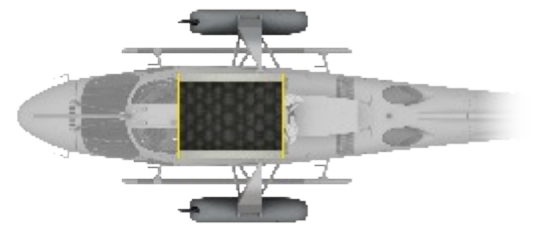
Typical CASEVAC/MEDEVAC Configuration



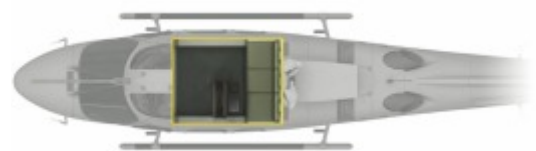
Typical SAR Configuration



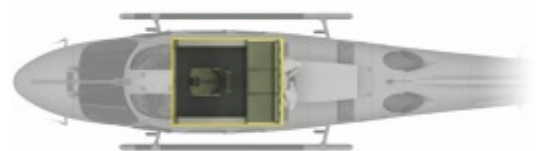
Typical Special Ops Configuration



Typical Close Air Support Configuration



Typical Reconnaissance Configuration



Typical Training Configuration

SURVIVABILITY & CRASHWORTHINESS

Leveraging the major contributions to battlefield survivability made by Doctrine and Training, and Intelligence, Mission-Planning and Re-Planning, the AW109 TrekkerM can operate effectively in the modern battlefield. Platform and mission systems are designed to enable the AW109 TrekkerM to avoid threats, avoid detection by threats, avoid acquisition by threats and avoid a hit.

AW109 TrekkerM PLATFORM & SYSTEM CAPABILITIES	Avoid Threat	Avoid Detection	Avoid Acquisition	Avoid Hit
PLATFORM CAPABILITIES				
• Range / Endurance (for routing / re-routing)	✓	✓	✓	
• Agility / Performance for NOE flight (terrain masking)	✓	✓	✓	✓
• Power margins for Hot & High / Performance	✓	✓	✓	✓
SYSTEM CAPABILITIES				
• Day Night All Environment Operations	✓	✓	✓	✓
• Off-Board Mission Planning	✓	✓	✓	
• Situational Awareness: Digital Map	✓	✓	✓	
• Threat warning and geo-location: Laser / EW	✓	✓	✓	
• Comprehensive Voice, Video and Data Comms	✓	✓	✓	
• On-Board Mission Re-Planning	✓	✓	✓	
• Synthetic Vision / Terrain Avoidance Systems	✓	✓	✓	
• Sensors / Weapons capability –stand off from threats		✓	✓	
• Counter threat (Chaff & Flare etc.)			✓	✓
• Threat Suppression			✓	✓

AW109 TrekkerM can survive small arms fire due to its inherent ballistic tolerance provided by damage tolerant / fail-safe rotor blades, airframe structure and components, run-dry main gearbox, twin engines with fire suppression systems, dual electrical and hydraulic systems and ballistic tolerant / self-sealing fuel tanks. In the event of a crash, the AW109 TrekkerM provides the crew and personnel in the cabin with international levels of crash protection through energy absorbing skid landing gear and structure, crashworthy seating and restraints, crashworthy fuel tanks to minimize post-crash fire, flotation equipment for maritime operations, and rapid post-crash / post ditching egress.



CUSTOMER SERVICES SOLUTIONS

Leonardo's Helicopters Division Support mission is to assist Customers to perform their missions successfully. Fundamental to this mission is to ensure that operational safety is as high as possible. The Helicopters Division continues to develop its support services and advanced solutions in line with Customer's evolving requirements. In addition, the "Digital First" approach has been embraced at 360° and applied to all the stages of the helicopter journey, starting from the early production phases to the long term support and operations.

Today the Helicopters Division offers a full range of services to Customers. These can be contracted individually or organized under some form of integrated support scheme where the Helicopters Division is responsible for performance elements that vary from logistic support guarantee up to helicopter availability, moving the boundaries of traditional support. In the most comprehensive schemes the Customer specifies where and when he wants to fly and the Helicopters Division is accountable and responsible for the complete service.

The range of services includes:

- **Spare & Repairs:** the Material Support Services Organization is accountable for all material and logistics aspects of spares, repairs and overhauls, including a material AOG service. The organization can also provide logistic modelling.
- **Maintenance:** in support of customers worldwide, the Helicopters Division can provide line and base maintenance at Customers facilities, utilizing an extensive network of maintenance centres, or through company-owned and third party organizations.
- **Technical Services:** an extensive range of capabilities exist including the latest standards of integrated electronic technical publications, technical query resolution, repair design and modification assistance.
- **Advanced Services:** including remote support to the technicians through augmented reality, HUMS analysis, flight planning tools, various logistics packages, electronic replacements for traditional paperwork systems and online portals for direct access to company data. HELIconnect is the new mobile application that gives customers access to the entire spectrum of the digital services –all via a single app.
- **Fleet Operations Centres:** located across the globe, available 24/7, to promptly help Customers resolve issues and get back to flight.



CUSTOMER TRAINING SOLUTIONS

Leonardo, through its Helicopters Division, is a world leading provider of professional training services, systems and solutions to a global customer base. The company is fully committed to a training policy that enables our customers to make the most effective safe use of their helicopters.

With over 300 professional training personnel, the Helicopters Division has delivered essential training to the world's helicopter operators for over 65 years. Our team includes flying and technical instructors with considerable military and civilian helicopter experience. The training capability for the AW109 TrekkerM, at the Training Academy in Sesto Calende in Italy, features the latest synthetic training devices combined with a comprehensive programme of training courses for air crew, rear crew, ground crew and maintainers. In addition, the Helicopters Division is developing a network of regional Training Centers to ensure that customers can access world-class training at a time and place convenient to them.

The range of training solutions is evolving constantly. Services include type rating courses in conjunction with basic training, refresher training and complete turnkey solutions.

Leonardo's Helicopter Division is also focusing on a variety of mission specific training so that customers can do more with their aircraft to deliver total crew operational capability.

To meet the demands of an ever changing operating environment our Simulation Learning & Support Services (SL&SS) teams have leveraged Commercial-Off-The-Shelf technology combined with OEM software solutions to provide award-winning, cost effective training devices.

These range from simple computer based training courses through to maintenance training devices and full flight simulators (FFS), whilst the new ETD e-Motion brings together the advantages of each of them to ensure maximum efficiency. Also in the training domain, the data-driven digital approach guarantees contextualized and personalized courses exceeding all customers' needs and requirements.



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