

AW119M

HELICOPTERS DIVISION



AW119^M

**POWERFUL AND
FLEXIBLE**





MISSION EFFECTIVENESS

The AW119M is the new 3 tonne class multi-role single-engine military helicopter that delivers outstanding mission flexibility and performance in the most challenging environments day and night. Inherent safety is provided by redundancy of major systems. The AW119M is the only helicopter in its class with such features, typically found on twin engine helicopters.

The AW119M has excellent flight handling qualities and controllability paired with a robust, durable design. VFR and IFR operations are enabled by state-of-the-art digital avionics showing critical flight information on large multi-function displays, enhancing situational awareness and reducing pilot workload. The spacious reconfigurable cabin has more room than any other single engine helicopter and allows the rapid installation of a wide range of mission, role equipment and weapons to meet multiple mission requirements.

High mission versatility, superior power margins, rugged airframe and low cost of ownership make the AW119M very operationally and cost-effective for military and training applications.

Redundant 3-axis Stability Augmentation System

Cockpit/cabin separation

State of the art low workload glass cockpit for VFR/IFR operations

Redundant major systems

Single or Dual Pilot, VFR or VFR/IFR operations

2 pilots + 6 troops

Rugged skid landing gear designed for unprepared ground

Largest cabin in class

AW119M KEY FEATURES

AIR VEHICLE

- › Small footprint for confined area operations (Length Rotor Turning 12.92 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 (1.1 m wide) on both side port and starboard
- › Rugged skid landing gear and high ground clearance for rough terrain operations
- › Redundant electrical, hydraulic and fuel systems
- › Excellent cockpit / cabin configuration for student pilot and non-flying student pilot training

CORE AVIONICS

The AW119M features the Garmin G1000NXi VFR glass cockpit that enhances situational awareness. The Genesys Aerosystems IFR glass cockpit is available as an alternative to Garmin's avionics suite.

On July 16th 2019 the AW119 became the first single-engine IFR helicopter in decades to meet all IFR standards and be fully certified by the Federal Aviation Administration (FAA). The AW119M fully meets current IFR requirements allowing pilots to operate the aircraft safely in low visibility and challenging weather conditions thanks to advanced avionics by Genesys Aerosystems, redundant helicopter flight systems, flight director and an auxiliary generator.

Genesys Aerosystems IFR



Garmin G1000NXi VFR





Fully articulated titanium rotor & composite main rotor blades

Up to 30 minute dry-run transmission

Powerful PW PT6B-37A turbo-shaft engine

Aluminum alloy "Cocoon type" resistant airframe

Modular crash-resistant fuel system

EASA certified for high altitude operations up to 24,000 ft



GARMIN G1000NXI VFR GLASS COCKPIT STANDARD FEATURES:

- › 10.4" EFIS display units providing a Primary Flight Display (PFD) and Multi-Function Display (MFD)
- › 3D Synthetic Vision System
- › Helicopter Terrain Awareness and Warning System (HTAWS) with worldwide terrain and obstacle database
- › Moving map
- › Flight Management System (FMS)
- › Mode-S & ADS-B Out/In Transponder
- › NVG compatible



GENESYS AEROSYSTEMS VFR/ IFR GLASS COCKPIT STANDARD FEATURES:

- › 6" x 8" EFIS display units providing up to two Primary Flight Displays (PFD) and two Multi-Function Displays (MFD)
- › 3D Synthetic Vision System
- › Helicopter Terrain Awareness and Warning System (HTAWS) with worldwide terrain and obstacle database
- › Moving map
- › Flight Management System (FMS)
- › Flight Director coupled to 3-axis Stability Augmentation System
- › Mode-S & ADS-B Out/In Transponder
- › Marker Beacon Receiver System
- › ADF Receiver System
- › TACAN
- › NVG compatible

MISSION & ROLE EQUIPMENT

A wide range of mission and role equipment can be installed on the AW119M, further enhancing its operational effectiveness. This includes, but is not limited to the following:

Role Equipment

- › 180 or 221 US Gallon Modular Crash-Resistant Fuel System
- › Self-sealing Fuel Tanks
- › Engine Inlet Barrier Filter
- › Ballistic Protection
- › External Loudspeakers
- › Searchlight (NVG Compatible) - Trakkabeam A800
- › 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, Blue Force Tracker, Personnel Locator System, Video Downlink
- › Mode 5 IFF transponder
- › Defensive Aid Suite including Laser Warning Receiver (LWR), Missile Warning System (MWS) and Countermeasure Dispensing System (CMDS)
- › Electro-Optic / Infra-Red (EO/IR) sensor with optional Laser Range Finder / Designator
- › Mission Console in cabin providing Tactical Awareness and C2/ISR

Utility Equipment

- › Rappelling hooks (2 LH + 2 RH)
- › Fast rope (RH & LH)
- › Cargo hook (1,400 kg)
- › Dual cargo hook (1,400 kg/ 500 kg)
- › External rescue hoist (204 kg)
- › Foldable stretcher
- › Trainee / Observer Seat in Cabin

Weapon Systems

- › Internal: 2 x Pintle Mounted Sniper Rifle (Door)
- › Internal: 2 x 7.62mm Pintle Mounted Machine Guns (Door)
- › External Weapons Sighting System
- › 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)





CABIN SPACE AND ACCESSIBILITY

The AW119M unobstructed cabin provides space for the rapid transport of fully equipped troops and mission equipment. 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. 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/CSAR, Close Air Support and C2/ISR. An equipment stowage area, located in the rear fuselage, for equipment such as medical kits, keeps the cabin space free for cabin operations.



The AW119M Training configuration includes an Observers seat centrally located behind and between the Instructor and Student Pilot seats. This unique capability allows a non-flying student to fully observe the cockpit, maximizing student contact time while reinforcing crew concept principles.



AW119M CHARACTERISTICS

WEIGHT (MGW)

Internal Loads	2,850 kg	6,283 lb
External Loads	3,150 kg	6,945 lb

PROPULSION

Powerplant: 1 x Pratt & Whitney Canada PT6B-37A

ENGINE RATINGS

Take-Off Power (5 min)	747 kW	1,002 shp
Maximum Continuous Power	650 kW	872 shp

CAPACITY

Crew	1 to 2
Passengers	7 or 6 passengers

DIMENSIONS

Overall Length ⁽¹⁾	12.92 m	42 ft 05 in
Overall Height ⁽¹⁾	3.60 m	11 ft 10 in
Rotor Diameter	10.83 m	35 ft 06 in

PERFORMANCE (ISA, MGW)

VNE (SL)	282 km/h	(152 kt)
Max Cruise Speed (SL, MCP)	243 km/h	(131 kt)
HIGE (TOP)	3,352 m	(11,000 ft)
HOGE (TOP)	2,225 m	(7,300 ft)
Maximum Range (5,000 ft) ⁽²⁾	911 km	(492 nm)
Maximum Endurance (5,000 ft) ⁽²⁾		5 hr 5 min

(1) Rotors turning

(2) With 660 kg usable fuel, No Reserve, @ 5,000 ft

MULTI-ROLE CAPABILITY

TROOP TRANSPORT

The rapidly reconfigurable cabin provides fore and aft facing seating for up to 6 equipped troops. Ballistic protection as well as crew served weapons, such as 7.62 mm GPMG or Sniper Rifles, installed on pintles mounted in the cabin door, can be provided.

CARGO RE-SUPPLY / EXTERNAL LIFT

With the ability to carry internal cargo and coupled with a 1,400 kg single cargo hook or 1,400 kg / 500 kg dual cargo hook capability the helicopter has the capacity to conduct effective resupply and lift operations.

CASEVAC / MEDEVAC

The cabin can be easily reconfigured to enable CASEVAC / MEDEVAC operations with space for 4 ambulatory personnel and a non-ambulatory patient on a stretcher enabling full body access. Attachment points and power outlets are provided for medical equipment.

SEARCH & RESCUE

When fitted with 2 seats for hoist operator and para-med, the AW119M cabin enables hoist operations and personnel recovery through the large cabin door. An optional mission console enhances situational awareness and search capabilities to further enhance mission effectiveness.

SPECIAL FORCES OPERATIONS

Fore and aft bulkhead seating enables rapid egress and ingress of a Special Forces (SF) team through the large sliding doors. The fast roping system enables simultaneous egress of two troops per side. The rescue hoist can be used to recover SF teams when in the hover. Threat suppression is provided by crew served weapons in the cabin door.

COMMAND AND CONTROL (C2), INTELLIGENCE, SURVEILLANCE AND RECONNAISSANCE (ISR)

Battlefield C2 and enhanced ISR capabilities are provided by a mission console in the cabin that integrates mission systems and sensors. This enables the AW119M to collect, produce and disseminate time critical C2 & ISR information to the force.

CLOSE AIR SUPPORT/ARMED ESCORT

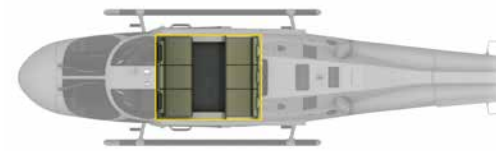
Close Air Support capabilities are provided by a sighting and targeting system combined with the external weapons. Heavy machine gun pods and guided and unguided rockets provide scalable threat suppression capabilities to enhance combat effectiveness.

TRAINING

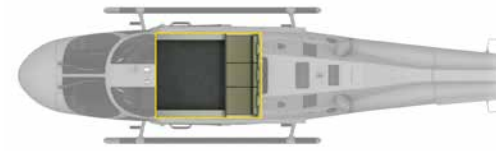
All phases of training from Ab Initio through to Advanced Training can be undertaken using the same aircraft configuration. The AW119M Training configuration includes an Observers seat centrally located behind and between the Instructor and Student Pilot seats. This unique capability allows a non-flying student to fully observe the cockpit, maximizing student contact time while reinforcing crew concept principles.

MARITIME CAPABILITY

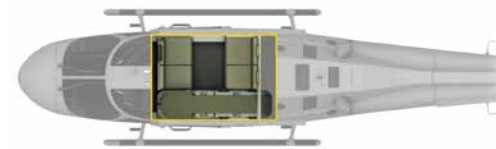
The AW119M provides maritime capability, usually found on a light twin helicopter. Lashing points and folding main rotor blades enable the AW119M to be secured during adverse weather conditions and stowed in suitably sized hangars. Ground handling equipment attached to the skid landing gear enables helicopter movement using handling systems. AW119M has the capability to operate within the electro-magnetic environment associated with ship operations.



Typical Troop Transport Configuration



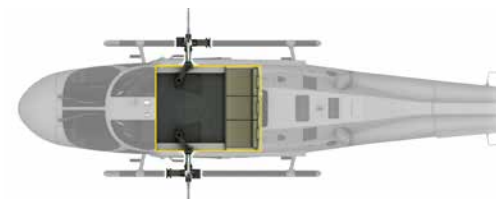
Typical Cargo Configuration



Typical CASEVAC/MEDEVAC Configuration



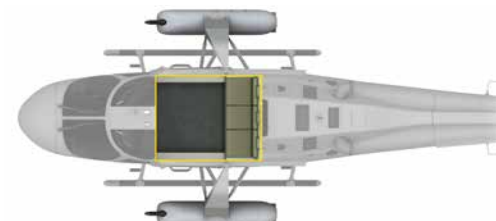
Typical SAR Configuration



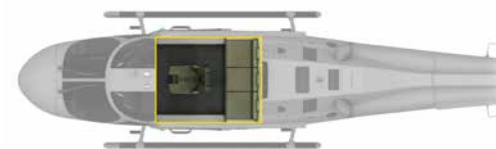
Typical Special Ops Configuration



Typical Reconnaissance Configuration



Typical Close Air Support 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 AW119M can operate effectively in the modern battlefield. Platform and mission systems are designed to enable the AW119M to avoid threats, avoid detection by threats, avoid acquisition by threats and avoid a hit.

AW119M 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			✓	✓

AW119M 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, dual electrical and hydraulic systems, ballistic tolerant / self-sealing fuel system and ballistic protection of critical components. In the event of a crash, the AW119M provides levels of crash protection through energy absorbing skid landing gear, crashworthy pilot and co-pilot 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 Helicopter 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.

Today the Helicopters Division offers a full range of services to Customers. These can be contracted individually or organised 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 Organisation is accountable for all material and logistics aspects of spares, repairs and overhauls, including a material AOG service. The organisation can also provide logistic modelling.
- › **Maintenance:** in support of customers worldwide, the Helicopters Division can provide line and base maintenance at Customers facilities, utilising an extensive network of maintenance centres, or through company-owned and third party organisations.
- › **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.
- › **Fleet Operations Centres:** located across the globe, available 24/7, to promptly help Customers resolve issues and get back to flight.



Repair Services

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 AW119M, at the Training Academies in Sesto Calende in Italy and in Philadelphia in the United States, 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 Systems (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.

24/7 Fleet Operations



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