



LEONARDO HELICOPTERS

AW139M

 **LEONARDO**

AW139M

SIMPLY NO RIVALS



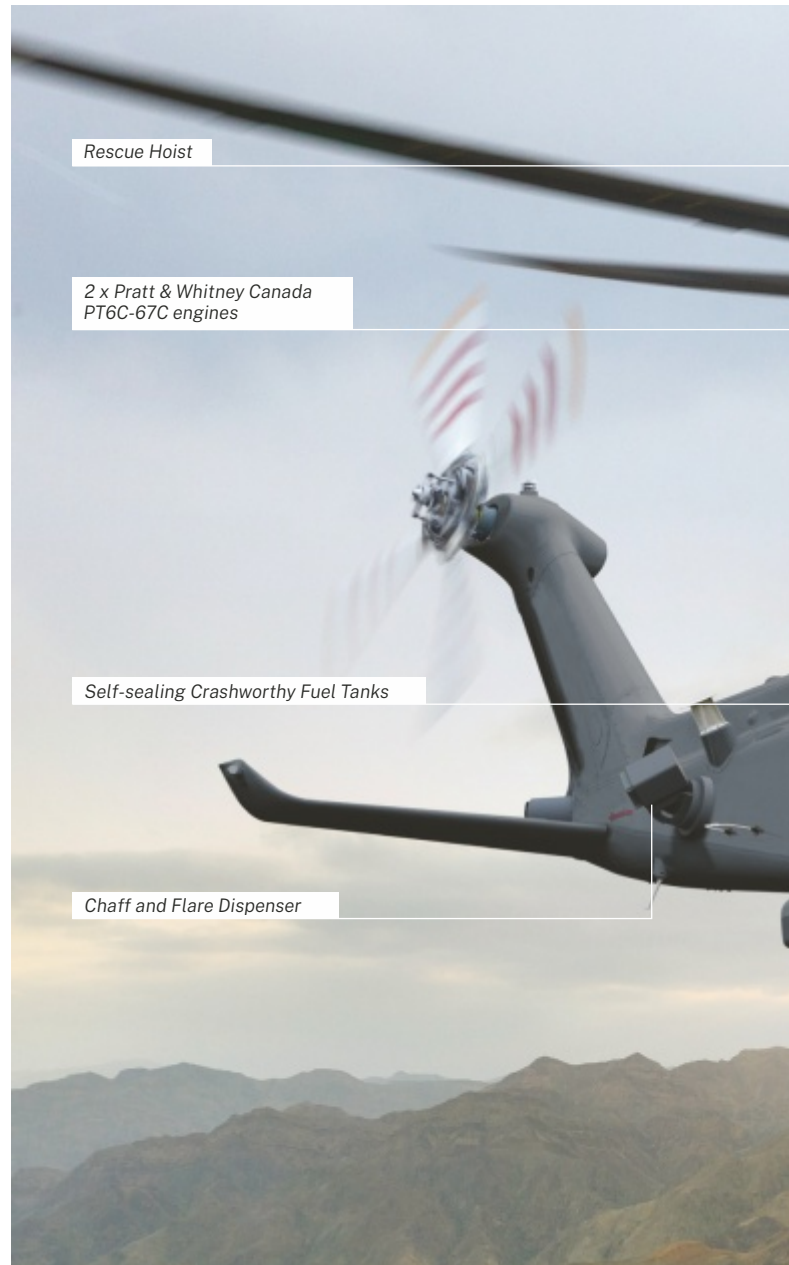


DELIVERING CAPABILITY FOR DEMANDING MISSIONS

The AW139M is the military version of the AW139, the market leading helicopter that sets the standard for twin engine intermediate class. Developed to meet the requirements of government, homeland security and military users, the AW139M has been designed to perform a wide range of missions in the most challenging environments.

Operators worldwide benefit from advanced technology, high power margins and inherent high levels of safety and survivability. Day/Night VFR, IFR and NVIS operations are enabled by state-of-the-art digital avionics that enhance situational awareness and reduce pilot workload. The largest reconfigurable cabin in its class maximises operational flexibility and allows the rapid installation of mission, role equipment and weapons to meet operational requirements.

Combining cutting edge technology, unmatched performance and unrivalled safety, the AW139M is the best solution in the most challenging conditions, all over the world.



AW139M KEY FEATURES

AIR VEHICLE

- Compact footprint for confined area operations (D-Value 16.66 m)
- Fully articulated Main and Tail Rotors providing agile handling during Nap of the Earth (NOE) flight
- 60 min certified dry-run capable Main Gearbox
- Large Cabin 2.70 m (l) x 2.10 m (w) x 1.42 m (h); Cabin Volume 8 m³
- Two large sliding doors (1.6 m wide)
- Critical systems redundancy
- Bird-strike resistance
- Crashworthiness to latest standards

CORE AVIONICS

- NVG Compatible Cockpit Display System with four 8" x 10" colour Active Matrix Liquid Crystal Displays
- Additional 5th Display in Cockpit
- 4-axis Digital Automatic Flight Control System
- Flight Management System (FMS)
- Communication System including Dual VHF and Intercom System
- Navigation System including Dual VOR, DME, ADF, GPS, IRS TACAN
- Identification Systems
- Cockpit Voice & Flight Data Recorder
- Health & Usage Monitoring System
- Electronic Standby Instrument System (ESIS)
- HIRF / LEMP / EMC resistant





Fully articulated Main and Tail Rotors

Secure communications including V/UHF/HF

NVG Compatible Glass Cockpit

Defensive Aids Suite including RWR, LWR, MVR

Nose-mounted surveillance, search and weather radar

Electro-Optical / Infra-Red (EO/IR) with Laser Range Finder and Illuminator

Searchlight

Cargo Hook

Bubble cabin windows or sliding windows



CABIN SPACE AND ACCESSIBILITY

Designed with inherent multi-role capability and flexibility of operation, the AW139M's largest in class unobstructed cabin provides space for the rapid transport of heavily laden troops and mission equipment in support of high-tempo operations. Large sliding doors on both sides of the helicopter and low floor height enable rapid ingress and egress of troops, ease of loading and unloading of cargo and equipment and rapid loading of NATO stretchers on the ground. Fast roping operations enables troop insertion from the hover, whilst allowing simultaneous threat suppression from window mounted crew-served weapons.

The cabin space enables the rapid installation of mission and role equipment including a fully integrated mission console. Additional mission equipment, such as stretchers can be stowed in the large storage area behind the cabin. Optionally accessible from the cabin in flight, it keeps cabin space free for operations.

The cabin can be rapidly reconfigured from Troop Transport and Cargo Re-Supply into more demanding configurations, including MEDEVAC, CASEVAC, SAR, SF/CSAR and C2/ISR.

MISSION & ROLE EQUIPMENT

A wide range of mission and role equipment can be installed on the AW139M, further enhancing its operational effectiveness. This includes, but is not limited to the following.

ROLE EQUIPMENT

- Inlet Barrier Filters
- Crashworthy Self-Sealing Fuel Tanks
- Ballistic Protection (Cockpit & Cabin Floor, Cockpit Doors)
- IR Suppressor
- Wire Strike Protection System
- 360° Coverage Obstacle Proximity LiDAR System (OPLS)
- Searchlight (NVG Compatible)
- IR Formation Lights
- Overwater Kit (Emergency Flotation & Life Rafts)
- Rappelling Hooks (3 LH + 3 RH)
- Fast Rope Attachments (RH & LH)
- Cargo Hook - Single or Dual HEC Type
- External Rescue Hoist - Single or Dual Type
- Folding Crashworthy Troop Seats
- Medical and Casualty Evacuation System (up to 4 stretchers)
- Internal Auxiliary Fuel Tank
- Ice Protection Systems

AVIONIC EQUIPMENT

- Enhanced SAR modes and Hover mode
- Mil GPS, IFF, TACAN, IRS
- Military Communications including Secure Radios, Combat Tactical Radios, Blue Force Tracker, Personnel Locator System, Video Downlink, Data Link 16 (KOR-24 GFE)
- Mode 5 IFF transponder
- Defensive Aid Suite including Radar Warning Receiver (RWR), Laser Warning Receiver (LWR), Missile Warning System (MWS), Direct Infra Red Counter Measure System (DIRCM) 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, Link Management and C2/ISR
- Digital Maps and Tactical Data Display
- Weather / Search Radar
- Synthetic Vision System
- Enhanced Vision Systems

WEAPON SYSTEMS

- Observation and Targeting System
- Internal: Pintle Mounted Machine Guns 7.62 mm (Doors / Windows), 12.7 mm (Doors)
- External: 2 x 12.7 mm Gun Pod (250 or 400 rounds)
- External: 2 x 70 mm Rocket Launchers (7 or 12 Tubes)





AW139M CHARACTERISTICS

Weight (MTOW)

Max Take Off Weight (Internal)	6,400 kg	(14,110 lb)
Increased Gross Weight ⁽¹⁾	6,800 kg	(14,991 lb)
Increased Gross Weight ⁽¹⁾	7,000 kg	(15,432 lb)

Propulsion

Powerplant: 2 x Pratt & Whitney Canada PT6C-67C engines with FADEC

Engine Ratings

Take-Off Power (5 mins)	2 x 1,252 kW	(2 x 1,679 shp)
Max Continuous Power	2 x 1,142 kW	(2 x 1,531 shp)

Capacity

Crew	1 to 2	
Passengers	Up to 12 heavily / 15 lightly equipped troops	

Dimensions

Overall Length ⁽²⁾	16.66 m	(54 ft 08 in)
Overall Height ⁽²⁾	4.98 m	(16 ft 04 in)
Rotor Diameter	13.80 m	(45 ft 03 in)

Performance

VNE (ISA, SL)	309 km/h	(167 kt)
Max Cruise Speed (@5,000 FT, ISA, MGW, MCP)	306 km/h	(165 kt)
HIGE (ISA, MGW, TOP)	4,672 m	(15,327 ft)
HOGC (ISA, MGW, TOP)	2,476 m	(8,123 ft)
Maximum Range (@5,000 FT, ISA, MGW) ⁽³⁾	1,187 km	(641 nm)
Maximum Endurance (@5,000 FT, ISA, MGW) ⁽³⁾	5 h 38 min	

⁽¹⁾ Available as a Kit

⁽²⁾ Rotors turning

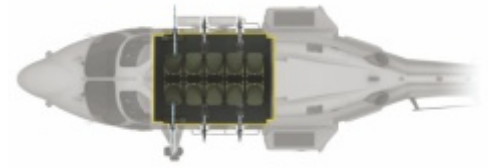
⁽³⁾ With auxiliary fuel tank - No reserve



MULTI-ROLE CAPABILITY

TROOP TRANSPORT / SPECIAL FORCES OPERATIONS

The rapidly reconfigurable cabin provides crashworthy seating for up to 15 lightly equipped troops or 10 fully equipped troops in fore/aft and sideways facing layouts. The fast roping system enables simultaneous egress of two troops per side. Ballistic protection as well as window mounted crew served weapons, can be provided.



Typical Special Ops Configuration

CARGO RE-SUPPLY / EXTERNAL LIFT

The large 8 m³ constant section cabin, flat floor and large 1.6 m wide cabin doors enable rapid loading and unloading of cargo and equipment. Coupled with a 2,200 kg cargo hook capability, with “in cockpit” monitoring the helicopter has the capacity to conduct effective resupply and lift operations.



Typical Cargo Configuration

CASEVAC / MEDEVAC, C-SAR

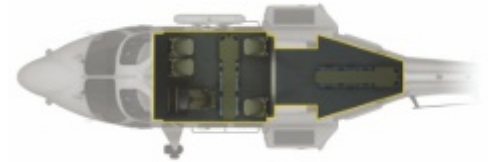
The rapidly reconfigurable cabin enables designation for medical operations. In addition to 4 forward facing seats, 2 stretchers can be mounted transversally on the flat floor to enable full body access to patients or 4 NATO stretchers can be carried in a floor mounted module. Threat suppression can be provided by crew served weapons in the forward windows on dedicated cabin layout.



Typical CASEVAC/MEDEVAC Configuration

SEARCH & RESCUE

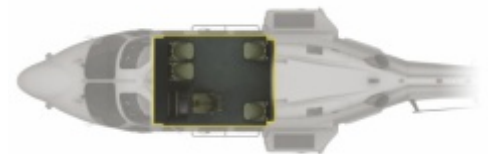
The cabin can be rapidly reconfigured with seats for hoist operator and medic providing unobstructed space for hoist operations and injured recovery through the large cabin door. In-flight access to the 3.4 cu metre rear stowage bay enables SAR mission equipment to be stowed outside of the cabin area. Optional mission consoles enhance situational awareness and search capabilities to further increase mission effectiveness.



Typical SAR Configuration

COMMAND & CONTROL (C2), COMMUNICATIONS, COMPUTERS (C4), INTELLIGENCE, SURVEILLANCE & RECONNAISSANCE (ISR)

Battlefield capabilities from C2 to C4ISR are provided depending on the mission by means of a dedicated console in the cabin integrated with the AW139M mission management, mission systems and sensors. This enables the AW139M to collect, produce and disseminate time critical C2 and ISR information to the Force.



Typical Command and Control Configuration

CLOSE AIR SUPPORT/ARMED ESCORT

Close Air Support and Armed Escort capabilities are provided by the AW139M sighting, targeting and external weapon systems that complement window and door mounted crew served weapons. Heavy machine gun pods and guided / unguided rockets provide scalable threat suppression capabilities to enhance combat effectiveness.



Typical Close Air Support Configuration

MARITIME CAPABILITY

The AW139M provides intermediate class multi-role maritime capability. Lashing points and folding main rotor blades enable the AW139M to be secured during adverse weather conditions and stowed in suitably sized hangars. The wheeled undercarriage enables easy helicopter movement using handling systems. AW139M has the capability to operate within the electromagnetic environment associated with ship operations.

SURVIVABILITY & CRASHWORTHINESS

Leveraging the major contributions to battlefield survivability made by Doctrine and Training, and Intelligence, Mission-Planning and Re-Planning, the AW139M will survive in the modern battlefield. Platform and mission systems capabilities enable the AW139M to avoid threats, avoid detection by threats, avoid acquisition by threats and avoid a hit.

AW139M 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	✓	✓	✓	✓
• De-Icing / Anti-Icing for Winter Operations	✓	✓	✓	
• Low Signatures (Visual, Acoustic and IR)	✓	✓	✓	
SYSTEM CAPABILITIES				
• Day Night All Environment Operations	✓	✓	✓	
• Off-Board Mission Planning	✓	✓	✓	
• Situational Awareness: Digital Map	✓	✓	✓	
• Threat warning and geo-location: Radar / 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			✓	✓

AW139M 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 and turbine burst containment, dual electrical and hydraulic systems, ballistic tolerant / self-sealing fuel tanks. In the unlikely event of a crash, the AW139M provides crashworthy structures and seats, and crashworthy fuel tanks to minimize post-crash fire, flotation equipment for emergency ditching, and rapid post-crash / post-ditching egress capability.



CUSTOMER SERVICES SOLUTIONS

The main objective of Leonardo's Helicopter Division Support mission is to assist Customers in performing their missions successfully. Fundamental to this is to ensure that operational safety is as high as possible. Leonardo continues to develop its support services and advanced solutions in line with evolving Customer 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 earliest design and production phases to long term support and operations. Today Leonardo offers a full range of services to Customers. These can be contracted individually or organised under integrated support schemes where Leonardo is responsible for performance elements that vary from the material logistics support guarantee up to helicopter availability, moving the boundaries of traditional support.

The range of services includes:

- **Spare & Repairs:** the Material Support Services Organisation is accountable for material and logistics provision of spares, repairs and overhauls services;
- **Maintenance:** in support of Customers, Leonardo is able to provide Line and Base maintenance at Customer facilities, utilising an extensive network of maintenance service centres, or through company-owned and third party organisations;
- **Technical Services:** Leonardo can provide an extensive range of capabilities based on the latest standards for interactive electronic technical publications, technical query resolution, repair design and modification assistance;
- **Advanced Services:** Leonardo can provide remote support to the technicians through augmented reality (HeliLink), Health & Usage Monitoring System (HUMS) analysis, flight planning tools (SkyFlight), customised logistics packages, upgrades from traditional paper-based systems to a modern web-based approach through online company portals, facilitating direct access to company information. HELIconnect is the new mobile application that gives Customers access to the entire spectrum of digital services-via the "all-in-one" app;
- **Fleet Operations Centres:** located across the globe, available 24/7, to promptly help Customers to resolve technical or logistic issues and in order to get back to flight.



Repair Services

CUSTOMER TRAINING SOLUTIONS

Leonardo, through its Helicopter 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, Leonardo 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 civil helicopter experience. The training capability for the AW139M, 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, Leonardo is developing a network of regional Training Centers to ensure that Customers can access worldclass 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 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 (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 personalised courses exceeding all Customers' needs and requirements.



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