



LEONARDO HELICOPTERS

AW149

AW149

MULTI-MISSION
PERFORMANCE



DELIVERING MULTI-ROLE VERSATILITY

The AW149 is the latest-generation medium multi-role helicopter, rapidly reconfigurable for a wide range of demanding missions in the most severe operational environments.

Advanced platform and system technologies, together with modular mission equipment and weapons, ensure unparalleled safety and performance. High levels of survivability and crashworthiness, provide armed forces a highly effective, survivable and cost-effective capability.

The AW149 is Day / Night VFR / IFR capable with a dual pilot NVG compatible low workload 'glass cockpit' with state of the art Human Machine Interface. An advanced, Leonardo open avionic architecture enables a seamless and simplified interface and integrated mission systems provide enhanced situational awareness.



AW149 KEY FEATURES

AIR VEHICLE

- Compact footprint for confined area operations (Length Rotor Turning 17.57 m; Rotor Dia 14.60 m)
- Fully articulated Main and Tail Rotors providing agile handling at low level
- Main gearbox (50 min certified dry run capable)
- Two engines with emergency lubrication, burst containment and integrated particle separator
- Dedicated 60 kW Auxiliary Power Unit (APU)
- Up to 30 min performance in HOGE TOP
- Large Cabin 3.47 m (l) x 2.43 m (w) x 1.42 m (h),
- Cabin volume 11.2 m³
- Cabin surface 8 m²
- Large port and starboard sliding doors (1.6 m wide)
- Dual redundant electrical and hydraulic systems
- Bird-strike resistant
- 90th Percentile DEFSTAN Survivable Airframe
- Robust undercarriage for rough terrain operation and high descent rates

CORE AVIONICS & SYSTEMS

- NVG Compatible Cockpit Display System with four 10" x 8" colour displays
- 4 axis Digital Automatic Flight Control System with advanced autopilot functions
- Aircraft Monitoring and Management System
- Communication System (Secure Voice & Data)
- Navigation System (Civil / Military)
- Digital Maps and Tactical Data Display
- Identification Systems
- Enhanced Vision Systems
- Flight Management System (FMS) function
- Cockpit Voice & Flight Data Recorder
- NVG Lighting (Internal / External)
- Health & Usage Monitoring System (HUMS)
- Standby Information System
- HIRF / LEMP / EMC resistant system



CABIN SPACE AND ACCESSIBILITY

The AW149 has the largest most versatile cabin in its class. Configurable for rapid transportation of heavily laden troops and mission equipment in support of high-tempo missions. Large port and starboard sliding doors and robust footsteps, in addition to low floor height enables rapid ingress and egress of troops, ease of loading and unloading of cargo and equipment and loading of NATO stretchers on the floor. Fast roping and hoist operations are permitted through large sliding doors enabling troop insertion and extraction from the hover, whilst allowing threat suppression from window mounted crew-served weapons.

The regular-shape 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. A large stowage area for additional mission equipment, such as stretchers and medical kit, optionally accessible from the main cabin in flight, keeps the cabin free for operations.

MISSION & ROLE EQUIPMENT

A wide range of mission and role equipment can be installed on the AW149, further enhancing its operational effectiveness. This includes, but is not limited to the following:

ROLE EQUIPMENT

- Wire Strike Protection System
- Searchlight (NVG Compatible)
- NVG Compatible Formation Lights
- Ballistic Protection (Cockpit & Cabin)
- Crashworthy Self-Sealing Fuel Tanks
- Internal Crashworthy Auxiliary Fuel Tanks
- Overwater Kit (Flotation & Life Rafts)
- Cargo Hook
- Bambi Bucket
- Electrical Rescue Hoist - Single or Dual type
- Rappelling / Fast Roping Frame
- Loud Hailer
- Weather/Search Radar
- Crashworthy Foldable Seats
- Medical Evacuation (3 stretchers) and Casualty Evacuation (4 to 6 stretchers)
- Full Ice Protection system

AVIONIC EQUIPMENT

- Integrated Mission Console providing Tactical Processing, Link Management and C2/ISR
- Electro-Optic / Infra-Red (EO/IR) sensor with optional Laser Range Finder / Designator
- Military Communications including Secure Radios with TACSAT capability, Combat Tactical Radios, Blue Force Tracker, Personnel Locator System, Video Downlink, Tactical Data Link
- Integrated Defensive Aids Suite (DAS) including Electronic Countermeasure Dispensing System (ECDS), Radar Warning Receiver (RWR), Laser Warning Receiver (LWR), Missile Warning System (MWS)
- Weather / Search Radar

WEAPON SYSTEMS

- Observation & Targeting System
- Internal: 2 x 7.62 mm Machine Guns
- External: 2 x 12.7 mm Gun Pods
- External: 2 x 2.75" Rocket Launchers (7 or 19 tubes, Guided / Unguided)
- External: 2 x Air Ground To Missile Launcher (2 or 4 rails)



AW149 CHARACTERISTICS

Weight (MTOW)

| | | |
|------------------|----------|-----------|
| Max Gross Weight | 8,600 kg | 18,960 lb |
|------------------|----------|-----------|

Propulsion

Powerplant:

| | |
|-----|---|
| 2 x | General Electric CT7-2E1 and 1 x Safran e-APU (60 kW) |
| or | |
| 2 x | Safran Aneto-1K and 1 x Safran e-APU (60 kW) |

Engine Ratings

General Electric CT7-2E1

| | | |
|--------------------------|--------------|---------------|
| Take off power (5 min) | 2 x 1,480 kW | 2 x 1,985 shp |
| Maximum Continuous Power | 2 x 1,395 kW | 2 x 1,871 shp |

Safran Aneto-1K

| | | |
|--------------------------|--------------|---------------|
| Take off power (30 min) | 2 x 1,905 kW | 2 x 2,554 shp |
| Maximum Continuous Power | 2 x 1,807 kW | 2 x 2,423 shp |

Capacity

| | |
|------------|--|
| Crew | 1-2 |
| Passengers | Up to 16 troops heavily / 19 troops lightly equipped |

Dimensions

| | | |
|-----------------------------|---------|-------------|
| Overall length ¹ | 17.57 m | 57 ft 08 in |
| Overall height ¹ | 5.07 m | 16 ft 07 in |
| Rotor diameter | 14.60 m | 47 ft 11 in |

Performance

General Electric CT7-2E1

| | | |
|---|----------|------------|
| VNE (IAS,SL) | 313 km/h | 169 kt |
| Max cruise speed (@5,000 FT, ISA, 8,300 kg, MCP) | 294 km/h | 159 kt |
| HIGE (ISA, 8,300 kg, TOP) | 3,948 m | 12,953 ft |
| HOGF (ISA, 8,300 kg, TOP) | 2,893 m | 9,490 ft |
| Maximum range (@5,000 FT, ISA, 8,300 kg) ² | 1,009 km | 545 nm |
| Maximum endurance (@5,000 FT, ISA, 8,300 kg) ² | | 5 h 05 min |

Safran Aneto-1K

| | | |
|---|----------|------------|
| VNE (IAS, SL) | 313 km/h | 169 kt |
| Max Cruise speed (@5,000 FT, ISA, 8,300 kg, MCP) | 294 km/h | 159 kt |
| HIGE (ISA, 8,300 kg, TOP) | 4,572 m | 15,000 ft |
| HOGF (ISA, 8,300 kg, TOP) | 2,712 m | 8,900 ft |
| Maximum range (@5,000 FT, ISA, 8,300 kg) ² | 913 km | 493 nm |
| Maximum endurance (@5,000 FT, ISA, 8,300 kg) ² | | 4 h 28 min |

¹ Rotors turning

² With Standard self-sealing fuel tank, under floor tanks and transversal aux fuel tank - no reserve



MULTI-ROLE CAPABILITY

AW149 has been designed with a large unobstructed cabin for maximum reconfigurability and mission flexibility. With dedicated cabin configurations together with optional mission equipment for increased capability during military missions.

TROOP TRANSPORT

The AW149 cabin provides seating for up to 16 fully equipped troops. Rapid Ingress and egress is enabled through large port/starboard sliding doors. Crew safety has been prioritised with ballistic protection able to be provided.



SPECIAL INTERVENTION

Threat suppression is provided from crew served weapons in the FWD sliding cabin windows. Centrally mounted port/stbd or fwd/aft seats provide space for a fully equipped team of up to 12 special forces troops. Port/starboard fast roping frames enable simultaneous troop insertion from the hover.



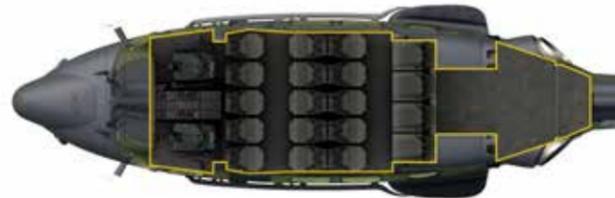
SEARCH & RESCUE / COMBAT SEARCH & RESCUE

The large cabin can be fitted with 2 seats for hoist operator and medics or 2 gunner seats for window mounted crew served weapons providing unobstructed space for hoist operations. Full body access is granted to patients with the cabin able to accommodate 2 full length NATO stretchers horizontally. In flight access to the rear stowage bay enables additional mission equipment to be stowed outside of the cabin area. Optional mission consoles enhance situational awareness and search capabilities.



LOGISTIC RELOCATION

Crashworthy seating for up to 19 lightly equipped troops. Crew safety has been prioritised with ballistic protection for the cabin able to be provided. In flight access to the rear stowage bay enables mission equipment to be stowed outside the cabin area without consuming cabin space.



CASEVAC / MEDEVAC

The rapidly reconfigurable cabin enables designation for medical operations. Up to 2 NATO stretchers can be mounted horizontally on the flat floor enabling full body access to patients or 4 to 6 Stretchers can be carried in a floor mounted module for more demanding missions. Mounting supports with quick attachment fittings are provided for medical equipment and additional seats are available for passengers and crew.



SURVIVABILITY & CRASHWORTHINESS

Leveraging the major contributions to battlefield survivability made by Doctrine and Training, and Intelligence, Mission-Planning and Re-Planning, the AW149 will survive in the modern battlefield. Platform and mission systems are designed to enable the AW149 to avoid threats, avoid detection by threats, avoid acquisition by threats and avoid a hit.

| AW149 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 ops | ✓ | ✓ | | |
| • Low signatures (Visual, Acoustic and IR) | ✓ | ✓ | | ✓ |
| SYSTEM CAPABILITIES | | | | |
| • Day Night All Environment Operations | ✓ | ✓ | ✓ | ✓ |
| • Off-Board Mission Planning | ✓ | ✓ | ✓ | |
| • Situational Awareness: Digital Map, Threat Overlay | ✓ | ✓ | ✓ | |
| • Threat warning and geo-location: Radar / Laser / EW | ✓ | ✓ | ✓ | |
| • Comprehensive Voice, Video and Data Comms | ✓ | ✓ | ✓ | |
| • Receive and use 3rd party tactical data | ✓ | ✓ | ✓ | |
| • On-Board Mission Re-Planning | ✓ | ✓ | ✓ | |
| • Synthetic Vision / Terrain Avoidance Systems | ✓ | ✓ | ✓ | |
| • Sensors / Weapons capability –stand off from threats | | ✓ | ✓ | |
| • Counter threat (Chaff & Flare etc.) | | | ✓ | ✓ |
| • Threat suppression | | | | ✓ |

AW149 can survive small arms fire due to high levels of ballistic tolerance provided by damage tolerant / fail-safe rotor blades, airframe structure and components, run-dry main and tail gearboxes, twin engines with fire suppression and turbine burst containment, dual electrical and hydraulic systems, ballistic tolerant / self-sealing fuel system and ballistic protection of critical components. In the event of a crash, the AW149 provides the crew and cabin personnel with high levels of crash protection through energy absorbing 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 SUPPORT 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 Operation 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 military flying and technical instructors with considerable military helicopter experience. The training capability for the AW149, 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.



24/7 Fleet Operations

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