EMS

LEONARDO HELICOPTERS

AW169

1948 • 2018
AW169

- MTOW – 4600/4800 kg
  Light Intermediate Category
- 6 Crewmen + 1 Stretcher
- 4 Crewmen + 2 Stretcher
- Specifically designed for EMS missions
Product Portfolio of Principal Players

<table>
<thead>
<tr>
<th>Max Gross Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
</tr>
</tbody>
</table>

**AgustaWestland**
- SW4
- AW109 Family
- AW119
- AW169
- W3
- AW189
- AW609

**Bell**
- B206L
- B407
- B429
- B430
- B412
- 525 Relentless (9,299 kg)

**Airbus**
- AS350
- EC135
- H120
- AS355
- H145
- H155
- H160
- H175
- AS332/EC225 (9,300/11,000kg)

**Sikorsky**
- S333
- H130
- AS365N3e
- S76C++/D
- S92 (12,020kg)

**MD Helicopters**
- MD500
- MD600
- MD902

**Robinson**
- R66

Colors:
- Yellow: SINGLE-TURBINE
- Gray: TWIN-TURBINE
- Red: UNDER DEVELOPMENT / NEW CERTIFICATION
- Blue: DISCONTINUED

Leonardo Helicopters Proprietary Information – Commercial in confidence
AW169 Market Overview: Fleet Distribution

- 67 Helicopters delivered
- 25,500 FH
- Fleet Leader Over 1,300 FH
- 200+ Orders & Options
- 29 Countries
- 80+ Customers
AW169 Market Overview: EMS Customers
TECHNICAL OVERVIEW
### The AW169 and the AW Family

<table>
<thead>
<tr>
<th>Model</th>
<th>Certification Year</th>
<th>Weight (t)</th>
<th>Passengers</th>
<th>Flight Hours (FH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AW169</td>
<td>2015</td>
<td>4.6 / 4.8</td>
<td>8 / 10</td>
<td>Over 23,000</td>
</tr>
<tr>
<td>AW139</td>
<td>2004</td>
<td>6.8 / 7</td>
<td>12 / 15</td>
<td>Over 2,200,000</td>
</tr>
<tr>
<td>AW189</td>
<td>2014</td>
<td>8.3 / 8.6</td>
<td>16 / 19</td>
<td>Over 49,000</td>
</tr>
</tbody>
</table>
Expanding the AW product offer for HEMS - HSAR - HAA

NEW GENERATION FAMILY
having different SIZE-RELATED PERFORMANCE
with EQUIVALENT SAFETY & TECHNOLOGICAL STANDARDS

LOW INTRODUCTION RISK
AW169 General Overview

Engines:
- 2 x 1,000 shp PW210A

Rotors:
- Advanced technology fully-articulated main rotor, high aerodynamic efficiency

Fuel System:
- 888 kg usable fuel

Avionics:
- Open architecture avionics design

Transmission:
- APU mode allows the use of ECS and equipment with rotors stopped
AW169 Performance Summary for the Basic Aircraft

- **Maximum speed (5.000 ft):** 153 ktas
- **Recommended Cruise Speed (5.000 ft):** 135 knots
- **Maximum Rate of Climb TOP:** 1.847 feet/minute
- **HIGE Ceiling TOP @ MTOW:** 14,700 feet
- **HOGE Ceiling TOP @ MTOW:** 11,600 feet
- **Maximum Range (5.000ft, RCS):** 446 Nautical Miles
- **Maximum Endurance (5.000ft, ME):** 4:23h
AW169 Powerplant

Takeoff:
- 2 x 1.108 shp

MCP:
- 2 x 920shp

OEI 2.5 min
- 1.250 shp

OEI MCP
- 1.108 shp
High Controllability

High altitude operations possible all year round

AW Family: AW139 and AW169 have the same P/W ratio

AW169 Powerplant: Performance

HOGE Ceiling

AW169

AW139

Bell 412 EP

AS365

S76C+

Performance

0 feet

4,000 feet

8,000 feet

12,000 feet
PC1 – CAT A Procedure

Clear Area Procedure **AW169**
- Provides maximum payload
- Airliner-like procedure: comfort
- Maximum Take Off weight up to ISA+31 @ SL

Vertical Procedure **AW169**
- Provides maximum accessibility
- Requires just 15x15 m helipads
- Maximum Take Off weight up to ISA+23 @ SL

Variable TDP PROCEDURE **AW169**
- Provides high obstacle clearance
- Requires just 15x15 m helipads
- Maximum Take Off weight up to ISA+17 @ SL
AW169 CAT-A PC1 Vertical

- Purely vertical procedure, no rearward TO climb path required
- 50 ft
- Fixed TDP
- 15x15 m
- Helipad dimensions
- MTOW up to ISA+23 SL
AW169 CAT-A PC1 Variable TDP

- Extremely steep procedure (50° climb path)
- TDP Height (up to) 400 ft
- Helipad dimensions 15x15 m
- 90 m maximum obstacle height
- MTOW up to ISA+17 SL
AW169 CAT-A PC1 Variable TDP: a real case study
AW169 External Dimension

- Main Rotor Diameter: 12.12 m
- Maximum Height: 4.5 m
- Maximum Length: 14.65 m
AW169 Internal Dimension

- **Cabin Width**: 2.03 m
- **Cabin Height**: 1.32 m
- **Cabin Length**: 2.15 m
- **Cabin Volume**: 6.3 m³
- **Baggage Volume**: 1.75 m³

The AW169 provides more internal volume than +5t helicopters.

![Graph comparing AW169, AW109, H145, AS365, Bell 412 EP, S76C+]
The AW169 provides door as wide as the AW139, a 7t helicopter.
AW169 Baggage Compartment

- Maximum Width: 1.67 m
- Maximum Height: 0.93 m
- Maximum Length: 2.25 m
- Baggage Volume: 1.75 m³
AW169 APU Mode

- Rotors Stopped
- No Noise
- No Downwash
- Electromedical Ready
- Engine Ready
- Pilot Ready
AW169 Rotors Technology

- Fully articulated rotors
- Rotative Fluidlastic Dampers
- Reduced Maintenance
- Decreased Vibration Levels
AW169 Airframe

- Rugged and reliable design
- Easy accessibility to all subsystems
- Reduced Maintenance
- Composite Materials

+75%

Composite Materials
AW169 Fuel System

- **904** Kilograms of Total fuel
- **888** Kilograms of Usable Fuel
- **4+** Hours endurance
AW169 Built-in Safe Design

- Emergency exits exceeding FAA / EASA requirements
- All systems are crash-resistant
- 33 min DRY RUN
- Clearance for MR and TR
- 2+ meter

DRY RUN
AW169: 33 minutes dry-run

The procedure is clearly described in the RFM

- Landing or ditching should be made within 33 minutes.

33 min
DRY RUN

equivalent to a range of 50 nm
AW169: Ground Safety

Clearance for MR and TR allows for safe ground operations.
**AW169: Emergency exits**

- Dual action pop-out windows
- Exceeding FAA / EASA requirements
- +25% Window Area compared to type IV requirements

Exceeding FAA / EASA requirements

Window Area +25%
AW169: Safety is not an optional
CABIN FLEXIBILITY
AW169: Cabin Interior
AW169: EMS Cabin

- Hard points for safe operations in the cabin
- Patient lights for a uniform illumination
- Easy and quick reconfiguration between 3 different layout
AW169: Transversal Layout

- One Stretcher + 6 seats
- Two Stretchers + 4 seats
AW169: Transversal Layout – Single Stretcher

Extremely versatile layout:
- 1 stretcher + 6 seats
- 2 stretchers + 4 seats
- 8 pax
AW169: Transversal Layout – Double Stretcher
AW169: Longitudinal Layout

-One Stretcher + 4 seats
AW169: Longitudinal Layout

- 2 swiveling and tracking medical seat
- Loading platform rotates and slides to facilitate the loading of the patient
- Optimal design for secondary EMS mission
AW169: Medical Evacuation Layout

- Up to 10 seats
- Quick installation (<30 minutes)
AW169: Medical Evacuation Layout

Up to 10 seats
Quick installation (<30 minutes)
AW169: C3 “Common Cockpit Concept” Approach

- AW Family Concept: the information are displayed using the same philosophy (colour code, graphics, symbols...) across the different AW platforms
- Reduced Pilot training time thanks to shared commonalities
AW169: Modern Cockpit

- Primary Flight Display (PFD)
- Multi-Function Display (MFD)
- Primary Flight Display (PFD)
- Enhanced Display & Control Units (EDCUs) Touchscreen
AW169: Touchscreen Interface

- The Past: One panel for each equipment
- The Future: Integrated Touchscreen interface

- Increased system performance and information visibility
- Enhanced effectiveness of crew interaction
- Common interface for the management of the avionic, aircraft and mission systems
AW169: Visibility And Situation Awareness

- HTAWS
- Flight Plan
- SVS
- TCAS II
- Moving Map
- External Cameras

Courtesy of Michael Alesi
AW169: Synthetic Vision System & HTAWS

- **Synthetic Vision System**
  - Increased situation awareness in poor visibility conditions
  - Aural & visual warning

- **Helicopter Terrain Warning System**
  - Helps avoiding collisions with the terrain
  - Display a 3D Image of the terrain
THANK YOU FOR YOUR ATTENTION

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