GENERAL

aw139 helicopter flight manual elgor

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Introduction

The AW139 is one of the most widely used medium size, twin engine helicopters in the world. Whether it's performing search and rescue missions, offshore transport, or VIP travel, pilots rely on a comprehensive flight manual to navigate the complex systems and procedures that keep the aircraft safe and efficient. In the aviation industry, **Elgor**is the trusted publisher that delivers high quality, up to date flight manuals for the AW139 family. This article delves into the AW139 helicopter flight manual, the pivotal role played by Elgor, and how pilots and operators can make the most of this indispensable resource.

Understanding the AW139 Aircraft

Design and Capabilities

The AW139, developed by **Airbus Helicopters**, combines advanced aerodynamics with a robust powerplant to deliver exceptional performance. Key features include:

- Two Turbomeca Arrius 2C engines providing a combined 4,300 /hp
- Maximum cruise speed of 280 /knots (517 /km/h)
- Typical range of 1,200 /nm (2,222 /km) with standard fuel
- Versatile cabin options for up to 15 passengers or specialized medical configurations
- Advanced avionics suite, including the Elgor flight deck integration

Operational Roles

The AW139's versatility allows it to perform a wide range of missions:

1. Search and Rescue (SAR) – Rapid deployment to remote areas, equipped with rescue winches and medical support.
2. Offshore Transport – Safe and efficient travel between oil platforms and shore facilities.
3. VIP and Corporate Transport – Comfortable cabin and high performance flight characteristics.
4. Medical Evacuation (MEDEVAC) – Dedicated medical equipment and crew support.

Why a Flight Manual is Essential

Regulatory Compliance

Every aircraft operating under civil aviation authorities—such as the FAA, EASA, or ICAO—must have an approved flight manual. The manual is the official source of operating limitations, performance data, and emergency procedures. Pilots must reference it before every flight to ensure compliance with **aviation regulations**and to maintain the aircraft's airworthiness.

Safety and Reliability

Flight manuals contain detailed information on:

- Pre flight and post flight checklists
- Engine and system operation limits
- Weight and balance calculations

- Emergency and abnormal procedures
- Maintenance and inspection schedules

Adhering to these guidelines reduces the risk of accidents and ensures that the aircraft remains in a safe operating condition.

Operational Efficiency

By following the performance tables and operational procedures outlined in the manual, pilots can optimize fuel usage, flight times, and crew workload. This leads to cost savings and increased mission reliability.

Elgor: The Trusted Publisher of AW139 Flight Manuals

Company Overview

Elgor, a global leader in aviation documentation, specializes in producing accurate, user friendly flight manuals and technical publications. Their partnership with Airbus Helicopters ensures that the AW139 flight manual is regularly updated to reflect the latest regulatory changes and manufacturer enhancements.

Key Advantages of Using Elgor Manuals

- Accuracy – Elgor's editorial team works closely with Airbus engineers to verify every data point.
- Accessibility – Manuals are available in digital and printed formats, with searchable PDF versions for quick reference.
- Compliance – All Elgor manuals meet the standards set by aviation authorities worldwide.
- Support – Elgor offers technical support and updates, ensuring operators always have the latest information.

Structure of the AW139 Flight Manual

General Information

At the beginning of the manual, pilots find:

- Aircraft identification and serial number
- Manufacturer's statement and version control
- Summary of key changes from previous editions
- Contact information for technical support

Operating Limitations

This section lists:

- Maximum operating altitude and temperature limits
- Speed restrictions for takeoff, cruise, and landing
- Weight and balance constraints
- Environmental limits such as wind shear and turbulence tolerance

Systems Overview

Detailed descriptions of the AW139's major systems are provided, including:

- Engine and fuel system
- Hydraulic and electric power distribution
- Flight controls and autopilot
- Avionics and communication systems
- Environmental control and cabin systems

Performance Data

Performance tables enable pilots to calculate:

- Takeoff and landing distances
- Climb rates and cruise performance
- Fuel consumption rates at various power settings
- Weight and balance calculations

Operating Procedures

Step by step checklists and procedures cover:

- Pre flight inspection and preparation
- Engine start and taxi operations
- Takeoff, climb, cruise, descent, and landing sequences
- Emergency and abnormal procedures (e.g., engine failure, hydraulic loss)
- Special mission procedures for SAR, MEDEVAC, and offshore operations

Maintenance and Inspection

Elgor includes a comprehensive maintenance schedule aligned with the AW139's Service Bulletin requirements. Topics include:

- Daily, weekly, monthly, and annual inspection tasks
- Component life limits and replacement intervals
- Record keeping and documentation standards
- Maintenance planning tools and checklists

Appendices and Reference Material

Appendices provide quick reference charts, glossary, and additional technical data. They are invaluable for quick look ups during flight operations.

Key Sections Explained in Detail

Pre Flight Checklist

Before every flight, pilots must verify:

1. Aircraft exterior and interior condition
2. Engine and system status (fuel, hydraulics, avionics)
3. Navigation and communication equipment
4. Emergency equipment (first aid, life vests, rescue winch)
5. Weight and balance calculations

Engine Start and Taxi Procedures

The AW139's twin Arrius 2C engines require a specific sequence:

- Check engine start parameters (fuel selector, ignition, engine monitor)
- Verify engine monitoring instruments (temperature, pressure, RPM)
- Perform a brief engine run up to confirm normal operation
- Proceed with taxi, ensuring all flight controls are free and correct

Takeoff and Climb

Takeoff procedures emphasize:

- Proper power settings for short and long field takeoffs
- Monitoring rotor RPM and airspeed
- Gradual climb to safe altitude while monitoring engine performance
- Maintaining a safe distance from obstacles and terrain

Cruise and Descent

During cruise, pilots focus on:

- Optimal airspeed for fuel efficiency
- Continuous monitoring of engine and system parameters
- Planning for descent, including fuel reserve calculations and approach procedures

Landing and Post Flight

Landing procedures include:

- Approach speed and glide path management
- Flare and touchdown techniques to avoid hard landings
- Post flight inspection to confirm the aircraft is ready for the next mission

Operating Procedures for Special Missions

Search and Rescue (SAR)

The AW139’s SAR configuration requires additional procedures:

- Winch deployment and recovery operations
- Rescue personnel positioning and safety checks
- Coordination with ground rescue teams
- Emergency medical support protocols

Offshore Transport

Offshore missions involve:

- Sea state assessment and approach planning
- Fuel planning for extended operations
- Communication with offshore platform operators
- Specialized cargo handling procedures

Medical Evacuation (MEDEVAC)

MEDEVAC missions demand:

- Medical equipment checks (ventilators, monitors)
- Patient transfer procedures from ground to aircraft
- In flight medical support protocols
- Coordination with receiving medical facilities

Safety and Emergency Procedures

Engine Failure

In the event of an engine failure, the AW139’s flight manual outlines:

- Immediate actions to maintain airspeed and altitude
- Procedure for shutting down the failed engine

- Options for emergency landing or return to base
- Post failure inspection and documentation

Hydraulic Loss

Hydraulic failure procedures include:

- Use of backup hydraulic systems
- Control surface management in low hydraulic pressure mode
- Emergency landing procedures

Electrical System Failure

Electrical failures require:

- Switching to backup power sources
- Prioritizing critical systems (flight controls, engine monitoring)
- Executing an emergency landing if necessary

Training and Proficiency

Simulator Sessions

Elgor's flight manual is often used as a reference during simulator training, helping pilots internalize procedures and emergency responses in a risk free environment.

Instructor's Guide

Instructors can use the manual's detailed procedures to design lesson plans that cover both normal operations and abnormal scenarios.

Recurrent Training

Regular recurrent training ensures pilots remain familiar with the latest updates and maintain proficiency in all AW139 systems.

Compliance and Certification

Type Certificate

The AW139 flight manual is issued under the aircraft's type certificate, guaranteeing that all information complies with the manufacturer's specifications.

Airworthiness Directives

Elgor incorporates updates from the latest airworthiness directives, ensuring operators remain compliant with regulatory changes.

Operational Limitations

Adhering to the flight manual's operational limits protects both the aircraft and the crew, preventing over stress and potential accidents.

Where to Obtain the AW139 Flight Manual

Elgor Digital Library

Operators can subscribe to Elgor's digital library, granting instant access to the latest AW139 flight manual in PDF format.

Printed Copies

For those who prefer hard copies, Elgor offers high quality printed manuals available through authorized distributors.

Airbus Helicopters Support

Airbus Helicopters provides direct support and can facilitate manual procurement for operators and maintenance facilities.

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