MERCURY

# Airworthiness Training Course

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## Introduction:

The Airworthiness Training Course provides participants with a comprehensive understanding of how airworthiness and safety regulations are controlled in the United KingdomThe course outlines the processes and procedures implemented by the UK Civil Aviation Authority CAA to ensure compliance with airworthiness regulationsAdditionally, the course places this regulatory framework within the broader international context established by the International Civil Aviation Organization ICAO and the European Union Aviation Safety Agency EASA.

## Targeted Groups:

- Aviation Professionals: Individuals working in the aviation industry, including engineers, technicians, inspectors, and regulators, who need a thorough understanding of airworthiness regulations and processes.
- Aviation Safety Managers: Safety managers responsible for ensuring compliance with airworthiness regulations and maintaining a safe operating environment.
- Aircraft Manufacturers: Professionals involved in the design, production, and certification of aircraft, who require knowledge of airworthiness regulations to ensure compliance.
- Airline and Maintenance Organization Personnel: Individuals working in airline and maintenance organizations, such as maintenance engineers, quality managers, and operations managers, who need to understand airworthiness regulations for safe operation and maintenance of aircraft.

## Targeted Competencies:

## Upon completion of this course, participants will be able to:

- Understand the principles and importance of airworthiness regulations in ensuring safe aviation operations.
- Comprehend the roles and responsibilities of various stakeholders in the airworthiness process, including manufacturers, operators, and maintenance organizations.
- Recognize the regulatory framework established by ICAO and EASA and its influence on national airworthiness regulations.
- Explain the airworthiness certification process and the criteria for obtaining and maintaining airworthiness certificates.
- Identify the different airworthiness documents and records required for compliance.
- Understand the concept of continued airworthiness management and its role in maintaining aircraft safety throughout its operational life.
- Describe the processes and procedures used by the UK CAA to enforce airworthiness regulations and ensure compliance.
- Recognize the importance of safety management systems SMS in achieving and maintaining airworthiness.

## Unit 1: Introduction to Airworthiness

- Importance of airworthiness regulations in aviation safety

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- Overview of the UK CAA and its role in airworthiness control
- International framework established by ICAO and EASA
- Key airworthiness terminology and definitions
- Safety management principles and their relationship to airworthiness

## Unit 2: Airworthiness Certification Process

- Types of airworthiness certificates
- Criteria and requirements for airworthiness certification
- Certification processes for different types of aircraft
- Roles and responsibilities of manufacturers, operators, and regulators in the certification process
- Understanding the difference between type certificates and supplemental type certificates

## Unit 3: Airworthiness Documents and Records

- Overview of essential airworthiness documents and records
- Maintenance records and logbooks
- Airworthiness directives and service bulletins
- Importance of record-keeping for audits and inspections
- Document control procedures for managing airworthiness documents

## Unit 4: Continued Airworthiness Management

- Principles of continued airworthiness management
- Maintenance programs and reliability monitoring
- Aging aircraft management and inspection programs
- Reliability-centered maintenance RCM principles
- Safety assessment of modifications and repairs

## Unit 5: Airworthiness Regulation Enforcement

- Overview of the UK CAA enforcement procedures
- Compliance monitoring and surveillance
- Investigation of airworthiness incidents and accidents
- Regulatory sanctions and enforcement actions
- Role of aviation safety inspectors in airworthiness enforcement

## Unit 6: Safety Management Systems and Airworthiness

- Introduction to safety management systems SMS
- Integration of SMS and airworthiness processes
- Safety culture and human factors in airworthiness management
- Risk assessment and mitigation in airworthiness management
- SMS implementation and evaluation in the context of airworthiness

## Unit 7: Case Studies and Best Practices

- Analysis of real-world airworthiness cases
- Best practices in airworthiness compliance and management
- Lessons learned and continuous improvement in airworthiness

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- Review of notable airworthiness incidents and their impact
- Application of lessons learned to enhance airworthiness practices