



DEPARTMENT OF AEROSPACE ENGINEERING

19ASB303 AIRCRAFT MAINTENANCE ENGINEERING

UNIT - 3 - INSPECTION

Type certificate Data Sheets - ATA specifications

1. Introduction to Type Certificate Data Sheets (TCDS)

A Type Certificate Data Sheet (TCDS) is an official document issued by aviation regulatory authorities, such as the FAA or EASA, that provides detailed specifications and limitations of a certified aircraft, engine, or propeller. It serves as a reference for aircraft manufacturers, operators, and maintenance personnel to ensure compliance with design and airworthiness standards.

2. Purpose of Type Certificate Data Sheets

- **Defines Aircraft Configuration:** Lists approved designs, modifications, and limitations.
- **Ensures Compliance:** Provides regulatory approval for aircraft operation and maintenance.
- **Guides Maintenance Practices:** Assists in inspections, repairs, and modifications.
- **Supports Airworthiness Directives (ADs):** Helps determine applicable regulatory actions.

3. Contents of a Type Certificate Data Sheet

A TCDS typically includes the following sections:

- **General Information:**
 - Manufacturer, model, and serial number range
 - Certification basis and issue date
- **Aircraft Specifications:**
 - Maximum Takeoff Weight (MTOW)
 - Fuel and oil specifications
 - Approved flight envelope (speed, altitude, center of gravity limits)
- **Engine and Propeller Data:**
 - Approved engine/propeller models
 - Performance and operational limitations

- **Landing Gear and Structural Limitations:**
 - Approved configurations
 - Load factors and material specifications
 - **Equipment and Modifications:**
 - List of mandatory and optional equipment
 - Approved modifications and Supplemental Type Certificates (STCs)
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4. ATA Specifications and Their Role in Aircraft Maintenance

The Air Transport Association (ATA) developed the **ATA 100** and **ATA iSpec 2200** coding systems to standardize technical documentation in aircraft maintenance. These specifications ensure consistency across various aircraft manufacturers and maintenance manuals.

a. ATA 100 Specification (Legacy Standard)

- Used for structuring aircraft maintenance documentation.
- Organizes technical manuals into numbered chapters based on systems.

b. ATA iSpec 2200 (Modern Standard)

- Digital evolution of ATA 100, used in electronic maintenance documentation.
- Standardized format for Interactive Electronic Technical Manuals (IETMs).
- Enhances digital access and searchability for maintenance data.

c. Common ATA Chapters in TCDS and Maintenance Manuals

ATA Chapter	System
ATA 05	Time Limits/Maintenance Checks
ATA 24	Electrical Power
ATA 32	Landing Gear
ATA 52	Doors
ATA 78	Exhaust

5. Importance of TCDS and ATA Specifications in Inspections

- Ensures aircraft remain within certified limits.
- Provides standard procedures for maintenance teams.
- Aids in troubleshooting by referring to specific ATA chapters.
- Supports compliance with airworthiness directives and safety bulletins.

6. Conclusion

Type Certificate Data Sheets and ATA Specifications play a crucial role in aircraft maintenance and regulatory compliance. By understanding these documents, engineers and maintenance personnel can ensure safe and efficient aircraft operations.

