



SNS COLLEGE OF TECHNOLOGY

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DEPARTMENT OF AEROSPACE ENGINEERING

19ASB303 AIRCRAFT MAINTENANCE ENGINEERING

UNIT - 3 - INSPECTION

FAR Air worthiness directives

1. Introduction to Airworthiness Directives (ADs)

Airworthiness Directives (ADs) are legally enforceable regulations issued by the Federal Aviation Administration (FAA) under the Federal Aviation Regulations (FARs). They mandate inspections, modifications, or corrective actions to address safety issues in aircraft, engines, propellers, or appliances.

2. Purpose of Airworthiness Directives

- **Ensuring Flight Safety:** Prevent potential failures that could compromise aircraft operation.
- **Regulatory Compliance:** ADs are legally binding; failure to comply results in regulatory penalties.
- **Risk Mitigation:** Addresses design defects, maintenance issues, or operational hazards.
- **Continuous Airworthiness:** Ensures that aircraft remain airworthy throughout their service life.

3. Types of Airworthiness Directives

a. Notice of Proposed Rulemaking (NPRM) ADs

- Issued for public comment before finalization.
- Allows industry feedback before the directive is enforced.

b. Final Rule ADs

- Issued when immediate action is necessary.
- Effective without prior public comment in cases of urgent safety concerns.

c. Emergency ADs

- Issued when an immediate risk to flight safety is identified.
 - Requires compliance before further flight.
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4. Compliance Requirements

- **Compliance Timeframe:** Specifies when the corrective action must be completed.
 - **Applicability:** Defines which aircraft, engines, or components are affected.
 - **Inspection/Modification Guidelines:** Details the required actions to rectify the issue.
 - **Recording and Reporting:** Mandates maintenance log updates and possible reports to the FAA.
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5. How ADs Are Issued Under FARs

- ADs are governed by **14 CFR Part 39** of the Federal Aviation Regulations.
 - They apply to all aircraft operating under FAA jurisdiction.
 - They are published in the FAA's regulatory database and official bulletins.
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6. Examples of Airworthiness Directives

- **Boeing 737 MAX Grounding:** Issued after two fatal accidents to address flight control system defects.
 - **Engine Blade Fatigue Cracks:** Mandated inspections on turbine engines prone to blade failure.
 - **Electrical System Failures:** Required modifications to prevent in-flight electrical malfunctions.
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7. Conclusion

FAR Airworthiness Directives are crucial for maintaining aircraft safety and regulatory compliance. Adhering to ADs prevents accidents and ensures aircraft remain in safe operational condition.