



Chapter 04: Avionics Operations

01. Work Order Creation and Authorization

Create and authorize avionics work orders ensuring proper documentation and client approval for avionics maintenance and installation projects.

Purpose

This process establishes procedures for creating comprehensive avionics work orders that ensure proper documentation, regulatory compliance, and client authorization before beginning any avionics maintenance or installation work. The process ensures all work is properly scoped, authorized, and documented in accordance with Part 145 repair station requirements.

Roles and Responsibilities

Avionics Technician:

- Conduct avionics system assessments and repairs
- Prepare detailed work scope and time estimates
- Document component requirements and procedures
- Coordinate with parts department for availability
- Ensure regulatory compliance for avionics work

A&P Mechanic:

- Execute assigned maintenance tasks per specifications
- Review work order technical requirements
- Provide technical input for work scope estimates
- Document completion status and discrepancies
- Ensure regulatory compliance in all maintenance work

Client Service Representative:

- Manage client communications and service requests
- Process documentation and billing
- Obtain client authorizations and approvals
- Coordinate scheduling and aircraft availability
- Maintain professional client relationships

Chief of Maintenance:

- Review and approve complex or high-value work orders
- Assign qualified technicians to specific maintenance tasks
- Ensure regulatory compliance for all maintenance work
- Resolve scheduling conflicts and resource allocation issues
- Oversee maintenance quality and safety standards

Process Steps

Initial Assessment Phase

- **Receive work request** - Document client requirements, symptoms, or installation requests with complete aircraft information
- **Conduct preliminary inspection** - Assess aircraft systems and identify scope of work required for accurate estimation
- **Review aircraft records** - Examine maintenance logs, equipment lists, and previous avionics modifications for compatibility
- **Identify regulatory requirements** - Determine applicable regulations, STCs, and certification requirements for proposed work

Work Scope Development Phase

- **Define work scope** - Prepare detailed description of work to be performed including specific tasks and deliverables
- **Estimate labor requirements** - Calculate labor hours based on manufacturer data, experience, and complexity factors
- **Identify parts and materials** - Create comprehensive list of required components, consumables, and special materials
- **Determine equipment needs** - Verify availability of required test equipment, tools, and calibrated instruments

Authorization and Approval Phase

- **Prepare cost estimate** - Calculate total project cost including labor, parts, and any applicable fees or surcharges
- **Present to client** - Review work scope, timeline, and costs with client providing clear explanations of technical requirements
- **Obtain written authorization** - Secure client signature on work order authorization form with clear scope

and cost agreement

- **Create work order** - Generate formal work order in maintenance tracking system with all required documentation

Pre-Work Verification Phase

- **Verify parts availability** - Confirm all required components are available or ordered with acceptable delivery schedules
- **Assign qualified technicians** - Ensure assigned personnel have appropriate certifications and manufacturer training
- **Schedule aircraft time** - Coordinate with client and operations for aircraft availability and hangar space allocation
- **Prepare technical data** - Gather all required manuals, STCs, service bulletins, and approved maintenance procedures

Process Mapping

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Client Request → Initial Assessment → Work Scope Development → Cost Estimation → Client Authorization
→ Work Order Creation → Resource Allocation → Work Commencement

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Tools and Resources

Documentation:

- Work Order Authorization Forms
- Aircraft Equipment Lists and Records
- Manufacturer Installation Manuals
- STC Documentation and Instructions

Software Systems:

- Maintenance Tracking System
- Parts Inventory Management System
- Client Billing and Authorization System
- Regulatory Compliance Database

Reference Materials:



- 14 CFR Part 145 Requirements
- Manufacturer Service Bulletins
- Technical Standard Orders (TSO)
- AC 43-9C Maintenance Records

Success Metrics

- **Completion Time:** Work order created and authorized within 4 business hours of initial request.
- **Quality Standard:** 100% of work orders include complete scope, accurate estimates, and proper client authorization.
- **Safety Standard:** All regulatory requirements identified and documented before work authorization.
- **Client Satisfaction:** Client approval rating of 4.5/5 for work order clarity and communication.

Common Issues and Solutions

- **Issue:** Client requests work without understanding regulatory requirements or complexity
- **Solution:** Provide detailed technical consultation explaining certification requirements, timeline implications, and regulatory compliance needs before presenting final work scope

Issue: Parts availability delays affect project timeline after authorization

Solution: Implement parts availability verification as mandatory step before client authorization, include delivery timelines in work order, and maintain communication protocols for any changes

Issue: Work scope changes discovered during initial inspection phases

Solution: Build contingency assessment time into initial estimates, establish change order procedures for scope modifications, and maintain clear communication protocols for client approval of changes

Safety Considerations

- **⚠ WARNING:** Ensure all avionics work complies with applicable airworthiness requirements and manufacturer instructions to prevent unsafe installations or modifications

⚡ **CAUTION:** Verify technician qualifications match work complexity requirements to prevent improper installations or repairs that could affect aircraft safety

i NOTE: All work orders must reference appropriate approved data including STCs, manufacturer instructions, or acceptable methods per AC 43.13-1B

✅ BEST PRACTICE: Conduct thorough pre-work planning sessions with assigned technicians to review

procedures, identify potential issues, and confirm resource availability

Regulatory References

- **14 CFR Part 145** - Repair Station Operating Certificate requirements for work authorization
- **14 CFR Part 43** - Maintenance, Rebuilding, and Alteration documentation requirements
- **AC 43-9C** - Maintenance Records guidance for work order documentation
- **AC 43.13-1B** - Acceptable Methods, Techniques, and Practices for avionics work
- **TSO Standards** - Technical Standard Orders for avionics equipment certification