



Chapter 03: Maintenance Operations

06. Parts Inventory Management and Ordering

Manage parts inventory and procurement to ensure availability of quality components for maintenance operations.

Purpose

Establish systematic procedures for managing aircraft parts inventory, procurement, and quality control to ensure availability of airworthy components while minimizing inventory costs and maintaining regulatory compliance throughout the parts management process.

Roles and Responsibilities

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

Inventory Management and Control

- **Monitor stock levels** - Review daily inventory reports and identify parts approaching minimum stock levels or requiring reorder
- **Conduct periodic inventory audits** - Perform monthly physical counts of high-value items and quarterly complete inventory verification
- **Track parts usage patterns** - Analyze consumption data to optimize stock levels and identify seasonal or aircraft-specific requirements
- **Maintain inventory accuracy** - Update inventory records immediately upon parts receipt, issue, and return to ensure accurate stock information

Parts Procurement and Ordering

- **Review parts requests** - Verify parts specifications, quantities, and installation requirements against maintenance work orders and technical documentation
- **Source approved suppliers** - Select vendors from approved supplier list based on parts availability, pricing, and delivery requirements
- **Prepare purchase orders** - Generate detailed purchase orders including part numbers, quantities, delivery requirements, and quality specifications
- **Track order status** - Monitor order progress and coordinate with vendors to ensure on-time delivery for scheduled maintenance activities

Quality Control and Receiving

- **Inspect incoming parts** - Examine all received parts for damage, proper packaging, and compliance with order specifications
- **Verify airworthiness documentation** - Review certificates of conformity, airworthiness tags, and traceability documentation for regulatory compliance
- **Update inventory records** - Enter received parts into inventory system with location, cost, and documentation information
- **Process discrepancies** - Handle damaged, incorrect, or improperly documented parts through vendor return and replacement procedures

Parts Storage and Preservation

- **Store parts properly** - Place parts in appropriate storage locations with proper environmental controls and protection from damage

- **Maintain shelf life tracking** - Monitor time-limited parts and consumables to ensure use before expiration dates
- **Implement security measures** - Secure high-value and controlled parts in locked storage with access control and tracking
- **Preserve parts condition** - Apply appropriate preservation methods for long-term storage and protect against corrosion and deterioration

Issue and Documentation Control

- **Process parts requisitions** - Issue parts to technicians with proper documentation and work order authorization
- **Maintain traceability records** - Document parts installation history and maintain records for warranty and regulatory requirements
- **Handle returns and exchanges** - Process unused parts returns and coordinate warranty exchanges with suppliers
- **Update cost tracking** - Allocate parts costs to appropriate work orders and maintain accurate job costing information

Process Mapping

Flowchart to show sequential steps

Tools and Resources

- Parts inventory management software system
- Approved vendor database and contact information
- Parts catalogs and cross-reference databases
- Quality control inspection checklists and procedures
- Storage equipment and environmental control systems
- Airworthiness documentation filing and tracking systems
- Cost tracking and budget monitoring tools
- Emergency parts procurement procedures and contacts

Success Metrics

- **Completion Time:** Parts orders processed within 2 hours of request; emergency orders within 30

minutes.

- **Quality Standard:** 100% accuracy in parts specifications and airworthiness documentation verification.
- **Safety Standard:** Zero installation of unapproved or improperly documented parts.
- **Client Satisfaction:** 95% parts availability for scheduled maintenance without delays.

Common Issues and Solutions

- **Issue:** Parts availability delays from suppliers affecting maintenance schedules
- **Solution:** Maintain multiple approved suppliers for common parts, establish minimum stock levels for critical components, and implement expedited ordering procedures

Issue: Parts quality or documentation discrepancies discovered upon receipt

Solution: Implement systematic receiving inspection procedures, maintain vendor quality ratings, and establish clear return and replacement protocols

Issue: Inventory accuracy problems affecting parts availability and cost control

Solution: Implement regular cycle counting procedures, use barcode scanning systems when possible, and establish clear parts issue and return procedures

Safety Considerations

⚠ WARNING: Never install parts without proper airworthiness documentation and regulatory approval

⚡ CAUTION: Ensure proper storage conditions for all parts to prevent deterioration and maintain airworthiness

i NOTE: All parts must be traceable from installation back to original manufacturer certification

✅ BEST PRACTICE: Maintain relationships with multiple approved suppliers to ensure parts availability and competitive pricing

Regulatory References

- **14 CFR Part 21** - Certification Procedures for Products and Articles
- **14 CFR Part 43.13** - Performance Rules (General)
- **AC 20-62E** - Eligibility, Quality, and Identification of Aeronautical Replacement Parts
- **AC 21-29E** - Detecting and Reporting Suspected Unapproved Parts
- **AC 43-9C** - Maintenance Records
- **AC 43.13-1B** - Acceptable Methodss, Techniques, and Practices of Aircraft Inspection and Repair

- **AC 43.13-2B** - Acceptable Methods, Techniques, and Practices - Aircraft Alterations
- **AC 120-10A** - Flightcrew Member Duties and Responsibilities Regarding the Use of Safety Belts and Shoulder Harnesses