



Dear Vendor,

United's philosophy is to reduce maintenance costs, cost of ownership, while maintaining reliability. Approval and purchase of PMA parts is a key part of this objective. United requires that all PMA parts, approved for installation meet or exceed the reliability and durability of OEM produced parts.

United's approval goes beyond that required by the FAA by reviewing the part and package. Although all PMA parts reviewed by United are FAA approved, not all are accepted for United's use. The data package must detail how the vendor determined part design with regard to configuration, dimensions, materials, surface finish, hardness, etc. Once UA is satisfied that all required material is present and the package reviewed, it is determined whether or not the PMA Part is as good, or better, than the OEM Part. The review may include such things as a complete dimensional check, materials analysis, fit check, endurance test, etc.

Each submitted package must include a **sample part** and the following information:

All packages must be submitted in order shown in the attached paperwork

- Basis for Design Approval as identified on pages 1 & 2 for Test and Computation and page 3 for Identity.
- Make sure all pages are bound so that pages can't be easily removed. With the exception of drawings, packages with loose page will not be accepted.
- Initials for each item on the checklist submitted.

Regrettably packages missing any information will be returned. Should any package be returned, please attach a letter stating corrective action taken prior to re-submitting in Tab 2.

Packages for accepted parts will not be returned to the vendor and become property of United Airlines. Before submitting PMA packages please contact me for approval.

Thank you,

Sandra Dahlin
PMA Development Coordinator
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Test and Computation

Tab 1

Table of Contents

FAA PMA Approval Letter with signatures

FAA Transmittal Letter for Subsequent PMA Supplement with signatures

PMA Supplement is complete with signatures

Tab 2

Introduction

- Part description, application and function
- Identify next higher assembly
- Sample size
- Quantity per aircraft
- Rotating part
- Life Limited Part
- Referenced Documents or Exhibits (must be included)
- Background of PMA Vendor
 - a. History of supplying reliable parts
 - b. How long has the PMA part been in production?
 - c. Industry experience
 - i. What operators use the part?
 - ii. Contact information
 - iii. Quantities sold

Tab 3

Service History Review

- Assessment of criticality
- Airworthiness Directives
- Service Difficulty Reports
- List sources of research

Tab 4

Proof of Model Effectivity (Must be provided for each Aircraft Model installed)

- Illustrated Parts Catalog
- Aircraft Maintenance Manual
- Component Maintenance Manual
- Interchangeability

Tab 5

OEM Sample Traceability

- Paperwork from shipped part
- Purchase Data

Tab 6

Part Marking per FAR 45.15 requirements

1. FAA PMA
2. Name of symbol/trademark of PMA holder
3. Part number
4. Applicable aircraft/engine model eligibility
5. If the part is too small, is the package clearly and properly marked?
6. Is part number marked on OEM part?
 - a. If OEM part is marked, regardless of part size, PMA part marking is a requirement by UAL.

If answer to question 2 or 3 is no and answer to 6 is yes, PMA part and package cannot be accepted.

Tab 7

Comparative Test and Analysis

- Design Methodology
- Material Analysis
- Chemical Analysis
- Dimensional Analysis
 - a. Drawing and data table showing actual dimensions and tolerances for all samples
- Drawings
 - a. Drawings include title block, revision control, dimensions and tolerances, materials, and processes

Tab 8

Conformity Inspection

- Ensures conformity to the approved design

Tab 9

Compliance with Airworthiness Standards

- Listed applicable CFR's

Tab 10

Test Scope

- Strength
- Durability
- Life analysis
- Side-by-side testing of proposed and original parts with zero service time

Tab 11

Certified Test Reports

- Cut away of OEM and proposed part
- Color photos with scale showing OEM and PMA part. All views.
- Witness
- Fit checks performed
- Flammability Testing for Interior Parts

Tab 12

Failure mode and effect analysis

- Support classification of critical or non-critical
- Does not in itself constitute an unacceptable hazard?
- Does not result in damage to other systems that are essential to safety.
- Effects failure would have on systems required for safe flight and landing due to damage and possibility of smoke and /or fire.
- Physical inspection of aircraft to ensure capability?

Tab 13

Instructions for Continued Airworthiness

- Maintain serviceability compared to OEM part (MM,CMM,etc)

Tab 14

Conclusions and Recommendations

Tab 15

Applicable documents

Identicality

Tab 1

Table of Contents

FAA PMA Approval Letter with signatures

FAA Transmittal Letter for Subsequent PMA Supplement with signatures

PMA Supplement is complete with signatures

Tab 2

Introduction

- Part description, application and function
- Identify next higher assembly
- Sample size
- Quantity per aircraft
- Rotating part
- Life Limited Part
- Background of PMA Vendor
 - a. History of supplying reliable parts
 - b. How long has the PMA part been in production?
 - c. Industry experience
 - i. What operators use the part?
 - ii. Contact information
 - iii. Quantities sold

Tab 3

Licensed components have service histories with no known problems causing unsafe conditions.

Tab 4

Basis for Identicality

- Evidence of a licensing agreement
 - a. Letter of licensing agreement between OEM and vendor
- Identicality without a Licensing Agreement
 - a. Statement certifying that the design is identical in all respects to an approved design (for example, TC, STC or TSO authorization)
 - b. Provide the data supporting the identicality claim (dimensional and material characteristics, special processes and coatings, and test and acceptance criteria)
- FAA form 8110-3 for Identicality with signatures
- Instructions for Continued Airworthiness
- Conclusions and Recommendations
- Applicable documents

Tab 5

Part Marking per FAR 45.15 requirements

- 1 FAA PMA
- 2 Name of symbol/trademark of PMA holder
- 3 Part number
- 4 Applicable aircraft/engine model eligibility
- 5 If the part is too small, is the package clearly and properly marked?
- 6 Is part number marked on OEM part?
 - a. If OEM part is marked, regardless of part size, PMA part marking is a requirement by UAL.

If answer to question 2 or 3 is no and answer to 6 is yes, PMA part and package cannot be accepted.