ORDER

8110.42A

PARTS MANUFACTURER APPROVAL PROCEDURES

March 31, 1999

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

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FOREWORD

This order establishes procedures for the evaluation and approval of Parts Manufacturer Approval (PMA) for Replacement and Modification Parts. The procedures contained in this order apply to all Engineering and Manufacturing personnel.

The issuance of this order supersedes the prior edition.

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1. PURPOSE. This order prescribes the responsibilities and procedures for Federal Aviation Administration (FAA) aircraft certification personnel responsible for the approval process required by the Federal Aviation Regulations (FAR) for replacement and modification parts for installation on a type certificated product.

2. DISTRIBUTION. This order is distributed to the Washington Headquarters branch levels of the Aircraft Certification Service, to the branch level of the Regional Aircraft Certification Directorates, to all Aircraft Certification Offices (ACO), the Brussels Aircraft Certification Staff, to all Manufacturing Inspection District Offices (MIDO), to all Manufacturing Inspection Satellite Offices (MISO), and to all Designated Engineering Representatives (DER).

3. CANCELLATION. FAA Order 8110.42, Parts Manufacturer Approval Procedures, dated August 4, 1995, is canceled.

4. GENERAL. This order describes the procedures for FAA personnel to follow when issuing a Parts Manufacturer Approval (PMA) in accordance with Code of Federal Regulations Title 14 (14 CFR) part 21 Subpart K, § 21.303. This document has been extensively expanded, primarily in the areas of approval of the design by the Aircraft Certification Office (ACO). Comprehensive new guidance is provided on making compliance findings by identicality and test and computations. It is intended that for most non-identicality approvals, that these procedures will be used and that supplemental type certification procedures should only be used where the PMA application constitutes a major change to the product. The procedures in this order are used in lieu of Chapter 5 of FAA Order 8120.2A, Production Approval and Surveillance Procedures dated April 30, 1979. Chapter 5 has been removed from FAA Order 8120.2A.

5. INFORMATION CURRENCY. Any deficiencies found, clarifications needed, or improvements to be suggested regarding the content of this order should be forwarded to the Aircraft Certification Service, Automated Systems Branch, AIR-520, Attention: Directives Management Officer, for consideration. Your assistance is welcome.
FAA Form 1320-19, Directive Feedback Information, is located

on the last page of this order for your convenience. If an interpretation is urgently needed, you may contact the Aircraft Engineering Division, Certification and Procedures Branch (AIR-110) for guidance, however, you should use the FAA Form 1320-19 as a follow-up to a verbal conversation.

6. DEFINITIONS AND TERMS. When following procedures outlined in this order, the following definitions and terms also apply:

a. Aircraft Certification Office (ACO) is the field element of the FAA Aircraft Certification Service with geographic responsibility for making a finding that the design complies with applicable airworthiness standards. The ACO administers and secures compliance with agency regulations, programs, standards, and procedures governing the design approval of replacement and modification parts. The location, addresses, and geographic areas of responsibility, of the individual ACO, are in appendix 1, List of FAA Aircraft Certification/Field Offices.

b. Certificating ACO is the ACO that has issued and has oversight of the original design approval for the product/appliance on which the PMA applicant's part is eligible for installation.

c. Critical is a term applicable to parts, appliances, characteristics, processes, maintenance procedures, or inspections when if failed, omitted, or non-conforming, may cause significantly degraded airworthiness of the product during takeoff, flight, or landing.

d. Design consists of all drawings and specifications, which may be summarized on a master drawing list. These are necessary to show the configuration of the part and all information on dimensions, tolerances, materials, processes, and procedures necessary to define all characteristics of a part, as well as, the Airworthiness Limitations Section of the Instructions for Continued Airworthiness (ICA).

e. Eligibility relates on which type certificated products a part produced under PMA may be installed.

f. FAA-PMA Letter is the initial production approval document issued to the PMA applicant by the appropriate Manufacturing Inspection District Office (MIDO). This letter is accompanied by a PMA supplement(s), which is the record of approval of the design by the ACO and production

authorization by the MIDO. Subsequent PMA supplement approvals are transmitted by a transmittal letter that references the initial PMA letter.

g. Life-limited Part is any part which has an established replacement time, inspection interval, or related procedure specified in the Airworthiness Limitations section under 14 CFR part 21 §§ 21.50, 23.1529, 25.1529, 27.1529, 29.1529, 31.82, 33.4, and 35.4 or mandatory replacement and/or inspections noted or referenced on the product Type Certificate Data Sheet (TCDS), for products certified before airworthiness limitations were added to 14 CFR. Mandatory replacement and/or inspections would also be noted or referenced on a letter of technical standard order authorization (TSOA).

h. Life Management Program is a FAA approved program established by the applicant to assure the continued airworthiness of a life-limited part.

i. Manufacturing Inspection District Office (MIDO) is the field element of the FAA Aircraft Certification Service with responsibility for certificate management of the geographic area in which the PMA applicant's fabrication inspection system (FIS) is located. In some areas, a Manufacturing Inspection Satellite Office (MISO) will perform these functions. The location, addresses, and geographic areas of responsibility of the individual MIDO/MISO are in appendix 2, List of FAA Manufacturing Inspection District/Satellite Offices.

j. Certificating MIDO is the MIDO that issued approval or has certificate management responsibility for the production of the product/appliance on which the PMA applicant's part is eligible for installation.

k. Production Approval Holder (PAH) is the holder of a Production Certificate (PC), Approved Production Inspection System (APIS), PMA, or TSOA who controls the design and quality of a product or part thereof.

l. Producer of a part is a person who participates in controlling the design, manufacture, or quality of a part. The FAA does not consider a person who only insignificantly participates in the actions listed to be a producer. One or more of the following actions would indicate that a person is a producer of a part:

1. Fabricating or treating the part, or performing a value-added inspection of the part.

2. Developing the design or performance data from which to manufacture the part.

3. Selecting materials from which to manufacture the part.

4. Developing fabrication processes or assembly methods to be used to manufacture the part.

5. Developing quality control procedures to be used to manufacture the part.

6. Controlling or supervising the manufacture of the part.

m. Product is an aircraft, aircraft engine, or propeller (part 21 § 21.1(b)).

n. Standard Part is a part manufactured in complete compliance with an established industry or U.S. government specification which includes design, manufacturing, test and acceptance criteria, and uniform identification requirements; or for a type of part which the Administrator has found demonstrates conformity based solely on meeting performance criteria, is in complete compliance with an established industry or U.S. government specification which contains, performance criteria, test and acceptance criteria, and uniform identification requirements. The specification must include all information necessary to produce and conform the part, and be published so that any party may manufacture the part. Examples include, but are not limited to, National Aerospace Standards (NAS), Army-Navy Aeronautical Standard (AN), Society of Automotive Engineers (SAE), SAE Sematec, Joint Electron Device Engineering Council, Joint Electron Tube Engineering Council, and American National Standards Institute (ANSI).

As of the date of publication of this order, the FAA has made a finding that discreet electrical and electronic components which conform to their applicable performance criteria, are standard parts (published in the Federal Register March 5, 1997, Volume 62, Number 43). Offices that receive requests to have additional type of parts declared standard, on the basis of conforming to a performance only specification, should forward that request to AIR-100 for disposition. The FAA will publicize any future determinations of parts which (the Administrator finds) demonstrate conformity based solely on meeting performance criteria.

o. Supplier any person who furnishes parts or related services (at any tier) to the manufacturer of a product or part thereof.

p. Technical Standard Order Authorization (TSOA) is a FAA design and production authorization issued to a specific manufacturer of an article which has been found to meet or exceed a specific Technical Standard Order (TSO) performance standard. The Aircraft Engineering Division (AIR-100) is responsible for promulgation of the TSO. The geographic ACO is responsible for the issuance of the TSOA to the applicant. The TSOA does not confer installation authority. The installation of the article must be approved as part of the type design of a type certificated product.

7. APPLICABILITY.

a. General. 14 CFR part 21 § 21.303 requires that any person producing replacement or modification parts for sale for installation on a type certificated product to obtain a PMA or to produce such parts under one of the exceptions of part 21 § 21.303(b). PMA may be obtained for replacement parts for TSOA articles that are approved as part of a product type design, provided that installation eligibility to that product can be shown. However, approval of a part that would constitute a major design change to the TSOA article, can not be done under PMA and would require a new TSOA. An applicant's design that could meet the identicality provisions of part 21 § 21.303 would normally not be considered a major design change.

b. Exceptions. A PMA is required except as described below.

(1) Manufacturing inspection procedures, materials, and/or special processes, such as hardening, plating, or shot-peening, are not in and of themselves eligible for PMA. However, if a person participates in controlling the design, manufacture, or quality of a part by performing such procedures or processes and does so with the intent that the part be sold for sale for installation on a type certificated product, that person must do so pursuant to another's production approval.

(2) A PMA cannot be issued on the basis of a "one-time only" Supplemental Type Certificate (STC) or a FAA Form 337 approval. The applicant would have to reapply for

a new STC, which constitutes a “multiple approval” before a PMA, could be considered.

(3) Production Approval Holders (PC, APIS, or TSOA) may produce replacement parts for their products or articles under their existing design and production approvals. A supplier to a Production Approval Holder (PAH) may not produce replacement or modification parts for sale for installation on a type certificated product, unless the PAH authorizes major inspection and grants direct ship authority (with FAA approval) to that supplier or that supplier has a PMA for the replacement or modification parts.

(4) An aircraft owner or operator may produce parts for installation on their own product without a PMA. The installation of those parts must comply with 14 CFR part 43. If the part is produced with the intent of selling it for installation on a product other than the owner's or operator's, then a PMA would be required.

(5) An air carrier, operating under 14 CFR part 121 or part 135, may produce parts for installation on its own product without a PMA, provided the installation of those parts is approved in accordance with 14 CFR part 43 and complies with the air carrier's accepted maintenance procedures manual and instructions. If the part is produced with the intent of selling it for installation on a product other than the owner's or operator's, then a PMA would be required.

(6) A part produced by a FAA certificated repair station with the intent of installing it on a type certificated product that the repair station has in-house for repair. Production of such parts is authorized in accordance with FAA Order 8000.50, Repair Station Production of Replacement or Modification Parts, of September 1981. Such parts may not be offered for sale as separate items.

(7) The FAA does not require a PMA for production of parts produced for sale for installation on a type certificated product that conform to an established industry or U.S. specification (standard parts). However, if a standard part does not conform to such specification(s) and is not produced pursuant to another's production approval, production of that standard part is considered to be a violation of part 21 § 21.303. FAA personnel should be aware that there are parts which may be purchased by a PAH as standard parts but which are subject to a more restrictive inspection criteria prior to approval for

installation. When a question arises as to whether a part is a standard part, the certificating ACO and/or MIDO should be contacted to determine whether the design of the part meets the criteria for a standard part.

(8) Imported Products. Parts produced in a country other than the U.S., and with which the U.S. has a bilateral airworthiness agreement or bilateral aviation safety agreement that covers the approval and acceptance of replacement and modification parts, may be produced and imported in accordance with part 21 § 21.502.

(a) Parts produced in a bilateral country by a person holding a FAA type certificate for imported products (part 21 § 21.29) or a FAA letter of TSO design approval are exempt from the requirements of PMA (part 21 § 21.303(b)(1) and (3). These parts are produced by the FAA design approval holder or their supplier holding specific authorization to produce and ship parts. These parts are accepted for import under part 21 § 21.502 when accompanied by a certificate of airworthiness for export, certifying the parts meet the FAA-approved design and other FAA requirements.

(b) Parts produced in a bilateral country for installation on a product type certificated under part 21 § 21.21 (U.S. designed and manufactured), may be imported into the U.S. under part 21 § 21.502, when accompanied by a certificate of airworthiness for export, issued by the CAA of the exporting country, with a certifying statement that the parts meet the FAA type certificate and any other FAA requirements.

(c) A PMA will not be issued or expanded when manufacturing facilities are located outside the U.S.

c. Special Considerations: Older Products. In evaluating applications for approval to produce parts for sale for installation on older TC products, FAA personnel should consider potential problems. For example, type design information may be difficult to obtain, the product may no longer be in production, or the TC holder may no longer exist or may no longer be producing parts. In all such cases, the applicant must still submit sufficient information to support a determination that the applicant's design meets the applicable airworthiness standards and that the applicant will produce parts conforming to the approved

design. Accordingly, FAA engineering personnel will need to exercise sound judgment in considering means of demonstrating compliance as alternatives to those means described in paragraph 9c.

8. PARTS MANUFACTURER APPROVAL. The ACO administers and secures compliance with agency regulations, programs, standards, and procedures governing the issuance of design approval for replacement and modification parts. The MIDO/MISO ensures conformity to airworthiness requirements, issues the FAA-PMA production approval letter, conducts surveillance at the PMA holder's facilities, investigates and submits enforcement reports concerning noncompliance with the Federal Aviation Regulations (14 CFR, Chapter I) (this includes PMA holders and non-PMA holders), and investigates service difficulties and reports these findings to the appropriate ACO. Coordination (e.g., requests for conformity inspections to determine produceability) between the ACO and MIDO/MISO ensures that the applicant's processes are producing replacement and modification parts in accordance with the approved design. When appropriate, the MIDO verifies the manufacturing processes of the applicant from the standpoint of its capability regarding the processes critical to achieving the approved design characteristics. Approval of an application for PMA requires an approval of the design by the ACO and a production system approval by the MIDO/MISO (see PMA process flow chart in appendix 3).

a. The applicant must show that the design meets the applicable airworthiness standards. There are two basic ways that an applicant may show compliance:

(1) The applicant shows that the design of the part is identical to the design of a part covered under a type certificate, or

(2) The applicant shows through tests and computations that the design of the part meets the airworthiness requirements applicable to the product on which the part is installed. The applicant must assure that no interference with mating or adjacent hardware occurs and that the part performs its intended function.

b. The applicant must establish and maintain a fabrication inspection system (FIS) to meet the requirements of part 21 § 21.303(h).

9. APPLICANT RESPONSIBILITIES.

a. Application. The applicant must submit a letter of application (see appendix 4, Sample FAA-PMA Letters of Application) to the ACO in the geographical area in which the manufacturing facility of the applicant is located, unless the applicant is applying on the basis of an STC or identicality by licensing agreement, in which case the application will be sent to the geographic MIDO. The application should include the following information:

(1) The name and address of the manufacturing facility which will be covered by the FIS of the applicant, and

(2) The identity of the part for which PMA application is being made, including:

(a) The type certificated product identified by make, model, series, and if appropriate, serial number, on which the part is to be installed.

(b) The TC holder's part number and if known, the drawing number and revision level, which the PMA part would replace or modify.

(3) A brief description of the method by which design approval will be sought:

(a) Identicality by showing evidence of a licensing agreement. The applicant should submit an appropriate document from the TC holder authorizing use of the submitted data package. Evidence of licensing agreement is not a separate approval method, it is merely a means of showing identicality. The evidence of licensing agreement is used by the applicant to show that the data submitted is FAA-approved and therefore identical. For FAA purposes, the licensing agreement, in whatever form it takes, need only to authorize the applicant to use the type design data specified. The current industry practice of TC holder's preparing "assist letters" (see appendix 5, Sample TC or TSOA Holder's PMA Assist Letter) for submittal by the applicant to the FAA is sufficient, in and of itself, to meet the requirements of showing evidence of licensing agreement under part 21 § 21.303(c)(4).

(b) If by evidence of identicality without a licensing agreement, a statement by the applicant certifying

that the design is identical in all respects to the design of the part covered under an approved design.

(c) If by test and computation, a data package that includes a statement that all design, materials, processes, test specifications, system compatibility, and interchangeability are supported by an appropriate test and substantiation plan for FAA review and approval.

(d) If by STC, a statement that references the STC number and evidence that the PMA applicant has a written permission statement from the STC holder.

(4) A statement that certifies the applicant has established a fabrication inspection system in compliance with part 21 § 21.303(h).

b. An unnumbered PMA supplement prepared in accordance with the samples shown in appendix 6, Sample FAA-PMA Supplement for Identicality, Test & Computation, and STC or appendix 7, Sample FAA-PMA Supplement with Licensing Agreement.

c. Data package. Regardless of the basis upon which PMA is sought, the application must include information that meets the requirements of part 21 § 21.303(c) and the airworthiness requirements of the Federal Aviation Regulations (or their predecessors) applicable to the product on which the part is to be installed (part 21 § 21.303(f)). The complexity of the data package necessary to meet these requirements will vary depending upon the critical nature of the part as it relates to the product on which it is proposed to be installed. The information required may extend to the manufacturing controls, fabrication processes, assembly techniques, and the performance, endurance and test requirements if they are necessary to establish the airworthiness of the part in accordance with applicable regulations. The data package may include, but is not necessarily limited to, the following:

(1) One copy of the applicants drawings and specifications necessary to show the configuration of the part. Drawings and specifications should address dimensions and tolerances, materials, and processes necessary to define the structural strength and all design characteristics of the part. The required information for some parts (e.g., those determined to be critical and/or life-limited), may include routing sheets, tooling requirements, process

sheets, material handling/storage, and/or inspection requirements as deemed necessary by the FAA.

(2) Inspection and test procedures. For parts determined to be critical and/or life-limited parts, the FAA may require demonstration of the manufacturing process, inspection and test procedures (including process controls, finished product performance and incoming material controls) in order to obtain design approval. In such a case, if the application is based upon identicality or STC, necessary manufacturing test procedures should be submitted to demonstrate the above. If the application is based upon test and computation both design and manufacturing test procedures should be submitted.

(3) Test results. For parts determined to be critical and/or life-limited parts, the FAA may require the applicant to perform inspections, tests, and provide the test results necessary to show the airworthiness of parts produced in conformity with the proposed design in order to obtain design approval. If the application is based upon identicality, submit test results necessary to demonstrate that the airworthiness of the part (as originally approved) are not altered by the manufacturing methods and processes as performed by the applicant. If the application is based upon test and computation or STC, both design and manufacturing test results should be submitted.

(4) Design change control (addressing both performance and fabrication). The applicant should describe the methods and controls for addressing any changes to design, and for implementation into the manufacturing process.

(5) Airworthiness limitations. For life-limited parts identified in Type Certificate Data Sheets or airworthiness limitations section, the fatigue lifeing methodology necessary to accurately assess fatigue life must be established and will include the appropriate elements as follows: material property distributions, loads, frequency of loads, mission profile, and stress and temperature distribution.

(6) Other data per 14 CFR parts 34 and 36.

(7) Life Management Program. Depending upon the critical nature of the part, to assure the continued airworthiness of the PMA part, the applicant must also provide for FAA approval a Life Management Program to comply

with 14 CFR parts 21, 23, 25, 27, 29, 31, 33 and 35. The program should provide for detailed records of all aspects of the manufacturing cycle maintained for the entire life of the part and should provide details of how to segregate an affected population, if necessary. In-service part usage must be continually maintained and design assumptions continually reviewed against the in-service experience. If a failure condition is identified, the applicant must have procedures to identify the problem, develop the corrective action(s), and implement action(s) into the field in an appropriate time frame.

(8) Part marking. Part marking information necessary to insure that compliance with 14 CFR part 45 § 45.15 (and critical components marked in accordance with part 45 § 45.14) will not interfere with airworthiness considerations.

(9) Installation eligibility. Detailed identification of and information on the part sufficient to demonstrate understanding of where the part goes, on which products it may be installed (make, model, series, and if appropriate serial number), how it relates to the next higher assembly of which it is a part, and the consequences for the next higher assembly and the product if the part should fail. If by STC, a copy of the STC will be sufficient to show eligibility.

(10) The applicant should identify all airworthiness directives or unresolved service difficulties involving the part.

(11) Maintenance Instructions/Instructions for Continued Airworthiness. Part 21 § 21.50(b) states that a holder of a design approval, including a TC or STC, for a product for which application was made after January 28, 1981, must furnish a complete set of Instructions for Continued Airworthiness (IFCA) prepared in accordance with the airworthiness requirements applicable to the product. If the part for which PMA is sought would be eligible for installation on a product for which application was made after that date, the PMA applicant must furnish data sufficient for the FAA to determine that the IFCA will continue to be valid for the product with the PMA part installed. If the IFCA are not valid with the PMA part installed the applicant will need to furnish supplementary IFCA. For parts which would be eligible for installation only on a product for which the application for TC was made on or before January 28, 1981, the PMA applicant must furnish supplementary maintenance and related instructions,

if the design approval holder's instructions are not adequate. The applicant’s supplementary IFCA and maintenance instructions will be reviewed and approved (if appropriate) by the ACO and Flight Standards Aircraft Evaluation Group.

d. Special Requirements - Test and Computation Applications. Applications submitted on the basis of test and computation should specifically address the following:

(1) Applications based upon test and computation must demonstrate compliance with applicable airworthiness standards. The certification basis for the PMA part is the same as that for the product(s) on which the part is to be installed (see the Type Certificate Data Sheet). The airworthiness standards are found in the following Federal Aviation Regulations (14 CFR, Chapter I) or their predecessors:

(a) Part 21, Subpart O, Technical Standard Order Authorizations.

(b) Part 23, Airworthiness Standards: Normal, Utility, Acrobatic, and Commuter Category Airplanes.

(c) Part 25, Airworthiness Standards: Transport Category Airplanes.

(d) Part 27, Airworthiness Standards: Normal Category Rotorcraft.

(e) Part 29, Airworthiness Standards: Transport Category Rotorcraft.

(f) Part 31, Airworthiness Standards: Manned Free Balloons.

(g) Part 33, Airworthiness Standards: Aircraft Engines.

(h) Part 34, Fuel Venting and Exhaust Emission Requirements for Turbine Engine Powered Airplanes.

(i) Part 35, Airworthiness Standards: Propellers.

(j) Part 36, Noise Standards: Aircraft Type and Airworthiness Certification.

(2) Substantiation. To show compliance with the applicable airworthiness standards under test and

computation, the applicant must provide either a comparative or a general analysis, supported by an appropriate test design and results. In either case, the analysis must be supported by the engineering assessment of the consequences to the next higher assembly and the product, should the part fail to perform its intended function.

(a) Analysis. There are two acceptable methods of analysis: comparative or general.

1 Comparative analysis. The applicant may demonstrate by comparative analysis that the part is equal to or better in functional design than the design of the type certificated or TSOA part that would be replaced. The applicant should thoroughly analyze the type certificated part and compare it with the proposed PMA part, report all differences and provide sound technical justification for these differences.

2 General analysis. The applicant may demonstrate by general analysis that the functional design of the part otherwise meets the requirements of all applicable airworthiness standards. This analysis should discuss how the part meets each of the Federal Aviation Regulations or specific TSO functional requirements and address material composition and condition, fabrication, configuration, and interface with other parts.

(b) Testing. Functional testing may or may not be required of the applicant's part. Testing should be related to the criticality and complexity of the part. The component testing and/or flight testing, if required, must be designed to test the performance and durability of the part to the extent required by applicable airworthiness standards. If it is necessary for the flight testing to be performed by a FAA fight test pilot, it should be done in accordance with an approved Type Inspection Authorization. The applicant should identify the number of test units, unit identification, test conditions and duration, test criteria, test safety control, and control of test procedures. To accomplish this, the applicant shall submit a test plan, including a request for part conformity, for FAA approval. Following FAA approval and conformity, the applicant shall conduct the test(s) and teardown inspection, both of which may be witnessed by a representative of the FAA. Following the teardown, the applicant will submit a test report. This report should include an analytical evaluation of the test results and post-test teardown inspection results and a comparison of these results to the test standard. One of

the following should be used as a test standard against which the adequacy of the PMA part will be measured:

1 A new (zero time since new) part from the TC holder tested under the same procedures and conditions as the applicant's part.

2 Verification that the part meets each applicable Federal Aviation Regulations or specific TSOA (as determined by previous Federal Airworthiness Regulations analysis).

3 Other tests deemed acceptable by the FAA.

e. Part Marking Requirements. Under part 45 § 45.15, parts produced under a PMA must be permanently and legibly marked in a manner that will enable persons to identify: the fact that it is a PMA part, the manufacturer, the part number, and the type certificated product(s) on which it may be installed. In the case of a part based on an STC, the identification of installation-eligible type certificated products must include reference to the STC on the shipping document. In the case of parts that have been identified as critical components (in accordance with part 45 § 45.14), the part must be marked with a part number or equivalent, and serial number or equivalent. The identifying marks should be included on the design data and reviewed as part of the FAA engineering approval of the design, in part, to establish that the location and process of identification does not degrade airworthiness compliance. The issuance of the PMA letter authorizes (and requires) the PMA holder to mark the parts as prescribed by part 45 § 45.15, in accordance with the approved design. If a PMA is granted for an assembly, detail parts of the assembly sold separately must also be accompanied by shipping document containing the information required by part 45 § 45.15 and reference the assembly PMA part number.

(1) Part Numbering. The applicant's part should be numbered such that it is distinguishable from the specific TC holder's part number. The TC holder's part number with a prefix or suffix is sufficient for this purpose, so long as use of such a prefix or suffix will not cause confusion with the part marking practices of the TC holder. The requirements of part 45 § 45.15(a)(2) to mark with name, trademark, or symbol of the applicant may be satisfied by the use of a prefix or suffix, if the prefix or suffix is consistent across the applicant's product line.

The FAA-PMA letter will show the type-approved part number with which the applicant's part is interchangeable. Each part must also be marked with the letters "FAA-PMA" in proximity to the part number to meet the requirements of part 45 § 45.15.

(a) For a supplier to a PAH in which the supplier's part number is used by the PAH, the PMA holder may use the same part number as the design approval holder, provided the PMA holder also meets the requirements of part 45 § 45.15(a)(1) and (2) to permanently mark the part (in the same area as the part number) with the letters "FAA-PMA" and the name, trademark, or symbol of the PMA holder.

(b) Parts Manufactured Under License. When the PMA is issued by showing evidence of a licensing agreement, the PMA part number may be identical to that on the type certificated part, provided the applicant also meets the requirements of part 45 § 45.15(a)(1) and (2) to permanently mark the part with the letters "FAA-PMA" and the name, trademark, or symbol of the PMA holder.

(2) Parts that are Impractical to Mark. In cases where the part is found by the FAA to be too small (or to have other characteristics that make it impractical) to mark all (or any) of the information on the part, the information not marked on the part must be put on a tag that is attached to the part or marked on the container for the part. If the number of type certificated products on which the part is eligible for installation is too long to be practical to include with the part, or if the list is likely to change over time, the tag or container may refer to a readily available manual or catalog made publicly available by the applicant for part eligibility information.

f. Establishment of the Fabrication Inspection System (FIS). Under part 21 § 21.303(h), the applicant must establish and maintain a FIS (see appendix 8, Fabrication Inspection System).

g. Post PMA Activities.

(1) Reporting of Failures, Malfunctions, and Defects under part 21 § 21.3. The PMA holder should establish a procedure to report to the FAA any failure, malfunction, or defect of a PMA part, which has left its quality control system. This reporting requirement applies to failures, malfunctions, or defects that could result in, or has resulted in, one of the occurrences listed in part 21 § 21.3(c).

(2) Maintain FIS. The PMA holder must maintain the FIS to comply with part 21 § 21.303. Changes to the FIS that may affect the inspection, conformity, or airworthiness of the parts must be reported to the MIDO/MISO before implementation.

(3) Designees. Following issuance of the PMA, the PMA holder is eligible to apply for appointment of qualified individuals, who are in their employment, as Designated Manufacturing Inspection Representatives or Organizational Designated Airworthiness Representatives (refer to 14 CFR part 183) to:

(a) Issue Airworthiness Approval Tags (FAA Form 8130-3), in accordance with part 21 subpart L.

(b) Conduct any inspection that may be necessary to determine that:

1 Prototype part(s) conform to design specification; and

2 Production part(s) conform to the FAA-approved design data and are in a condition for safe operation.

3 Perform the above functions for the manufacturer or manufacturer's supplier, at any location authorized by the FAA.

(4) Additional Installation Approvals. A PMA holder may apply for additional installation approvals for the PMA part. The applicant should follow the procedures of paragraph 9 (particularly 9c(9)) of this order, to the extent that they apply, to obtain approval of the additional installation(s). The PMA holder needs to submit the information related to the Instructions for Continued Airworthiness as described in paragraph 8c(11). If the FAA finds that the product with the PMA part installed will continue to comply with the applicable airworthiness requirements, the part will be approved as eligible for installation on that product; in that case, the ACO will forward the signed PMA supplement and application to the MIDO for their review and issuance of the PMA supplement. These additional installation approvals must be identified on the part under the part identification requirements of part 45 § 45.15(a)(4) (see paragraph 9e).

(5) Design Changes.

(a) The PMA holder shall submit minor changes to existing PMA approvals in accordance with procedures agreed to by the certifying ACO/MIDO. The ACO approval of these minor changes will be by letter to the applicant. Minor changes to life-limited parts or other parts that have been demonstrated to be critical, and all other major changes, must be substantiated and approved prior to implementation in the same manner as that for the original PMA.

(b) Identicality by showing evidence of a licensing agreement. The procedures that have been accepted by the type certificate or TSOA holder and their cognizant FAA Aircraft Certification Office, for minor changes to original parts used on type certificated products, are also acceptable for incorporating the same minor changes on identical FAA-PMA replacement parts. The FAA-PMA holder should be able to show traceability relating to the TC, STC, or TSOA holder on all minor changes incorporated by this procedure. When these procedures are no longer applicable because of completion of the production contract or termination of the licensing agreement, all subsequent design changes to the PMA parts would require FAA-approval by the ACO who has jurisdiction over the PMA holder.

(c) If the installation of a replacement or modification part would constitute a major design change to a TSOA article, then the part manufacturer must obtain a new TSOA.

(d) To introduce a design change, the PMA holder should have an understanding of the relationship of that change to the type certificated product (refer to paragraph 8d(2)).

(6) Additional Part Approvals. If a PMA holder wishes to produce additional parts under the existing approved production system, then application should be made in accordance with these procedures. When the requirements of part 21 § 21.303(d) are met, the ACO/MIDO will issue a PMA supplement, adding the new parts to the original approval. If the new parts production constitutes a significant change in the operation or capabilities of the PMA holder, the FAA will conduct a review of the FIS.

(7) The PMA holder may not produce parts if any change, in its relationship to the TC/PC holder or

otherwise, makes it unable to meet any of its responsibilities under the PMA.

10. ACO RESPONSIBILITIES. The cognizant ACO has the following responsibilities with respect to applications for PMA.

a. The ACO in the geographical area in which the applicant is located should accept the application for PMA when it is based on identicality or test and computation (sample provided in appendix 4, Sample FAA-PMA Letters of Application). If the application is based on showing evidence of a licensing agreement or STC, then it should be sent by the applicant directly to the MIDO in the geographic area where the applicant's manufacturing facility is located.

b. If the facility is located outside the United States, a PMA will not be issued or expanded, unless a determination has been made in coordination with headquarters that the location of the manufacturing facility places no undue burden on the FAA in the administering of applicable airworthiness requirements.

c. The ACO should review the applicant's engineering design to determine whether the design meets applicable airworthiness standards. In performing this review, the ACO should:

(1) Consider all substantiating data submitted by the applicant to show compliance with applicable airworthiness standards.

(2) Determine whether the application for PMA establishes that the part meets the airworthiness requirements applicable to the type certificated product on which the part is to be installed, and verify the eligibility for installation on the type certificated product. The ACO should consider the following in evaluating each potential basis for design approval.

(a) General considerations. Applicants may combine the method of showing compliance. However, irrespective of the method by which an applicant chooses to show compliance, prior to issuance of design or manufacturing approval, each application must be carefully reviewed in coordination with MIDO as appropriate (i.e., issue requests for conformity inspections) to determine whether the applicant can ensure:

1 Compliance with the applicable airworthiness requirements.

2 That materials conform to the specifications in the design.

3 That the part conforms to the drawings in the design.

3 That the applicant has demonstrated that the manufacturing processes, construction, and assembly conform to those specified in the applicant's design (part 21 § 21.303(f)(1)-(4)).

5 Continued airworthiness under the applicable airworthiness requirements, including reporting requirements under part 21 § 21.3, for the manufactured part and the product upon which the part is installed.

(b) Verification of installation eligibility. Lacking documentation from the TC or TSOA holder or other FAA-approved data, the ACO should consider all evidence submitted by the applicant and may check other documents including the type design Master Drawing List in making its finding. The Manufacturers' Illustrated Parts Catalog (IPC), while it does provide information that pertains directly to installation eligibility, is usually not FAA-approved. The IPCs should be used in conjunction with other data (examples include: purchase orders from the PAH, service bulletins, maintenance manuals, technical publications index, and/or master drawing list). In certain instances, where safety is not impacted by the installation (such as interior trim pieces), the IPC may be used as the sole means of verifying installation eligibility. When the IPCs are used as the sole means of verification the authenticity of the IPCs should be verified. The IPC shall not be used by the FAA to make any engineering finding leading to approval of the applicant's design data, nor to determine part conformity.

(c) Service history considerations. Depending on the criticality of the part, the ACO may perform an in-depth review of the service history of the part. For all parts the ACO will verify that the part is not the subject of an airworthiness directive (AD), other continued airworthiness problem(s), or subject to an incident or accident investigation where the part may be causal. If the part is subject to one of the above, and the

design is identical or substantially identical in a material way to the problem, then the following guidelines should be used:

1 If there is an AD that removes the TC holder's part from service, immediately or in the future, the PMA application should be rejected.

2 If the FAA is currently developing or considering development of an AD to remove the TC holder's part from service, the ACO should delay the processing or reject the PMA application.

3 If the FAA is investigating an incident or accident where the TC holder's part may be causal, delay the processing of the PMA application until the part is cleared.

4 If an AD calls for repetitive inspections but prescribes no terminating corrective action (e.g., modification or replacement of the part) and if the repetitive inspections are intended to catch failures that may occur before the part reaches the published service life, the FAA should reject the application for PMA. The FAA should always strive for terminating corrective action; issuing a PMA to produce and distribute identical parts only complicates and prolongs the problem.

5 For a part that is not identical or substantially identical to the TC holder's part, the ACO should determine whether installation of the applicant's part would create an unsafe condition.

6 The fact that the TC holder issues an Alert Service Bulletin to remove a part from service does not in and of itself exclude issuance of a PMA.

7 If the part is experiencing service difficulties and the FAA is ACTIVELY pursuing corrective action with the TC holder, the application for PMA should be rejected.

(d) Life-limited parts. Irrespective of the method under which an applicant seeks a PMA, a life-limited part must be substantiated in accordance with paragraph 9c(2) and (3). The substantiation must establish the life limits and airworthiness of that part. The required substantiating data must include tests on components produced by the applicant.

(e) Special considerations--Identicality.

1 Engineering approval of the design can be accomplished when the applicant shows and the FAA finds that the design of the part for which PMA is requested is identical in dimension, tolerances, materials, processes, and specifications to the design of the part covered under a type certificate.

2 Some part designs may contain features that have nothing to do with form, fit, or function or being airworthy. Some of these features may include; color, tighter tolerances, etc. It may not be necessary that these features be identical.

(f) Review of the data package should, when appropriate, be coordinated with the certificating ACO and MIDO to determine whether manufacturing processes outlined by the applicant are identical to the part being produced under the type certificate. **For critical and life-limited parts, coordination with the certificating ACO is required.** Accountable directorate coordination will be at their discretion.

(g) Reverse Engineering. Special care should be taken in evaluating "identicality" based upon "reverse engineering." The process of "reverse engineering" is one way to develop the design of a part. However, "reverse engineering" a part will not normally produce a design that is identical to a type certificated part. While an applicant could establish the use of identical materials and dimensions, it is unlikely that a showing could be made that the tolerances, processes, and manufacturing specifications were identical. If the design can not be approved by identicality then the test and computation method should be used. The applicant must show that its design complies with the applicable regulations. The extent of substantiating data required by the FAA should take into account the degree to which the design is identical.

(h) When the design data submitted (including the manufacturing processes) does not show that the part is identical to a part covered under a type certificate, the application should be returned to the applicant with a notification that it does not show the applicant's part to be identical (see appendix 9, Sample FAA Design Approval Rejection Letter). However, PMA may be granted if the applicant has shown on the basis of tests and computations that the part meets all applicable airworthiness requirements, in accordance with

part 21 § 21.303(f)(1)-(4). The ACO may also require that the applicant submit inspection and test reports to substantiate that the design and manufacturing data will produce an airworthy part, if it determines that the airworthiness of a part cannot be assured solely by the showing of identicality to the design covered under a type certificate or when the part has not performed satisfactorily in service.

(i) Minor design change and material review board authority may be exercised under PMA granted on the basis of identicality when the applicant submits a license agreement or other evidence that he has been granted such authority by the TC or specific TSOA holder. The ACO will be contacted by the MIDO to participate in the approval of the FIS for controls necessary for processing design changes and processing MRB dispositions.

(j) Special considerations--Test and Computation.

1 For critical and life limited parts, program coordination with the certificating ACO is required. Accountable directorate coordination will be at their discretion.

2 The ACO should carefully review the showing of compliance through the test and computation method, in coordination with the applicant and the responsible MIDO/MISO, to assure adequate substantiation. The responsible engineer in the ACO should evaluate and approve the test plan submitted, and if appropriate consult with the certificating ACO, to determine whether it is appropriate to the nature of the part (criticality) and whether the part is currently eligible for the use described in the application. If the applicant proposed that no supplemental IFCA is required, the ACO should review the applicant’s substantiation that the original design approval holder’s IFCA are adequate (paragraph 9c(11)).

(k) Instructions for Continued Airworthiness (IFCA) or Maintenance Instructions. The applicants proposed IFCA or maintenance instructions should be reviewed by the ACO and coordinated with the appropriate Aircraft Evaluation Group (AEG) of Flight Standards Service. If the applicant is proposing that no IFCA or maintenance instructions are necessary the ACO should review the applicants substantiation for that position.

(l) Evaluating the data package. All applications should include the detailed design criteria including: drawings, technical data necessary to establish structural strength, part marking information, and process specifications necessary to define the configuration, and other data necessary to establish the pertinent characteristics of the part. The applicant's detail drawings must be identified as their own unless evidence of a licensing agreement is submitted. In evaluating any data package, consideration should be given the following areas:

1 Manufacturing and Process Specifications. Manufacturing procedures and process specifications may affect the airworthiness of the part. If the applicant's detail drawings reference the TC holder's process specifications, those specifications must be submitted. As the data package is reviewed, coordination with the certificating ACO or MIDO may be necessary to determine what effect these specifications may have on the airworthiness of the design or to a finding of identicality. **For critical and life-limited parts, coordination with the certificating ACO is required.** Accountable directorate coordination will be at their discretion.

2 Source Control Drawings. Source control drawings must be carefully evaluated to determine whether the applicant has appropriate control over the configuration and manufacture of the part. The applicant must submit all applicable detail drawings and specifications for evaluation of the sources listed on source control drawings. The applicant must have satisfactory and verifiable control procedures included in the Fabrication Inspection System for vendor supplied items prior to issuance of the PMA. **Coordination with the certifying MIDO is required**, this may be in the form of a request for conformity.

3 Drawing Notes. The ACO must establish that the applicant's data provides the ability to produce conforming parts, before issuing engineering approval. The ACO should pay particular attention when the design approval holders drawings or specifications used to make a finding of identicality have notes stating:

(aa) "Parts supplied to this drawing shall be in strict accordance with samples (first articles) approved by (*name of applicant)* engineering department unless prior written approval is given to subsequent change."

(bb) "Source approval is required for raw stock through total fabrication."

(cc) "This drawing represents a critical item and must successfully complete substantiation tests and be approved by engineering.", or

(dd) Other similar statements implying special source selection criteria.

NOTE: The ACO will evaluate each applicant's capabilities to produce the part on a case-by-case basis. If the applicant is unable to provide this information, the test and computation method should be used.

(2) Coordinate requests for conformity inspections with the appropriate MIDO/MISO to ensure that the manufacturing process produces replacement and modification parts according to the approved design.

d. Design approval. When the ACO has found that the applicant has shown compliance with the applicable airworthiness requirements, the ACO should do the following:

(1) Except as provided for in paragraph (2)(b) below, retain the submitted data package for its project files, and

(2) Send the applicant the following:

(a) A letter notifying the applicant that their application has been forwarded to the MIDO for further processing (see appendix 10, Sample FAA Acceptance of Applicant's Request Letter),

(b) Previously FAA-approved design data voluntarily submitted by the applicant for FAA use in making a finding of identicality (on a comparison basis) should be returned to the applicant. The official files should identify in detail the data used to make the finding of identicality, and

(3) Send a copy of the FAA Acceptance of Applicant's Request Letter, the unnumbered and signed PMA supplement (an electronic copy of the supplement is also encouraged), and the applicant's application to the MIDO/MISO for further processing.

e. Non-Compliance. If the ACO can not make a finding of compliance they should send the applicant a rejection letter (see appendix 9, Sample FAA Design Approval Rejection Letter) and return the applicant's data package in its entirety.

11. MIDO/MISO RESPONSIBILITIES. The cognizant MIDO/MISO, in addition to any requests for conformity inspections, has the following responsibilities with respect to PMA:

a. Following ACO Approval of the Design. Upon receipt of the PMA supplement evidencing approval of the design by the ACO, or upon receipt of an application based on evidence of a licensing agreement or an STC, the MIDO/MISO should:

(1) Ensure that the applicant has submitted a statement certifying that the fabrication inspection system (FIS) required by part 21 § 21.303(h) has been established. Data submitted as evidence of compliance with part 21 subpart K, should be evaluated in accordance with the criteria contained in FAA Order 8120.2, paragraph 159 and in FAA Order 8100.7. The ACO should be involved in evaluating data such as, design data control, software control, MRB, etc. When data has been found to be acceptable, the following additional statement must be included in the initial PMA letter.

> "(*Applicant name*) shall produce all parts in accordance with (*Applicant name*), Quality Assurance Manual, Revision B, dated August 12, 1995"

(2) Prior to the original issuance of a PMA, conduct an evaluation of the applicant's facility including any supplier's facilities, as appropriate, to determine whether the applicant is in compliance with part 21, Subpart K. The evaluation may include a first article conformity inspection, as appropriate, and should be conducted no later than 30 days after receipt of the PMA supplement from the ACO.

(3) When deemed necessary, the Principal Inspector (PI) should conduct or make arrangements for a part conformity or an evaluation when additional parts are approved by a supplement to the original PMA approval letter, or when the manufacturer expands or relocates its facility.

(4) PMA Number and MIDO Signature. A PMA number, if not previously assigned to the applicant, will be assigned to all original PMA letters in accordance with the existing project assignment number procedures. The number will be unique to each PMA holder and will be carried forth on subsequent approved supplements. The number should be composed of the prefix "PQ", followed by a four digit number for PMA's, followed by a two letter directorate identifier (CE, NE, NM, or SW), (e.g., "PQ0018CE", which would represent the 18th PMA issued by the Small Airplane Directorate). The MIDO will sign the PMA supplements affirming production approval after completing validation of the FIS.

(5) Distribution. The PMA letter for all initial issuance of PMAs (see appendix 11, Sample FAA-PMA Letter) and transmittal letter for all subsequent issuance of PMAs (see appendix 12, Transmittal Letter of Subsequent PMA Supplement), including all supplements, should be prepared in triplicate. The original should be presented to the manufacturer. One copy should be retained by the issuing office and one copy should be sent to the ACO. The information on the PMA supplement will be forwarded to the Flight Standards Service, Regulatory Support Division, Engineering and Manufacturing Branch (AFS-610).

(6) If the ACO approval of the design was based upon a finding of identicality without showing evidence of a licensing agreement, and the applicant otherwise lacks other authorization to exercise design change or material review board authority, then the MIDO/MISO should assure that appropriate procedures have been written in the FIS manual controlling the design change and MRB processes.

(7) Special considerations - Identicality based on evidence of a licensing agreement. The evidence of licensing agreement from the TC/STC/TSOA holder must include written permission for the applicant to use the design data to apply for FAA-PMA. A "PMA assist letter" (see appendix 5, Sample TC or TSOA Holder's PMA Assist Letter) or similar evidence authorized by the TC, STC, or TSOA holder is sufficient for showing evidence of a licensing agreement. The applicant must meet all the requirements of part 21 § 21.303. The PMA will not be issued merely on the showing of the licensing agreement. The "PMA assist letter" should include the following information, as appropriate:

(a) Product model, name, and TC number.

(b) A statement that the PMA applicant is authorized to use the design data, identified by part name and drawing number and revision level

(c) Information on the authority of the PMA applicant to use the TC holder's part number and other part marking information as appropriate.

(d) Information that establishes the life limits and/or the airworthiness limitations of the part.

(e) Information on the parts eligibility for installation (product make, series, model and if appropriate the serial number, per the type certificate data sheet).

(f) A statement as to whether design changes to the part and disposition of non-conforming parts will be controlled through the TC/STC/TSOA holder's quality assurance process, and how design change information will be related to the applicant and consequently to the FAA.

(8) Based on the review of the PMA Assist Letter that contains the above information, the MIDO will make a finding of identicality by showing evidence of licensing agreement and review the PMA Supplement prepared by the applicant in accordance with appendix 7, Sample FAA-PMA Supplement with Licensing Agreement.

(9) The MIDO will forward life-limited part applications to the certificating ACO to verify completeness of design data including the life management plan.

b. Post PMA activities.

(1) Change of Location of FIS. A re-evaluation of the FIS as implemented at manufacturing facilities may be necessary when a PMA holder relocates its manufacturing facilities, including supplier facilities who have been delegated major inspection functions, or expands its operation to include additional facilities at other locations, the PAH must notify the FAA within 10 working days from the date such action takes place (part 21 § 21.303(j)). This requirement also applies to supplier facilities, but only to those who furnish parts or related services where a determination as to the safety and conformance to the approved design is not made upon receipt at the approved receiving facility. Special care should be taken by the PAH to preserve the inspection status of parts that are to be moved to the new location.

(1) Transferability. A PMA is not transferable to another person, company, or location. The regulations do not preclude revising approval letters to show a change in name only of the holder; provided that there is no change in the FIS, management, ownership, or location of the principal facility. However, the design portion of a PMA based on an STC can be sold, licensed, or otherwise transferred. The new holder/licensee of the STC should apply for a new PMA.

(a) Although a PMA itself is not transferable, the design and substantiating data approved under a PMA may be used by another person to apply for a new PMA. The applicant must show compliance with the regulations and may submit previously approved substantiating data to meet (partially or fully) this requirement. For critical parts, the applicant may be required to perform testing in accordance with paragraphs 9c(2) and (3).

(3) Changes to FIS. Whenever a PMA applicant has submitted data as evidence of compliance with part 21 subpart K and that data has been found acceptable by the cognizant MIDO/MISO, any subsequent revisions to these data must be approved by the PI prior to implementation. Revisions that affect the design, such as, MRB, design data control, service difficulty reporting, etc. and should be coordinated with the ACO. The PMA holder should be notified within 30 days of receipt of any revised data as to whether or not it is acceptable. The sample letter in FAA Order 8120.2, appendix 7 should be used for this notification.

(4) Surveillance.

(a) Assignment of Principal Manufacturing Inspector (PI). A PI should be assigned to each PMA holder to manage all aspects of the PMA. The PI assigned this responsibility should conduct ongoing surveillance as appropriate to ensure that the holder remains in compliance with part 21, subpart K. The certificate management functions for which the PI is responsible are identified in FAA Order 8120.2, Production Approval and Surveillance Procedures, paragraph 26, as appropriate to the PMA. The standards to be used in conducting the surveillance are defined in FAA Order 8120.2, paragraph 159.b.

(b) Evaluations. All evaluation activity will be accomplished in accordance with FAA Order 8120.2 and FAA Order 8100.7.

(c) Inspections. Conduct periodic inspections of the PMA holder's facilities, including any supplier's facilities, as appropriate, to determine continued compliance. Procedures for supplier's surveillance are contained in FAA Order 8120.2.

(5) Enforcement. FAA Order 2150.3, Enforcement Procedures, should be followed for any violation against part 21 § 21.303. Non-compliance with part 21 § 21.3, part 21 subpart K, part 45 § 45.15, and the FAA approved FIS (generally submitted as a quality control manual) are the basis for enforcement actions.

12. DESIGNATED ENGINEERING REPRESENTATIVES (DER). DER do not have authority to make PMA approvals. However, a DER may contribute towards PMA approvals, within the scope of the DERs authorization, by making findings of identicality and findings relative to airworthiness requirements by test and computation. The DER has the responsibility to work within the limitations and designation of their delegated authority. The DER must be specifically authorized to make a finding of identicality by the DER appointing ACO. A finding relative to test and computation is authorized within the scope of the DERs delegation. The DER is required to follow the provisions of this order when conducting PMA activities. An example of FAA Form 8110-3 with identicality notations is included in appendix 12.

a. The DER and the PMA applicant should verify the DER authority and limitations before proceeding with the finding of identicality.

b. For critical and life-limited parts, appropriate DER may sign FAA Form 8110-3 as "recommend approval" only. Final engineering approval is made by the ACO.

c. For other parts, appropriate DER may sign FAA Form 8110-3 as "approved", indicating identicality to the TC or TSOA holder's data listed, i.e., the data that define the part covered under a TC or TSO approved article eligible for installation on a type certificated product. The requested eligibility for the applicable product model(s) must be indicated. The applicant's TC holder or TSOA data examined by the DER will be submitted to the project ACO with FAA Form 8110-3 and the PMA data.

d. Checking the approved block on FAA Form 8110-3, Statement of Compliance with the Federal Aviation Regulations, does not mean that the PMA or any engineering aspects of the data are approved. It means the DER is indicating their finding that the PMA applicant's design is identical to the TC or TSOA holder's design. A note on FAA Form 8110-3 "List of Data" section must state "FAA approval of the design is contingent upon FAA engineering verification of the type design data (or TSOA data) listed."

e. The "Purpose of Data" block on FAA Form 8110-3 will state "Identicality only approval under 14 CFR part 21 § 21.303." The "Applicable Requirements" block will state "14 CFR part 21 § 21.303(c)(4)." The DER making the finding must hold delegated authority in the appropriate airworthiness areas.

f. The FAA will verify that the listed TC or TSOA holder's data is approved type design data for the product models indicated and that the stated eligibility is valid. The FAA also verifies that there are no mandatory corrective actions that must be implemented and that there are no serious unresolved service difficulties that make the part ineligible. The applicant's design need not conform to the latest revision level of the TC or TSOA holder's drawing if the FAA determines that the previously approved parts are still eligible for installation on the listed product models.

g. Upon verification that all requirements are met, the ACO will send the application, and the ACO signed PMA supplement indicating approval of the design to the MIDO for processing and signature. The ACO will notify the applicant of the above action.

APPENDIX 1. LIST OF FAA AIRCRAFT CERTIFICATION/FIELD OFFICES

1. Engine Certification Office (ANE-140)
   12 New England Executive Park
   Burlington, Massachusetts 01803

2. Boston Aircraft Certification Office (ANE-150)
   12 New England Executive Park
   Burlington, Massachusetts 01803

3. New York Aircraft Certification Office (ANE-170)
   10 Fifth Street, Third Floor
   Valley Stream, New York 11581-1200

4. Anchorage Aircraft Certification Office (ACE-115N)
   222 West 7th Avenue, #14
   Anchorage, Alaska 99524-7587

5. Atlanta Aircraft Certification Office (ACE-115A)
   One Crown Plaza, Suite 450
   1895 Phoenix Boulevard
   Atlanta, Georgia 30349

6. Chicago Aircraft Certification Office (ACE-115C)
   2350 East Devon Avenue, Room 323
   Des Plaines, Illinois 60018

7. Wichita Aircraft Certification Office (ACE-115W)
   1801 Airport Road, Room 100
   Mid-Continent Airport
   Wichita, Kansas 67209

8. Seattle Aircraft Certification Office (ANM-100S)
   1601 Lind Avenue, S.W.
   Renton, Washington 98055-4056

9. Denver Aircraft Certification Office (ANM-100D)
   Technical Operations Center
   26805 East 68th Avenue, Room 214
   Denver, Colorado 80249

10. Los Angeles Aircraft Certification Office (ANM-100L)
    3960 Paramount Boulevard
    Lakewood, California 90712-4137

APPENDIX 1. LIST OF FAA AIRCRAFT CERTIFICATION/FIELD OFFICES (CONTINUED)

11. Airplane Certification Office (ASW-150)
    2601 Meacham Boulevard
    Fort Worth, Texas 76137-4298

12. Rotorcraft Certification Office (ASW-170)
    2601 Meacham Boulevard
    Fort Worth, Texas 76137-4298

13. Special Certification Office (ASW-190)
    2601 Meacham Boulevard
    Fort Worth, Texas 76137-4298

APPENDIX 2. LIST OF FAA MANUFACTURING INSPECTION DISTRICT/SATELLITE OFFICES

1. Manufacturing Inspection Office (ANE-180)
   12 New England Executive Park
   Burlington, Massachusetts 01803

2. Manufacturing Inspection District Office (NE-MIDO-41)
   Corporate Air Building 85-214, 2nd Floor
   Bradley International Airport
   Windsor Locks, Connecticut 06096

3. Manufacturing Inspection Satellite Office (NE-MIDO-42)
   12 New England Executive Park
   Burlington, Massachusetts 01803

4. Manufacturing Inspection District Office (NE-MIDO-44)
   Building 201, Room 102
   New Cumberland, Pennsylvania 17070-3419

5. Manufacturing Inspection District Office (NE-MIDO-45)
   150 Fred Wehran Drive, Room 2
   Teterboro Airport
   Teterboro, New Jersey 07608

6. Manufacturing Inspection District Office (NE-MIDO-46)
   Administration Building, Suite 236
   7150 Republic Airport
   Farmingdale, New York 11735-1585

7. Atlanta Manufacturing Inspection District Office
   One Crown Plaza, Suite 475
   1895 Phoenix Boulevard
   Atlanta, Georgia 30349

8. Savannah Manufacturing Inspection Satellite Office
   404 Airways Avenue
   Savannah, Georgia 31408

9. Nashville Manufacturing Inspection Satellite Office
   #2 International Plaza Drive, Suite 700
   Nashville, Tennessee 37217

10. Mobile Manufacturing Inspection Satellite Office
    Brookley Field, Building 28
    P. O. Box 5196
    Bayside Station
    Mobile, Alabama 36605-0196

11. Orlando Manufacturing Inspection District Office
    Citadel International III Building, Suite 405
    5950 Hazeltine National Drive
    Orlando, Florida 32822

APPENDIX 2. LIST OF FAA MANUFACTURING INSPECTION DISTRICT/SATELLITE OFFICES (CONTINUED)

12. Minneapolis Manufacturing Inspection District Office
6020 28th Avenue South, Room 103
Minneapolis/St. Paul International Airport
Minneapolis, Minnesota 55450-2700

13. Chicago Manufacturing Inspection Satellite Office
2300 East Devon Avenue, Room 318
Des Plaines, Illinois 60018

14. Cleveland Manufacturing Inspection District Office
Federal Facilities Building, Room 127
Cleveland Hopkins International Airport
Cleveland, Ohio 44135

15. Detroit Manufacturing Inspection Satellite Office
Willow Run Airport - East Side
8800 Beck Road
Belleville, Michigan 48111

16. Vandalia Manufacturing Inspection District Office
3800 Wright Drive
Vandalia, Ohio 45377

17. Wichita Manufacturing Inspection District Office
1801 Airport Road, Room 101
Mid-Continent Airport
Wichita, Kansas 67209

18. Kansas City Manufacturing Inspection District Office
Downtown Airport, Room 272
250 Richards Road
Kansas City, Missouri 64116-4232

19. Seattle Manufacturing Inspection District Office (ANM-108S)
2500 East Valley Road, Suite C-2
Renton, Washington 98055-4056

20. Everett Manufacturing Inspection Satellite Office (ANM-108S)
Boeing Commercial Airplane Group - M/S OF-04
P. O. Box 3707
Seattle, Washington 98108

21. Renton Manufacturing Inspection Satellite Office (ANM-108S)
Boeing Commercial Airplane Group - M/S 94-08
P. O. Box 3707
Seattle, Washington 98108

22. Auburn Manufacturing Inspection Satellite Office (ANM-108S)
Boeing Commercial Airplane Group – M/S 5H-44
P. O. Box 3707
Seattle, Washington 98109

APPENDIX 2. LIST OF FAA MANUFACTURING INSPECTION DISTRICT/SATELLITE OFFICES (CONTINUED)

23. Los Angeles Manufacturing Inspect. District Office (ANM-108L)
3960 Paramount Boulevard
Lakewood, California 90712-4137

24. Long Beach Certificate Management Office
Boeing Long Beach Division, Mail Stop MC36-35
3855 Lakewood Boulevard
Long Beach, California 90806-2425

25. Van Nuys Manufacturing Inspection District Office (ANM-108V)
7120 Hayvenhurst Avenue, Suite 100
Van Nuys, California 91406

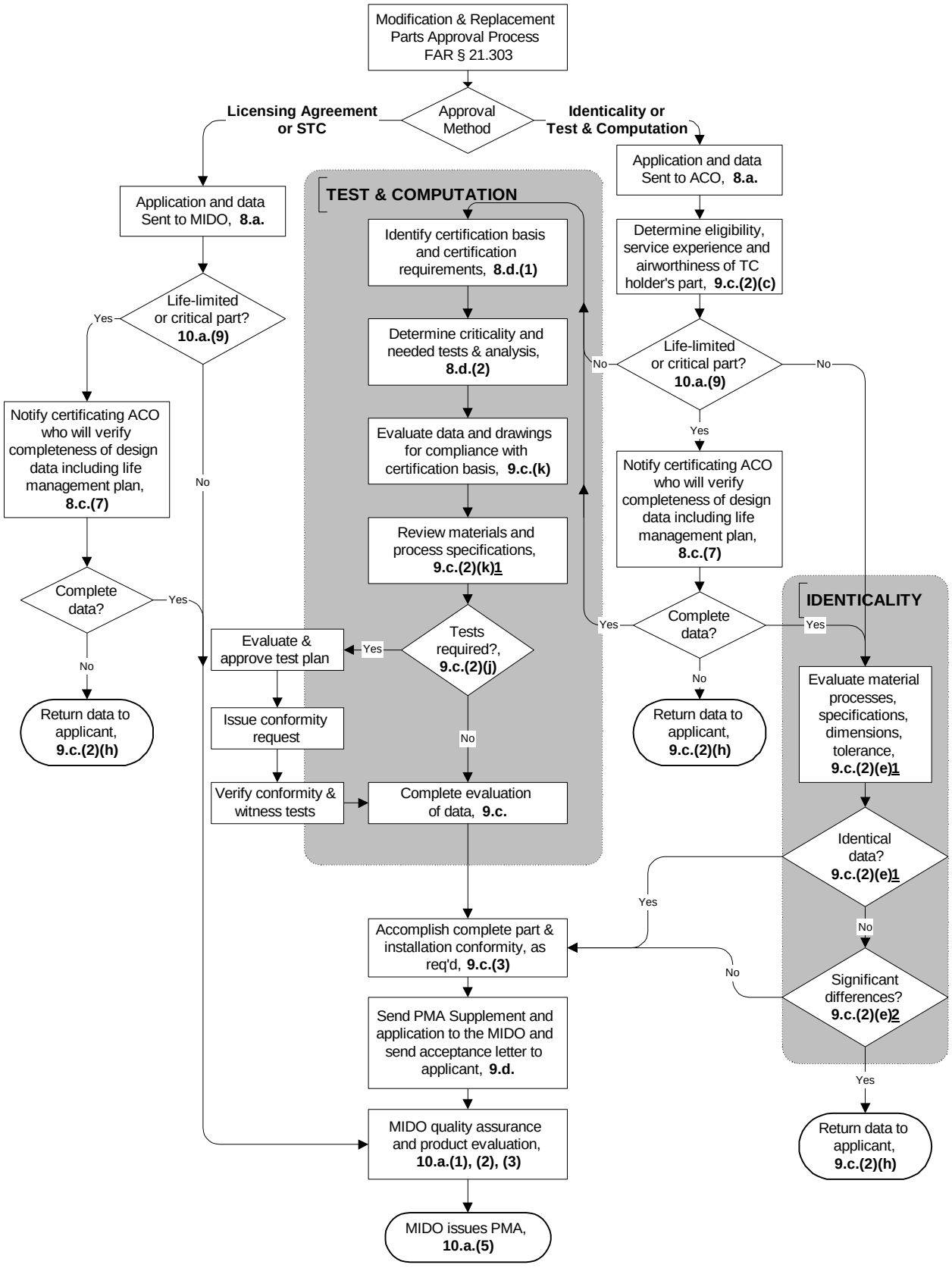
26. Phoenix Manufacturing Inspection District Office (ANM-108P)
13951 North Scottsdale Road, Suite 123
Scottsdale, Arizona 85254-3454

27. Manufacturing Inspection Office (ASW-180)
2601 Meacham Boulevard
Fort Worth, Texas 76137-4298

28. Manufacturing Inspection District Office (SW-MIDO-41)
Wiley Post Airport
FAA Building, Room 206
Bethany, Oklahoma 73008

29. Manufacturing Inspection District Office (SW-MIDO-43)
Suite 650
10100 Reunion Place
San Antonio, Texas 78216

APPENDIX 3. PMA PROCESS FLOW CHART



Paragraphs indicated in designated blocks above, refer to the individual section within this PMA document.

APPENDIX 4. SAMPLE FAA-PMA LETTERS OF APPLICATION

The ABC Tool Company
3000 Hill St.
Randolph, MA 02368

FAA - New England Region
12 New England Executive Park
Burlington, MA 01803

Attention: Mr. Mark Jones
Manager, Engine Certification Office, ANE-140

Subject: Request for New FAA-PMA Approval

Gentlemen:

ABC is submitting an application for Parts Manufacturer Approval for our Part Number (P/N) ABC 13579. We request your review of the enclosed data being submitted in support of this application. ABC 13579 is a bushing assembly eligible on PS PT9D-1, -7, -9 series engines. Approval is requested based on **(showing identicality by submitting test reports and computations)** under 14 CFR part 21 § 21.303(c). ABC 13579 replaces PS bushing assembly P/N 13579, drawing no. 13579, revision level C.

The part will be manufactured at ABC Tool Company, 3000 Hill Street, Randolph, MA 02368. ABC Tool Company hereby certifies that a fabrication inspection system, which is in accordance with 14 CFR part 21 § 21.303(h), has been established and the above part is manufactured in accordance with this system.

Your efforts in support of this request are most appreciated.

Very truly yours,

PMA Administrator,
ABC Tool Company

Enclosures:
1 copy ABC drawings, specifications and processes.
1 copy unnumbered PMA Supplement

APPENDIX 4. SAMPLE FAA-PMA LETTERS OF APPLICATION (CONTINUED)

The ABC Tool Company
3000 Hill St.
Randolph, MA 02368

FAA - New England Region
12 New England Executive Park
Burlington, MA 01803

Attention: Mr. Mark Steale
Manager, Manufacturing Inspection
Satellite Office, NE-MIDO-42

Subject: Request for New FAA-PMA Approval

Gentlemen:

ABC is submitting an application for Parts Manufacturer Approval for our Part Number (P/N) ABC 13579. We request your review of the enclosed data being submitted in support of this application. ABC 13579 is a bushing assembly eligible on PS PT9D-1, -7, -9 series engines. Approval is requested based on **(STC #/Licensing Agreement #, dated)** under 14 CFR part 21 § 21.303(c). ABC 13579 replaces PS bushing assembly P/N 13579, drawing no. 13579, revision level C.

The part will be manufactured at ABC Tool Company, 3000 Hill Street, Randolph, MA 02368. ABC Tool Company hereby certifies that a fabrication inspection system which is in accordance with 14 CFR part 21 § 21.303(h) has been established and the above part is manufactured in accordance with this system.

Your efforts in support of this request are most appreciated.

Very truly yours,

PMA Administrator,
ABC Tool Company

Enclosures:
1 copy STC or PMA Assist Letter
1 copy unnumbered PMA Supplement

APPENDIX 5. EXAMPLE OF A COMPLETE TC OR TSOA HOLDER'S PMA ASSIST LETTER

SUPPORTING DATA
PARTS MANUFACTURER APPROVAL

Smith Engineering Corporation
10 Main Street
Los Angeles, CA 90012 FILE NO._____

(1) Supplier Part Name and Part No.	(2) Approved Replacement For	(3) TC/STC/TSOA Approval and Design Data	(4)Model Eligibility
Part Name: Spring P/N: SE24689	General Air P/N: 24689	TC: E9NM DWG. No: SE25206 Rev: None Date: 3/31/88	General Air CP6-6, -30
Part Name: Pin P/N: SE24695	General Air P/N: 24695	TC: E9NM DWG. No: SE25207 Rev: None Date: 3/31/88	General Air CP6-6, -30

It is hereby certified that the components listed herein are included as a part of the type design/ approved design data for General Air models as specified in the fourth column herein.

The above named supplier is hereby authorized to use the approved (type design) data noted in the third column herein to manufacture replacement components (column 1). This certification may be used as part of the application for FAA-PMA. (14 CFR Part 21 § 21.303)

Approved:
General Air Corp.

_____
J. Doe, Manager Date
(Engineering Manager, Q. A. Manager, Corporate Officer, DER, or FAA Liaison)

PAGE 1 OF 1

APPENDIX 6. SAMPLE FAA-PMA SUPPLEMENT FOR IDENTICALITY (non-licensing agreement), TEST & COMPUTATION, AND STC

FEDERAL AVIATION ADMINISTRATION - PARTS MANUFACTURER APPROVAL

Smith Engineering Corporation
10 Main Street
Los Angeles, CA 90012

PMA NO._____
SUPPLEMENT NO._____
DATE_____

Part Name	Part Number	Approved Replacement for Part Number	Approval Basis and Approved Design Data	Make Eligibility	Model Eligibility
Spring	SE24689	24689	Identicality per 14 CFR § 21.303 DWG No: SE 25206 Rev: None Date: 3/31/88 or later FAA approved revisions	General Air	CP6-6, -30
Pin	SE24695	24695	Test and Computations per 14 CFR § 21.303 DWG No: SE 25207 Rev: None Date: 3/31/88 or later FAA approved revisions	General Air	CP6-6, -30
Wing Kit	MDL 660	Modification Part	STC SA1234NM DWG No: MDL 660 Rev: None Date: 3/31/88 or later FAA approved revisions	General Air	CP6-6, -30 with STC SA1234NM installed

----------End of Listing----------

NOTE: Minor design changes (reference 14 CFR part 21 §§ 21.93 and 21.95) must be submitted in a manner as determined by the ACO. Major design changes (reference 14 CFR part 21 §§ 21.93 and 21.97) to drawings and specifications are to be handled in the same manner as that for an original FAA-PMA.

_____ _____

Manager, Aircraft
Certification Office
(*do not use for STC)*

Manager, Manufacturing
Inspection District Office

APPENDIX 7. SAMPLE FAA-PMA SUPPLEMENT FOR LICENSING AGREEMENT

FEDERAL AVIATION ADMINISTRATION - PARTS MANUFACTURER APPROVAL

Smith Engineering Corporation
10 Main Street
Los Angeles, CA 90012

PMA NO._____
SUPPLEMENT NO._____
DATE_____

Part Name	Part Number	Approved Replacement for Part Number	Approval Basis and Approved Design Data	Make Eligibility	Model Eligibility
Galley	SE101001-101	101001-101	Identicality per 14 CFR § 21.303, licensing agreement between Smith Engineering Corp. and Ace Aircraft, File No. 5-1034-89-RMS 769, dated 9/12/89 DWG No: SE 25207 Rev: None Date: 3/31/88 or later FAA approved revisions	Ace Aircraft	A-700, -710

----------End of Listing----------

NOTE: The procedures that have been accepted by the type certificate or TSOA holder and their cognizant FAA Aircraft Certification Office, for minor changes to original parts used on type certificated products, are also acceptable for incorporating the same minor changes on identical FAA-PMA replacement parts. The FAA-PMA holder shall be able to show traceability relating to the TC, STC, or TSOA holder on all minor changes incorporated by this procedure. When these procedures are no longer applicable because of completion of the production contract, or termination of the licensing agreement or Business relationship, all subsequent minor design changes to the PMA parts must be submitted in a manner as determined by the ACO. Major design changes (reference 14 CFR Part 21 §§ 21.93 and 21.97) to drawings and specifications are to be handled in the same manner as that for an original FAA-PMA.

_____
Manager, Manufacturing
Inspection District Office

APPENDIX 8. FABRICATION INSPECTION SYSTEM

Establishment of the Fabrication Inspection System (FIS). Under part 21 § 21.303(h), the applicant must establish and maintain an FIS. The description of the FIS may be in any form acceptable to the FAA, however, for durability and easy reference, it is suggested that this description be in the form of a manual, indexed as necessary, describing the methods, procedures, inspections, and tests which the applicant and his suppliers intend to use to meet the requirements of part 21 § 21.303(h)(1)-(9), provisions for reporting under part 21 § 21.3 and provisions for identifying the product in accordance with part 45 § 45.15. The description may result in a lengthy document, or it might contain only a few pages, dependent upon the size of the applicant's facilities and the number and complexity of parts being manufactured. In describing the FIS, references to other documents or data maintained by the applicant may be utilized in lieu of a detailed description of a particular procedure, provided that a brief description is included in the manual and the referenced documents provide a complete description of the system. All referenced documents must be submitted for approval as part of the FIS description. If procedures or data are kept at or controlled by the original design/production approval holder under a contractual arrangement with the applicant, the applicant must demonstrate contractual provisions or provide other appropriate written assurance of the procedure for communicating design and manufacturing changes to the applicant. The applicant should also demonstrate that termination of the contractual relationship would not affect the applicant's ability to maintain compliance with the established FIS. For record purposes, the description should also include a facsimile of the applicant's symbol, trademark or prefix/suffix. The following paragraphs, headed by the section of part 21 to which they apply, provide an example of the material usually found in an acceptable description.

1. Section 21.303(h)(1). The portion of the FIS established to comply with this section would usually include the procedures that ensure conformity to approved design data of all supplier-furnished materials and services. Generally, this part of the FIS description would describe the manner by which the applicant ensures that:

a. All incoming materials conform to approved design data prior to their acceptance and release to production.

APPENDIX 8. FABRICATION INSPECTION SYSTEM (CONTINUED)

b. Provisions are made for the evaluation and surveillance of suppliers by the applicant when it relies to any degree upon a supplier's inspection system. The surveillance of suppliers of proprietary parts must enable the applicant to determine that incoming materials conform and that supplier services are performed correctly.

c. Suppliers, including suppliers of proprietary parts upon whom an applicant relies for controlling conformity and quality, should be formally advised that their inspection system and materials being supplied are subject to inspection by the FAA. When a supplier from a country other than the U.S. is involved, the FAA will determine whether the performance of any FAA duties at the supplier's facilities would result in an undue burden being placed on the FAA. If such FAA duties would be required, a means acceptable to the FAA of relieving any undue burden must be found, or it will be necessary for the applicant to perform all required functions in the U.S.

d. Positive control is exercised over the design configuration and condition of all parts obtained from suppliers. The fact that the supplier does not hold a production approval for the part re-emphasizes the PMA holder's responsibilities for the design configuration of the part.

e. All material review actions and design changes made by suppliers, including suppliers of proprietary over which the applicant does not exercise direct design control, are evaluated by the applicant and approved as applicable in accordance with part 21 § 21.303(d) and part 21, Subpart D.

f. Records are maintained of all inspections and tests performed by or for the applicant in controlling the conformity of all supplier-furnished materials.

g. All incoming materials and services, including related inspection and test records are identified with appropriate acceptance, rejection, or rework stamps as applicable.

2. Part 21 § 21.303(h)(2). The FIS description will include the system the applicant will utilize, with respect to compliance with this section, to ensure that the physical and chemical properties of incoming material are as specified in the approved design data.

APPENDIX 8. FABRICATION INSPECTION SYSTEM (CONTINUED)

3. Part 21 § 21.303(h)(3). An acceptable description of the storage and issuance system established by the applicant would include the procedures that ensure:

a. Identification, segregation, and protection of materials and in storage.

b. Periodic re-inspection and disposition of materials subject to deterioration from prolonged storage.

c. Protection from damage of materials, and of components being delivered to fabrication or shipping areas, and while stored in fabrication areas prior to use.

d. Incorporation of all applicable design changes prior to release of stored components for installation in the part.

e. That only those materials and components which are identified as having passed receipt inspection criteria are received into, and issued from, storage.

4. Part 21 § 21.303(h)(4). The integrity of processes and services utilized in the manufacture of parts is dependent upon the skill with which the work is performed, the capabilities of the equipment used, and close control of critical factors such as temperatures, solutions, curing time, special tools, etc. A system to control processes and services, such as welding, brazing, heat treatment, plating, and radiographic, ultrasonic, or magnetic particle inspection, etc., requires that each process be performed by trained and qualified personnel and in accordance with approved specifications containing definitive standards of quality, and that periodic inspection of gauges, solutions, or any critical equipment is controlled and documented. The description with respect to this section in the FIS manual should explain the procedure by which the applicant will qualify personnel, and control processes performed at the approved facilities, as well as by suppliers, and should generally include a listing of manufacturing processes which are relied upon to assure quality, conformity, and safety of the completed parts.

5. Part 21 § 21.303(h)(5). Compliance with this section requires that procedures be established to control all phases of inspection of the part. The FIS description should, therefore, provide descriptions of all procedures established by the applicant to ensure that all inspections

APPENDIX 8. FABRICATION INSPECTION SYSTEM (CONTINUED)

and tests will be conducted in the proper sequence, when components and processes are in an inspectable condition- "for example, prior to painting or closures." This is achieved through use of inspection instructions, shop travelers, checklists, or similar media. Following are examples of inspection functions that would be described to the extent applicable to the complexity of the parts or size of the manufacturer's facilities:

a. Planning Procedures. Such procedures would ensure that each component used in the part is adequately inspected for conformity with the approved design. This function of the planning system would be facilitated if it provided for:

(1) Classifying design characteristics and related manufacturing defects to determine their critical nature so that the most effective fabrication inspection methods and process controls will be used with respect to critical and major characteristics and detecting defects, (reference part 21 § 21.93; MIL-STD-105, Sampling Procedures and Tables for Inspection by Attributes; and MIL-STD-414, Sampling Procedures and Tables for Inspection by Variables for Percent Defective).

(2) Selection of appropriate inspection methods and plans for each classification to ensure that all characteristics affecting safety will be inspected and re-inspected, as appropriate, to ensure conformity to approved design data and to eliminate discrepancies from in-process and completed parts.

b. Inspection Status. This system would ensure that appropriate stamps or marks are placed on components or other means are used to indicate their inspection status. It would be helpful if this portion of the description also contains copies of all inspection forms, checklists, and imprints of the various inspection and process stamps and their meanings. Procedures should call for suitable acceptance, rework, or rejection stamps to be used, particularly on life-limited, critical or non-conforming parts, as follows:

(1) Materials and components which have been subjected to a process such as heat treatment, welding, bonding, etc., or testing and inspection which may include hardness tests, laboratory analysis, magnetic particle inspection, or similar functions.

APPENDIX 8. FABRICATION INSPECTION SYSTEM (CONTINUED)

(2) Materials and components which have been inspected at the specified point in production and are found in conformity with the approved design.

(3) Materials and components that are rejected as being unusable or scrap so as to preclude their installation.

c. Tool and Gauge Control. This system should provide control over periodic inspection and calibration of inspection tools, gauges, testing equipment, production jigs, fixtures, templates, etc., which are depended upon as media for inspection product acceptance. The description of the means utilized for tool and gauge control should include a schedule of periodic or usage inspection and calibration intervals to ensure that tools, gauges, etc. are inspected, adjusted, repaired, and/or replaced prior to their becoming inaccurate. The inspection system description should also describe the procedures for implementing the tool and gauge control schedules. Such procedures would basically ensure that each piece of equipment is:

(1) Checked prior to first usage and at the proper periodic interval and marked to indicate that it is under calibration control and the date that the next inspection is due; and

(2) Removed from inspection and shop areas or conspicuously identified to prohibit usage after expiration of the inspection due date.

d. Final Inspection. This function of the inspection system would ensure that each completed part is subjected to a final inspection to determine conformity with approved design data; compliance with applicable FAA airworthiness directives and, whether the part is safe for installation on type certificated products. Such a system would usually incorporate procedures to ensure that:

(1) Each part is inspected for completeness, adjustments, safety, calibration, markings, placards, etc., as applicable to the complexity of the part.

(2) If applicable, each completed part or appropriate sample is subjected to a functional test to ensure that the operating characteristics meet the approved design provisions.

APPENDIX 8. FABRICATION INSPECTION SYSTEM (CONTINUED)

6. Part 21 § 21.303(h)(6). The description of the system established for compliance with this rule includes:

a. The procedures utilized to ensure that current design drawings are readily available to manufacturing and inspection personnel, and use when necessary, and

b. The procedures utilized to ensure that drawings and data which are obsolete, or affected by superseding data, or FAA airworthiness directives are promptly removed from production and inspection areas or otherwise controlled to prevent their improper use.

7. Part 21 § 21.303(h)(7). The description of the drawing change controls required by this regulation should include procedures to ensure that, prior to final acceptance of articles and completed parts, all changes required to be FAA-approved have been approved and are incorporated in the applicable drawings or covered by change notices attached to such drawings. The inspection system manual would, therefore, include a section describing or referring to the drawing change control system. If the drawing change control system refers to or relies upon the original design approval holder's system through a contractual relationship, the applicant should demonstrate contractual provisions or provide other appropriate written assurance sufficient to ensure that all changes will be incorporated into the finished part(s) manufactured by the applicant. In such a case, the applicant should also indicate how it would establish a new system to maintain the FIS should the contractual relationship with the original design/production approval holder be changed or terminated.

8. Part 21 § 21.303(h)(8). The description of the procedures established for compliance with this regulation includes provisions for engineering evaluation of rejected materials and articles to determine whether they can be reworked, repaired, or accepted "as is" without affecting the airworthiness of the part. Approval for the PMA applicant to utilize this provision shall consider the ability of the applicant to substantiate the effects of non-conformance or repair to the safe performance of the part and its parent system(s). If the procedures proposed by the applicant to demonstrate compliance with the FAR rely upon a contractual relationship with the original design approval holder, the applicant must demonstrate contractual provisions or provide other appropriate written assurance indicating how compliance by the applicant with

APPENDIX 8. FABRICATION INSPECTION SYSTEM (CONTINUED)

applicable requirements will be ensured. In such a case, the applicant should also indicate whether it would need to establish a new system to maintain the FIS should this aspect of the contractual relationship with the original design/production approval holder be changed or terminated.

9. Part 21 § 21.303(h)(9). Compliance with this section requires that procedures be established for maintaining inspection records. This includes all inspections accomplished on the parts from raw materials to finished parts. There should be a procedure established for identifying inspection records where practicable with parts, such as serial numbers, dates, codes, etc. The applicant must file and retain the inspection records for a period of at least 2 years after the part has been completed.

APPENDIX 9. SAMPLE FAA DESIGN APPROVAL REJECTION LETTER

Expert Aviation Co.
1000 West Street
Tempe, AZ 85281

Gentlemen:

This is in response to your request for design approval based on identicality. We have reviewed the data you submitted and do not find it identical to the corresponding approved data. Enclosed is the data submitted.

Sincerely,

_____
Manager, Rotorcraft Certification Office

Enclosure

APPENDIX 10. SAMPLE FAA ACCEPTANCE OF APPLICANT'S REQUEST LETTER

XYZ Aviation Co.
1000 West Street
Tempe, AZ 85281

Gentlemen:

This is in response to your letter, dated April 5, 1995, requesting Parts Manufacturer Approval (PMA) approval on XYZ Aviation bushing assembly Part Number XYZ13579 which is eligible on the ABC JT9D-3A series engine.

We have reviewed the drawing(s) and data submitted and find they meet the requirements of 14 CFR part 21 § 21.303(d)(1). The approval of the design via the PMA supplement along with your application has been forwarded to ***(name and address of Manufacturing Inspection District Office)***. Production approval will be granted after the validation of your fabrication inspection system, and issuance of the FAA-PMA letter and PMA supplement by the MIDO.

Sincerely,

Manager, Engine Certification Office

cc: Van Nuys MIDO

APPENDIX 11. SAMPLE FAA-PMA LETTER

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Kansas City Manufacturing Inspection District Office
250 Richards Road
Kansas City, Missouri 64116

May 1, 1995

Aero-Parts, Incorporated
3212 Newton Street
St. Louis, Missouri

FEDERAL AVIATION ADMINISTRATION - PARTS MANUFACTURER APPROVAL

In accordance with the provisions of 14 CFR part 21 (part 21), Subpart K, the FAA has found that the design data, as submitted by Aero-Parts, Inc., (hereinafter referred to as "the Manufacturer") on September 16, 1977, meets the airworthiness requirements of the Federal Aviation Regulations applicable to the product(s) on which the part(s) is to be installed. Additionally, the FAA has determined that Aero-Parts Incorporated has established the fabrication inspection system required by part 21 § 21.303(h) at 3212 Newton Street, St. Louis, Missouri. Accordingly, Parts Manufacturer Approval (PMA) is hereby granted to the manufacturer, to produce the replacement parts (or modification parts, as applicable) listed in the enclosed supplement(s) in conformity with the FAA-approved design data. Any subsequent changes to these design data must be approved in a manner acceptable to the FAA.

The following terms and conditions are applicable to this approval:

1. The manufacturer's fabrication inspection system, methods, procedures and manufacturing facilities, including suppliers, are subject to FAA surveillance or investigations. Accordingly, the manufacturer must advise their suppliers that their facilities are also subject to FAA surveillance and investigation.

2. The manufacturer must notify our district office (address) in writing within 10 days from the date the manufacturing facilities at which parts are manufactured are relocated or expanded to include additional facilities at other locations. This requirement also applies to the manufacturer's suppliers, but only those who have been delegated major inspection authorization and those who furnish parts or related services where a determination as to safety and conformance to the approved design cannot or will not be made upon receipt at the approved receiving facility.

3. The manufacturer must make available to FAA, upon request, any pertinent information concerning their suppliers who furnish parts/services, including:

a. A description of the part or service;

APPENDIX 11. SAMPLE FAA-PMA LETTER (CONTINUED)

b. Where and by whom the part or service will undergo inspection;

c. Any delegation of inspection duties;

d. Any delegation of materials review authority;

e. Name and title of FAA contact at the supplier facility;

f. The inspection procedures required to be implemented;

g. Any direct shipment authority;

h. Results of the manufacturer's evaluation, audit, and/or surveillance of their suppliers;

i. The purchase/work order number (or equivalent);

j. Any feedback relative to service difficulties originating at the manufacturer's suppliers.

4. Parts, appliances, or manufacturing services furnished by any suppliers located in a foreign country may not be used in the production of any part or appliance listed in the enclosed supplement unless:

a. That part or service can and will be completely inspected for conformity at the manufacturer's U.S. facility; or

b. The FAA has determined that the location of the foreign supplier facility places no undue burden on the FAA in administering applicable airworthiness requirements. When the use of such foreign suppliers are contemplated, the manufacturer must advise the FAA at least 10 days in advance to allow the FAA to make this determination; or

c. The parts/services furnished by the foreign supplier are produced under the "components" provisions of U.S. bilateral airworthiness agreements, and approved for import to the U.S. in accordance with part 21 § 21.502.

5. Parts produced under the terms of this approval must be permanently marked with the identification information as required by 14 CFR part 45 (part 45) § 45.15, i.e., with the letters "FAA-PMA," the name, trademark, or symbol of the company, the part number, and the name and model designation of each type certificated product on which the part is eligible for installation. Alternate means of identification, if the part is too small or if it is otherwise impractical to mark, must be approved by the FAA. In the case of a part based on an STC, the identification of installation-eligible type certificated products must include reference to the STC on the shipping document. If a PMA is granted for an assembly, detail parts of the assembly sold separately must also be marked in accordance with the requirements of part 45 § 45.15 and reference the assembly PMA part number on the shipping document.

6. This approval is not transferable and it may be withdrawn for any reason which would preclude its issuance; or at any time that the FAA finds that the fabrication inspection system is not being maintained; or if unsafe or nonconforming parts are accepted under the fabrication inspection system.

APPENDIX 11. SAMPLE FAA-PMA LETTER (CONTINUED)

7. Our district office must be notified within 10 days from the date that the address shown in this approval has been changed.

8. The manufacturer must maintain their fabrication inspection system in continuous compliance with the requirements of part 21 § 21.303(h), and ensure that each part conforms with the approved design data and is safe for installation on type certificated products.

9. The manufacturer is eligible for the appointment of qualified individuals in their employ to represent the FAA as Designated Manufacturing Inspection Representatives (DMIRs) or Organization Designated Airworthiness Representatives (ODARs) for the purpose of issuing Export Airworthiness Approvals for Class II and Class III products.

10. The manufacturer shall report to our district office in a timely manner, information concerning service difficulties on any part produced under this approval, in addition to any failures, malfunctions, and defects required to be reported in accordance with part 21 § 21.3.

11. All technical data required by part 21 § 21.303(c)(3), for the parts to be produced under this approval, must be readily available to the FAA at the facility at which the parts are being produced.

12. The manufacturer shall notify our district office immediately in writing of any changes to the Fabrication Inspection System that may affect the inspection, conformity, or airworthiness of the parts approved in this letter.

13. (This condition should only be prescribed when the applicant has voluntarily submitted inspection system data/procedures as evidence of compliance with part 21 § 21.303(h)). The manufacturer shall produce all parts in accordance with Aero-Parts, Inc., Quality Assurance Manual, Revision B, dated August 7, 1977, which has been presented as evidence of compliance with part 21 § 21.303(h). Accordingly, any revisions to these data must be submitted for approval by this office prior to implementation.

G. Jones
Manager, Kansas City Manufacturing Inspection District Office

Enclosure:
Parts Manufacturer Approval Listing
Supplement No. 1

APPENDIX 12. SAMPLE TRANSMITTAL LETTER OF SUBSEQUENT PMA SUPPLEMENT

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Kansas City Manufacturing Inspection District Office
250 Richards Road
Kansas City, Missouri 64116

May 1, 1995

Aero-Parts, Incorporated
3212 Newton Street
St. Louis, Missouri

FEDERAL AVIATION ADMINISTRATION - PARTS MANUFACTURER APPROVAL

In accordance with the provisions of 14 CFR part 21 (part 21), Subpart K, we have found that the design data, based on **(identicality/test and computation/STC)**, submitted by Aero-Parts, Incorporated, with letter dated _____, meet the airworthiness requirements of the regulations applicable to the products on which the parts are to be installed. Additionally, it has been determined that Aero-Parts, Incorporated has established the fabrication inspection system required by part 21 § 21.303(h) at 3212 Newton Street; St. Louis, Missouri. Accordingly, Parts Manufacturing Approval (PMA) is hereby granted for production of the replacement parts listed in the enclosed Supplement No. #.

You are reminded that the provisions of the Federal Aviation Regulations, noted in our PMA letter of approval dated _____, also apply to the enclosed PMA Listing-Supplement No. #.

Sincerely,

Manager, MIDO

APPENDIX 13. EXAMPLE OF FAA FORM 8110-3 IDENTICALITY NOTATIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

STATEMENT OF COMPLIANCE WITH THE FEDERAL AVIATION REGULATIONS

DATE

AIRCRAFT OR AIRCRAFT COMPONENT IDENTIFICATION

MAKE	MODEL NO.	TYPE (*Airplane, Radio, Helicopter, etc.*)	NAME OF APPLICANT

LIST OF DATA

IDENTIFICATION	TITLE
	FAA approval of the design is contingent upon FAA engineering verification of the type design data listed.

PURPOSE OF DATA
Identicality only approval under 14 CFR part 21 § 21.303

APPLICABLE REQUIREMENTS *(List specific sections)*
14 CFR part 21 § 21.303(c)(4)

CERTIFICATION - Under authority vested by direction of the Administrator and in accordance with conditions and limitations of appointment under Part 183 of the Federal Aviation Regulations, data listed above and on attache sheets numbered _____ have been examined in accordance with established procedures and fou comply with applicable requirements of the Federal Aviation Regulations.

I (We) Therefore
- ☐ Recommend approval of these data
- ☐ Approve these data

SIGNATURE(S) OF DESIGNATED ENGINEERING REPRESENTATIVE(S)	DESIGNATION NUMBER	CLASSIFICATION(S)

FAA Form 8110-3 (11-70) SUPERSEDES PREVIOUS EDITION (REPRESENTATION)

(Example FAA Form 8110-3 reduced to approximately 80% actual size)

APPENDIX 14. List of Acronyms

ACO	Aircraft Certification Office
AC	Advisory Circular
AD	Advisory Directive or Airworthiness Directive
AN	Army-Navy Aeronautical Standard
ANSI	American National Standards Institute
APIS	Approved Production Inspection System
CAA	Civil Aviation Authority or Civil Aeronautics Authority
CFR	Code of Federal Regulations
DER	Designated Engineering Representative
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FIS	Fabrication Inspection System
IFCA	Instructions for Continued Airworthiness
IPC	Illustrated Parts Catalog
MIDO	Manufacturing Inspection District Office
MISO	Manufacturing Inspection Satellite Office
NAS	National Aerospace Standards
PAH	Production Approval Holder
Part 21	Certification Procedures for Products and Parts
Part 43	Maintenance, Preventive Maintenance, Rebuilding, and Alteration
Part 45	Identification and Registration Marking
PC	Production Certificate
PI	Principal Inspector
PMA	Parts Manufacturer Approval
SAE	Society of Automotive Engineers
STC	Supplemental Type Certificate
TC	Type Certificate
TSO	Technical Standard Order
TSOA	Technical Standard Order Authorization

Appendix 15. FAA Form 1320-19

U. S. Department
Of Transportation

Federal Aviation
Administration

Directive Feedback Information

Please submit any written comments or recommendations for improving this directive, or suggest new items or subjects to be added to it. Also, if you find an error, please tell us about it.

Subject: **Order 8110-42A**

To: Directive Management Officer, AIR-520, 800 Independence Avenue S. W., Washington, DC 20591
(Please check all appropriate line items)

An error (**typographical**) has been noted in paragraph
11 (b) (1) (1) on page 29.

Recommend paragraph 11 (b) (1) on page 29 be changed
as follows:
(attach separate sheet if necessary)

11 (b) (1) (2) Transferability.

The paragraph numeration sequence is incorrect and has cause confusion at facilities that have or are seeking ownership changes.

Thank you,

In a future change to this directive, please include coverage on the following subject:
(briefly describe what you want added)

Other comments:

Submitted by: Carlos A. Quiles Date: September 3, 2003

Telephone Number: 860-654-1092 Routing Symbol: ANE-MIDO-41

FAA Form 1320-19 (8-89) (Representation)