



(Aircraft) Australian Parts Manufacturing Approval System

An APMA production approval allows the manufacturer to produce and sell CASA approved aircraft parts that are eligible for installation on type certificated aircraft and products.

An APMA is not transferable. An APMA is valid until surrendered, withdrawn or terminated. One may sell APMA data to another, but the buyer must get a separate APMA.

The design approval phase of APMA certifies that a replacement or modification part complies with the airworthiness standards of eligible products (aircraft, engine, or propeller). The applicant shows this compliance through tests and computations unless the part is identical to the part design on a type-certificated product. Identity means that a part is the same in all respects to a part design in a type-certificated product. Evidence of a license agreement shows this identity.

No person may produce a modification or replacement part for sale for installation on a type-certificated product (an aircraft, engine, or propeller) unless this part is produced in accordance with an APMA issued by CASA under CASR Part 21, Subpart K.

In order to obtain an APMA from CASA, the manufacturer must demonstrate that it has a design for an aircraft part that meets the applicable airworthiness standards, and a fabrication inspection system that will assure that each part released from the system will meet the CASA approved design.

There are two phases to the APMA approval. The first phase is the approval of the design of the replacement or modification part. APMAs are parts made to replace parts fitted to a type certificated aircraft, including parts associated with Supplemental Type Certificates.

The second phase is the manufacturing approval.

Because the United States was the first nation to adopt rules permitting the manufacture of aircraft aftermarket parts (and for many decades was the only nation with these rules), the PMA industry is primarily concentrated in the United States. Other countries, like Australia, have adopted the FAA PMA regulations and processes like we did in 1998.

However, the FAA have amended their Part 21 Subpart K to adopt a quality manufacturing system to improve safety and make the manufacturer clearly responsible for compliance with design standards – Australia has not yet adopted these 2009 FAR amendments. Australia must adopt these amendments.

Safety Benefits

With an ageing aircraft fleet, obtaining replacement parts can become an issue. However, this restriction on purchasing parts for older aircraft can be reduced by using APMA parts. The design of replacement parts usually meets or improves the quality of the item thus improving safety.

Bilateral Aviation Agreements

Crucial to this sector of the industry is Bilateral Aviation [Safety] Agreements with workable Implementation Procedures that enables recognition of Australian PMA approval holders to sell their APMA parts into these foreign aviation markets.

Many current Agreements do not have recognition of APMA parts thus restricting growth in this sector.

It is doubtful that CASA has the resources and expertise to obtain and implement such agreements to improve Australian PMA manufacturers' access to these foreign aviation markets.

Most current Agreements require dedicated CASA resources to create the processes, contacts etc. with the foreign NAA to negotiate and implement procedures for the benefit of the Australian industry.

Without such agreements, the APMA system is restricted to the Australian registered aircraft market thus restricting growth and jobs.

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Safety All Around.

Technology & Innovation

Aviation maintenance is an industry that continually responds to advances in technology and innovation providing cost effective support to aircrafts' continuing airworthiness.

However, to take advantage of new technology and innovation that exists within the design capabilities in Australia, the aviation regulatory system must keep pace with world's best practice.

The current system has stagnated and is restricting the modernisation of the APMA system that the FAA changed in 2009. The basis of the APMA is modelled on the FAA system as it is the world leader at utilising the PMA system across all levels of aviation.

The use of the STC system utilising PMA parts has been used in the FAA to re-birth an ageing aircraft by replacing major structural parts so the airframe is returned to zero flight hours.

By adopting the latest amendments to FAR Part 21, in particular Subpart K for PMA parts, the regulations would provide the same requirements as applied by the FAA to their industry.

Since 2009, the PMA industry in the USA has flourished with improved quality replacement parts becoming available for all kinds of aircraft, including PMA parts for STC products.

Many aircraft manufacturers of aged aircraft that are on the CASA aircraft register just do not maintain stock of spare parts and when a part has to be made, it is a one-off and highly costly to manufacture.

This provides great business opportunities in Australia to expand the APMA system to address the delays in obtaining spare parts. In many cases persons considering entering the APMA system have been turned off by the over regulated system currently being provided by CASA.

This has to change so innovation and advanced technology can be applied to provide cost effective replacement parts to the registered owners of Australian aircraft.

If government/CASA can negotiate BASA/IPA that actually benefit Australian APMA manufacturers to participate in the international market, this sector can create jobs utilising advanced technologies.

From The FAA Website

What are Bilateral Agreements?

Bilateral agreements facilitate the reciprocal airworthiness certification of civil aeronautical products imported/exported between two signatory countries. A Bilateral Airworthiness Agreement (BAA) or Bilateral Aviation Safety Agreement (BASA) with Implementation Procedures for Airworthiness (IPA) provides for airworthiness technical cooperation between the FAA and its counterpart civil aviation authorities.

Type of Bilateral Agreements

Bilateral Airworthiness Agreements

Bilateral Airworthiness Agreements are executive agreements concluded prior to 1996 through an exchange of diplomatic notes between the U.S. Department of State and its foreign counterpart based on FAA technical recommendations. (Note: The U.S. no longer concludes Bilateral Airworthiness Agreements.)

Bilateral Aviation Safety Agreement

In addition to airworthiness certification, Bilateral Aviation Safety Agreements provide for bilateral cooperation in a variety of aviation areas, including maintenance, flight operations, and environmental certification. For aircraft certification, an additional document, an Implementation Procedures for Airworthiness, is developed to address specific areas such as design approvals, production activities, export airworthiness approval, post-design approval activities, and technical cooperation.

Compare Major Changes to Regulations

The major difference between the amended FAR and CASR Part 21 is that Subpart K is now about approving the design based on industry engineering designees and the manufacturer, not the approval of *'materials, parts processes and appliances'*.

The two subparts are no longer compatible thus affecting the harmonisation that was achieved in 1998. Like the rest of CASR Part 21, it is restricting Australian aircraft & parts manufacturers to trade.

FAR (2009 Update)	CASR (1998 version)
<p>FAR Part 21. Subpart K—Parts Manufacturer Approvals</p> <p style="color: red;">Note: this is now about approval of the design & Parts Manufacturer.</p>	<p>Adopt FAR – Delete CASR</p> <p>Subpart 21.K Approval of materials, parts, processes and appliances</p>
<p>§21.301 Applicability.</p> <p>This subpart prescribes—</p> <p>(a) Procedural requirements for issuing PMAs; and</p> <p>(b) Rules governing holders of PMAs.</p>	<p>Adopt FAR – Delete CASR</p> <p>21.301 Applicability</p> <p>This Subpart prescribes requirements for the approval of certain materials, parts, processes, and appliances.</p> <p><i>Source FARs section 21.301 modified.</i></p>
<p>§21.303 Application.</p> <p>(a) The applicant for a PMA must apply in a form and manner prescribed by the FAA, and include the following:</p> <ol style="list-style-type: none"> (1) The identity of the product on which the article is to be installed. (2) The name and address of the manufacturing facilities at which these articles are to be manufactured. (3) The design of the article, which consists of— <ol style="list-style-type: none"> (i) Drawings and specifications necessary to show the configuration of the article; and (ii) Information on dimensions, materials, and processes necessary to define the structural strength of the article. (4) Test reports and computations necessary to show that the design of the article meets the airworthiness requirements of this subchapter. The test reports and computations must be applicable to the product on which the article is to be installed, unless the applicant shows that the design of the article is identical to the design of an article that is covered under a type certificate. If the design of the article was obtained by a licensing agreement, the applicant must provide evidence of that agreement. (5) An applicant for a PMA based on test reports and computations must provide a statement certifying that the applicant has complied with the airworthiness requirements of this subchapter. <p>(b) Each applicant for a PMA must make all inspections and tests necessary to determine—</p> <ol style="list-style-type: none"> (1) Compliance with the applicable airworthiness requirements; (2) That materials conform to the specifications in the design; (3) That the article conforms to its approved design; and (4) That the manufacturing processes, construction, and assembly conform to those specified in the design. 	<p>Adopt FAR – Delete CASR</p> <p>21.303 Replacement and modification parts</p> <p>(1) A person commits an offence if:</p> <ol style="list-style-type: none"> (a) the person produces a modification or replacement part for sale for installation on: <ol style="list-style-type: none"> (i) a type certificated aircraft, aircraft engine or propeller; or (ii) an aircraft, aircraft engine or propeller for which a foreign type certificate issued by the NAA of a recognised country is in force; and (b) the part is not produced in accordance with an APMA. <p>Penalty: 50 penalty units.</p> <p>(1A) An offence against subregulation (1) is an offence of strict liability.</p> <p><i>Note For strict liability, see section 6.1 of the Criminal Code.</i></p> <p>(2) This regulation does not apply to the following:</p> <ol style="list-style-type: none"> (a) parts manufactured in the course of maintenance by a maintenance organisation having approval to manufacture the parts; (b) parts produced under a type certificate or production certificate; (c) parts manufactured by the owner or operator of an aircraft, aircraft engine or propeller manufactured by the owner or operator, for maintaining or altering the aircraft, aircraft engine or propeller; (d) parts produced under an ATSO authorisation; (e) standard parts. <p>(2A) Any person is eligible to apply for an APMA.</p> <p>(3) An application for an APMA may be made to CASA and must include the following:</p> <ol style="list-style-type: none"> (a) the identity of the aircraft, aircraft engine or propeller on which the part is to be installed; (b) the name and address of the manufacturing facilities at which the part is to be manufactured; (c) the design of the part, which consists of: <ol style="list-style-type: none"> (i) drawings and specifications necessary to show the configuration of the part; and (ii) information on dimensions, materials, and processes necessary to define the structural strength of the part; (d) test reports and computations necessary to show that the design of the part meets the airworthiness requirements of these regulations applicable to the aircraft, aircraft engine or propeller on which the part is to be installed, unless the applicant shows that the design of the part is identical to the design of a part that is covered under a type certificate. <p style="margin-left: 20px;">If the design of the part was obtained by a licensing agreement, evidence of that agreement must be furnished;</p> (e) subject to subregulation (3A), a copy of the system that the applicant proposes to use, if granted an APMA, to comply with the requirements of subregulation 21.303 (11) <p>(3A) An applicant is not required to include a copy of the system referred to in paragraph 21.303 (3) (e) if the applicant has previously given CASA a copy of the same version of the system.</p>

FAR (2009 Update)	CASR (1998 version)
	<p>(4) An applicant is entitled to an APMA for a replacement or modification part if:</p> <ul style="list-style-type: none"> (a) following examination of the design, or on the basis of design data for the design approved by CASA or an authorised person, CASA is satisfied that the design meets the airworthiness requirements of these Regulations applicable to the aircraft, aircraft engine or propeller on which the part is to be installed; and (b) the applicant will, if the APMA were to be granted, be able to comply with the requirements of subregulation (11). <p>(5) An applicant for an APMA must allow CASA to make any inspection or test necessary to determine compliance with the applicable regulations.</p> <p>(6) CASA is not required to consider an application unless the applicant has complied with paragraphs (8) (b), (c) and (d).</p> <p>(7) The applicant must ensure that no change is made to a part between the time compliance with paragraphs (8) (b), (c) and (d) is shown for that part and the time the part is presented to CASA for inspection or test.</p> <p>(8) An applicant for an APMA must make all inspections and tests necessary to determine the following:</p> <ul style="list-style-type: none"> (a) compliance with the applicable airworthiness requirements; (b) that materials conform to the specifications in the design; (c) that the part conforms to the drawings in the design; (d) that the fabrication processes, construction, and assembly conform to those specified in the design. <p>(9) Subject to regulation 11.055, CASA must issue an APMA to an applicant for the APMA if the applicant:</p> <ul style="list-style-type: none"> (a) is eligible, under this regulation, to apply for the APMA; and (b) applies for the APMA in accordance with this Subpart; and (c) is entitled, under this Subpart, to the APMA; and (d) otherwise complies with this Part. <p>(10) CASA is not required to issue an APMA if the manufacturing facilities for the part are located outside Australian territory, unless the location of the manufacturing facilities places no undue burden on CASA in administering the applicable airworthiness requirements.</p> <p>(11) The holder of an APMA must establish and maintain a fabrication inspection system that ensures that each completed part conforms to its design data and is safe for installation on applicable type certificated aircraft, aircraft engines or propellers. The system must be documented and include procedures to ensure that:</p> <ul style="list-style-type: none"> (a) incoming materials used in the finished part are as specified in the design data; and (b) incoming materials are properly identified if their physical and chemical properties cannot otherwise be readily and accurately determined; and (c) materials subject to damage and deterioration are suitably stored and adequately protected; and (d) processes affecting the quality and safety of the finished aircraft, aircraft engine or propeller are accomplished in accordance with acceptable specifications; and (e) parts in process are inspected for conformity with the design data at points in production where accurate determination can be made. Statistical quality control procedures may be employed where it is shown that a satisfactory level of quality will be maintained for the particular part involved; and (f) current design drawings are readily available to manufacturing and inspection personnel, and used when necessary; and (g) major changes to the basic design are adequately controlled and approved before being incorporated in the finished part; and

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	<p>(h) rejected materials and components are segregated and identified in such a manner as to preclude their use in the finished part; and</p> <p>(i) inspection records are maintained, identified with the completed part, where practicable, and retained in the holder's file for a period of at least 2 years after the part has been completed.</p> <p>(12) An APMA is not transferable and continues in force until cancelled.</p> <p>(13) The holder of an APMA must notify CASA in writing within 10 days from the date the manufacturing facility at which the parts are manufactured is relocated or expanded to include additional facilities at other locations.</p> <p>(13A) The holder of an APMA must, within 2 days after the day when any change is made to the holder's fabrication inspection system that may affect the inspection, conformation to design data or airworthiness of a part to which the APMA relates, tell CASA in writing of the change.</p> <p>(14) The holder of an APMA must determine whether each completed part conforms to the design data and is safe for installation on type certificated aircraft, aircraft engines or propellers.</p> <p>(15) CASA may suspend or cancel an APMA, by written notice given to its holder, if the holder does not comply, or ceases to comply, with this Subpart.</p> <p>(16) Despite subregulation (12), an APMA is not in force during any period of suspension.</p> <p>(17) A notice under subregulation (15) must set out:</p> <ul style="list-style-type: none"> (a) the grounds for the suspension or cancellation; and (b) in the case of a suspension — when the suspension stops having effect. <p><i>Source FARs section 21.303 modified.</i></p> <p><i>Note See also regulations 21.002C and 21.002E in relation to suspension and cancellation of APMAs.</i></p>
	<p>Delete CASR</p> <p>21.304A Changes to an APMA</p> <p>(1) The holder of an APMA may apply in writing to CASA to approve a change to any of the particulars specified in the APMA, including a condition of the APMA.</p> <p>(2) CASA may, on receiving an application made under subregulation (1), approve the change.</p> <p>(3) In deciding whether to approve the change, CASA must take into account any relevant considerations relating to the interests of the safety of air navigation.</p>
<p>§21.305 Organization.</p> <p>(a) Each applicant for or holder of a PMA must provide the FAA with a document—</p> <ul style="list-style-type: none"> (1) Describing how its organization will ensure compliance with the provisions of this subpart; (2) Describing assigned responsibilities, delegated authorities, and the functional relationship of those responsible for quality to management and other organizational components; and (3) Identifying an accountable manager. <p>(b) The accountable manager specified in paragraph (a) of this section must be responsible within the applicant's or production approval holder's organization for, and have authority over, all production operations conducted under this part. The accountable manager must confirm that the procedures described in the quality manual required by §21.308 are in place and that the production approval holder satisfies the requirements of the applicable regulations of subchapter C, Aircraft. The accountable manager must serve as the primary contact with the FAA.</p>	<p>Adopt FAR – Delete CASR</p> <p>21.305 Approval of materials, parts, processes and appliances</p> <p>Whenever a material, part, process, or appliance is required to be approved under this Part, it may be approved:</p> <ul style="list-style-type: none"> (a) under an APMA; or (b) under an ATSO authorisation or letter of ATSO design approval; or (c) in conjunction with type certification procedures for an aircraft, aircraft engine or propeller; or (d) under Subpart 21.N; or (e) in any other manner approved by CASA. <p><i>Source FARs section 21.305 modified.</i></p>

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	<p>Delete CASR</p> <p>21.305A Approval of materials, parts, processes and appliances not covered by regulation 21.305</p> <p>(1) A person may apply to CASA or an authorised person for approval of any material, part, process or appliance that is not covered by regulation 21.305.</p> <p>(2) CASA or an authorised person must, following any inspection that may be necessary, give the approval to the applicant if CASA or the authorised person is satisfied that doing so would be unlikely to have an adverse effect on aviation safety.</p>
	<p>Delete CASR</p> <p>21.306 Use of standard parts and materials</p> <p><i>Standard parts</i></p> <p>(1) A standard part may be used in the manufacture of an aircraft, aircraft engine, propeller or appliance, or another part, if:</p> <p>(a) the standard part is required by:</p> <p>(i) the type design for the aircraft, aircraft engine or propeller; or</p> <p>(ii) the approved design for the appliance or other part; and</p> <p>(b) the standard part was supplied with a document that:</p> <p>(i) was issued under the law of a Contracting State; and</p> <p>(ii) contains a statement that identifies the standard part and the specification with which the standard part complies; and</p> <p>(c) the standard part has zero time in service.</p> <p><i>Note</i> For the definition of <i>standard part</i>, see Part 1 of the Dictionary.</p> <p>(2) For the purposes of determining whether a standard part complies with the specification identified in the document mentioned in paragraph (1) (b) for the standard part, CASA may:</p> <p>(a) direct the person who is using, or proposing to use, the standard part to give CASA:</p> <p>(i) any technical data for the type design for the aircraft, aircraft engine or propeller that relates to the standard part; or</p> <p>(ii) any technical data for the approved design for the appliance or other part that relates to the standard part; or</p> <p>(b) inspect the standard part to determine whether it complies with the specification.</p> <p><i>Materials</i></p> <p>(3) A material may be used in the manufacture of an aircraft, aircraft engine, propeller, part or appliance if:</p> <p>(a) the material is required by:</p> <p>(i) the type design for the aircraft, aircraft engine or propeller; or</p> <p>(ii) the approved design for the part or appliance; and</p> <p>(b) the material complies with an established industry or Australian specification; and</p> <p>(c) the material was supplied with a document that:</p> <p>(i) was issued under the law of a Contracting State; and</p> <p>(ii) contains a statement that identifies the material and the specification with which the material complies.</p> <p>(4) For the purposes of determining whether a material complies with the established industry or Australian specification identified in the document mentioned in paragraph (3) (c) for the material, CASA may:</p> <p>(a) direct the person who is using, or proposing to use, the material to give CASA:</p> <p>(i) any technical data for the type design for the aircraft, aircraft engine or propeller that relates to the material; or</p> <p>(ii) any technical data for the approved design for the part or appliance that relates to the material; or</p>

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	<p>(b) inspect the material to determine whether it complies with the specification.</p> <p><i>Directions</i></p> <p>(5) A direction under paragraph (2) (a) or (4) (a) must:</p> <p>(a) be in writing; and</p> <p>(b) specify the time within which the direction must be complied with.</p> <p>(6) If CASA gives a direction to a person under paragraph (2) (a) or (4) (a), the person must comply with the direction within the time mentioned in the direction.</p> <p>Penalty: 50 penalty units.</p> <p>(7) In this regulation:</p> <p>approved design, for a part or appliance, has the meaning given by subregulation 42.015 (1).</p> <p>(8) An offence against subregulation (6) is an offence of strict liability.</p>
<p>§21.307 Quality system.</p> <p>Each applicant for or holder of a PMA must establish a quality system that meets the requirements of §21.137.</p>	<p>Adopt FAR</p>
<p>§21.308 Quality manual.</p> <p>Each applicant for or holder of a PMA must provide a manual describing its quality system to the FAA for approval. The manual must be in the English language and retrievable in a form acceptable to the FAA.</p>	<p>Adopt FAR</p> <p>Return to quality manufacturing standards – world's best practice.</p>
<p>§21.309 Location of or change to manufacturing facilities.</p> <p>(a) An applicant may obtain a PMA for manufacturing facilities located outside of the United States if the FAA finds no undue burden in administering the applicable requirements of Title 49 U.S.C. and this subchapter.</p> <p>(b) The PMA holder must obtain FAA approval before making any changes to the location of any of its manufacturing facilities.</p> <p>(c) The PMA holder must immediately notify the FAA, in writing, of any change to the manufacturing facilities that may affect the inspection, conformity, or airworthiness of its PMA article.</p>	<p>Adopt FAR</p> <p>Location approvals</p>
<p>§21.310 Inspections and tests.</p> <p>(a) Each applicant for or holder of a PMA must allow the FAA to inspect its quality system, facilities, technical data, and any manufactured articles and witness any tests, including any inspections or tests at a supplier facility, necessary to determine compliance with this subchapter.</p> <p>(b) Unless otherwise authorized by the FAA, the applicant or holder—</p> <p>(1) May not present any article to the FAA for an inspection or test unless compliance with §21.303(b)(2) through (4) has been shown for that article; and</p> <p>(2) May not make any change to an article between the time that compliance with §21.303(b)(2) through (4) is shown for that article and the time that the article is presented to the FAA for the inspection or test.</p>	<p>Adopt FAR</p> <p>Enables CASA to do any inspections and tests.</p>
<p>§21.311 Issuance.</p> <p>The FAA issues a PMA after finding that the applicant complies with the requirements of this subpart and the design complies with the requirements of this chapter applicable to the product on which the article is to be installed.</p>	<p>Adopt FAR</p> <p>Applicant complies with these regulations AND</p> <p>Design complies applicable standards of the product on which the PMA part is to be installed.</p>

FAR (2009 Update)	CASR (1998 version)
<p>§21.313 Duration. A PMA is effective until surrendered, withdrawn, or the FAA otherwise terminates it.</p>	Adopt FAR
<p>§21.314 Transferability. The holder of a PMA may not transfer the PMA.</p>	Adopt FAR
<p>§21.316 Responsibility of holder. Each holder of a PMA must—</p> <p>(a) Amend the document required by §21.305 as necessary to reflect changes in the organization <u>and provide these amendments to the FAA;</u></p> <p>(b) Maintain the quality system <u>in compliance with the data and procedures approved for the PMA;</u></p> <p>(c) <u>Ensure that each PMA article conforms to its approved design</u> and is in a condition for safe operation;</p> <p>(d) <u>Mark the PMA article for which an approval has been issued. Marking must be in accordance with part 45 of this chapter, including any critical parts;</u></p> <p>(e) <u>Identify any portion of the PMA article (e.g., sub-assemblies, component parts, or replacement articles) that leave the manufacturer's facility as FAA approved with the manufacturer's part number and name, trademark, symbol, or other FAA approved manufacturer's identification;</u></p> <p>(f) <u>Have access to design data necessary to determine conformity and airworthiness for each article produced under the PMA;</u></p> <p>(g) <u>Retain each document granting PMA and make it available to the FAA upon request;</u> and</p> <p>(h) <u>Make available to the FAA information regarding all delegation of authority to suppliers.</u></p>	<p>Adopt FAR</p> <p>Manufacturer responsibilities.</p>
<p>§21.319 Design changes.</p> <p>(a) Classification of design changes.</p> <p>(1) A “minor change” to the design of an article produced under a PMA is one that has no appreciable effect on the approval basis.</p> <p>(2) A “major change” to the design of an article produced under a PMA is any change that is not minor.</p> <p>(b) Approval of design changes.</p> <p>(1) Minor changes to the basic design of a PMA may be approved using a method acceptable to the FAA.</p> <p>(2) The PMA holder must obtain FAA approval of any major change before including it in the design of an article produced under a PMA.</p>	<p>Adopt FAR</p> <p>New Definitions</p> <p>Enables manufacturers to make minor changes to improve their product without CASA involvement.</p>
<p>§21.320 Changes in quality system. After the issuance of a PMA—</p> <p>(a) Each change to the quality system is subject to review by the FAA; and</p> <p>(b) The holder of the PMA must immediately notify the FAA, in writing, of any change that may affect the inspection, conformity, or airworthiness of its article.</p>	<p>Adopt FAR</p> <p>Changes to Quality System</p>