

Regulatory Attitudes Toward PMA

**A Presentation To:
PMA Parts & DER Repairs – 2010**

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**by
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Introduction

The Source – The United States

The EASA Benefit

The Asian Environment

Conclusions

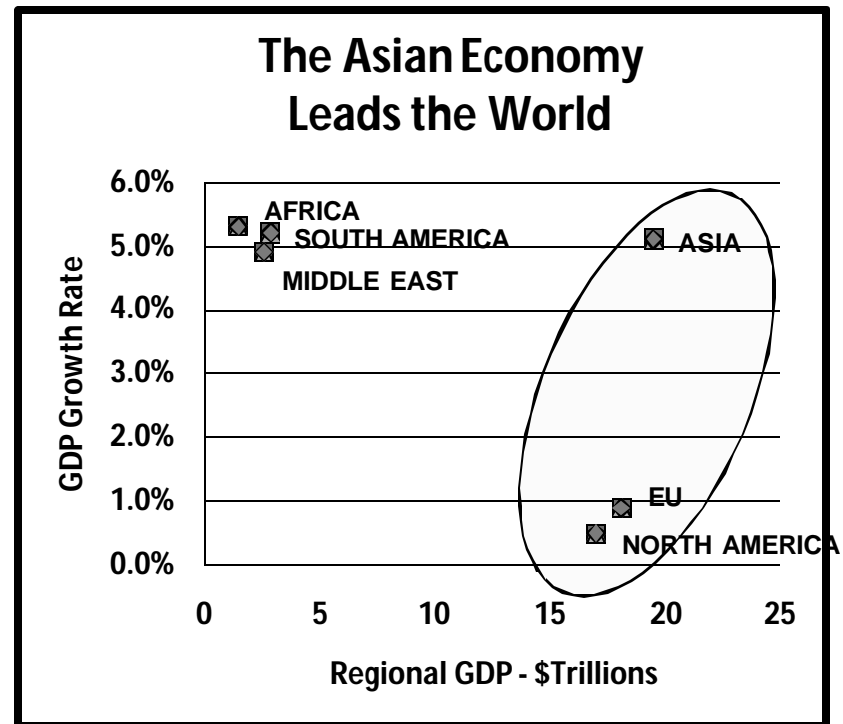
Leasing Companies Inhibit PMA Growth Because Of Their Fear Of Financial Consequences

- **Operating leases account for about 40% of the transport aircraft fleet.**
- **In the past differing levels of acceptance of PMA by various national airworthiness authorities was likely to block the transfer of aircraft at the end of a lease agreement.**
- **Lessors could be stuck making payments on an aircraft without a compensating revenue stream.**
- **Expensive shop visits to replace PMA before a transfer were also a concern.**
- **Lessors avoid the risk of a blocked lease transfer by prohibiting the use of PMA in their lease contracts.**

Have recent changes in the regulatory environment reduced the risk of a blocked lease transfer?

The Largest Markets Were Used To Test the Lessor Perception Of The Risk Of Blocked Transfers

- **Asia, Europe, and North America are the largest material markets.**
 - **Small, fast growing markets**
 - Africa
 - South America
 - Middle East
 - **Large, slowly growing markets**
 - Europe
 - North America
 - **Large, fast growing markets**
 - Asia
- **Only countries operating more than 100 aircraft were reviewed.**



Source: The CIA Factbook

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The FAA Created, Regulates, & Protects PMA

- **The FAA created the Parts Manufacturer Approval in July, 1955 with Civil Air Regulation 1-55.**
- **Since this time the FAA has regularly updated the regulatory structure governing PMA to keep abreast of the industry's dynamic growth.**
- **The FAA appears regularly at industry conferences to inform stakeholders about regulation changes and to provide advanced information on potential future changes.**
- **The FAA protected PMA suppliers from baseless OEM charges by performing an objective study of the effects of PMA and DER that countered those charges.**
- **The FAA program to aggressively pursue comprehensive Bilateral Airworthiness Safety Agreement treaties with other airworthiness authorities has opened overseas markets for PMA.**

Bilateral Aviation Safety Agreements

Open the Door to PMA Around The World

- The FAA sees an opportunity to eliminate non-value adding duplication of work by using airworthiness findings accomplished by other competent aviation authorities.
- The process starts with a mutual investigation to determine that the certification systems are sufficiently similar in structure, performance, and technical competence to allow reciprocal acceptance of findings.
- Parties then agree to accept each other's airworthiness approvals *including design findings and production approvals for PMA parts.*
- The requirements for export/import documentation are spelled out in the treaty procedures.

All BASAs follow the same general format, but each contains some variations in the details depending upon the specific country agreement.

The FAA Is Also Concerned That The Industry May Attempt To Move Beyond Its Competence

- **The entrepreneurial PMA industry has continuously pushed existing boundaries for the acceptance of PMA parts.**
 - **Simple parts such as brackets and bushings**
 - **Significant parts such as combustors**
 - **Rotating parts such as compressor blades**
 - **Rotating hot section turbine blades**
 - **Life limited parts via STC**
- **At each stage customers snapped up the parts, and the PMA suppliers moved on to new horizons.**
- **The FAA has had to move quickly to modernize and strengthen regulations and policies to avoid falling behind the industry.**

At all costs we need to avoid the specter of an ignorant, howling media combined with a second-guessing Congress.

The FAA Has Tightened Controls On Engine PMA For Critical And Important Parts

- **The FAA has categorized parts based on their most severe potential failure effect.**
 - **Type 1: Critical – Failure directly effects airworthiness of aircraft.**
 - **Type 2: Complex or important – Failure may reduce capability of aircraft or ability of crew to cope with adverse situations.**
- **The FAA expects a test and substantiation plan from applicants for Type 1 and Type 2 parts.**
- **The FAA has also developed costly test templates for many Type 1 and Type 2 part families.**
 - **50 new blades must be used for air cooled turbine blades.**
 - **An engine endurance test may be required.**

Only resource rich organizations with a high degree of technical competence should apply for these parts.

While We're On The Subject of North America

- **Canada – Transport Canada Civil Aviation (TCCA)**
 - **BASA signed in 2000 – recognizes each other's system as part of the overall certification system.**
 - **PMA approved without limitation.**
 - **8130-3 and standard part marking requirements.**
- **Mexico – Direccion General de Aeronautica Civil (DGAC)**
 - **BASA signed in 2009 – each views other's certifications and findings as valid as their own.**
 - **PMA approved without limitation.**
 - **8130-3 and standard part marking requirements.**

If you can get it approved in the US, you can market it anywhere in North America.

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EASA Means One Approval Rather Than Many

- **Europe consists of 50 countries ranging in size from Russia to Vatican City.**
 - **Many of these countries had their own National Airworthiness Authority.**
 - **These NAAs all had different levels of competence, biases, and quirks.**
- **The JAA was formed in 1970 to standardize Europe's NAAs, but each nation still retained regulatory power in its own NAA.**
- **EASA was formed in 2002 to assume regulatory power for 27 EU states plus 4 associate states.**
- **JAA's airworthiness functions have been transferred to EASA.**
- **A JAA liaison function incorporates EASA regulations by reference and accepts EASA approvals as JAA recommendations to its 14 non-EU members.**

A single EASA approval can remove PMA transfer barriers within Europe.



The BASA With EASA Is On Hold

- **A Bilateral Aviation Safety Agreement has been negotiated with EASA but its activation has been delayed due to a disagreement over fees.**
- **A BASA with EASA would provide automatic acceptance of FAA design findings.**
- **FAA approval of PMA would automatically translate into EASA approval for all FAA PMA except for “critical” parts.**
 - **“a part for which a replacement time, inspection interval, or related procedure is specified in the Airworthiness Limitations section of the manufacturer’s maintenance manual or ICA.**
 - **Critical parts will require approval through the FAA STC process prior to submission to the EASA STC process.**
- **In the future EASA will add more guidance for “influencing” (Type 2) parts.**

Much Of The BASA Has Been Implemented Through An Executive Agreement

- **6 existing BASA agreements with EU countries provide the basis for the agreement.**
 - **France, Germany, Italy, Netherlands, Sweden, UK**
 - **Airworthiness and design approvals for the agreements managed by EASA , not the NAAs.**
- **Where there is no bilateral, EASA general clauses for automatic acceptance of PMA apply.**
 - **PMA part has previously been approved in EU.**
 - **PMA obtained under a licensing agreement from the OEM.**
 - **PMA approval from FAA for non-critical part (statement to be included in 8130-3).**
- **Critical parts must go through the STC process.**

Philosophy is similar to the FAA, "simplify the non-critical parts and make it very difficult for critical parts."

Russia And Turkey Are The Most Important Non-EU Nations In Europe

- **Russia – Interstate Aviation Committee Aviation Registry (AR) and the Federal Aviation Authority of Russia (FAAR)**
 - **BASA signed in 1998 – each views other’s certifications and findings as valid as their own.**
 - **The AR will accept FAA Airworthiness Approval Tags on parts only when the FAA certifies that each part(s)**
 - Conforms to AR approved design data
 - Is marked in accordance with approved procedures (standard)
 - Meets all additional requirements of the AR, as notified.
 - **Parts must have an 8130-3 tag referencing document for approved design data.**

This early BASA is not as strong and comprehensive as current BASA treaties.

Russia And Turkey (continued)

- **Turkey – Turkish Directorate of Civil Aviation (DGCA)**
 - **No bilateral aviation agreement with the US.**
 - **Member of the JAA and working to become member of EU.**
 - **Turkish regulations concentrate on maintenance, training, and operation without a strong airworthiness certification function.**
 - **Turkey has signed a working arrangement with EASA and is increasing its partnership with EASA on regulatory matters.**

Turkey and Russia appear to be open to FAA PMA, however, companies wishing to market there need to carefully investigate the requirements first.

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China Is The Largest Aviation Market In Asia

- **China - General Administration of Civil Aviation of China (CAAC)**
- **Bilateral Aviation Agreement - Updated in 1995**
 - **The CAAC accepts type design approval of civil aeronautic products for which the FAA is the certifying authority. (includes materials, parts, and components)**
- **CAAC approach to PMA**
 - **Not a new topic to the CAAC. They can see many benefits from PMA.**
 - **PMA cannot be substituted for OEM part in ETOPS critical application.**
 - **PMA must have 2500 hours or 1250 cycles of trouble free operation before it can be approved for China.**
 - **BELAC HPT blades have been approved for use in Chinese airlines. (Willing to accept Type 2 parts without restriction.)**

The CAAC Focuses Its PMA Control Efforts On The Airlines

- **The CAAC controls the airline PMA approval process.**
 - **Airline must have verified copy of FAA approval.**
 - **Must have written agreement between PMA manufacturer and the airline. Contents are mandated by the CAAC.**
 - **Airline must have a CAAC approved PMA evaluation procedure.**
 - Critical parts and service experience assessment
 - Evaluation of requirement for ICA documents.
 - Requirements for evaluation records and reporting
 - Procedures for publishing authorization for use.
- **The CAAC also regulates procedures for management of PMA in service.**

CAAC mandates for airlines represent good practices rather than barriers to PMA, and the airlines are open for PMA business.

The FAA Has Also Negotiated Aviation Agreements In Other Major Asian/Pacific Markets

- **Australia - Civil Aviation Authority of Australia (CASA)**
 - **BASA agreement – 2005**
 - Each party views the other's certifications and findings as valid as their own.
 - CASA will accept FAA authorized Airworthiness Approval Tags for modification and replacement parts for all products and appliances regardless of the State of Design.
- **Indonesia - Directorate General of Air Communication (DGAC)**
 - **BAA agreement – 1992**
 - Approvals are to be based, to the maximum extent practicable on the certifications and findings of the exporting authority.
 - Parts – The importing authority shall accept the evaluations made by the exporting authority.

Asian/Pacific Agreements (continued)

- **Japan – Civil Aviation Bureau of Japan (JCAB)**
 - **BASA agreement – 2009**
 - Each party views the other's certifications and findings as valid as their own.
 - The JCAB shall accept an FAA Authorized Release Certificate on a new, modification and/or replacement part produced by a US production approval holder.
- **Malaysia - Department of Civil Aviation (DCA)**
 - **BASA agreement – 2002**
 - Each party views the other's certifications and findings as valid as their own.
 - PMA parts with associated approvals are eligible for import into Malaysia.

Asian/Pacific Agreements (continued)

- **Singapore - Civil Aviation Authority of Singapore (CAAS)**
 - **BASA agreement - 2007**
 - Each party views the other's certifications and findings as valid as their own.
 - PMA parts with associated approvals are eligible for import into Singapore.
 - Singapore's aviation strategy very much favors OEMs.
- **South Korea - Korean Civil Aviation Safety Authority (KCASA)**
 - **BASA agreement – 2008**
 - Each party views the other's certifications and findings as valid as their own.
 - PMA parts with associated approvals are eligible for import into the Republic of Korea.
 - Korea accepts BELAC HPT blades (Type 2 parts).

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- **Outstanding performance by PMA suppliers and diligent efforts by the FAA have broken down regulatory barriers against PMA around the world.**
- **The FAA continues to negotiate favorable BASA agreements at the rate of about two per year.**
- **The risk of national airworthiness authorities blocking lease transfers because of PMA is rapidly approaching the status of a myth.**

It's time to attack LEASING MYTH #2, “ *Aircraft values are reduced by the installation of PMA.*”