



PMAs on Leased Aircraft
Keith Coleman
President, ISA



WENCOR

KircoDefense

LaSALLE

INTERFAST

DIXIE AEROSPACE

YAVNET

SS



The banner features the iSA logo in the top left corner. To its right is a search bar with the text "Search:" and a magnifying glass icon. Below the logo and search bar is a navigation menu with the following items: HOME, ABOUT iSA, PARTS/SUPPLIERS, SERVICES, RESOURCES, E-COMMERCE, and CONTACT US. The main content area has a dark background with a collection of mechanical parts including gears, a light bulb, a bracket, a ring, and various bolts. On the left, the text "The iSA Goal:" is followed by "iSA provides a single point of contact for all your expendable/consumable needs." and a "LEARN MORE >" button. On the right, there is a small image of an airplane in flight above a "LOGIN TO E-COMMERCE >" button. At the bottom of the banner, a row of logos for partner companies is displayed: UFC, WENCOR, KitGoDefense, LASALLE, INTERFAST, DIXIE AEROSPACE, and AVNET. Below the banner, the text "ISA/Wencor Confidential" is centered, and the number "2" is in the bottom right corner.

iSA

Search:

HOME ABOUT iSA PARTS/SUPPLIERS SERVICES RESOURCES E-COMMERCE CONTACT US

The iSA Goal:
iSA provides a single point of contact for all your expendable/consumable needs.

LEARN MORE >

LOGIN TO E-COMMERCE >

UFC WENCOR KitGoDefense LASALLE INTERFAST DIXIE AEROSPACE AVNET

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Integrated Supplier Alliance (ISA) Partners

Strategic Partnership Created in 2002 to Provide a
Totally Integrated Aircraft Consumable Solution

Provide an Industry-Leading Product Breadth while
Maintaining Product Competency

- Avnet ElectroAir - Avionics Components & Services
- LaSalle - Lamps, Displays, Fuses, Batteries, & Cable Ties
- Dixie Aerospace - Bearings / Bushings , & PMAs
- UFC Aerospace – Aerospace Hardware & Chemicals
- Interfast – Aerospace Hardware
- Wencor - Seals, Filters, Hoses, Hardware & PMAs
- S&S – Tooling & Non-Flight Consumables

Wencor's PMA Parts

- Air Cycle Machines
- Airframes
- Auxiliary Power Units
- CSDs, IDGs and Generators
- Engines and Gear Box
- Fan Reverser
- Fuel Systems
- Hydraulics
- Landing Gear
- Pneumatics
- Starters
- Other systems

2,500+ Wencor PMA*
1,200+ Customers
400+ New PMAs/Yr



CSD



Seals



Fuel Pump



ATS



Engines



ACM



APU



Fan Reverser

* 3,800+ additional PMAs
under distribution

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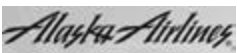
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ISA Advantage

- Expertise in Expendables and Consumables
- Broad Commodity Coverage
- Communication & Contract Consolidation
- Overhead Cost Reduction – At No Additional Expense
- Customized Web Interface
- Competitive Pricing
- On Site / Dedicated Representation

More Enterprise = Lower Costs and Greater Savings

ISA Customer Base

- Delta Contract - 10/1/2002 
- Bombardier Business Contract - Tucson 02/01/2006 
- Bombardier Regional Contract - Tucson / WVAC 04/10/2006
- Avianca Contract - 06/14/2007 
- Alaska Contract – 04/15/2008 
- Aviation Technical Services – 12/1/2008 
- Czech Airlines – 12/12/2008 
- SAS – 01/15/2009   
- STAR Alliance – 09/01/2009 
- United Airlines – 1/20/2010 
- ADP/ANZ 

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Supplier Consolidation Examples

- Customer #1: 6 Suppliers ? 1 Supplier (ISA)
- Customer #2 : 6 Suppliers ? 1 Supplier (ISA)
- Customer #3 : 15 Suppliers ? 1 Supplier (ISA)
- Customer #4 : 10 Suppliers ? 1 Supplier (ISA)
- Customer #5 : 10 Suppliers ? 1 Supplier (ISA)
- Customer #6 : 20 Suppliers ? 1 Supplier (ISA)

Reduced Number of Suppliers = Reduce Overhead Costs

PMAs On Leased Aircraft

OEM vs. Non-OEM Parts

**Which was maintained using ONLY OEM parts &
how was the Market Value impacted ?**



**2005 Ford F-150 Ext. Cab
65,000 mi.
5.4L V8
15 MPG
Auto, RWD**



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Market Value: \$18,980



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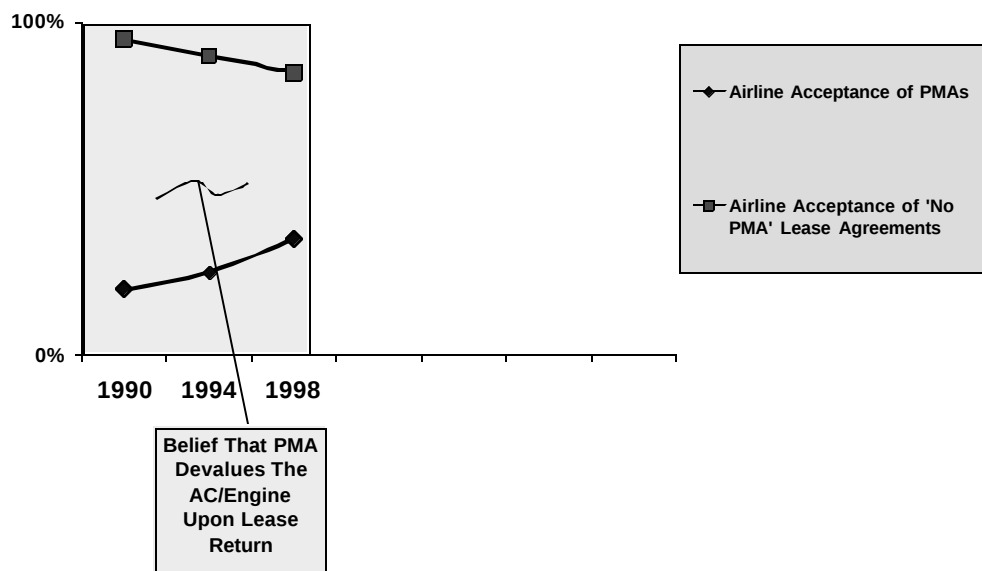
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The Lessor Argument

- **The use of PMA Parts ‘Devalues’ the A/C or Engine**
 - The available lease market is diminished due to the qty of airlines who do not want to utilize PMA
 - PMA parts have a lower cost, therefore, they reduce the value of the commodity
- **Regulatory authorities are unclear on PMA legitimacy**
- **PMA parts impact aircraft reliability**
- **This is our standard contract language . . . We can not change . . . We must be consistent**

PMA Acceptance

Lease Market Impact

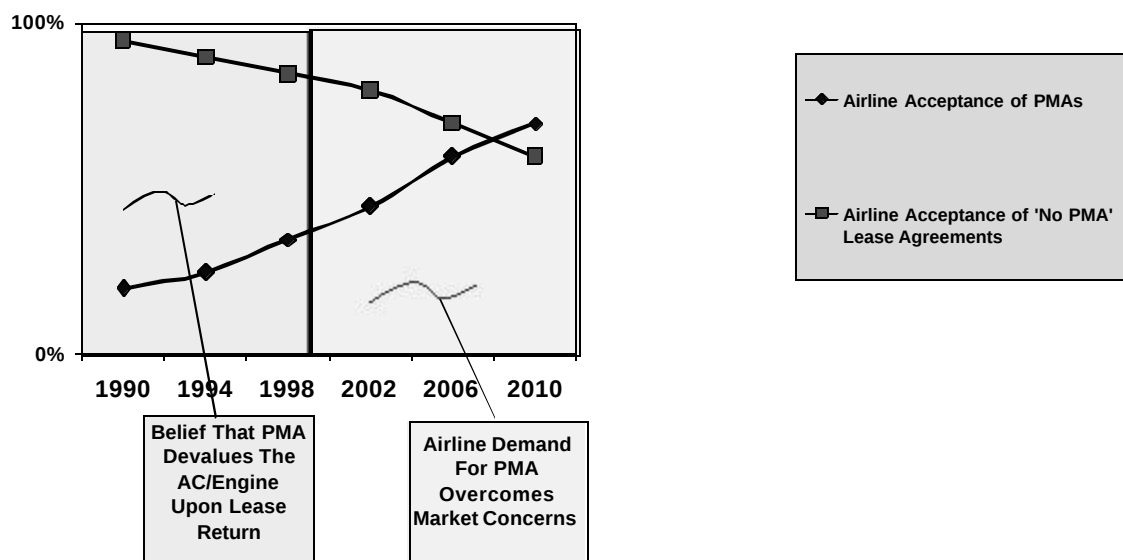


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PMA Acceptance

Lease Market Impact



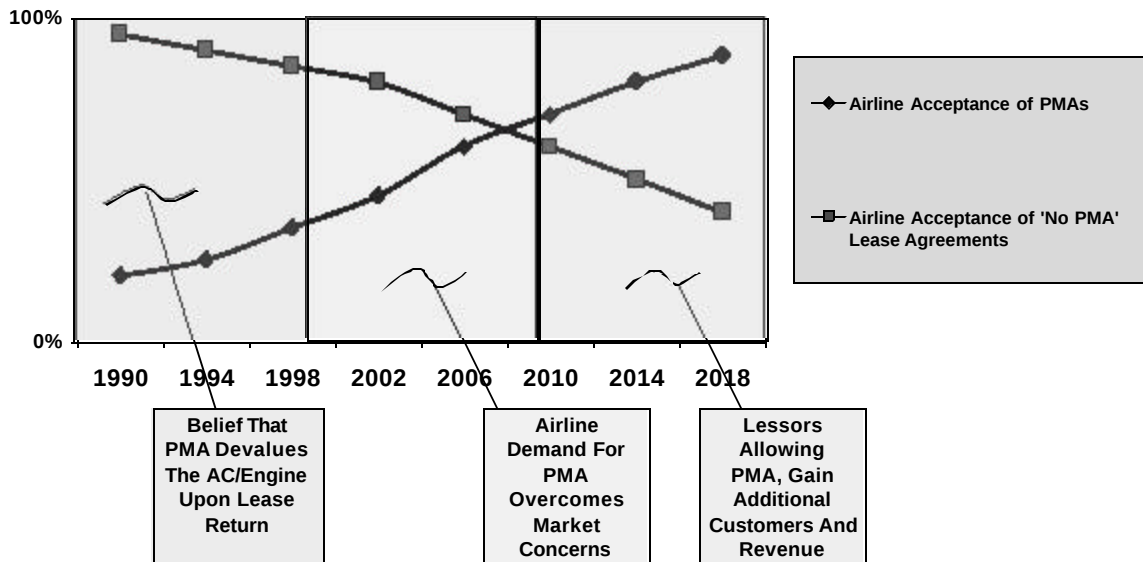
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PMA Acceptance

Lease Market Impact

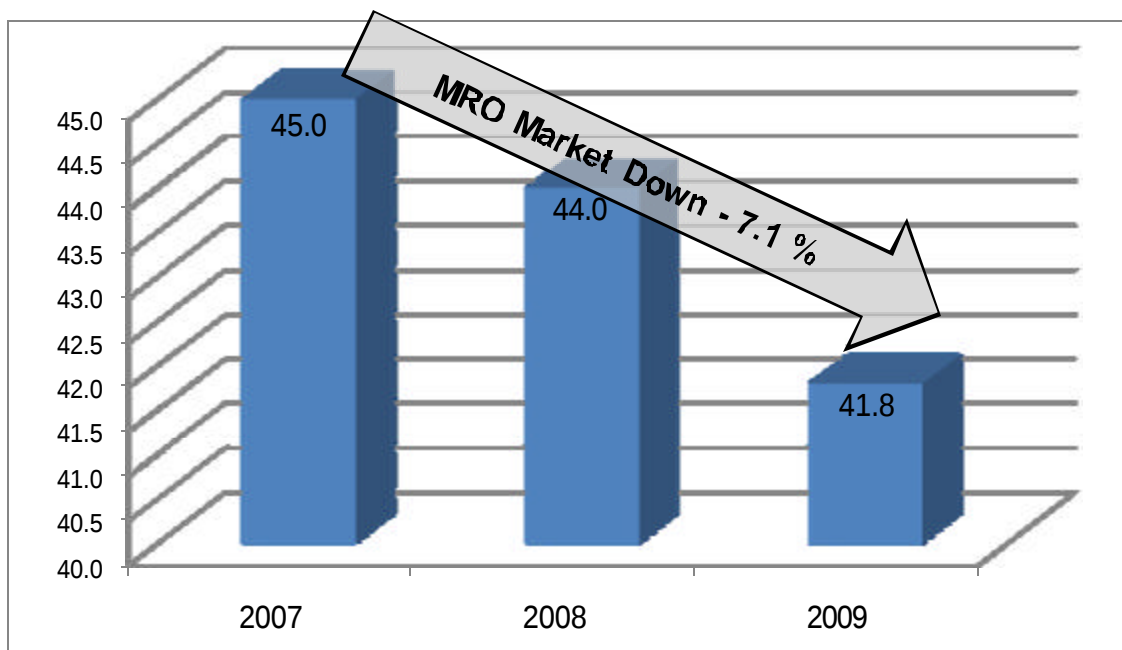
Lessors who continue to prohibit PMA will begin to lose market share



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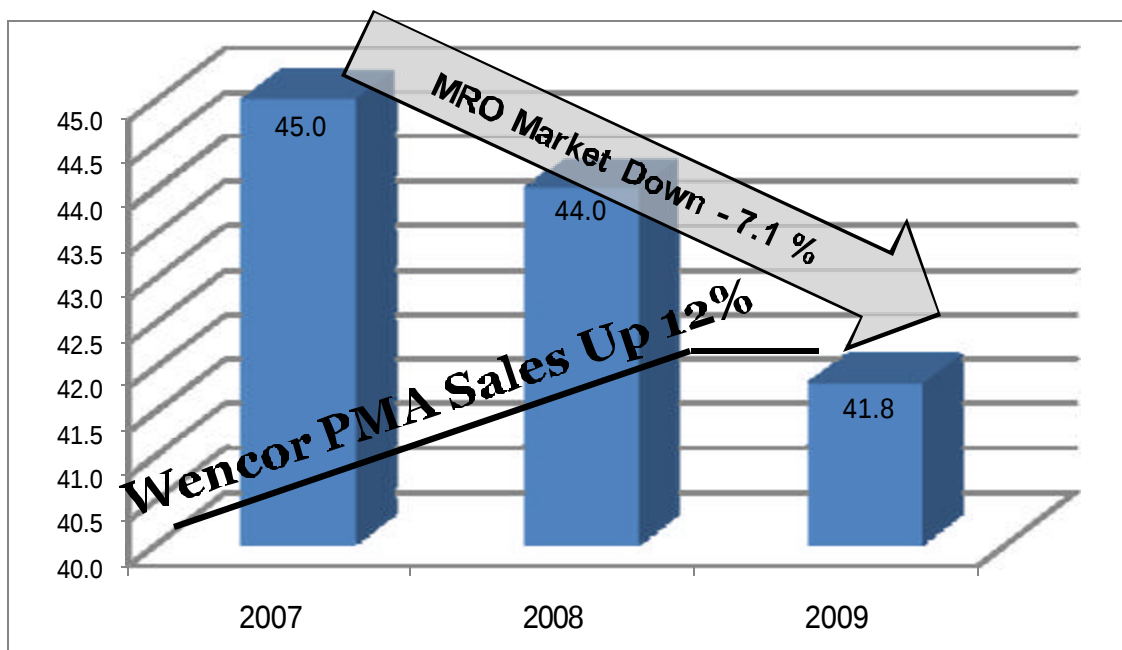
MRO Market Trend (\$B)



AeroStrategy - 2009

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MRO Market Trend (\$B)

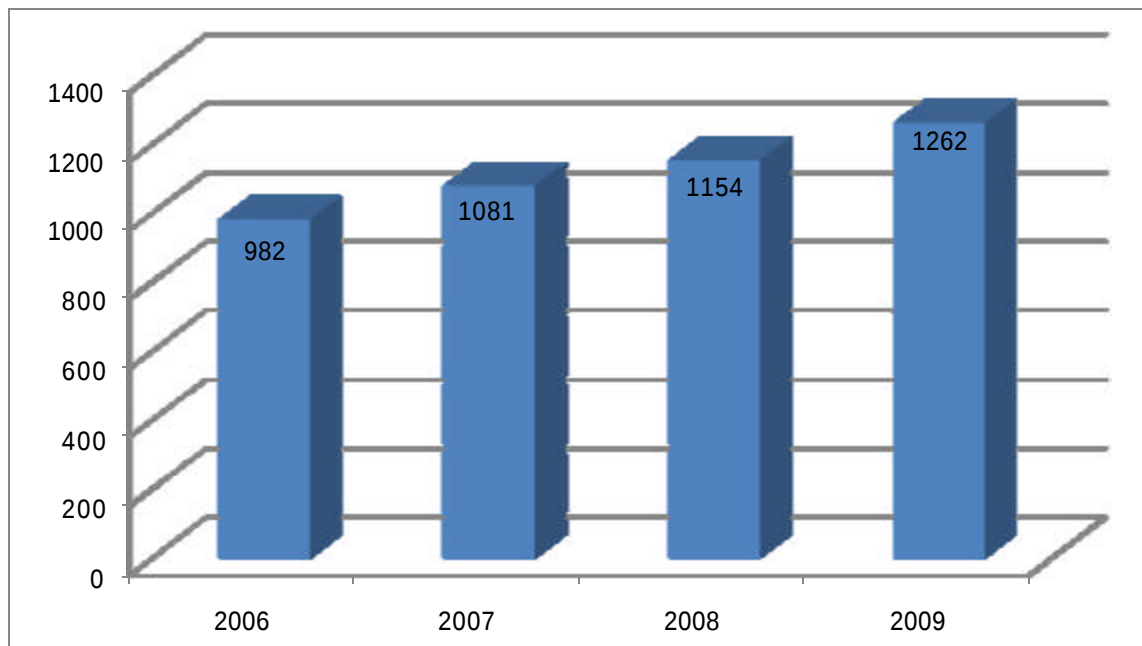


PMA Growth Outpaces The MRO Market Decline

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Wencor PMA Customer Growth



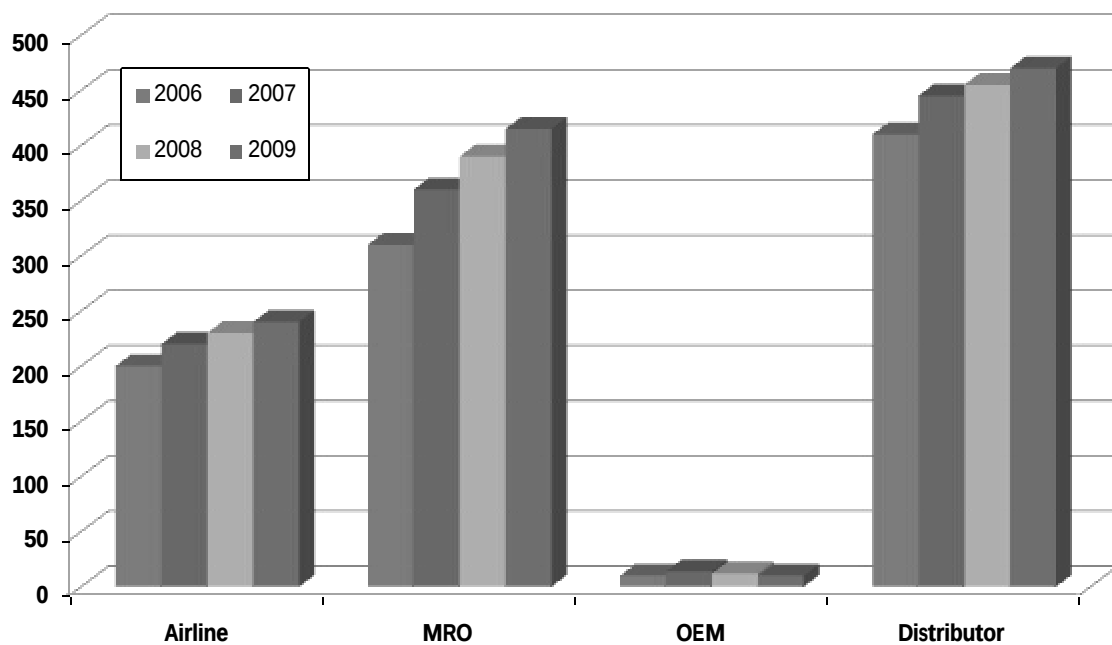
Wencor has sold PMA to 100% of the top 10 airlines in the world & 92% of the top 50 domestic airlines

A majority of the commercial airline fleet uses PMA

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PMA Customers: Even OEMs Use PMA Parts



OEM Sales: Bombardier, GE, P&W, Hamilton, Honeywell, Curtis Wright, Goodrich, Raytheon etc.

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PMA Users With Leased Aircraft

A Few Examples



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PMA Users With Leased Aircraft

A Few Examples

FedEx

 **UNITED AIRLINES**

 **Lufthansa**

 **Delta Air Lines**

JAL

COMAIR

SkyWest
AIRLINES®


Garuda Indonesia

 **American Airlines®**

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Lessors Allowing The Use Of PMA

A Few Examples

United Airlines

- AAR Aircraft Sales & Leasing
- AWAS
- Babcock & Brown Aircraft Management LLC
- Banc of America Leasing & Capital LLC
- CIT Aerospace
- First Greenwich Kahala Ltd

GECAS
Macquarie AirFinance
ORIX Aircraft Corp
ORIX Aviation Systems
Pembroke Group
Q Aviation LLC

Delta Air Lines

- Banc of America Leasing & Capital LLC
- CIT Aerospace
- GECAS
- Global Knafaim Leasing Ltd
- Global Principal Finance Company LLC
- Guggenheim Aviation Partners

ILFC
Jet Trading And Leasing
Pacific AirFinance
Sky Holding LLC
SkyWorks Leasing LLC
Vx Capital Partners

American Airlines

- AerCap
- AWAS
- Banc One Capital Corp
- Boeing Capital Corp
- RPK Capital Management Group LLC
- Global Knafaim Leasing Ltd
- Jetscape Inc

Macquarie AirFinance
Pacific AirFinance
Pembroke Group
RBS Aviation Capital
GECAS
Volito Aviation AB

Reference: MRO Prospector

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Lessors Inconsistent In The Use Of PMA

United Airlines

- AAR Aircraft Sales & Leasing
- AWAS
- Babcock & Brown LLC (C)
- Banc of America Leasing & Capital LLC
- CIT Aerospace
- First Greenwich Kahala Ltd

- GECAS (C)
- Macquarie AirFinance (C)
- ORIX Aircraft Corp
- ORIX Aviation Systems
- Pembroke Group
- Q Aviation LLC

Delta Air Lines

- Banc of America Leasing & Capital LLC
- CIT Aerospace
- GECAS (C)
- Global Knafaim Leasing Ltd
- Global Principal Finance Company LLC
- Guggenheim Aviation Partners

- ILFC
- Jet Trading And Leasing
- Pacific AirFinance
- Sky Holding LLC
- SkyWorks Leasing LLC
- Vx Capital Partners

American Airlines

- AerCap (C)
- AWAS
- Banc One Capital Corp
- Boeing Capital Corp
- RPK Capital Management Group LLC
- Global Knafaim Leasing Ltd
- Jetscape Inc

- Macquarie AirFinance
- Pacific AirFinance
- Pembroke Group
- RBS Aviation Capital
- GECAS (C)
- Volito Aviation AB

Reference: MRO Prospector

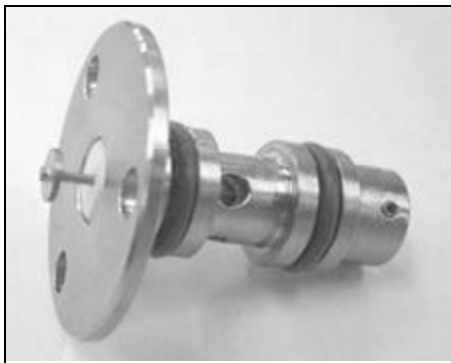
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The FAA Supports PMA

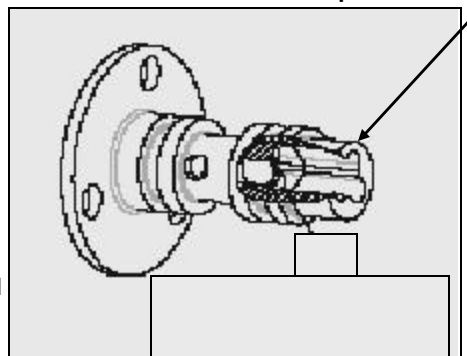
- FAA Order 8110.42C provides approval procedures and requirements for PMA
- The Special Airworthiness Information Bulletin (SAIB) NE-08-40 states the following:
 - “In today’s competitive market, owners and operators are continuously searching for ways to reduce costs while maintaining safety. One way is to reduce maintenance expenses by finding alternative sources of replacement parts.”
 - “PMA and STC parts are thoroughly evaluated for compliance with respect to any changes they introduce and their effect on the original type design. The need for supplemental ICAs (instructions for continued airworthiness), new airworthiness limitations and other conditions are established by the FAA to ensure the safe integration of the PMA and STC parts into the product.”
 - While some OEMs attempt to monopolize the parts market by edict of warranty or by statements to follow the OEMs instructions under 43.12-1A, the SAIB clearly states that an approved PMA part is functionally as good as the original

The FAA sends a message to OEMs & associated misinformation

Reliability Improvement Valve Body Example



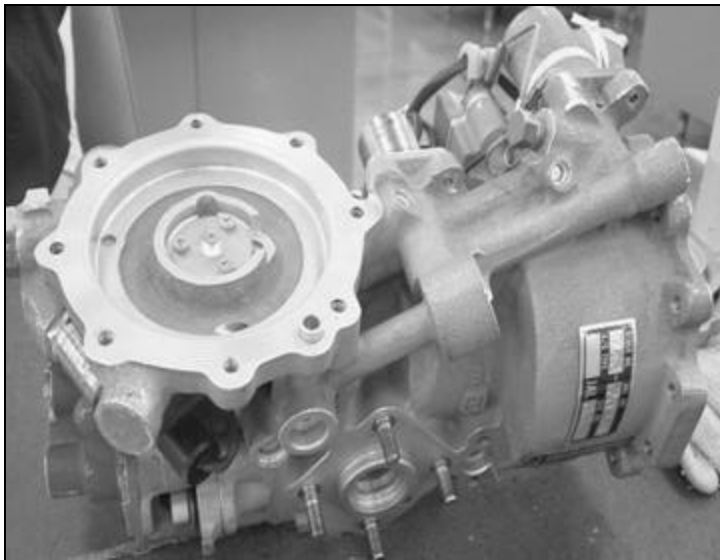
Customer asked Wencor to change the material of existing Valve Body P/N 746528-5 from Aluminum to Stainless Steel



Scarring in the Aluminum body, caused by the return spring, lead to the valve sticking in the open position

Reliability Improvement

Valve Body Example



Customer successfully conducted an in-service evaluation of the new stainless steel valve body P/N 746528-5WE

Fewer Issues With Other FAA Approvals

ie. DER . . . Why Not PMA

FAA-DER Repairs:

OEM parts are analyzed

- Dimensional analysis
- Material analysis
- Hardness analysis
- Coating analysis
- Surface finish analysis

Develop process to correct defect

FAA-DER approval of repair process

Quality inspection

DMIR / DAR issue 8130-9

FAA APPROVED !!!!!

FAA-PMA Parts:

OEM parts are analyzed

- Dimensional analysis
- Material analysis
- Hardness analysis
- Coating analysis
- Surface finish analysis

Develop Process to manufacture to print

FAA-DER approval of design data

Quality inspection (first article)

DMIR / DAR issue 8130-9

FAA-ACO approved design

FAA-MIDO issues FAA-PMA Supplement

FAA APPROVED !!!!!

Engage The Leverage of Alliances

Work together to identify lessor inconsistencies



STAR ALLIANCE

U-S AIRWAYS *EGYPTAIR* TURKISH AIRLINES  UNITED

 TAP PORTUGAL  THAI  swiss  Lufthansa

SINGAPORE AIRLINES   Spanair  SOUTH AFRICAN AIRWAYS

LOT POLISH AIRLINES SHANGHAI AIRLINES 

 Scandinavian Airlines

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Engage The Leverage of Alliances

Work together to identify lessor inconsistencies



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Why Lease Agreements Must Allow PMA

- **High % (Majority) of airlines allow the use of PMA**
- **The FAA supports the use of PMA and sees the benefits**
- **Many Lease agreements don't restrict the use of many DER repairs, why should other FAA approved processes be different**
- **A majority of airlines are demanding that lease agreements allow the use of PMAs**
- **Lessors ARE allowing some airlines to use PMA (Especially on the airframe and in accessories/components)**

Airlines MUST Insist On Allowance Of PMA In Existing & New Agreements

Actions Airlines Can Take

- **Meet with Lessors to discuss the importance of the use of PMA**
 - New Agreements
 - Existing Agreements
- **Utilize the arguments provided – Focus on Lessor Inconsistencies**
- **PMA suppliers would be glad to also participate in discussions**
- **Engage the assistance of alliance partners**
 - Openly share lessons learned in Lessor negotiations
 - Meet with Lessors together as a group