

MARPA Conference 2015



Federal Aviation
Administration

The Future of FAA PMA

Presented to: Conference Attendees

By: FAA AIR-110

Date: October 28, 2015



Topics

- **Presenter Bios**
- **How did we get here**
- **The Facts about PMA**
 - RGL data and trending analysis
- **Current PMA Policy and Guidance**
- **New Initiatives already in planning**
 - Streamlining expansions
 - Part 21 Final Rule review
 - International expansion
 - 3 Day Class (OKC and SAA)
- **Future Initiatives**



Presenter Bio

- **Who is Angelia Collier**

- I have been with the FAA for 11 years
- Member of Part 21 rulemaking team
- PMA policy expert since 2007
- Production approval procedures policy expert since 2010
- Prior to the FAA
 - Senior Analyst, Department of Transportation, Office of Inspector General (OIG), Aviation & Special Programs

Presenter Bio

- **Who is Robert Sprayberry?**

- I have been with the FAA for 7 years
 - Started with the Atlanta ACO as a Structures Engineer
- Moved to FAA HQ in Sept. 2012
- Transitioned to work the PMA Policy with John Milewski in Nov. 2012
- Prior to the FAA:
 - Sr. Project Engineer for HEICO Aerospace Corp.
 - Structural Liaison Engineer for Vision Composites
 - PW2000/4000 Co-op Engineering Student at Delta Air Lines



How did we get here?

- **Key events in PMA history**

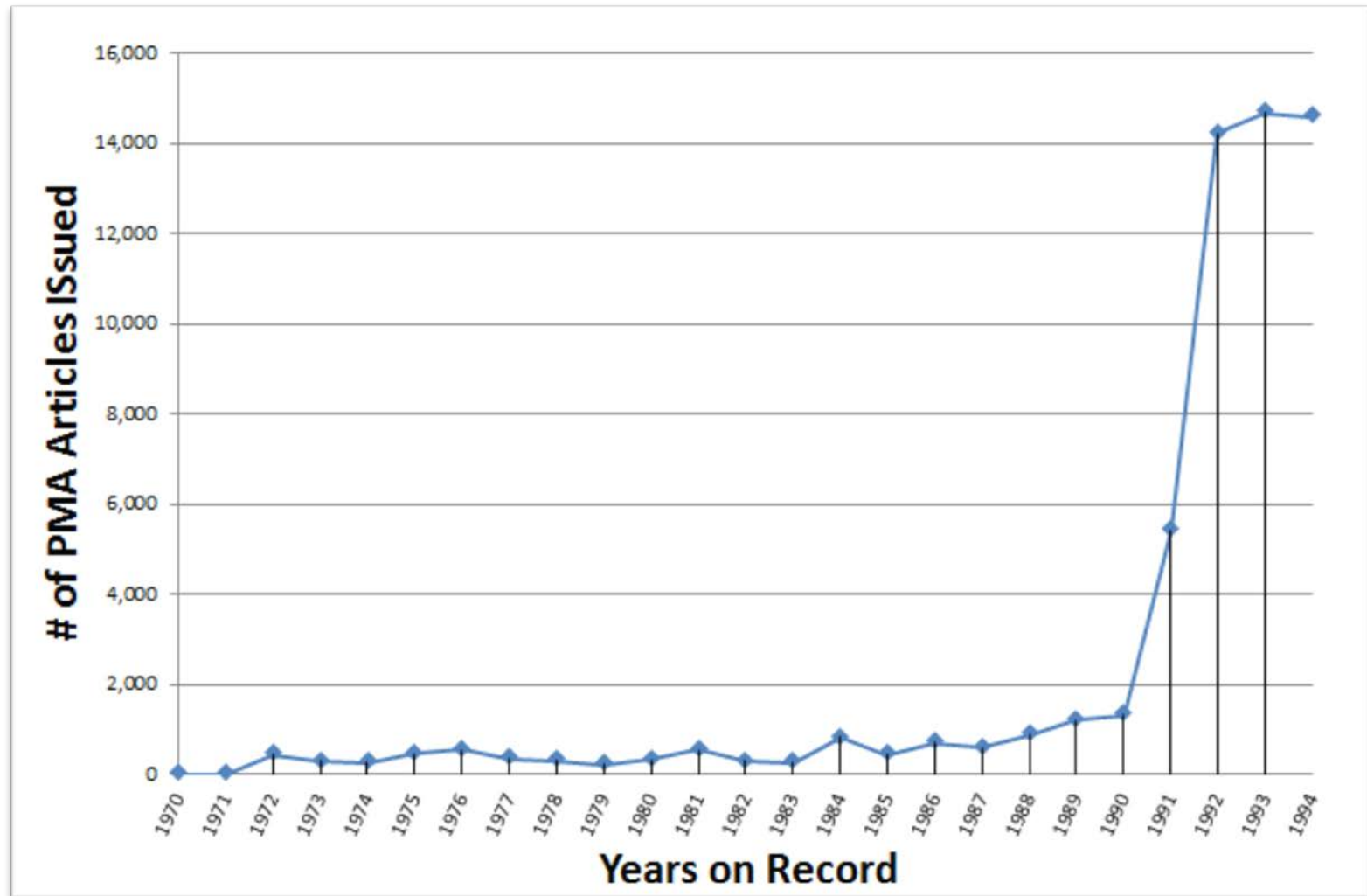
- 1965: The FAA was issuing 14 CFR part 21.303
 - Set the original basis for replacement and modification articles (called parts way back then)
 - 21.303 circa 1965 was VERY descriptive
 - Contained many of the key steps in what would be come known as the PMA process
- 1972: 14 CFR part 21.303 is revised along with a large portion of part 21 in general
 - AC 21-303.1A becomes the first real “guidance” document issued for the FAA PMA process

How did we get here? Cont'd

- **Key events in PMA history**
 - 1984: The COMSIS Report, Phase 1
 - Focused on issue mitigation for existing (limited) PMA guidance
 - Proposal of alternatives to the current state of affairs
 - 1988: The COMSIS Report, Phase 2
 - Focused on refining the Phase 1 recommendations
 - Evaluated industry and economic impact of alternatives
 - Laid the foundation for the eventual Order 8110.42 Rev. IR
 - 1995: 8110.42 is born
 - The result of years of planning and review
 - Established the four (4) methods of PMA

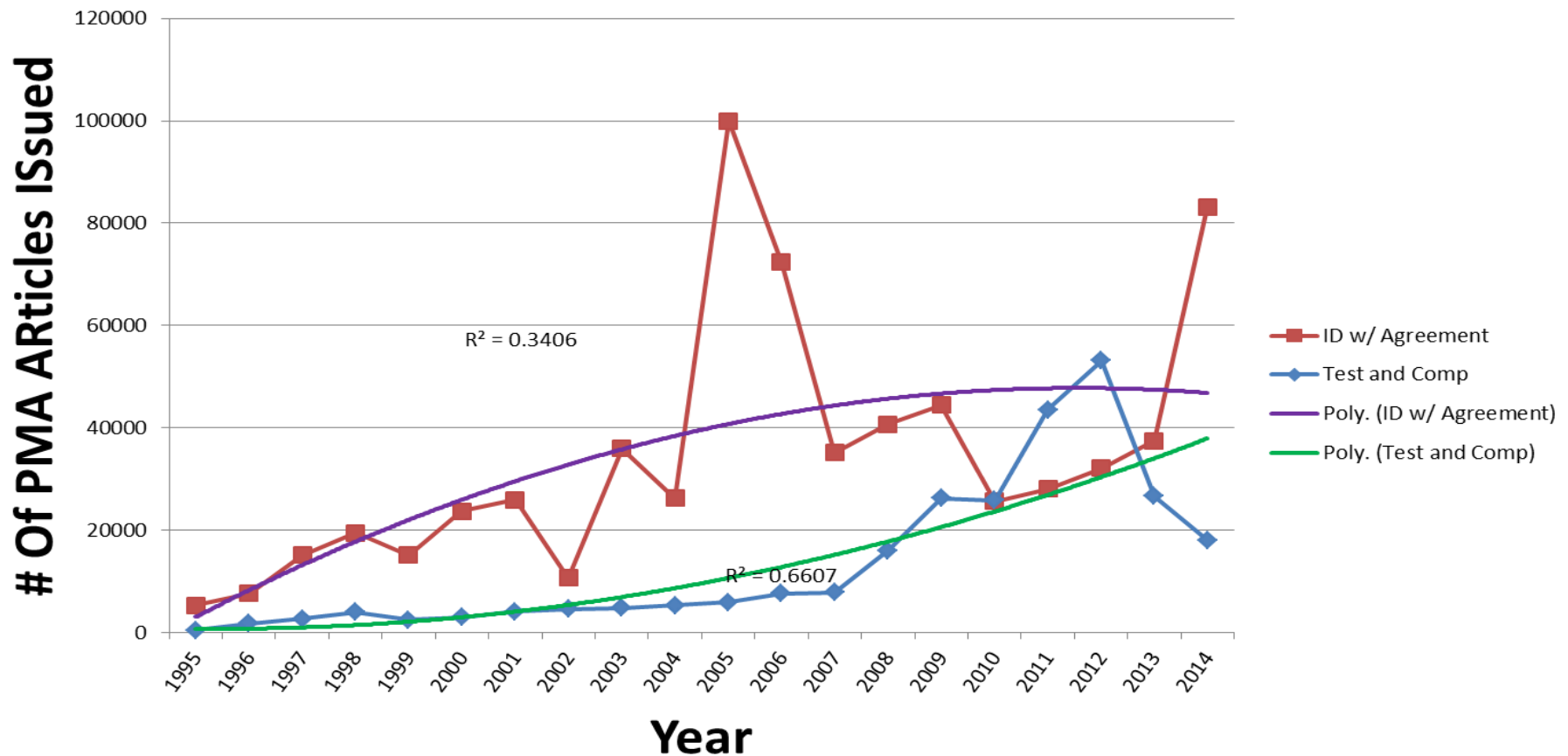


How did we get here? Cont'd

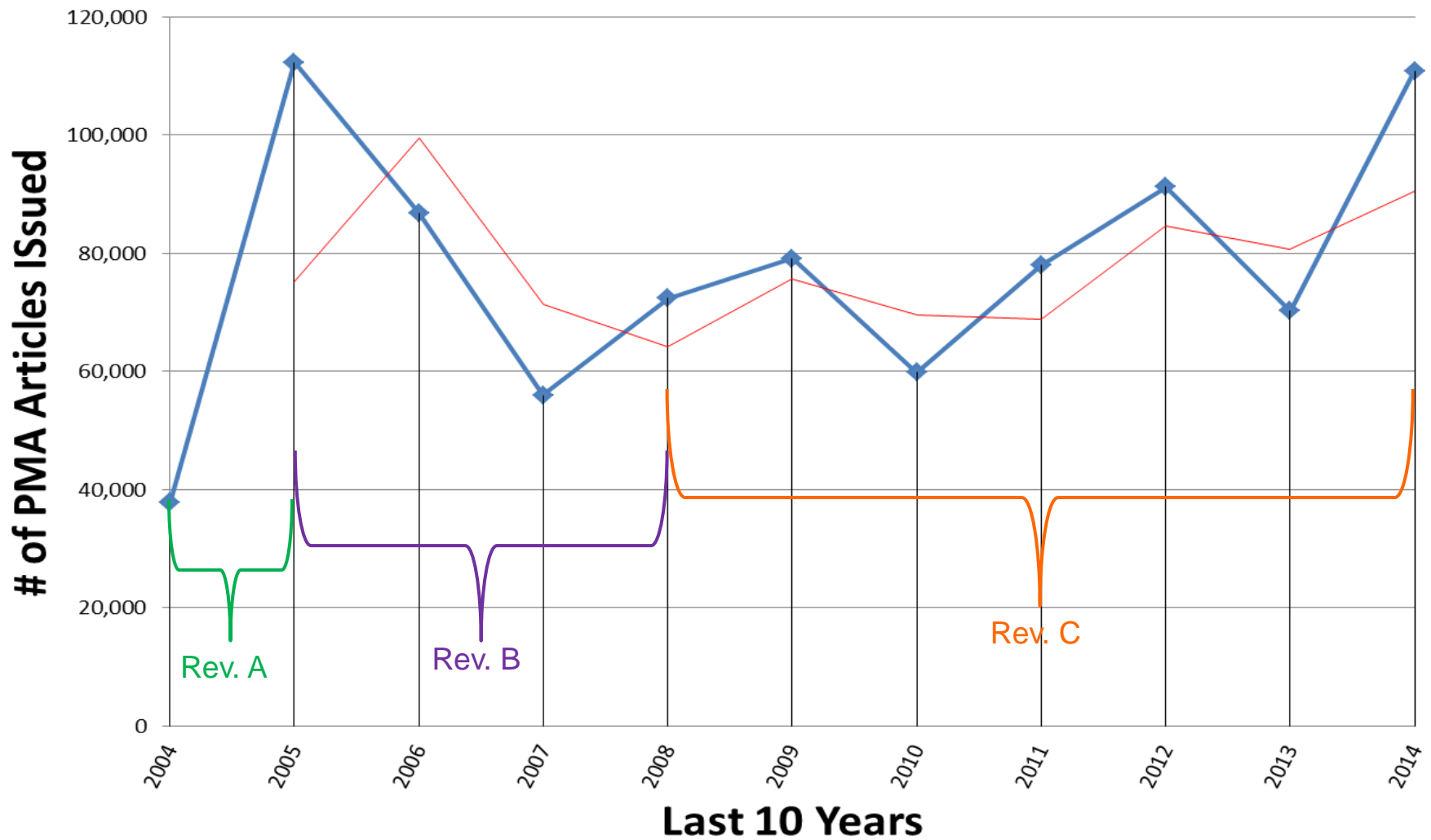


How did we get here? Cont'd

of PMAs Issued per Year



How did we get here? Cont'd



PMA Policy/Guidance

- **14 CFR 21, Subpart K**
 - Last updated 16 April, 2011
- **FAA Order 8110.42D**
 - Released 21 March, 2014
- **FAA Advisory Circular 21.303-4**
 - Released 21 March, 2014
- **FAA Order 8110.119**
 - Released 30 November, 2012
- **Production specific guidance**
 - FAA Order 8120.22 & FAA AC 21-43

PMA Policy/Guidance, Cont'd

- **Order 8110.42D – The details**
 - Speaks to FAA Aircraft Certification Offices (ACOs) working projects
 - Only applies to PMA via Identicality without a licensing agreement or via Test & Comp
 - Tells them what is required for all PMA applications
 - Details the steps to finding compliance with the regulation in Subpart K.
 - Clarifies the “grey areas” and puts requirements in “plain language”
 - Provides examples for notification letters and draft supplements

PMA Policy/Guidance, Cont'd

- **AC 21.303-4 – The Key details**

- Speaks to PMA applicants submitting projects to their regional ACOs
- Only applies to PMA via Identicality without a licensing agreement or via Test & Comp
- Mirrors Order 8110.42 but from the applicants point of view
- Provides more detail in certain specifics needed to make an acceptable application for “showing” compliance
 - One way but not the only way
 - Sets the FAA’s “expectations”

PMA Policy/Guidance, Cont'd

- **Order 8110.119**

- Known as the Streamline PMA Process
- Developed to utilize the applicant ONLY showings ideology within AIR
 - Recognizes MARPA Document 1100
 - Does NOT allow FAA designees into the process
 - Does NOT shortcut any current PMA requirements
 - No net-differences between PMAs approved via the streamline process or traditionally via 8110.42
- Extremely limited scope
 - Only applicable to qualified applicants
 - Only open to Non-Safety Significant (NSS) articles

PMA Policy/Guidance, Cont'd

- **Order 8120.22**

- Relevant PMA information is in Chapter 4
 - Formerly Chapter 4 of Order 8110.42 back in Rev B
- PMA via Identity WITH a licensing agreement
 - Design approval flows down from the existing FAA type certificate data
- PMA via STC
 - Design approval flows from the existing FAA STC data
- Sets requirements for the PMA holder facilities and Quality System
 - Same requirements as any other FAA production approval holder

New Initiatives

- **Minor Modifications per 21.93 and the PMA process**
 - Draft Policy Statement out for public comment
- **Simplified eligibility expansion agreements**
 - Limited to same TCDS and certification basis
- **Streamline PMA Expansion**
 - We are working to field test pilot programs so stay tuned
 - Moving beyond NSS articles and getting into “bread and butter” articles
 - Anchored by MOA/MOUs

New Initiatives, Con't

- **The next several slides will bring you up to date on the latest part 21 final rule.**
 - Published in the Federal Register on 10/01/2015
 - Effective date of 03/29/2016
 - Link:
 - <https://www.federalregister.gov/articles/2015/10/01/2015-24950/changes-to-production-certificates-and-approvals>



SUMMARY

The rule change revises current regulations to reflect the modern, global manufacturing environment and to reinforce the PAH's responsibility. This rule change proposed five major initiatives, which required changes to 14 CFR parts 21 and 45.

The following elements are of particular concern to the PMA community.

- Require applicants and production approval holders (PAHs) to identify an accountable manager;
- Allow PAHs to issue authorized release documents for aircraft engines, propellers and articles; and
- Require PAHs to ensure each supplier-provided product, article, or service conforms to the PAH's requirements, and establish a supplier-reporting process.

The other major changes are:

- Permit production certificate (PC) holders to manufacture and install interface components (ICs); and
- Exclude fixed-pitch wooden propellers from the fireproof marking requirement.

Overview of the Rule Change

Sections 21.135, 305, and 605, Organization

PMA holders and applicants must identify an accountable manager who is responsible for, and has authority over, a production approval holder's operations. The accountable manager:

- Serves as the PMA's primary contact with the FAA.
- Has responsibility for and authority over all production operations conducted under Part 21.
- May delegate functions and identify alternate points of contact.



Rationale for Change

Sections 21.135, 305, and 605, Organization

Rationale:

- Not having a primary contact often results in schedule delays and uncertainty when conducting certificate management
- Having an accountable manager would provide a single individual who would facilitate communication between the PMA and FAA.
- EASA countries require a production organization to identify an accountable manager in order to obtain a production approval.
- This best practice is currently required by part 145 certificated repair stations and is also used within certain other segments of the industry

Overview of the Rule Change

Section 21.137(c) Supplier Control

Current Language	Final Rule Language
<p>Supply Control—Procedures that:</p> <p>(1) Ensure that each supplier-furnished product or article <i>conforms to its approved design</i>; and</p> <p>(2) <i>Require each supplier to report to the production approval holder</i> if a product or article has been released from that supplier and subsequently found not to conform to the applicable design data.</p>	<p>Supply Control—Procedures that</p> <p>1) Ensure that each supplier-provided product, article, <i>or service conforms to the product approval holder’s requirements</i>; and</p> <p>2) <i>Establish a supplier reporting process</i> for products, articles or services that have been released from the supplier and subsequently found not to conform to the production approval holder’s requirements.</p>

- Change conforms to “approved design” to “PAH requirements.” (i.e. pilot holes, only primed not finish paint, annealed not hardened.)
- Added “service” to products and articles
- Changed supplier reporting requirement to PAH established process.

Rationale for Change

Section 21.137(c) Supplier Control

Rationale:

- In many cases suppliers provide articles that at the time of receipt do not meet an approved design. The PMA holder is ultimately responsible for ensuring all products or articles conform to their approved design.
- Reporting of supplier escapes may not always need to be reported to the PMA holder. When a supplier escape occurs at a lower level supplier the reporting should be to the supplier at the next level up and maybe also to the PAH. This rule change make it the responsibility of the PMA holder to determine who has to report and to whom they report.

Overview of the Rule Change

Section 21.137(o) Issuing authorized release documents

- Allow PAHs to issue authorized release documents for aircraft engines, propellers, and articles.
- An authorized release document is a certifying statement by the PAH that a given aircraft engine, propeller, or article (1) conforms to its approved design data or properly altered condition, and (2) is in a condition for safe operation at the time of examination and release of the document.
- Section 21.137(o) is only applicable to a PAH who wants to issue authorized release documents.
- These documents are issued using FAA Form 8130-3.



Rationale for Change

Section 21.137(o) Issuing authorized release documents

Rationale:

- The PAH is responsible for ensuring the airworthiness of each product and article it manufactures.
- Currently, European and Canadian approved manufacturers can issue their equivalent to our FAA Form 8130-3
- This proposal would harmonize the CFR with EASA regulations and those of other foreign authorities



Revising/Amending the PMA Supplement

This section was revised to clarify under what circumstances revisions and amendments to PMA supplements are authorized.

- **A “revision” to a PMA Supplement is allowed to correct typographical errors. This revision does not change or add any additional part numbers or model eligibility. In this case the previously issued PMA supplement is cancelled with the effectivity of the new PMA Supplement.**
- **An “amendment” to a PMA Supplement is required when the PMA holder adds part numbers or model eligibility either via a new Licensing Agreement from the TC/STC holder or STC. A new PMA Supplement would be issued referencing the new Licensing Agreement or STC with the additional part number or model eligibility information. The “original” PMA Supplement would still remain in effect as the articles produced under that Supplement are still approved replacement or modification articles.**

Rationale for Change

- **The language in the current production approval procedures order is being rewritten to correct the confusing language in the revising/amending PMA supplement paragraph. In the revision, the narrative mirrors the language in Order 8110.42D.**

New Initiatives, Con't

- **International Expansion**

- What do the International Agreements say?
 - Nearly ALL foreign CAAs accept FAA-PMA without further showings or validation
 - Many international manufacturers support and supply US TC holders with Licensing Agreement PMAs
- Several bilateral partners are now working towards implementing their own versions of PMA regulations and guidance materials
- New trade missions taking place with FAA support

New Initiatives, Con't

- **3 Day FAA Articles Class (includes PMA)**
 - Oklahoma City, Mike Monroney Aeronautical Center (MMAC)
 - Domestic participant focused
 - Open to both FAA and Industry attendance
 - Joint instruction from FAA and Industry instructors
 - ETA is TBD
 - Singapore Aviation Academy (SAA)
 - International participant focus
 - Open to both civil airworthiness authorities and industry
 - FAA instructor led
 - ETA, early 2016

Future Initiatives

- **Part 21 rewrite**
 - Separate design and production for PMA
- **Order 8110.42D, CHG 1**
 - Anticipated by Oct. 2017
 - Simplified eligibility expansions within the same TCDS
 - Post AD PMA guidance clarification
 - Recent PMA policy clarification inclusion
 - Additive Manufacturing guidance

Future Initiatives, Cont'd

- **Order 8120.22A, CHG 1**
 - Anticipated due date of December 30, 2015.
 - Minor edits and clarifications
 - PMA supplement revisions and eligibility expansion
 - Keeps current with the new 14 CFR part 21 final rule published on 10/1/2015
- **Order 8120.22B**
 - Anticipated due date is FY 2017

Conclusions

- **There has been a minimal amount of SDRs, SAIBs, or ADs written specifically for PMAs**
 - Industry reviews and corroborating FAA records show:
 - 23 ADs exist that apply “*exclusively*” to PMA products
- **What is the FAA outlook on PMA?**
 - Expected to grow and evolve over the coming years
 - PMA Policy and Guidance is in a constant state of review and advancement
 - PMA manufactures are trending less towards engines and more towards other areas in recent years

Contact Info.

Angelia Collier

Aviation Safety Inspector

FAA Aircraft Certification Service - L'Enfant Plaza

Aircraft Certification Service -

Certification Procedures Branch AIR-110

Production Certification Section, AIR-112

T: 202.267.1588

E: angelia.collier@faa.gov

Robert Sprayberry

Aerospace Engineer / PMA Policy

FAA Aircraft Certification Service - L'Enfant Plaza

Aircraft Certification Service -

Certification Procedures Branch AIR-110

Design Certification Section, AIR-111

T: 202.267.1655

E: robert.sprayberry@faa.gov

