

Gorham Conference 2016

The Future of FAA PMA

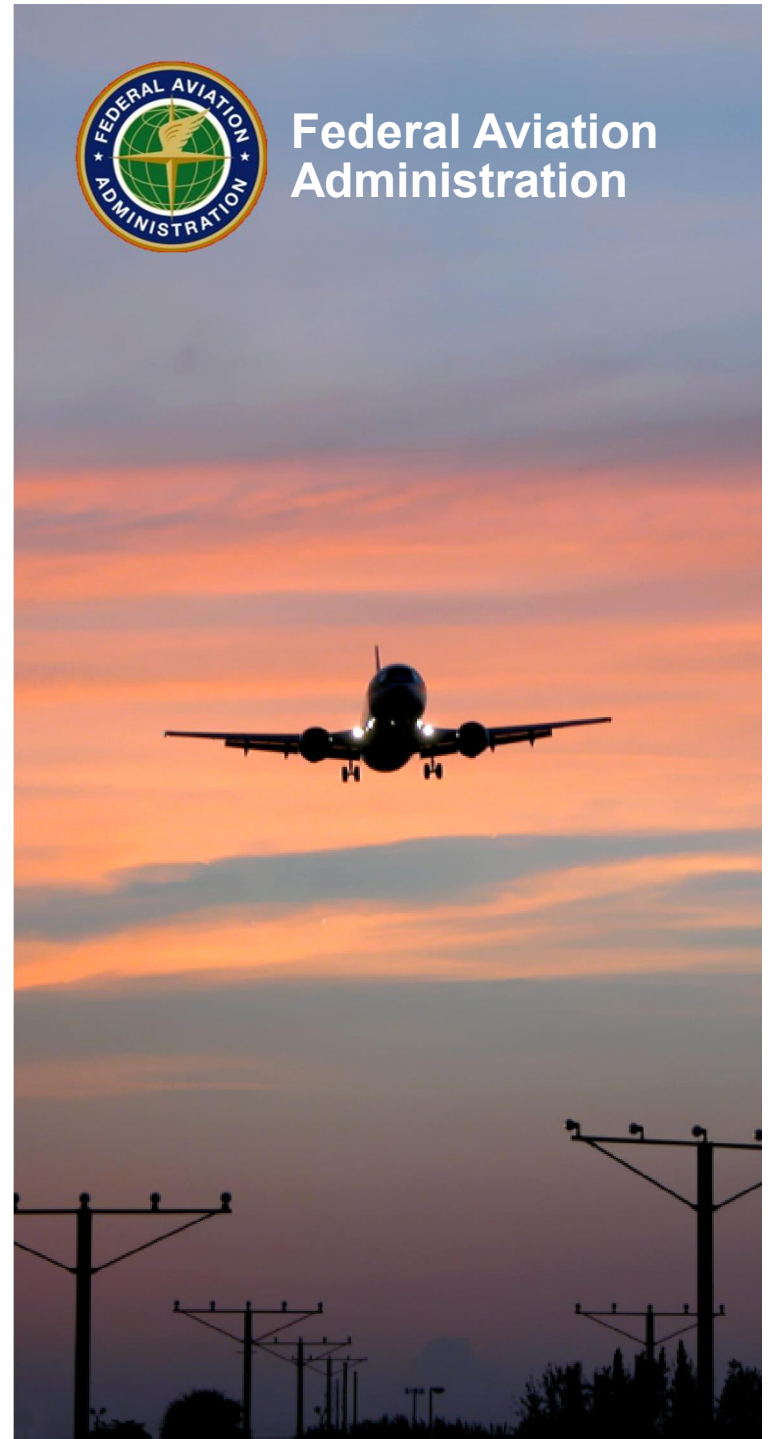
Presented to: Conference Attendees

By: FAA AIR-110

Date: March 22, 2016



Federal Aviation
Administration



Topics

- **Bio... for those interested**
- **How did we get here?**
- **Current PMA Policy and Guidance**
- **New Initiatives already in planning**
 - PS-16-21-01
 - Streamlining eligibility expansions
 - Expanding PMA Streamline Order
 - International expansion
 - 3 Day Class (OKC and SAA)
- **Future Initiatives**



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 working 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 to 1972 was VERY descriptive
 - Contained many of the key steps in what would become 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

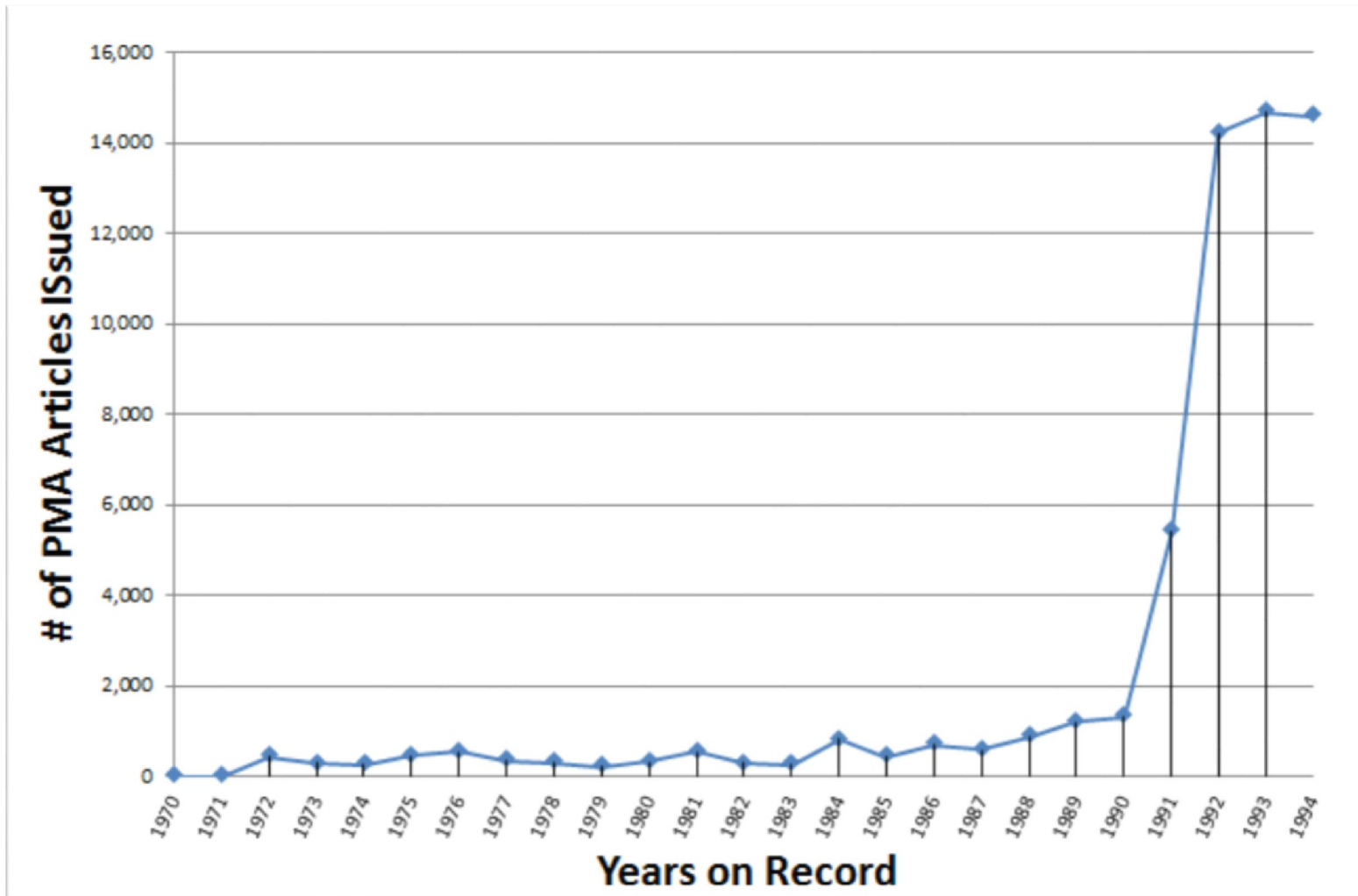
How did we get here? Cont'd

- **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

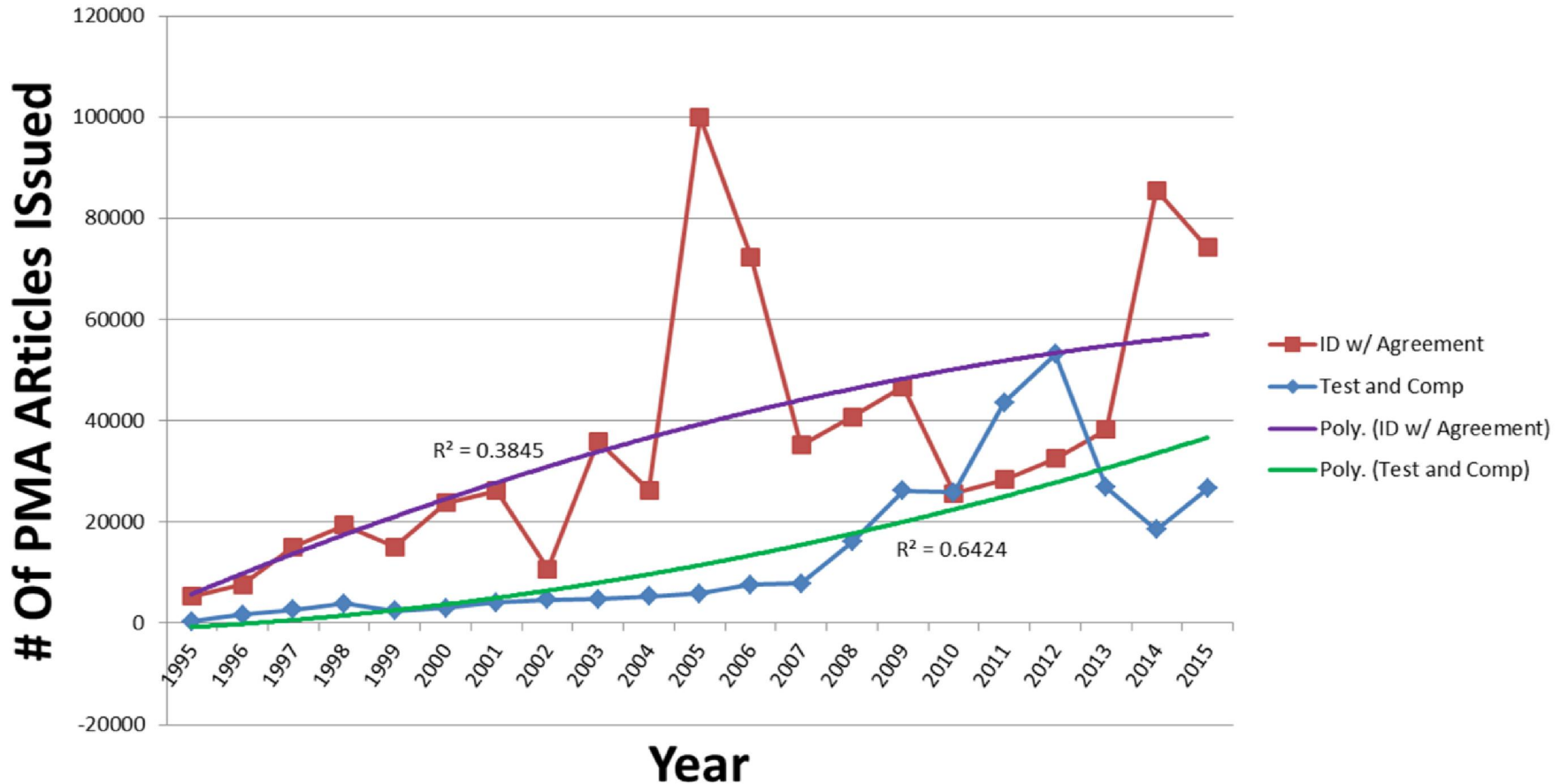


How did we get here? Cont'd

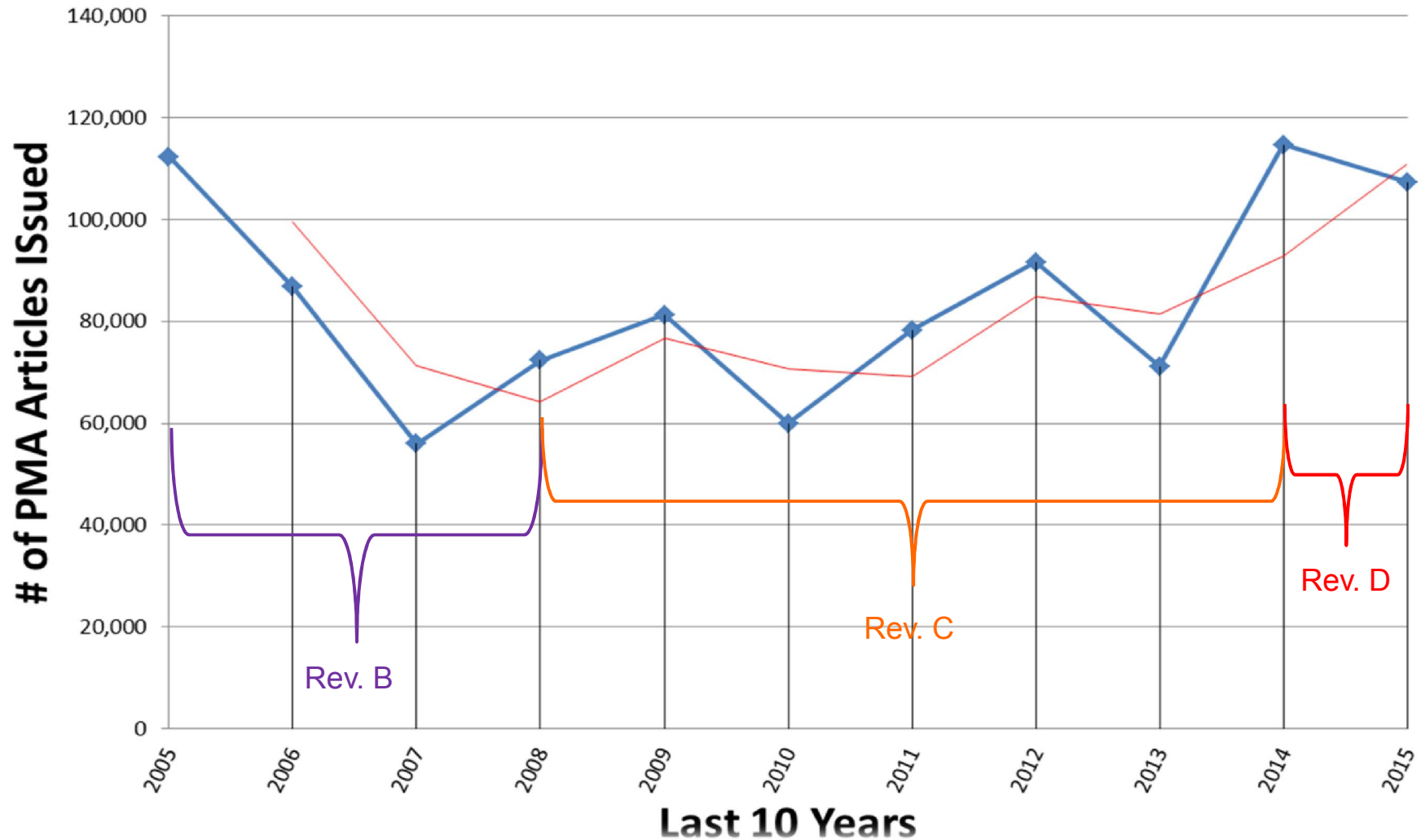


How did we get here? Cont'd

of PMAs Issued per Year



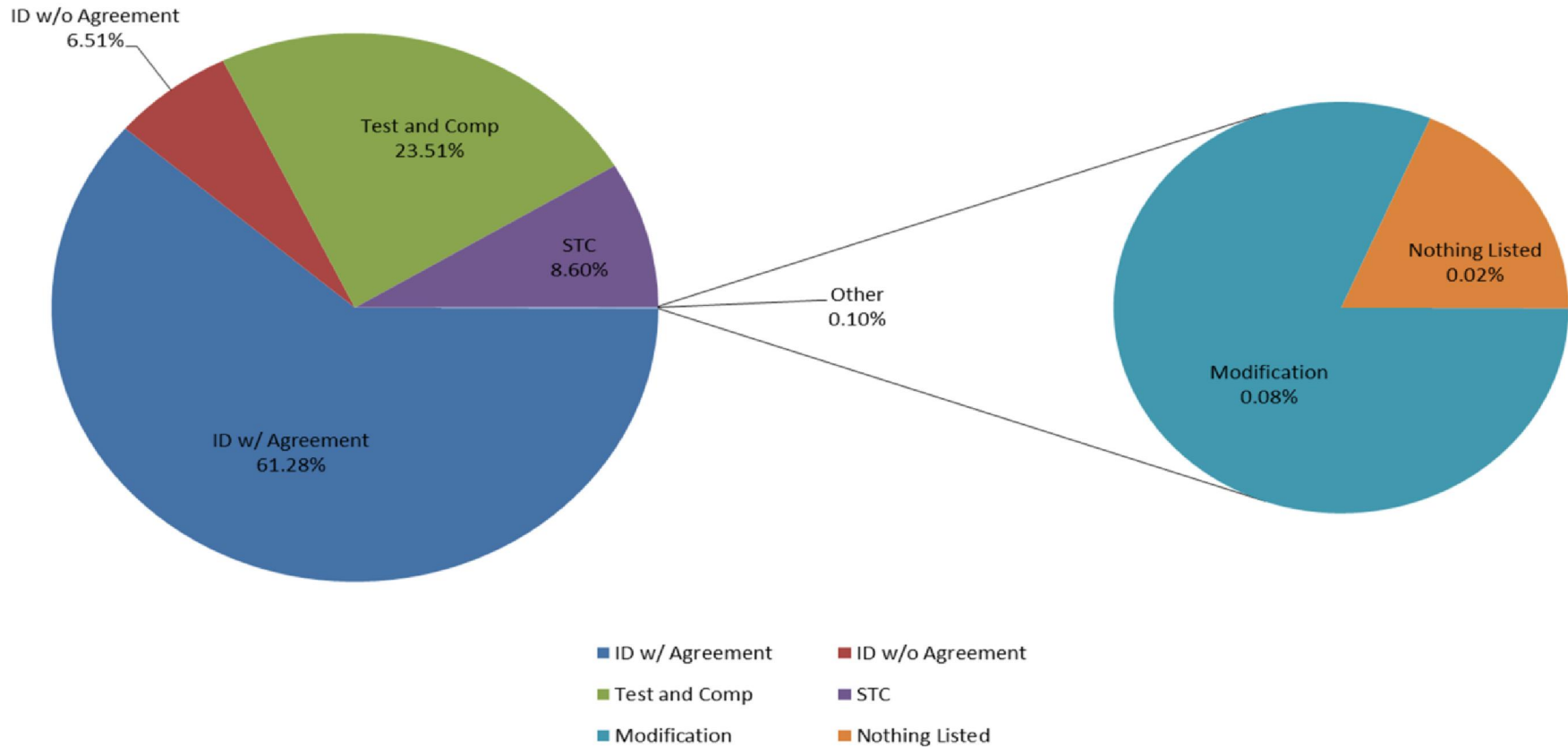
How did we get here? Cont'd



How did we get here? Cont'd

Parts Manufacturer Approval - Totals

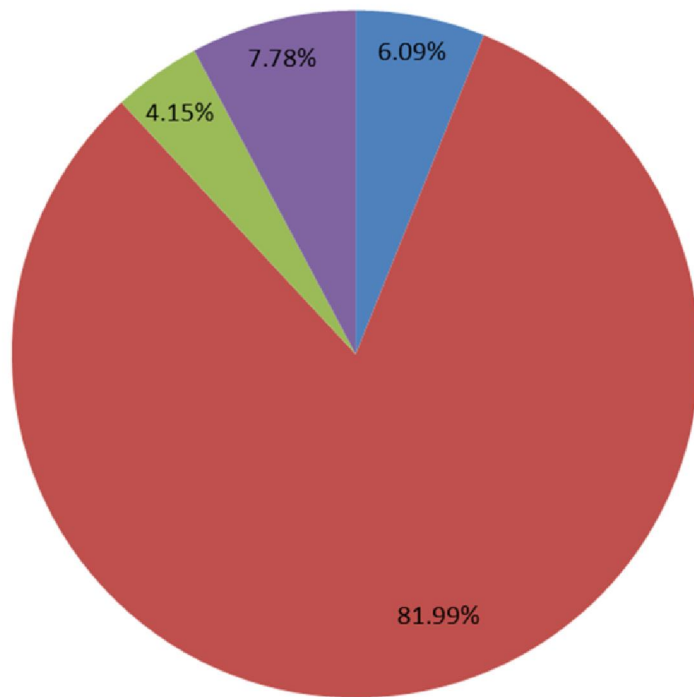
1,268,295 PMA articles as of 2-1-2016



How did we get here? Cont'd

% of PMAs Issued by Product Type

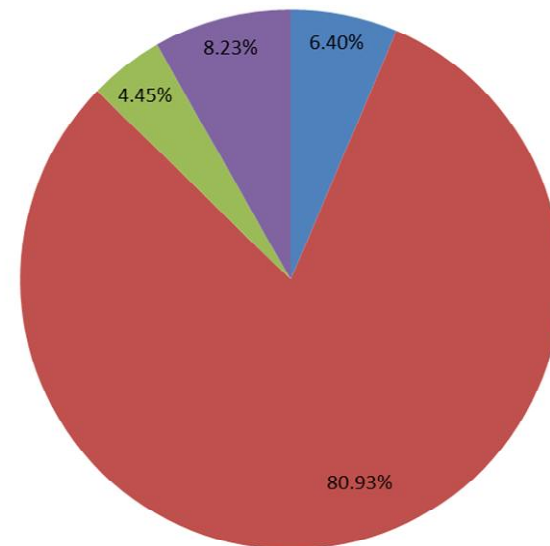
1,146,110 Total PMAs as of 2-1-2015



Ref. from last year

% of PMAs Issued by Product Type

1,146,110 Total PMAs as of 2-1-2015



- Part 23
- Part 25
- Part 27/29
- Part 33

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 Identity 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 – The only details**
 - 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

- **Policy Statement PS-16-21-01 going out for field and public review as of March 2016**
 - Rev. D of the Order clarified the definition of a Modification Article to include minor changes not rising to the level of a STC
 - Historic precedence has allowed PMAs for mod articles outside the use of a STC
 - Onus of utilizing this guidance is on the applicant
 - Not to be used to subvert a STC project
 - Will not be reliant on any comparative analysis but rather a general analysis only
 - Will NOT be applicable on most modification articles



New Initiatives, Con't

- **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

- **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 FY 2017
 - Singapore Aviation Academy (SAA)
 - International participant focus
 - Open to both civil airworthiness authorities and industry
 - FAA instructor led
 - ETA FY 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**
 - Published as of January 11, 2016.
 - 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 approvals are trending less towards engines and more towards other areas in recent years

Contact Info.

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

