

# Engineering Certification Procedures Section

## New and Draft Policy

Presented to: 2018 Engineering Recurrent Seminar

By: Sue McCormick  
AIR-6C1



Federal Aviation  
Administration



# Outline

- **New Policy in the past ~18 months**
- **Policy in Work**
  - Remote Witnessing Tests Using Video
  - FAA Order 8110.4, Revision E
- **Design Approval Holder Landing Page**
  - Matrix of Part 21 Rules to Orders, Policy and Guidance

# New Directives, Policy and Guidance

**Purpose:** Updates on New Directives, Policy and Guidance



# New Directives, Policy, and Guidance

Number	Title	Release Date	Focal
AIR100-2016-AIR-110-PM-10	Revision of Figure A-1 in Appendix A of Order 8110.112A, Standardized Procedures for Usage of Issue Papers and Development of Equivalent Levels of Safety Memorandums	September 21, 2016	Ky Ngo
PS-AIR-21-1601	FAA Order 8110.42D, Parts Manufacturer Approval Procedures - Use of Parts Manufacturer Approval (PMA) for Minor Modification Articles on Products	October 6, 2016	Ian Lucas



# New Directives, Policy, and Guidance

Number	Title	Release Date	Focal
AIR100-16-110-GM31	Clarification of FAA Order 8110.4C, Type Certification, par. 4-19.d., Original Product section	November 8, 2016	Maddie Miguel
AIR-100-16-110-PM16	Clarification: Missing Requirement from Sample Technical Standard Order Authorization (TSOA) Letter in Order 8150.1C	November 29, 2016	Doug Law
AC 20-188	Compatibility of Changes to Type Design Installed on Aircraft	December 9, 2016	Ed Garino
AC 21-46 Rev A	Technical Standard Order Program	February 23, 2017	Doug Law



# New Directives, Policy, and Guidance

Number	Title	Release Date	Focal
Order 8110.4, Change 6	Type Certification	March 6, 2017	Maddie Miguel
Order 8150.1 Rev D	Technical Standard Order Program	March 17, 2017	Doug Law
Order 8000.71	Aircraft Make, Model, and Series Taxonomy	May 2, 2017	Victor Powell
AIR100-17-110-PM07	Clarification Memorandum to FAA Order 8110.42D PMA Part Marking	July 13, 2017	Ian Lucas
Order 8110.56, Rev B	Restricted Category Type Certification	July 19, 2017	Ed Chalpin



# New Directives, Policy, and Guidance

Number	Title	Release Date	Focal
PS-AIR-2X-1701	Acceptable Methods for Demonstrating Compliance With Flammability Requirements including Traceability to Previously Approved Data	July 21, 2017	Sue McCormick
Order 8110.48 Rev A	How to Establish the Certification Basis for Changed Aeronautical Product	July 21, 2017	Mike Jewell



# New Directives, Policy, and Guidance

Number	Title	Release Date	Focal
AIR-600-17-6F0-DM11	Deviation from Order 8100.15B, Organization Designation Authorization Procedures, and Order 8110.115, Certification Project Initiation and Certification Project Notification - Elimination of Requirement for Standards Staff Determination of Significance for Organization Designation Authorization (ODA) Projects that don't require a Program Notification Letter (PNL)	November 8, 2017	Ky Ngo



# Draft Directives, Policy and Guidance

**Purpose:** Share Information on Future Directives, Policy and Guidance



# Draft Directives, Policy and Guidance

Number	Title	ECD	Focal
FAA Policy PS-AIR-XXXX	Remote Witnessing Using Video	3 <sup>rd</sup> Qtr FY 2018	Bob Anoll
Draft Policy Memo PS-AIR-6C1-MG1	Known Non-Compliances in Approved Type Design	3 <sup>rd</sup> Qtr FY 2018	Meghan Gordon
FAA Order XXXX	Destroyed Aircraft	4 <sup>th</sup> Qtr FY 2018	Ky Ngo
FAA Order 8000.79, Revision A	Use of Electronic Technology and Storage of Data	4 <sup>th</sup> Qtr FY 2018	Ed Chalpin
AC 21-48, Revision A	Using Electronic Modeling Systems as Primary Type Design Data	4 <sup>th</sup> Qtr FY 2018	Ed Chalpin
FAA Order 8110.42D, Change 2	Parts Manufacturer Approval Procedures	4 <sup>th</sup> Qtr FY 2018	Ian Lucas

# Draft Directives, Policy and Guidance

Number	Title	ECD	Focal
Draft Policy Memo PS-AIR110-EC	Surrendering non U.S.-registered models under a Product Type Certificate	4 <sup>th</sup> Qtr FY 2018	Ed Chalpin
Draft Policy Memo PS-AIR-6C1-MG2	Counter Measure Equipment	4 <sup>th</sup> Qtr FY 2018	Meghan Gordon
AC 21-XX	Incorporation of Supplemental Type Certificates Into TC'd Products by the TC Holder	1 <sup>st</sup> Qtr FY 2019	Sue McCormick
AC 21-56	TSO Applicant Design Capabilities	2 <sup>nd</sup> Qtr FY 2019	Rachel Cabe
Draft Policy PS-AIR-6C1-SM	Clarification of Responsibilities of Design Approval Holders for Major/Minor Changes	2 <sup>nd</sup> Qtr FY 2019	Sue McCormick

# Draft Directives, Policy and Guidance

Number	Title	ECD	Focal
FAA AC XX-XX	Destroyed Aircraft	2 <sup>nd</sup> Qtr FY 2019	Ky Ngo
Draft AC 21-XX	Design Approval Holder Responsibilities	2 <sup>nd</sup> Qtr FY 2019	Sol Maroof
Draft Policy Memo PS-AIR-6C1-DL1	FAA Policy § 21.8(d) for foreign TSO applications	3 <sup>rd</sup> Qtr FY 2019	Doug Law
Draft Revision to AC 21-51 Revision A	Applicant's Showing of Compliance and Certifying Statement of Compliance	3 <sup>rd</sup> Qtr FY 2019	Steve Flanagan
Draft Policy PS-AIR-6C1-VP	Draft policy to clarify § 21.35 flight test requirements for various aircraft categories	4 <sup>th</sup> Qtr FY 2019	Victor Powell
FAA Order 8110.4, Revision E	Type Certification	1st Qtr FY 2020	Maddie Miguel

# Draft Directives, Policy and Guidance

Number	Title	ECD	Focal
AC 21-XX	Type Certification Process	2 <sup>nd</sup> Qtr FY 2020	Maddie Miguel
Draft AC 21-93 for Major/Minor	Major/Minor Classification of Changes	3 <sup>rd</sup> Qtr FY 2020	Ky Ngo
Draft Order 8110.XXX Major/Minor	Major/Minor Classification of Changes	3 <sup>rd</sup> Qtr FY 2020	Ky Ngo
Draft Policy Memo PS-AIR6C1-EC	Draft Policy on using Configuration Management in lieu of Conformity	4 <sup>th</sup> Qtr FY 2020	Ed Chalpin
Draft Policy Memo PS-AIR-6C1-DL2	FAA Policy § 21.8(d) for general applications	2 <sup>nd</sup> Qtr FY 2022	Doug Law

# Use of Video and Connectivity Technologies (Draft Policy)

**Purpose:** This policy statement describes the policy and procedures to enable an FAA-authorized witness to remotely witness engineering tests, conformity inspections, and issue airworthiness approvals using video



# Part 23 ARC Recommendation

- **FAA develop policy to enable remote test witnessing**
- **Remote witnessing could -**
  - Reduce designee travel-related costs
  - Improve certification timeliness
  - Reduce FAA oversight burden
- **Strong interest and support for policy**



# Current Status

- **Drafted policy addressing witnessing for engineering tests**
  - Public comment period closed March 1, 2018
  - Mostly supportive comments
  - Revising policy to address feedback
- **Industry feedback**
  - Policy should be less prescriptive
  - Expand scope to include manufacturing and airworthiness aspects
  - Develop Advisory Circular to address broad use of technology

# Request Process

- **Proposed using Project Specific Certification Plan**
- **Describe:**
  - Testing associated risks
  - Clarity and maturity of test procedures and test complexities
  - Skills of applicant representatives and overall experience with conducting test(s)
  - Designee's experience and familiarity with the test and facility/ test personnel
  - Equipment setup
  - Additional considerations
  - Acknowledge risks
- **Concurrence needed from all applicable designees and project managing office**

# Documentation

- **Additional details outlined within the test plan**
- **Witness provides record for inclusion in test report**
  - Reference FAA Order 8110.4, paragraph 2-6(d)(1)
- **Equipment and setup must enable witness to verify all requisite conditions are met and a proper evaluation can be performed**

# Considerations

- Time stamping
- Multiple cameras, viewing angles, zoom
- Resolution and field of view appropriate for tests
- Special Lighting
- Environmental / weather conditions
- Loss of sensory perception
- Policies restricting video usage

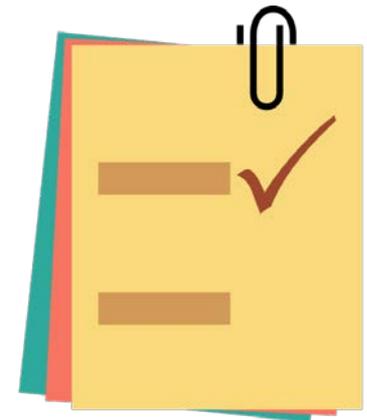


# Procedures and Records

- **Same basic process as witnessing on-site**
  - Conformity complete
  - Unsatisfactory comments dispositioned
  - Video setup adequate for proper witnessing
- **Video will not be retained in the project file**
  - The video is a tool to verify proper test execution
  - Witness provides in documentation: equipment used, chronological description of tests and adjustment of equipment and adequacy of the video

# Summary

- **Using video and connectivity technologies can be a viable option**
- **Draft Policy being expanded to include conformity inspections and airworthiness approvals**
- **ECD September 2018**



# Contacts

Robert Anoll

[robert.anoll@faa.gov](mailto:robert.anoll@faa.gov)

202-267-1571

571-330-5343 cell

Sue McCormick

[susan.mccormick@faa.gov](mailto:susan.mccormick@faa.gov)

206-231-3242

425-356-9140 cell



# FAA Order 8110.4 Revision E (DRAFT)

**Purpose:** Update Type Certificate Order

# Background

- **Order 8110.4C (current)**
  - Published October 26, 2005 (12 years old)
  - Six changes have been published
- **Order 8110.4D (proposed 2012)**
  - Inclusion of risk-based decision making processes
  - Further definition and refinement needed to mature concepts, tools, and processes
- **Order 8110.4E (in progress)**



# Topics for Inclusion

- **Incorporate Order 8110.120, Processing Surrendered, Abandoned, and Historical Aircraft Type Certificates, Chapter 3**
  - Order will be cancelled after inclusion into 8110.4E
- **Software Conformity Process, Chapter 5**
  - Requirements for S/W conformity (harmonized from Order 8110.49, Software Approval Guidelines)

# Topics for Inclusion (continued)

- **Statement of Compliance (§§ 21.20 and 21.97), Chapters 2 and 4**
- **Remote Test Witnessing via Video, Chapter 5**
  - Will be published as a policy statement first
- **Several forms listed in the appendices of the Order will be removed**
  - Either superseded (revised) or cancelled
  - Several forms (including samples) will be replaced with references to the FAA forms webpages

# Topics for Inclusion (continued)

- **Incorporation of STCs into a TC product by the TC holder, Chapter 4**
  - Incorporation by reference or in-draw process
- **Restricted Category Aircraft, Chapter 6**
  - Miscellaneous revision to policy and procedures
- **Allow reduced AEG participation in typical TC program (maintenance and operations)**
  - Participation to review approval of maintenance manuals, ICAs, AFMs

# Topics for Inclusion (continued)

- **Reference to Order 8000.71, Aircraft Make, Model, and Series Taxonomy, Chapter 3**
- **Incorporate previously issued deviation approval memos not included in Changes 1 through 6**
  - Conduct Certain Ground Tests without a Type Inspection Authorization (TIA), [PS-AIR-100\\_12-10-11](#)
  - Approved Deviation to FAA Order 8110.4C paragraph 3-3.e.(20) and Order 8130.2G paragraph 306.f.(2), [PS-AIR100-14-110-DM14](#)



# Topics for Inclusion (continued)

- **FAA Policy PS-AIR-2X-1701, Acceptable Methods for Demonstrating Compliance With Flammability Requirements including Traceability to Previously Approved Data**
- **All (Major and Minor) Changes must comply with the Applicable Requirements**



# Topics for Inclusion (continued)

- **Expanded Guidance on Applicability of Policy and Guidance**
  - Applicant must use policy and guidance on the date of application or
  - Use an issue paper to establish MOC
- **Extending the Application Date – For TCs, Amended TCs, STCs and Amended STCs**
  - Guidance on how applicant applies for an extension to their TC, amended TC, STC or amended STC application (e.g., via letter) and the effects of that extension



# Topics for Inclusion (continued)

- **AIR Transformation updates, Chapter 1**
  - New organization names and routing symbols
  - Placeholder until Refinement Phase
  - Explanation of changes, definitions, organization roles and responsibilities chart, order scope, and related publications listings
  - Will be revised last to illustrate AIR after realignment and capture all the changes introduced to the Order



# Schedule

- **ECD Fiscal Year 2020**



# Contact Information

**Maddie Miguel**

**Aerospace Engineer**

**Order 8110.4 ( ) Program Manager**

**Design Certification Procedures Section**

**AIR-6C1**

**[Maddie.miguel@faa.gov](mailto:Maddie.miguel@faa.gov)**

**202-267-1631**



# Design Approval Holder Landing Page

**Purpose:** Communication of Policy and Guidance  
Information Specific to Part 21

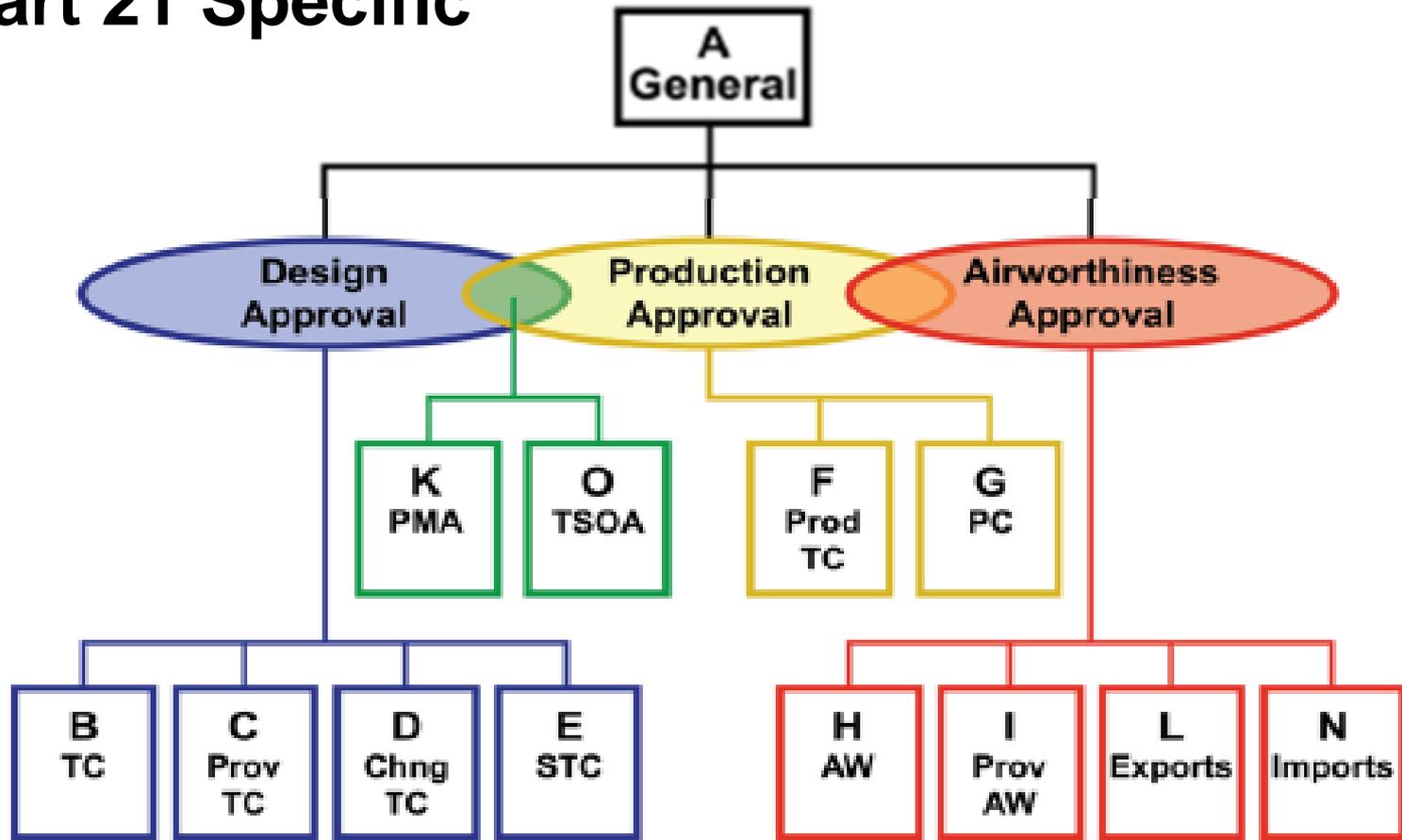
# Design Approval Holder Landing Page

- **Communication Tool**
- **Matrix of Policy/Guidance Materials**
- **Training/Outreach Materials**
- **Centralized location for Engineering Certification Information**
  - Regulations and Policy
  - Library
  - Training
  - Resources
  - Forms
- **Notification of Changes**



# Rules → Policy and Guidance

- Part 21 Specific



# DAHs Landing Page – cont'd

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## Information for Design Approval Holders

Latest News

- New Training Material Available on Change Product Rule, April 1, 2018
- Release of FAA Policy Memo PS-AIR6C1-21-1010, March 30, 2018

Regulations & Policy Library Training Resources Forms

Lists of regulatory, policy, and guidance information arranged by 14 CFR Part 21 subpart, applicable to the following Design Approval Holders:

- Type Certificate (TC)**
  - Subpart A - General
  - Subpart B - Type Certificates
  - Subpart C - Provisional Type Certificates
  - Subpart D - Changes to Type Certificates
- Supplemental Type Certificate (STC)**
  - Subpart A - General
  - Subpart B - Type Certificates
  - Subpart D - Changes to Type Certificates
  - Subpart E - Supplemental Type Certificates
- Parts Manufacturer Approval (PMA)**
  - Subpart A - General
  - Subpart K - Parts Manufacturer Approvals
- Technical Standard Order (TSO)**
  - Subpart A - General
  - Subpart O - Technical Standard Order Approvals
- 14 CFR 21.8(d) - Other Design Approvals**
  - Subpart A - General

Feedback

Send comments and questions to [9-AIR6C1-DAH-Info@faa.gov](mailto:9-AIR6C1-DAH-Info@faa.gov).

**Top Tasks**

- Get Form 337, Major Repair and Alteration
- Register an aircraft
- Look up an N-number
- Review preliminary accident data
- Find aircraft safety alerts
- Search for SAIBs



# DAH Landing Page – cont'd

- **Create matrix similar to Part 25 → AC and Policy**
  - [https://www.faa.gov/aircraft/air\\_cert/design\\_approval](https://www.faa.gov/aircraft/air_cert/design_approval)

## Rules and Guidance List

This list contains the title 14, Code of Federal Aviation Regulations part 25 and 26 rules and the Advisory Circulars and policy statements that provide associated guidance.

Rule	Title	Advisory Circulars	Policy Statements
25.1	Applicability		
25.2	Special retroactive requirements		
25.3	Special provisions for ETOPS type design approvals		
25.5	Incorporations by reference		
25.21	Proof of compliance	25-25A	
25.23	Load distribution limits		
25.25	Weight limits	25-8	
25.27	Center of gravity limits		
25.29	Empty weight and corresponding center of gravity		
25.31	Removable ballast		
25.33	Propeller speed and pitch limits	25-25A	
25.101	General	25-13, 25-15, 25-25A, 25-31, 25-32, 25.735-1	PS-ANM100-1994-00059
25.103	Stall speed	20-73A, 25-15, 25-25A	
25.105	Takeoff	25-15, 25-31	
25.107	Takeoff speeds	25-7C, 25-15, 25-31	
25.109	Accelerate-stop distance	25-7C, 25-15, 25-25A, 25-31, 25.735-1	
25.111	Takeoff path	25-15, 25-25A, 25-31	PS-ANM100-2000-00112
25.113	Takeoff distance and takeoff run	25-7C, 25-15, 25-31	
25.115	Takeoff flight path	25-7C, 25-15, 25-31	

# Part 21 Regulations and Policy

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## Regulations, Policy, and Directives Information for Design Approval Holders

**Subpart A - General**

Rule	Title	Orders	Advisory Circulars	Policy Statements
21.1	Applicability and definitions	8110.118		
21.2	Falsification of applications, reports, or records			
21.3	Reporting of failures, malfunctions, and defects.			
21.4	ETOPS Reports Requirements			
21.5	Airplane or Rotorcraft Flight Manual			
21.6	Manufacture of New Aircraft, aircraft engines, and propellers			
21.7	Continued airworthiness and safety improvements			
21.8	Approval of Articles	8110.112 8110.115 8000.71	20-166 20-179	
21.9	Replacement and Modification Articles	8000.71		

**Subpart B - Type Certificates**

Rule	Title	Orders	Advisory Circulars	Policy Statements
21.11				



# Contact Information

**Sue McCormick**

**Aerospace Engineer**

**Design Certification Procedures Section**

**AIR-6C1**

**[Susan.mccormick@faa.gov](mailto:Susan.mccormick@faa.gov)**

**206-231-3242**

