How ACOs Will Work With Other ACOs

July 28, 1998

Table of Contents

Why this guide? 1

This guide contains 2

Description of Key Players. 3

Issue and Contributing Factors 4

Proposed Solution 5

Roles & Responsibilities 6-7

Procedures 8-9

Procedure Diagram 10

Attachment 11

Things to Accomplish Prior to Implementation 12

Evaluation 12

Why this guide?

Why this guide?

- **To certify a better safer product by effective use of FAA and industry resources**
- **To enhance the certification process through open communication between the Project ACO (PACO) and Certificate Managing ACO (CMACO)**
- **To identify accountability of FAA's CMACO and PACO key players during the supplemental type certification (STC) and Parts Manufacturer Approval (PMA) processes**
- **To describe our operating principles**

This guide contains...

- **Descriptions of the roles and responsibilities of key players in the STC/PMA processes**
- **The critical steps that lead to an STC or PMA approval**
- **"Best Practices" FAA can follow to do this job better**
- **Job functions for which each of the key players is responsible**
- **Related orders: FAA Order 8100.5, Aircraft Certification Directorate Procedures and FAA Order 8110.4A, Type Certification Process**

STC/PMA Applicant

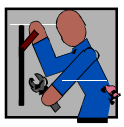
- Demonstrates compliance to FAR
- Submits application to PACO

PACO Project Engineer/Project Manager

- Orchestrates project and gets the job done
- Coordinates w/CMACO assigned engineer the CPP (includes certification basis, level of CMACO involvement, MOC's, Certification Summary Report)

CMACO Assigned Engineer

- Coordinates on the CPP
- Provides expert technical support



PACO Manufacturing Inspector

- Determines conformity and airworthiness

Engineer

- Applies regulations and policy
- Verifies compliance with regulations and policy

Flight Test Pilot/Flight Test Engineer

- Conducts FAA flight tests or delegates to designee
- Reviews and verifies applicants' test results

NRS

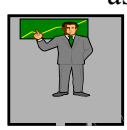
- Provides expert advice

AEG

- Evaluates compliance with oper./maint. requirements
- Assists in review of flight manuals and instructions for continued airworthiness

PACO Manager

- Provides leadership and resources
- Ensures PACO PE/PM coordination w /CMACO assigned engineer



CMACO Manager

- Provides engineering resources to PACO
- Supports process concept within CMACO

Key Players

In the STC/PMA Process

HOW ACOs WILL WORK WITH OTHER ACOs

ISSUE

Approvals of product modifications could be improved by enhancing the communication and accountability for compliance findings among ACOs.

CONTRIBUTING FACTORS

- Communication of the engineering/certification issues that developed during the original type certification of the product needs to be improved.
- Lack of appropriate processes to manage the information exchange among the various ACOs.
- Availability of the appropriate expertise and technical disciplines to effectively accomplish the project amongst the ACOs.

PROPOSED SOLUTION

It has been determined that the best way to get a safe, compliant product is to have the Type Certificate Managing ACO (CMACO) assist the Project ACO, (PACO) with any follow up certification activity such as a Supplemental Type Certificate (STC) or Parts Manufacturer Approval (PMA) project.

The CMACO knows the certificated product better. This is not because of any greater knowledge of any technical issue or a better handling of certification/regulation issues. The CMACO experienced all the growing pains of dealing with the manufacturer from day one when the design was just a proof of concept all the way to the finished product and/or they maintain daily interface with the original manufacturer in supporting continued airworthiness.

The PACO by coordinating with the CMACO will assure that proper decisions that could impact safety are made when issuing approvals for modifications/installations considered significant. This will occur for the following reasons:

- The CMACO maintains contact with the company representatives of the original certificated product. Relationships are formed which allow for open dialogue between the FAA certification engineer and the company design engineers.

- CMACOs know, or have the capability to find out, what was approved during the original certification process. When the PACO receives data submittals from the applicant and they reference original reports or sections of reports prepared by the TC holder, the CMACO can assist in determining if these reports are indeed FAA approved.

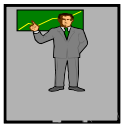
- CMACOs will know, or have the capability to find out, if there were any special conditions/equivalent safety findings, or specific design features requiring special consideration, tests or analysis, that could have an impact on the issuance of an approval and thus compromise safety.

ROLES & RESPONSIBILITIES

Even though FAA Order 8100.5 implies that a PACO Project Engineer (PE)/Program Manager (PM) should always contact the CMACO this has not been consistently done throughout the service. This process will require the following commitment:

- Buy in from all ACO managers to support the process.

- It will require CMACO to manage these requests. While it is expected that one ACO cannot set the priorities for other ACOs, each ACO manager has an obligation to the other managers to expect that we are responsible for each other's success and supporting each other's needs.



- The assigned PACO PE/PM will be the focal point for all communication to and from the CMACO. All such communication must take place early on in the project, and often, to ensure that the product we have certificated is accomplished in a timely, efficient manner.

- The CMACO assigned engineer will be the focal point for all communication to and from the PACO. This person will be responsible to provide to the PACO all information required relative to the project in question. This will limit the extent of involvement to those value added areas that would be attributable to engineers in the CMACO.

- It is the responsibility of the PACO PE/PM to know and understand the project in its entirety so that the required coordination with the CMACO is more effective and addresses the issues which need coordination. Also, the PACO is responsible to the external customer for the FAA approval that is being sought.

- An office having processed a product approval with special consideration or limitations will ensure that this information is communicated to the ACO community
  to promote early coordination between CMACOs and PACOs.

PROCEDURE TO BE FOLLOWED BY THE PROJECT ACO WHEN AN APPLICATION IS RECEIVED FOR A MODIFICATION AS DESCRIBED IN ATTACHMENT

NOTE: THIS PROCEDURE IN NO WAY SUPERSEDES HOW THE ACOs PRESENTLY ARE REQUIRED TO COORDINATE WITH THE RESPONSIBLE DIRECTORATE PROJECT OFFICE.

All communication MUST be documented in a fashion that requires quick response, e.g., using electronic means (CCMail). This allows for quick responses to requests, questions and inquiries, etc.

- PACO completes a Certification Program Notification (CPN) electronically and submits it to the accountable Directorate.

- If the modification in question is not one listed in the ATTACHMENT, then the PACO may proceed and work the project towards completion using their engineering judgment whether or not to coordinate with the CMACO.

- If the modification in question is one that is listed in the ATTACHMENT, then the PACO must coordinate with the CMACO.

    - The PACO PE/PM, will send the CPN electronically to the CMACO assigned engineer.

    - The PACO PE/PM will discuss with the CMACO engineer all issues involving the project and establish the level of involvement the CMACO will have, i.e. submission of data, attendance at meetings, etc. and assure that all technical issues are addressed.

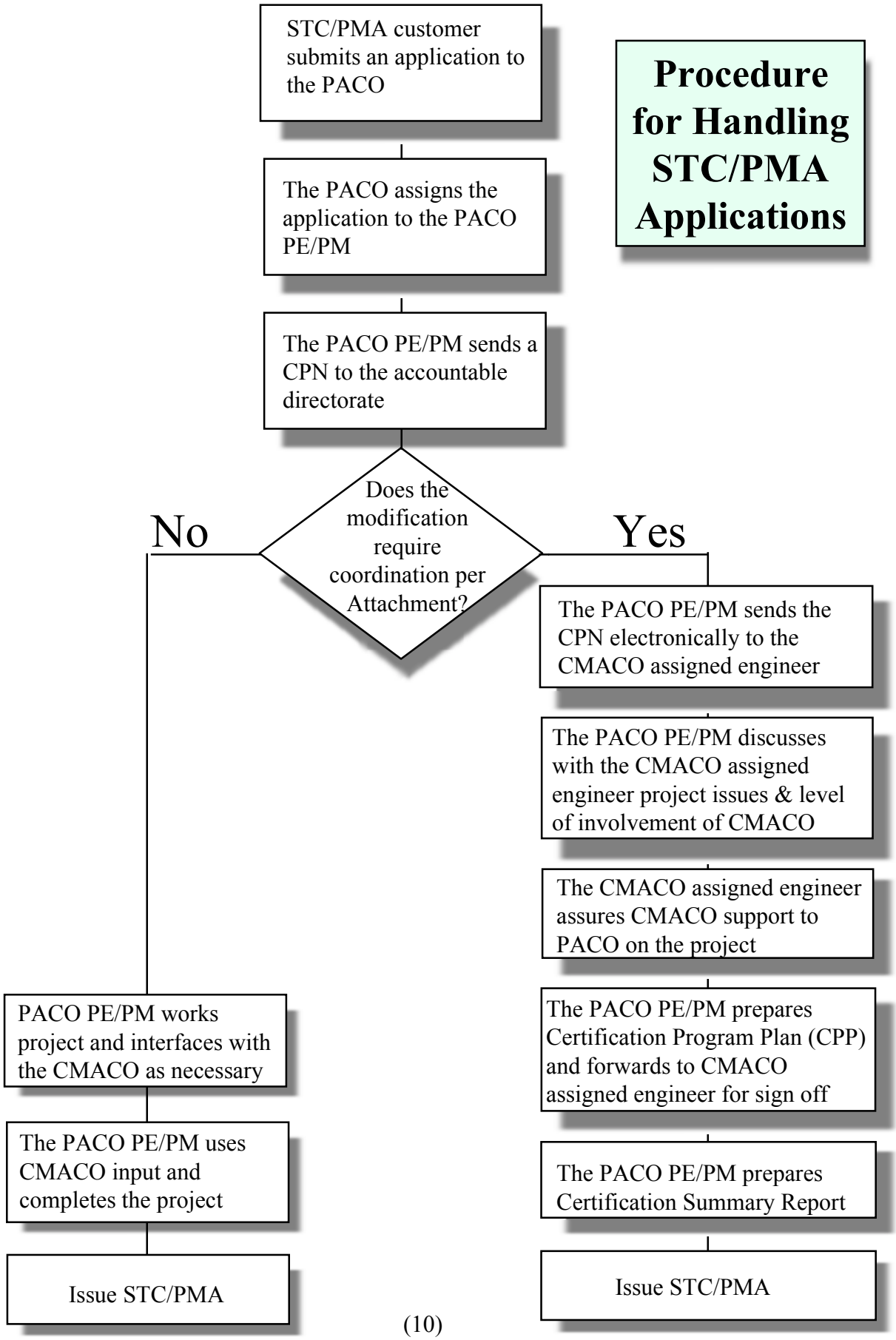
    - It will be the responsibility of the CMACO engineer to obtain the technical support from his/her office to assist in dealing with the PACO on the assigned project in question.

PROCEDURE TO BE FOLLOWED BY THE PROJECT ACO WHEN AN APPLICATION IS RECEIVED FOR A MODIFICATION AS DESCRIBED IN ATTACHMENT
(Continued)

- The CMACO engineer will be part of the FAA team and will sign off on the Certification Program Plan (CPP) provided by PACO [includes certification basis generated and agreed level of CMACO involvement, the methods of compliance (MOCs)]. Any documentation required can be accomplished in writing in a form such as the Certification Summary Report as discussed in paragraph 19a of FAA Order 8110.4a. Any coordination required can be accomplished electronically.

- It will be the responsibility of the PACO to ensure that any information required from the CMACO is obtained and used by the PACO project team.

Procedure for Handling STC/PMA Applications



ATTACHMENT

The PACO must coordinate the types of projects listed below with the CMACO.

General

-Any STC/PMA or repair that affects or replaces a critical or life limited structural or engine part, such as landing gear, thrust reversers, gear boxes, rotating engine parts, pistons, connecting rods, engine block and head.
-Modifications to empty/zero fuel weight.
-Externally mounted equipment. (excluding antennas)

Engine/Prop/Fuel System/APU

-Change in type or power rating of engine
-Propeller/propeller control replacement.
-Propeller installations that affect gear box/changes to mass balance.
-APU and APU compartment modifications.
-Fuel system modifications.
-Change to electronic engine controls or instruments.
-Nacelle modifications.

Electrical/Avionics/Software

- Software modifications that affect critical systems.
-Electrical modifications to aircraft with FADEC engines.
-Single pilot IFR certification modifications.
-New/novel avionics packages (glass cockpit, ECAS, etc.)
-Enhanced GPWS.

Systems

-Major changes to fire detection/suppression systems.
-Hydraulic flight controls/ASAS.
-Icing protection systems.

Rotorcraft

-Rotorcraft mods affecting loads/vibration/fatigue/damage tolerance characteristics of main and tail rotor system/transmission system/gear box/main and tail rotor blades.

Structural

-Installation of cargo doors, passenger to cargo conversions.
-Changes to any primary or critical structure, including flight control surfaces.
-Assessment of flyable cracks in structure.

THINGS TO ACCOMPLISH PRIOR TO IMPLEMENTATION

- ACO Managers are to provide a focal point(s) of contact for their office.

- Generation/presentation of a standardized briefing for all AIR certification engineers on this process.

EVALUATION

- The Aircraft Certification Office Management Team (ACOMT) will evaluate how the process worked after the first year of implementation and suggest any areas that could be improved to assure success of the procedure. We will measure our success by results that have a real safety significance.