
Federal Aviation Administration

2015 GLOBAL MANUFACTURING MEETING PROCEEDINGS

Crystal Gateway Marriott
Arlington, Virginia
September 1–3, 2015



Executive Summary

In September 2015, a meeting to discuss Global Manufacturing topics was held in Arlington, VA. The meeting goal was to foster cooperation and improve communication between aviation authorities. As the aviation industry continues to rapidly change, increased collaboration and a better exchange of ideas will address new, unexpected, and complex situations.

The three-day proceedings included presentation topics addressing current and future manufacturing and oversight challenges, global oversight, special arrangements/management plan approach, and performance-based oversight. Other presentations included authority's recent experience in cooperative oversight, foreign designs manufactured domestically, and current program status/developments. To further collaboration between the authorities on near-term and long-term challenges on manufacturing topics, group workshops were conducted to brainstorm and discuss various manufacturing topics.

The meeting minutes provide a foundation and collection of material that was presented and discussions shared between attendees. Comments and actions have also been captured to show where the challenges lie and where more collaboration is needed.

Attendee List

| Authority | | Name | Title | E-mail |
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Opening Address - Dorenda Baker, Director, Aircraft Certification Service

Meeting Goals - Susan Cabler, Acting Manager, Design, Manufacturing, & Airworthiness Division

The Scope of the Challenge We Face - Chris Carter, Manager, International Division

Content Summary: This presentation discussed the regulatory challenges resulting from the current complex international business models industry has created. The drivers of change are the globalization of aviation, velocity of change, industry growth, and heightened expectations. Stakeholders in this new complex environment demand agility and efficiency. The AIR:2018 roadmap is driving change through innovation.

The globalization vision sets the FAA's strategic priorities with the following outcomes:

- Bilateral relationship management conducted using safety management principles
- Improved regulatory framework through global strategic alignment
- Effective and efficient oversight (particularly manufacturing) accomplished by leveraging bilateral partnerships
- Increased leveraging of bilateral partner's type certification system

Global Oversight - Steve Roomes, Manager, Surveillance and Oversight Policy Section

Content Summary: This presentation discussed methods of supplier control oversight efficiency. Manufacturers are becoming more of an integrator with major assemblies produced all over the world. The concentration of suppliers by continent was graphed. Block methodology (a more efficient geographical auditing strategy) was presented. Block methodology emphasizes planning, considers suppliers to multiple PAHs, and traces quality system flow down requirements. The benefits include standardization, building effective and mutual relations with authorities and PAHs, maximizing resources, fostering continuity between aviation authorities, and promoting communications and collaboration between authorities.

Technical Assistance for the FAA - Pablo Carranza Plata, Director of Engineering, Standards and Certification, Directorate General of Civil Aeronautics, Mexico

Content Summary: This presentation served to explain the structure of the current technical assistance collaboration and coordination between the FAA and the DGAC. The presentation included background information about the working relationship and the roadmap to the current status of the FAA and the DGAC. On September 18, 2007, a Bilateral Aviation Safety Agreement (BASA) was signed between the DGAC and FAA due to the number of PAH suppliers in Mexico. The BASA and the Implementation Procedures Agreement (IPA) form the basis for technical assistance regarding surveillance activities in Mexico. In April 2015, a special agreement for certificate management activities was established to provide a legal framework to perform surveillance and oversight activities. The presentation discussed the DGAC/FAA joint audit pilot program and the supplier control audits performed in 2015. The presentation

shared the benefits of lessons learned. Future challenges include improving communication, expanding the experience with production approvals, and extending BASA-IPA to FAR Part 23 Certification.

***Common Findings – Common Challenges* - Mark Barker, CAA Principal Surveyor – Airworthiness, United Kingdom Civil Aviation Authority**

Content Summary: The presentation addressed 3 main subjects:

- Review of Production Findings
- Risk-based approach to supplier oversight
- Shared oversight with other authorities

The CAA has begun an analysis of production findings. Supplier control was found within the top three elements and has been a contributory cause to several high-profile escapes. Other elements found during the pareto analysis included design interface, quality audits, record of work performed, exposition documents, and processes. Discussions and examples of each of these elements were presented to the attendees. Following the discussions, a topic was introduced focusing on new/different manufacturing methods.

After the production findings review, the next subject introduced a risk-based approach to supplier oversight. Oversight of supplier/subcontractors was consistently in top surveillance findings. As a result, Leaflet C-180 was published in October 2012. The presentation outlined leaflet contents: changes to significant subcontractor work, control of vendor supplied items, and other party supplier control.

The risk-based approach began with an assessment of 180 Production Organization Approval (POA) holders with organizations classified as Green, Amber or Red. Amber and Red POAs were individually contacted for additional scoring criteria. Results of the assessment confirmed initial risk estimates, and in some cases, the extent of supplier activity was much lower than originally anticipated. The lower POAs were reclassified.

Even after several reclassifications, the risk proportions remained largely unchanged:

- Green - 30 percent (65 companies)
- Amber - 60 percent (109 companies)
- Red - 10 percent (18 companies)

The final topic was oversight involving other authorities. The presentation discussed several points of international cooperation. For example, the CAA is exploring collaboration with regulatory partners to share best practices and undertake audits on behalf of each other. In June 2015, a formal agreement was made between ENAC Italy and UK CAA for CAA personnel in the surveillance of AgustaWestland S.p.A. facility in Yeovil.

Special Arrangement/Management Plan Approach - Sarbhpreet Sawhney, Assistant Manager, International Division

Content Summary: The presentation begins with the topic of globalization. Because of globalization, growth and framework documents (such as BAA/BASA) implementation procedures, special arrangements, working procedures, and management plans have been created. The global aviation environment consists of state of design, state of manufacture, and state of registry (ICAO Annex 8 – Definitions). The certification systems are continuous activities with interaction between authorities. Split responsibilities between states and new situations unexpectedly arise.

The presentation discussed leveraging partnerships using the framework documents. Implementation Procedures (IPA) are used when activities are within the scope of the existing bilateral agreement and are addressed in the implementation procedures. Special Arrangements (SA) are used when activities are within the scope of the existing bilateral agreement but are not addressed in the Implementation Procedures. Management plans are used to carry out a specified level of technical detail derived from activity of an IPA or SA. They are also mutually agreed upon by the FAA and the CA or AA and require signature as specified in the applicable IPA or SA document which enables the activity. The presentation then discussed a phased implementation of framework documents.

ENAC and UK CAA – An Example of Cooperative Oversight - Pietro Barbagallo, Head of Production Section, Airworthiness Regulation Division, Italian Civil Aviation Authority

Content Summary: The presentation outlined an example of production organization oversight involving two NAAs: ENAC as the competent authority and UK CAA as the cooperating authority. The presentation provided an overview of the complexity of the AgustaWestland POA. In late 2014, Agusta informed ENAC about their intent to merge Agusta’s PO approval of the UK AgustaWestland Ltd into the Italian PO approval. ENAC contacted the UK CAA in order to establish a liaison agreement between NAAs as required by the Regulation of the European Union.

The presentation discussed the complexity of managing different POA approvals and what impact it could have on the management of the organization. Examples were given, dealing with different aviation authorities for the same kind of approval, redundant audits since “foreign” PO is formally a supplier of the primary PO, satisfying the local environment, and managing different fees and charge schedules. The presentation also discussed the cooperation between ENAC and UK CAA. There were meetings held to define outstanding issues that included a memorandum of understanding (MOU) and related procedures. The presentation also related the benefits and lessons learned by the aviation authorities as well as the manufacturer’s viewpoint.

Welcome & Overview of Day 2 - Review of Day 1 - Jim Seipel, Assistant Manager, Design, Manufacturing, & Airworthiness Division

Status and Solutions: Foreign Designed Civil Aircraft Manufactured in China - Li Bo, Director, Airworthiness Inspection Division, CAAC-AAD

Content Summary: The presentation began with a background and status of aviation in China. General aviation is increasing in China as an open sky policy becomes realized and a market potential for aviation increases. The presentation discussed regulations and requirements tracing documentation from ICAO Annex 8, through Chinese Civil Aviation Law, to the aircraft airworthiness requirements on foreign designed civil aviation products manufactured in China. The presentation discussed the licensing agreement and the relationship between authorities in the bilateral agreement. The presentation then discussed the CAAC general certification requirements with a detailed discussion about the licensing agreement.

Three main points were clarified in the licensing agreement as a minimum requirement:

- Responsibilities of the licensing agreement assignor
- Responsibilities of the licensing agreement assignee
- Mutual responsibilities

Methods of Increasing Oversight Efficiency - Steve Roomes, Manager, Surveillance and Oversight Policy Section

Content Summary: The presentation began by giving an overview of what would be discussed:

- Oversight challenges
- Case for change
- Oversight initiatives
- Risk Assessment
- Reciprocal Technical Assistance

The presentation discussed the case for change resulting from the challenges and the evolution of manufacturing. Aviation products are now produced all over the world applying emerging technologies. There is a great reliance on supply chain with risk sharing partnerships being created. As industry expands globally, there are limited resources and complex business arrangements. Oversight of manufacturing facilities and bilateral agreements must become more efficient. Current FAA oversight initiatives include: Reciprocal Technical Assistance, Performance Based Oversight, and International Certificate Management.

The current 3-step risk assessment model was presented to the attendees;

- Exposure in the national airspace system
- Organizational risk assessment
- Focusing of oversight

Leveraging bilateral partners was presented with two main objectives:

- Decrease FAA audit of facilities in other countries through increased reliance on CAAs
- Apply resources made available to FAA through bilateral agreements

Reciprocal Technical Assistance supports a partnership approach to address today's environment by helping to diminish duplication of oversight activities. Reciprocal Technical Assistance promotes effective use of limited resources, and promotes sharing of safety data. Bilateral relationships will promote and establish standardization and harmonization through increased familiarization with each other's oversight system.

There are limitations identified by the authorities that need to be considered before performing reciprocal technical assistance. For example, the CAA may not have the legal authority to perform technical assistance *if* the facility does not hold their respective country's production approval, and in these instances, the FAA may need to conduct some international supplier control audits.

***Performance Based Oversight* - Kevin Nyce, Aviation Safety Analyst, Surveillance and Oversight Policy Section**

Content Summary: The presentation began by discussing performance-based oversight (PBO). Greater performance confidence in the control of manufacturing and quality systems could improve the level of oversight. PBO performance indicators present the performance level of the production system. Indicators between the PAH and the FAA need to be well-defined and understood. An example displayed indicators grouped together to create a dashboard. The presentation discussed PBO reviews and other types of reviews that occur between the FAA and the PAH prototype companies.

The PBO goal is for the principle inspector (PI) to be able to access data, review it, and then assess the system's risk. The presentation discussed oversight level adjustment and a potential reduction timeline for the PAHs.

The presentation shared six indicators agreed upon between the FAA and the PAH. The six indicators relate to the following quality performance topics:

- Quality Escapes
- Continued Operating Safety Reports
- Material Review Board Activity
- Internal Audit Activity
- Manufacturing Initiated Design Changes
- Supplier Rejection Performance

The indicators are tracked and PAHs provide data that is reviewed. Data validation was presented (including current status) and a process map of PBO as a system was discussed. The presentation closed with an update of the upcoming project milestones and projections for the upcoming scheduled visits.

Production Approval System in Japan and Recent Developments - Daisuke Umezawa, Director, Airworthiness Standards and International Affairs Office, Airworthiness Division, Japan Civil Aviation Bureau

Content Summary: The presentation began by giving a brief history of the Japanese civil aviation. Current developments were then discussed with respect to design and manufacturing of aircraft. The presentation compared the aerospace industry size to Japan's GDP. The organization regulating this industry, Japanese Civil Aviation Bureau (JCAB), provided discussions regarding the roles and responsibilities of their organization. Current JCAB approved production organizations were discussed, as well as, supplier dispersion around the world.

In addition to the presentations, group workshops were conducted to brainstorm and discuss various manufacturing topics. The workshops were divided into two topics: ***The Mechanics of Reciprocal Technical Assistance*** and ***Reciprocal Acceptance***. These topics included near-term challenges and long-term strategies. The near-term workshop topics included oversight scheduling and a point of contact from each authority for conducting reciprocal assistance. Other near-term topics included a potential form to capture requests and a discussion about how authorities followup on corrective actions requested from another authority. Longer term issues include the challenges of moving toward reciprocal acceptance and data sharing methods that accompany this challenge.

Conclusion

During the three-day proceedings, challenges to current and future manufacturing and oversight were identified. In order to address the rapid change in the global aviation industry, increased collaboration between the authorities is needed to continue to build on the mechanics of reciprocal technical assistance leading to reciprocal acceptance in the future. Through open communication, shared ideas on how to streamline our processes and more efficiently use our resources. Collectively, we agreed that we must identify challenges and continue the work to identify opportunities for harmonization.

The presentations and workshops during the meeting worked to enhance those conversations – all in the hope of working together to answer some of the tough questions we all face. We were excited to have several of the authorities present and provide their unique perspectives in catalyzing new initiatives to begin the development of an advanced roadmap for the future. We look forward to continuing the progress made during the 2015 Global Manufacturing Meeting.