International Civil Aviation Organization

MIDANPIRG/18 and RASG-MID/8 Virtual Meetings

(15-22 February 2021)

Agenda Item 2.3:   COVID-19 Impact on Aviation

REMOTE PERFORMANCE OF REGULATORY CERTIFICATION
AND OVERSIGHT ACTIVITIES

(Presented by the United States of America)

SUMMARY

This paper provides information about United States (U.S.) Federal Aviation Administration (FAA) remote performance of regulatory certification and oversight activities.

1.   INTRODUCTION

1.1   The FAA is continuing its use of remote technology to perform certain certification activities and regulatory oversight obligations, using technologies as tools. The FAA developed this process several years ago, as it is not always possible to perform these activities safely in-person, or performance may be limited or prevented due to a variety of circumstances. As the recent COVID-19 global health pandemic emergency has required the limitation of travel, the FAA has expanded its use of commonly available technology, such as phone and computer video/audio, scanned documentation, and other means, to meet its regulatory responsibilities or stakeholder needs. This technology was used sparingly prior to the global health emergency; however, with travel restrictions for inspectors during the current global health emergency, the FAA anticipates that certification/surveillance/oversight done by remote means will become a growing and permanent capability for more activities.

1.2   Historically within the FAA, there has been a professional or cultural bias against using remote technology as a replacement for in-person activities. Many were concerned about the fidelity of the technology, security of proprietary data, or other unforeseen challenges. Because of the global health pandemic emergency, the FAA is expanding use of technologies to perform remote oversight for maintenance recertification and airworthiness certification tasks domestically and internationally, and has learned valuable lessons from this experience. The FAA has also determined that the remote performance of certain inspections and tests can be more cost effective, improve certification timeliness, and reduce FAA resource burdens. Using technology for remote performance of oversight activities is still evolving, but the processes and procedures are allowing airworthiness and maintenance certification, conformity inspections, and complex surveillance tasks at more locations while using fewer resources in both time and travel.

2.   DISCUSSION

2.1   Challenges that preclude physical visits by the FAA have been issues in the past, and the COVID-19 global health emergency has focused our thinking and actions to seek or expand alternatives that will allow us to meet our certification or regulatory oversight responsibilities under difficult circumstances, whatever the cause.

2.2   Remote video technology is well established. Historically, while it has not been used widely for aviation regulatory oversight or certification activities, stable technologies are available and reliable. Having the ability for easy travel and visits to facilities, it has not been pursued aggressively. Under current circumstances, the FAA has significantly increased use of the varying capabilities and has learned that experience with the technology matters, and the capability to use it effectively continues to improve.

2.3   The primary tools the FAA is using include remote cameras, microphones, electronic document retrieval and review, and working with certificate holders and applicants through video or audio conferencing.

2.4   One of the main benefits of performing oversight activities remotely is the efficiency gained through not requiring inspectors to travel. This means the practice will continue, even when circumstances once again facilitate routine/frequent travel. The ability to see, through cameras, laptops, etc., a remote location will likely mean fewer physical visits by inspectors over time.

2.5   Initial meetings with applicants taking place by remote means can be scheduled more easily and more staff can participate, as travel is no longer a barrier. Follow-up meetings are also improved and scheduled more frequently, while using fewer workhours for the inspectors as travel considerations are removed.

2.6   The verification of corrective actions can also take place more quickly, thus allowing work to proceed more quickly for the regulated actions. Observation of products or parts in another country or region can occur at a greatly reduced expenditure of resources in both time and cost.

2.7   To date, the FAA has performed over 150 remote oversight events in 33 countries utilizing a variety of methodologies to maintain robust certificate management, to include new certification and renewals of part 145 repair stations inside and outside of the United States. The FAA is also conducting conformity inspections both domestically and internationally. While some steps must be added to ensure the technology will work for activities such as comparing physical features with drawings or test plans, these challenges are easily overcome via pre-coordination and setting expectations for all participants.

2.8   As remote oversight events progress, the FAA captures data for a database of successes and challenges for further analysis and process refinement. Data elements include ease of use; receptiveness by organization; audio/video quality; workload factor (time spent on a remote technology activity compared to an in person event).

2.9   The FAA has found a number of practical solutions to common obstacles:

- In areas without Wi-Fi, the use of a mobile phone hotspot has proven effective;
- Ensure that only one audio microphone is enabled (mute all others) to avoid echoing and reverberation;

- Having one inspector run the meeting and another take notes effectively minimizes interruptions and maintains focus;
- Have one person running or monitoring the quality of video and audio, acting as a director for both the regulator and the facility staff to make adjustments;
- Have the facility staff provide documents for review prior to the event to minimize review time;
- Hold a "Kick Off" preparation/introduction meeting: review process, gain familiarity with the remote technology application/software and discuss expectations;
- Limit the daily durations of remote meeting to no more than 2-3 hours;
- Use multiple meetings; and
- Use of multiple video methods at one time provide the ability to get different view angles and more complete picture.

2.10   The FAA continues to learn where the technology is appropriate for sampling and verification work and where the technology may not assist with oversight. The FAA also learns what works and what needs adjustment as we perform our inspection responsibilities remotely.

2.11   The video inspection element is the most challenging due to factors such as unfamiliarity with a new methodology, bandwidth challenges, limited field of view, audio challenges, time zone differences, etc. The FAA works through these challenges in real-time and has had success in improving the experiences, as each progressive event is easier than the previous event.

2.12   The FAA emphasizes that remote surveillance will not fully replace physical inspections, but by allowing remote observation or test witnessing, both the regulated entity and regulator will improve the timing to market and thus reduce costs to both sides.

2.13   Although expanded for use during the COVID-19 global pandemic health emergency, there are potential future applications for remote oversight that will achieve the intent while reducing travel costs and conserving public funds. This includes using technology to perform traditional in-person functions such as the observation of work on an aircraft, first-article inspection, verification of corrective actions and interim remote visits to supplement direct visits.

2.14   The FAA is beginning to document the remote oversight process and to create On the Job Training material. The expanding process allows the FAA to take the lessons learned discussed in this paper and standardize them, to share across teams and groups. While these documents do not currently exist, the FAA recognizes that the standardization of activities is the standard process for maintaining aviation safety and the next step in moving forward.

2.15   The use of technology to perform safety oversight activities remotely has expanded due to emergency circumstances. However, it has the possibility to improve inspection and oversight capabilities with fewer resources. The FAA feels its use is a benefit and encourages use by others to gain additional data on where it can work and how to benefit all Member States. The use of technology for remote oversight will not replace all physical inspections. However, it can be a tool to decrease the time for some inspections and replace some routine activities currently performed in person. The FAA continues to gain experience and will continue to share this with interested partners.

3.   ACTION BY THE MEETING

3.1   The Meeting is invited to note the information provided.

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