industry

BEST PRACTICES
FOR ELECTRONIC MANUALS, RECORDKEEPING AND SIGNATURES

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The Federal Aviation Administration's policies regarding electronic manuals, recordkeeping and signatures were significantly revised in 2016 with publication of Advisory Circular 120-78A: Electronic Manuals, Recordkeeping and Signatures. The agency allowed a six-month transition period, which was later extended, so the new policies have been in effect for more than a year.

AC 120-78A sets out the requirements for certificate holders conducting operations in accordance with 14 CFR 121, 125, 133, 135 or 137; fractional ownership program managers conducting operations in accordance with 14 CFR Part 91 Subpart K; repair stations operating in accordance with 14 CFR 145; and certain other entities to use electronic manuals, recordkeeping and signatures.

The AC also provides guidance for issuance of Operations Specification A025 or related letter of authorization, as appropriate.

Although the AC references several federal government efforts to encourage the use of electronic manuals, recordkeeping and signatures to improve business efficiencies, many organizations find applying for authorization in accordance with AC 120-78A anything but efficient.

AC 120-78A seems to have been easily accepted by repair stations and other maintenance organizations, but it has been a difficult transition for some small organizations and operators, especially small Part 135 air carriers with only one or two aircraft and limited technical and financial resources.

Major vendors of maintenance records software were already largely in compliance with AC 120-78A requirements, and most provide guidance for their customers to apply for and obtain authorization to use electronic records and signatures. Part 121 airlines often have proprietary systems that met or were relatively easily converted to meet the requirements of AC 120-78A.

The Part 135 industry was not as prepared to comply with the revised AC. Prior to the 2016 AC revision, some sophisticated Part 135 operators had authorization to use electronic manuals, records and/or signatures. Other Part 135 operators had authorization to use A025 just for electronic minimum equipment lists.

Many Part 135 operators use simple systems – for example, a PDF of an actual paper general operations manual or an Excel spreadsheet for weight and balance calculations.

Are these documents – which either start as a printed, signed document in the case of the GOM or are easily printed and produced as paper in the case of the Excel spreadsheet, essentially a calculator – actually "electronic" documents? Does an "electronic signature" have to be a complicated PIN, or is a signature created

on a touchscreen, with the signer's knowledge that the signature is as legally binding as a paper-written signature, considered an "electronic signature?"

Ask a roomful of inspectors and you'll get a variety of answers.

The answer is important because of the prevalent use of electronic flight bags. If an operator requests OpSpec A061, they will almost always need A025, unless they only intend to use EFBs for charts. In some cases, operators use common cloud storage systems, like Google Drive or Dropbox, for storing and sharing manuals or even flight plans, weight and balance calculations, and other records.

There are more sophisticated solutions to these challenges, but a revised AC shouldn't cause an operator to buy new apps, software, or subscriptions, creating a new cost to ensure compliance. (Formal rulemaking can create a new cost of compliance but only after required cost/benefit analyses.)

There is no regulatory reference for electronic manuals, records or signatures for Part 135. §135.63 merely requires the certificate holder to maintain specific records, and §135.21 requires an operator to have an accepted manual. How those manuals and records are kept are left to the operator. Compare this language to the correlating Part 121 language that requires computer record systems be approved by the FAA administrator.

Advisory circulars are not regulations. They are advisory material presenting one but not the only option for compliance with a particular regulation. In fact, the introductory memo of the AC includes the standard AC language stating, "This AC describes an acceptable means, but not the only means, for a certificate holder to utilize an electronic signature, electronic recordkeeping, and electronic manuals."

Inspector guidance found in FSIMS in Volume 3 General Technical Administration, Chapter 31 Electronic Signatures, Electronic Recordkeeping Systems, and Electronic Manual Systems is also not regulatory in nature. However, inspectors rely heavily on FSIMS and other guidance documents for approval and oversight purposes. Some even consider these materials regulatory, though they are not.

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Nevertheless, some inspectors will follow and require the applicant to follow the AC and guidance to the letter, which creates challenges for some aviation organizations.

If your repair station or air carrier organization chooses to implement electronic manuals, recordkeeping and signatures, whether you use simple or more sophisticated methods, consider the following best practices.

Best practices for electronic authorization and implementation

1. Talk to your inspectors before submitting a formal letter of request and application. Explain your plan and needs for electronic documents and try to understand their expectations. This is especially important if you are using simpler methods, like a cloud storage system, instead of a sophisticated manual management system or long-established recordkeeping and signatures systems.

2. Use AC 120-78A as a guide for your application. Align each requirement in the AC with your own processes as clearly as possible – even number your application according to the AC to assist inspectors in following their published guidance. If you are using software or apps from a vendor, ask for their guidance. Most vendors have a document at the ready with language to include in an A025 application.

3. Be sure your policies and procedures for use of electronic documents are clearly defined. This will not only assist your inspectors in approving your request but will help your employees comply.

4. Train your employees properly and regularly on these policies and procedures.

5. Use an app revision management service to ensure mobile devices maintain currency. Mobile device management services are useful for updating all devices on a particular network at once and ensuring ongoing compliance, mitigating the risk of different revisions on different devices.

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6. Audit devices, apps and software for current revisions of electronic manuals, especially for simpler systems.

7. Verify results of any app or software that conducts calculations – weight and balance or runway performance, for example – by completing manual calculations from time to time. Teach employees to question results that seem impractical.

8. Review your related policies and procedures at least annually to ensure they and any related apps and software continue to meet your needs and are easy for your employees to follow.

There are an infinite number of electronic manual management and storage, recordkeeping, and signatures methods for operators and maintenance organizations to consider. The challenge with AC 120-78A and related inspector guidance isn't necessarily the language itself; it's the difficulty of including all of those combinations of methods – available now or in the future – in just a few guidance documents. The result is often subjectivity from individual inspectors on how to ensure compliance.

At the end of the day, industry and the FAA should consider these issues from a safety perspective. Do the operator's methods ensure current, accurate manuals are used in operations and maintenance activities? Are records – regardless of format – properly completed to ensure safety and then stored to demonstrate compliance? Do individuals completing and signing records understand a mark made in any manner is legally binding, just as a signature written by hand in ink?
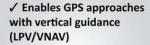
These are the real goals of 120-78A, but sometimes those goals are lost in interpretation. Work with your inspectors. Clearly demonstrate how your methods – whether sophisticated, commercially available options or a common cloud storage app and PDFs – work to ensure safety and demonstrate compliance in your operation or maintenance organization. ❑