



Designation: F3364 – 23

Standard Practice for Independent Audit Program for Unmanned Aircraft Operators¹

This standard is issued under the fixed designation F3364; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice establishes a minimum set of requirements for an Unmanned Aircraft Systems (UAS) Operator Independent Audit Program in compliance with Practice F3365. This document has been purposefully designed within the broader context of the Committee F38 library. Although the original source materials for the content presented here were intended to function as standalone documents, the committee has consciously removed any redundant information in favor of adopting a referential "single-source-of-truth" approach. Consequently, when applying this standard, it is essential to consider and integrate all relevant Committee F38 standards to ensure its comprehensive and accurate implementation.

1.2 When intending to utilize the information provided in this document as a Means of Compliance for operational or design approval, or both, it is crucial to consult with the respective oversight authority (for example, CAA) regarding its acceptable use and application. To find out which oversight authorities have accepted this standard (in whole or in part) as an acceptable Means of Compliance to their regulatory requirements (hereinafter "the Rules"), please refer to the Committee F38 webpage (www.ASTM.org/COMMITTEE/F38.htm).

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

¹ This practice is under the jurisdiction of ASTM Committee F38 on Unmanned Aircraft Systems and is the direct responsibility of Subcommittee F38.03 on Personnel Training, Qualification and Certification.

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2. Referenced Documents

2.1 *ASTM Standard*:²

E2159 Guide for Selection, Assignment, and Monitoring of Persons To Be Utilized as Assessors/Auditors or Technical Experts

F3060 Terminology for Aircraft

F3341 Terminology for Unmanned Aircraft Systems

F3365 Practice for Compliance Audits to ASTM Standards on Unmanned Aircraft Systems

3. Terminology

3.1 *Unique and Common Terminology*—Terminology used in multiple standards is defined in Terminology F3341, UAS Terminology Standard, and Terminology F3060, Aircraft Terminology Standard. Terminology that is unique to this specification is defined in this section.

3.2 *Definitions*:

3.2.1 *audit finding, n*—a statement of audited entity conditions at the time of the audit by evaluation against audit criteria. Audit findings shall be based upon verifiable audit data and may be either positive or negative with respect to audit criteria.

3.2.2 *independent audit, n*—an audit of an unmanned aircraft systems operator and its associate facilities by an external auditing entity to determine compliance with Civil Aviation Authority (CAA) accepted consensus standards, and procedures established to meet those requirements.

3.2.3 *noncompliant finding, n*—a non-fulfillment of a requirement that may affect the ability of the UAS Operator to comply with the provisions for compliance of the relevant CAA.

4. Significance and Use

4.1 This practice establishes the minimum set of requirements for an independent audit program for unmanned aircraft system operators. The intended use is to provide minimum

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

requirements for an initial assessment of operators bringing a new aircraft model or service to market, or for periodic review of an existing operator's operations.

4.2 Compliance to this practice would ensure that the audit program and those who execute it meet the consensus set of minimum requirements and qualifications.

4.3 This practice does not mandate operator independent audits.

4.4 Independent audits are to be conducted only at the request of the operator or the relevant CAA. This does not preclude an independent audit at the request of a court of law or arbitrator.

5. Audit Criteria

5.1 *Initial Assessment*—When performing an initial assessment audit of an unmanned aircraft system operator, the auditor(s) shall review compliance to the consensus standards for the aircraft being produced.

5.1.1 The auditing entity shall verify that the referenced consensus standards are appropriate and accepted by the relevant CAA.

5.1.2 At a minimum, the auditor(s) shall assess compliance to the following processes as applicable to the category of aircraft being produced:

- 5.1.2.1 UAS Design and Performance;
- 5.1.2.2 UAS Operating Instructions;
- 5.1.2.3 UAS Maintenance and Inspection Procedures;
- 5.1.2.4 UAS Flight Training Supplement (as applicable);
- 5.1.2.5 UAS Operator's Quality Assurance System;
- 5.1.2.6 UAS Operator's Continued Operational Safety Program; and

5.1.2.7 Any specific requirements mandated by relevant CAA.

5.1.3 Assessment of compliance shall be comprehensive and verifiable.

NOTE 1—Assessment of compliance to applicable standards does not require a determination of technical or design merit to be made by the auditing entity.

5.2 *Periodic Review*—When conducting a periodic review audit, the auditing entity may vary the audit scope to assess compliance to the same standards as an initial assessment audit at a reduced level of review. For example, the audit scope may include only selected audit criteria, selected period under review, or selected portions of the facility or organization.

6. Audit Program Personnel and Responsibilities

6.1 *General*—The auditing entity is responsible to conduct this audit program in accordance with the requirements given in Practice F3365.

6.2 *Personnel*—The audit program consists of the following personnel selected in accordance with Guide E2159:

- 6.2.1 Lead auditor;
- 6.2.2 Audit team members, as required, to conduct the audit; and
- 6.2.3 Support personnel, as required.
- 6.2.4 The responsibilities and qualifications of these personnel are defined in Practice F3365. Auditors and any support

personnel shall be familiar with the content of all applicable standards before performing or supporting an audit.

6.3 *Training*—The lead auditor shall have a current certification from an accredited quality auditor certification training program.

7. Selection and Scheduling of UAS Operator Independent Audits

7.1 *Audit Schedule Notification*—Unless directed by relevant CAA to address potential safety of flight concerns, the facility to be audited shall receive notification at least 30 calendar days before the start of the audit.

7.2 *Selection of Auditors*—The audit team should consist of auditors who are competent, objective, and independent as defined in Practice F3365.

8. Audit Process

8.1 Audit Preparation:

8.1.1 Before the start of an audit, an audit plan will be developed in accordance with Practice F3365

8.1.2 *Lead Auditor Responsibilities*—The lead auditor coordinates with:

8.1.2.1 A representative of the facility to be audited to ensure administrative and logistical arrangements for items such as unrestricted access, escorts, meeting rooms, and safety and security requirements are complete; and

8.1.2.2 Audit team members and CAAs, as needed, to facilitate administrative and logistical travel and audit preparation information.

8.1.3 The lead auditor and all team members meet before starting the audit, usually at the facility to be audited. This pre-audit team meeting is the forum for the lead auditor to review team assignments and supplement them, if necessary.

8.2 Executing the Audit:

8.2.1 Audit communications and data gathering protocols shall be conducted in accordance with Practice F3365.

8.2.2 Any findings shall be documented before the conclusion of the audit in accordance with Practice F3365.

8.3 Post-Audit Reporting Activities:

8.3.1 Corrective Action and Follow-Up:

8.3.1.1 *Post-Audit Letter*—The audited entity will receive a post-audit letter indicating the results of the audit activity. The letter should include communication of any findings.

8.3.1.2 *Request for Corrective Action*—The post-audit letter will request corrective action for any findings.

8.3.1.3 The post-audit letter should be delivered within 30 calendar days of the audit, or within the timeline agreed upon in the audit plan.

8.3.1.4 *Verification of Corrective Actions*—On-site verification of corrective actions may occur when it is not possible to confirm corrective actions via written, electronic, or other correspondence.

8.3.1.5 *Final Audit Report*—Once findings and corrective actions have been resolved, a letter will be sent to the UAS Operator confirming completion of the audit and communicating the UAS Operator's completion of the audit and resolution of any findings. This should be completed within 90 calendar