

4910-13-P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 5, 21, 91, and 119

[Docket No.: FAA-2021-0419; Amdt. No. XX]

RIN 2120-AL60

Safety Management Systems

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: The FAA is updating requirements for safety management systems and requiring certain certificate holders and commercial air tour operators to develop and implement a safety management system (SMS). This rule extends the requirement for an SMS to all certificate holders operating under the rules for commuter and on-demand operations, commercial air tour operators, production certificate holders that are holders or licensees of a type certificate for the same product, and holders of a type certificate that license out that type certificate for production. The FAA is publishing this rule in part to address a Congressional mandate as well as recommendations from the National Transportation Safety Board and two aviation rulemaking committees. Additionally, the rule more closely aligns the United States with Annex 19 to the Convention on International Civil Aviation. This rule will improve aviation safety by requiring organizations to implement a proactive approach to managing safety.

DATES: Effective *[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]*.

ADDRESSES: For information on where to obtain copies of rulemaking documents and other information related to this final rule, see “How to Obtain Additional Information” in the SUPPLEMENTARY INFORMATION section of this document.

FOR FURTHER INFORMATION CONTACT: For technical questions concerning this action, contact Scott Van Buren, Office of Accident Investigation and Prevention, AVP-4, Federal Aviation Administration, 800 Independence Avenue SW, Room 300 East, Washington, DC 20591, telephone (202) 494-8417; email Scott.VanBuren@faa.gov.

SUPPLEMENTARY INFORMATION:

List of Abbreviations and Acronyms Frequently Used In This Document

AC – Advisory Circular
ACSAA – Aircraft Certification, Safety, and Accountability Act of 2020
ANPRM – Advance notice of proposed rulemaking
ARC – Aviation Rulemaking Committee
ASAP – Aviation Safety Action Program
CAA – Civil Aviation Authority
CFR – Code of Federal Regulations
EASA – European Union Aviation Safety Agency
FAA – Federal Aviation Administration
FOIA – Freedom of Information Act
FRFA – Final Regulatory Flexibility Analysis
HTAWS – Helicopter Terrain Awareness and Warning System
ICAO – International Civil Aviation Organization
IRFA – Initial Regulatory Flexibility Analysis
LOA – Letter of Authorization
NAICS – North American Industry Classification System
NPRM – Notice of proposed rulemaking
NTSB – National Transportation Safety Board
OMB – Office of Management and Budget
OpSpec – Operations Specifications
PC – Production Certificate
PMA – Parts Manufacturer Approval

RFA – Regulatory Flexibility Act
RIA – Regulatory Impact Analysis
SBA – Small Business Administration
SMS – Safety Management System
STC – Supplemental Type Certificate
TC – Type Certificate
TSOA – Technical Standard Order Authorization
U.S.C. – United States Code
WBAT – Web-Based Analytical Technology

Table of Contents

- I. Executive Summary
 - A. Purpose of the Regulatory Action
 - B. Changes Made in this Final Rule
 - C. Summary of the Costs and Benefits
- II. Authority for this Rulemaking
- III. Background
 - A. Statement of the Problem
 - B. Safety Management System Overview
 - C. Related Regulatory Actions
 - D. NTSB Recommendations
 - E. SMS ARCs
 - F. Aircraft Certification, Safety, and Accountability Act
 - G. International Movement Toward SMS
 - H. Summary of the NPRM
 - I. General Overview of Comments
- IV. Discussion of Comments and the Final Rule
 - A. Applicability to Part 135 and LOA holders under § 91.147
 - B. Applicability to Part 21 Foreign Entities
 - C. Expansion of Proposed Applicability
 - D. Compliance Timelines and Submission Requirements
 - E. Use of the term “Person”
 - F. System Description
 - G. Notification of Hazards and Protection of Information
 - H. Recordkeeping – Communications regarding Hazard Information Notifications
 - I. “Hazard” Definition
 - J. Scalability
 - K. Code of Ethics
 - L. FAA and Industry Readiness for SMS
 - M. Aviation Organizations with an Existing SMS
 - N. Employee Reporting
 - O. Summary of Confidential Employee Reports
 - P. Emergency Response Planning
 - Q. Safety Risk Management
 - R. Part 135 Pilot and Duty Rules ARC

- S. Consistency with ICAO
- T. Safety Policy
- U. Miscellaneous Amendments
- V. Benefits and Costs
- W. Severability
- V. Regulatory Notices and Analyses
 - A. Summary of the Regulatory Impact Analysis
 - B. Regulatory Flexibility Act
 - C. International Trade Impact Assessment
 - D. Unfunded Mandates Assessment
 - E. Paperwork Reduction Act
 - F. International Compatibility
 - G. Environmental Analysis
 - H. Regulations Affecting Intrastate Aviation in Alaska
- VI. Executive Order Determinations
 - A. Executive Order 13132, Federalism
 - B. Executive Order 13175, Consultation and Coordination with Indian Tribal Governments
 - C. Executive Order 13211, Regulations that Significantly Affect Energy Supply, Distribution, or Use
 - D. Executive Order 13609, Promoting International Regulatory Cooperation
- VII. Additional Information
 - A. Electronic Access and Filing
 - B. Small Business Regulatory Enforcement Fairness Act

I. Executive Summary

A. Purpose of the Regulatory Action

A safety management system (SMS) provides an organization-wide approach to identifying safety hazards, assessing and managing safety risk, and assuring the effectiveness of safety risk controls. An SMS provides a set of decision-making processes and procedures that can improve safety by assisting an organization in planning, organizing, directing, and controlling its aviation-related business activities. Currently, the SMS requirements of part 5 of title 14 of the Code of Federal Regulations (CFR) apply only to air carriers certificated under part 119 and conducting operations in accordance with part 121 (part 121 operators). This final rule extends the applicability of the SMS requirements in part 5 to include additional entities to enhance safety, respond

to a Congressional mandate, and more closely align the FAA's SMS requirements with International Civil Aviation Organization (ICAO) Annex 19.

Historically, the approach to aviation safety was based on the reactive analysis of past accidents and the introduction of corrective actions to prevent the recurrence of those events. An SMS, in contrast, helps organizations proactively identify potential hazards in the operating environment, analyze the risks of those hazards, and mitigate those risks to prevent an accident or incident. In 2015, the FAA promulgated 14 CFR part 5, which required part 121 operators to develop and implement SMS and set out the basic requirements for those systems. The next step in improving aviation safety is to extend the SMS requirements in part 5 to additional organizations that play a critical role in the design, manufacturing, and operation of aircraft (i.e., part 119 certificate holders operating under part 135, Letter of Authorization (LOA) holders operating commercial air tours under § 91.147, and certain certificate holders under part 21). These aviation organizations are in the best position to prevent future incidents and accidents because they are closest to the hazards, and they know the most about their operations and products.

An SMS provides a structured, repeatable, systematic approach to proactively identify hazards and manage safety risk. With implementation of an SMS, these aviation organizations will be better able to develop and implement mitigations that are appropriate to their environment and operational structure. SMS can be used to avoid or mitigate future aviation accidents. This final rule is based on the recommendations of two

previous Aviation Rulemaking Committees (ARCs),¹ the National Transportation Safety Board (NTSB),² and the Joint Authorities Technical Review of the Boeing 737 MAX Flight Control System,³ and consideration of public comments received during the comment period.

Further, the Aircraft Certification, Safety, and Accountability Act of 2020 (Pub. L. 116-260, 134 Stat. 2309, hereafter referred to as ACSAA), enacted on December 27, 2020, mandated the application of SMS regulatory requirements to holders of both a Type Certificate (TC) and a Production Certificate (PC) issued under part 21.⁴ Congress further mandated that the FAA include certain requirements in its implementing regulations. The amendments to part 5 are in accordance with this legislation.

Lastly, requiring SMS for certain commercial operators and design and manufacturing organizations more closely aligns the FAA's SMS requirements with ICAO Annex 19; therefore, this final rule increases U.S. alignment with other civil aviation authorities (CAAs) that are also implementing SMS requirements in accordance with ICAO Standards and Recommended Practices.⁵

¹ The SMS ARCs are discussed in Section III.D.

² NTSB recommendations are discussed in Section III.C.

³ Joint Authorities Technical Review (JATR), *Boeing 737 MAX Flight Control System: Observations, Findings, and Recommendations*, Washington, October 11, 2019.

⁴ Section 102(a)(1) of ACSAA.

⁵ Several major civil aviation authorities have established or are in the process of establishing SMS requirements for air operators, air traffic management, airports, and maintenance organizations, including the European Union Aviation Safety Agency (EASA), Brazil, Canada, Japan, New Zealand, and Australia. Fewer countries have design and manufacturing organizations and, therefore, they have not established SMS requirements for those entities. However, New Zealand, Japan, and EASA have established SMS requirements for design and manufacturing organizations.

The FAA emphasizes that the requirements of this rule are limited to those activities that directly affect aviation safety. Therefore, to the extent the organizations covered by this rule also engage in activities that do not directly affect aviation safety (e.g., processing consumer payments, mitigating slip-and-fall accidents on company property, administering employee payroll), those activities need not be covered by an SMS required by this rule (but an organization is not prohibited from covering such activities by its SMS, if it chooses to do so).

B. Changes Made in this Final Rule

After considering the information provided by commenters, the FAA is making several changes in this final rule from what was proposed in the notice of proposed rulemaking (NPRM).⁶ Table 1 below summarizes the changes. The changes are discussed in more detail in Section IV.

Table 1. Summary of Regulatory Text Changes

Proposed 14 CFR Section Affected	Description	Summary of Final Rule Changes from NPRM
5.1(e) and 5.1(f)	Applicability of part 5 to part 21 certificate holders.	“For the same product” (aircraft, aircraft engine, or propeller) is added to § 5.1(e) and § 5.1(f) to clarify that part 5 does not apply to either a supplemental type certificate (STC) holder or a PC holder for an STC, or PC holders that only produce parts or articles.
5.1(g) and 5.15(a)	Applicability of part 5 to foreign manufacturers.	Foreign holders of a validated TC issued under § 21.29 are now excluded.
5.3	Definition of “Hazard.”	The proposed revision to the definition of “hazard” is partially adopted. The terms “incidents” and “objects” are incorporated as proposed, but the proposal to replace the term “foreseeably” with “potential to” is not adopted. The new definition is: “Hazard means a condition or an object that could foreseeably cause or contribute to an incident or aircraft accident, as defined in 49 CFR 830.2.”
5.5	Scalability.	The proposal to remove the scalability language in original § 5.3 is not adopted. The language is

⁶ 88 FR 1932.

		retained and placed in § 5.5(a) to provide a better understanding related to scalability.
5.5(b), 5.95(c)	Organizational system description.	The “system description” proposed in § 5.5(b) is renamed to “organizational system description.” The requirement is moved to § 5.17 and is now applicable only to covered part 21 entities (§§ 5.11(a), 5.13(b)(1), 5.15(b)(1), and 5.15(c)(1)). The proposed regulatory language is revised to make explicit that only a summary of information in the organizational system description is required. Also, the proposal to require SMS documentation of the system description in § 5.95(c) is not adopted.
5.7(a)	Part 121 submission requirements.	The FAA proposed in § 5.7(a) that existing part 121 operators would be required to submit to the FAA for acceptance revisions to their SMS necessary to meet the new requirements in part 5. In the final rule, existing part 121 operators with acceptable SMS are required to make revisions to their SMS. However, in alignment with the requirements for new part 121 applicants, part 135 operators, and LOA holders under § 91.147, FAA acceptance of the SMS and revisions made by existing part 121 operators will not be required.
5.7(b), 5.9(a) and (b), and 91.147(c)(8)	Statement of Compliance.	<p>The FAA proposed that existing part 135 operators and LOA holders under § 91.147 submit a statement of compliance. In the final rule, the name is changed from a statement of compliance to a declaration of compliance.</p> <p>The requirement to submit a statement of compliance was also proposed for applicants for part 121 or 135 operations and LOAs under § 91.147. This requirement is not adopted in the final rule.</p>
5.9(a)(1) and (a)(2)	Part 135 operators and § 91.147 air tour operators compliance timeline.	The compliance timeline for existing operators is extended from 24 months to 36 months.
5.9	Single-pilot operators.	Part 135 operators and part 91 commercial air tour operators are required to have an SMS, as proposed; but some SMS requirements have been determined not to be applicable to certain single-pilot operators. New § 5.9(e) enumerates the exceptions for certain single-pilot operators.
5.11; 5.13; 5.15	Requirements for part 21 certificate holders.	For existing part 21 certificate holders, the deadline for submission of SMS implementation plans is changed from December 27, 2024, to no later than 6 months after the final rule’s effective date. SMS must be implemented by these entities no later than 36 months after the effective date. For PC applicants or TC holders entering into a licensing agreement, the deadline to implement SMS is changed to no later than 36 months after submission of the implementation plan.

		Finally, the sequence of the requirements is changed to move development of the implementation plan before development of the SMS.
5.17	Implementation plan.	The implementation plan requirements in proposed § 5.17 are moved to § 5.19 to more logically follow the “organizational system description” requirements (now § 5.17). Language is added to require that the implementation plan be based on the organizational system description.
5.71	Safety performance monitoring and measurement.	In the NPRM, the FAA proposed removing the word “operations” from § 5.71(a) and (b) to clarify the requirement and avoid confusion with the term “operator.” The FAA does not adopt that change in the final rule.
5.94 and 5.97(d)	Notification of hazards to interfacing persons.	The proposed § 5.94(a) requirement for notification of hazards is moved to subpart C - Safety Risk Management, in new § 5.57. The term “interfacing persons” is now clarified to be “those who contribute to the safety” of a covered organization’s “aviation-related products and services.” In addition, a requirement is included in subpart D – Safety Assurance (new § 5.71(a)(8)) to have a process for investigating hazard notifications that have been received. Thus, the requirement in proposed § 5.94(b) to develop procedures for reporting and receiving hazard information is removed. Section 5.97(d) is updated to replace the reference to “§ 5.94” with “§ 5.57.”
119.8	Requirement to meet part 5 for part 121 and 135 operators.	Section 119.8 is changed to: “Certificate holders authorized to conduct operations under part 121 or 135 of this chapter must have a safety management system that meets the requirements of part 5 of this chapter.” This change corrects an inadvertent error in the NPRM.

C. Summary of the Costs and Benefits

As presented in the NPRM, the FAA estimated quantified annualized costs of \$47.4 million using a 7 percent discount rate over a 5-year period of analysis. The costs represent resources to develop and implement an SMS. Mitigation costs to reduce or eliminate any hazards identified by an SMS, which are yet to be identified and thus unknown, are not quantified in the analysis. The FAA evaluated benefits qualitatively. The benefits are the value that would result from avoided fatalities, injuries, aircraft

damage, and investigation costs. The analysis of costs and benefits reflects changes in the final rule from the NPRM. See Section V.A. for more information.

II. Authority for this Rulemaking

The FAA's authority to issue rules on aviation safety is found in title 49 of the United States Code (U.S.C.). Subtitle I, section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority. This rulemaking is promulgated under the authority described in 49 U.S.C. 106(f), which establishes the authority of the Administrator to promulgate regulations and rules.

In 2010, Congress mandated that the FAA conduct rulemaking to require part 121 operators to implement an SMS in the Airline Safety and Federal Aviation Administration Extension Act of 2010 (Pub. L. 111-216, 124 Stat. 2366).

Subsequently, Congress enacted ACSAA, on December 27, 2020. Section 102, titled "Safety Management Systems," requires the FAA to initiate a rulemaking to require manufacturers that hold both a TC and a PC issued pursuant to 49 U.S.C. 44704 have an SMS consistent with the Standards and Recommended Practices established by ICAO and contained in Annex 19 to the Convention on International Civil Aviation (61 Stat. 1180) for such systems, and ensure their SMSs are consistent with, and complementary to, existing SMSs. Section 102 of ACSAA requires the implementing regulations to include a confidential employee reporting system through which employees can report hazards, issues, concerns, occurrences, and incidents without concern for reprisal for reporting, and a code of ethics. The regulations in the final rule are in accordance with those requirements.

Additionally, the FAA is using its discretion under the following authorities to proactively extend SMS requirements to part 119 certificate holders authorized to operate under part 135, LOA holders operating under § 91.147, and certain TC or PC holders not covered under section 102 of the ACSAA.

This rulemaking is promulgated under 49 U.S.C. 44701(a)(5) (“The Administrator of the Federal Aviation Administration shall promote safe flight of civil aircraft in air commerce by prescribing regulations and minimum standards for other practices, methods, and procedure the Administrator finds necessary for safety in air commerce and national security”); 44701(a)(2)(A) (“The Administrator of the Federal Aviation Administration shall promote safe flight of civil aircraft in air commerce by prescribing regulations and minimum standards in the interest of safety for inspecting, servicing, and overhauling aircraft, aircraft engines, propellers, and appliances”); 44702(a) (“The Administrator of the Federal Aviation Administration may issue airman certificates, design organization certificates, type certificates, production certificates, airworthiness certificates, air carrier operating certificates, airport operating certificates, air agency certificates, and air navigation facility certificates”); and 44704(a)(1) (“The Administrator of the Federal Aviation Administration shall issue a type certificate for an aircraft, aircraft engine, or propeller, or for an appliance specified under paragraph (2)(A) of this subsection when the Administrator finds that the aircraft, aircraft engine, propeller, or appliance is properly designed and manufactured, performs properly, and meets the regulations and minimum standards”). Additionally, this rulemaking is consistent with the requirements of 49 U.S.C. 44701(d)(1)(A) (“When prescribing a regulation or standard under [49 U.S.C. chapter 447], the Administrator shall consider the

duty of an air carrier to provide service with the highest possible degree of safety in the public interest”).

Finally, 49 U.S.C. 44701(c) directs the Administrator to “carry out this chapter in a way that best tends to reduce or eliminate the possibility or recurrence of accidents in air transportation.” Among other things, this rulemaking requires certain entities whose activities affect safety in air transportation to develop and maintain an SMS to improve the safety of their operations. SMS enables persons to proactively identify and mitigate safety risk, thereby reducing the possibility or recurrence of accidents in air transportation consistent with the mandate in section 44701(c). For these reasons, the regulations identified in the final rule are within the scope of the FAA’s authority and are consistent with Congress’s mandate that the FAA exercise its authority proactively – not just reactively – to promote safe flight of civil aircraft and to reduce or eliminate hazards that could result in accidents in air transportation.

III. Background

A. Statement of the Problem

As described in the NPRM, over the last few decades, accidents involving commercial aviation operators have decreased.⁷ Despite an overall reduction in accidents, the FAA determined that many of the accidents involving part 135 and § 91.147 operators could have been effectively mitigated by the presence of an SMS. These accidents highlight the systemic improvement opportunities to safety, which are described in the Regulatory Impact Analysis (RIA) for this rulemaking. According to

⁷ U.S. Air Carrier Safety Data, <https://www.bts.gov/content/us-air-carrier-safety-data>. Accessed March 22, 2022.

NTSB data, from 2015 to 2019, there were 215 accidents involving part 135 operators, with a total of 121 fatalities,⁸ as well as 33 accidents involving air tour operators operating under § 91.147, with a total of 16 fatalities.⁹ Of these accidents, the FAA identified 35 involving part 135 operators and four involving § 91.147 operators that resulted in fatalities and serious injuries that could have been mitigated had those operators implemented an SMS. Additional accidents not involving fatalities or serious injuries may also have been avoided. The FAA also identified several accidents across part 91, 121, and 135 operations involving design and production issues that resulted in fatalities and serious injuries that could have been mitigated or prevented if the design and manufacturing organizations involved had implemented an SMS. A full listing of each accident used to inform the analysis of this rulemaking is included in Appendix A to the RIA.

Given the rapid development, growth, and increasing complexities of the airspace, the FAA is extending SMS requirements to parties that play critical roles in the design, manufacturing, and operation of aircraft. ACSAA requires the FAA to include holders of both a TC and a PC among those organizations that should be required to implement an SMS. Applying SMS to commuter and on-demand air carriers, air tours, and the manufacturers responsible for design and production of products will continue to reduce incidents, accidents, and fatalities. This extended application will improve safety in aviation by requiring these organizations to proactively identify hazards, assess risk of

⁸ National Transportation Safety Board. US Civil Aviation Accident Rates. 2022. Available at: <https://www.nts.gov/safety/Pages/research.aspx>.

⁹ Data file of sightseeing accidents provided by the NTSB April 2020.

those hazards, and develop and implement mitigations, as necessary. ICAO, other CAAs, industry advisory groups, and the NTSB all agree that the use of an SMS improves safety. An SMS has been implemented by each part 121 operator, and many other aviation organizations have implemented an SMS within the context of the FAA's voluntary SMS programs.

B. Safety Management System Overview

An SMS is a formal, top-down, organization-wide approach to managing safety risk and ensuring the effectiveness of safety risk controls. It includes systematic procedures, practices, and policies for the management of safety risk. An SMS is a management system integrated into an organization's operations that enforces the concept that safety should be managed with as much emphasis, commitment, and focus as any other critical area of an organization.

An SMS is a formalized approach to managing safety by developing an organization-wide safety policy, developing formal methods of identifying hazards, analyzing and mitigating risk, developing methods for ensuring continuous safety improvement, and creating organization-wide safety promotion strategies. An SMS must include the following four components: Safety Policy, Safety Risk Management, Safety Assurance, and Safety Promotion. For additional information on these components and other elements of SMS see the "Safety Management Systems for Domestic, Flag, and Supplemental Operations Certificate Holders" final rule (80 FR 1309).

The purpose of an SMS is to reduce incidents, accidents, and fatalities by aiding aviation organizations in identifying hazards and mitigating the risk of those hazards

before they lead to an incident or accident. An SMS can work to reduce incidents, accidents, and fatalities in many different ways. For example, an SMS may:

- Increase safety of products or services by identifying and addressing problems before they result in an incident, accident, or fatality.
- Improve data-informed decision making to prioritize resource allocation.
- Enhance communication regarding safety by using common, consistent terminology within the organization and throughout the industry.
- Strengthen the organization's safety culture.

SMS increases safety by requiring an organization with a part 5 SMS to “connect the dots” in a way that it may not do without an SMS. An SMS integrates discrete processes and procedures, such as organizational safety promotion, designation of safety roles and responsibilities, hazard identification, risk assessment and control, and performance assessment, into a comprehensive system to address aviation hazards. For example, consider an air carrier whose pilots suddenly start noticing that landings at a specific airport have recently become more difficult. Under SMS, those pilots are encouraged to communicate their individual observations to their management. Their management, upon noticing several reports have been received, would assess the situation and trigger their Safety Risk Management processes. These processes would then trigger a notification of the hazard to the airport. If the carrier does not have an SMS program, the carrier's pilots may not communicate their individual observations, the management may not have known of the hazard, and the systemic airport problem would not have been identified or addressed.

As another example, consider the scenario of an aircraft production line where a tool is calibrated improperly. The aircraft assembly technician was unaware of the improperly calibrated tool and completed the assembly process. During operation, an air carrier's pilots identified minor and repeated flight control issues and reported these issues to their management. Under an SMS, the air carrier's management would report the hazard to the aircraft manufacturer. The aircraft manufacturer, upon receipt of the hazard report, would assess the situation and trigger its Safety Risk Management processes. This analysis would identify that the flight control problems were caused by an improperly calibrated tool. The manufacturer would then implement safety risk mitigations to correct the tool calibration process and increase tool inspection. In addition, the manufacturer would identify all delivered aircraft that may have been assembled with the improperly calibrated tool and issue maintenance instructions to all operators. Without SMS, the potential hazard may go unrecognized, unreported, and unmitigated, presenting a safety issue for each aircraft in service.

Anecdotal evidence from FAA voluntary SMS program participants indicates that SMS improves the safety of aviation organizations.¹⁰ The FAA's Voluntary Program started as a pilot project in 2007 with a primary focus on part 121 operators, and it was based on the ICAO's SMS framework in Annex 19. In 2015, with the publication of part 5, the pilot project was transitioned to what is now called the FAA's SMS Voluntary

¹⁰ As described in the RIA, for example, one participant noted that the compressed executive awareness time of new safety related issues resulted in formal management actions occurring in less than 90 days for low-risk issues and within hours for high-risk issues. Another participant noted that they have seen a substantial drop in the major risk categories that they track.

Program, and it is based on part 5.¹¹ As of October 31, 2023, the SMS Voluntary Program had 72 participants, which included 45 part 135 operators, two part 141 pilot schools, one part 142 training center, and 24 part 145 repair stations. As of October 31, 2023, there were 30 part 21 certificate holders participating in the associated voluntary program for design and production organizations, which includes 5 part 21 certificate holders with accepted SMSs. Recognizing this, the FAA has implemented SMS within many of its own organizations.

Further, expansion of the SMS requirements increases U.S. alignment with other CAAs that are also implementing SMS requirements in accordance with ICAO Standards and Recommended Practices. With an SMS, a U.S. company may have an enhanced ability to operate internationally due to improved alignment with ICAO Standards and Recommended Practices.

To date, SMS requirements have mainly focused on internal identification and mitigation of risk within an aviation organization. However, the FAA augmented these requirements in this rule to encourage a collaborative approach in which persons required to have an SMS share hazard information with each other and work together to identify and address hazards and safety issues. To enable collaboration, this rule requires persons to share hazard information with other aviation organizations to ensure that relevant information reaches the person in the best position to address the hazard. The expanded applicability and hazard information sharing among interfacing organizations will enable a network of aviation organizations working collaboratively to manage risk, thereby

¹¹ 80 FR 1308. The FAA published technical amendments on January 13, 2015 (80 FR 1584) and May 25, 2017 (82 FR 24009) to correct a date and a reference in the rule, respectively.

enhancing the safety benefits of SMS by assuring that hazards are communicated and mitigated effectively.

Accordingly, expanding the implementation of SMS in the aviation industry, as well as requiring the notification of identified hazards to those best positioned to address them, will increase safety throughout the industry.

C. Related Regulatory Actions

1. Safety Management Systems for Domestic, Flag, and Supplemental Operations

On July 23, 2009, the FAA published an advance notice of proposed rulemaking (ANPRM) to solicit public comments on whether certain 14 CFR part 21, 119, 121, 125, 135, 141, 142, and 145 certificate holders, product manufacturers, applicants, and employers (product/service providers) should be required to develop an SMS.¹² On August 1, 2010, Congress subsequently enacted the Airline Safety and Federal Aviation Administration Extension Act of 2010 (Pub. L. 111-216, 124 Stat. 2366), which directed the FAA to conduct rulemaking to “require all part 121 air carriers to implement a safety management system.”¹³ To meet the rulemaking deadlines mandated by the Act, the FAA decided not to immediately address SMS for product/service providers other than part 121 air carriers.¹⁴ Accordingly, the FAA limited the SMS rulemaking project to part 121

¹² ANPRM, “Safety Management Systems,” 74 FR 36414. July 23, 2009.

¹³ See Sec. 215(a).

¹⁴ See “Safety Management System; Withdrawal,” 76 FR 14592. March 17, 2011.

air carriers, issued an NPRM on November 5, 2010,¹⁵ and subsequently withdrew the ANPRM.¹⁶

On January 8, 2015, the FAA published the “Safety Management Systems for Domestic, Flag, and Supplemental Operations Certificate Holders” final rule (SMS for part 121 final rule) requiring operators authorized to conduct operations under part 121 to develop and implement an SMS to improve the safety of their aviation related activities.¹⁷ The final rule added part 5 to title 14 of the CFR, creating the SMS requirements for part 121 certificate holders, modeled on the ICAO SMS framework in ICAO Annex 19 and consistent with the 2009 ARC recommendations (as discussed in Section III.E.1.). The FAA crafted the requirements in part 5 to be applicable to aviation organizations of various sizes and complexities, as well as to be adaptable to fit the different types of organizations in the air transportation system and operations within an individual company. By 2018, all part 121 operators had met the requirement to have an SMS acceptable to the FAA.

2. Safety Management Systems for part 139 Airports

On February 23, 2023, the FAA published a final rule¹⁸ updating 14 CFR part 139 that requires certain airport certificate holders to develop, implement, maintain, and adhere to an airport SMS. Certificated airports that qualify under one or more of the following criteria are required to develop an SMS under this final rule: are classified as

¹⁵ 75 FR 68224.

¹⁶ *See id.*

¹⁷ 80 FR 1308. The FAA published technical amendments on January 13, 2015 (80 FR 1584) and May 25, 2017 (82 FR 24009) to correct a date and a reference in the rule, respectively.

¹⁸ 88 FR 11642.

large, medium, or small hubs based on passenger data extracted from the FAA Air Carrier Activity Information System; have a 3-year rolling average of 100,000 or more total annual operations, meaning the sum of all arrivals and departures; or serve any international operation other than general aviation. This rule expanded SMS requirements to certain certificated airports and furthered the FAA's aviation-wide approach to SMS implementation to address safety at an organizational level. This rule became effective on April 24, 2023.

D. NTSB Recommendations

The NTSB first recommended in 1997 that transportation organizations implement an SMS, and early recommendations were aimed at improving safety in the maritime industry. Since then, a number of NTSB investigations related to various modes of transportation, including aviation, have cited organizational factors contributing to accidents and resulted in recommendations that SMS be used as a way to prevent future accidents and improve safety. The NTSB issued 18 recommendations regarding SMS for aviation organizations over a 15-year period, spanning 2007 through 2021.¹⁹ These recommendations covered commercial operations under 14 CFR parts 121 and 135, revenue passenger carrying business operations under part 91, and certificate holders under part 21. Eight of the 18 NTSB recommendations were issued to the FAA.²⁰

¹⁹ NTSB Safety recommendations: A-07-010 (2007), A-09-016 (2009), A-09-089 (2009), A-09-098 (2009), A-09-106 (2009), A-12-062 (2012), A-12-063 (2012), A-14-105 (2014), A-14-106 (2014), A-16-036 (2016), A-19-028 (2020), A-19-036 (2019), A-19-038 (2019), A-20-025 (2020), A-21-007 (2021), A-21-013 (2021), A-21-014 (2021), and A-21-048 (2021).

²⁰ NTSB Safety recommendations: A-07-010 (2007), A-09-089 (2009), A-09-016 (2009), A-16-036 (2016), A-19-028 (2020), A-21-013 (2021), A-21-014 (2021), and A-21-048 (2021).

The NTSB publishes a Most Wanted List that “highlights transportation safety improvements needed now to prevent accidents, reduce injuries, and save lives.”²¹ The NTSB 2021-2023 Most Wanted List recommended that the FAA “Require and Verify the Effectiveness of Safety Management Systems in all Revenue Passenger-Carrying Aviation Operations.”²²

E. SMS ARCs

Prior to publishing the 2015 SMS rule, the FAA chartered two ARCs to provide advice on implementing SMS in aviation regulations. The industry stakeholders on these ARCs included individual companies and associations representing operators, design and manufacturing organizations, repair stations, and training organizations. These ARCs expressed industry support for SMS and recommended that the FAA publish rules requiring the use of SMS.

The FAA chartered the first ARC in 2009, after publishing an ANPRM seeking public input on requiring certain part 21, 119, 121, 125, 135, 141, 142, and 145 certificate holders to develop an SMS.²³ The ARC recommended the FAA issue regulations on SMS and that those regulations apply to certificate holders under 14 CFR parts 21, 119, 121, 125, 135, 141, 142, and 145, as well as operators under 14 CFR part 91 subpart K.²⁴ The

²¹ 2021-2023 NTSB Most Wanted List of Transportation Safety Improvements, www.nts.gov/mwl

²² 2021-2023, NTSB Most Wanted List of Transportation Safety Improvements, Require and Verify the Effectiveness of Safety Management Systems in all Revenue Passenger-Carrying Aviation Operations, <https://www.nts.gov/Advocacy/mwl/Pages/mwl-21-22/mwl-as-01.aspx>.

²³ 74 FR 36414, July 23, 2009.

²⁴ Safety Management System (SMS) Aviation Rulemaking Committee; Order 1110.152, Washington, D.C. Available at: https://www.faa.gov/regulations_policies/rulemaking/committees/documents/media/SMSARC-2122009.pdf (as of March 15, 2022).

ARC also recommended phased promulgation of SMS regulations and that the FAA prioritize new SMS regulations based on the potential safety benefit, as well as industry experience and regulatory oversight readiness. The rulemakings implementing SMS for part 121 operators and airports certificated under part 139 are addressed in more detail in Section III.C. of this preamble.

The FAA chartered a second ARC in 2012²⁵ to evaluate improvements to the effectiveness and efficiency of existing “certification procedures for products and parts,” and the benefits of incorporating SMS in the design and manufacturing environment. The FAA received the ARC’s final report in October 2014.²⁶ The ARC recommended establishing regulatory requirements for implementing SMS for design and production approval organizations that would be consistent with the part 5 requirements.

For more information about both ARCs’ recommendations and the FAA’s responses, see Section IV.A of the NPRM preceding this final rule.

F. Aircraft Certification, Safety, and Accountability Act

The Lion Air and Ethiopian Airlines accidents involving the Boeing 737 MAX resulted in several investigations, not only of the accidents, but also of the FAA’s oversight and certification processes. One such investigation, convened by the FAA in April of 2019, was the Boeing 737 MAX Flight Control System Joint Authorities Technical Review. The Joint Authorities Technical Review included representatives from

²⁵ 14 CFR 21/Safety Management Systems Aviation Rulemaking Committee Charter. Available at: https://www.faa.gov/regulations_policies/rulemaking/committees/documents/media/Part21ARC-10052012.pdf (visited March 15, 2022).

²⁶ Part 21/Safety Management Systems (SMS) Aviation Rulemaking Committee to the Federal Aviation Administration: Recommendations on Certification Procedures for Products and Parts. October 5, 2014.

the National Aeronautics and Space Administration, the FAA, and several foreign CAAs. One of the Joint Authorities Technical Review recommendations was that the FAA encourage applicants to have a system safety function, such as an SMS, that is independent from their design organization.²⁷

Subsequently, on December 27, 2020, Congress enacted ACSAA, which set forth a variety of reforms intended to address certain safety standards relating to the aircraft certification process. Section 102 of ACSAA required the FAA to promulgate rules that require holders of both a TC and a PC issued under 14 CFR part 21 to implement an SMS. ACSAA also established a timeline for those certificate holders to adopt an SMS (i.e., no later than 4 years after the date of enactment, December 27, 2020), and it established certain requirements for the rulemaking, including a confidential employee reporting system through which employees can report hazards, issues, concerns, occurrences, and incidents without concern for reprisal for reporting, and a code of ethics.

G. International Movement Toward SMS

ICAO Annex 19, Safety Management, establishes a framework for member States to develop and implement SMS requirements within their respective State's rules. Several member States, including the United States, started developing and implementing SMS requirements within their countries after Annex 19 First Edition was published in July 2013 and became applicable in November 2013.²⁸ Annex 19 currently requires States to establish requirements for SMS for international commercial air transportation, design

²⁷ Joint Authorities Technical Review (JATR), *Boeing 737 MAX Flight Control System: Observations, Findings, and Recommendations*. October 11, 2019.

²⁸ The Second Edition of Annex 19 was published in July 2016 and became applicable in November 2019.

and manufacturing, maintenance, air traffic services, training organizations, and certified aerodromes, as well as SMS criteria for international general aviation operators of large or turbojet airplanes.

Member States continue to make progress in developing, implementing, and maintaining requirements for SMS that are aligned with ICAO's SMS Standards and Recommended Practices, including certificating authorities in Canada, Brazil, the United Kingdom, Japan, Australia, and Europe (EASA). For example, in the EASA regulatory framework, SMS is mandatory for certificated operators of airplanes and helicopters authorized to conduct commercial air transportation. Additionally, EASA also adopted rules for EU-part 145 organizations, which became applicable on December 2, 2022, and for design and production organizations (EU part 21), which became applicable on March 7, 2023.

H. Summary of the NPRM

On January 11, 2023, the FAA published the NPRM for Safety Management Systems.²⁹ The FAA proposed to update the SMS requirements in part 5 and extend the requirement to have an SMS to all certificate holders operating under the rules for commuter and on-demand operations (part 135), LOA holders operating commercial air tours under § 91.147, PC holders that are holders or licensees of a TC for the same product (part 21), and holders of a TC who license out that TC for production (part 21). The FAA proposed several amendments and new requirements to part 5 intended to increase the effectiveness of SMS. The FAA also proposed amendments to certain

²⁹ 88 FR 1932.

regulations in parts 21, 91, and 119 to conform with, and enable the implementation of, the proposed requirements in part 5.³⁰ The comment period was originally 60 days and was scheduled to close on March 13, 2023. In response to commenters' requests for extensions, the comment period was extended by 30 days and ultimately closed on April 11, 2023.³¹

I. General Overview of Comments

The FAA received 186 comment submissions in response to the NPRM from a variety of commenters, including air carriers, aircraft designers and manufacturers, trade associations, emergency medical transport services, a non-profit safety organization, a university, and private citizens. The FAA received comments from the following:

Aerospace Industries Association (AIA), Air Charter Safety Foundation, Air Line Pilots Association (ALPA), Air Medical Operators Association (AMOA), Airbus Commercial Aircraft (Airbus), Aircraft Electronics Association (AEA), Aeronautical Repair Station Association (ARSA), Aircraft Owners and Pilots Association (AOPA), Alaska Air Carriers Association (AACA), Ameristar, Association for Uncrewed Vehicle Systems International (AUVSI), Association of Air Medical Services, Cargo Airline Association, Commercial Drone Alliance, Commission on Accreditation of Medical Transport Systems (CAMTS), Delta Air Lines, Embraer S.A., European Union Aviation Safety Agency (EASA), Experimental Aircraft Association (EAA), GE Aerospace, General Aviation Manufacturers Association (GAMA), Gulfstream Aerospace Corporation (Gulfstream), Helicopter Association International (HAI), Lockheed Martin, Minnesota

³⁰ 88 FR 1933.

³¹ 88 FR 5812.

Business Aviation Association, Modification and Replacement Parts Association (MARPA), National Business Aviation Association (NBAA), National Transportation Safety Board (NTSB), NetJets Association of Shared Aircraft Pilots, Piper Aircraft, Pratt & Whitney, Regional Air Cargo Carriers Association (RACCA), Transport Canada Civil Aviation (TCCA), Rolls-Royce, Regional Airline Association (RAA), Small UAV Coalition, Transport Workers Union of America, Transportation Trades Department – AFL-CIO, WYVERN, Zipline, as well as multiple individuals and smaller operators.

The FAA received comments on multiple aspects of the proposal. The comments and the FAA's responses are discussed in Section IV.

IV. Discussion of Comments and the Final Rule

A. Applicability to Part 135 and LOA holders under § 91.147

In the NPRM, the FAA proposed to apply part 5 to all operators under part 135 and air tour operators under § 91.147. Specifically, proposed § 5.1(b) stated that part 5 would apply to certificate holders or applicants authorized to conduct operations under part 135. Proposed § 5.1(c) provided that part 5 would apply to applicants and LOA holders under § 91.147.

1. Discussion of the Final Rule

The FAA is applying part 5 to all part 135 operators and air tour operators with a LOA issued under § 91.147, as well as to applicants for these operations. This amendment is designed to further improve aviation safety for passenger-carrying and cargo operations conducted for compensation or hire. As detailed more thoroughly in the NPRM, the FAA identified a number of accidents involving part 135 operators and

§ 91.147 LOA air tour operators that resulted in fatalities and serious injuries that could have been mitigated through SMS.

After considering comments, the FAA adopts this applicability as proposed. However, for the reason discussed in the FAA Response section, the FAA decided not to require certain requirements within part 5 for those operators where a single pilot is the sole individual performing all necessary functions for the safe operation of the aircraft. Section 5.9 is revised from the NPRM to add paragraph (e), which identifies the requirements in part 5 that are not applicable to certain single-pilot organizations. These requirements generally focus on identification of designated management personnel, employee reporting, and communication across the aviation organization and are explained in more detail in section IV.A.3.

2. Summary of the Comments

Several commenters indicated that requiring part 135 operators and § 91.147 LOA holders to comply with the part 5 SMS requirements would impose a significant burden resulting in little safety benefit. Commenters, including the CAMTS, NATA, NBAA, and RACCA suggested part 5 was designed for large air carriers, not for smaller operators, nor for the diversity of operations conducted under part 135. The commenters also argued part 5 is too prescriptive to accommodate the variation of size and scope of part 135 operations. For these reasons, commenters recommended that the FAA develop separate SMS requirements for part 135 operators that are less complex than part 5 and are truly scalable for organizations with limited resources. As an alternative, NBAA recommended the FAA apply specific regulations to entities based on size or complexity, using criteria

similar to the complexity criteria identified by the Safety Management International Collaboration Group.

Commenters also expressed concern about the difficulty for small businesses to implement SMS. NBAA indicated that the FAA should consider EASA and TCCA SMS models, and the feedback both entities received, highlighting the difficulties that small organizations face when implementing SMS. NBAA further noted that its experience with other regulatory frameworks has illustrated the need for additional full-time personnel or external contractors to manage the system.

NATA stated the FAA needs to recognize the challenges for small business and ensure that guidance and training address this issue. NATA noted that SMS solutions for small businesses must not be cost-prohibitive or so burdensome as to drive businesses to close, further stating that the FAA has the responsibility to impose SMS regulations on small operators only if it can be done in a way that enhances safety and minimizes burdens. NATA also stated that there have been no pilot programs or specialized analysis conducted to support the concept of SMS for smaller operators.

Some commenters asserted that air tour operations already have stringent requirements in place, and that imposing the part 5 requirements would negatively harm these small businesses and cause inadvertent negative safety effects by diverting resources. Other commenters suggested that certain air tour operators should be excluded from the requirement, such as § 91.147 LOA holders operating fewer than 100 flights per year or air tour operators with fewer than five employees.

Several commenters recommended excluding single-pilot operators from the SMS requirements. These commenters argued the requirements are impractical, unnecessary,

and overly burdensome, citing the confidential reporting system as an example.

Commenters noted SMS may be beneficial for larger organizations because a team is involved, but it does not make sense for a single pilot operator because that individual is already conducting all the functions that would be required under part 5. According to one commenter, requiring single-pilot operators to document their decisions, for example, is counter-productive and may distract them from important duties.

An individual commenter questioned the FAA's justification for requiring single-person operators to implement SMS. The commenter argued that the real-world accident descriptions in the NPRM did not provide evidence that an SMS would have prevented any of the accidents involving single-person operators. The commenter also noted the FAA did not present statistical evidence to justify making this regulatory change for single-person operators.

Other commenters, however, supported the proposed rule, stating companies requiring payment for service should have an SMS. For instance, the NTSB stated that it supports the proposed expansion of SMS to include all part 135 operators and all operators conducting air tours under § 91.147. The NTSB noted that if the proposed requirements were adopted, the rule could possibly satisfy the intent of Safety Recommendations A-16-36 and A-19-28. The NTSB also stated that the particular methods an operator uses to implement an SMS are not prescribed in the proposed rule; therefore, the current SMS framework provides sufficient flexibility to small operators under both part 135 and § 91.147, and no alternatives exist that would achieve the same safety objectives as SMS.

3. FAA Response

The FAA understands the concerns expressed by the commenters regarding the impact to small operators. Part 5 was designed to be scalable and flexible so aviation organizations could design and implement an SMS that fits their operations. Scalability was discussed at length in the preamble to the NPRM, discussed further in Section IV.J. of this preamble, and is addressed in Advisory Circular (AC) 120-92 and AC 21-58.³² Appendix G in AC 120-92 includes implementation strategies and examples regarding how small operators could comply with part 5 requirements.

The public expects safe carriage from operators offering flight services for hire irrespective of whether an operator employs one pilot or many. Regardless of size, all companies have the responsibility to conduct safe operations. Accordingly, the FAA has determined SMS will be applicable to all part 135 operators as well as commercial air tours conducting their operations with a LOA under § 91.147 because they are all engaged in the transportation of passengers or cargo for compensation or hire. This expanded applicability also meets, in part, the NTSB's recommendations for commercial aircraft operations to have an SMS.

There is risk in aviation operations regardless of the size or complexity of the organization. A fundamental element of SMS is the identification of hazards and mitigating the risk of those hazards. Therefore, SMS is intended to be used to mitigate the risk in these operations, including the risk not currently addressed by existing regulations. Even though aviation organizations must ensure compliance with the relevant regulatory

³² Guidance, including ACs, to support this rule will be available at the FAA's Dynamic Regulatory System (<https://drs.faa.gov>) approximately 30 days after publication in the *Federal Register*.

standards, they should use their SMS to identify and address the underlying causes of regulatory or procedural noncompliance and invest resources and efforts to preclude their recurrence.³³

The FAA concludes that all commercial operators authorized under part 135 or § 91.147 can benefit from implementing an SMS because it increases safety by supporting a proactive, predictive method of managing safety to identify and address problems before they result in an incident or accident. SMS is not a comprehensive solution but serves as an additional preventive measure in the evolution of aviation safety.

In addition, the FAA recognizes that there is a spectrum of organizational sizes and complexities across the aviation industry. There are relatively low-cost implementation resources available to assist persons to meet part 5 requirements, including online platforms such as the Web-Based Analytical Technology (WBAT) platform. This platform is a federally funded software system that was originally created to support data collection and information technology for FAA voluntary safety programs. WBAT has since evolved, and it can now be used to assist organizations in meeting SMS requirements. The platform has modules to support all aspects of an SMS and it includes the following tools: SMS implementation manager, safety risk management, safety assurance, employee reporting, and data sharing. Basic access to the WBAT platform is free. Additional support is fee-based, and the platform has multiple tiers of service enabling organizations to decide which tier best fits their operations.

³³ An SMS does not excuse noncompliance with existing regulations.

In response to NBAA's suggestion that the FAA use criteria similar to the Safety Management International Collaboration Group for small organizations, the FAA decided not to adopt these criteria because part 5 is already designed to be scalable based on the size and complexity of the aviation organization. Safety Management International Collaboration Group criteria are discussed further in AC 120-92 and may provide useful guidance for aviation organizations to use when implementing their SMS. However, the FAA is not codifying these specific criteria in this rule because the rule should allow for various ways to scale SMS implementation.

The FAA agrees with commenters that certain part 5 requirements may be impractical or illogical for many single-pilot organizations. As a result, the FAA adds a new paragraph (e) to § 5.9 to enumerate those SMS provisions that the FAA has determined shall not apply to certain single-pilot operations conducted under part 135 or an LOA issued under § 91.147 (specifically, §§ 5.21(a)(4), 5.21(a)(5), 5.21(c), 5.23(a)(2), 5.23(a)(3), 5.23(b), 5.25(b)(3), 5.25(c), 5.27(a), 5.27(b), 5.71(a)(7), 5.93, and 5.97(d)). These exceptions are limited to entities with a single pilot who is the sole individual performing all necessary functions in the conduct and execution related to, or in direct support of, the safe operation of the aircraft. All necessary functions would generally include: operational control, refueling, ground handling of the aircraft, flight planning, weight and balance calculations, performance of preventive maintenance, coordination of maintenance activities, pre-flight and post-flight activities, and financial decisions related to operating the aircraft safely, in addition to operating the aircraft. The FAA is removing requirements relating to employee reporting for these aviation organizations because the person reporting would be the same person receiving the reports. In addition, the

requirements for communication within the aviation organization are also not necessary for these organizations; nor do they need to identify and designate various management personnel because the same person would be fulfilling those roles.

The FAA provides additional guidance in AC 120-92 to help these single-pilot organizations navigate the exceptions. The FAA is also providing additional time for compliance, as discussed in Section IV.D. Commenters' concerns regarding the cost and the perceived lack of benefits are discussed further in Section IV.V.

B. Applicability to Part 21 Foreign Entities

In the NPRM, the FAA proposed to apply the SMS requirements in part 5 to any TC holder that allows another person to use the TC to manufacture the product under a PC. The proposal did not distinguish between TC holders where the United States is the State of Design³⁴ and TC holders where a foreign country is the State of Design. Under 14 CFR 21.29, the FAA may issue a U.S. TC to a foreign manufacturer for an import product by “validating” the original TC issued to the manufacturer by the relevant foreign CAA. For the holder of a validated TC issued by the FAA, the foreign country (or jurisdiction) remains the State of Design because that country has regulatory authority over the original TC and TC holder. As proposed in the NPRM, part 5 would be applicable to a foreign holder of a TC issued under § 21.29 that licenses its TC to another person to manufacture the product in the United States. This applicability would therefore impose part 5 requirements on a holder of a TC issued under § 21.29, even though the

³⁴ As defined in § 21.1(b)(8) of 14 CFR, the term “State of Design” means “the country or jurisdiction having regulatory authority over the organization responsible for the design and continued airworthiness of a civil aeronautical product or article.”

United States is not the State of Design. The FAA did not intend for this provision to apply to these TC holders.

1. Discussion of the Final Rule

The FAA intends for this rule to require SMS for TC and PC holders where the United States is the State of Design or State of Manufacture.³⁵ In the final rule, the FAA makes changes to § 5.1(g) to address any ambiguity regarding to which entities the rule applies. Specifically, the FAA is revising § 5.1(g) and § 5.15(a) to exclude foreign holders of a validated TC issued under § 21.29 that allow another person to use the TC to obtain a PC to manufacture the product in the United States.³⁶

2. Summary of the Comments

Embraer S.A. commented that the requirement as proposed in § 5.1(g) did not distinguish between a U.S. TC holder and a foreign TC holder with a validated TC issued under § 21.29. As a result, Embraer noted that one could interpret the provision to mean that the FAA would regulate a design organization for which the United States is not the State of Design. Embraer noted that this seems to be an unintended effect, based on information in the NPRM and the FAA's stated intention of seeking alignment with ICAO Annex 19, including section 4.1.5 of Chapter 4 of the Annex, which states "the SMS of an organization responsible for the type design of aircraft, in accordance with Annex 8, shall be made acceptable to the State of Design."

³⁵ As defined in § 21.1(b)(9) of 14 CFR, the term "State of Manufacture" means "the country or jurisdiction having regulatory authority over the organization responsible for the production and airworthiness of a civil aeronautical product or article."

³⁶ Note that if the validated TC holder obtains a PC to manufacture the product itself, then it is subject to the rule.

3. FAA Response

The FAA agrees that it did not intend for this rule to apply to a design organization for which the United States is not the State of Design. Rather, the FAA intended to require SMS for TC and PC holders where the United States is the State of Design or State of Manufacture. In the final rule, § 5.1(g) is revised to exclude foreign holders of a TC issued under § 21.29 that allow another person to use the TC to obtain a PC to manufacture the product in the United States. For purposes of this rule, the term “production certificate” in § 5.1(g) and in § 5.15 continues to refer to a production certificate issued by the FAA under part 21 or a production certificate or equivalent authorization issued by a foreign aviation authority.

C. Expansion of Proposed Applicability

The NPRM proposed to apply part 5 to part 135 operators, air tour operators operating under § 91.147 LOAs, and certain certificate holders under part 21. Several commenters suggested expanding applicability beyond the proposal. In addition, the FAA specifically asked the public for input regarding a possible future rule to apply part 5 to part 145 repair stations, as well as input regarding whether part 5 should apply to all design and production approval holders (i.e., all holders of a TC, PC, technical standard order authorization (TSOA), supplemental type certificate (STC), or parts manufacturer approval (PMA)). The FAA also asked the public for input on whether part 5 applicability should be limited for certain subsets of the part 145 or part 21 entities.

1. Discussion of the Final Rule

The FAA has decided not to expand the applicability of this rule beyond the original proposal. The current applicability was chosen because the FAA believes this

scope will capture segments of the aerospace system that have a large impact on safety without unduly delaying the effective date of the rule. Rather than expanding the scope of this rule, the FAA will continue to encourage voluntary implementation of SMS in segments of the aerospace system not covered by part 5.

2. Summary of the Comments

Commenters suggested expanding the applicability of the proposal in various ways. Some commenters pointed out areas in the aerospace system where they thought risk existed and could benefit from SMS. Other commenters focused on covering entities that charged a fee for service or covering all entities that ICAO Annex 19 requires have an SMS.

For the air transportation industry, the NTSB noted that FAA only proposed to apply the SMS requirements to air tour operations conducted under § 91.147 rather than applying the requirements to all revenue passenger-carrying operations conducted under part 91 as the NTSB recommended. The NTSB stated the proposed rule does not go far enough to meet the intent of Safety Recommendations A-21-13 and -14, reiterated its position that SMS is necessary to improve the safety of all part 91 revenue passenger-carrying operations, and urged FAA to include all revenue passenger-carrying operations conducted under part 91 in the final rule.

NATA commented that including fractional ownership programs would be consistent with the reasons the FAA decided to regulate part 91 subpart K operations.

TCCA and EASA expressed their support for expanding SMS to other areas within part 21.

For the aviation maintenance industry, the FAA asked in the NPRM whether it should consider a future rulemaking project to expand the applicability of part 5 to include repair stations certificated under part 145. Commenters that supported extending the application of part 5 to repair stations, included the NTSB, EASA, Air Charter Safety Foundation, ALPA, Transportation Trades Department – AFL-CIO, Transport Workers Union of America, and Airbus Commercial Aircraft, as well as individuals and operators. The NTSB indicated that SMS should be applied to part 145 repair stations to address Safety Recommendation A-21-48. EASA, Airbus Commercial Aircraft, GE Aerospace, and others cited the importance of harmonizing with ICAO and other CAAs as a reason to require part 145 repair stations to have an SMS.

Other commenters, including AEA, ARSA, and Pratt & Whitney, did not support extending the application of part 5 to part 145 repair stations. AEA and ARSA stated that the addition of part 5 to existing safety standards for repair stations is redundant, expensive, and unnecessary. Pratt & Whitney recommended that part 145 repair stations remain in the voluntary program.

A few commenters recommended applying SMS to part 145 repair stations to facilitate certificate acceptance by a foreign CAA.

For the aviation design and manufacturing industry, the FAA sought comment in the NPRM as to whether part 5 should apply to all holders of a TC, PC, STC, TSOA, or PMA. The FAA also requested input on whether any exceptions should be made to these holders and for commenters to provide supporting information and data on the safety benefits or impact of the broadened applicability. Some commenters noted that limiting part 5 applicability (for design and manufacturing entities) to holders of a TC or a PC

leaves gaps in safety and requested that SMS be extended to certain design and manufacturing entities that produce safety-critical components. The commenters, however, did not provide any data or information supporting the benefit of extending applicability to STC, TSOA, and PMA holders.

3. FAA Response

Although the FAA agrees with many commenters that other areas of the aerospace system could benefit from SMS, the Agency is not expanding the applicability of this rule beyond the original proposal.

With regard to expanding the rule to include STC, TSOA, and PMA holders under part 21, the FAA's decision not to expand this final rule simply maintains the existing level of safety in part 21 applicable to those entities. Before making changes, the FAA would first establish that a safety justification (the safety "gap" as characterized by one commenter) exists. At this time the FAA does not have sufficient information to support a safety justification for expanding this rule to STC, TSOA, and PMA holders. The FAA would also need to take these steps to expand the applicability of part 5 to additional part 91 revenue passenger-carrying operations.

With respect to part 145 repair stations, the FAA acknowledges the comments received on whether the Agency should consider future rulemaking to cover these organizations under part 5. The FAA recognizes the significant impact repair stations have on aviation safety; the recommendations of the NTSB for the FAA to require organizations that maintain aircraft to establish SMS; and the applicability of ICAO Annex 19 to maintenance organizations. The comments received from the NPRM offer a diverse set of viewpoints across the aviation sector, all of which must be taken into

account should the FAA consider a future rulemaking to require part 145 repair stations to develop and maintain an SMS. The FAA continues to collect and evaluate data to determine whether the benefits would justify the costs and will continue to pursue and promote part 145 repair station involvement in the FAA's SMS Voluntary Program.

In summary, applying SMS requirements to part 145 repair stations, additional part 21 design and production approval holders, and other entities as recommended in the comments requires careful and deliberative consideration by the FAA of many factors, including safety benefits, costs, and other priorities. The time needed to fully evaluate these considerations and to develop and apply the most appropriate SMS requirements for additional entities would inhibit the FAA's ability to finalize this rulemaking expeditiously. The FAA will continue to encourage voluntary implementation of SMS by aviation organizations not covered by part 5. The FAA acknowledges and appreciates the input provided by commenters in response to the questions posed on SMS applicability and may explore expansion of part 5 applicability in future initiatives, which could include future NPRMs for which the FAA would solicit additional public input.

D. Compliance Timelines and Submission Requirements

In the NPRM, the FAA proposed to require existing part 135 operators and § 91.147 air tour operators to develop and implement an SMS in accordance with part 5 and to submit a statement of compliance no later than 24 months after the effective date of a final rule. The FAA also proposed to require any new applicant for authorization to conduct operations under part 135 or for a LOA under § 91.147 to submit a statement of compliance as part of the certification or LOA process. In the NPRM, existing part 121 operators were required to revise their SMS to meet the new proposed requirements in

part 5 and submit those revisions for acceptance by the FAA no later than 12 months from the effective date of the rule. The FAA also proposed to require any new applicant for authorization to conduct operations under part 121 to submit a statement of compliance as part of the certification process.

In addition, the FAA proposed that existing part 21 certificate holders be required to submit an implementation plan no later than December 27, 2024, and implement their SMS by December 27, 2025. For companies that apply for a PC, have a pending application for a PC, or have a TC and enter into a licensing agreement in accordance with § 21.55, the FAA proposed similar compliance timelines to maintain parity with the compliance timelines proposed for existing certificate holders. More specifically, the FAA proposed to require TC holders who enter into a licensing agreement to submit an implementation plan for FAA approval when providing a written licensing agreement to the FAA. The FAA also proposed to require PC applicants to submit an implementation plan for FAA approval during the certification process. In the proposal, PC applicants, as well as TC holders who enter into a licensing agreement, were required to implement their SMS no later than 1 year after the FAA's approval of the implementation plan.

1. Discussion of the Final Rule

i. Existing Part 135 Operators and LOA holders under § 91.147

In the final rule, the FAA has increased the compliance timeframe from the proposed 24 months to 36 months for part 135 operators and LOA holders under § 91.147 in response to comments received.

In addition, the FAA is changing the title of the document to be submitted for existing part 135 certificate holders as well as existing LOA holders under § 91.147 from

“statement of compliance” to “declaration of compliance.” Submitting a declaration of compliance to the FAA serves to document that the aviation organization has developed and implemented an SMS meeting the applicable requirements of part 5. The FAA will assess the aviation organization’s compliance with SMS requirements during routine surveillance. Aviation organizations are required to make their SMS processes and procedures available in accordance with §§ 5.9(d) and 5.95 to FAA personnel for review. Upon implementation of an SMS, if revisions to manuals are necessary, the aviation organization will submit those changes in accordance with applicable regulatory requirements.

ii. Existing Part 121 Operators

After further consideration, the FAA decided to remove the proposed requirement for existing part 121 operators to submit the changes to their SMS to meet the new requirements in part 5 to the FAA for acceptance. Specifically, part 121 operators are required to revise their SMS to meet the new requirements proposed in §§ 5.21(a)(7) (Safety Policy Code of Ethics), 5.53(b)(5) (Safety Risk Management Interfaces), 5.57 (Hazard Notification), 5.71(a)(7) (Employee Confidential Reporting System), 5.71(a)(8) (Investigating Hazard Notifications), and 5.97(d) (SMS Records). The FAA will validate compliance with these new requirements using existing oversight methods and tools.

Part 121 operators are still required to make available all necessary information and data that demonstrates that they have an SMS that meets the requirements in part 5, in accordance with § 5.7(d). Therefore, the proposed requirement (§ 5.7(a)(2)) is unnecessary, and the FAA has removed it.

iii. Applicants for Part 121 or 135 Operations or for an LOA under § 91.147

The FAA makes minor changes to the submission requirements for anyone who applies to operate under part 121 or 135 or for an LOA under § 91.147 after the effective date of this rule. In the NPRM, the FAA proposed that these applicants submit a “statement of compliance” with their certificate or LOA application. After further consideration, the FAA concluded that it was not necessary to make this submission a regulatory requirement as a part of this rule. To be clear, the FAA will require part 121 and 135 and § 91.147 LOA applicants to implement SMS. However, instead of requiring these applicants to submit a “statement of compliance,” the FAA will include its assessment of the applicant’s SMS using the same processes and procedures it uses to assess the applicant’s compliance with other FAA requirements. Removing the requirement is consistent with how the FAA evaluates compliance with other regulatory requirements and aligns with terminology used in traditional air carrier and air operator certification, thereby reducing the potential for confusion.

Specifically, the general certification requirements in § 119.35 direct the air carrier or operator certificate applicant to submit an application with the necessary information and in a form and manner prescribed by the Administrator. The FAA provides guidance (AC 120-49) describing how to prepare and submit application materials and document compliance with regulatory requirements. This guidance includes information on how to document compliance with regulations that the applicants must comply with, including part 5. Similarly, for applicants requesting issuance of an LOA under § 91.147, the FAA will verify part 5 compliance during the application process. New § 91.147(b)(3) adds compliance with part 5 as a requirement for obtaining an LOA.

This additional requirement, supported with requirements in § 5.9(c) and (d), provides sufficient assurance that § 91.147 LOA applicants implement and maintain an SMS.

iv. Part 21 Certificate Holders

In response to comments, the FAA revises the compliance deadlines for covered part 21 entities to be based upon the effective date of the final rule. Existing certificate holders will have 6 months from the final rule effective date to develop and submit an implementation plan to the FAA and 36 months from the effective date to implement their SMS. PC applicants are required to submit an implementation plan for FAA approval during the certification process, and to implement the SMS no later than 36 months after submission of their implementation plan. Holders of a TC entering into a licensing agreement in accordance with § 21.55 are required to submit an implementation plan to the FAA when providing written licensing agreements, and to implement the SMS no later than 36 months after submission of their implementation plan.

2. Summary of the Comments and FAA Response

i. Part 135 Operators and LOA holders under § 91.147

a. *Summary of the Comments*

Industry associations, regulated entities, and several individuals submitted comments regarding implementation timeframes. Most of these commenters felt the 24-month timeframe was inconsistent with ICAO and other SMS implementation and maturity models, and that 24 months is insufficient to develop and implement SMS.

Commenters, including HAI, NBAA, and Jet Linx Aviation, recommended extensions ranging from 36 months to 5 years for development and implementation of the

SMS. Individual commenters cited the 36-month timeframes for existing part 121 SMS and SMS for airports, which permits up to 5 years in some circumstances.

EAA, AMOA, NATA, AOPA, and LifeFlight of Maine recommended a phased (staged) approach to the timeline of SMS implementation instead of a rigid 24-month requirement. In particular, they cited no opportunity for operators to consult with the FAA before SMS acceptance and oversight, which could lead to noncompliance. These commenters noted the phased approach would also allow FAA inspectors to become familiar with SMS processes, procedures, and oversight. An individual commenter said that a more measured timeline would reduce the burden on business aviation operators.

b. *FAA Response*

The FAA agrees with the commenters that extending the compliance timeframe would be beneficial and in the final rule extends the timeframe by 12 months for part 135 operators and LOA holders under § 91.147, as well as provides pending applicants 36 months to meet part 5. This extension will allow more time for operators to obtain a comprehensive understanding of SMS. In addition, the 36-month timeline is more consistent with the timeframes provided to part 121 operators and airports, as well as the part 21 certificate holders covered by this rule (as discussed in Section IV.D.2.ii.).

Although the FAA has chosen not to follow a phased approach as suggested by the commenters, the extended compliance timelines adopted in this final rule will help address their concerns over the lack of FAA consultation. The FAA and many industry stakeholders have gained significant experience with SMS principles in the years since part 5 was originally published. The FAA, industry associations, and third-party service providers have resources to help stakeholders with implementation, which are further

discussed in Section IV.L.2. Stakeholders will continue to have the opportunity to contact the FAA for compliance assistance, as appropriate. The change from 24 months to 36 months for compliance provides operators with the necessary time to implement SMS effectively.

ii. Part 21 Certificate Holders

a. *Summary of the Comments*

Commenters, such as Pratt & Whitney, Piper Aircraft, Aviation Safety Solutions, Gulfstream, and GAMA/AIA noted that the timeframes proposed in the NPRM would provide insufficient time to implement an SMS and emphasized that the compliance deadlines should not be based on pre-established calendar dates. Commenters referenced timeframes recommended by the 2012 part 21 SMS ARC and the compliance deadlines established for part 121 operators under the part 5 rule issued in 2015. Pratt & Whitney, Piper Aircraft, Aviation Safety Solutions, Gulfstream, and GAMA/AIA requested additional time for submitting an implementation plan and fully implementing SMS, ranging from 6-12 months for submitting the implementation plan, and 24-48 months for fully implementing SMS.

Airbus asked why the timeframes are different across different sections of the NPRM for part 21 entities.

Individual commenters remarked on the requirement for PC applicants to submit an SMS implementation plan as a prerequisite to obtaining or amending a PC. Some commenters asked for the FAA to clarify that the submission of the implementation plan is the only part 5 prerequisite to obtaining or amending the PC and that companies are not expected to have the SMS fully implemented to obtain or amend a PC. GAMA/AIA

requested an exception for TC holders that apply for a PC less than 1 year after the final rule becomes effective, recommending that these applicants should be given 1 year after PC approval to submit their implementation plan.

TCCA asked if 1 year to implement SMS is reasonable and indicated that the provision does not seem to consider the size and complexity of organizations, suggesting that large organizations may need more time to fully implement their SMS due to organizational structuring or re-structuring. TCCA suggested that the FAA consider an implementation schedule based on the size of the organization, factoring in any existing voluntary programs. EASA noted that the proposed compliance timelines for part 21 are close to the compliance timeline for full implementation of SMS in the European regulatory framework (March 7, 2025) and that extending timelines beyond those as proposed may delay FAA's SMS compliance with ICAO Annex 19 and may delay harmonization with other CAAs.

b. *FAA Response*

The FAA acknowledges the need to provide design and manufacturing companies adequate time to plan and implement their SMSs. Further, the FAA recognizes the challenges posed by establishing compliance deadlines for existing holders based upon fixed calendar dates that may be impacted by delays in the publication of the final rule. Based on the feedback the FAA received, the FAA is extending the time for design and manufacturing companies to implement SMS. Under the final rule, existing part 21 certificate holders that come under this final rule will be afforded 6 months after the rule's effective date to develop and submit an implementation plan and 36 months after the rule's effective date to implement their SMS in accordance with the FAA-approved

implementation plan. This approach is consistent with the approach in the original part 5 for part 121 operators, as well as EASA's SMS rule and the recommendations from the 2012 part 21 SMS ARC.

New and pending applicants for a PC will be required to submit implementation plans as part of the production certification process (as was proposed in the NPRM). The FAA will not issue a PC until the Agency has received the required implementation plan. Submission of the implementation plan is the only prerequisite under part 5 before an applicant may be issued a PC. Once an implementation plan has been submitted to the FAA, applicants will have 36 months to implement their SMSs rather than the 12 months previously proposed.

As a result of these changes, the timeframes for existing certificate holders and future and pending applicants will be consistent. Regarding GAMA/AIA's request to extend the requirement for TC holders that apply for a PC less than 1 year after the final rule becomes effective, the FAA does not agree that an extension is warranted because development of the implementation plan itself need not be complex. In addition, the FAA has provided information and materials in AC 21-58 to aid in the development of the plan.

E. Use of the term "Person"

In the NPRM, the FAA proposed to amend various sections in part 5 to change the term "certificate holder" to "person." The FAA proposed this revision as a non-substantive conforming change. Prior to this rule, part 5 had only applied to part 121 certificate holders, and the reference to "certificate holder" in part 5 was appropriate. The FAA proposed to expand applicability beyond certificate holders to include § 91.147

LOA holders. With that change, “certificate holder” would no longer be accurate and the FAA proposed replacing it with “person.”

1. Discussion of the Final Rule

This rule adopts the proposal to use the term “person” in place of “certificate holder.”

2. Summary of the Comments

Commenters, including Airbus, Alaska Seaplanes, Ameristar Air Cargo, Cargo Airline Association, Delta Air Lines, RAA, NBAA, USC Aviation Safety Management, USC, and three individuals objected to or sought clarification regarding the change to use the term “person” instead of “certificate holder.”

3. FAA Response

The term “person” is defined in 14 CFR 1.1 as: “an individual, firm, partnership, corporation, company, association, joint-stock association, or governmental entity. It includes a trustee, receiver, assignee, or similar representative of any of them.” This definition includes certificate holders, service providers, or other types of individuals or business entities and is used throughout 14 CFR. As a result, the term “person” is not only appropriate, but also consistent with existing FAA use. Accordingly, the FAA replaces “certificate holder” with the term “person,” as proposed.

F. System Description

In the NPRM, the FAA proposed in § 5.5 that any person that is required to have an SMS must develop a system description. The proposed description included, at minimum, the person’s aviation-related processes, procedures, and activities; the function and purpose of the aviation products or services provided; the operating environment; and

the personnel, equipment, and facilities; as well as identifies the interfacing persons that contribute to the aviation-related products and services provided.

1. Discussion of the Final Rule

In the final rule, the FAA adopts a system description requirement with a number of notable changes from the NPRM. First, the requirement to develop a system description applies only to part 21 certificate holders. Second, the FAA removes the system description requirement from § 5.5. Instead, the FAA is moving most of these requirements to § 5.17. Section 5.17 now expressly states that only summary information must be included in the system description. The FAA is not adopting the proposed requirement for the system description to include information concerning the aviation organization's interfacing persons. Finally, the term "system description" is renamed to "organizational system description" to clearly denote that this requirement applies to the aviation organization and to avoid any confusion with the "system analysis" in § 5.53.

As a result of these changes, the requirements for developing and maintaining an organizational system description are now in the sections specific to the part 21 entities (§§ 5.11(a), 5.13(b)(1), 5.15(b)(1) and 5.15(c)(1)) and the documentation requirement in proposed § 5.95(c) is removed.

2. Summary of the Comments

Several commenters expressed concern that the proposed requirements in § 5.5(b) to develop and maintain a system description creates an administrative burden without a corresponding safety benefit. Commenters, including Pratt & Whitney, GE Aerospace, and University of Southern California Aviation Safety and Security, said it would be a significant administrative burden to maintain a system description that lists all interfacing

entities because the list is continuously changing given the fluidity of aviation operations. In addition, an individual indicated the requirement was unnecessary and Delta Air Lines requested clarification regarding the FAA's expectations.

Baldwin Safety and Compliance noted that system descriptions are not required by most other CAAs and suggested the requirement be removed from the final rule to better align with the ICAO Annex 19 Appendix 2 framework and other CAAs. TCCA suggested a system description may be better as a recommendation within guidance, rather than a required document, because it may be burdensome for small operators without enhancing their safety.

Some commenters expressed concern about how the system description requirement would affect part 121 operators. Delta Air Lines said the system description could create significant administrative work. RAA and Cargo Airline Association acknowledged system descriptions may be helpful for new adopters of SMS, but strongly recommended the FAA remove the requirement for part 121 operators or limit it to new applicants.

3. FAA Response

The FAA acknowledges the concerns by some commenters on the potential impacts to operators, large and small. Upon further evaluation, the FAA has determined that developing a system description should not be a requirement for operators (§ 91.147, part 135, and part 121) because the information required by the proposed provision is already documented by part 121 and 135 operators in their Operations Specifications and in the LOA application for § 91.147 operators.

Production organizations holding or applying for a production certificate have certain organizational description requirements in § 21.135 (requiring the PC holder or applicant to provide a document describing how its organization will ensure regulatory compliance and describing assigned responsibilities, delegated authorities, and organizational relationships for quality). However, there are no organizational requirements associated only with a type certificate. This difference may cause some aviation organizations to believe that SMS is applicable only to production activities and not to other activities such as design. As a result, the FAA retains the organizational system description requirement for part 21 organizations to ensure that SMS is applied to design, certification, production, and continued airworthiness activities.

In response to commenters' concern that developing a system description would be overly burdensome and difficult to maintain, the FAA is requiring in the final rule that only a "summary" of these processes, procedures, and activities need to be included in the organizational system description. Therefore, a part 21 design and manufacturing organization should include a summary of the following processes in their organizational system description: design, certification, production, and continued operational safety; however, it does not have to list every process individually. AC 21-58 includes guidance regarding developing the organizational system description.

The FAA acknowledges the concerns over the potential burden related to the proposed requirement in § 5.5(b) for an aviation organization to include in its system description information on "interfacing persons that contribute to the safety of the aviation-related products and services provided." The list of interfacing persons for a large company could number in the thousands, but most of those persons may never

actually be involved with a safety hazard. As a result, in the final rule, the FAA is removing the requirement to include information about interfacing persons from the organizational system description. The design or production organization will engage with the proper interfacing persons during safety risk management through the requirement that the organization “consider interfaces” in § 5.53(b)(5) and the “hazard notification to interfacing persons” requirement in the new § 5.57 (discussed in the following section). This change will allow the covered aviation organization to identify the proper interfacing persons on an as-needed basis rather than developing and maintaining a listing of all interfacing persons that could theoretically be involved in safety risk management.

G. Notification of Hazards and Protection of Information

In the NPRM, the FAA proposed to add a new section (§ 5.94) to require the person who identifies a hazard to notify the interfacing person in the best position to address that hazard or mitigate the risk, and also to develop and maintain procedures for reporting and receiving such hazard information.

1. Discussion of the Final Rule

The FAA is retaining the intent of proposed § 5.94 but is making regulatory text changes to better integrate sending and receiving hazard information with other functions in the SMS. To that end, the FAA has decided to remove proposed § 5.94, instead placing these requirements in subparts C – Safety Risk Management and D – Safety Assurance. Specifically, the requirement to provide notification of hazards is added to § 5.57, which is also amended to include language clarifying that “interfacing persons” are those who contribute to the safety of the aviation-related product or service.

In addition, the FAA has added to § 5.71(a)(8) a requirement to investigate hazards received from external sources to clarify that the aviation organization must investigate any hazard information received and process the investigation results through its safety assurance and safety risk management processes. Proposed § 5.94(b) required a process to receive the hazard notification but did not require the aviation organization to do anything upon receipt of a hazard notification. While the proposed regulation implied that the aviation organization should investigate, it did not explicitly require such action. The final rule makes it clear that an aviation organization must investigate and address through its safety assurance and safety risk management processes all hazard notifications it receives. Finally, § 5.97(d) is updated to replace the reference to “§ 5.94” with “§ 5.57” to ensure aviation organizations retain records regarding the hazard communications.

2. Summary of the Comments

Several commenters requested clarification regarding the proposed notification of hazards to interfacing persons requirement. Some commenters asked for clarification regarding who the “interfacing person” would be and the actions the interfacing person would be required to take.

Pratt & Whitney recommended the FAA clarify “interfacing persons” be limited to those stakeholders outside the organization’s quality management system having airworthiness decision-making responsibilities because this would result in a manageable list of stakeholders while realizing the hazard notification benefits. GE Aerospace noted a person who identifies a hazard may not have the requisite knowledge or information available to identify which persons are best able to address or mitigate the hazard. It

recommended that the FAA either delete this requirement or revise it to require the person to notify the appropriate holders of FAA design, production, or maintenance approvals.

Other commenters requested that the FAA clarify what hazards must be reported under the notification requirement. Airbus Commercial Aircraft suggested the requirement should only require relevant safety hazards to be shared with interfacing persons. RAA stated not all hazards rise to the level of risks, or at least may not rise to that level equally across all carriers as a standard deviation, and noted it is not convinced that this requirement will enhance aviation safety.

Cargo Airline Association noted that this requirement raises many questions concerning the practicality and scope of the requirement. It also expressed concern that this requirement could have a chilling effect on voluntary reporting and “just culture.”

Collins Aerospace Division of Raytheon Technologies supported the sharing of hazard information with stakeholders; however, it also stated that additional formal documentation and recordkeeping could impede timely information transfer and could preclude reporting in certain situations.

Other commenters expressed concern about protecting proprietary data related to sharing of hazard information. Some commenters raised concerns about whether or how the hazard information disclosures would be protected from public release. They noted that 49 U.S.C. 44735 protects certain SMS information from disclosure under the Freedom of Information Act (FOIA) when submitted to the FAA voluntarily, but they wondered what protections would exist when disclosure to the FAA is mandated by this rule. Other commenters asked whether there is any way to protect proprietary information

given that hazard information notification would require them to disclose information to private parties. Commenters indicated that unintended liabilities or other legal consequences could arise between private parties as a result. For example, once a person reports a hazard to a (non-FAA) third-party, nothing would prohibit that party from releasing that information to the public or to other government regulators. While many commenters supported the concept of reporting hazards to interfacing persons, most objected to disclosing proprietary information to third parties without disclosure protections. For instance, GAMA asserted the notification requirement is vague and said the FAA provided no direction for how proprietary data will be handled, or how Export Administration Regulations would be handled in the case of interfaces with international organizations. This commenter noted some US-based companies contract with foreign Original Equipment Manufacturers to build proprietary components and have been granted an Export Control Classification Number license for rotor systems or transmissions, suggesting that sharing technical data with them may not be legal, and recommended the FAA consider international business communication mandates that may conflict with other U.S. Government restrictions.

3. FAA Response

The FAA seeks to encourage a more collaborative approach in which persons required to have an SMS share hazard information with each other and work together to identify and address hazards and safety issues. Hazard information sharing would enable a network of aviation organizations working collaboratively to manage risk, thereby enhancing the safety benefits of SMS by assuring that hazards are communicated and mitigated effectively. Therefore, the FAA is retaining the intent of the requirements, but

making regulatory text changes to better integrate the sending and receiving of hazard information with the other functions in the SMS. To that end, the FAA moved the requirement to provide notification of hazards to subpart C – Safety Risk Management (§ 5.57). The FAA moved the receipt of hazard notifications to subpart D – Safety Assurance (§ 5.71), requiring the aviation organization to investigate hazard notifications received from external sources.

The FAA acknowledges the commenters' concerns regarding sharing information outside an aviation organization. Commenters requested clarification regarding whether the FAA could protect FOIA information disclosure. If an aviation organization reports hazard information to the FAA because the Agency is the interfacing person who could address the hazard, the information is not protected from FOIA disclosure. Once a report is required, FOIA disclosure protections in 49 U.S.C. 44735 no longer apply. However, the FAA would redact trade secret or confidential commercial or financial information before release. If an aviation organization discloses hazard information to a third party, the FAA cannot protect the information. The protection under 44735 only safeguards against public release by the FAA under the FOIA and does not extend to release by other governmental entities or private parties. One option for safeguarding information includes entering into non-disclosure agreements with the interfacing person. Aviation organizations may explore other ways to communicate information about hazards without disclosing proprietary or confidential elements.

Sharing hazard information is an important part of improving safety from which all participants in the aviation eco-system can benefit. The FAA does not expect that sharing hazard information would require the sharing of proprietary or confidential

information; it would only require the aviation organization to adequately describe the hazard. The FAA still expects that in instances where the hazard cannot be adequately described without the use of proprietary information, the aviation organization itself would likely be in the best position to address that hazard, and therefore, information sharing probably would not be necessary.

Some commenters raised questions about what would happen if they made a report to a third-party interfacing person and then subsequently reported that same information to the FAA. Under this hypothetical, the third party is an interfacing person, but the FAA is not. This means that the report to the third party would be mandatory, but the subsequent report to the FAA would be voluntary. That voluntary report to the FAA would be excluded from release under the FOIA, except as allowed under section 44735 (i.e., de-identified information).

In addition, the requirement limits reporting of information to “interfacing persons,” which creates limits on which information the aviation organization must report. Section 5.57, which is newly adopted in the final rule, is limited to interfacing persons that, to the best of the notifying person’s knowledge, could address the hazard or mitigate the risk. Section 5.57 clarifies further that interfacing persons are only those that contribute to the safety of the organization’s aviation-related products and services. In practical terms, these limitations will effectively limit the hazard reporting requirement to organizations with which the aviation organization already has a relationship. This limit addresses some of the commenters’ concerns regarding the scope and practicality of providing and receiving notification of hazard information to third parties. For example, interfacing persons for a part 135 operator or § 91.147 air tour operator could be any

organization that the operator conducts business with, such as a fixed base operator, a repair station, airports where operations are conducted, or the aircraft manufacturer. An operator's customers, however—such as revenue passengers in a passenger-carrying operation—would not ordinarily be considered interfacing persons because passengers are not responsible for or expected to contribute to the safe operation of the aircraft (besides not interfering with the operation). The interfacing person for a design and manufacturing organization providing an aircraft, engine, or propeller would typically be suppliers of parts or engineering services for the aircraft, engine, or propeller. A competing manufacturer, on the other hand, would not be considered an interfacing person because a competitor to a TC and PC holder would not generally have any contribution to the design or production of the product provided by the TC and PC holder.

As an example of hazard information sharing, consider a part 135 air ambulance operator that identified a hazard with the helicopters it is operating. The investigation of one of its helicopters that was involved in a near controlled flight into terrain, identified that the volume of the audio warnings in the helicopter terrain awareness and warning system (HTAWS) fluctuated so the warnings were barely audible at times.

In applying § 5.57, the part 135 operator first determines, to the best of its knowledge, which interfacing person(s) could address the hazard or mitigate the risk. The air ambulance operator examines the HTAWS for wiring damage or wear and tear and, seeing none, determines that the issue is more likely the result of a design or production defect than a maintenance concern. Next, the part 135 operator confirms that the helicopter manufacturer contributes to the safety of the air ambulance services. In a call

with the manufacturer's representative, however, the operator learns that the HTAWS was not part of the original helicopter design, but rather, was installed a few years after production by the previous owner through an STC. The operator does some research to ascertain the identity and contact information of the STC holder, the manufacturer of the particular HTAWS unit. Prior to sending the hazard notification to the HTAWS manufacturer, the air ambulance operator removes any proprietary or confidential information from the hazard report, including proprietary or confidential information involved with how the hazard was identified (e.g., as a result of internal investigation of a near accident), who identified the hazard (e.g., the names of the pilots and crew involved), or any risk mitigating actions the part 135 operator has implemented. Note that the air ambulance operator is not required by § 5.57 to provide notification of the hazard to other helicopter operators that use the same HTAWS model in their helicopters because these other operators do not contribute to the safety of the services provided by the part 135 operator. This example illustrates how aviation organizations can meet the hazard information sharing per § 5.57 without compromising confidential business or personal information, by: (1) identifying the interfacing person who could address the hazard or mitigate the risk; (2) confirming that the interfacing person contributes to the safety of the products or services provided by the aviation organization; and (3) removing any proprietary or confidential information other than the hazard details from the report prior to sending it to the interfacing person.

The FAA emphasizes, however, that providing notification of hazard information to an interfacing person in accordance with § 5.57 does not replace any other regulatory obligations to report or provide notification of safety issues, such as requirements under

14 CFR 135.415 (service difficulty reporting), 49 CFR 830.5 (notification and reporting of aircraft accidents and incidents), or 14 CFR 21.3 (reporting of failures, malfunctions, and defects).

Finally, section 102(a)(2)(B) of the ACSAA mandates that the SMS regulations required to be issued under the statute include “provisions that would permit operational feedback from operators and pilots qualified on the manufacturers’ equipment to ensure that the operational assumptions made during design and certification remain valid.” The hazard information sharing requirements established in this rule create the structure for the type of feedback Congress intended for part 21 certificate holders.

H. Recordkeeping – Communications regarding Hazard Information Notifications

In the NPRM, the FAA proposed to amend § 5.97(d) to require the retention of records of all communications that occur under the hazard reporting requirements of proposed § 5.94, for a minimum of 24 consecutive calendar months.

1. Discussion of the Final Rule

The proposed requirement for notification of hazards to interfacing persons in § 5.94 has been incorporated into the safety risk management and safety assurance within subparts C and D (§§ 5.57 and 5.71(a)(8)) (as discussed in Section IV.G.). The FAA is updating § 5.97(d) in order to reference the new § 5.57, but the amendment is otherwise adopted as proposed. Section 5.97(d) now requires covered aviation organizations to retain records of all communications involving the notification of hazards to interfacing persons, as required by § 5.57, for a minimum of 24 consecutive months.

2. Summary of the Comments

Commenters expressed concern regarding the requirements to maintain records of communications pertaining to notifying interfacing parties of hazards. Further, commenters requested additional information and clarification regarding what the FAA's expectations are for compliance, and urged flexibility, noting that recordkeeping could be burdensome for some organizations. NATA commented the FAA should allow operators to use third-party electronic systems that facilitate their participation in SMS. In addition, it indicated that the FAA should ensure that all businesses are able to use electronic systems for their SMS records without requiring them to obtain FAA approval (via Operations Specifications) for an electronic recordkeeping system.

TCCA suggested that the 24-month minimum period for record retention could be too short. TCCA said disposing records after that period could lead to the loss of pertinent information on hazard reporting and prevent the ability to identify historical trends.

3. FAA Response

The new documentation and recordkeeping requirement is necessary because of the requirement for all persons under part 5 to provide notification of hazards. Maintaining records of communications regarding notification of hazards provides objective evidence of compliance similar to the records that are maintained for internal safety communications conducted in accordance with § 5.93. As with the other performance-based and scalable requirements, aviation organizations should determine how they meet these requirements in a way that fits their organization.

Commenters indicated that the FAA should be flexible in allowing aviation organizations to determine how to maintain records. As stated in the NPRM, the operator chooses how it maintains the required SMS records, which can be electronically or in paper format. Regarding NATA's comment on allowing operators to use third-party electronic systems without requiring them to obtain FAA approval (via Operations Specifications or OpSpec) for an electronic recordkeeping system, the FAA has determined that the requirements of § 5.97(d) do not present any unique challenges to justify deviation from standard practices currently applicable to part 135 operators. Authorizations to use electronic recordkeeping are issued to certain operators via OpSpec A025 when they elect to maintain required records electronically. If a certificate holder operating under part 135 seeks to develop and maintain its SMS records utilizing a electronic system (whether third-party or internally developed), and does not already have OpSpec A025 authorization, it should follow the standardized process for obtaining OpSpec A025 for electronic recordkeeping.³⁷ In contrast, if an air tour operator with an LOA under § 91.147 chooses to maintain its SMS records via an electronic system, the FAA has determined that, as of the publication date of this final rule, no specific authorization via an OpSpec will be needed. Due to the low volume of documentation LOA holders under § 91.147 are required to maintain, creating a special authorization for these operators related to electronic recordkeeping is not warranted as it creates additional work for the operator and the FAA with no added value. For more information

³⁷ The FAA notes that the procedures for obtaining operations specifications, including the necessity for many operators to obtain OpSpec authorization for electronic recordkeeping, are under continuous review and are subject to change in the future.

regarding the use of services provided by third parties, see Section IV.L.2.iv. For more information regarding scalability, see Section IV.J.

TCCA commented that a 24-month retention period may be too short and could lead to the loss of pertinent information on hazard reporting. The 24-month retention period applies to the records of communications. Any records of outputs of safety risk management processes must be retained for as long as the control remains relevant to the operation. As a result, information regarding identified hazards is not limited to the 24-month retention period related to communications.

I. “Hazard” Definition

In the NPRM, the FAA proposed to revise the definition of “hazard” to align it more closely with ICAO Annex 19. The definition in original part 5 (§ 5.5) reads as follows: “*Hazard* means a condition that could foreseeably cause or contribute to an aircraft accident as defined in 49 CFR 830.2.” In Annex 19, ICAO defines “hazard” as “a condition or an object with the potential to cause or contribute to an aircraft incident or accident.”³⁸ The FAA proposed to further align with the ICAO definition by adding after “a condition” the phrase “or an object,” replacing the phrase “that could foreseeably” with “with the potential to,” and inserting “incident” before “aircraft accident,” such that the definition would read as follows: “*Hazard* means a condition or an object with the potential to cause or contribute to an incident or aircraft accident, as defined in 49 CFR 830.2.”

³⁸ International Civil Aviation Organization, Annex 19 to the Convention on International Civil Aviation, Safety Management, Second Edition, pp. 1-2 (July 2016).

1. Discussion of the Final Rule

To better align with the ICAO Annex 19 definition, the FAA is adopting the changes to the definition of “hazard” as proposed in the NPRM, with the exception of the proposed change from “foreseeably” to “potential to.” The definition now reads as follows: “*Hazard* means a condition or an object that could foreseeably cause or contribute to an incident or aircraft accident, as defined in 49 CFR 830.2.” With these changes, particularly the inclusion of the term “incident,” the final rule clarifies that anything that affects or foreseeably could affect the safety of aviation operations is included in the definition of hazard, not just those conditions or objects that could result in serious injury, death, or substantial damage.

2. Summary of the Comments

RACCA, AMOA, Ameristar Air Cargo, GE Aerospace, Small UAS Coalition, RAA, MARPA, and GAMA/AIA expressed opposition to elements of the proposed revision of the definition of “hazard.” Some commenters, like AMOA, were opposed to the replacement of the word “foreseeably” with “with the potential to.”

Delta Air Lines supported the FAA’s proposed modification of the definition of “hazard” to include incidents as well as accidents. It said the FAA’s proposed changes would boost safety by expanding the scope of potential hazards to address.

MARPA, GE Aerospace, Pratt & Whitney, and an individual expressed concern that the expanded scope of hazards contemplated by the proposed inclusion of “incidents” might introduce additional safety risks as organizations spend more resources on concerns less likely to yield increased safety benefits. Pratt & Whitney urged the FAA to

use a consistent definition of “incident” in other guidelines and requirements to help maintain a focus on issues that have a potential for an accident.

MARPA said the NTSB’s definition of “incident” in 49 CFR 830.2 is purposefully defined broadly because it is intended to give the NTSB flexibility in pursuing investigations into aircraft incidents, reflecting a very different context than that of the proposed SMS rule. MARPA said the FAA’s proposed definition would encompass many incidents affecting the safety of operations that would be entirely beyond the control of a production approval holder; even though they might be considered foreseeable under an SMS, it would be unreasonable to expect production approval holders to anticipate and mitigate these incidents.

Phoenix Air Group, LLC said the FAA’s estimate of the cost and effort of SMS implementation fails to account for companies whose SMS applies across their entire organization, and whose definition of hazard, therefore, encompasses far more than potential causes of aircraft accidents. It advised the FAA to introduce a separate definition for the term “accident” to cover instances of injury to personnel or damage to aircraft, equipment, or facilities not associated with an intention for flight, as well as refine the definition of “hazard” to go beyond aircraft accidents or events associated with the operation of an aircraft. For example, the commenter said a puddle of oil on a hangar floor is clearly a hazard in its SMS, but it does not meet the definition of a hazard under the SMS rule or Annex 19.

3. FAA Response

The FAA disagrees that the inclusion of the word “incident” in the definition expands the scope of “hazard.” As stated in the NPRM preamble, many of the same

circumstances that result in an incident could just as easily result in an accident. The “conditions” and “objects” that could “foreseeably cause or contribute” to an aircraft accident, such as a mid-air collision, have been found to be the same conditions and objects that cause or contribute to near mid-air collisions (i.e., incidents).³⁹ Under the previous definition, an aviation organization that applies the SMS requirements may have identified conditions in its systems that could foreseeably result in an aviation accident. Under the revised definition, the same aviation organization will, in general, identify that the same conditions are present that could foreseeably cause or contribute to either incidents or accidents. From the FAA’s experience, it would be highly unlikely that the aviation organization would discover new conditions that can cause or contribute to an incident but not an accident. Therefore, the change would not create an additional burden or divert resources to efforts that would not yield safety benefits.

The final rule changes to the definition, notably the addition of “incident,” do not result in a substantial expansion in the scope of hazards that a covered person needs to address. First, aircraft incidents are already covered to a large extent under the original part 5 SMS framework, even if the term “incident” was not expressly included in the “hazard” definition. The part 5 safety assurance processes require investigations of both incidents and accidents (§ 5.71(a)(5)) and subsequent analysis (§ 5.71(b)) and assessments to identify new hazards (§ 5.73(a)(4) and (5)). The safety assurance processes and systems must also include a confidential employee reporting system in which employees can report incidents (in addition to hazards, issues, concerns, and

³⁹ See Tinsley, Catherine H., Robin L. Dillon, and Peter M. Madsen. How to Avoid Catastrophe. Harvard Business Review, <https://hbr.org/2011/04/how-to-avoid-catastrophe> (2011).

occurrences) (§ 5.71(a)(7)). These changes are consistent with the original SMS rulemaking in 2015, which was designed to improve safety by addressing underlying organizational issues that may result in accidents or incidents.⁴⁰

The FAA disagrees that the term incident is not defined. The term “incident” is defined in 49 CFR 830.2 (as is “aircraft accident”). As defined, “incident” means “an occurrence other than an accident, associated with the operation of an aircraft, which affects or could affect the safety of operations.”

The FAA is not adopting the recommendation to introduce separate definitions for the terms “accident” and “hazard” to cover non-aviation-related concerns to avoid extending SMS requirements to subject areas such as workplace safety that extend beyond the intended scope of this rule. As noted in the NPRM, however, some aviation organizations might choose to extend their SMS to their non-aviation related activities, such as security and occupational safety and health issues. If an aviation organization elects to do so, the FAA will only conduct oversight of the SMS related to its aviation functions.

The FAA acknowledges the concerns by commenters that the phrase “with the potential to” could imply that the definition of hazard includes a boundless set of situations that could not be reasonably foreseen. The FAA agrees that “with the potential to” is too open-ended. Thus, the FAA is not adopting the proposal to replace the term “foreseeably” with “potential to.” The FAA recognizes that keeping the phrase “that could foreseeably cause” does not mirror the ICAO definition of hazard (which uses the

⁴⁰ 80 FR 1308.

phrase “with the potential to”). The principal reason for proposing the changes to the definition of “hazard” was to align with the internationally recognized definition of hazard established by ICAO in Annex 19. The FAA seeks to align with ICAO where feasible. Although the FAA aspires to align with ICAO, the Agency also recognizes there may be situations, such as this, in which full alignment may not be the best solution. In addition, using the term “foreseeably” is consistent with the Agency’s definition of hazard in the recently published Airport SMS rule.⁴¹

J. Scalability

An SMS is designed to be scalable to the size and complexity of the aviation organization, and to not be unduly burdensome. When part 5 was originally promulgated in 2015, the FAA clarified that small air carriers would not be expected to have an SMS as complex as one for large carriers. Further, the FAA stated in the original § 5.3 that the SMS must be “appropriate to the size, scope, and complexity” of the aviation organization.⁴² To emphasize the scalability of SMS to the new types of aviation organizations covered under the proposed rule, the NPRM for this rule included examples of how small aviation organizations, such as a single-pilot operator, could scale implementation of their SMS requirements to the size and complexity of their organization.⁴³ Because the SMS requirements are performance-based and scalable, the FAA proposed to remove as unnecessary the scalability language in former § 5.3.

⁴¹ 88 FR 11642.

⁴² 80 FR 1310.

⁴³ 88 FR 1952-53.

1. Discussion of the Final Rule

In this final rule, the FAA has decided to retain the express requirement for the SMS to be appropriate to the size, scope, and complexity of the aviation organization, in order to provide a better understanding of scalability as a result of the comments received. This text is moved, along with the other general SMS requirements in former § 5.3, to § 5.5.

2. Summary of the Comments

Commenters, including NBAA, EAA, and AOPA, expressed the need for scalable and flexible requirements. Commenters indicated part 5 is prescriptive and would be difficult for small operators to implement. Commenters also requested clarification regarding how an SMS can be scaled in application, and stated the FAA provided limited explanation or examples.

Several commenters suggested the FAA provide more guidance to small organizations on how to comply with the proposed SMS requirements. The NTSB said it issued Safety Recommendation A-22-15 to address confusion about how SMS applies to smaller operators. The NTSB said the proposed rule's treatment of scalability does not appear to follow its recommendation's call for scalability guidance to include specific details, such as methods and techniques as well as examples addressing several operational sectors. The NTSB also said more explicit guidance on strategies and methods applicable to smaller operators would make it easier for a range of operators to comply with the proposed requirements, as well as help the FAA inspectors in evaluating compliance by smaller operators. It further suggested that the FAA compile an inventory of SMS strategies and methods used by operators of different sizes, noting that the

Agency could take advantage of its experience working with the FAA's voluntary SMS program participants, as well as overseeing part 121 operators.

Several commenters recommended that the final rule include an explicit statement establishing that the SMS is intended to be scalable. TCCA, Ameristar Air Cargo, Inc., GAMA, and AIA noted that scalability language in current 14 CFR 5.3(a) ("The SMS must be appropriate to the size, scope, and complexity of the certificate holder's operation...") was omitted from the proposed rule. These commenters urged the FAA to retain this language to ensure that the rule contains a clear statement of intent to incorporate scalability.

3. FAA Response

The FAA agrees with the commenters that SMS implementation should be appropriately scaled to the aviation organization. Part 5 was designed to be scalable and flexible. Aviation organizations should scale their SMS implementation to fit their operations. This concept is addressed in detail in the NPRM preamble and guidance material. Appendix G in AC 120-92 includes implementation strategies and examples regarding how small operators could comply with part 5 requirements.

The FAA, in an effort to address scalability, has designed part 5 to allow for flexibility in solutions used to meet the requirements. The rule specifies a basic set of processes to form a framework for the SMS but does not specify particular methods for implementing these processes. Aviation organizations can use solutions that are appropriate for their size and complexity. For example, smaller or less complex aviation organizations may use standard word processing software, Excel spreadsheets, email, notebooks, and whiteboards rather than more complex software solutions to document the

system, policies, processes, and procedures. Larger or more complex aviation organizations may need more involved solutions that might include databases and layered hierarchical analysis and decision-making.

The following example illustrates how a small operator could scale implementation of SMS to fit its organization. The organization would document its safety policy; again, this could be done on paper or in a digital file. The example provided in the appendix in AC 120-92 could be used as a starting point, but there are also various examples available on the Internet that could be used as a starting point.

To meet safety risk management and safety assurance requirements, the operator could use a tool such as the Web-Based Analytical Technology (WBAT) platform which is FAA-supported software, to support employee reporting and SMS. The platform could also be used to meet recordkeeping and documentation requirements. However, simpler options such as digital files on a computer or paper files could be used as well. For instance, AC 120-92 provides worksheets that the operator could use to meet most safety risk management requirements. To meet safety assurance requirements in a simpler way in a small operator, a person could observe how an operation is working and identify trends in real-time. If there are issues, the individual could take appropriate action and reevaluate the results. Any operational process could be observed and does not necessarily require formal audits or forms. Again, all of this could be documented on paper or in a digital file.

To meet communication requirements a small operator might use existing email applications to share information within its organization and with interfacing organizations, as appropriate. To meet documentation and recordkeeping requirements,

the organization could use paper or digital files just as they might do for other areas of their operations such as invoicing, service, and rental agreements, etc. The organization could document this using a medium of their choosing, including something as simple as a notebook.

The following example illustrates how SMS might operate in a small, low complexity operator. This example company has two helicopters and four pilots, and it provides air tour services within a 25 nautical mile range of its home airport. The company has developed a safety policy under § 5.21 that reminds everyone safety is the company's number one priority. It contains in bold letters at the bottom, "If you see something unsafe, say something." This policy statement is one page, signed by the company owner, and posted inside the office for all to see.

After a flight, one of the pilots reports to the air tour operator's home base that there is a new hazard in the flightpath of their desired tour route. The hazard is a power line across a canyon and there are no visibility markers on that line. The report of the hazard is the start of the safety risk management process under § 5.51(d). Under § 5.53, the air tour operator researches the location and height of the power line relative to the flight path in the area. The operator calls the power company and learns that the line is ½-inch thick and an expected date of installation for the markers is unknown due to manufacturing delays. This information is recorded in a notebook or digital file. Even the process for conducting this analysis under § 5.53(c) can also be located in the notebook or in a digital file.

Under § 5.53, the air tour operator determines the unmarked power line is an operational hazard. Knowing that helicopters and unseen power lines are a high risk and

realizing that the company's air tour route places them in the exact spot of the canyon where the unmarked power line exists, makes this particular risk assessment easy. The air tour company determines the severity of hitting that power line would be catastrophic and the likelihood of encountering that power line is high due to their route of flight. Using a risk matrix, the operator qualitatively determines that the risk of conducting tours with the presence of the unmarked power line is unacceptable and requires risk controls be implemented to reduce the risk to an acceptable level. All this information is placed into the notebook. The operator develops risk controls under § 5.55(c), which, in this case, is a deviation to the planned air tour route. The evaluation of the risk acceptance under § 5.55(d) is done by talking to other employees, brainstorming, or engaging with other operators. The records of meetings or conversations, as well as the risk controls themselves, are documented using a medium of their choosing, including something as simple as a notebook or digital file consistent with the recordkeeping requirements of § 5.97.

The operator's next step is to monitor the controls it put into place through its safety assurance program. The operator will check on the deviation to the route it put in place under § 5.71(a)(1) through (a)(7). This can be done by tracking the flight path or auditing the new procedures and keeping those notes in the notebook. Under § 5.93, the operator will promote safety by informing the pilots of the hazard and communicating the safety action taken, which was providing the air tour route with a deviation. Each pilot can be issued a safety alert via a memo that can be handed to them upon check in and perhaps sent via email before the flight starts.

Just as existing part 5 requirements are performance-based and scalable, each revision proposed in the NPRM was also intended to be scalable. The FAA did not intend for the proposed removal of the scalability language to alter that stance. Based on the comments received, however, the FAA understands that the proposed removal caused confusion regarding its position on SMS scalability. Therefore, the FAA has decided to retain the scalability language, with minor adjustments to conform to general requirements language in § 5.5(a).

K. Code of Ethics

In the NPRM, the FAA proposed requiring a code of ethics be included in an aviation organization's safety policy. This proposal was in response to section 102(f) of ACSAA, which mandates: "the regulations issued under subsection (a) shall require a safety management system to include establishment of a code of ethics applicable to all appropriate employees of a certificate holder, including officers (as determined by the FAA), which clarifies that safety is the organization's highest priority." While Sec. 102 of ACSAA is applicable only to certain part 21 certificate holders, the FAA proposed to apply the code of ethics requirement to all certificate and LOA holders that would be required to meet part 5 requirements.

1. Discussion of the Final Action

The FAA is adopting the code of ethics requirement as proposed. The code of ethics must clarify that safety is the aviation organization's highest priority. Having a code of ethics, applicable to all employees of the aviation organization, influences the safety culture of that organization and is beneficial to overall safety. As a component of an aviation organization's safety policy (§ 5.21(a)(7)), the new requirement helps ensure

that every officer, manager, and employee in the organization is aware that safety is a core value for that organization and that safety risk should be reduced to the extent that it is practicable to do so. If employees see their management engaged with safety as the highest priority, then that same safety attitude will likely prevail throughout the entire organization. Therefore, all persons required to have an SMS benefit from having a code of ethics that confirms safety is the aviation organization's highest priority.

2. Summary of the Comments

Several commenters requested that the FAA either remove or modify the proposed requirement in § 5.21(a)(7) to include in an organization's safety policy a code of ethics, applicable to all employees, clarifying that safety is the organization's highest priority. Piper Aircraft and NBAA stated that it would be more appropriate for the code of ethics to state that safety is a "core value" of the company.

Commenters also indicated that safety cannot be a company's "highest priority" and safety must be balanced with production or the provision of the service they provide. For instance, NBAA stated that organizations are not in the business of manufacturing safety and that an organization's highest priority is to sustain the business through maximizing profit balanced against appropriate risk control.

Commenters also expressed concern that the requirement may cause confusion or conflict with existing practices. For example, GAMA and AIA noted that the language could be misconstrued as creating a new standard of care or a new performance requirement and requested that the definition be revised to require the company to state their highest priority is compliance with applicable safety standards. Collins Aerospace Division stated that the language in the regulation may create a misunderstanding and

lead to actions inconsistent with the FAA's current approach that allows continued temporary air operations with certain non-conformance or non-compliance. It recommended that the FAA reconsider the language to allow more flexibility to applicants to demonstrate in the code of ethics that safety is prioritized. Lockheed Martin Corporation also commented that the FAA should not mandate the use of specific words or phrases in this context.

Additionally, commenters requested clarification regarding the FAA's expectations for the code of ethics. Gulfstream suggested that the FAA clarify whether the code of ethics must be explicitly identified as a "Code of Ethics" or if the requirement is satisfied as long as the prescribed statement is present in the safety policy. AACA also asked if compliance would involve adding language to an organization's safety policy that mandates all employees prioritize safety above all else, or if the FAA expects each organization to create a document titled "Code of Ethics." Zipline suggested that the FAA clearly define the expectations of the new code of ethics requirement, or if no additional clarification is provided, remove it.

AMOA's comment recognized the ACSAA mandate for the code of ethics was directed at design and manufacturing organizations and requested that different provisions be created for air transportation operators.

3. FAA Response

The addition of the code of ethics to an aviation organization's safety policy ensures that every officer, manager, and employee in the aviation organization is aware that safety is a core value for that organization and that safety risk should be reduced to acceptable levels. The FAA recognizes there is inherent risk in aviation. An SMS

includes processes for aviation organizations to identify hazards and to assess and mitigate the risk associated with those hazards. It is not possible to completely eliminate risk in aviation. However, it is essential for aviation organizations to consider safety and the reduction of risk, and they should use their SMS to reduce safety risk to acceptable levels. As stated earlier in this preamble, an aviation organization is in the best position to mitigate the risk of its products or services. When providing products and services, the aviation organization must consider safety and, if there is a conflict between safety and other considerations, safety must not be compromised.

Section 5.21(a)(7) requires a code of ethics be included in a covered aviation organization's SMS safety policy. The FAA does not expressly require that the code of ethics be a separate document or be entitled "Code of Ethics." Nonetheless, the FAA expects the aviation organization to make clear to its officers, managers, and employees, as well as to reviewing FAA personnel, that this component of the aviation organization's safety policy is a matter of ethics. The addition of this code of ethics does not create a new standard of care or new performance requirement for compliance with part 5. The safety hazard or risk may be identified, addressed, and mitigated using the existing processes and procedures for safety risk management, assurance, and promotion as required by part 5 (as amended by this rule). The addition of the code of ethics does, however, establish a new expectation for an aviation organization to prioritize safety over other concerns in the performance of its SMS processes and requirements.

The FAA acknowledges that section 102(f) of ACSAA requires the FAA to apply the code of ethics requirement to only part 21 design and manufacturing certificate holders. The FAA does not agree with some commenters, however, that the regulatory

requirement should be limited to design and manufacturing organizations. Nothing in the ACSAA, express or implied, suggests that the FAA cannot or should not extend the code of ethics to other entities. The FAA seeks consistency in the SMS requirements to the greatest extent possible and, therefore, is extending this requirement to all aviation organizations required to comply with part 5. In general, the changes to part 5 are added to assist in maximizing the potential of an SMS to increase safety across the aerospace system and, as a result, fall within the scope of the FAA's broad safety mandate.

There is benefit to aviation organizations documenting their ethical commitment to safety. If this requirement were limited to only design and manufacturing organizations, the FAA would be concerned about implying some aviation organizations should make safety their highest priority, but others should not. In addition, ethical decision-making in the management of safety should be foundational to any SMS.

L. FAA and Industry Readiness for SMS

Several commenters asserted the FAA lacks the ability to adequately support and oversee the certificate and LOA holders required to develop and implement an SMS as proposed in the NPRM. In addition, several commenters recommended various ways to ensure adequate training is available to industry.

1. Summary of the Comments

Several commenters expressed concern about the FAA's ability to accept and monitor new, mandatory SMS programs in a timely, effective manner. A commenter asserted that the FAA would need to significantly increase staffing to review and approve implementation plans, arguing that Flight Standards District Office staffing levels are critically low. Other commenters suggested that the FAA is not prepared to support part

135 and § 91.147 companies, citing past experience with FAA staffing shortages, lack of effective training for inspectors and industry, unclear inspector guidance, and inconsistent inspector interpretation of guidance. Commenters, including NATA, NBAA, and AMOA, focused on inspector staffing levels, SMS expertise, and ability to oversee part 5.

Commenters, including NBAA, and Alaska Air Carriers Association, also expressed concern about the consistency of guidance and the interpretation of guidance.

Several commenters recommended various ways to ensure adequate training is available to industry. Commenters, including WYVERN, Air Charter Safety Foundation, and Priester Aviation/Mayo Aviation LLC, focused on the FAA working with industry to provide training. Commenters, including WYVERN and NBAA, proposed creation of FAA-approved SMS consultant and designee programs, as well as the FAA pre-approving SMS services provided by third-party vendors.

2. FAA Response

The SMS training for FAA inspectors and engineers addresses validation of operators' regulatory compliance through normal surveillance and oversight activities. The FAA continues to update and prepare its workforce to validate aviation organizations' implementation of SMS in support of this rule. The FAA also updated appropriate policy and guidance regarding oversight for part 5 compliance. To support an aviation organization's implementation of SMS, the FAA expects to conduct outreach with industry to facilitate understanding and implementation of SMS.

Finally, as SMS requirements expand to other aviation organizations, the FAA anticipates more third-party providers will offer services to aid aviation organizations in developing and implementing their part 5 compliant SMSs. Aviation organizations may

work with a third party to develop or implement an SMS that meets the regulatory requirements. A third-party SMS provider could include the provider developing the SMS and training the operator to use it. Other options could include not only development and training, but the third-party could also operate some parts of the SMS on behalf of the aviation service provider.

However, there are some aspects of an SMS that must be performed by the aviation organization. For instance, the accountable executive responsibilities and roles cannot be delegated to a contractor. An aviation organization may choose to use third-party providers and other industry resources to assist and support SMS integration and development, as appropriate, but that aviation organization remains fully responsible for regulatory compliance. The FAA does not endorse the use of any specific product or third-party provider, nor does it pre-approve any specific service to meet the regulatory requirements. For more information regarding the use of third-party service providers, please see AC 120-92.

The NPRM did not propose the establishment of a designee or similar program for SMS. At this time, the FAA is not adopting such a program.

M. Aviation Organizations with an Existing SMS

Numerous commenters requested more information regarding how the FAA would approach compliance for existing SMS processes, programs, or certifications.

1. Summary of the Comments

NBAA and other commenters requested that the FAA accept third-party SMS as a means of compliance with part 5, while others requested credit for early adoption of an SMS. NBAA noted that some third-party SMS programs are compliant with ICAO

Annex 19, and therefore, should be accepted by the FAA. Individual commenters raised questions about how part 5 relates to other SMS frameworks, and whether demonstration of compliance to ICAO Annex 19 could replace compliance with part 5 requirements.

Other commenters, including GAMA, TCCA, AACA, AMOA, CAMTS, PHI Health, Alaska Seaplanes, and Pratt & Whitney, indicated the need for clarification and assistance in bridging from voluntary SMS to mandatory SMS. They also expressed interest in how the FAA will consider existing voluntary SMS programs. Commenters expressed concerns with restarting the certification process and indicated the NPRM did not address FAA's voluntary SMS programs.

2. FAA Response

The FAA asserts that aviation organizations having an SMS that is certified, approved, or accepted by another entity or through the FAA's voluntary SMS programs does not replace the mandate to meet all applicable part 5 requirements. Companies are nonetheless encouraged to leverage existing processes and procedures to help meet part 5 requirements.

The FAA encourages companies to conduct a gap analysis to identify the areas where their aviation organization complies with part 5 and where requirements are unmet. Additional information about conducting gap analyses is available in AC 21-58 and AC 120-92.

Companies are encouraged to leverage existing SMS processes and procedures to help meet part 5 requirements and to utilize all available industry resources such as educational institutions, international organizations, as well as FAA guidance and support. However, the FAA will not be endorsing the use of any specific product or third-

party provider to meet the regulatory requirements. Ultimately, the responsibility for ensuring compliance with part 5 remains with the organization.

N. Employee Reporting

Section 102(e) of ACSAA requires the FAA's SMS regulations to include a confidential employee reporting system through which employees can report, "without concern for reprisal", hazards, issues, concerns, occurrences, and incidents. Original part 5, under § 5.71(a)(7) of subpart D – Safety Assurance, already required a confidential employee reporting system, applicable to all covered entities, but did not expressly provide that the system be without concern for reprisal. The FAA proposed to add the text "without concern of reprisal for reporting" to the § 5.71(a)(7) confidential employee reporting system requirement, to respond to the mandate in section 102(e) of ACSAA.

1. Discussion of the Final Rule

In the final rule, the FAA is maintaining the revision to the employee reporting system requirements in § 5.71(a)(7). This requirement is applicable to all persons required to comply with part 5, except as identified in § 5.9(e).

2. Summary of the Comments

Several commenters expressed concern or suggested changes to the proposed requirements in § 5.71(a)(7) regarding developing and maintaining a confidential employee reporting system and that employees can report "without concern of reprisal for reporting."

NATA commented that the concept of confidential reporting of hazards is critical but becomes unachievable as business size decreases. NATA stated that the FAA should

ensure that guidance and training recognizes this issue, as well as educate operators on best practices when business size limits the confidential reporting of hazards.

NBAA stated the proposed § 5.71(a)(7) requirement to implement and maintain a confidential reporting system is a prescriptive requirement, noting that some organizations may wish to implement an anonymous reporting system over a confidential one to provide more comfort in reporting. In addition, NBAA questioned how either a confidential or anonymous reporting system would work in a one or two-person organization.

Cargo Airline Association expressed its support for the proposed change because it increases safety and leads to a just culture. Cargo Airline Association also noted this requirement is consistent with the intent of other voluntary reporting systems, including the Aviation Safety Action Program (ASAP), and that it would support additional information in the guidance materials to provide safeguards like those under ASAP.

Multiple commenters expressed concern regarding not being able to act upon intentional malicious acts that are reported in the employee reporting system due the addition of the clause “without concern of reprisal.”

3. FAA Response

As described in the original part 5 preamble, the confidential reporting system in § 5.71(a)(7) is a conduit for employees to raise aviation safety issues “without fear of reprisal” (see 80 FR 1307, 1318). Although the FAA did not include that express language in the text of original § 5.71(a)(7), the Agency’s intent has always been that the confidential reporting system be non-punitive in nature. In this rulemaking, the phrase

“without concern of reprisal” makes explicit what was already implicit, while also meeting the requirements of section 102(e) of the ACSAA.

With respect to concerns that aviation organizations would not be able to act upon intentional malicious acts by employees, the FAA emphasizes that the addition of the phrase “without concern of reprisal” does not alter or supersede the requirement in existing § 5.21(a)(5) for covered aviation organizations to establish policy that defines unacceptable behavior and conditions for disciplinary action. The FAA recognizes that there are instances where disciplinary action is warranted (e.g., the behavior indicates a willful disregard to comply with company procedures or regulations). Confidential reporting and disciplinary action requirements have historically co-existed to address different concerns and behaviors. This allows the aviation organization to gather safety information from employees in a confidential manner while maintaining the freedom to address unacceptable behavior, ultimately supporting a just culture. Nothing in this final rule alters that.

The FAA also notes that although the ACSAA mandate to add the text “without concern of reprisal for reporting” to the confidential employee reporting system requirement is specific to part 21 certificate holders, this requirement applies to all persons that must comply with part 5. Protecting employees from reprisal for reporting aviation hazards, issues, concerns, occurrences, or incidents is critical for safety regardless of the type of aviation organization.

Further, some aviation organizations already have reporting systems in place, such as an ASAP. An ASAP would satisfy the confidential reporting program requirement for those aviation organizations that have a memorandum of understanding

with the FAA for the specific employee groups. The FAA expects that these programs will continue to be used and be leveraged in the development and implementation of SMS. For employee groups that are not covered by an existing ASAP, the aviation organization must have an alternate means of compliance for confidential employee reporting.

Regarding the comments about a confidential reporting system versus an anonymous reporting system, the requirement does not prohibit an aviation organization from accepting anonymous reports. An anonymous reporting system, if correctly implemented, would satisfy the § 5.71(a)(7) requirements for confidentiality and non-reprisal; however, anonymous reporting is not necessarily the better or preferred system for employee reporting. For instance, with anonymous reports, an aviation's ability to obtain additional information is more difficult as the original reporter would remain unknown. Accordingly, the FAA is not adopting recommendations from commenters for the FAA to require anonymous reporting rather than confidential reporting.

Regarding the comments on the difficulty of maintaining confidentiality in a small aviation organization, the FAA acknowledges that maintaining confidentiality in a small organization may be more challenging. But these challenges do not outweigh the safety benefits of an employee reporting system for hazards and other aviation safety issues. Even if absolute confidentiality is not always possible due to the small numbers of employees in some aviation organizations, the FAA determined that organizations, regardless of size, can establish and communicate formal workplace policies for maintaining confidentiality and for non-reprisal of employee reports under § 5.71(a)(7).

Aviation organizations, especially small ones, should strive for a just culture and reporting culture to encourage employees to report hazards and openly share information.

The FAA recognizes, though, that the confidential reporting system is unnecessary in aviation organizations where the pilot is the sole individual performing all necessary safety functions. Thus, employee reporting is not required for certain single-pilot operators, which is discussed further in Section IV.A.

O. Summary of Confidential Employee Reports

In proposed § 5.71(c), the FAA addressed the ACSAA section 102(e) requirement that the FAA require TC and PC holders to submit to the FAA, at least twice a year, a summary of the employee reports received through the confidential reporting system. Summaries of confidential employee reports submitted by certificate holders with both a TC and a PC are protected from public disclosure by 49 U.S.C. 44735(a)(2) if the summaries are requested under the Freedom of Information Act. The FAA did not propose to extend this requirement to all persons required to have an SMS because the information would not be protected under 49 U.S.C. 44735(a)(2) for persons that are not covered by the ACSAA requirement.

1. Discussion of the Final Rule

In the final rule, the FAA is maintaining the requirement in § 5.71(c) as proposed and per ACSAA requirements. Specifically, holders of both a TC and a PC for the same product will be required to submit to the FAA a summary of confidential employee reports received every 6 months.

2. Summary of the Comments

Commenters focused on the chilling effect this requirement may have on existing reporting systems and expressed concerns that employees may be hesitant to raise issues if they believe they may be personally subjected to scrutiny by a regulator. MARPA maintained that these reports create a burden on the holder, drawing resources away from addressing the actual risks raised in these reports. MARPA also maintained that the requirement imposes a burden on the FAA without a directive to do more, stating it is unclear what, if anything, the FAA should do with these reports. USC Aviation Safety Management Systems Course 23-3, Piper Aircraft, Inc., Gulfstream, and a member of GAMA/AIA highlighted the disparity of this reporting requirement across those required to comply with part 5. They asserted that the requirement should apply equally for those required to comply with part 5 or should not apply at all.

3. FAA Response

This final rule adopts the reporting requirement to part 21 organizations holding both a TC and a PC for the same product because the FAA is statutorily required to promulgate the requirement. Section 102(e) of the ACSAA does not give the FAA discretion with regard to whether this requirement should be imposed on TC/PC holders for the same product. The FAA understands the concerns surrounding confidentiality but reiterates that these semi-annual reports are specifically protected from disclosure under 49 U.S.C. 44735(a)(2). The reports submitted to the FAA should not contain any confidential or proprietary information.

The FAA has determined that this requirement should be applicable only to part 21 organizations holding both a TC and a PC for the same product because 49 U.S.C.

44735(a)(2) protections apply only to those entities. Requiring all covered aviation organizations to compile and submit semi-annual summary reports would result in the inconsistent treatment among regulated entities, because only the part 21 reports would be protected from public disclosure. Therefore, the FAA is limiting this requirement to only those entities specifically covered by the ACSAA requirement.

P. Emergency Response Planning

In the NPRM, the FAA proposed non-substantive edits to the requirements in § 5.27, Coordination of emergency response planning. Specifically, the FAA added a comma that was missing in the introductory text, removed the semi-colon format, and replaced “certificate holder” with “person” (or, in the case of paragraph (c), simply removed the term) in alignment with the change discussed in Section IV.E.

1. Discussion of the Final Rule

The FAA adopts the edits as proposed. As explained in the FAA response to comments that follows and in AC 21-58, the Agency clarifies that emergency response plans would not ordinarily be necessary for part 21 certificate holders.

2. Summary of the Comments

Several commenters expressed concern about the requirements to coordinate emergency response plans. NBAA asserted that the requirements are unclear, impractical, and burdensome for many part 135 operations and expressed concern regarding the number of interfacing organizations with which a part 135 operator might need to coordinate. The part 21 commenters indicated that the requirements should not apply to design and manufacturing organizations.

3. FAA Response

The FAA clarifies that the emergency response planning requirements of § 5.27 are not, in general, needed by part 21 organizations. Section 5.27 provides that an emergency response plan is required “[w]here emergency response procedures are necessary.” As explained further in AC 21-58, a part 21 certificate holder may be involved in the investigation of aircraft accidents or incidents but is likely not involved in the emergency response to the aircraft accident or incident. For this reason, the FAA has determined that emergency response planning is not ordinarily necessary for part 21 certificate holders.

With respect to the concerns from NBAA, the FAA notes that many part 135 operators already have emergency response plans that may be used to fulfill this requirement. One of the primary intents of an emergency response plan is to provide procedures for management decision-making and actions in an emergency, and not necessarily to require the creation and coordination of specific emergency plans for every airport a part 135 on-demand operator might serve. The FAA provides further guidance in AC 120-92 with examples of how various types of operators, including part 135 on-demand operators, interface and coordinate with other aviation organizations. In response to comments related to emergency response plans being impractical and burdensome, the FAA has excepted requirements of § 5.27(a) and (b) for certain single-pilot operations.

Q. Safety Risk Management

In the NPRM, the FAA proposed a new requirement under § 5.53(b)(5) to consider the interfaces of the system when conducting a system analysis as part of the safety risk management process. Interfaces are a point where two or more operations,

systems, subjects, or organizations connect and interact. Interfaces can be internal to an aviation organization, or they can be external (e.g., between organizations, between the system being analyzed and other systems, or between a human using the system and the system itself).

1. Discussion of the Final Rule

The FAA adopts the requirement to consider interfaces of the system when conducting a system analysis as proposed in § 5.53(b)(5). Hazards can exist with interfacing aviation organizations, processes, or systems in the way the two interfacing parts interact with each other. Understanding the interfaces while conducting a system analysis is important because the system analysis serves as the basis for identifying and analyzing hazards and their associated risk. As the aviation system becomes more complex, dynamic, and integrated, understanding these interfaces can assist in the identification of related hazards and improve safety overall.

2. Summary of the Comments

Several commenters were concerned with whom and how the safety risk management processes will be accomplished. Other commenters were concerned that requiring organizations to consider external interfaces during safety risk management processes could be too burdensome and may not add value because they do not control the activities of external organizations. Baldwin Safety and Compliance asserted that the requirement in § 5.53(a) requiring a system analysis when “applying safety risk management” is prescriptive and limiting.

3. FAA Response

Regarding the comments concerned with the burden and value of having to consider external interfaces during safety risk management processes, the FAA emphasizes, as it did in the NPRM, that an SMS that looks both inward and outward is more effective at identifying hazards, which is a core function of any operational SMS. Developing a good system analysis provides aviation organizations an opportunity to identify internal and external interfaces and will aid in the analysis process of the safety risk management by providing a whole system view. That said, the FAA does not expect external aviation organizations that do not have an input into the process or support the aviation activity to be included in the system analysis or safety risk management process. The system analysis is intended to limit the system only to those areas where the hazard was identified, and mitigations could be implemented. By reaching out to other aviation organizations that may be affected by the hazard, or have input to the system, substitute risks or residual risks to the system could be identified and more easily addressed.

Furthermore, the FAA is not requiring aviation organizations, through § 5.53(b)(5), to compel external interfaces to participate in risk analysis and system-related safety management, but rather, only to consider those interfaces when conducting system analysis. Aviation organizations are in the best position to determine whether those external interfaces should participate (and would be willing and able to participate) in an aviation organization's risk analysis activities.

Because part 5 is a performance-based regulation, the aviation organization can determine how to meet the requirements, which allows the organization to scale and adapt the methods used for safety risk management. The aviation organization can design

the process to fit the organization's size and complexity. For more information regarding scalability, see Section IV.J.

R. Part 135 Pilot and Duty Rules ARC

In the NPRM, the FAA included the statement:

The identification of hazards through SMS may include analyzing the potential risk associated with crewmember fatigue when compounded by variations in individual part 135 operations, such as scheduling variances, frequency of operations, distance, and number of pilots.⁴⁴

Footnote 44 was linked to this statement and said: See report from the Part 135 Pilot and Duty Rules Aviation Rulemaking Committee dated July 2, 2021, a copy of which has been placed in the docket for this rule.

1. Summary of the Comments

NBAA, NATA, and NJASAP expressed concern and asked questions regarding whether the FAA intends for the rule to address the ARC recommendations.

2. FAA Response

While addressing hazards related to crew fatigue would be a part of a mature SMS, the FAA did not intend to imply that the ARC's recommendations would be covered by this rule. The FAA is evaluating the Part 135 Pilot and Duty Rules ARC's recommendations and weighing options to address them, which would need to be accomplished through a separate regulatory initiative.

⁴⁴ 88 FR 1940.

S. Consistency with ICAO

The FAA noted throughout the NPRM that the proposed rule would more closely align the United States SMS requirements with ICAO Annex 19.

1. Summary of the Comments

Commenters expressed concerns about elements of the proposed rule that differ from ICAO Annex 19. Specifically, the Business Aviation Safety Consortium (BASC) noted that some elements of the proposed rule differ from the existing ICAO framework, which could lead to difficulties for flight departments that operate domestically and internationally where they must adhere to Annex 19. BASC asked whether these operators would need to operate two separate SMS programs or one hybrid program and cautioned that focusing on compliance with two separate frameworks could jeopardize safety when safety excellence already exists.

University of Southern California Aviation Safety and Security said that requiring an SMS that departs radically from the ICAO standards could require international service providers to maintain two SMS programs, which would be an unacceptable burden and could diminish the effectiveness of SMS. The commenter indicated that the FAA cannot be exercising international leadership in aircraft safety if it departs substantially from ICAO Annex 19, and that the current part 5 requirements should be standardized to reflect ICAO Annex 19 and Document 9589 more closely. Aviation Safety Solutions also said the FAA's reliance on a Quality Management System, rather than ICAO Annex 19, for its SMS rule could create disadvantages for international operators. Minnesota Business Aviation Association recommended that requirements be

identically worded to ICAO to facilitate the approval process for ICAO-compliant SMS operators in the United States.

NBAA recommended returning to AC 120-92B because AC 120-92D is too prescriptive and inconsistent with ICAO Annex 19. It noted that several countries (Australia, Canada, Hong Kong, Saudi Arabia) applied Annex 19, Appendix 2 to their respective regulatory frameworks, which helps avoid challenges for international operators. NBAA highlighted the accountable executive requirement as an example where the proposed rule is less flexible than under ICAO, and also cited the code of ethics, data sharing, and systems description requirements as “outside the scope” of Annex 19.

2. FAA Response

ICAO Annex 19 directs member States to develop State safety programs for safety management and includes minimum requirements. Ultimately, each State is responsible to develop SMS regulations to implement this requirement. Part 5 fulfills this responsibility for the United States. An important distinction between Annex 19 and part 5 is that Annex 19 applies to the member States and part 5 applies to individual operators. As a result, each member State implements the Annex 19 SMS framework in accordance with its own processes and legal systems; accordingly, Member State regulations can vary to some extent. They meet Annex 19 requirements, however, if they include all of the elements in ICAO’s framework. To be clear, Annex 19 does not apply directly to individual entities; its purpose is to direct member States to regulate those entities. Accordingly, the FAA developed part 5 to align with the SMS framework in ICAO Annex 19.

Part 5 includes all the elements in ICAO's Annex 19 framework, which means that the United States and, by definition, U.S. entities compliant with part 5 are in compliance with Annex 19.

Finally, the FAA issued AC 120-92D to be consistent with part 5. As a result, it is also consistent with Annex 19.

T. Safety Policy

In addition to comments regarding proposed amendments to the safety policy, which are addressed in other sections of the preamble, several commenters expressed concern about various safety policy requirements in subpart B of part 5, which were not amended, including the required contents of the safety policy and the responsibilities of the accountable executive.

1. Summary of the Comments

Pratt & Whitney said that the prescriptive list of requirements in § 5.21 for the safety policy requires a lengthy legal document that would not bring about the desired behaviors. The commenter requested industry latitude to develop safety policies, possibly from multiple sources, that satisfy the proposed list of requirements.

Small UAV Coalition questioned why § 5.25(a) requires a single individual to satisfy all four functions of the accountable executive, noting that some companies have specialized executives (e.g., CFOs, Chief Human Resource Officers) that might better oversee a particular function. The coalition also said the requirement in § 5.25(c) for the accountable executive to "designate sufficient management personnel" is vague and questioned whether small companies could comply with this requirement if they designated all responsibilities to one person.

The USC Viterbi School of Engineering noted that the requirement for an accountable executive to review the safety policy is stated in both § 5.21 and § 5.25 and suggested it need only be stated in § 5.25. The commenter also recommended specifying how often this review should be conducted and suggested that annual reviews be required.

2. FAA Response

In response to the comments, the FAA notes that the only substantive addition to § 5.21 is the code of ethics now required under new paragraph (a)(7) (discussed in Section IV.J. of this rule). The other requirements in § 5.21, which were promulgated in the original part 5 rulemaking, are performance-based and are designed to provide the aviation organization with latitude in developing its safety policy. The FAA has included additional explanation in AC 120-92 and AC 21-58 providing suggestions for designating the accountable executive and management personnel, defining unacceptable behavior and conditions for disciplinary action, and the expectations for compliance in small entities.

With respect to the concern regarding possible duplication of requirements, the FAA notes that, in some cases, similar language is necessary to tie one SMS component to another SMS component to achieve the desired closed-loop system. For example, although §§ 5.21 and 5.25(b) use similar language, § 5.21 prescribes requirements on the aviation organization while § 5.25(b) prescribes the responsibilities of the accountable executive.

Neither Annex 19 nor part 5 specifies a set time interval, applicable to all covered entities, for reviewing the safety policy. Section 5.21(c) requires that the safety policy be

documented and communicated throughout the aviation organization. This is where the aviation organization specifies the interval the safety policy is to be reviewed by the accountable executive, in a timeframe appropriate for its organization.

U. Miscellaneous Amendments

After further consideration, the FAA decided to add “for the same product” to § 5.1(e), § 5.1(f), and § 5.1(g) to clarify the applicability of part 5. The additional text clarifies that part 5 does not apply to either an STC holder or a PC holder for an STC because these design and production approvals are for modifications to a product and not for complete products. Similarly, there are persons who may hold a TC and a PC to produce parts or articles only. The final rule does not apply because the PC is only for the production of a part or an article and not for the same product.

In addition, in the NPRM the FAA proposed removing the word “operations” from § 5.71(a) to clarify the requirement and avoid confusion with the term “operator.” In retrospect, this change created additional confusion. As a result, the FAA is retaining the original part 5 language.

Finally, the FAA proposed amending § 119.8 to clarify that part 119 certificate holders authorized to conduct part 121 or 135 operations must have an SMS that meets part 5 requirements. On further review, the FAA determined that the amended language would have prohibited all operations while not in compliance with part 5, resulting in a new violation each time. This was not what the FAA intended. Accordingly, the FAA removed the language that would have provided for a per-operation violation. Section 119.8 now reads: Certificate holders authorized to conduct operations under part 121 or 135 of this chapter must have a safety management system that meets the requirements of

part 5 of this chapter. This change ensures the FAA's approach to § 119.8 is consistent with past practices as well as other provisions in this rule.

V. Benefits and Costs

1. **Comments in Support of Benefits**

i. Summary of Comments

NetJets Association of Shared Aircraft Pilots claimed that the safety benefits of SMS have been well established over the years. The NTSB stated that in the 15 years since its first aviation safety recommendation for SMS in 2007, its investigations have consistently shown the need for aviation safety providers to implement SMS to ensure its benefits to industry and the public are realized. Aviation Safety Solutions also indicated that it anticipates substantial safety benefits from part 5. The commenter claimed that International Standard for Business Aircraft Operations Stage 3 operators have not had a fatal accident in 20 years, the result of industry-wide safety culture enhancements, continual data analysis, and ensuring that safety is the operator's top priority. Another commenter noted that the level of benefits required to breakeven for certain part 21 design and production approval holders is not much of a challenge.

ii. FAA Response

The FAA agrees with these comments and the potential benefits from SMS (the FAA does not have operator-specific information on International Standard for Business Aircraft Operations stage 3 to confirm the accident rate). SMS identifies hazards so mitigations can be implemented to reduce the potential of an accident occurring. By managing hazards in an operational environment, the potential for an accident is significantly reduced.

2. Comments Contesting Benefits

i. Summary of Comments

Phoenix Air Group asserted that an SMS does not mitigate or reduce the number of accidents in any known definition or study of such programs. One commenter questioned if there are studies that show SMS would have any effect on accident rates or overall safety. One commenter stated that the NPRM shows no data proving that the present SMS has improved safety. Another commenter found the actual accident-based case the FAA made for applying SMS mandates to single-person operations to be unsupported. Finally, one commenter expressed concern about the resources needed to implement an SMS and the lack of realistic practical benefits for certain small part 21 operations, for example, hot air balloon manufacturing.

ii. FAA Response

The FAA acknowledges the lack of studies documenting reduced accident rates under SMS. As stated previously, SMS assists aviation organizations in identifying hazards that could result in an accident so the organization can implement mitigations to reduce accident probability.⁴⁵ The FAA has determined that the requirements would be beneficial even applied to small entities, including small manufacturers, and implementation can also be scaled accordingly, as discussed in Section IV.J.

⁴⁵ In the data for recent years (2020-2021), the FAA identified an additional 9 part 135 accidents and 1 § 91.147 accident (resulting in 27 fatalities and 8 serious injuries) in which SMS could potentially have prevented the accident. These accidents include the 2020 helicopter crash in Calabasas, CA resulting in 9 fatalities (the NTSB determined that a contributing factor to the accident was the lack of use and oversight of the company's SMS). These accidents also include single-pilot operations (NTSB accident number CEN20CA119).

3. Comments on Costs

i. Summary of Comments

Phoenix Air Group, Inc. stated that incompatibility between the rule and ICAO Annex 19 Standards and Recommended Practices would require the company to maintain two different safety programs, increasing costs by 75%. It stated that it has a third-party provided SMS that meets the ICAO Annex 19 requirements for all its operations under multiple CFR parts. The commenter stated that the current annual cost would be much higher than the RIA estimate, and the costs after the addition of part 5 would also be much higher. Regarding the cost of risk mitigations, Phoenix Air Group stated the company's mitigations have ranged from no cost actions to actions that added hundreds of thousands of dollars requiring the company to modify one or more aircraft, including the purchase of a supplemental type certificate, which added hundreds of thousands of dollars to the cost for each installation and removed each aircraft from operation for many weeks.

ii. FAA Response

The FAA's estimates would not have accounted for the company's part 91 operations (other than § 91.147) or its repair station, or activity not affecting the safety of flight, which could explain the difference in costs. The commenter also did not identify the gaps that would need to be addressed between the proposed rule and its current ICAO Annex 19 conforming SMS that would produce the projected additional costs. Although more specific in several areas, part 5 is harmonized with ICAO Annex 19, and the FAA disagrees that the rule would require separate SMS. The FAA acknowledges the potential

range in mitigation costs, which will be specific to an aviation organization and the hazards identified.

iii. Summary of Comments

LifeFlight of Maine/ LifeFlight Aviation Services LLC stated that it is in the small operator proposed cost profile in the NPRM with between 1-99 employees and 1-9 aircraft with costs estimates ranging from \$7,500-\$38,120 initial and \$4,380-\$39,420 annual recurring. It believed the cost estimates in the NPRM are significantly understated, citing a threefold increase in the NPRM proposed discounted costs from experience to date. It stated that, as a percentage of overall costs of operations, the NPRM proposed SMS mandate and timing are a significantly higher burden for smaller entities. Additionally, air medical operators are unable to pass through compliance costs via price increases as neither Medicare, Medicaid, nor commercial medical reimbursement recognize or allow costs associated with implementing and maintaining an SMS. The commenter stated that an effective SMS in a smaller program will look and feel quite different than the same in a large operation and spreading out implementation costs is essential for smaller operators.

iv. FAA Response

The commenter did not provide additional detail for the FAA to evaluate the cited threefold difference in costs incurred. As described elsewhere in this preamble, the FAA maintains that SMS processes, and thus costs, are scalable to the size and complexity of the aviation organization. Aviation safety regulatory compliance costs represent costs of air medical service provision. If insurance reimbursement rates do not fully cover service provision costs, then such costs could negatively impact profit or service provision.

However, as also explained elsewhere, the FAA has determined that the requirement for SMS in part 135 operations should apply to small and large operators alike. The FAA is providing an additional 12 months for compliance to assist in the spreading out of implementation costs for small operators.

v. Summary of Comments

MARPA stated that the code of ethics provision affects a broad swath of individuals not reflected in the cost-benefit analysis, based on the requirement of the rule to “be applicable” to all employees. The Aviation Suppliers Association stated that many certificate holders who would be subject to the SMS regulations will flow down the requirements to aircraft parts suppliers and distributors through commercial obligations in contracts and other similar documents. The association found that flow-down appears to be an unintended consequence that exceeds the planned scope (and the cost-benefit analysis). It also suggested that a supplier to multiple certificate holders may be faced with adopting the disparate SMS requirements of several certificate holders, at a cost much greater than the cost of adopting its own SMS. The association also expressed concern that SMS requirements from other nations may not be consistent with the FAA’s requirement, but nonetheless applied to suppliers from the United States. The commenter suggested that, for businesses that supply more than one certificate holder (directly or indirectly), having their own voluntary SMS program that is recognized by the FAA may be a more efficient model. MARPA and Aviation Suppliers Association also stated that the proposed requirement of § 5.94 to notify interfacing persons of identified hazards creates flow-down risks to persons not intended to have SMS and could impose significant cost on those parties. They suggested that the FAA audit the extent to which

the interfacing provisions result in flow down requirements, and if the actual reach of the regulations is beyond the stated scope, then consider preparing a revised cost-benefit analysis for the rule.

vi. FAA Response

The FAA disagrees with these comments regarding costs. With respect to the code of ethics applying to all employees, the method the FAA used for extrapolating unit costs to design and manufacturing organizations entailed multiplying unit costs by the number of employees. Therefore, the costs estimates reflect the number of employees. With respect to hazard notification and the potential for flow down of SMS requirements, there are already flow down requirements from type and production certificate holders to suppliers to manage the quality of parts supplied (§ 21.137, Quality system). For example, type and production certificate holders already expect suppliers to fix defective parts. Regarding a voluntary SMS for suppliers, the FAA's voluntary SMS program is currently available to TSOA holders and PMA holders.

vii. Summary of Comments

GAMA and AIA stated it is unclear if additional mandates (interfacing communications, confidential hazard reporting, addition of system description, and record keeping) are included in the FAA's cost estimates. They stated that costs for a summary of confidential reports could approach \$100,000 a year, is not part of the cost analysis, and that there is no value added from this requirement. They requested clarification that the Executive Order 12866 requirement to only adopt a regulation upon reasoned determination that benefits justify the cost is met. They also requested clarification that the Unfunded Mandates Reform Act of 1995 requirement that agencies

prepare a written assessment of costs, benefits, and other effects of proposed or final rules is met.

viii. FAA Response

The FAA captures the costs of additions to part 5 in Tables 25 and 27 of the RIA. In the final rule, the organizational system description applies only to part 21 certificate holders and is only a summary-level description. Also, for part 135 and § 91.147, confidential hazard reporting is not applicable for certain single-pilot organizations. The FAA does not expect the summary of confidential employee reports for part 21 organizations to cost \$100,000 per year. SMS requires analysis of safety performance data, including information obtained through confidential employee reporting systems. Therefore, these reports would already be consolidated, reviewed, and acted on as part of the company's SMS. The commenter's assertion of needing to cull out any military and international reports from a summary does not seem to explain this cost. As stated in the preamble to the proposed rule, the FAA maintains that benefits justify the cost, and that the costs do not meet the threshold in Unfunded Mandates Reform Act of 1995.

ix. Summary of Comments

AMOA disputed the Agency's cost analysis that includes part 135 operators with one employee-pilot. The commenter also found that the FAA assumes that third-party consultants or trade associations would provide ready tools for compliance by a small operator, yet the NPRM does not appear to have examined the cost of third-party resources. The association urged the FAA to include a table specifically examining the costs of each SMS regulatory element for single-pilot operators to provide a better foundation for cost benefit analysis.

x. FAA Response

Regarding the FAA's cost estimate for single-pilot/employee operations, see also the FAA's response to comments regarding Applicability to part 135 operators and LOA holders under § 91.147 (in Section IV.A.), as well as Scalability (in Section IV.J.).

Aviation organizations can use solutions that are appropriate for their size and complexity. For example, smaller or less complex aviation organizations may use notebooks and whiteboards rather than more sophisticated software solutions. The costs of these solutions would scale as well. The FAA subject matter experts reviewed the estimates used for part 135 operators, considering the experience of aviation organizations already implementing SMS and including higher cost areas such as Alaska, and found them reasonable.

The FAA did solicit costs of third-party resources as part of developing the NPRM. However, these resources and costs depend on the particular offering and pricing structure. For the NPRM and final rule, the FAA instead relied on the information from the FAA's voluntary SMS program participants. For part 135 and § 91.147, the FAA developed average costs based on number of aircraft for general categories of costs rather than element-by-element for single-pilot operators. As described in the RIA, the SMS ARC identified these sources of additional incremental initial and recurring costs that could be incurred as a result of an SMS rule, noting that these costs are highly dependent on the existing safety programs and systems within the aviation organization (see AC 120-92 for additional guidance). Table 26 in the RIA provides the results (based on the limited industry outreach documented in Tables 21 and 23). Whether existing processes in place would meet the external interface identification and notification requirements

would also be operator specific. In addition, in the final rule, certain requirements are not applicable to certain single-pilot operators.

xi. Summary of Comments

Aviation Safety Solutions provided one-time and annual costs for emergency response plan manual, emergency response exercise, SMS manual, safety manager, SMS software, and training.

xii. FAA Response

Aviation Safety Solutions did not provide the size of the aviation organization these costs are relevant to (other than commenting that for an organization size of close to 100, one individual running the SMS would be insufficient). The FAA also notes that these items and positions may not be incremental at all aviation organizations and incremental costs would depend on the extent of processes and procedures in place, as well as the scaled methods that the entity chooses for compliance (e.g., small operators utilizing notebooks rather than SMS software). Therefore, the commenters' cost estimates may be relevant for some entities as one potential means of compliance with some requirements, rather than representative costs.

The FAA summarizes and responds to comments regarding the Initial Regulatory Flexibility Analysis in Section V.B.

W. Severability

As discussed earlier in this document, Congress authorized and required the FAA by statute to promote safety in aircraft manufacturing and operations. Consistent with that mandate, the FAA is requiring certain persons to implement an SMS that applies to their processes that have a direct effect on aviation safety. The purpose of this rule is to

operate holistically in addressing a range of hazards in aviation. However, the FAA recognizes that certain provisions of this final rule will affect different organizations in different ways. Therefore, the FAA finds that the various provisions of this final rule are severable and able to operate functionally if severed from each other. In the event a court were to invalidate one or more of this final rule's provisions, the remaining provisions should stand, thus allowing the FAA to continue to fulfill its Congressionally authorized role of promoting safety in air commerce.

V. Regulatory Notices and Analyses

Federal agencies consider impacts of regulatory actions under a variety of executive orders and other requirements. First, Executive Order 12866 and Executive Order 13563, as amended by Executive Order 14094 ("Modernizing Regulatory Review"), direct that each Federal agency shall propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify the costs. Second, the Regulatory Flexibility Act of 1980 (Pub. L. 96-354) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (Pub. L. 96-39) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. Fourth, the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of \$100 million or more (adjusted annually for inflation) in any one year. The current threshold after adjustment for inflation is \$177 million using the most current (2022) Implicit Price Deflator for the

Gross Domestic Product. The FAA has provided a detailed Regulatory Impact Analysis (RIA) in the docket for this rulemaking. This portion of the preamble summarizes the FAA's analysis of the economic impacts of this rule.

A. Summary of the Regulatory Impact Analysis

The FAA estimated quantified annualized costs of \$47.4 million using a 7 percent discount rate over a 5-year period of analysis. The costs represent the value of resources that regulated entities would need to develop and implement an SMS. Mitigation costs, which are yet to be identified and thus unknown, are not quantified. The benefits are the value that would result from avoided fatalities, serious injuries, aircraft damage, and investigation costs, which the FAA evaluated qualitatively.

1. Baseline for the Analysis

The baseline for the analysis of incremental benefits and costs of the rule includes existing regulations and standards, existing practices, affected entities, and current risks of aircraft accidents and incidents. The FAA already requires part 121 operators to implement an SMS. The FAA also provides voluntary SMS programs for certificate holders under parts 21, 135, and 145. The FAA's voluntary SMS programs are based on the requirements in part 5. There are 5 aircraft design and manufacturing organizations and 40 part 135 operators in active conformance (full implementation of the certificate holder's SMS) under the voluntary program.⁴⁶ In addition, some part 121 operators have covered their part 135 operations and part 145 repair station services under their SMS. Finally, certain aircraft design and production approval holders (and certificated repair

⁴⁶ See FAA Order 8900, Volume 17, Chapter 3, Safety Management System Voluntary Program.

stations⁴⁷) subject to requirements of EASA (applicable March 7, 2023) are required to develop and implement an SMS under that agency's SMS requirements.

The FAA estimated that the rule would apply to approximately 65 aircraft design and production approval holders. Also, there are approximately 1,848 part 135 operators that would be required to implement an SMS, which includes 203 entities that also hold an LOA to conduct commercial air tours under § 91.147. Additionally, there are 715 LOA holders operating under § 91.147 that are not associated with a part 135 certificate that would be required to implement an SMS under the rule.

With respect to aircraft accidents, although risks associated with regularly scheduled commercial air carriers in the United States are low, there have been accidents involving fatalities and serious injuries. Under part 135, there has been an average of 43 accidents and 24 fatalities annually from 2015 to 2019, mostly in on demand operations. There have also been recent fatal accidents involving air tours conducted under § 91.147 (an average of 7 accidents and 3 fatalities annually from 2015 to 2019).

2. Benefits

The benefits of the rule include the value of the reductions in safety risks associated with requiring additional entities to implement SMS. The information available for estimating such benefits includes data on accident consequences, accident investigation reports identifying the probable causes, and information on the values associated with avoiding consequences. The FAA used aviation accident data from the NTSB for the years 2015 to 2019 and standard values for estimating avoided

⁴⁷ The rule will not apply to repair stations.

consequences including fatalities, serious injuries, property damage, and investigation costs.

The FAA evaluated benefits by determining average annual aviation accident consequences, the share of those consequences that could be mitigated under the rule, and the probability of mitigation. The FAA determined the share of consequences that could potentially be mitigatable by the rule by looking at the causes of individual accidents. Requiring aircraft design and production approval holders to implement SMS has the potential to mitigate accidents in operations conducted under 14 CFR parts 121, 135, and 91. Requiring part 135 operators and § 91.147 LOA holders to implement SMS has the potential to mitigate accidents in operations conducted under part 135 and § 91.147. The probability of mitigation is uncertain.

The FAA identified 11 accidents of which the risk could have been mitigated through SMS in aircraft design and production. The FAA also identified 35 accidents related to operations under part 135 and 4 accidents related to § 91.147 LOA holders of which the risk could have been mitigated through SMS. Because the FAA focused on accidents involving fatalities and injuries, not all accidents indicative of the potential for benefits from the rule may have been identified. Additionally, requiring SMS for certain part 21 certificate holders will have beneficial impacts beyond domestic operations (i.e., to citizens of foreign countries).

3. Costs

To estimate compliance costs, the FAA developed average one-time SMS development and implementation costs and recurring SMS maintenance costs. Then, the FAA extrapolated these costs to entities that fall under the expanded applicability of part

5 who would not already be required to implement an SMS and are not already implementing an SMS voluntarily. To develop these estimates, the FAA conducted limited outreach to industry participants in the FAA's voluntary SMS program to obtain data on implementation costs. To properly scale costs for company size, the FAA calculated these costs per employee for certificate holders under part 21 and per aircraft for operators under part 135 and § 91.147. The FAA then extrapolated the costs based on number of employees or number of aircraft. The FAA estimated only minor costs for entities that have already implemented an SMS voluntarily or under existing requirements for part 121.

There are uncertainties in the analysis, including that costs are based on information from a small sampling. As a result, costs could be lower or higher than estimated. The outreach indicated a high level of variability depending on the individual circumstances of the entity (e.g., existing processes and capabilities). For this analysis, the FAA intends for the estimates to represent an average across entities.

4. Summary

Table 2 provides a summary of annualized and 5-year present value costs using 3 percent and 7 percent discount rates.

Table 2. Summary of Costs¹ (Millions \$2022)

Category	Annualized	Present Value (5 Years)
3% Discount Rate		
Part 21 ²	\$4.9	\$22.5
Part 135	\$35.9	\$164.5
§ 91.147	\$7.2	\$33.2
Part 121	\$0.05	\$0.2
Total	\$48.1	\$220.4
7% Discount Rate		
Part 21 ²	\$4.9	\$20.1
Part 135	\$35.3	\$144.9
§ 91.147	\$7.1	\$29.2
Part 121	\$0.05	\$0.2

Table 2. Summary of Costs¹ (Millions \$2022)

Category	Annualized	Present Value (5 Years)
Total	\$47.4	\$194.5
1. Based on quantified impacts. Excludes costs of mitigation.		
2. Includes FAA administrative costs.		

5. Regulatory Alternatives

The FAA considered two alternatives to the rule. Each alternative would change the applicability of the requirements for an SMS:

- Alternative 1: Extend applicability of part 5 to include most design and production approval holders under part 21, with some exceptions.
- Alternative 2: Exclude from the applicability of part 5 the part 135 operators that use only one pilot-in-command in their operations and the § 91.147 LOA holders that conduct fewer than 100 flights per year.

The FAA considered an alternative to the part 21 applicability (Alternative 1) based on recommendations from a part 21 SMS ARC. Under Alternative 1, the SMS requirements would apply beyond holders of both a type and production certificate for the same product and would include most design and production approvals holders. This alternative would exclude design and production approval holders of products, articles, or changes to existing type certificated products that are not typically used for carrying passengers or property for compensation or hire. Also, as part of this alternative, the FAA considered a process that would allow design and production approval holders to apply to be excluded from SMS requirements if their article or approved product alteration would have little or no effect on the continued safe flight or landing of the aircraft.

Under Alternative 1, the FAA estimated that over 3,000 additional entities would be required to implement SMS and over 3,000 additional entities (not associated with the

entities in the previous sentence) would likely apply to be excluded from the SMS requirements.

Alternative 1 would increase benefits through SMS implementation by the approximately 3,000 entities who design or produce certain safety-critical parts under any design or production approval. The alternative would also hold entities who design and produce safety-critical parts to the same SMS standard required of entities holding both a type certificate and a production certificate for the same product. This alternative would increase benefits by requiring SMS for all entities involved in the design or production of safety-critical aircraft parts compared to the final rule baseline that requires SMS for the approximately 60 type and production certificate holders that design or manufacture products (aircraft, aircraft engines, or propellers). The approximately 3000 additional entities that would be required to implement SMS under this alternative include STC holders that modify product designs, TSOA holders that design and produce aircraft articles, and PMA holders that design and produce aircraft replacement and modification parts. The FAA expects requiring SMS for these additional entities would increase SMS benefits (reducing or eliminated accidents) through improved identification of safety hazards, enhanced management of safety risk, and better assurance of the effectiveness of safety risk controls across a larger ecosystem of aircraft design and production organizations. However, as of the date of this analysis, the FAA was not able to estimate these risks or benefits due to a lack of specific data.

The FAA estimated that costs could be \$37 million for Alternative 1, using a number of assumptions because it does not have information for these entities on the size of their aviation design and production processes. The costs would include SMS

development and implementation costs, costs to apply for an exception from the requirement to implement SMS, and FAA review and approval costs. Compared to the rule, the increase in costs is approximately \$32 million (annualized using a 7% discount rate).

The FAA considered an alternative for part 135 and § 91.147 (Alternative 2) that would limit the number of small operators affected. Under Alternative 2, the FAA considered excluding from the applicability of part 5 the part 135 operators that use only one pilot-in-command in their operations and the § 91.147 LOA holders that conduct fewer than 100 flights per year. The FAA estimated that 1,300 part 135 operators would be affected under Alternative 2 compared to 1,848 under the rule. The FAA does not have data on the number of § 91.147 LOA holders that conduct less than 100 flights per year. As an estimate, the FAA used LOA holders with one aircraft listed on the LOA. The FAA estimated that 338 § 91.147 LOA holders would be affected under Alternative 2 compared to 715 under the rule.

The reduced applicability under Alternative 2 would lower both costs and benefits. For part 135, costs would be \$3.0 million lower compared to the rule. For § 91.147, costs would be \$1.6 million lower compared to the rule. With respect to benefits, one of the potentially mitigatable accidents involved an operator that used only one pilot-in-command. These types of operators would not be required to implement an SMS.

Table 3. provides a summary of the analysis of the alternatives. The uncertainty associated with the analysis of benefits and costs of the proposal also applies to the estimates of the alternatives. Section IV.C., Expansion of Proposed Applicability and

Section IV.A., Applicability to Part 135 and LOA Holders under § 91.147, of the preamble to the rule provides the Agency’s rationale for selecting the option.

Table 3. Summary of Alternatives Analysis

Scenario	Change from Proposed Rule		
	Affected Entities	Benefits	Costs (Millions)
Alternative 1: Extend applicability to include additional design and production approval holders under part 21	SMS: +3,000 Exception: +3,000	Data not available to quantify change in risk	+\$32.0
Alternative 2: Limit applicability for certain part 135 operators (exclude operators that use only one pilot-in-command) and § 91.147 LOA holders (exclude fewer than 100 flights per year)	Part 135: -548 § 91.147: -377	Lower (would not mitigate risks identified in 1 part 135 accident)	Part 135: -\$3.0 § 91.147: -\$1.6

See the RIA available in the docket for more details.

B. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) of 1980, (5 U.S.C. 601–612), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121) and the Small Business Jobs Act of 2010 (Pub. L. 111–240), requires Federal agencies to consider the effects of the regulatory action on small business and other small entities and to minimize any significant economic impact. The term “small entities” comprises small businesses and not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000.

The FAA published an Initial Regulatory Flexibility Analysis (IRFA) in the proposed rule to aid the public in commenting on the potential impacts to small entities. The FAA considered the public comments in developing the final rule and this Final Regulatory Flexibility Analysis (FRFA). A FRFA must contain the following:

- (1) A statement of the need for, and objectives of, the rule;

(2) A statement of the significant issues raised by the public comments in response to the IRFA, a statement of the assessment of the agency of such issues, and a statement of any changes made in the proposed rule as a result of such comments;

(3) The response of the agency to any comments filed by the Chief Counsel for Advocacy of the Small Business Administration (SBA) in response to the proposed rule, and a detailed statement of any change made to the proposed rule in the final rule as a result of the comments;

(4) A description of and an estimate of the number of small entities to which the rule will apply or an explanation of why no such estimate is available;

(5) A description of the projected reporting, recordkeeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;

(6) A description of the steps the agency has taken to minimize the significant economic impact on small entities consistent with the stated objectives of applicable statutes, including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the final rule and why each of the other significant alternatives to the rule considered by the agency which affect the impact on small entities was rejected.

1. Need for and Objectives of the Rule

As described elsewhere in this preamble, the rule addresses a Congressional mandate as well as recommendations from the NTSB and various ARCs. Additionally, the rule would move the United States closer to harmonizing with ICAO Annex 19. The FAA intends for the rule to improve aviation safety by requiring organizations to

implement a proactive approach to managing the safety performance of an organization. The successful use of SMS by part 121 operators suggests potential benefits of expanding SMS into other sectors of the aviation system.

The objective of implementing an SMS is to proactively identify hazards, assess the risk of those hazards, and apply effective mitigations before an accident or incident occurs. The rule expands the use of SMS in the aviation industry by making the SMS requirements applicable to part 135 operators, § 91.147 LOA holders, and certain part 21 design and production certificate holders. The rule also increases the opportunities for communication of identified hazards between part 119 certificate holders, § 91.147 LOA holders, and manufacturers. The rule is therefore intended to increase the overall safety of the national airspace system. Additionally, the rule fulfills the statutory mandate in section 102 of ACSAA. Section II. of this preamble describes the FAA's authority to issue rules on aviation safety under title 49 U.S.C. and the Congressional mandate in section 102 of ACSAA.

2. Significant Issues Raised in Public Comments

Significant issues raised in the public comments relate to duplicative rules and the economic impact on small part 135 operations. MARPA stated that applying SMS to design and production holders creates duplicate or overlapping obligations for design and production holders. The association recommended that the FAA consider the duplications already identified in past ARC reports, as well as the facial duplication within the proposed rule, and amend the regulation to eliminate those already-identified as overlaps.

The FAA does not agree that the requirements contained in part 5 are duplicative of elements contained in part 21 as they serve different purposes. The provisions in part

21 are focused on the product; part 21 ensures a product's design is safe and compliant and it is produced in conformance with its approved type design. For example, when certifying an aircraft engine, an organization must conduct a safety analysis of the engine to demonstrate that the likelihood of engine failure effects is below specified levels. Part 5, on the other hand, is focused on identifying hazards and mitigating risks with the organization's systems that are used to design, certify, produce, and maintain continued airworthiness of the products they provide. For example, when revising a system for designing an engine (e.g., implementing a new design process), part 5 requires the organization to analyze, assess, and mitigate the risk of the system revision producing an engine safety issue.

Within the proposed rule, the FAA determined the provisions are necessary for emphasis or to tie one SMS component to another SMS component to achieve the desired closed-loop system. In addition, many of the requirements map to the SMS Framework in ICAO Annex 19, Appendix 2.

NATA stated that SMS solutions for small businesses must not be cost-prohibitive or so burdensome that business closure becomes imminent. The association recommended a staggered compliance schedule of at least 5 years for small carriers to address this concern. NATA also raised issues related to feasibility of provisions not possible at many small businesses, such as confidential reporting of hazards, and stated that the FAA needs to ensure that guidance and training recognize this issue. It stated a need for communications retention procedures where communications are largely oral, and more articulation of precisely how the small operator will implement SMS. The

FAA's assessment and response to these issues can be found in Sections IV.A., IV.D., IV.H., and IV.N. of this preamble.

LifeFlight of Maine/LifeFlight Aviation Services LLC stated that as a percentage of overall costs of operations, the SMS mandate and timing are a significantly higher burden for smaller entities. Also, air medical operators have no methodology to pass these costs via price increases as neither Medicare/Medicaid nor commercial medical reimbursement recognize or allow these costs. It stated that an effective SMS in a smaller program will look and feel quite different than the same in a large operation and the spreading out of implementation costs is essential for smaller operators. An individual commenter found that the NPRM fails to meet the requirements of the RFA. The individual disputed single-person operations can increase fares to cover additional administrative responsibilities because they have neither the extra time for SMS management nor the market elasticity in which to raise prices. Another individual stated that it is unclear how small manufacturers of simple aircraft will absorb the initial and ongoing cost of implementation.

The FAA evaluated these potential impacts and made two changes to the final rule: extending the compliance period for operators by 12 months and excepting certain requirements of part 5 for certain single-pilot operators. The FAA discusses these changes in Section IV.D. of this preamble. The FAA's rationale for maintaining the proposed applicability of the rule with respect to small and single-pilot operations is discussed in Sections IV.A. and IV.J. of this preamble.

3. Response to SBA Comments

The SBA did not comment on the proposed rule.

4. Small Entities to Which the Rule Will Apply

The FAA used the definition of small entities in the RFA for this analysis. The RFA defines small entities as small businesses, small governmental jurisdictions, or small organizations. In 5 U.S.C. section 601(3), the RFA defines "small business" to have the same meaning as "small business concern" under section 3 of the Small Business Act. The Small Business Act authorizes the Small Business Administration (SBA) to define "small business" by issuing regulations.

SBA has established size standards for various types of economic activities, or industries, under the North American Industry Classification System (NAICS). These size standards generally define small businesses based on the number of employees or annual receipts. Table 4 shows the SBA size standards for example industrial classification codes relevant for the proposed rule. Note that the SBA definition of a small business applies to the parent company and all affiliates as a single entity.

Table 4. Small Business Size Standards: Air Transportation

NAICS Code	Description	Size Standard
336411	Aircraft Manufacturing	1,500 employees
336412	Aircraft Engine and Engine Parts Manufacturing	1,500 employees
336413	Other Aircraft Part and Auxiliary Equipment Manufacturing	1,250 employees
481111	Scheduled Passenger Air Transportation	1,500 employees
481112	Scheduled Freight Air Transportation	1,500 employees
481211	Nonscheduled Chartered Passenger Air Transportation	1,500 employees
481212	Nonscheduled Chartered Freight Air Transportation	1,500 employees
481219	Other Nonscheduled Air Transportation	\$16.5 million
487990	Scenic and Sightseeing Transportation, Other	\$8.0 million
NAICS = North American Industrial Classification System		

i. Part 21

As described in the RIA, the FAA estimated that there may be approximately 65 design or production certificate holders under part 21 that will need to implement SMS

under this rule. Fifteen of these entities are already implementing SMS under the FAA’s voluntary program or are large businesses (based on publicly available information regarding number of employees). Of the remaining 50 entities, 31 may meet the size standard for a small business in Aerospace Product and Parts Manufacturing (NAICS 33641).

ii. Part 135

Approximately 1,848 part 119 certificate holders operating under part 135 will need to implement SMS under this final rule. Internal FAA data indicate that all but four of these certificate holders have fewer than 1,500 employees. Thus, to the extent that the industrial classification of the parent company of these entities is scheduled passenger or freight, or nonscheduled chartered passenger or freight air transportation (NAICS 481111, 481112, 481211, or 481212), most would be small businesses. Table 5 shows the distribution of certificate holders by total employment.

Table 5. Distribution of Part 135 Employment

Number of Employees	Number of Certificate Holders	Percent of Certificate Holders
1	275	15%
2-9	812	44%
10-19	258	14%
20-49	288	16%
50-99	113	6%
100-499	79	4%
500-999	15	1%
1000+	6	0%
Source: FAA data as of June 2023		

iii. Section 91.147

Approximately 694 air tour operators will have to implement SMS under the final rule. To the extent that the industrial classification of the parent company of these entities

is Scenic and Sightseeing Transportation, Other, the relevant size standard is \$8.0 million. Internal FAA data does not include revenue or number of flights for these operations. However, 362 of these LOA holders have only one aircraft listed on the LOA. Many may meet the small business size standard.

5. Projected Reporting, Recordkeeping, and Other Compliance Requirements

Section IV.G. of this preamble discusses the reporting requirements of the rule. Affected entities who identify a hazard in their operating environment must provide notice of the hazard to the interfacing person or persons who would best be able to address the hazard or mitigate the risk.

Section IV.H. of this preamble describes the recordkeeping requirements of the proposed rule. Affected entities must maintain records of the outputs of safety risk management for as long as risk controls remain relevant to the operation. In addition, entities must retain outputs of safety assurance processes for a minimum of 5 years, SMS training records for as long as each individual is employed by the person, and communication records retained for a minimum of 24 months.

Recordkeeping and reporting requirements, like the rest of part 5, are scalable to a wide variety of business models and sizes, as discussed in Section IV.J. of this preamble. As a result, entities could potentially accomplish the recordkeeping and reporting requirements through the use of existing personnel rather than require additional professional skills.

Section III.B. of the preamble describes the primary requirements for an SMS, which include safety policy, safety risk management, safety assurance, and safety

promotion, as well as documentation. As described in the RIA, the FAA estimated the cost of compliance with all the requirements based on number of employees for part 21 certificate holders and based on fleet size for part 135 operators and § 91.147 LOA holders. Table 6 and Table 7 provide the results for example size categories and expressed as a percentage of overall average receipts (using NAICS 336411 for part 21 and 336411 for part 135 as examples⁴⁸). Not included in the costs are mitigation costs that are yet unknown. The RIA provides additional detail on the cost estimates.

Table 6. Example SMS Compliance Costs By Number of Employees: Part 21

Number of Employees	One-time Cost	Annual Cost	One-time Cost/Receipts¹	Annual Cost/Receipts¹
1-99	\$8,100 - \$28,140	\$540 - \$10,940	0.2% - 1.2%	0.1% - 0.1%
100-499	\$28,420 - \$141,830	\$11,050 - \$55,130	0.2% - 1.2%	0.1% - 0.5%
500-10,000	\$142,110 - \$2,842,190	\$55,240 - \$1,104,870	0.03 - 0.1%	0.01% - 0.04%
1. Source for receipts: 2017 County Business Patterns and Economic Census (https://www2.census.gov/programs-surveys/susb/tables/2017/us_state_naics_detailedsizes_2017.xlsx). Adjusted for inflation using the Consumer Price Index. Based on NAICS 336411.				

Table 7. Example SMS Compliance Costs By Number of Aircraft: Part 135 and 91.147

Number of Aircraft	One-time Cost	Annual Cost	One-time Cost/Receipts¹	Annual Cost/Receipts¹
1-9	\$8,100 - \$41,180	\$4,730 - \$42,580	0.1% - 0.7%	0.1% - 0.4%
10-49	\$45,750 - \$224,180	\$47,310 - \$231,820	0.1% - 0.9%	0.1% - 0.9%
50-99	\$228,750 - \$452,930	\$236,550 - \$468,370	0.2% - 0.9%	0.2% - 0.9%
100-500	\$457,500 - \$2,287,510	\$473,100 - \$2,365,510	0.2% - 0.3%	0.2% - 0.3%
1. Source for receipts: 2017 County Business Patterns and Economic Census (https://www2.census.gov/programs-surveys/susb/tables/2017/us_state_naics_detailedsizes_2017.xlsx). Adjusted for inflation using the Consumer Price Index. Based on NAICS 481111 and median number of employees per number of aircraft for part 135 operators.				

⁴⁸ The ratios are similar using NAICS 336412 and 336413 for part 21 and 481112, 481113, 481211, 481212, and 481213 for part 135. For § 91.147, the FAA does not have number of employees associated with the number of aircraft on the LOA. However, assuming LOA holders of 1 and 2 registered aircraft have less than 5 employees, the ratios for one-time and annual costs as a percentage of inflation adjusted receipts in this smallest employment size category in NAICS 487990 would be 1.8% and 1.1%, respectively.

Total annualized costs (using a 7 percent discount rate) for small businesses may be in the range of \$0.3 million for part 21 and \$35.3 million for part 135. The FAA does not have data to identify § 91.147 LOA holders that may meet the size standard. However, total annualized costs for this sector are estimated at \$7.1 million.

6. Significant Alternatives Considered

The FAA has taken steps to minimize the significant economic impact on small entities. As described in Section IV.D., the FAA is providing part 135 operators and § 91.147 LOA holders 3 years for submission of a declaration of compliance. Design and manufacturing companies will have 6 months to submit an implementation plan for FAA approval, and 3 years to implement SMS. These timelines will enable small businesses to spread development costs over a 3-year period. Also, as described in Section IV.A., the FAA is excepting part 135 operators and § 91.147 LOA holders that use a single-pilot from certain part 5 provisions that will not be applicable in such small organizations. Finally, as described in Section IV.J., the FAA is providing additional information on how SMS is scalable to small entities.

The FAA considered an alternative to the applicability for part 135 and § 91.147 that would have limited the number of small operators affected. The FAA considered excluding part 135 operators that use only one pilot-in-command in their operations and the § 91.147 LOA holders that conduct less than 100 flights per year. However, the alternative does not meet the Agency's safety objective of having all commercial operations comply with part 5, which is also consistent with the recommendations of the NTSB.

C. International Trade Impact Assessment

The Trade Agreements Act of 1979 (Pub. L. 96-39), as amended by the Uruguay Round Agreements Act (Pub. L. 103-465), prohibits Federal agencies from establishing standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Pursuant to these Acts, the establishment of standards is not considered an unnecessary obstacle to the foreign commerce of the United States, so long as the standard has a legitimate domestic objective, such as the protection of safety and does not operate in a manner that excludes imports that meet this objective. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards. The FAA has assessed the potential effect of this rule and determined that it will improve aviation safety and does not exclude imports that meet this objective. As a result, the FAA does not consider this rule as creating an unnecessary obstacle to foreign commerce.

D. Unfunded Mandates Assessment

The Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531-1538) governs the issuance of Federal regulations that require unfunded mandates. An unfunded mandate is a regulation that requires a State, local, or tribal government or the private sector to incur direct costs without the Federal government having first provided the funds to pay those costs. The FAA determined that this final rule will not result in the expenditure of \$177 million or more by State, local, or tribal governments, in the aggregate, or the private sector, in any one year. Therefore, the requirements of title II of the Unfunded Mandates Reform Act of 1995 do not apply.

E. Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) requires that the FAA consider the impact of paperwork and other information collection burdens imposed on the public. According to the 1995 amendments to the Paperwork Reduction Act (5 CFR 1320.8(b)(2)(vi)), an agency may not collect or sponsor the collection of information, nor may it impose an information collection requirement unless it displays a currently valid Office of Management and Budget (OMB) control number.

This rule contains new information collection requirements and amendments to the existing information collection requirements previously approved under OMB Control Number 2120-0675. As required by the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)), the FAA has submitted these information collection amendments to OMB for its review.

Summary: This rule requires the following information collection activities (Table 8):

Table 8. Information Collections

Information	Section	Description
Organizational system description	5.11(a) 5.13(b)(1) 5.15(b)(1) 5.15(c)(1)	Any person that holds a type certificate or a production certificate issued under part 21 of this chapter must develop and maintain an organizational system description.
Compliance declarations	5.9(a)(2) 5.9(b)	Submit compliance information in a form and manner acceptable to the Administrator.
Implementation plan	5.11(b) 5.13(b)(2) 5.15(b)(2) 5.15(c)(2)	Submit an implementation plan for FAA approval in a form and manner acceptable to the Administrator.
Safety policy	5.21(a)	Any person required to have an SMS under this part must have a safety policy.
Summary of confidential employee reports	5.71(c)	Any person that holds both a type certificate and a production certificate issued under part 21 for the same product must submit a summary of the confidential employee reports to the Administrator every 6 months.

Table 8. Information Collections

Information	Section	Description
Notification of hazards to interfacing persons	5.57	If a person required to have an SMS under this part identifies a hazard in the operating environment, the person must provide notice of the hazard to the interfacing person or persons who, to the best of their knowledge, could address the hazard or mitigate the risk.
SMS documentation	5.95	Any person required to have an SMS under this part must develop and maintain the following SMS documentation: (a) Safety policy, (b) SMS processes and procedures.
SMS records	5.97	Any person required to have an SMS under this part must: (a) Maintain records of outputs of safety risk management processes for as long as the control remains relevant to the operation (b) Maintain records of outputs of safety assurance processes for a minimum of 5 years (c) Maintain records of all training provided under § 5.91 for each individual for as long as the individual is employed (d) Retain records of all communications provided under § 5.93 and § 5.57 for a minimum of 24 consecutive calendar months.

Public Comments: The FAA received two comments on the information collection requirements. One individual stated that the requirement for SMS documentation by small businesses goes against the Paperwork Reduction Act. The individual stated that the FAA did not provide evidence of proven benefit to single person operators for SMS mandates and asserted that the FAA's justification of potential safety gains is a statutorily unacceptable justification for hardship. Wing Aviation LLC suggested that SMS has the capability to be used to reduce the burdensome regulations and paperwork necessary for routine unmanned aviation operations that have already proven themselves to be sustainably safe.

The FAA has taken actions in the final rule in response to concerns regarding paperwork burden for small entities. In the final rule, the FAA is excepting certain single-pilot operations from SMS requirements that would not be applicable in organizations of

this size. These exceptions will eliminate the reporting and recordkeeping burden associated with the reporting of safety hazards, disciplinary action, and communication under § 5.21(a)(4) and (5), and the retention of safety communication records under § 5.93 [§ 5.97(d)].

Additionally, in the final rule, the requirement for an organizational system description is only applicable to design and manufacturing organizations under part 21.

Use: The information collection will be used to provide a basis for the FAA's review during the development and implementing phases, used by the certificate or LOA holder in its SMS processes and procedures, and used to demonstrate compliance with the part 5 requirements.

Collection and analysis of safety data is an essential part of an SMS. Types of data to be collected, retention procedures, analysis processes, and organizational structures for review and evaluation will be documented in the SMS. These records will be used by a certificate holder or LOA holder in the operation of its SMS and to facilitate continuous improvement through evaluation and monitoring. While this rule does not require a certificate holder or LOA holder to submit these records to the FAA, it requires a certificate holder or LOA holder to make these records available upon request.

Respondents (including number of): Table 9 provides the FAA's estimates of the number of respondents by affected entity category (by part 21 certificate holders, 121 operators, part 135 operators, and § 91.147 LOA holders) that would be impacted by the paperwork requirements in this rule.

Table 9. Number of Respondents

Affected Entity Category	Number of Respondents
Organizational system description	
Part 21	65

Table 9. Number of Respondents

Affected Entity Category	Number of Respondents
Compliance declarations	
Part 135	1,848
§ 91.147	715
Total	2,563
Implementation plan	
Part 21	65
Safety policy	
Part 21	65
Part 135	1,848
§ 91.147	715
Total	2,628
Summary of employee reports	
Part 21	65
Notification of hazards	
Part 21	65
Part 135	1,848
§ 91.147	715
Part 121	66
Total	2,694
SMS documentation	
Part 21	65
Part 135	1,848
§ 91.147	715
Total	2,628
SMS records	
Part 21	65
Part 135	1,848
§ 91.147	715
Total	2,628

Frequency: The frequency of new information collection requirements and amendments to the existing information collection requirements is shown below in Table 10 with the annual burden estimate for each.

Annual Burden Estimate: The FAA estimated the paperwork burden for up to 2,694 certificate and approval holders impacted by the rule as shown below in Table 10.

Table 10. Paperwork Burden

Category	Number of Respondents	Frequency of Response ¹	Total Number of Responses	Burden Hours ²	Costs (Millions) ³
Organizational system description					

Table 10. Paperwork Burden

Category	Number of Respondents	Frequency of Response ¹	Total Number of Responses	Burden Hours ²	Costs (Millions) ³
Part 21	65	1	65	520	\$0.05
Compliance declarations					
Part 135	1,848	1	1,848	3,696	\$0.34
§ 91.147	715	1	715	1,430	\$0.13
Total	2,563	NA	2,563	5,126	\$0.47
Implementation plan					
Part 21	65	1	65	2,080	\$0.19
Safety policy					
Part 21	65	1	65	260	\$0.02
Part 135	1,848	1	1,848	7,392	\$0.68
§ 91.147	715	1	715	2,860	\$0.26
Total	2,628	NA	2,628	10,512	\$0.97
Summary of employee reports					
Part 21	65	6	390	1,560	\$0.14
Notification of hazards					
Part 21	65	3	195	1,560	\$0.14
Part 135	1,848	3	5,544	44,352	\$4.10
§ 91.147	715	3	2,145	17,160	\$1.59
Part 121	66	3	198	1,584	\$0.14
Total	2,694	NA	8,082	64,656	\$5.98
SMS documentation					
Part 21	65	1	65	2,080	\$0.19
Part 135	1,848	1	1,848	59,136	\$5.47
§ 91.147	715	1	715	22,880	\$2.12
Total	2,628	NA	2,628	84,096	\$7.78
SMS records					
Part 21	65	3	195	1,560	\$0.14
Part 135	1,848	3	5,544	44,352	\$4.10
§ 91.147	715	3	2,145	17,160	\$1.59
Total	2,628	NA	7,884	63,072	\$5.84
NA = not applicable 1. Frequency over three-year period. 2. Calculated as number of respondents × hours per respondent. 3. Calculated as burden hours × average labor rate including benefits. The FAA used an average wage including benefits of \$92.53, which is the mean average wage for aerospace engineers (\$61.10) divided by the percent of total employer costs of employee compensation represented by wages (66%) to account for benefits (34%). Wages and benefits information available at: https://www.bls.gov/oes/current/oes172011.htm and https://www.bls.gov/news.release/eccec.t04.htm#ect_table4.f.1 .					

Table 11 provides a summary of the implied annual responses and burden (total divided by three).

Table 11. Summary of Annual Burden¹

Category	Reporting	Recordkeeping	Disclosure
Organizational system description			
# of respondents	22	0	0
# of responses per respondent	1	0	0
Time per response (hours)	8	0	0
Total # of responses	22	0	0
Total burden (hours)	173	0	0
Compliance declarations			
# of respondents	854	0	0
# of responses per respondent	1	0	0
Time per response (hours)	2	0	0
Total # of responses	854	0	0
Total burden (hours)	1,709	0	0
Implementation plan			
# of respondents	65	0	0
# of responses per respondent	1	0	0
Time per response (hours)	10.7	0	0
Total # of responses	65	0	0
Total burden (hours)	693	0	0
Safety policy			
# of respondents	0	876	0
# of responses per respondent	0	1	0
Time per response (hours)	0	4	0
Total # of responses	0	876	0
Total burden (hours)	0	3,504	0
Summary of employee reports			
# of respondents	65	0	0
# of responses per respondent	2	0	0
Time per response (hours)	4	0	0
Total # of responses	130	0	0
Total burden (hours)	520	0	0
Notification of hazards			
# of respondents	2,694	0	0
# of responses per respondent	1	0	0
Time per response (hours)	8	0	0
Total # of responses	2,694	0	0
Total burden (hours)	21,552	0	0
SMS documentation			
# of respondents	0	2,628	0
# of responses per respondent	0	1	0
Time per response (hours)	0	10.7	0
Total # of responses	0	2,628	0
Total burden (hours)	0	28,032	0
SMS records			
# of respondents	0	2,628	0
# of responses per respondent	0	1	0
Time per response (hours)	0	8	0
Total # of responses	0	2,628	0

Table 11. Summary of Annual Burden¹

Category	Reporting	Recordkeeping	Disclosure
Total burden (hours)	0	21,024	0
1. Calculated as total burden from Table 10 divided by 3.			

F. International Compatibility

ICAO Annex 19 establishes an SMS Framework for managing aviation safety risk, as well as identifies the types of aviation organizations that should implement an SMS. This rule moves the United States closer to harmonization with ICAO Annex 19. The rule aligns with Annex 19 by requiring the following service providers to implement SMS: 1) commercial operators of airplanes or helicopters, and 2) certain organizations responsible for the design or manufacture of products. The FAA has already implemented SMS across the FAA's Air Traffic Organization.⁴⁹ Additionally, the FAA published an update to part 139 on February 23, 2023, to require SMS implementation for certain airports.⁵⁰ Both of these recent rules bring the United States closer to alignment with ICAO Annex 19 because Annex 19 also includes air traffic service providers and airports.

When part 5 was originally constructed, it was based on the SMS framework in ICAO Annex 19. Part 5 currently also includes requirements for recordkeeping, which are not part of the ICAO's SMS framework. However, recordkeeping requirements facilitate FAA's oversight functions, and they assist the person implementing SMS in demonstrating compliance with the regulations. In addition, the rule requires the communication of information regarding safety hazards. While this requirement is not in the ICAO's SMS framework, the FAA believes that it is beneficial to the persons

⁴⁹ See FAA Order JO 1000.37 for implementation details.

⁵⁰ 88 FR 11642.

implementing SMS. In addition, it is consistent with ICAO's intent as ICAO notes in Annex 19 that other aviation organizations that interface with a product or service provider can make a significant contribution to the safety of its products or services.

1. Air Carriers and Operators

The ICAO SMS requirements for commercial operators are contained in Annex 19, but Annex 6 defines the scope of the requirements. Part I of Annex 6 covers international commercial operations in airplanes. This part of Annex 6 makes no distinction in its requirements on the basis of an aviation organization's size. The Annex applies to all commercial air transportation operations in airplanes. In the United States, this includes operators certificated under part 119 and authorized to operate under part 121 or part 135. Part III of Annex 6 covers commercial air transportation operators of helicopters. In the United States, these operations are conducted under part 135. Annex 6, part I addresses international flight operations; in the United States, these international flights are operated under either part 121 or part 135. The FAA previously only required part 121 operators to implement and maintain an SMS, and this rule extends the requirement for an SMS to part 135 operators, further harmonizing the United States with ICAO's SMS requirements.

2. Aircraft Design and Manufacturing

ICAO Annex 19 requires SMS for organizations responsible for the type design or manufacture of aircraft, engines, or propellers. This rule extends part 5 applicability to holders of both a TC and a PC for the same product, applicants for a PC where the applicant is the holder or licensee of the TC, and holders of a TC that allow other persons to use their TC to obtain a PC. This rule brings the United States into closer

harmonization with the ICAO Annex 19 SMS requirement for certain organizations responsible for the design or manufacture of products.

3. Development and Implementation of SMS by Foreign Jurisdictions

Many States have made significant progress in developing, implementing, and maintaining requirements for SMS, aligned with ICAO's SMS framework, including certificating authorities in Europe (EASA), Canada, Brazil, the United Kingdom, Japan, and Australia. Of those authorities, most have SMS requirements for international commercial operations, and some have SMS requirements for design and manufacturing. Most that do not have SMS requirements for design and manufacturing plan to adopt such requirements in the future. Some States also have SMS requirements for other operations in the aviation system: airports, maintenance organizations, training organizations, international general aviation operations, and for safety data collection, protection, and exchange.

Harmonization of requirements, to the extent feasible, is important to reduce the regulatory burden on those holding certificates or authorizations from multiple States. The FAA continues to work with other States to harmonize SMS requirements. The rule aligns with sections of the ICAO SMS framework and furthers harmonization with other States requiring SMS. Consistency with international standards reduces the likelihood that U.S.-based aviation organizations providing products or services would need to duplicate efforts to meet SMS requirements of other States in which they do business. As a result, the rule likely reduces the regulatory burden on those holding certificates or authorizations across multiple States.

4. Other FAA Support for Harmonization and Standards Development

The FAA is a founding member and active participant in the Safety Management International Collaboration Group, a group representing 18 international regulatory authorities. The primary purpose of the Safety Management International Collaboration Group is to promote international harmonization of SMS regulations, guidance material, and oversight strategies. The FAA is also an active participant on the ICAO Safety Management Panel.

The FAA also participated with the Aerospace Industries Association to develop an international industry standard for SMS: "Implementing a Safety Management System in Design, Manufacturing and Maintenance Organizations." This standard is intended to enable the aviation industry to implement an SMS consistent with the ICAO Annex 19 "Safety Management" Second Edition, Appendix 2.

G. Environmental Analysis

FAA Order 1050.1F identifies FAA actions that are categorically excluded from preparation of an environmental assessment or environmental impact statement under the National Environmental Policy Act in the absence of extraordinary circumstances. The FAA has determined this rulemaking action qualifies for the categorical exclusion identified in paragraph 5-6.6f for regulations and involves no extraordinary circumstances.

H. Regulations Affecting Intrastate Aviation in Alaska

Section 1205 of the FAA Reauthorization Act of 1996 (110 Stat. 3213) requires the Administrator, when modifying 14 CFR regulations in a manner affecting intrastate aviation in Alaska, to consider the extent to which Alaska is not served by transportation

modes other than aviation, and to establish appropriate regulatory distinctions. Because this rule applies to: (1) any person authorized to conduct operations under part 135, (2) any person operating under an LOA issued under § 91.147, and (3) certain holders of a TC or a PC, it could affect intrastate aviation in Alaska. The use of SMS may improve aviation safety in Alaska. The FAA analyzed NTSB part 135 accident data from 2015 to 2019 and found that of all part 135 air carrier accidents studied, 43 percent of these accidents occurred in Alaska. Because implementation of SMS can be scaled to the size and complexity of an aviation organization, SMS requirements will not be overly burdensome for smaller part 135 operators (see discussion in Section IV.J.). The increase in safety benefits to intrastate operations in Alaska will positively impact air commerce in Alaska with the same requirements applicable to every organization under part 5.

VI. Executive Order Determinations

A. Executive Order 13132, Federalism

The FAA has analyzed this final rule under the principles and criteria of Executive Order 13132, Federalism. The FAA has determined that this action will not have a substantial direct effect on the States, or the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government, and, therefore, will not have federalism implications.

B. Executive Order 13175, Consultation and Coordination with Indian Tribal Governments

Consistent with Executive Order 13175, Consultation and Coordination with Indian Tribal Governments,⁵¹ and FAA Order 1210.20, American Indian and Alaska Native Tribal Consultation Policy and Procedures,⁵² the FAA ensures that Federally Recognized Tribes (Tribes) are given the opportunity to provide meaningful and timely input regarding proposed Federal actions that have the potential to have substantial direct effects on one or more Indian tribes, on the relationship between the Federal government and Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes; or to affect uniquely or significantly their respective Tribes. At this point, the FAA has not identified any unique or significant effects, environmental or otherwise, on tribes resulting from this final rule.

C. Executive Order 13211, Regulations that Significantly Affect Energy Supply, Distribution, or Use

The FAA analyzed this final rule under Executive Order 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use (May 18, 2001). The FAA has determined that it is not a “significant energy action” under the executive order and is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

⁵¹ 65 FR 67249.

⁵² FAA Order No. 1210.20 (Jan. 28, 2004), available at <https://www.faa.gov/documentLibrary/media/1210.pdf>.

D. Executive Order 13609, Promoting International Regulatory Cooperation

Executive Order 13609, Promoting International Regulatory Cooperation, promotes international regulatory cooperation to meet shared challenges involving health, safety, labor, security, environmental, and other issues and to reduce, eliminate, or prevent unnecessary differences in regulatory requirements. The FAA has analyzed this action under the policies and agency responsibilities of Executive Order 13609 and has determined that this action may improve regulatory cooperation by moving FAA requirements for SMS closer to ICAO Standards and Recommended Practices that other States are adopting or considering adopting.

VII. Additional Information

A. Electronic Access and Filing

A copy of the NPRM, all comments received, this final rule, and all background material may be viewed online at <https://www.regulations.gov> using the docket number listed above. A copy of this final rule will be placed in the docket. Electronic retrieval help and guidelines are available on the website. It is available 24 hours each day, 365 days each year. An electronic copy of this document may also be downloaded from the Office of the Federal Register's website at <https://www.federalregister.gov> and the Government Publishing Office's website at <https://www.govinfo.gov>. A copy may also be found at the FAA's Regulations and Policies website at https://www.faa.gov/regulations_policies.

Copies may also be obtained by sending a request to the Federal Aviation Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue S.W.,

Washington, D.C. 20591, or by calling (202) 267-9677. Commenters must identify the docket or notice number of this rulemaking.

All documents the FAA considered in developing this final rule, including economic analyses and technical reports, may be accessed in the electronic docket for this rulemaking.

B. Small Business Regulatory Enforcement Fairness Act

The Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 requires the FAA to comply with small entity requests for information or advice about compliance with statutes and regulations within its jurisdiction. A small entity with questions regarding this document may contact its local FAA official, or the person listed under the **FOR FURTHER INFORMATION CONTACT** heading at the beginning of the preamble. To find out more about SBREFA on the Internet, visit https://www.faa.gov/regulations_policies/rulemaking/sbre_act/.

List of Subjects

14 CFR Part 5

Air carriers, Aircraft, Airmen, Aviation safety, Reporting and recordkeeping requirements, Safety, Transportation.

14 CFR Part 21

Aircraft, Aviation safety, Exports, Imports, Reporting and recordkeeping requirements.

14 CFR Part 91

Air carriers, Air taxis, Aircraft, Airmen, Aviation safety, Charter flights, Reporting and recordkeeping requirements.

14 CFR Part 119

Administrative practice and procedure, Air carriers, Aircraft, Aviation safety, Charter flights, Reporting and recordkeeping requirements.

For the reasons stated in the preamble, the Federal Aviation Administration amends chapter I of title 14, Code of Federal Regulations as follows:

PART 5—SAFETY MANAGEMENT SYSTEMS

1. The authority citation for part 5 is revised to read as follows:

Authority: 49 U.S.C. 106(f), 106(g), 40101, 40113, 40119, 41706, 44101, 44701-44702, 44705, 44709-44711, 44713, 44716-44717, 44722, 46105; Sec. 102, Pub. L. 116-260, 134 Stat. 2309; Sec 215, Pub. L. 111-216, 124 Stat. 2366.

2. Revise subpart A to read as follows:

Subpart A—General

§ 5.1 Applicability.

This part applies to all of the following:

- (a) Any person that holds or applies for a certificate issued under part 119 of this chapter authorizing the person to conduct operations under part 121 of this chapter.
- (b) Any person that holds or applies for a certificate issued under part 119 of this chapter authorizing the person to conduct operations under part 135 of this chapter.
- (c) Any person that holds or applies for a Letter of Authorization issued under § 91.147 of this chapter.
- (d) Any person that holds both a type certificate and a production certificate issued under part 21 of this chapter for the same product.

(e) Any person that holds a production certificate issued under part 21 of this chapter for a product for which the person is a licensee of the type certificate for the same product.

(f) Any person that applies for a production certificate under part 21 of this chapter for a product for which the person is the holder or licensee of the type certificate for the same product.

(g) Any person that holds a type certificate issued under part 21 of this chapter for a product, except for persons that hold only type certificates issued under § 21.29 of this chapter, that allows another person to use the type certificate to manufacture the same product under a production certificate.

§ 5.3 Definitions.

Hazard means a condition or an object that could foreseeably cause or contribute to an incident or aircraft accident, as defined in 49 CFR 830.2.

Risk means the composite of predicted severity and likelihood of the potential effect of a hazard.

Risk control means a means to reduce or eliminate the effects of hazards.

Safety assurance means processes within the SMS that function systematically to ensure the performance and effectiveness of safety risk controls and that the organization meets or exceeds its safety objectives through the collection, analysis, and assessment of information.

Safety Management System (SMS) means the formal, top-down, organization-wide approach to managing safety risk and assuring the effectiveness of safety risk controls. It includes systematic procedures, practices, and policies for the management of safety risk.

Safety objective means a measurable goal or desirable outcome related to safety.

Safety performance means realized or actual safety accomplishment relative to the organization's safety objectives.

Safety policy means the person's documented commitment to safety, which defines its safety objectives and the accountabilities and responsibilities of its employees in regards to safety.

Safety promotion means a combination of training and communication of safety information to support the implementation and operation of an SMS in an organization.

Safety Risk Management means a process within the SMS composed of describing the system, identifying the hazards, and analyzing, assessing, and controlling risk.

§ 5.5 General requirements.

(a) *SMS components*. An SMS under this part must be appropriate to the size, scope, and complexity of the person's organization and include, at a minimum, all of the following components:

- (1) Safety policy that meets the requirements of subpart B of this part.
- (2) Safety risk management that meets the requirements of subpart C of this part.
- (3) Safety assurance that meets the requirements of subpart D of this part.
- (4) Safety promotion that meets the requirements of subpart E of this part.

(b) *Continuing requirements*. Any person required to develop and implement an SMS under this part must maintain the SMS in accordance with this part.

§ 5.7 Requirements for domestic, flag, and supplemental operations.

(a) Any person authorized to conduct operations under part 121 of this chapter that has an SMS acceptable to the FAA on or before [INSERT DATE 30 DAYS AFTER

PUBLICATION IN THE FEDERAL REGISTER], must revise its SMS to meet the requirements of this part no later than [INSERT DATE 30 DAYS AND 12 MONTHS AFTER PUBLICATION IN THE FEDERAL REGISTER].

(b) Any person applying for authorization to conduct operations under part 121 of this chapter or with such application pending on or after [INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER], must develop and implement an SMS that meets the requirements of this part.

(c) Any person required to develop and implement an SMS under this section must maintain the SMS as long as the person is authorized to conduct operations under part 121 of this chapter.

(d) Any person required to develop and implement an SMS under this section must make available to the Administrator, upon request, all necessary information and data that demonstrates that the person has an SMS that meets the requirements set forth in this part.

§ 5.9 Requirements for commuter and on-demand operations or passenger-carrying flights for compensation or hire.

(a) Any person authorized to conduct operations under part 135 of this chapter or that holds a Letter of Authorization issued under § 91.147 of this chapter before [INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER], must:

(1) Develop and implement an SMS that meets the requirements of this part no later than [INSERT DATE 30 DAYS AND 36 MONTHS AFTER PUBLICATION IN THE FEDERAL REGISTER].

(2) Submit to the FAA, a declaration of compliance with this part in a form and manner acceptable to the Administrator no later than [INSERT DATE 30 DAYS AND 36 MONTHS AFTER PUBLICATION IN THE FEDERAL REGISTER].

(b) Any person applying for authorization to conduct operations under part 135 of this chapter or a Letter of Authorization under § 91.147 of this chapter, or with such application pending on or after [INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER], must develop and implement an SMS that meets the requirements of this part.

(c) Any person required to develop and implement an SMS under this section must maintain the SMS as long as the person is authorized to conduct operations under either part 135 or § 91.147 of this chapter.

(d) Any person required to develop and implement an SMS under this section must make available to the Administrator, upon request, all necessary information and data that demonstrates that the person has an SMS that meets the requirements set forth in this part.

(e) The following requirements do not apply to those organizations with a single pilot who is the sole individual performing all necessary functions in the conduct and execution related to, or in direct support of, the safe operation of the aircraft:

§§ 5.21(a)(4), 5.21(a)(5), 5.21(c), 5.23(a)(2), 5.23(a)(3), 5.23(b), 5.25(b)(3), 5.25(c), 5.27(a), 5.27(b), 5.71(a)(7), 5.93, and 5.97(d) of this part.

§ 5.11 Requirements for production certificate holders that are holders or licensees of a type certificate for the same product.

Any person that holds a production certificate issued under part 21 of this chapter for a product for which the person is the holder or licensee of the type certificate for the same product on or before [INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER], must:

(a) Develop and maintain an organizational system description in accordance with § 5.17 of this subpart.

(b) Submit an implementation plan in accordance with § 5.19 of this subpart for FAA approval in a form and manner acceptable to the Administrator no later than [INSERT DATE 30 DAYS AND 6 MONTHS AFTER PUBLICATION IN THE FEDERAL REGISTER].

(c) Develop an SMS that meets the requirements of this part.

(d) Implement the SMS in accordance with this part no later than [INSERT DATE 30 DAYS AND 36 MONTHS AFTER PUBLICATION IN THE FEDERAL REGISTER].

(e) Make available to the Administrator, upon request, all necessary information and data that demonstrates that the person has an SMS that meets the requirements set forth in this part.

(f) Maintain the SMS as long as the person is both a holder of a production certificate and a holder or licensee of a type certificate for the same product.

§ 5.13 Requirements for type certificate holders or licensees applying for a production certificate for the same product.

(a) This section applies to any holder or licensee of a type certificate for a product who either:

(1) Applies for a production certificate for that same product under part 21 of this chapter on or after [INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER], or

(2) Has an application for a production certificate for that same product under part 21 of this chapter pending on [INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER].

(b) Any person that meets paragraph (a) of this section must:

(1) Develop and maintain an organizational system description in accordance with § 5.17 of this subpart.

(2) Submit an implementation plan in accordance with § 5.19 of this subpart for FAA approval in a form and manner acceptable to the Administrator during the certification process.

(3) Develop an SMS that meets the requirements of this part.

(4) Implement the SMS in accordance with this part no later than 36 months after submission of the implementation plan.

(5) Make available to the Administrator, upon request, all necessary information and data that demonstrates that the person has an SMS that meets the requirements set forth in this part.

(6) Maintain the SMS as long as the person is both a holder of a production certificate and a holder or licensee of a type certificate for the same product.

§ 5.15 Requirements for type certificate holders that allow another person to use the type certificate to obtain a production certificate for the same product.

(a) This section applies to any person that holds a type certificate issued under part 21 of this chapter for a product, except for persons that hold only type certificates issued under § 21.29 of this chapter, that allows another person to use the type certificate to manufacture the same product under a production certificate.

(b) Any person that meets paragraph (a) of this section and has a licensing agreement in accordance with § 21.55 of this chapter on [INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER], must:

(1) Develop and maintain an organizational system description in accordance with § 5.17 of this subpart.

(2) Submit an implementation plan in accordance with § 5.19 of this subpart for FAA approval in a form and manner acceptable to the Administrator no later than [INSERT DATE 30 DAYS AND 6 MONTHS AFTER PUBLICATION IN THE FEDERAL REGISTER].

(3) Develop an SMS that meets the requirements of this part.

(4) Implement the SMS in accordance with this part no later than [INSERT DATE 30 DAYS AND 36 MONTHS AFTER PUBLICATION IN THE FEDERAL REGISTER].

(5) Make available to the Administrator, upon request, all necessary information and data that demonstrates that the person has an SMS that meets the requirements set forth in this part.

(6) Maintain the SMS as long as the person continues to meet paragraph (a) of this section.

(c) Any person that meets paragraph (a) of this section and enters into a licensing agreement in accordance with § 21.55 of this chapter after [INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER], must:

(1) Develop and maintain an organizational system description in accordance with § 5.17 of this subpart.

(2) Submit an implementation plan in accordance with § 5.19 of this subpart for FAA approval in a form and manner acceptable to the Administrator when providing written licensing agreements in accordance with § 21.55 of this chapter.

(3) Develop an SMS that meets the requirements of this part.

(4) Implement the SMS in accordance with this part no later than 36 months after submission of the person's implementation plan.

(5) Make available to the Administrator, upon request, all necessary information and data that demonstrates that the person has an SMS that meets the requirements set forth in this part.

(6) Maintain the SMS as long as the person continues to meet paragraph (a) of this section.

§ 5.17 Organizational system description.

An organizational system description developed and maintained under this part must include a summary of the following information about the safety of the aviation products or services provided by the person:

(a) The person's aviation-related processes, procedures, and activities.

(b) The function and purpose of the aviation products or services.

(c) The operating environment.

(d) The personnel, equipment, and facilities necessary for operation.

§ 5.19 Implementation plan.

(a) An implementation plan filed under this part must be based on the organizational system description as defined in § 5.17 of this subpart and describe the means of compliance (including, but not limited to, new or existing policies, processes, or procedures) used to meet the requirements of this part.

(b) A person required to submit an implementation plan under this part must make available to the Administrator, upon request, all necessary information and data that demonstrates that the SMS has been or will be implemented in accordance with the implementation plan.

Subpart B—Safety Policy

3. Amend § 5.21 by:

a. Revising the introductory text of paragraph (a) and revising paragraphs (a)(1) and (a)(2).

b. Adding paragraph (a)(7).

c. Revising paragraphs (c) and (d).

The revisions and addition read as follows:

§ 5.21 Safety policy.

(a) Any person required to have an SMS under this part must have a safety policy that includes at least the following:

(1) The person's safety objectives.

(2) The person's commitment to fulfill the safety objectives.

* * * * *

(7) A code of ethics that is applicable to all employees, including management personnel and officers, which clarifies that safety is the organization's highest priority.

* * * * *

(c) The safety policy must be documented and communicated throughout the person's organization.

(d) The safety policy must be regularly reviewed by the accountable executive to ensure it remains relevant and appropriate to the person.

4. Amend § 5.23 by revising the introductory text of paragraph (a), and revising paragraphs (a)(3) and (b) to read as follows:

§ 5.23 Safety accountability and authority.

(a) Any person required to have an SMS under this part must define in its safety policy the accountability for safety of the following individuals:

* * * * *

(3) Employees relative to the person's safety performance.

(b) The person must identify the levels of management with the authority to make decisions regarding safety risk acceptance.

5. Revise § 5.25 to read as follows:

§ 5.25 Designation and responsibilities of required safety management personnel.

(a) *Designation of the accountable executive.* Any person required to have an SMS under this part must identify an accountable executive who, irrespective of other functions, satisfies the following:

(1) Is the final authority over operations authorized to be conducted under the person's certificate(s) or Letter(s) of Authorization.

(2) Controls the financial resources required for the operations to be conducted under the person's certificate(s) or Letter(s) of Authorization.

(3) Controls the human resources required for the operations authorized to be conducted under the person's certificate(s) or Letter(s) of Authorization.

(4) Retains ultimate responsibility for the safety performance of the operations conducted under the person's certificate(s) or Letter(s) of Authorization.

(b) *Responsibilities of the accountable executive.* The accountable executive must accomplish the following:

(1) Ensure that the SMS is properly implemented and is performing across all pertinent areas.

(2) Develop and sign the safety policy.

(3) Communicate the safety policy throughout the person's organization.

(4) Regularly review the safety policy to ensure it remains relevant and appropriate to the person.

(5) Regularly review the safety performance and direct actions necessary to address substandard safety performance in accordance with § 5.75 of this part.

(c) *Designation of management personnel.* The accountable executive must designate sufficient management personnel who, on behalf of the accountable executive, are responsible for the following:

(1) Coordinate implementation, maintenance, and integration of the SMS throughout the person's organization.

(2) Facilitate hazard identification and safety risk analysis.

(3) Monitor the effectiveness of safety risk controls.

(4) Ensure safety promotion throughout the person's organization as required in subpart E of this part.

(5) Regularly report to the accountable executive on the performance of the SMS and on any need for improvement.

6. Revise § 5.27 to read as follows:

§ 5.27 Coordination of emergency response planning.

Where emergency response procedures are necessary, any person required to have an SMS under this part must develop, and the accountable executive must approve as part of the safety policy, an emergency response plan that addresses at least the following:

(a) Delegation of emergency authority throughout the person's organization.

(b) Assignment of employee responsibilities during the emergency.

(c) Coordination of the emergency response plans with the emergency response plans of other organizations it must interface with during the provision of its services.

Subpart C—Safety Risk Management

7. Amend § 5.51 by revising the introductory text to read as follows:

§ 5.51 Applicability.

Any person required to have an SMS under this part must apply safety risk management to the following:

* * * * *

8. Amend § 5.53 by:

a. Revising paragraph (a).

b. Adding paragraph (b)(5).

c. Revising paragraph (c).

The revisions and addition read as follows:

§ 5.53 System analysis and hazard identification.

(a) When applying safety risk management, any person required to have an SMS under this part must analyze the systems identified in § 5.51 of this subpart. Those system analyses must be used to identify hazards under paragraph (c) of this section and in developing and implementing risk controls related to the system under § 5.55(c) of this subpart.

(b) * * *

(5) The interfaces of the system.

(c) Any person required to have an SMS under this part must develop and maintain processes to identify hazards within the context of the system analysis.

9. Revise § 5.55 to read as follows:

§ 5.55 Safety risk assessment and control.

Any person required to have an SMS under this part must:

(a) Develop and maintain processes to analyze safety risk associated with the hazards identified in § 5.53(c) of this subpart.

(b) Define a process for conducting risk assessment that allows for the determination of acceptable safety risk.

(c) Develop and maintain processes to develop safety risk controls that are necessary as a result of the safety risk assessment process under paragraph (b) of this section.

(d) Evaluate whether the risk will be acceptable with the proposed safety risk control applied before the safety risk control is implemented.

10. Add § 5.57 to Subpart C to read as follows:

§ 5.57 Notification of hazards to interfacing persons.

If a person required to have an SMS under this part identifies a hazard in the operating environment, the person must provide notice of the hazard to any interfacing person that, to the best of the person's knowledge, could address the hazard or mitigate the risk. For the purpose of this section, interfacing persons are those that contribute to the safety of the certificate or Letter of Authorization holder's aviation-related products and services.

Subpart D—Safety Assurance

11. Amend § 5.71 by:

- a. Revising the introductory text of paragraph (a).
- b. Revising paragraphs (a)(6) and (a)(7).
- c. Adding paragraph (a)(8).
- d. Revising paragraph (b).
- e. Adding paragraph (c).

The revisions and additions read as follows:

§ 5.71 Safety performance monitoring and measurement.

(a) Any person required to have an SMS under this part must develop and maintain processes and systems to acquire data with respect to its operations, products, and services to monitor the safety performance of the organization. These processes and systems must include, at a minimum, the following:

* * * * *

(6) Investigations of reports regarding potential non-compliance with regulatory standards or other safety risk controls established by the person through the safety risk management process established in subpart C of this part.

(7) A confidential employee reporting system in which employees can report hazards, issues, concerns, occurrences, incidents, as well as propose solutions and safety improvements, without concern of reprisal for reporting.

(8) Investigations of hazard notifications that have been received from external sources.

(b) Any person required to have an SMS under this part must develop and maintain processes that analyze the data acquired through the processes and systems identified under paragraph (a) of this section and any other relevant data with respect to its operations, products, and services.

(c) Any person that holds both a type certificate and a production certificate issued under part 21 of this chapter for the same product must submit a summary of the confidential employee reports received under paragraph (a)(7) of this section to the Administrator once every 6 months.

12. Amend § 5.73 by revising the introductory text of paragraph (a), and revising paragraphs (a)(1) and (b) to read as follows:

§ 5.73 Safety performance assessment.

(a) Any person required to have an SMS under this part must conduct assessments of its safety performance against its safety objectives, which include reviews by the accountable executive, to:

(1) Ensure compliance with the safety risk controls established by the person.

* * * * *

(b) Upon completion of the assessment, if ineffective controls or new hazards are identified under paragraphs (a)(2) through (5) of this section, the person must use the safety risk management process described in subpart C of this part.

13. Revise § 5.75 to read as follows:

§ 5.75 Continuous improvement.

Any person required to have an SMS under this part must establish and implement processes to correct safety performance deficiencies identified in the assessments conducted under § 5.73 of this subpart.

Subpart E—Safety Promotion

14. Revise § 5.91 to read as follows:

§ 5.91 Competencies and training.

Any person required to have an SMS under this part must provide training to each individual identified in § 5.23 of this part to ensure the individuals attain and maintain the competencies necessary to perform their duties relevant to the operation and performance of the SMS.

15. Amend § 5.93 by revising the introductory text to read as follows:

§ 5.93 Safety communication

Any person required to have an SMS under this part must develop and maintain means for communicating safety information that, at a minimum:

* * * * *

Subpart F—SMS Documentation and Recordkeeping

16. Amend § 5.95 by revising the introductory text to read as follows:

§ 5.95 SMS documentation.

Any person required to have an SMS under this part must develop and maintain the following SMS documentation:

* * * * *

17. Revise § 5.97 to read as follows:

§ 5.97 SMS records.

Any person required to have an SMS under this part must:

(a) Maintain records of outputs of safety risk management processes as described in subpart C of this part. Such records must be retained for as long as the control remains relevant to the operation.

(b) Maintain records of outputs of safety assurance processes as described in subpart D of this part. Such records must be retained for a minimum of 5 years.

(c) Maintain a record of all training provided under § 5.91 for each individual. Such records must be retained for as long as the individual is employed by the person.

(d) Retain records of all communications provided under § 5.93 or § 5.57 of this part for a minimum of 24 consecutive calendar months.

PART 21– CERTIFICATION PROCEDURES FOR PRODUCTS AND ARTICLES

18. The authority citation for part 21 is revised to read as follows:

Authority: 42 U.S.C. 7572; 49 U.S.C. 106(f), 106(g), 40105, 40113, 44701-44702, 44704, 44707, 44709, 44711, 44713, 44715, 45303; Sec. 102, Pub. L. 116-260, 134 Stat. 2309.

19. Revise § 21.55 to read as follows:

§ 21.55 Responsibilities of type certificate holders who license the type certificate.

A type certificate holder who allows a person to use the type certificate to manufacture a new aircraft, aircraft engine, or propeller must meet the applicable requirements of part 5 of this chapter and provide that person with a written licensing agreement acceptable to the FAA.

20. Amend § 21.135 by adding paragraph (c) to read as follows:

§ 21.135 Organization.

* * * * *

(c) Each applicant for or holder of a production certificate, except those based only on a supplemental type certificate or on the rights to the benefits of a supplemental type certificate under a licensing agreement, must meet the applicable requirements of part 5 of this chapter.

21. Amend § 21.147 by revising paragraph (b) to read as follows:

§ 21.147 Amendment of production certificates.

* * * * *

(b) An applicant for an amendment to a production certificate to add a type certificate or model, or both, must comply with §§ 21.135(c), 21.137, 21.138, and 21.150.

* * * * *

PART 91— GENERAL OPERATING AND FLIGHT RULES

22. The authority citation for part 91 continues to read as follows:

Authority: 49 U.S.C. 106(f), 106(g), 40101, 40103, 40105, 40113, 40120, 44101, 44111, 44701, 44704, 44709, 44711, 44712, 44715, 44716, 44717, 44722, 46306, 46315, 46316, 46504, 46506-46507, 47122, 47508, 47528-47531, 47534, Pub. L. 114-190, 130 Stat. 615 (49 U.S.C. 44703 note); articles 12 and 29 of the Convention on International Civil Aviation (61 Stat. 1180), (126 Stat. 11).

23. Revise § 91.147 to read as follows:

§ 91.147 Passenger-carrying flights for compensation or hire.

(a) *Definitions.* For the purposes of this section, *Operator* means any person conducting nonstop passenger-carrying flights in an airplane, powered-lift, or rotorcraft for compensation or hire in accordance with §§ 119.1(e)(2), 135.1(a)(5), or 121.1(d) of this chapter that begin and end at the same airport and are conducted within a 25-statute mile radius of that airport.

(b) *General requirements.* An Operator conducting passenger-carrying flights for compensation or hire must meet the following requirements unless all flights are conducted under § 91.146. The Operator must:

- (1) Comply with the safety provisions of part 136, subpart A of this chapter.
- (2) Register and implement its drug and alcohol testing programs in accordance with part 120 of this chapter.
- (3) Comply with the applicable requirements of part 5 of this chapter.
- (4) Apply for and receive a Letter of Authorization from the responsible Flight Standards office.

(c) *Letter of Authorization.* Each application for a Letter of Authorization must include the following information:

- (1) Name of Operator, agent, and any d/b/a (doing-business-as) under which that Operator does business.
- (2) Principal business address and mailing address.
- (3) Principal place of business (if different from business address).
- (4) Name of person responsible for management of the business.

(5) Name of person responsible for aircraft maintenance.

(6) Type of aircraft, registration number(s), and make/model/series.

(7) Antidrug and Alcohol Misuse Prevention Program registration.

(d) *Compliance*. The Operator must comply with the provisions of the Letter of Authorization received.

PART 119—CERTIFICATION: AIR CARRIERS AND COMMERCIAL OPERATORS

24. The authority citation for part 119 continues to read as follows:

Authority: 49 U.S.C. 106(f), 106(g), 40101, 40102, 40103, 40113, 44105, 44106, 44111, 44701–44717, 44722, 44901, 44903, 44904, 44906, 44912, 44914, 44936, 44938, 46103, 46105; sec. 215, Pub. L. 111–216, 124 Stat. 2348.

25. Revise § 119.8 to read as follows:

§ 119.8 Safety Management Systems.

Certificate holders authorized to conduct operations under part 121 or 135 of this chapter must have a safety management system that meets the requirements of part 5 of this chapter.

Issued under authority provided by 49 U.S.C. 106(f), 44701(a), and 44703 in Washington, D.C.

Michael Gordon Whitaker,
Administrator.