

Supporting Statement A Flight Operations Quality Assurance (FOQA) Program

1. Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection.

Flight operational quality assurance (FOQA) is a voluntary safety program designed to improve aviation safety through the proactive use of flight-recorded data. Operators will use these data to identify and correct deficiencies in all areas of flight operations. Properly used, FOQA data can reduce or eliminate safety risks, as well as minimize deviations from regulations. Through access to de-identified aggregate FOQA data, the Federal Aviation Administration (FAA) can identify and analyze national trends and target resources to reduce operational risks in the National Airspace System (NAS), air traffic control (ATC), flight operations, and airport operations.

The FAA and the air transportation industry have sought additional means for addressing safety problems and identifying potential safety hazards. Based on the experiences of foreign air carriers, the results of several FAA-sponsored studies, and input received from government/industry safety forums, the FAA concluded that wide implementation of FOQA programs could have significant potential to reduce air carrier accident rates below current levels. The value of FOQA programs is the early identification of adverse safety trends, which, if uncorrected, could lead to accidents. A key element in FOQA is the application of corrective action and follow-up to ensure that unsafe conditions are effectively remediated.

FOQA is a program for the routine collection and analysis of digital flight data (FDAT) generated during aircraft operations. FOQA programs provide more information about, and greater insight into, the total flight operations environment. FOQA data is unique because it can provide objective information that is not available through other methods. A FOQA program can identify operational situations in which there is increased risk, allowing the operator to take early corrective action before that risk results in an incident or accident. FOQA must interface and be coordinated with the operator's other safety programs, such as the Aviation Safety Action Program (ASAP), Advanced Qualification Program (AQP), pilot reporting systems, and Voluntary Disclosure Reporting Program (VDRP). The FOQA program is another tool in the operator's overall operational risk assessment and prevention program. Being proactive in identifying and addressing risk will enhance safety.

FOQA has no legal or administrative requirements for implementation. FOQA is a voluntary disclosure program that allows the Federal Aviation Administration (FAA) to work closely with a certificated air carrier to electronically monitor their flight operations so as to ensure that established safety parameters are not exceeded.

When exceedances are detected, the certificate holder works closely with the FAA to mitigate the situation through awareness, additional training and procedural changes in a confidential manner. The collected information is de-identified and protected from Freedom of Information Act (FOIA) requests so as to encourage the free flow of information that is unencumbered by any fears or hesitancy that may be caused by any potential enforcement action.

The collection of this information is essential to ongoing efforts to ensure the continued successful completion of the standardized and safe commercial aviation operations that occur thousands of times every day within the United States and abroad.

2. Indicate how, by whom, and for what purpose the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection.

Air Carriers voluntarily submit information to the FAA under a FOQA program. FOQA data and trend information should be reviewed between the Air Carrier and the FAA on at least a quarterly basis.

In a FOQA program, data is collected using either a special acquisition device such as a Quick Access Recorder (QAR), directly from the flight data recorder (FDR), or by other means. Using one of several available transmission methods, data is periodically retrieved and sent to the operator's FOQA office for analysis. This office usually resides within the flight safety organization at the operator, but may reside elsewhere. The data is then verified and analyzed, using specialized processing and analysis software designed to convert the FDAT into usable information. The operator can use the information and insights provided by FOQA to improve safety by enhancing training effectiveness, operational procedures, maintenance and engineering procedures, and ATC procedures.

The submitted aggregate trend information is submitted to the FAA Principal Operations Inspector (POI). It is reviewed by the FAA office to identify safety concerns. The trend information is submitted monthly by the Air Carrier to the Aviation Safety Information Analysis and Sharing (ASIAS) and quarterly to their local FAA office. The POI and his staff make use of this information to monitor operational trends, to identify areas in need of corrective action, and to verify that corrective action is effective. Other organizational elements within the FAA may also receive FOQA information specific to their respective mission areas. In general, the information is used to provide an improved basis for agency decisions based on objective data from line operations.

In an effort to promote an open exchange of safety information to continuously improve aviation safety, the Federal Aviation Administration (FAA) and the aviation industry developed the Aviation Safety Information Analysis and Sharing (ASIAS) program. For the past 11 years, ASIAS has drawn together a wide variety of safety data and information sources across Government and industry, including voluntarily provided safety data.

The program continues to evolve, but has matured to the point that it now incorporates voluntarily provided safety data from operators that represent 99 percent of U.S. air carrier operations in the National Airspace System (NAS). ASIAS continues to pioneer advanced analytical capabilities to provide safety teams with enhanced insight into these operations.

ASIAS also partners with the industry-sponsored Aviation Safety InfoShare meeting, which facilitates the sharing of safety issues and best practices in a protected environment. This partnership enables ASIAS to gain insight into safety issues and leverage its data repository to identify emerging systemic safety issues within the NAS.

Any FOQA data or information shared with the FAA will be protected from public disclosure in accordance with part 193 and Order 8000.81.

3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

Air carriers participating in the FOQA program routinely make use of state-of-the-art automated electronic collection and data transmission techniques as the primary means of compliance with the reporting requirements of the collection. Participating certificate holders use electronic information management technology for archiving, maintaining, and reporting aggregate data associated with the requirements of the final rule. This information collection is compliant with the Government Paperwork Elimination Act (GPEA).

All FOQA programs are comprised of four basic elements:

- Equipment to collect and record FDAT;
- A means to deliver the data to a place where analysis will occur;
- Software that will process the data, analyze the data, and generate reports of findings from the data; and;
- A structure that will devise and track corrective actions based on the data.

These systems acquire and capture the necessary in-flight information. They include specific aircraft data input sources and parameters, and the equipment to record and store the collected data. Data is gathered via onboard sensors that measure significant aspects of aircraft operation. Most sensor information is carried to its eventual destination via several data buses. Data is collected by interfacing with these buses. Other airborne equipment can be used to process and analyze the collected data, display the data to pilots during flight or on the ground, and transmit data to a Ground Data Replay and Analysis System (GDRAS).

Data must get from the aircraft to a location where it can be processed and analyzed. There are numerous ways of accomplishing this, depending on the capabilities of equipment used, both on board the aircraft and on the ground. QARs and some FDAUs have removable media that are taken off the aircraft and hand-delivered or sent by mail to the FOQA office. There are handheld download devices that can be used to download data from an FDAU, QAR, or FDR. The data is stored in the unit and downloaded via modem or the operator's Wide Area Network (WAN). Operators may also use wireless data links (WDL), in which data are downloaded wirelessly to a network connection, which transmits the data to the FOQA office.

GDRAS is the heart of the program. This software takes the raw binary data and, using an LFL defined for each fleet make, model, and series (M/M/S) and variant, translates it into engineering units (EU) (e.g., feet, knots, or degrees). It is also the primary tool for analysis of FOQA data. Depending on the capabilities of a particular GDRAS, it may allow examination of an entire distribution of the values of a recorded parameter. It may also allow the operator to look for events that fall outside operator-determined standards based on operator-defined event sets and event levels. It stores those events in a database that is used for generating and tracking trend information. The GDRAS may also be capable of generating ROMs that provide valuable trending insight on what is “normal” in an operation. It generates reports in a variety of formats for use by the operator’s analysis team. The GDRAS may also have other statistical analysis tools incorporated in it. To complement the GDRAS, an operator may also choose to use flight animation software or other third-party analysis products as both analysis and communication tools.

Under an FAA-approved FOQA program, the POI (and/or APMs) and the PMI (and/or Partial Program Managers (PPM)) should be permitted free and open access to the operator’s de-identified aggregate FOQA data, including fleet-specific trend analysis information. The operator must invite the POI (and/or APMs) and the PMI (and/or PPMs) to review trend information with the operator on at least a quarterly basis. This operator may satisfy this requirement at regular operator FOQA meetings, where the operator will present such trend information.

Section 13.401(d) provides that the operators will provide aggregate FOQA data to the FAA in a form and manner acceptable to the Administrator. Operators accomplish this requirement by providing aggregate FOQA data to the FAA’s Aviation Safety Information Analysis and Sharing (ASIAS) program, in addition to the certified operator’s information-sharing activities that take place with the certificate-holding district office (CHDO). All information included in any industry-sharing activity or any Request for Information (RFI) will be reviewed and approved by the operator before release. Any information released by the FAA will comply with the provisions of Order 8000.81 and part 193.

There is no form involved with this collection. The results of this collection are protected under Title 49 of the United States Code and is not shared with the public.

4. Describe efforts to identify duplication. Show specifically why any similar information already available cannot be used or modified for use for the purposes described in Item 2 above.

The FAA does not have another means of accessing this information. Our other surveillance programs do not provide the level of detailed information that FOQA data provides. The participation in this voluntary program contributes to safety.

If the same or similar circumstances come to light through the collection of this data, a trend is established and can be addressed. If, after mitigation has been applied, similar circumstances continue to manifest themselves, then the root cause must be re-examined since the original mitigation strategy did not correct the problem.

5. If the collection of information involves small businesses or other small entities, describe the methods used to minimize burden.

The program was reviewed by the FAA's Office of Policy and was determined not have a significant effect on small entities. This is a voluntary program. It does not impose any burden on any business that does not desire to participate.

6. Describe the consequence to Federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.

If the requested information is not collected, the FAA would not be able to ascertain that appropriate actions are being taken to correct deficiencies that impact safety, nor would the FAA be able to benefit from the use of FOQA aggregate information for agency decision making purposes. The information collection frequencies required by this program are the minimum amount necessary and appropriate for these purposes.

7. Explain any special circumstances that would cause an information collection to be conducted in a manner:

- *requiring respondents to report information to the agency more often than quarterly;*
- *requiring respondents to prepare a written response to a collection of information in fewer than 30 days after receipt of it;*
- *requiring respondents to submit more than an original and two copies of any document; requiring respondents to retain records, other than health, medical, government contract, grant-in-aid, or tax records, for more than three years;*
- *in connection with a statistical survey, that is not designed to produce valid and reliable results that can be generalized to the universe of study;*
- *requiring the use of a statistical data classification that has not been reviewed and approved by OMB;*
- *that includes a pledge of confidentiality that is not supported by authority established in statute or regulation, that is not supported by disclosure and data security policies that are consistent with the pledge, or which unnecessarily impedes sharing of data with other agencies for compatible confidential use; or*
- *requiring respondents to submit proprietary trade secrets, or other confidential information unless the agency can demonstrate that it has*

instituted procedures to protect the information's confidentiality to the extent permitted by law.

There are no special circumstances or inconsistencies in this collection.

8. Provide information on the PRA Federal Register Notice that solicited public comments on the information collection prior to this submission. Summarize the public comments received in response to that notice and describe the actions taken by the agency in response to those comments. Describe the efforts to consult with persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported.

A Federal Register Notice published on September 4, 2019 (84 FR 46604) solicited public comment. One comment was given by United Airlines. They emphasized the benefits of a FOQA program in that it's also an oversight tool for the FAA. Additionally they emphasized that data collection should occur via an automated dashboard that are reviewed by the carrier. While this is an excellent suggestion, the necessity for creating an automated dashboard is controlled by the air carrier, and not mandated or monitored by the FAA. Therefore, this part of the comment cannot be implemented by the FAA. While one airline may find this suggestion useful, others may have other acceptable means of monitoring their data. Lastly, they stated that the burden published in the 60 day notice was inaccurate and should be 30 hours annually instead of the 12 published in the 60 day notice. This supporting statement and the 30 day notice were corrected to reflect a more realistic burden of 30 hours.

9. Explain any decisions to provide payments or gifts to respondents, other than remuneration of contractors or grantees.

There is no payment or gift to respondents.

10. Describe any assurance of confidentiality provided to respondents and the basis for assurance in statute, regulation, or agency policy.

In the Federal Aviation Reauthorization Act of 1996, Congress included specific provisions pertinent to the release to the public of safety related information voluntarily submitted to the FAA. Specifically, the Reauthorization Act added a new section, 49 USC § 40123, to the FAA's governing statute to protect voluntarily submitted information under certain circumstances. Section 40123 provides:

(a) In General. -- Notwithstanding any other provision of the law, neither the Administrator of the Federal Aviation Administration, nor any agency

receiving information from the Administrator, shall disclose voluntarily-provided safety or security related information if the Administrator finds that --

(1) The disclosure of the information would inhibit the voluntary provision of that type of information and that the receipt of that type of information aids in fulfilling the Administrator's safety and security responsibilities; and

(2) Withholding such information from disclosure would be consistent with the Administrator's safety and security responsibilities.

(b) Regulations. -- The Administrator shall issue regulations to carry out this section.

By a final rule on Protection of Voluntarily Submitted Information, 14 CFR, Part 193, the FAA implemented the provisions of 49 USC § 40123. In accordance with that rule, by FAA Order 8000.81 FOQA data and aggregate data were designated as protected from disclosure under the Freedom of Information Act.

In addition, applicants may be provided confidentiality under the provision of the Privacy Act and the Privacy system of records DOT/FAA 847, Aviation Records on Individuals.

11. Provide additional justification for any questions of a sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private.

There are no questions anticipated to entail matters commonly considered to be sensitive or private.

12. Provide estimates of the hour burden of the collection of information.

Number of respondents who have established a FOQA program: 55 presently, 64 by the end of the 3 year information collection due to an estimated 9 new programs being added. The total number of 64 was used to calculate the annualized numbers.

Frequency of response per respondent: Monthly (or less but not less than quarterly depending on agreement with FAA office) for existing program holders. For new program applicants, they will need to submit their plan for approval once. Once the plan is approved, they will need to report no less than quarterly.

Estimated number of hours per respondent to prepare aggregate trend information to be submitted to the FAA: 7.5 hours per quarterly report.

Estimated annual hour burden per respondent: 30 hours.

- The estimated 30.0 hour burden includes the additional time required to transform the aggregate data already produced monthly by the certificate holder as part of an approved FOQA program into the appropriate form for use by the FAA.

Total estimated hours of industry burden for existing FOQA program holders:
1,920 hours

Total estimated annual hours of industry burden for new program holders: 300 hours

Existing Program Burden

Summary (Annual numbers)	Reporting	Recordkeeping	Disclosure
# of Respondents	64		
# of Responses per respondent	4		
Time per Response	7.5 Hours		
Total # of responses	256		
Total burden (hours)	1,920		

The certificate holder's FOQA Analyst will typically prepare and submit aggregate trend information to the FAA. Current data from BLS (May 2018) estimates the average hourly wage for an Operations Research Analyst to be \$42.48/hr.¹ A 31.4 percent multiplier was then applied to account for fringe benefits which brings the salary to \$55.82.² To account for overhead, a multiplier of 17 percent was applied.³ The average burdened cost of a FOQA Analyst including fringe and overhead is \$65.34. Therefore, the maximum potential cost of this burden for 55 certificate holders (1,650 hours) is \$107,811.

For the development of a new FOQA program, an operator must write a plan that includes a description of how data is collected and analyzed, procedures for taking corrective action that analysis of the data indicates is necessary in the interest of safety, procedures for providing the FAA access to de-identified aggregate FOQA information, and procedures for informing the FAA as to any corrective action performed. It is

¹ <https://www.bls.gov/oes/current/oes152031.htm>

² <https://www.bls.gov/news.release/ecec.nr0.htm>

³ Source: Cody Rice, U.S. Environmental Protection Agency, "Wage Rates for Economic Analyses of the Toxics Release Inventory Program" (June 10, 2002), <https://www.regulations.gov/document?D=EPA-HQ-OPPT-2014-0650-0005>.

estimated that the preparation of this Implementation and Operations Plan (I&O Plan) will take the operator approximately 100 hours. A technical specialist would prepare the I&O Plan. The employee salary used to calculate this is equivalent to a GS-13 Salary (GS-13, Step 5 hourly wage, Kansas City Locality Pay) for an average wage of \$47.66 per hour⁴ with 31.4%⁵ fringe benefits cost for a total of \$62.76 per hour. With overhead added⁶, the total salary is 70.86 per hour. Therefore, the maximum potential cost of this burden for 9 new FOQA carriers during the 3 year period of this collection (900 hours) is \$63,744.

New Program Burden

Summary (Annual numbers)	Reporting	Recordkeepin g	Disclosure
# of Respondents	3		
# of Responses per respondent	1		
Time per Response	100 Hours		
Total # of responses	3		
Total burden (hours)	300		

13. Provide an estimate for the total annual cost burden to respondents or record keepers resulting from the collection of information.

The initial capital and start-up costs as well as those associated with annual operations, maintenance, and purchase of services components by the certificate holder will be accomplished for reasons other than to provide information or keep records for the government. Any costs over and above the latter are born by the government. Therefore, there are no costs other than those included in question 12.

14. Provide estimates of annualized costs to the Federal government. Also, provide a description of the method used to estimate cost, which should include quantification of hours, operational expenses (such as equipment, overhead,

⁴ https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/salary-tables/pdf/2019/GS_h.pdf

⁵ Bureau of Labor Statistics, Employer Costs for Employee Compensation – September 2018, USDL-18-1941, Released December 14, 2018

⁶ Source: Cody Rice, U.S. Environmental Protection Agency, “Wage Rates for Economic Analyses of the Toxics Release Inventory Program” (June 10, 2002), <https://www.regulations.gov/document?D=EPA-HQ-OPPT-2014-0650-0005>.

printing, and support staff), and any other expense that would not have been incurred without this collection of information.

The FAA will not use FOQA information in punitive enforcement action against an air carrier or its employees. The FAA encourages the voluntary establishment of FOQA programs by individual airlines. Voluntarily participating airlines with FAA approved programs are encouraged to share their findings at InfoShare in order to raise awareness among the aviation community.

The airlines are also encouraged to participate in the Aviation Safety Information Analysis and Sharing (ASIAS) in order to advance the aviation community's ability to identify and mitigate systemic risk in commercial aviation. These initiatives provide confidentiality and protections to ensure the data is only used to advance safety. The FAA has no access to this data (outside of the FAA field certificate management functions for each individual air carrier) as it is contrary to ASIAS protocols and signed agreements.

FAA Staff Burden-Field Certificate Management of Individual Air Carriers:

- (1) FAA Staff Action: To obtain approval for its FOQA program, the operator must develop and submit an FOQA Implementation and Operations (I&O) plan to the FAA for review and approval. The FAA estimates that review and approval by an Aviation Safety Inspector will take 5 hrs. The FAA estimates an additional 9 operators will implement FOQA programs in this 3 year reporting period.
- (2) FAA Staff Action: To approve the I&O plan, the FAA will initiate a letter of approval. The FAA estimates that developing the letter of approval by an Aviation Safety Inspector will take 1 hr. An Aviation Safety Assistant will spend approximately .25 hours processing this approval. The FAA estimates an additional 9 operators will implement FOQA programs in this 3 year reporting period.
- (3) FAA Staff Action: FAA Certificate Holding District Office (CHDO) managers shall prepare a summary report of safety enhancements achieved each quarter by each certificate holder's FOQA program. The FAA estimates that generating a summary report by a CHDO manager will take .25 hrs. There are currently 49 operators with FOQA programs. The FAA estimates an additional 9 operators will implement FOQA programs in this reporting period for a total of 62.

This figure is the estimated cost for the government to approve and monitor FOQA programs. Typically inspectors at the GS-13 level would inspect and approve these programs. Generally, these inspectors are GS-13 (GS-13, Step 5 hourly wage, Kansas City Locality Pay) for an average wage of \$47.66 per hour⁷ with 31.4%⁸

⁷ https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/salary-tables/pdf/2019/GS_h.pdf

⁸ Bureau of Labor Statistics, Employer Costs for Employee Compensation - September 2018, USDL-18-1941, Released December 14, 2018

fringe benefits cost for a total of \$62.76 per hour. With overhead added⁹, the total salary is 70.86 per hour. Generally, Aviation Safety Assistants are GS-7 employees (GS-7, Step 5 hourly wage, Kansas City Locality Pay) for an average wage of \$19.74 per hour¹⁰ with 31.4%¹¹ fringe benefits cost for a total of \$26 per hour. With overhead added¹², the total salary is \$30.42 per hour. A CHDO Manager is typically equivalent to a GS-15 (GS-15, Step 5 hourly wage, Kansas City Locality Pay) for an average wage of \$57.89 per hour¹³ with a 31.4%¹⁴ fringe benefits cost for a total of \$76.07 per hour. With overhead added¹⁵, the total salary is \$89.

FAA Staff Action	FAA Personnel	Burden	
		Time	Cost
(1) Review/Approval of I&O Plan	Aviation Safety Inspector - 5 hrs x 9 operators = 45 hrs at \$71/hr = \$3,195	45	\$3,195
(2) Provide approval letter to air carrier	Aviation Safety Inspector- 1 hr x 9 operators = 9 hrs at \$71/hr = \$639	9	\$639
	Aviation Safety Assistant- .25 hr x 9 operators = 2.25 hr at \$31/hr = \$69.75	2.25	\$69.75
(3) Prepare Quarterly Summary Report	CHDO Manager .5 hr x 4 times a year = 2 hr per yr x 64 operators = 128 hrs x 3 yrs of this PRA reporting period = 384 hrs at \$89/hr = \$34,176	372	\$34,176
	Total	428.25	\$38,079.75

15. Explain the reasons for any program changes or adjustments.

During the preparation of this updated Supporting Statement the FAA responded to the terms of clearance: Prior to any additional approval of this collection, FAA shall fully

⁹ Source: Cody Rice, U.S. Environmental Protection Agency, "Wage Rates for Economic Analyses of the Toxics Release Inventory Program" (June 10, 2002), <https://www.regulations.gov/document?D=EPA-HQ-OPPT-2014-0650-0005>.

¹⁰ https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/salary-tables/pdf/2019/GS_h.pdf

¹¹ Bureau of Labor Statistics, Employer Costs for Employee Compensation – September 2018, USDL-18-1941, Released December 14, 2018

¹² Source: Cody Rice, U.S. Environmental Protection Agency, "Wage Rates for Economic Analyses of the Toxics Release Inventory Program" (June 10, 2002), <https://www.regulations.gov/document?D=EPA-HQ-OPPT-2014-0650-0005>.

¹³ https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/salary-tables/pdf/2019/GS_h.pdf

¹⁴ Bureau of Labor Statistics, Employer Costs for Employee Compensation – September 2018, USDL-18-1941, Released December 14, 2018

¹⁵ Source: Cody Rice, U.S. Environmental Protection Agency, "Wage Rates for Economic Analyses of the Toxics Release Inventory Program" (June 10, 2002), <https://www.regulations.gov/document?D=EPA-HQ-OPPT-2014-0650-0005>

account for the cost of staff time associated with this collection. The FAA response resulted in adjustments reported in Item 14. The number of current operators with FOQA programs was also adjusted to reflect current rates. The number of forecasted new applicants for FOQA programs was readjusted as well. There was no previous estimate for the development of a FOQA program. The costs of development of a new program have been added to this Supporting Statement.

The burden was changed due to a quarterly vs. monthly reporting requirement. The burden was also updated to more accurately reflect the time required to report information to the FAA. United Airlines offered comments during the 60 day Notice comment period that the previously used burden was incorrect. Therefore, the burden has been changed to more accurately represent the burden on carriers. The number of respondents was also updated to reflect the current number of carriers that have a FOQA program.

16. For collections of information whose results will be published, outline plans for tabulation and publication. Address any complex analytical techniques that will be used. Provide the time schedule for the entire project, including beginning and ending dates of the collection of information, completion of report, publication dates, and other actions.

The information to be collected will not be published, and is not releasable to the public except under special circumstances as may be required under 49 U.S.C. § 40123.

17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons why display would be inappropriate.

FAA is not seeking approval to not display the expiration date of OMB's approval of this collection of information.

18. Explain each exception to the topics of the certification statement identified in "Certification for Paperwork Reduction Act Submissions."

There are no exceptions.