Smoke, Odors and Fumes in U.S. Airliners: 2016-2019

Persistent Link

Include the persistent identifier (PID) that is associated with the dataset.

Persistent Link: https://doi.org/10.21949/1528565

Recommended Citation

The recommendeded data citation to be used when citing the dataset.

Recommended Citation:
"final verified SOF results", an Excel file

Change Log

Document the changes that are made to the DMP, any and all changes should be noted to ensure a more complete documentation.

Change Log: N/A

Table of Contents

Optional table of contents included here, in order to better organize the DMP.

CONTENTS:

0. Dataset and Contact Information

Please provide the following information:

- Name of the dataset or project for which data is being collected.
- Name of the FAA Line-Of-Business/Office for which the associated dataset is being generated.
- Email for the FAA Line-Of-Business/Office (key field).
- If applicable and as reference, project number, contract number, or other number used to link this DMP.

0. Dataset and Contact Information:

Project: Smoke, Odors, and Fumes in US Airlines

LOB: AVS

LOB email: AVS@FAA.gov

Project Number: MED-10167

1. Data Description

Name the data, data collection project, or data producing program. Provide high level narrative.

The events described below are contained as rows in the Excel file, "final verified SOF results".

Air supply contamination reports for US commercial airlines were collected from the Federal Aviation Administration Service Difficulty Report System (SDRS) database for a four-year period (January 2016 through December 2019). The event descriptions were then searched for keywords to include odor, fume, fog, aroma, smoke, odur, odour, oduor, haze, fire, scent, smell, and smoking. Events, such as baggage area fires and inspections, stating that the aircraft was powered off, were removed. The remaining events were manually reviewed to remove the cases that the automated keyword search included but were inapplicable. These filtered results were then manually reviewed to examine the description in the 'Event Details' column to ensure that the contaminant resulted from pyrolyzed oil, hydraulic fluid, or fuel. Furthermore, maintenance-related columns were reviewed for descriptions of follow-up maintenance activities such as repair or replacement that indicated pyrolyzed oil, hydraulic fluid, or fuel was a possible but not definite cause. This more restricted set of events is called the "contaminant events."

Describe the purpose of your research and whether results will be documented in a published document or report. How will it be used?

Purpose:

Cabin air quality onboard commercial aircraft has been a major concern for over 30 years. Advances in aircraft engine technology have resulted in increased engine temperatures and the use of synthetic lubricating oils that may contain organophosphate additives. Synthetic oils heated to high temperatures can contaminate aircraft air supplies due to mechanical failures or design deficiencies. The purpose of this paper is to describe the rate of occurrence of smoke, odor, and fume events related to pyrolyzed oil, hydraulic fluids, or fuel on US commercial airline flights.

Describe the data that will be generated in terms of nature and scale (e.g., numerical data, image data, text sequences, video, audio, database, modeling data, source code, etc.).

Rows (representing reported smoke, odor, fume events on US airlines) in an Excel spreadsheet.

Describe methods for creating the data (e.g., simulated; observed; experimental; software; physical collections; sensors; satellite; enforcement activities; researcher-generated databases, tables, and/or spreadsheets; instrument generated digital data output such as images and video; etc).

The data was extracted from sources as desxcribed above.

Describe the period of time over which the data will be collected and frequency at which it will be updated.

The data was collected between 2021 and 2022.

If using existing data, describe the relationship between the data you are collecting and existing data.

The data used represents data for the years 2016 through 2019.

Describe potential users of the data and the expected manner in which they may use it.

The data can be used to assess the frequency and categories of reports of smoke, odor, or fume events on US airlines.

Discuss the potential value of having the data available not only to your institution but also for the public, e.g., might be renewed interest and value in reanalyzing the data with updated and more universally comparable metrics or recently developed analytical methods.

The data might, in future studies, be tied to specific passenger or crew medical events.

State clearly if data can be shared publicly or not. If you request permission not to make data publicly accessible, explain rationale for lack of public access.

Operational data. The data for this project include data that are used by the organization to conduct official business and are governed by FAA rules regarding the release of such information. Examples include:

- Information related solely to the internal personnel rules and practices of the organization such as employee performance data, sensitive agency infrastructure, employee selection and hiring process data

Indicate the party responsible for managing the data.

Unless otherwise noted, refer to "Section 0: Dataset and Contact Information", the FAA line-of-business (LOB) is identified, which is responsible for generating the data, and is also responsible for managing the data initially, and by default long-term, the FAA's Enterprise Information Management (EIM) will manage and catalog the data. Refer to the [FAA Data Governance Center](#), this is landing page and access point to EIM uploaded datasets.

Describe how you will check for adherence to this data management plan.

Unless otherwise noted, refer to "Section 0: Dataset and Contact Information," the FAA line-of-business (LOB) is identified, which is responsible for generating the data, and is also responsible for managing the internal project management processes to ensure adherence to the published data management plan (DMP). Details of the particular FAA LOB's DMP adherence processes can be provided on-demand. Typical processes require management review and sign-off at project start and close-out.

2. Standards Employed

List in what format(s) the data will be collected. Indicate if they are open or proprietary.

2. Standards Employed:

Unless otherwise noted, this FAA research project has descriptive project data posted in https://rip.trb.org/ at project launch and while under development and https://researchhub.bts.gov/ database beyond. These databases have published standards. The project's metadata will be posted in [Catalog.Data.Faa.Gov](#). This catalog follows the DCAT-US Schema v1.1 (Project Open Data Metadata Schema) https://resources.data.gov/schemas/dcat-us/v1.1/ – a set of required fields (Title, Description, Tags, Last Update, Publisher, Contact Name, etc.) for every data set displayed on Catalog.Data.FAA.gov.

If you are using proprietary data formats, discuss your rationale for using those standards and formats.

Describe how versions of data be signified and/or controlled.

Unless otherwise noted, refer to "Section 0: Dataset and Contact Information", the FAA line-of-business (LOB) is identified, which is responsible for generating the data, and is also responsible for version control initially. Once uploaded by default upon project completion and long-term, the data is managed by FAA's Enterprise Information Management (EIM), which also applies configuration control on dataset versions. Refer to the [FAA Data Governance Center.](#) This is the internal FAA landing page and access point to EIM uploaded datasets and processes.

If the file format(s) you are using is(are) not standard to your field, describe how you will document the alternative you are using.

Unless otherwise noted, this project's metadata will describe the data and formats whether open source or non-

standard to the particular field domain of the research. if additional description is required for non-standard formats, the researcher will list references and/or definitions here.

Indicate what tools or software is required to read or view the data.

Unless otherwise noted, open data formats are used as much as possible. If not possible, the researcher shall list proprietary data formats and associated tools and software required to read/view the data here. Citations to the required tools and software would be included.

3. Access Policies

Describe what data will be publicly shared, how data files will be shared, and how others will access them.

Consistent with the previous two sections, "Section 1. Data Description" and "Section 2. Standards Employed," the default long term storage and access location for the data documented in this DMP is the FAA's Enterprise Information Management (EIM). Refer to the [FAA Data Governance Center.](#), which is the internal FAA landing page and access point to EIM uploaded datasets and processes.

Indicate whether the data contain private or confidential information. If so:

- Discuss how will you guard against disclosure of identities and/or confidential business information.
- List what processes you will follow to provide informed consent to participants.
- State the party responsible for protecting the data.

For this DMP's particular dataset, "Section 1. Data Description" Question #9 the researcher already delineated if the data was able to be publicly accessible or restricted and reason associated with the latter. Restricted data is identified upon upload to the FAA's Enterprise Information Management (EIM) and details of the protections in place are documented at the [FAA Data Governance Center](#), which is the internal FAA landing page and access point to EIM uploaded datasets and processes.

If applicable, describe how you will deidentify your data before sharing. If not:

- Identify what restrictions on access and use you will place on the data.
- Discuss additional steps, if any you will use to protect privacy and confidentiality.

Unless otherwise noted, all concerns and mitigations associated with the need to deidentify fields in the data are addressed in the previous question.

4. Re-Use, Redistribution, and Derivative Products Policies

Name who has the right to manage the data.

Unless otherwise noted, the data described in this DMP is generated and managed by the Federal Aviation Administration. The data are in the public domain, and may be re-used without restriction.

Indicate who holds the intellectual property rights to the data.

Unless otherwise noted (e.g., data is partially proprietary by an external entity, where intellectual property is shared), this data is required to be made available in open, machine-readable formats, while continuing to ensure privacy and security in accordance with the OPEN Government Data Act, which is Title II of the Foundations for Evidence-Based Policymaking Act.

List any copyrights to the data. If so, indicate who owns them.

Unless otherwise noted, there is no shared copyrights on the data described in this DMP.

Discuss any rights that are transferred to a data archive.

There are no rights transferred to the permanent archive or repository to accompany this dataset described in this DMP.

Describe how your data will be licensed for reuse, redistribution, and derivative products.

Unless otherwise noted, there is not a need for the data in this DMP to be licensed for reuse, redistribution, and/or its derivative products.

5. Archiving and Preservation Plans

Discuss how you intend to archive your data and where (include URL).

Unless otherwise noted, the data described in this DMP will be uploaded to the FAA's Enterprise Information Management (EIM) through the [FAA Data Governance Center.](#) This is the internal FAA landing page and access point to EIM uploaded datasets and processes. Here the metadata is curated and validated for quality and accuracy. The FAA Data Steward enters metadata and verifies quality and accuracy before publishing to data.faa.gov, which is the FAA's clearinghouse site for publicly available FAA data and managed and hosted by the FAA's, IT Shared Services organization - Chief Data Office, see https://catalog.data.faa.gov/about for more information.

Indicate the approximate time period between data collection and submission to the archive.

Data and all research products (e.g., reports) are expected to be submitted within the period-of-performance of the research, which is planned to conclude 12/15/2023.

Identify where data will be stored prior to being sent to an archive.

Unless otherwise noted, the permanent archive of the data described in this DMP shall be uploaded, stored, and managed permanently by the FAA's Enterprise Information Management (EIM) platform. However, until the upload upon completion of the project or at a convenient time before, the data will reside locally by the researcher. Refer to "Section 0: Dataset and Contact Information", the FAA line-of-business (LOB) is identified, which is responsible for generating the data, and is also responsible for managing the data initially.

Describe how back-up, disaster recovery, off-site data storage, and other redundant storage strategies will be used to ensure the data's security and integrity, initially and for the long-term.

Unless otherwise noted, the data described in this DMP shall be uploaded, stored, and managed permanently by the FAA's Enterprise Information Management (EIM) platform. This platform is managed and hosted by the FAA's, IT Shared Services organization - Chief Data Office and all back-up, disaster recovery, off-site data storage, and other redundant storage strategies are managed internally by this office and adhering to all FAA mission support policies. For more information and details on these processes, see FAA EIM Platform or contact the FAA line-of-business (LOB) that is identified in "Section 0: Dataset and Contact Information," which is responsible for generating the data.

Describe how data will be protected from accidental or malicious modification or deletion prior to receipt by the archive.

Unless otherwise noted, the data described in this DMP will initially (prior to receipt into the FAA's Enterprise Information Management (EIM) platform) be generated and managed by the FAA line-of-business (LOB), identified in "Section 0: Dataset and Contact Information." The FAA LOB will maintain (3) copies of the data within protected and monitored FAA government servers, facilities, and cloud platforms.

Indicate how long the chosen archive will retain the data.

Unless otherwise noted, the long term storage of the data described in this DMP will persist indefinitely in the FAA's Enterprise Information Management (EIM) platform following standard government policies and best practices.

Indicate if the chosen archive employs, or allows for the recording of, persistent identifiers linked to the data.

Unless otherwise noted for the FAA researchers in this DMP, the persistent identifiers can only be linked to the Catalog.Data.faa.gov, which provides access to metadata. Access to the research data itself currently requires secure access, including a secure government credentialed sign-on, referred to as MyAccess. This is a role based security profile and intrusion detection monitoring policy to maintain a secure boundary for the EIM Platform that hosts the data.

Discuss how your chosen data repository meets the criteria outlined on the Guidelines for Evaluating Repositories for Conformance with the DOT Public Access Plan page.

Unless otherwise noted, the data described in this DMP shall be uploaded, stored, and managed permanently

by the FAA's Enterprise Information Management (EIM) platform. The EIM Platform is an FAA-developed, cloud-based, big data platform that consists of two key items: (1) "Data Mall" – this is a large repository for FAA data. It is organized and catalogued for easy access, but safeguarded to preserve its integrity and protect data from unauthorized access. And (2) an "App Mall" – this is a collection of curated technologies and tools to enable FAA personnel to transform data into information. For more information, see [FAA EIM Platform](). The platform's DATA.FAA.GOV is the FAA's clearinghouse site for publicly available FAA data and managed and hosted by the FAA's, IT Shared Services organization - Chief Data Office. It is public gateway to the Enterprise Information Management (EIM) platform that is dedicated to managing data and information to improve efficiency, reduce costs, promote transparency, and enable business insight across the FAA. Thus, this FAA repository meets all the criteria outlined in the DOT Public Access Plan above.

6. Policies Affecting this Data Management Plan

Include policies that the data management plan was created to meet, such as the DOT public access plan.

This data management plan was created to meet the requirements enumerated in the U.S. Department of Transportation's "Plan to Increase Public Access to the Results of Federally-Funded Scientific Research" Version 1.1 << https://doi.org/10.21949/1520559 >> and guidelines suggested by the DOT Public Access website << https://doi.org/10.21949/1503647 >>, in effect and current as of Month(Write out) Day(XX), Year(XXXX).

Planned Research Outputs

Data paper - "Smoke, Odor, Fumes Technical Report 1700.7"

The FAA 1700.7 summary and data paper describing the results of the Smoke, Odor, Fumes study.

Dataset - "Final Verified SOF Results Dataset"

An Excel spreadsheet containing the final, verified SOF results on which the technical report results are based.

Planned research output details

Title	Type	Anticipated release date	Initial access level	Intended repository(ies)	Anticipated file size	License	Metadata standard(s)	May contain sensitive data?	May contain PII?
Smoke, Odor, Fumes Technical Report 1700.7	Data paper	2023-08-31	Restricted	None specified	10 MB	Creative Commons Attribution 4.0 International	None specified	No	No
Final Verified SOF Results Dataset	Dataset	2023-08-31	Restricted	None specified	10 MB	Creative Commons Attribution 4.0 International	None specified	Yes	No