

Plan Overview

A Data Management Plan created using DMPTool

DMP ID: <https://doi.org/10.48321/D1ZH16>

Title: Replacement of Cushions in Energy Absorbing Seats – Use of Modeling to Better Understand Test Variability

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Funder: Federal Aviation Administration ([faa.gov](https://www.faa.gov))

Template: Federal Aviation Administration (FAA) Data Management Plan (DMP) Template v1.1

Project abstract:

Aircraft seat cushions play a crucial role in the protection of occupants during crash landings. Testing has shown that only changing the material composition of the cushion can change the risk of injury to the occupant from less than 5% to greater than 50%. Dynamic testing of aircraft cushions shows significant variability that makes evaluation of replacement cushions risky. This project will use a physics based numerical model of a seat system to evaluate the effect of the variation seen in physical testing of the cushions.

Start date: 08-17-2022

End date: 08-31-2023

Last modified: 01-18-2024

Copyright information:

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Replacement of Cushions in Energy Absorbing Seats – Use of Modeling to Better Understand Test Variability

Question not answered.

Question not answered.

Question not answered.

Question not answered.

0. Dataset and Contact Information:

Name of Project: Replacement of Cushions in Energy Absorbing Seats – Use of Modeling to Better Understand Test Variability

Project Number: 12.4

PI: David Moorcroft - ORCID #0000-0002-9709-1150

Contact Information: 6500 S. MacArthur Blvd, AAM-632, Oklahoma City, OK 73169, ian.t.hellstrom@faa.gov, 405-954-5767

U.S. Department of Transportation, Federal Aviation Administration, Civil Aerospace Medical Institute,

URL:https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/cami/

Initial DMP: 4/26/2023

This data set includes physics based modeling data and component test results for cushions used in energy absorbing seats.

This project will document the impact of cushion variability on sled test results using a physics-based model. Project will be published in an Office of Aviation Medicine report

Modeling data is generated by a physics-based model built in Madymo. Includes numerical data and animations. Component data is from a high-rate load frame, includes numerical data and pre-test photos.

Modeling data is simulated. Component data is from sensors (load and displacement).

Modeling data generated in 2023. Component data generated in 2018.

N/A

Seat designers may use the data to better understand the effect of foam properties on the dynamic performance of the aircraft seats.

Data from this project could be used to simplify the replacement of cushions on aircraft.

Data will be made publicly available.

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.

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:

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.

No proprietary data formats will be used.

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.

Data's file formats are standard formats.

Unless otherwise noted, this project's metadata will describe the data and formats and by default should be understandable by other researchers and on the FAA's Enterprise Information Management (EIM), which requires application of published standards like 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.). Most data sets use open standard and common formats (e.g., CSV, XML, JSON) and if not, described in this DMP.

This project's metadata and associated data schema is posted with its data on the FAA's Enterprise Information Management (EIM), which requires application of published standards like 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.).

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 generating the metadata. Once uploaded by default upon project completion and long-term, the data and its associated metadata is managed by

FAA's Enterprise Information Management (EIM). Refer to the [FAA Data Governance Center](#). This is the internal FAA landing page and access point to EIM uploaded datasets and processes.

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.

Refer to "Section 0: Dataset and Contact Information", the FAA line-of-business (LOB) identified is responsible for managing quality control standards in the data generation and initial creation of the associated metadata. Once uploaded by default upon project completion and long-term, the data and its associated metadata is managed by FAA's Enterprise Information Management (EIM). Refer to the [FAA Data Governance Center](#). This is the internal FAA landing page and access point to EIM uploaded datasets and processes. Thus, all data uploaded to the EIM platform follows the quality control measures set forth in managing FAA datasets, where EIM states "FAA Data Stewards publish data thru the FAA Data Governance Center hosted and managed by the FAA Chief Data Office. 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."

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.

Data does not contain private or confidential information.

Not applicable.

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.

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.

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

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

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.

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.

The data is expected to be submitted to the archive within six (6) months of publication of the final report.

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.

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.

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.

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.

Unless otherwise noted for the FAA researchers in this DMP, the persistent identifiers can only be linked to the [Catalog.Data.faa.gov](https://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.

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](https://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.

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 - "TBD"

A final report documenting the methods and results will be published.

Dataset - "TBD dataset"

Data will be uploaded to a public database.

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?
TBD	Data paper	Unspecified	Open	ROSA P		None specified	None specified	No	No
TBD dataset	Dataset	Unspecified	Open	None specified		None specified	None specified	No	No