



Project 008 Noise Outreach

The Pennsylvania State University

Project Lead Investigator

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University Participants

The Pennsylvania State University

- P.I.: Kathleen Hodgdon, Research Associate
- FAA Award No.:13-C-AJFE-PSU Amendment 48
- Period of Performance: March 29, 2019 to March 28, 2020
- Task(s):
 1. Stakeholders Interactions
 2. Content Development
 3. Site Navigation and Infrastructure Enhancement

Project Funding Level

This project supports the Outreach efforts at Pennsylvania State University with \$30,000 of FAA funds. Matching funds are anticipated to satisfy cost share on all tasks. This report covers period from October 1, 2018 through September 30, 2019. Incremental funding for 2018 - 2019 was not received until July 2019, so the activity period was shortened to July 2019 to September 2019.

Investigation Team

P.I.: Kathleen Hodgdon Research Associate

Advisory Committee Members

Gulfstream Aerospace Corporation
Port of Portland Sr. Noise Analyst
Volpe National Transportation System Center

Robbie Cowart
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Project Overview

The NoiseQuest website is designed to support noise mitigation through information. NoiseQuest, located at www.noisequest.psu.edu, is an international resource that is designed to implement global education on aviation noise topics. The site presents aviation noise information that provides centralized web based educational outreach for all communities. This supports Outreach efforts for airports that are too small to have their own outreach programs, and provides additional outreach for airports with existing programs.

The site had been relocated to a new server to protect site integrity. The site was further reconfigured and tested after the move was completed. The content was reviewed as part of that effort.



Task 8.1- Stakeholders Interactions

Pennsylvania State University

Objective

The Outreach project seeks to improve airport and community interactions by providing information and education on aviation noise topics. The team interacted with stakeholders on Outreach topics.

Research Approach

Interactive outreach with stakeholders was conducted. The site user statistics were monitored to better inform the site development.

Milestones

Communications were held with aviation stakeholders via email and phone.

Major Accomplishments

We continue to interact with airport noise managers and community groups to identify topics of interest, successful implementations of outreach, or other approaches taken to resolve aviation noise issues. We continue to monitor our site statistics to gain insights on site usage (see Appendix A for Site Statistics).

Publications

Website contents are published at www.noisequest.psu.edu.

The website has also been utilized by reporters for aviation noise information. In this period of performance, Alex Davies, a transportation reporter from *Wired* magazine, used NoiseQuest for Outreach information and interviewed Professor Hodgdon for comments on aviation noise impact and mitigation. The article was published on 9/26/19 and can be found at: <https://www.wired.com/story/teaching-pilots-new-trick-landing-quietly/>. The article reported on changes in landing procedures that were evaluated in September 2019 by the German Aerospace Center. In addition to NoiseQuest, Professor Hodgdon referred Mr. Davies to the FAA website, the PARTNER website and the ASCENT website for additional references and information on aviation noise mitigation. Within the article he cited Professor Hodgdon and included a link to a research publication that was listed on the ASCENT site under ASCENT Project 17 "Pilot Study on Aircraft Noise and Sleep Disturbance". The article included a link to a research article entitled "[Aviation noise impacts: state of the science](#)" in *Noise and Health*, which is also available on the ASCENT site. (Basner, M., Clark, C., Hansell, A., Hileman, J.I., Janssen, S., Shepherd, K., and Sparrow, V. 2017. [Aviation noise impacts: state of the science](#). *Noise and Health* 19(87):41-50.).

Outreach Efforts

We interacted with airport noise managers and stakeholders from across the country.

Awards

None.

Student Involvement

None during July 2019 to September 2019.

Plans for Next Period

We will continue to monitor site statistics to determine site usage patterns. To promote greater site usage, we will work to get additional stakeholders to link to NoiseQuest and to provide recommendations for content.

Task 8.2- Content Development

Pennsylvania State University

Objective

This task focuses on identifying and developing content that addresses aviation noise impact and outreach education.

Research Approach

The Outreach team seeks to identify content that presents updates on aviation noise research, addresses noise issues, or meets the educational outreach needs of aviation stakeholders on specific topics.

Milestones

The team maintained existing site areas and added new content.

Major Accomplishments

The content organization was reviewed and updated as part of the site restructuring to enhance accessibility across all platforms. Featured content on AEDT, NextGen and Performance-Based Navigation was updated.

Publications

Site developed at www.noisequest.psu.edu

Outreach Efforts

We developed the Outreach content by reaching out to stakeholders for content ideas and development.

Awards

None.

Student Involvement

None.

Plans for Next Period

Content is currently in development. The plans for the future included generating enhanced content to further engage the public. New content topics will be identified and relevant features added to the site. Further topics will be identified based on stakeholder engagement.

Task 8.3- Site Navigation and Architecture Redesign and Development

Pennsylvania State University

Objective

Efforts under this task maintain the site architecture.

Research Approach

This effort includes website management including backups, updates, and infrastructure enhancement. The effort assures that the information on NoiseQuest is presented in an easily navigated, user-friendly format.

Milestones

Review of the site was completed and updates and new content was posted to the site.

Major Accomplishments

The site was reworked, with changes to the navigation features. To monitor usage of the entire site, website statistics can be viewed using Google Analytics. Changes were made to navigational aspects of the site to facilitate the ease of use across multiple platforms.



Publications

None.

Outreach Efforts

The team works to ensure that the changes resulted in clarity and ease of navigation across multiple platforms. These actions were taken to increase the mobile user base.

Awards

None.

Student Involvement

None.

Plans for Next Period

The site is now device agnostic and user-friendly on all platforms. The team will continue website management which includes backups, updates, and infrastructure enhancement as warranted.



Appendix A. NoiseQuest Statistics Usage in 2019

Table 1. NoiseQuest Usage by Country and Device

Country	Device Category	Users	Sessions	Pages/ Session
		38,672 % of Total: 100.00%	43,660 % of Total: 100.00%	1.47 Avg. for View: 1.47
United States	desktop	10,305 (26.75%)	11,503 (26.35%)	1.81
United States	mobile	7,697 (19.98%)	8,733 (20.00%)	1.35
India	mobile	3,949 (10.25%)	4,543 (10.41%)	1.20
India	desktop	1,442 (3.74%)	1,586 (3.63%)	1.23
United Kingdom	mobile	1,392 (3.61%)	1,526 (3.50%)	1.26
United Kingdom	desktop	1,216 (3.16%)	1,321 (3.03%)	1.46
United States	tablet	978 (2.54%)	1,188 (2.72%)	1.78
Philippines	desktop	750 (1.95%)	864 (1.98%)	1.29
Canada	desktop	624 (1.62%)	664 (1.52%)	1.51
Philippines	mobile	516 (1.34%)	655 (1.50%)	1.27

Table 2. NoiseQuest Usage by Page

Rank	Page	Pageviews	% Pageviews
		64,127	100%
1.	/noisebasics-basics.html	14,003	21.84%
2.	/nationalairspace-typesofairports.html	12,016	18.74%
3.	/communitytools-faq.html	8,656	13.50%
4.	/	4,423	6.90%
5.	/communitytools-glossary.html	2,627	4.10%
6.	/noiseeffects-reducingnoise.html	2,260	3.52%
7.	/ngexplorer.html	1,538	2.40%
8.	/sourcesofnoise-military.html	1,299	2.03%
9.	/communitytools-homebuyers.html	1,294	2.02%
10.	/noisebasics-noisemodels.html	1,094	1.71%



Table 3. NoiseQuest Usage by Country

Rank	Country	Users	% Users
1.	United States	19,042	49.36%
2.	India	5,437	14.09%
3.	United Kingdom	2,932	7.60%
4.	Philippines	1,287	3.34%
5.	Canada	1,121	2.91%
6.	Australia	916	2.37%
7.	Malaysia	537	1.39%
8.	Nigeria	478	1.24%
9.	Pakistan	462	1.20%
10.	Singapore	377	0.98%



Figure 1. Global NoiseQuest Users by City. Example: 43 Users in Anchorage during 2019.