

Study of a Prototype Kiosk for the Udvar Hazy Center of the National Air and Space Museum

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Foreword

This study was initiated by Elizabeth Scheffler, Associate Director for Operations and Administration at the National Air and Space Museum. It demonstrates the value of using prototyped exhibition elements and open-ended interviews to investigate how visitors respond to new designs. In addition to highlighting the features of the prototype that visitors particularly liked or disliked, the study gathered suggestions that could, directly or indirectly, help the museum connect more strongly with its visitors in the future.

In the Office of Policy and Analysis, David Karns led the project and produced this report. Whitney Watriss, Zahava Doering and I conducted interviews. Andrew Pekarik designed the study and analyzed the data. I am grateful to all of the staff for their effort and care.

Carole M.P. Neves
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of the National Air and Space Museum**

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BACKGROUND

The National Air and Space Museum asked the Office of Policy and Analysis to study visitor responses to a prototype structure designed for the new Udvar Hazy Center under construction at Dulles Airport. NASM's new facility will primarily be an open structure for displaying aircraft and spacecraft that cannot be accommodated in the Mall museum. It is not proposed to be a museum with interpretive exhibitions similar to the Mall museum. Rather, the current design calls for locating 20 information stations, or kiosks, throughout the Center that serve multiple functions, including orienting visitors to the type of craft clustered in the vicinity of each station. The kiosks will include lighting, visitor barriers, seating, information and photo displays, artifacts related to the clusters of air and spacecraft, and computer interactives.

The structure used in the prototype test is installed in the NASM gallery at the west end of the first floor. The prototype kiosk presents information and artifacts related to pre-1920 aircraft. Rather than bringing in a pre-1920 aircraft for the testing period, a 1970s racing monoplane, the Laser 200, which was already on display in the gallery, is used as a placeholder. Another aircraft, the "Little Stinker," was also already in place in the gallery, directly opposite the Laser 200. A wall-size photograph behind each aircraft was also in place before the kiosk was installed.



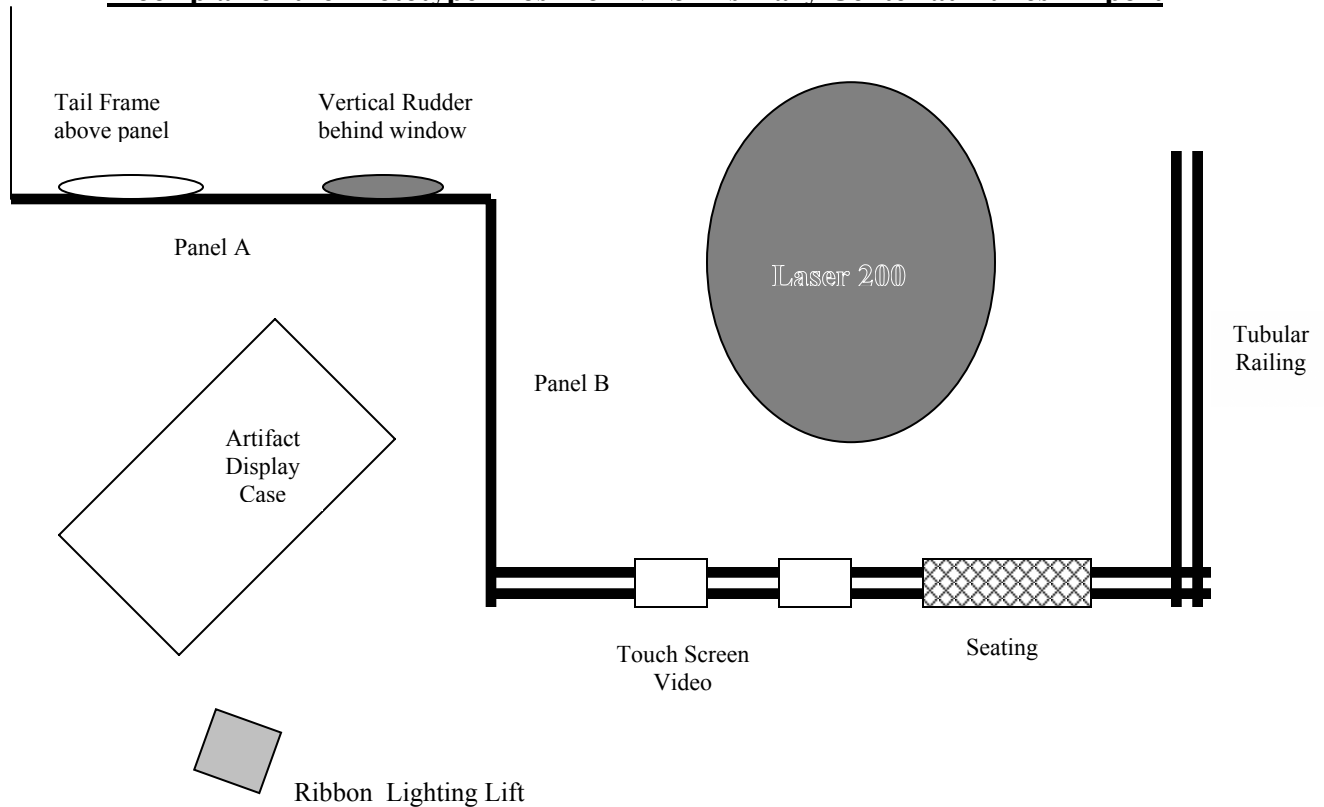
Photographs of the Prototype Kiosk

There are several important components to the prototype (see floor plan below):

- Two large wall panels incorporated:
 - Written information and photographs about flying in that period,
 - The frame of a tail horizontal stabilizer mounted above one panel, a wing rib mounted on the panel, and a vertical rudder behind a window in the same panel,
 - A display of decorative objects ("trench art") made during World War I mounted on the other wall panel.
- A free-standing display case containing two uniformed mannequins, headgear, instruments, the medals of Edwin C. Parsons, and other mechanical and personal artifacts from the period.

- A railing in front of the Laser 200 that supports a non-operational touch-screen interactive (software not installed), an information panel on the Laser 200, and integrated seating for two people.
- A “Ribbon Lift” lighting system (against the opposite wall across from the Laser 200) that lit the aircraft from above.
- The Laser 200, which served as a placeholder for period aircraft.
- The kiosk structure, which consisted of enameled metal framing with a tubular truss design.

Floor plan of the Prototype Kiosk for NASM’s Hazy Center at Dulles Airport



Office of Policy and Analysis staff conducted open-ended interviews with visitors in December 2002 and January 2003. Altogether, they conducted 33 interviews with individuals and groups that included a total of 70 people (37 males, 15 females, and 18 children). The purpose of study was to identify kiosk elements that provoked positive or negative reactions and to obtain visitors’ suggestions as to how the kiosk could be improved. The open-ended format allowed respondents to express their reactions in their own words instead of being constrained by a questionnaire with fixed questions and responses. This type of qualitative interviewing is a valid way to identify important issues, although the relative importance of these issues to all NASM visitors cannot be specified as the sample of interviewees was not representative. Since different aspects may be more or less important to, and noticed by, different visitors, all interviewees did not necessarily talk about the same things.

The following report is divided into two sections summarizing visitor responses: Findings (Positive Features and Negative Features) and Suggestions.

FINDINGS

Positive Features

Bright, Open Atmosphere: According to the remarks of these visitors, the prototype's most notable design features are bright lighting and a feeling of openness. In particular, interviewees were pleased by the fact that the object case is transparent on all sides, which makes it possible to see objects from different angles.

Appropriate Design Vocabulary: Some visitors described the design of the structures as "commercial," "modern," or "industrial," and felt that it was appropriate to the subject matter, because it suggested aircraft structure and represented "a healthy departure" from most NASM exhibitions..

Interesting Objects: Interviewees appreciated the fact that the display case included smaller artifacts and that many were "personal." As one visitor expressed it, "It's nice to see the small objects and get away from the coldness of the airplanes." The artifacts mentioned most favorably were the headgear, medals, planes, and trench art. The trench art was the most unexpected and was seen as "humanizing."

Readable Text: Favorable comments on the texts emphasized their readability. Some interviewees also made reference to "just enough information," "good information," and the fact that the information included a woman (Betty Skelton) and "a human touch."¹

Large Images: Some interviewees said that they liked the large photographs behind the airplanes. "They grab your attention," said one visitor. Another visitor commented that the back side of the panel beside the Laser 200 should also have been used to mount a large photo.

Seating: People liked the availability of seating. The interviewers noticed that it was used a lot.

Other: Several interviewees admired the Ribbon Lift light-stand.

¹ The information panels were correct for the two aircraft displayed, but the aircraft were not from the 1920s period.

Negative Features

Accessibility: Most of the negative comments addressed physical problems with the display of text and objects, primarily accessibility issues. The main complaints were that case objects and labels are too high and not tilted, the font size on some labels is too small, some labels poorly placed, and the interactive is not working or too hard to reach.²

Some interviewees also complained about obstructed views caused by the glass in front of the rudder, the railing (for children), or the structure. A few visitors commented that some artifacts in the display case were too low to be easily seen. Some were concerned that there would be a problem with these kiosks if the facility were crowded. The interviewers noted that many visitors completely missed seeing the tail frame or rudder or considered the tail frame part of the kiosk structure.

Seating: The seats were considered inadequate in many respects, including: there are not enough of them; they face away from the airplane (which felt “dumb”); they are too high off the ground; they are “not ergonomically designed;” and they are not attractive.

Visual Clutter: Some interviewees remarked that the installation felt “busy” or “cluttered,” because of the design of the structure, the placement of elements, or the number of objects in the free-standing case (especially in the center section).

Lack of Coherence: Some interviewees were concerned with the absence of an organizing structure, whether chronological or thematic. In the words of one visitor, “the different stuff in this area, for example, does not really hang together.” It should be noted, however, that the prototype kiosk combined information panels about pre-1920 aircraft with a later aircraft that was already in the gallery, and some visitors missed seeing the “Pre-1920 Aircraft” sign overhead that identified the section.

Better or More Information: Texts were criticized by some interviewees who wanted more information in general, or who wanted answers to specific questions, such as, “What are the medals for?” and “How did the plane get its name?” One visitor, a teacher, criticized the texts as being too long, saying, “What you have here is a textbook set in the middle of exciting stuff.” Another visitor proposed that the panels should provide basic text and more information should be available on computers.

Nothing for Children: Some interviewees felt that the display was not welcoming to children. The display case, in particular, was described as “not kid-friendly.”

² Although the computer interactive shell was placed on the railing to demonstrate the design, it was not operational during the prototype study, with no sign indicating that.

Suggestions

Sound

- “For example, [I would like to hear] the noise of the airplane, as long as it wasn’t too loud.”

Audio Text

- “Audio should be available for the visually impaired.”
- “I would rather listen than read.”

Interactive Stations

- “An interactive could provide more information on the medals and why they were awarded.”
- “I would like an interactive showing how the [Wright Flyer control stick] worked.”
- “There’s a website where you can look at airplanes from every direction and just turn them around yourself.”

Aircraft Displayed on an Incline

- “As if they were taking off. If they were displayed that way, they would have more of a life force.”

Interaction Areas

- “What if you had low round tables with lots of chairs around them in various places among the planes. They could design the tabletop like sky maps and tell you what was there. Groups could sit around the tables and really get into what was hanging around them. Maybe there’d even be ways to light up the aircraft from these tables.”

Map

- “A map with pointers to different airplanes would be helpful.”

Art

- “Some visitors, like my wife, are much more interested in art than in airplanes.”
- “Maybe there’s some place where [visitors] could make something like that [trench art].”
- “There should be more attention [at NASM] to art and its relationship to aircraft.”

Human Context

- The museum should have more about how these things “fit into the lives of the people who made them, used them, or died for them.”
- In communicating the craftsmanship of the rudder, “showing a jar or tube of glue that was used and a worn brush would probably make it more connected to people.”
- “I was thinking about what each and every one of those things meant to the people who were involved with them and what respect I have for them.”
- When bringing the kids to the museum, “I try hard to show them why things are important in the broader, cultural way, rather than just the mechanics. I’ve read them portions of Ann Lindbergh’s *North to the Orient* and *Listen to the Wind* in the museum and then we went looking for things mentioned that might be in the collection.”

Closer Contact with Aircraft

- “I like the plane on the ground and am not always pleased by looking at its underside. It is refreshing to see the planes from several sides.”
- “I like having the actual plane, and one that size, since it is easy to see. Having one people could touch would be good, especially for kids.”

Fuller Access to Collections

- One visitor took the interviewer over to the texts and pointed out that in at least two places it says that NASM “holds” more materials, additional objects, etc. He found that a bit irritating, as it did not indicate how he could get to see them.
- One visitor thought that crowded displays were justified because it is “better than wondering what else is hiding in the storerooms.”

Other Remarks

The Wright Flyer

- “By the way,” said one interviewee, “that Wright airplane – is that the original one?”
- “The label on the plane entering the museum doesn’t say it was the first plane ever.”
- “It would be wonderful to see the Wright control stick, instead of its photograph.”

The Steven F. Udvar-Hazy Center, also called the Udvar-Hazy Center, is the Smithsonian National Air and Space Museum (NASM)'s annex at Washington Dulles International Airport in the Chantilly area of Fairfax County, Virginia, United States. It holds numerous exhibits, including the Space Shuttle Discovery and the Enola Gay.Â The Udvar-Hazy Center displays historic aviation and space artifacts, especially items too large for the National Air and Space Museum's building on the National Mall, including:[6]. The Enola Gay, the Boeing B-29 Superfortress which dropped the first atomic bomb on Hiroshima, Japan.