

A Preservation Project

Housing the *Wright Brothers* Collection

by Anne Vazquez

This past December, The Franklin Institute Science Museum celebrated, at its facility, the centennial anniversary of the first powered heavier-than-air flight by the Wright Brothers. In 1903, in Kitty Hawk, NC, Orville and Wilbur Wright, achieved the first controlled, sustained flight with a pilot aboard. The Franklin Institute, located in Philadelphia, PA, has in its collection hundreds of items containing the research and other historical materials belonging to the young men during their years of aviation research. When Orville Wright passed away in 1948, he deeded these numerous items to the Institute.

The contents of the Wright Brothers' Aeronautical Engineering Collection at the Institute range from the first factory-made airplane, a 1911 Wright Model B Flyer (donated in 1934 by Grover Cleveland Bergdall); airfoil and wind tunnel models used for research; and notebooks, drawings, and even scraps of wallpaper that the brothers used for calculations. There are approximately 120 paper-based items and 180 metal and wooden objects.

Since arriving at the Institute, these items have been on and off exhibition. In 1978, restoration and conservation work was done to parts of the collection. When John Alviti, senior curator, joined the Institute in 1994, he de-installed the items that were on display in the Wright Brothers Bicycle Shop gallery. "Knowing that we would be celebrating the 100th anniversary [of the Wright Brothers' flight] in several years, I wanted it to be fresh and look better," Alviti explains.

As the centennial approached, Alviti and others at the Institute assessed the collection and set to work for its

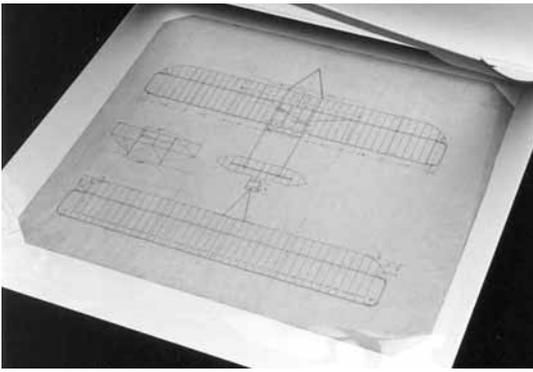


This photo of Orville (left) and Wilbur (at right) Wright is one of the items being rehoused for exhibition at The Franklin Institute.



The Wright Flyer

exhibition in 2003. In October 2003, selected items were put on display to celebrate the upcoming anniversary. For the remainder of the collection, it was determined that, before they were put out on display again, they should be conserved and/or rehoused. The Institute contacted several conservation agencies in the area—the Conservation Center for Art and Historic Artifacts (CCAHA) to treat the paper-based items, and Berrett Conservation Studio and Kreilick Conservation for the objects in the collection.



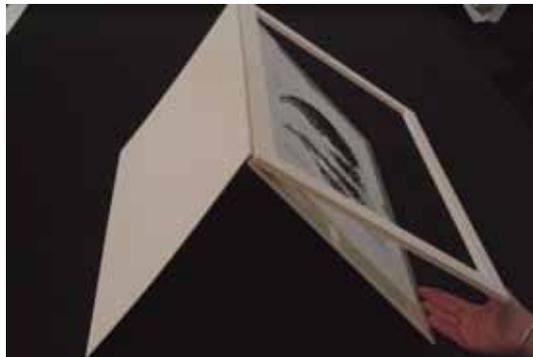
This technical drawing of the 1903 Wright Flyer was created on linen; the earlier conceptual drawing of the flyer was created on brown paper.



CCAHA technician James Moss cuts a window mat for the Wright Brothers' rehousing project.



CCAHA conservator Seoyoon Choi creates a toned paper fill for an area of loss in a Wright drawing.



Seen here is the mat design being used. This shows the portfolio cover folded back



Shown here is a detail of the cotton hinge used to secure the portfolio mat.

To help fund the project, the Institute submitted a grant application to the federal government's, "Save America's Treasures" program in Spring 2003. In November, a grant of \$61,539 was awarded for the project; the Institute was required to match the grant amount, which it did with an endowment fund left to the museum by Ralph S. Barnaby, a former staff member. That endowment, created in 1986, was specifically left for the conservation and care of the Wright Brothers collection.

The Institute began transferring the collection to the conservators this past February and the project is expected to be complete in Spring 2005. The items, most of which date back to the years 1896 to 1904, will then be ready for display in the Franklin Air Show gallery at the Institute. When on display, virtually all of the paper-based items will be put into frames. Therefore the rehousing of these pieces needed to take into account best conservation practices, as well as ease from storage to exhibition.

The items, ranging in size from wallpaper scraps to oversized drawings, are being cleaned (if need be) after being individually inspected. Each will then be housed in a construction agreed upon, with the Institute, by personnel at CCAHA. This includes: Ingrid Bogel, executive director; Glen Ruzicka, director of conservation; and conservators Joan Irving and Rolf Kat, who are heading up the execution of the project.

Alviti points out that while surface cleaning and repairs are being done when needed, this is primarily a rehousing project, aimed at protecting the collection in the most effective way. "Back in 1978, there was the initial conservation, but that was 25 years ago," he says. "The technology and practices have substantially changed. So this gives us an opportunity to look at the items and see if there is a need for further conservation work."

The Housing

The design for the rehousing consists of a hinged portfolio constructed of matboard (see photos at left). This format will help to protect the items during handling, while also providing a suitable presentation for exhibition. Each mat construction consists of a back mat, a window mat, and cover mat. The cover is attached so that it can be folded back when on exhibit.

Each item is being attached to a 4-ply, alkaline, 100% rag mat using Japanese paper hinges and wheat starch paste. A cover mat is

then being attached to the window mat using a cotton hinge and PVA adhesive. A 3 mil clear, inert polyester overlay will be placed over the surface of each item for additional protection. (The overlay will be removed when the item is on display.)

The CCAHA decided to use Alpharag Artcare matboard to create the portfolios. Irving explains that the product was chosen primarily because it contains zeolites. "Artcare products incorporate zeolites, or molecular sieves," she says. "Zeolites trap gaseous pollutants either present in the environment, or those produced by the deterioration of the artifact," she continues. "Testing has shown that these materials provide additional protection for paper artifacts and photographic prints enclosed within them."

The hinges created to secure the back, window, and cover mats together are made of Japanese tissue paper, as was done to hinge the art to the backing board. For the outer hinges, CCAHA chose to create a cloth hinge made of cotton. The cloth used is that determined for the "Cotton Specification Backlining" as stated by Library Binding Service (LBS), a company in Des Moines, IA. The LBS specification states, this is a "100% cotton material that has a thread count of 68/68

threads per square inch. This high thread count construction allows the material to be very strong and thin. The material is processed to retain the full strength of the cotton. It is not bleached, but is thoroughly washed to remove oils and stiffeners applied during the weaving process."

Within the Wright Brothers' Aeronautical Engineering Collection, there are smaller, archival items such as graphs and tables. Because of their size and quantity, these items are being housed in clear, inert, polyester L-sleeve enclosures. A sheet of alkaline Artcare paper will then be inserted behind each item in the sleeve; the paper will provide an absorbent layer and additional protection.

While the aim is to display as much of the collection as possible, once rehoused, there will be times when at least some of the collection is in storage. Alviti explains that the items will be placed in storage boxes, also made of conservation materials; the larger pieces will be placed in flat file storage drawers. When commenting on the storage, Alviti says, "We [at the Institute] have a responsibility for the stewardship of the collection, and that may or may not include public presentation at all times." When the collection goes on display next year, it will mark the re-emergence of a national treasure. ■