TIME and NAVIGATION

Opens March 29, 2013 at the National Air and Space Museum
Time and Navigation: The untold story of getting from here to there.

Explores the enduring connection between determining time and position.

Major theme:
“If you want to know where you are, you need an accurate clock.”

Collaboration of Two Smithsonian Museums:
National Air and Space Museum
National Museum of American History
Exhibit Elements Include:

- Sextant and chronometer station.
- Dynamic presentation on new methods of air navigation.
- Displays showing the impact of modern time and navigation technology.
- Stories from real people about how they navigate.
- Video presentation showing navigators from different eras.
Exhibit Layout

100% Schematic Design
PLAN VIEW

NAVIGATING IN THE AIR

NAVIGATING AT SEA

NAVIGATION FOR EVERYONE

INVENTING SATELLITE NAVIGATION

NAVIGATING IN SPACE

INTRO
Try a sextant aboard a ship
Learn navigation in the air
Navigate across the solar system
Impact on modern society
Origin of GPS and other systems
Exhibit Layout

**Winnie Mae**
Around-the-world aircraft

**Stanley**
Self-Navigating Vehicle
DARPA Grand Challenge

**Mariner 10**
Mercury flyby: First gravity assist

**Transit satellite**

Section through gallery
Full gallery view

**Submarine Navigation System**

East Elevation
*Navigating in the Air, Navigating in Space and Inventing Satellite Navigation*
Highlighted Clocks in *Time and Navigation*

- 1812 Bond marine timekeeper—The earliest seagoing chronometer made in U.S.
- British chronometers: Arnold (1825), Earnshaw (1798), Barraud & Jamison (1786)
- Weems second-setting wristwatches
- Rubidium and cesium frequency standards from 1970s for GPS satellites
- NIST-7
- Chip-scale atomic clocks from NIST and Symmetricom
Major Graphic Features

(Not to scale)

See the Real Thing

Lockheed Sirius Tingmissartoq
Pioneers of Flight Gallery
National Air and Space Museum

REFERENCE LABELS TO ARTIFACTS ON DISPLAY IN OTHER EXHIBITS
(approx 5 total)

NAVIGATION GONE WRONG

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Soviets Shoot Down an Airliner

WHAT HAPPENED
A Soviet MiG-23 fighter jet accidentally shot down a Korean Air Lines Boeing 747 on September 4, 1983, killing all 269 passengers and crew.

THE CONSEQUENCES
The downing of the airliner led to the international condemnation of the Soviet Union and the strengthening of Korean military defense. It also highlighted the dangers of miscalculation and the importance of clear communication between nations.

MAIN SUBUNIT PANELS (approx 11 total)

MEET THE MAPMAKER

CHARLES WILKES

Charles Wilkes (1798–1877) was an American naval officer, cartographer, and explorer. He led the Second American Exploring Expedition, which was funded by the U.S. government to chart the Pacific and Indian Oceans. Wilkes published his findings in two volumes, and his maps and charts of the world's oceans were widely used by navigators. Wilkes' work helped to establish the United States as a major player in oceanography and cartography.
Exhibit Artifacts:

Winnie Mae moved from Udvar-Hazy Center to Garber Facility for conservation.

Aircraft is now installed in *Time and Navigation*.

Web and Computer Interactives:

- Contracting process for exhibit website and computer interactives is underway

- Evaluations for interactive and website development coming soon

Mechanical Interactives:

- Building prototypes and testing all hands-on interactive elements is underway

Videos:

- Contracting process for video production and editing is underway
**In PROGRESS**

**Communications:**
- Developing a marketing plan and working with exhibits team to create press material

**Education and Outreach:**
- Planning social media engagement to support evaluation, inform online experience design, and explore learning objectives with museum audiences

**Special Features:**
Illustrations and animations explain technical details.
Please visit web site for updates:
airandspace.si.edu/timeandnavigation

Questions?
Contact Andrew Johnston:

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TIME and NAVIGATION

THIS EXHIBITION IS MADE POSSIBLE THROUGH THE GENEROUS SUPPORT OF

NORTHROP GRUMMAN

ITT CORPORATION
HONEYWELL
NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY

U.S. DEPARTMENT OF TRANSPORTATION

MAGELLAN

NATIONAL COORDINATION OFFICE FOR
SPACE-BASED POSITIONING, NAVIGATION & TIMING

ROCKWELL COLLINS

INSTITUTE OF NAVIGATION