WHITE SANDS SPACE HARBOR AREA 1, WEATHER TOWER No.4
(Space Shuttle Landing Facility Area 1, Weather Tower No. 4)
White Sands Missile Range
Approximately 375 feet west of the Control Tower
White Sands vicinity
Doña Ana County
New Mexico

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
U.S. Department of the Interior
Intermountain Regional Office
12795 Alameda Parkway
Denver, CO 80225-0287
Location: White Sands Missile Range
Approximately 375' west of Control Tower
White Sands vicinity
Doña Ana County
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U.S.G.S. 7.5 Minute Las Cruces, New Mexico, Quadrangle, Universal Transverse Mercator Coordinates (center of runways): E 32.944408 N 106.41993 Zone 13S, NAD 1983.

Construction: 1982-2005

Architect: Not known

Builder: Not known

Present Owner: Commander, U.S. Army White Sands Missile Range, New Mexico 88002-5018

Present Use: Operated by U.S. Army, White Sands Missile Range

Significance: The Weather Tower No. 4 was an essential component of the White Sands Space Harbor (WSSH) from 1982-2011. It has a historical association with the landing of Space Transportation System (STS)-3 Columbia in March 1982; this is the only STS landing to take place outside Edwards Air Force Base in California and Kennedy Space Center in Florida. The Weather Tower No. 4 is considered to have national significance and is eligible for listing in the National Register of Historic Places (NRHP) under Criterion A for its association with the NASA Space Shuttle Program (SSP) with a period of significance of 1976-2011. Because it achieved significance within the past fifty years, Criterion Consideration G also applies.
LIST OF ACRONYMS

ABGR  Alamogordo Bombing and Gunnery Range
ABS  Anti-lock Braking System
ACHP  Advisory Council on Historic Preservation
ACI  Archaeological Consultants, Inc.
AIAA  American Institute of Aeronautics and Astronautics
APE  Area of Potential Effects
ATC  Air Traffic Control
BTT  Basic Training Target
CCC  Civilian Conservation Corps
CIT  California Institute of Technology
CONEX  Container Express
DC-X  Delta Clipper, Experimental
DoD  Department of Defense
GPS  Global Positioning System
HAFB  Holloman Air Force Base
HPO  Historic Preservation Officer
HPWG  Historic Preservation Working Group
HUB  Harbor Utility Building
IGS  Inter Glide Slope
IHA  InoMedic Health Applications, LLC
JSC  Johnson Space Center
KSC  Kennedy Space Center
LC  Launch Complex
MD  McDonnell Douglas
MSBLS  Microwave Scanning Beam Landing System
MSFC  Marshall Space Flight Center
NASA  National Aeronautics and Space Administration
NAVAIDS  Navigational Aids
NEPA  National Environmental Policy Act
NHL  National Historic Landmark
NHPA  National Historic Preservation Act
NPS  National Park Service
NRHP  National Register of Historic Places
NSA  New South Associates
OCC  Operations Control Center
ORD  Army Ordinance Department
PAPI  Precision Approach Path Indicator
RFP  Request for Proposal
SCAPE  Self Contained Atmospheric Protective Ensemble
SHPO  State Historic Preservation Officer
SSP  Space Shuttle Program
SSRT  Single Stage Rocket Technology
STA  Shuttle Training Aircraft
STS  Space Transportation System
TACAN  Tactical Air Navigation
TAL  Transoceanic Abort Landing
UHF  Ultrahigh Frequency
USAAF  United States Army Air Force
USAF  United States Air Force
VITT  Vehicle Integration Test Team
WPA  Works Progress Administration
WSMR  White Sands Missile Range
WSNM  White Sands National Monument
WSPG  White Sands Proving Ground
WSSH  White Sands Space Harbor
WSTF  White Sands Test Facility
PART I. HISTORICAL INFORMATION

A. PHYSICAL HISTORY

1. DATE OF CONSTRUCTION

Weather Tower No. 4 was constructed from 1982-2005.

2. ENGINEER

Not known.

3. BUILDER/CONTRACTOR/SUPPLIER

Not known.

4. ORIGINAL PLANS

Not available.

5. ALTERATIONS AND ADDITIONS

The 1982 tower was replaced in 1988 on the original 1982 elevated platform; a second tower was added in 2005.
PART II. STRUCTURAL/DESIGN INFORMATION

A. GENERAL DESCRIPTION

1. CHARACTER

Weather Tower No. 4 is located approximately 300’ west of the HUB Maintenance Facility. Consisting of two separate metal towers, this structure is monitored and maintained by the WSMR. The southernmost tower features modern automated weather observing systems attached to a 1988 tower mounted on a 1982 elevated steel platform. The rectangular platform is accessed by a metal staircase. The solar-powered weather tower is secured to the platform and the ground with cable tie downs. In 2005, the northernmost metal tower was erected on a concrete pad. This triangular-shaped tower is painted red and white and is supported by electronic equipment.

2. CONDITION OF FABRIC

When documented in March 2012, Weather Tower No. 4 was in good condition and operational.

B. CONSTRUCTION

Weather Tower No. 4 is constructed of two steel towers. The southern tower is supported by an elevated steel platform and secured with cable tie downs. The northern tower is supported by a concrete foundation pad.

C. MECHANICAL/OPERATION

Weather Tower No. 4 is monitored and maintained by the U.S. Army at White Sands Missile Range.
PART III. SOURCES OF INFORMATION

A. ENGINEERING PLANS AND DRAWINGS

There are no original engineering plans or drawings for Weather Tower No. 4.

B. EARLY VIEWS AND HISTORICAL DATA

Historic photographs and maps of the WSSH are very limited. A view of the weather tower from 2006 can be found on page 16 of this document. The other historical data comes from a variety of sources cited in the Bibliography below.

The historic photographs and most of the historical data used in this documentation came from sources within WSTF and WSSH. Other more current imagery was obtained from the online WSTF Media Archive. Many of the original photographs have been donated to the WSMR Museum for digitization and curation. A body of recent aerial photographs were located and photocopied for inclusion in the HAER document to supplement the current ground photography.

C. INTERVIEWS

The following NASA and WSMR employees were interviewed for this documentation.

Robert E. Mitchell, WSTF Manager, September 2011.

Frank Offutt, WSSH Manager, September 2011.

Timothy Davis, WSTF Historic Preservation Officer, September 2011 and March 2012.

Bill Godby, WSMR Historic Preservation Officer, September 2011.

Doyle Piland, WSMR Museum Archivist, September 2011.

D. BIBLIOGRAPHY


Freeman, Paul. “Abandoned & Little-Known Airfields: Northrup Strip/White Sands Space Harbor, White Sands, New Mexico.”


E. LIKELY SOURCES NOT YET INVESTIGATED

Research was conducted at WSSH and WSTF using primary and secondary sources. Sources that were not investigated that may contain secondary information are archived at NASA’s Lyndon B. Johnson Space Center in Houston, Texas.

Additional oral history interviews with other engineers and technicians could also prove useful.
PART IV. PROJECT INFORMATION

In 2011-2012, New South Associates (NSA), under contract with InoMedic Health Applications, LLC (IHA) of Kennedy Space Center, Florida, and in coordination with NASA and the U.S. Army, conducted background research and a historic architecture survey of resources at the NASA WSSH. The survey included the documentation and evaluation for NRHP eligibility for seventy-two resources located in four distinct areas. Based on this research, NSA determined that no properties remain at WSSH from the period prior to NASA acquisition in 1963 except for the footprint of the packed gypsum Runway 17/35.¹

NSA recommended that the three NASA WSSH Runways and the Control Tower in Area 1 were individually eligible for listing in the NRHP and eligible as contributing resources to the “WSSH Shuttle Landing Facility District” under Criterion A and Criterion Consideration G for their association with the NASA SSP. None of the other sixty-eight inventoried properties were recommended individually eligible for listing in the NRHP due to lack of historical association with the NASA SSP or other historic contexts, lack of unique design or construction features, or insufficient integrity; however, nineteen of these properties, all of which lie within Area 1, were recommended as contributing resources to “WSSH Shuttle Landing Facility District,” even though they were not recommended individually eligible for the NRHP. The historic district contains a total of twenty-eight resources: twenty-three are contributing and five are non-contributing.

After formally ending the SSP on August 31, 2011, NASA disposed of the WSSH and released use of the property to the U.S. Army WSMR. The property transfer was a federal undertaking on federally-owned property and subject to compliance with Section 106 of the NRHP Act of 1966, as amended. The undertaking resulted in an Adverse Effect to the NRHP-eligible WSSH Shuttle Landing Facility District. To mitigate the adverse effects, NASA completed HAER Level II documentation of the historic district.

and relocated the Control Tower to the WSMR Museum for conservation, exhibition, and public interpretation.

The mitigation plan was defined in a Memorandum of Agreement (MOA), executed between NASA, the U.S. Army, and the NM-SHPO in August 2012. The properties within the historic district were documented with large format photography in March 2012.
APPENDIX- LOCATION MAPS
Figure 1. Map of White Sands Military Reservation showing White Sands Space Harbor (Source: U.S. Army).
Figure 2. Map of WSSH showing location of Weather Tower No. 4 in Area 1, which delineates the NRHP boundaries of the WSSH Shuttle Landing Facility District (Base Map Source: NASA WSTF).
Figure 3. Aerial View of HUB Complex, Looking East, Showing Weather Tower No. 4 in Foreground, 2006 (Source: NASA WSTF).
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David Diener, Photographer
March 27-29, 2012

NM-28-E-1 VIEW OF WEATHER TOWER NO.4 LOOKING NORTHWEST FROM HUB MAINTENANCE BUILDING TOWARDS SAN ANDRES MOUNTAINS.

NM-28-E-2 VIEW OF WEATHER TOWER NO.4 LOOKING NORTHWEST TOWARDS SAN ANDRES MOUNTAINS.