CAPE CANAVERAL AIR FORCE STATION, HAER NO. FL-8-11-S-7
LAUNCH COMPLEX 39,
SOLID ROCKET BOOSTER DISASSEMBLY & REFURBISHMENT COMPLEX
MULTI-MEDIA BLAST FACILITY
(Hangar AF Complex-Multi-Media Blast Facility)
(John F. Kennedy Space Center)
Cape Canaveral
Brevard County
Florida

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Department of Interior
100 Alabama St., SW
Atlanta, Georgia 30303

HISTORIC AMERICAN ENGINEERING RECORD

CAPE CANAVERAL AIR FORCE STATION, LAUNCH COMPLEX 39, SOLID ROCKET BOOSTER DISASSEMBLY & REFURBISHMENT COMPLEX MULTI-MEDIA BLAST FACILITY
(Hangar AF Complex–Multi-Media Blast Facility)

HAER No. FL-8-11-S-7

Location: Cape Canaveral Air Force Station, Cape Canaveral, Brevard County, Florida.

USGS Orsino, Florida, Quadrangle, Universal Transverse Mercator Coordinates: E 540465.24 N 3151325.46 Zone 17, NAD 1983.

Date of Construction: 1992

Present Owner: National Aeronautics and Space Administration (NASA)

Present Use: Solid Rocket Booster Disassembly & Refurbishment

Significance: The Solid Rocket Booster (SRB) Disassembly & Refurbishment Complex contains the Multi-Media Blast Facility and eight other facilities that played an essential role in the reusability of the SRBs in the Space Shuttle Program (SSP). The complex is considered eligible for the NRHP as a complex in the context of the SSP (1969-2011) under Criterion A for Space Exploration. The Multi-Media Blast Facility has achieved exceptional significance within the past 50 years, so Criterion Consideration G also applies. The complex was originally designed or modified to process SRBs, from pre-launch manufacture and assembly to post-launch recovery, disassembly, cleaning, and refurbishment. The complex maintains a high level of integrity.

Report Prepared by: New South Associates, Stone Mountain, Georgia

Date: October 16, 2012

PART I. HISTORICAL INFORMATION

A. INTRODUCTION

The Multi-Media Blast Facility (66340) lies within the SRB Disassembly and Refurbishment Complex, which is located on Hangar Road in the Industrial Area of the Cape Canaveral Air Force Station (CCAFS). The complex's boundaries are defined as the edges of the concrete hardscape that surrounds Hangar AF. The complex contains nine contributing resources, including the Multi-Media Blast Facility (8BR2009). The remaining eight contributing resources are Hangar AF (8BR2001), the High Pressure Gas Building (8BR2002), the High Pressure Wash Building (8BR2003), the First Wash Building (8BR2004), SRB Recovery Slip (8BR2005), the SRB Paint Building (8BR2006), the Robot Wash Building (8BR2007), and the Thrust Vector Control Deservicing Building (8BR2008).

The complex is a significant historic property for its association with the Space Transportation System (STS), commonly known as the "Space Shuttle." The STS was a unique breakthrough in the history of the U.S. Space Program because it was based on a design that made most of its major components reusable. This model decreased program costs and helped make orbital space flight a routine endeavor. Along with the orbiter spacecraft, the SRBs were two of the Space Shuttle's primary reusable elements, while the external tank (ET) was not reused. The SRBs' reusability was made possible by a number of facilities at Kennedy Space Center (KSC) and CCAFS, including the SRB Disassembly and Refurbishment Complex. The complex is the first place the SRBs were brought after their recovery from sea and where they were disassembled,

cleaned, and processed before moved to other KSC facilities for buildup and assembly.

B. HISTORICAL CONTEXT

A full historical context for the SRB Disassembly and Refurbishment Complex, as well as a summary of the entire disassembly and refurbishment process, can be found in HAER NO. FL-8-11-S (Hangar AF Complex). A detailed explanation for the portions of that process that occurred in this resource is located in Section III of this document.

C. PHYSICAL HISTORY

1. Date of Construction:

1992

2. Architects/Engineers:

Multi-Media Blast Facility (1992): AJT & Associates, Cape Canaveral, Florida.[1]

AJT & Associates was founded in 1988 and since that time has focused on work for NASA and other aerospace government contractors. The company offers engineering and technical support services for air traffic control towers and their computer network systems, as well as modular labs, mobile structures, and sewage and wastewater treatment systems.

[1] AJT & Associates, Inc, "Hangar AF New Multi-Media Blast Facility," Kennedy Space Center, Florida. Construction drawings, 1991.

3. Builder/Contractor/Supplier:

Unknown

4. Original Plans and Construction:

The Multi-Media Blast Facility retains its original appearance.

5. Alterations and Additions:

None

PART II. STRUCTURAL/DESIGN/EQUIPMENT INFORMATION

A. GENERAL STATEMENT:

1. Character:

The Multi-Media Blast Facility is a one-story building that housed equipment used to blast the last remaining TPS finish materials off of SRB segments. The facility used glass bead media as a blasting agent, which was effective for the task but did not damage the segments' aluminum base material.

2. Condition of fabric:

The Multi-Media Blast Facility was regularly maintained throughout its lifespan and does not exhibit any major signs of neglect or deterioration.

B. BUILDING DESCRIPTION:

Multi-Media Blast Facility
The Multi-Media Blast Facility (MMBF) was built in 1992 to house a new blasting facility at the Hangar AF Complex. The most recently built of the complex's buildings, it is located on the south end of the complex and is separated from the remaining complex buildings by a non-contributing GSE storage building. The MMBF is accessed by a paved road that leads south from the main hangar area.

Exterior

The building is composed of four block-shaped sections, including two blast bays on its east and west ends, a central equipment area, and a protruding office/restroom area on the north end. The exterior of the building is painted concrete block, which also serves as its structural system. It has a flat gravel-surface roof and a reinforced concrete foundation. There is an aluminum flashing and gutter system around the perimeter of the roof line.

The main north façade of the building features two bi-fold metal bay doors on each of the blast bays, with the office/restroom area in between. There are three ventilation hoods on the roof of the west blast bay and three more on the east blast bay. The office/restroom area has a recessed glass block window that provides light into the interior locker room. There are two pedestrian corridor entrances into the office/restroom area on its east and west elevations.

On the east elevation is a steel frame "lean-to" structure with aluminum roof that covers a nine-unit vacuum machine that sucks air out of the west blast bay.

The south elevation has two additional bi-fold doors leading into the blast bays. The building's central equipment area is visible on this elevation. This area has a central pedestrian entrance flanked by two ventilation louvers. Installed south of the east blast bay is a four-unit vacuum machine that sucks air out of the bay when in use. The vacuum has a different design than the one on the west elevation.

The west elevation features two ventilation louvers but no other structures or equipment.

Interior

The interior is composed of five areas, including the two blast bays, a rear (south) equipment room, a blast equipment hopper room, and the office/restroom area. This last area has an office room, locker room, and restroom, and it is separated from the rest of the building by a covered corridor walkway. Both sandblasting bays have exposed metal structural system ceilings, painted concrete block walls, and concrete floors. The blasting activities in these rooms have weathered the paint on the interior walls. The hopper room contains a central hopper where the glass-bead media fired by the blast machines is loaded and distributed.

PART III: OPERATIONS AND PROCESS

A. INTRODUCTION

The primary operations at the Hangar AF Complex involved separating all of the SRB segments, removing their electronic and mechanical components and their protective TPS finishes, and preparing them for buildup and assembly

at the ARF Manufacturing Building/L6-247. The buildings and structures at the Hangar AF Complex processed the aft skirts, forward skirts, frustums, TVC systems, MPSS, ETA ring, and a variety of small metal parts contained in each of the segments. The boosters' four SRMs were separated and cleaned at the Hangar AF Complex and then shipped to their manufacturer for full refurbishment. Typically, the number of people working at the Hangar AF Complex during the Space Shuttle era was approximately 150 people. It typically took these workers from two to three weeks to fully process the SRB components from the time of their arrival.

B. THE MULTI-MEDIA BLAST FACILITY

After disassembly and TPS removal, the SRB aft skirts, forward skirts, and frustums were moved into one of the facility's two blast bays. The exterior accordion-style doors were then closed. Workers used handheld blasting guns to remove the last remaining areas of TPS material and the underlying coats of hypalon paint and primer. The end result was the exposure of the segments' bare aluminum surface. The blast bays were each equipped with high-powered vacuum ventilation systems that removed all of the dust and debris from the blast bay during operations. These ventilation systems are visible on the east and south elevations of the building.

PART IV. SOURCES OF INFORMATION

A. ENGINEERING DRAWINGS AND PLANS

AJT & Associates, Inc. "Hangar AF New Multi-Media Blast Facility." Kennedy Space Center, Florida. Construction drawings, 1991.

B. SECONDARY SOURCES

Deming, Joan, and Patricia Slovinac. *NASA-Wide Survey and Evaluation of Historic Facilities in the Context of the U.S. Space Shuttle Program: Roll-Up Report*. Submitted to the National Aeronautics and Space Administration, Environmental Management Branch. Sarasota, Florida: Archaeological Consultants, Inc. February 2008, revised July 2008.

National Aeronautics and Space Administration (NASA) *NASA Facts: Solid Rocket Boosters*. Kennedy Space Center, Florida. IS-2004-09-014-KSC, Revised 2006.

NASA Facts: Solid Rocket Boosters and Post-Launch Processing. Kennedy Space Center, Florida. FS-2004-07-012-KSC (Rev. 2006).

United Space Alliance
"Marine Operations, Revision J." (John F. Kennedy Space Center, n.d.), MO-1.

"Structures Assembly Buildup Operations, Revision J" (John F. Kennedy Space Center, n.d.).

C. INTERVIEWS

Christy, Howard, RPSF Manager, Personal Communication, February 24, 2010.

Morales, Art. George C. Marshall Space Flight Center Office of the Director Shuttle - ARES Transition Office. Interview with author. September 27, 2011.

Price, David. Hangar AF Facility Manager, United Space Alliance. Interview with the author. September 27, 2011.

D. LIKELY SOURCES NOT YET INVESTIGATED

Research was conducted at KSC using primary and secondary sources. Sources that were not investigated that may contain secondary information include NASA Headquarters and at the offices of the various architects and contractors that constructed the buildings of the Hangar AF Complex.

Additional oral history interviews with other engineers and technicians could also prove useful.

V. PROJECT INFORMATION

NASA determined that the SRB Disassembly & Refurbishment Complex was eligible to the NRHP as a historic district under Criterion A in the area of Space Exploration. The Multi-Media Blast Facility was considered a considered a contributing resource to the historic district. This determination was made by NASA's "Shuttle Transition Historic Preservation Working Group" or HPWG, which looked at 335 facilities at thirteen NASA Centers.[2] As a result of this work, seventy properties were identified as either listed, determined eligible, or were potentially eligible to the National Register. Out of twelve property types identified for NASA's SSP, the SRB Disassembly and Refurbishment Complex was identified as Type 2, which includes Resources Associated with Vehicle Processing Facilities.[3] NASA completed this evaluation as the SSP was scheduled for termination in 2011.

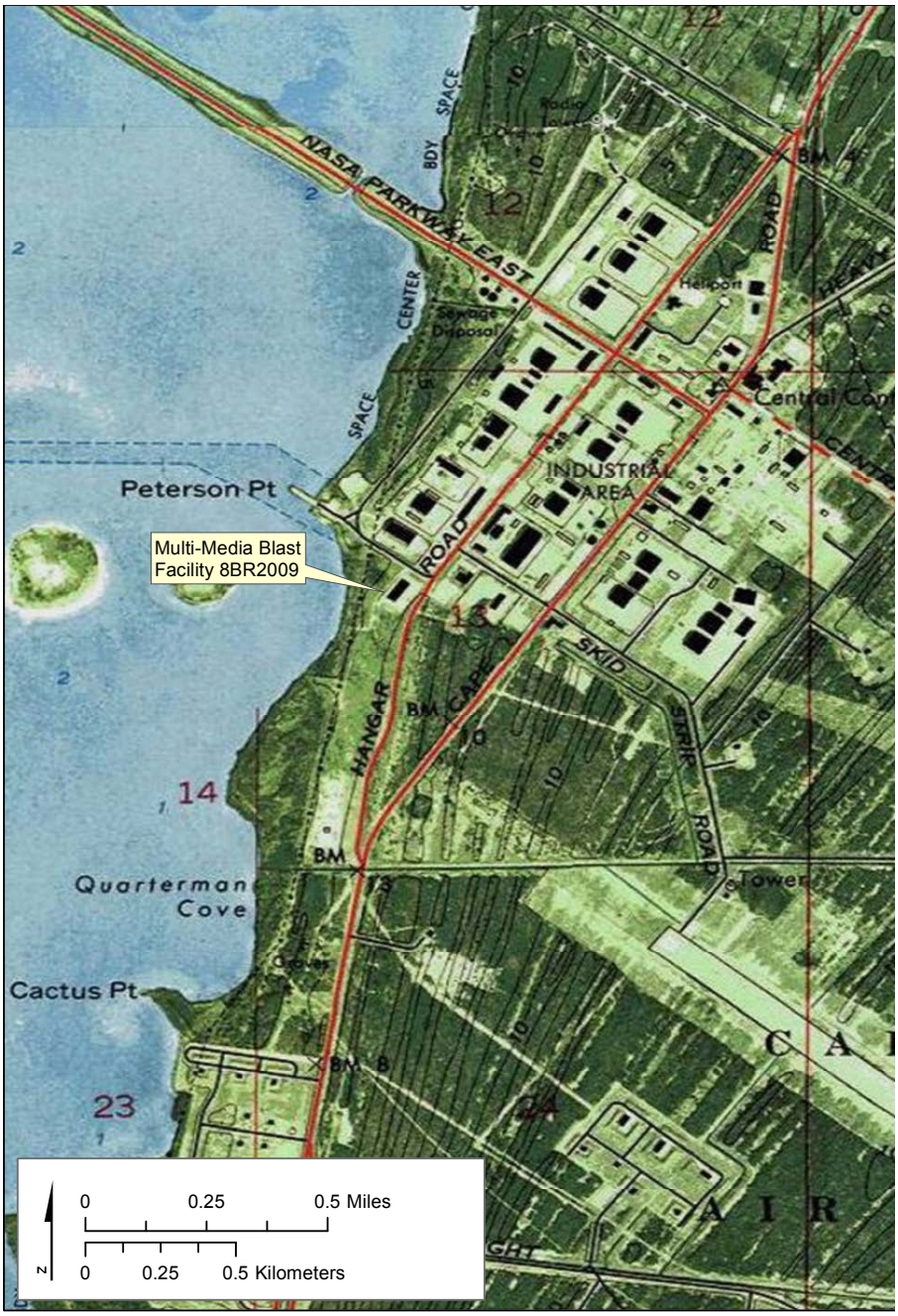
[2] Deming and Slovinac, *Evaluation of Historic Facilities, Space Shuttle Program*, 5.11.
[3] Deming and Slovinac, *Evaluation of Historic Facilities, Space Shuttle Program*, 5.11.

A Programmatic Agreement (PA) was developed to document the identified eligible resources and streamline the Section 106 consultation process. Per Section V.A of the PA between NASA, the Advisory Council on Historic Preservation (ACHP), and the Florida State Historic Preservation Officer (SHPO), dated May 2009, and the Statement of Work provided to New South Associates by KSC/InoMedic Health Applications (IHA), as part of the Task Order Contract, dated August 2011, the documentation package for the SRB Disassembly & Refurbishment Complex includes the following items: a written narrative; a series of photographs showing both exterior and interior views using large format negatives; and a selection of existing drawings, which were photographed with large format negatives. This HAER documentation fulfills the recordation requirements of the PA for the historic district.

New South Associates, under contract with IHA, a subcontractor to NASA, conducted the HAER documentation and historic research for this project in September and October 2011. Therefore, NASA is completing HAER documentation of the complex and other KSC properties to record these as they appear and as they existed during the SSP. David Diener served as the project photographer. Julie Coco served as Principal Investigator, while David L. Price served as Project Historian.

In order to complete the project, New South Associates personnel were allowed full access to the facility, under the supervision of Barbara Naylor, KSC Historic Preservation Officer, and Nancy English, Cultural Resources Specialist. Photographs were taken of each building’s interior, exterior, and context. David Price conducted a limited number of oral interviews and otherwise compiled the historic documentation required for the project. The following people were interviewed for this project: David

Price, Hangar AF Facility Manager, United Space Alliance; Art Morales, George C. Marshall Space Flight Center, Office of the Director Shuttle - ARES Transition Office; and Dave Pappalardo, United Space Alliance, TVC Technician. Elaine Liston, KSC Archivist, provided a wealth of information from her office in the KSC Headquarters Building.



Source: USGS 7.5 Minute Topographic Quadrangle Map, Orsino, FL (1976)

Figure 1. USGS Map Showing the Location of the Multi-Media Blast Facility.

Source: ESRI Resource Data, Imagery Layer

Figure 2. Aerial Photograph Showing the Location of the Multi-Media Blast Facility.

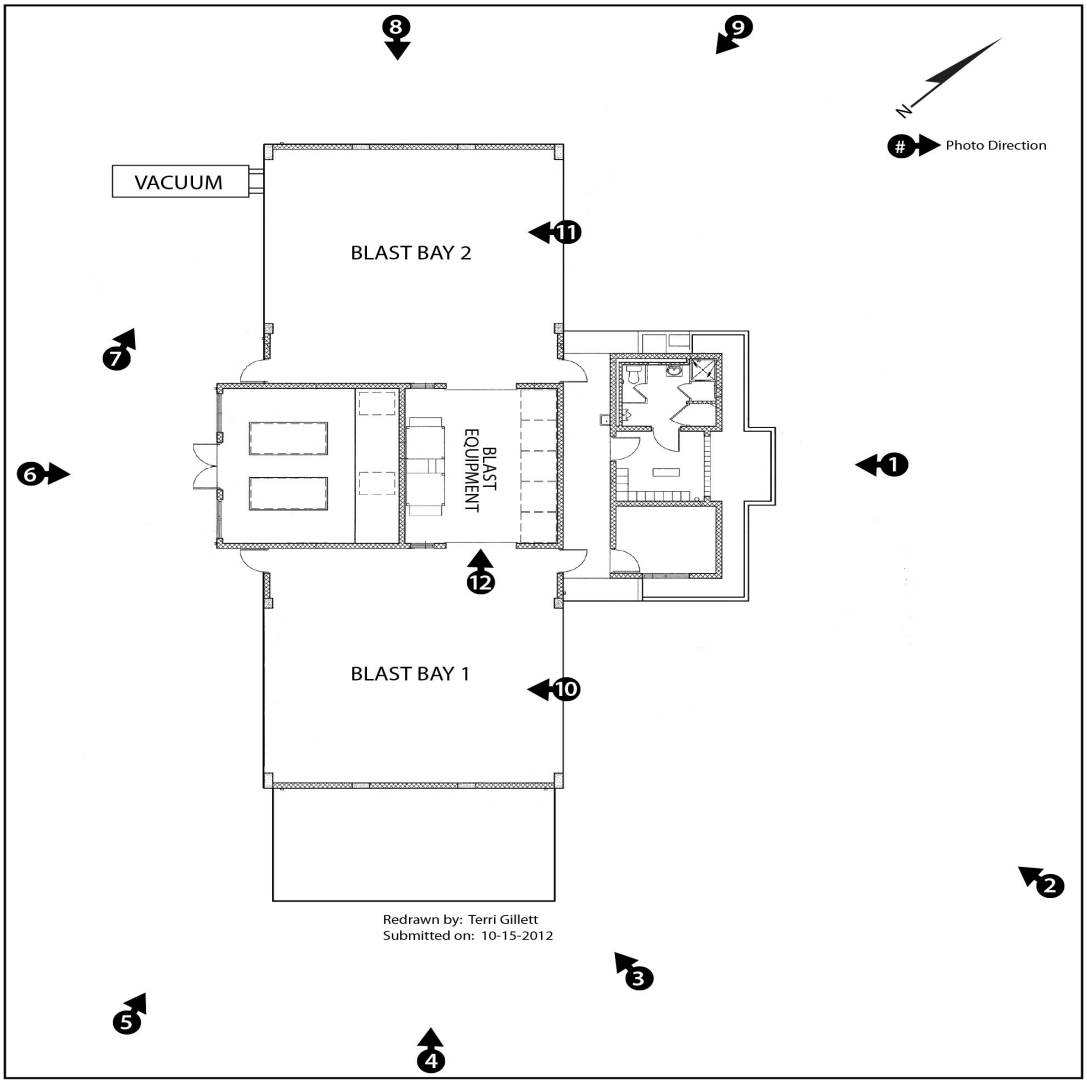


Figure 3. Photograph key for HAER NO. FL-8-11-S-7.