

**United States Department of the Interior
National Park Service**

For NPS use only

**National Register of Historic Places
Inventory—Nomination Form**

received

date entered

See instructions in *How to Complete National Register Forms*
Type all entries—complete applicable sections

1. Name

historic Redstone Test Stand

and/or common Interim Test Stand

2. Location

street & number George C. Marshall Space Flight Center not for publication

city, town Huntsville vicinity of congressional district

state Alabama code 01 county Madison code 089

3. Classification

Category	Ownership	Status	Present Use
<input type="checkbox"/> district	<input checked="" type="checkbox"/> public	<input type="checkbox"/> occupied	<input checked="" type="checkbox"/> museum
<input type="checkbox"/> building(s)	<input type="checkbox"/> private	<input type="checkbox"/> unoccupied	<input type="checkbox"/> park
<input checked="" type="checkbox"/> structure	<input type="checkbox"/> both	<input type="checkbox"/> work in progress	<input type="checkbox"/> private residence
<input checked="" type="checkbox"/> site	Public Acquisition	Accessible	<input type="checkbox"/> religious
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input checked="" type="checkbox"/> yes: restricted	<input type="checkbox"/> scientific
	<input type="checkbox"/> being considered	<input type="checkbox"/> yes: unrestricted	<input type="checkbox"/> transportation
		<input type="checkbox"/> no	<input checked="" type="checkbox"/> other: Abandoned

4. Owner of Property

name National Aeronautics and Space Administration (NASA)

street & number

city, town Washington vicinity of state D.C. 20546

5. Location of Legal Description

courthouse, registry of deeds, etc. National Aeronautics and Space Administration (NASA)

street & number Real Property Management Office Code NXG

city, town Washington state D.C. 20546

6. Representation in Existing Surveys

title National Register Inventory has this property been determined eligible? yes no

date May 13, 1976 federal state county local

depository for survey records

city, town state

7. Description

Condition

excellent
 good
 fair

deteriorated
 ruins
 unexposed

Check one

unaltered
 altered

Check one

original site
 moved date _____

Describe the present and original (if known) physical appearance

The Redstone test stand is a steel frame structure made from salvaged materials. The stand is 75 feet tall and 33 by 22 feet at its base. There is an external stair and two working platforms. An asbestos-sided gable roofed shed is found at the top of the structure.

The blockhouse for the test stand was used for observations and for receiving telemetered data during the tests. The blockhouse is constructed from three surplus chemical steel tanks covered by a mound of dirt. There are metal doors on the east side of the blockhouse, observation windows, and a roof observation post. The three tanks contain 1,500 square feet of usable space for the test engineers. The initial construction cost of the Redstone test stand in 1953 was \$25,000. The Redstone test stand is in excellent physical condition.¹

8. Significance

Period	Areas of Significance—Check and justify below			
<input type="checkbox"/> prehistoric	<input type="checkbox"/> archeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture	<input type="checkbox"/> religion
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> archeology-historic	<input type="checkbox"/> conservation	<input type="checkbox"/> law	<input type="checkbox"/> science
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> literature	<input type="checkbox"/> sculpture
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> architecture	<input type="checkbox"/> education	<input checked="" type="checkbox"/> military	<input type="checkbox"/> social/
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> art	<input checked="" type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> humanitarian
<input type="checkbox"/> 1800-1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input type="checkbox"/> theater
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> communications	<input type="checkbox"/> industry	<input type="checkbox"/> politics/government	<input type="checkbox"/> transportation
		<input type="checkbox"/> invention		<input checked="" type="checkbox"/> other (specify) Space Exploration

Specific dates 1953-1961 **Builder/Architect** U.S. Army

Statement of Significance (in one paragraph)

The Redstone test stand is the oldest static firing facility at the Marshall Space Flight Center. It was constructed by the Ordnance Guided Missile Center at Redstone Arsenal and was transferred to NASA in 1960. It was the first test stand in the United States to accommodate the entire launch vehicle for static tests (previous test stands in this country had accommodated the engine only) and was an important facility in developing the Jupiter C and the Mercury-Redstone vehicles that launched the first American satellite and the first American manned spaceflight. The test stand was also used to develop the "manrated" launch procedures vital to manned space flights and the acceptance firing criteria which were made in launch pneumatics, thrust measurement, propellant fuel procedures, and launch ignition procedures during various tests at this facility.

The basic Redstone missile for which the stand was a major test site had its origin in 1950 when the Ordnance Guided Missile Center began study of a 500-mile-range rocket. The Redstone medium range ballistic missile that evolved from a five-year research and development program was 70 inches in diameter and 69 feet long. Its power was rated at 75,000 pounds thrust.

From this test program, other versions of the Redstone evolved, including the Jupiter C and the Mercury/Redstone.

The Jupiter C was the basis for a detailed proposal for an orbiting earth satellite. This proposal designated "A Minimum Satellite Vehicle Based Upon Components Available From Missile Development of the Army Ordnance Corps," was prepared in 1955. It stated that the Army could launch a satellite within a short time using hardware then available.

After the USSR opened the space age, in October 1957, by orbiting Sputnik 1, the Army Redstone team led by Dr. Werner von Braun was directed to attempt a satellite launch. The feat was accomplished on January 31, 1958, by adding a single solid rocket motor as a fourth stage to the Jupiter C and attaching a scientific payload at its forward end.

NASA requested ten Redstones for its first manned program, Mercury. For Mercury, the Redstone propellant tank was lengthened by 6 feet (same as the Jupiter C) and the standard Redstone engine thrust was increased to 78,000 pounds thrust. This vehicle became known as Mercury/Redstone, and nine of them were tested in the Redstone test stand. Two of the Mercury/Redstone vehicles were eventually used to carry men into space. By that time, the space program had grown, and more sophisticated test sites were necessary.

9. Major Bibliographical References

See continuation sheets

10. Geographical Data

Acreage of nominated property Less than 1 acre

Quadrangle name Madison

Quadrangle scale 1:24,000

UMT References

A

1	6	5	3	0	5	6	0	3	8	3	2	1	6	0
Zone			Easting				Northing							

B

Zone			Easting				Northing							

C

Zone			Easting				Northing							

D

Zone			Easting				Northing							

E

Zone			Easting				Northing							

F

Zone			Easting				Northing							

G

Zone			Easting				Northing							

H

Zone			Easting				Northing							

Verbal boundary description and justification

The boundary of the Redstone Test Site is defined by the black circle on the accompanying map entitled "Marshall Space Flight Center, Alabama, Facilities Map."

List all states and counties for properties overlapping state or county boundaries

state	code	county	code
-------	------	--------	------

state	code	county	code
-------	------	--------	------

11. Form Prepared By

name/title Harry A. Butowsky

organization National Park Service

date May 15, 1984

street & number Division of History

telephone (202) 343-8168

city or town Washington, D.C. 20240

state

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

national state local

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

State Historic Preservation Officer signature

title _____ date _____

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I hereby certify that this property is included in the National Register

date _____

Keeper of the National Register

Attest:

Chief of Registration

date _____

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The site was phased out of the active test program in 1961 and all usable equipment removed.²

The Redstone test stand was listed on the National Register of Historic Places as being nationally significant in 1976. It was also designated as an Alabama historic engineering landmark in 1979.

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Footnotes

1. Draft Historic Properties Report Redstone Arsenal, Alabama with the George C. Marshall Space Flight Center (Silver Spring, Maryland: Building Technology Incorporated, 1983), p. 34.
2. Harry Butowsky et. al., Man in Space Reconnaissance Survey (Denver: Denver Service Center National Park Service, 1981), pp. 60-61.

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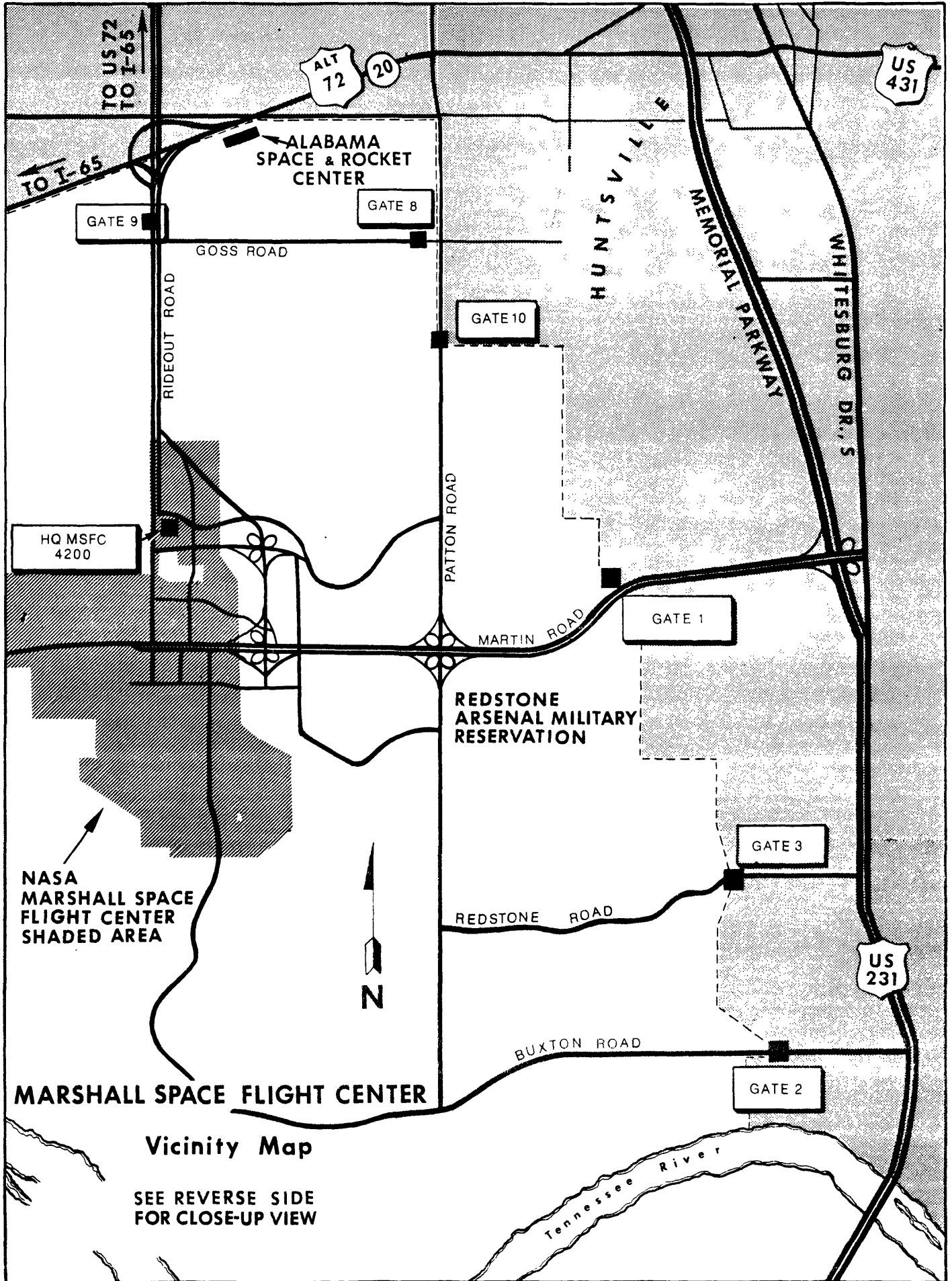
Bibliography

Butowsky, Harry A. et.al. Man in Space Reconnaissance Survey. Denver: National Park Service, 1981.

Draft Historic Properties Report Redstone Arsenal, Alabama with the George C. Marshall Space Flight Center. Silver Spring, Maryland: Building Technology Incorporated, 1983.

Floyd, Warner W. "National Register of Historic Places Inventory Redstone Test Stand." Montgomery, Alabama: Alabama Historic Commission, 1976.

Swenson, Loyd S. Jr., Grimwood, James M., and Alexander, Charles C. This New Ocean: A History of Project Mercury. Washington, D.C.: National Aeronautics and Space Administration, 1966.



MARSHALL SPACE FLIGHT CENTER

Vicinity Map

SEE REVERSE SIDE
FOR CLOSE-UP VIEW

NASA
MARSHALL SPACE
FLIGHT CENTER
SHADED AREA

MARSHALL SPACE FLIGHT CENTER, ALABAMA

FACILITIES SITE MAP

4700 AREA

- 4702 Shop Building
- 4703 Storage Building
- 4704 Hydraulic Press Fac.
- 4705 Machine Shop & Neutral Buoyancy Simulator
- 4707 Shop & Assembly Building
- 4708 Engr & Development Lab.
- 4711 Developmental Processes Lab.
- 4712 Office Building
- 4714 Mech. Equip. Building
- 4715 Storage Building
- 4716 Test Control Building
- 4723 Training Fac.
- 4727 Shop & Office Building
- 4728 Shop & Storage Building
- 4731 Storage Building
- 4732 Bisonic Wind Tunnel Fac.

- 4733 Impulse Base Flow Fac.
- 4734 Vacuum Pump House
- 4738 Fabrication Dev. Building
- 4740 Water Pollution Contr. Fac.
- 4744 Compressed Air Fac.
- 4746 Office Bldg.
- 4747 Air Compressor Bldg.
- 4752 Multipurpose High Bay Fac.
- 4755 High Bay Assembly Fac.
- 4759 Model Shop Building
- 4760 Surface Treatment Facility
- 4764 Chemical Storage Bldg.
- 4767 Heat Treatment Fac.
- 4774 Storage Building
- 4775 High Reynolds Fac.
- 4776 Experimental Acoustic Test Fac.

4200 AREA

- 4200 Office Building
- 4201 Office Building
- 4202 Office Building
- 4207 Communications Facility
- 4241 Shop & Storage Bldg.
- 4244 Storage Building
- 4249 Office Building
- 4250 Office & Shop Bldg.
- 4251 Equipment Shed

4300 AREA

- 4306 Office Building
- 4312 MSFC Security Hq
- 4313 Shop Building
- 4347 Solar Magnetograph Fac.
- 4348 Storage Building
- 4353 Photo Lab.
- 4373 Laboratory Building (Assigned to Army)

4400 AREA

- 4436 Storage
- 4467 Celestial & Optical Sensors Fac.
- 4471 Storage & Office Bldg.
- 4472 Shop Building
- 4475 Hazardous Operations Lab.
- 4476 Environmental Test Fac.
- 4478 Equipment Shed
- 4479 Storage Shed
- 4480 Paint Shop
- 4481 Space Sciences Lab.
- 4482 Transportation Support Bldg.
- 4483 Vehicle Maint. Shop
- 4485 Office Building
- 4487 Laboratory & Ofc. Bldg.
- 4490 Storage Shed
- 4491 Documentation Repository
- 4492 Elec. Sys. Lab Bldg. (On Loan to Army)
- 4493 Shop & Storage Bldg.
- 4494 Center Activities Bldg.
- 4495 Shop Bldg.
- 4498 Storage Building
- 4499 Storage Building

4500 AREA

- 4514 Propulsion Sys. Test Std.
- 4516 LOX Storage Fac.
- 4517 LH₂ Storage Facility
- 4518 Hydrogen Transfer Control House
- 4519 LOX Transfer Control House
- 4522 Propulsion Sys. Component Test Std.
- 4523 Test Stand Terminal Bldg.
- 4525 LOX Transfer Control House
- 4526 LH₂ Transfer Control House
- 4527 LH₂ Storage Tank
- 4530 Propulsion Sys. Component Test Std.
- 4540 Model Propulsion Sys. Test (Acoustic)
- 4541 Test Stand Control Bldg.
- 4549 Deionized Water Plant
- 4550 Structural Test Fac.
- 4551 Struct. Test Fac. Terminal Bldg.
- 4552 Water Reservoir
- 4553 Test Fac. Terminal Bldg.
- 4554 Test Fac. Support Bldg.
- 4557 Structural Test Fac.
- 4558 Structural Test Fac. Terminal Bldg.
- 4561 Shop & Lab Bldg.
- 4562 Water Reservoir
- 4566 Office Building (On Loan to Army)
- 4567 Pump and Boiler House
- 4570 Blockhouse and Cable Tunnels
- 4572 Propulsion & Struct. Test Fac.
- 4583 Test & Data Recording Fac.
- 4588 Cold Calibration Test Stand
- 4596 Boiler

4600 AREA

- 4605 Non-Destructive Evaluation Lab.
- 4610 Office & Engr. Building
- 4612 Materials Lab
- 4613 Compressor Building
- 4614 Atmospheric Research Bldg.
- 4618 Hydraulic Test Facility
- 4619 Structures & Mechanics Lab
- 4620 HP Pneumatic Facility
- 4621 Storage Building
- 4622 Liquid Hydrogen Fac.
- 4623 Laboratory Building
- 4628 Cryogenic Testing Fac.
- 4638 Support Building
- 4639 Support Building
- 4640 Support Building
- 4641 Support Building
- 4642 Support Building
- 4645 Hydraulic Equip. Support Bldg.
- 4646 Blockhouse
- 4647 Compressor Bldg.
- 4648 HP Test Facility
- 4649 Multipurpose High Bay Fac.
- 4650 Shop & Calibration Lab
- 4651 Shop Bldg.
- 4653 Components Service Bldg.
- 4654 Office Building
- 4655 Multipurpose High Bay Fac
- 4656 Hydraulic Equip. Dev. Fac.
- 4657 LH₂ Vaporization Fac.
- 4659 HP GN₂ Facility
- 4660 Boiler Plant
- 4663 Computer Fac.
- 4665 Historic Redstone Test Site
- 4666 Office Building
- 4667 Pump House
- 4668 Water Reservoir
- 4669 Water Reservoir
- 4670 Propulsion & Struct. Test Fac.
- 4671 Test Facility Support Bldg.
- 4672 Cryogenics Storage Fac.
- 4673 Fuel Tank
- 4674 Blockhouse
- 4678 Office & Storage Bldg.
- 4692 Cross-Connect Bldg (Assigned to Army)
- 4696 Propulsion Test Fac.
- 4697 Observation Bunker
- 4699 Structural Test Fac.

Redstone Test Stand Site
 Building 4665
 16/530560/3832160

