The White Sands Test Facility (WSTF) operates White Sands Space Harbor (WSSH), the primary training area for Space Shuttle pilots flying practice approaches and landings in the Shuttle Training Aircraft (STA) and T-38 chase aircraft. WSSH is a special airfield and operations complex built on a dry gypsum lakebed to simulate actual shuttle landing facilities in United States and overseas landing facilities. WSSH serves as a shuttle backup landing facility and was used during the landing of STS-3 Space Shuttle Columbia in March 1982.

Space Shuttle Certified Runways
The two operational runways at WSSH are 35,000 ft (11,000 m) long and 300 ft (91 m) wide. Both are marked for 15,000 ft (4600 m) with 10,000 ft (3100 m) overruns on each end. They also have an extended 300 ft (91 m) shoulder. WSSH can accommodate all NASA and most military aircraft. Aircraft as large as C-17, C-5As, B-52s, and Boeing 747s have landed there. In 1989, a third runway was constructed to allow pilots to practice transatlantic abort landings (TAL). The TAL runway is 12,800 ft (3,900 m) long by 150 ft (46 m) wide, smaller and narrower than the primary runways, and simulates the TAL runway in Ben Guerir, Morocco due to its size and markings and one end simulating an emergency landing runway.

WSSH is one of three designated abort once around (AOA) landing facilities. It is the primary AOA facility for high inclination launches (greater than 51.6 degrees) and secondary for International Space Station missions (51.6 degrees). All three runways are groomed continually for training missions, and the north-south and east-west runways are laser leveled to a tolerance of ± 1 in. (2.5 cm)/1,000 ft (304.8 m) to maintain readiness for shuttle landings. The long runways are certified to support the weight of the shuttle aircraft by using a large, specially designed load cart.

WSSH can simulate any runway configuration in the Space Shuttle Program with the following navigational aids and services:

- Microwave Scanning Beam Landing System
- Tactical Air Navigation (TACAN) System
- Precision Approach Path Indicators
- Visual Approach Slope Indicators
- Distance-to-Go Indicators
- High-Intensity Xenon Lights
- Global Positioning System Coordinates
- Sideline Indicators
- Centerline Indicators
- Approach Light Array Information

Other Projects
WSSH is used for other range projects and aircraft recovery when needed. WSSH has the equipment to handle a landing and to assist Kennedy Space Center in turnaround of Space Shuttle missions. WSSH also has all the heavy equipment and personnel to maintain the 100-sq. mi. area which makes up the facility. WSSH has an infrastructure that consists of pre-engineered metal buildings used for maintaining heavy equipment, office space, and housing the Holloman Fire Department. There are other features such as a communication system tied in to the NASA community, and personnel support from WSTF. WSSH is used jointly by White Sands Missile Range and NASA, and is governed by a joint NASA and Department of Defense agreement.

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