

GRISSOM AIR FORCE BASE, BUILDING NO. 143
(Grissom Air Force Base, Water Survival Training Pool)
Peru
Miami County
Indiana

HABS No. IN-301-A

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN BUILDINGS SURVEY
MIDWEST REGIONAL OFFICE
National Park Service
U.S. Department of the Interior
1709 Jackson Street
Omaha, NE 68102

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- Location:** Building 143, Grissom Air Force Base, Peru, Miami County, Indiana. The building is located in the northeast quadrant of the base.
- Date of Construction:** 1943
- Original Use:** Water Survival Training Pool
- Present Use:** Vacant.
- Present Owner:** Air Force Base Conversion Agency - Grissom
- Significance:** Building 143 houses the water survival training pool, which is significant for its association with World War II (WWII) Naval Aviation Cadet Training. The pool was considered one of the largest in the United States at the time. American aviation cadets used the diving platforms for staging lifeboat drills and abandonment maneuvers. Its unusually large size, coupled with the presence of two wooden platforms to simulate the height of an aircraft carrier deck, is significant for its ability to yield information about Navy survival training exercises. The building is also significant for its laminated arch construction, an important contribution to building design by the U.S. Navy during the WWII era.
- Project Information:** The recordation was prepared to satisfy a) the September 2001 Memorandum of Agreement between the Indiana State Historic Preservation Officer, as submitted to the Advisory Council on Historic Preservation, and b) the recordation requirements identified by the National Park Service, Midwest Region, Omaha, Nebraska, in a letter dated 19 November 2001. Portage Environmental, Inc., (PEI), under contract with the Air Force Center for Environmental Excellence prepared the recordation for Grissom Air Force Base Conversion Agency. Hardlines Design Company, Inc., (HDC) provided photodocumentation support under subcontract to PEI. Jeff Bates (photographer) and Mary Crowe (Historian) of HDC photographed the building in April 2002. Parker Atkins (Project Engineer) and Malini Lyman (Environmental Scientist) of PEI prepared the narrative and location map in May 2002.

HISTORICAL INFORMATION

When America entered World War II, it became necessary to immediately build a number of military bases to provide training for the armed forces. Grissom Air Force Base, formerly known as Bunker Hill Naval Air Station (NAS) (1942-46) became one of twenty-four such stations constructed across the United States in 1942-43. NAS Bunker Hill was built within a square comprised of Peru, Indiana, seven miles to the north, Kokomo, eighteen miles to the south, Logansport, twenty miles to the west, and Wabash, twenty miles to the east. Serving it is U.S. Highway 31, a fine concrete road. Indianapolis lies sixty-four miles to the south. Plans to establish a naval aviation training facility for 800 students at Peru were based on its central location with respect to various large cities, the extensive railroad net that served it, the nature of the terrain, and the fact that flight operations would not interfere with either local air traffic or that of Naval facilities.

U.S. Naval Reserve Aviation Base, Peru, was commissioned on 1 July 1942. It was renamed NAS Peru on 1 January 1943, and NAS Bunker Hill on 1 March 1943. Under Commandant Ninth Naval District, Glenview, Illinois, from 1 July to 1 December 1942, it was then transferred to the newly formed Naval Primary Training Command, itself part of the Naval Air Training Command.

The scope of the training activities at NAS Bunker Hill may be gauged from the fact that by 31 March 1945 there were 407 N2S-3, *Kaydet* aircraft and thirty-three service planes on board. Pilots studied for twelve weeks at a pre-flight school, then came to Bunker Hill NAS for an additional twelve weeks of flight training before being sent to intermediate aviation-training stations such as Pensacola. Coursework included celestial and dead-reckoning navigation, radio communication, care and repair of engines, physical fitness training that included boxing, wrestling, hand-to-hand fighting, and swimming. It trained 5,997 American Aviation Cadets, of whom 4,568 were advanced to Intermediate Flight Training, while 854 were sent to Great Lakes for reclassification. In addition, it trained 701 British Royal Navy cadets. Those who successfully completed primary flight training here were sent to other stations for intermediate training. Of the 5,582 students it handled during the course of four years, it transferred 4,177 to intermediate training, and 844 elsewhere. Pilots were trained for the Navy, Marines, and Coast Guard. One of the most famous alumni of Bunker Hill NAS is former major league baseball star Ted Williams. With the end of the war, Bunker Hill was considered expendable, and in February 1946 it was de-established, and the property was reverted to its former use as farmland.

The base was designated as United States Air Force Storage Branch on 16 November 1951, and was formally reopened as a Tactical Air Command Base on 22 June 1954, and was home to the 433rd Air Base Squadron and the 323rd Fighter-Bomber Wing. In 1955, the 319th Fighter Interceptor Squadron of the Air Defense Command joined forces at the base. The Strategic Air Command (SAC) arrived on the scene in the mid-fifties, and SAC's 8th Air Force assumed jurisdiction of the base on 1 September 1957.

In May 1959, the 305th Bomb Group and its medium bomber, the B-47 Stratojet aircraft arrived. Later that same year, the first KC-135 Stratotankers were assigned to the same unit. Two years later, Convair's B-58 Hustlers, the first supersonic bombers began replacing the B-47s. After twenty-six years of bearing the name Bunker Hill, the base was renamed on 12 May 1968 after Lieutenant Colonel Virgil I. "Gus" Grissom, a native of Mitchell, Indiana, who was one of the original seven astronauts. On 1 January 1970, the 305th Air Refueling Wing replaced the 305th Bomb Group, and Grissom became one of the largest tanker bases in the country. The Air Force Reserve became part of the Grissom community in 1971 when the 434th Special Operations Wing and its A-37 aircraft moved to the base. In 1978, a second Air Force Reserve unit was assigned to the base. At the height of its operations, the base was home to one active duty wing and two Air Force Reserve units, sixty KC-135 Stratotankers, and eighteen A-10 Thunderbolt II fighter aircraft. In 1992, the Air Mobility Command took charge of the base due to the Air Force's changes in mission. Two units (one reserve, one active duty) were deactivated in 1994. In October that year, Grissom was realigned as an Air Reserve facility and became home to the 434th Air Refueling Wing. It is only one of four such Air Reserve Bases in the nation.

ARCHITECTURAL INFORMATION

The engineering narrative of the indoor swimming pool in Building 143 is based upon the review of the August 1995 Grissom Air Force Base Historic Building Inventory and Evaluation of Building 143, available design plans submitted to the United States Navy Department, Bureau of Yards and Docks on 1 June 1943, and available rehabilitation design plans submitted by Superior Engineering Corporation to the Strategic Air Command, Grissom Air Force Base, Indiana on 20 September 1982. Building 143 was originally constructed in 1943 and was intended for use as a water survival training pool including lifeboat and abandon ship training. The pool is of an unusually large size and contains two wooden platforms to simulate the height of an aircraft carrier deck.

This 120' x 260' rectangular, two-story building was constructed on a concrete foundation and is clad in wood-grained board and batten metal siding. Two shallow shed roof wings flank the arched roof. It is connected to building 137 by a covered walkway and stairs on the east elevation. Building 143 is lighted by triple two and three pane louvered or fixed clerestory windows on all elevations except the west, where the windows were painted over. Four large metal overhead doors lead to a wading pool at the south elevation. The roof of the building is constructed of twenty laminated wood arches, which allow for a large interior clear span. The arched laminated trusses appear from original drawings to be similar to those mentioned in "World War II Temporary Military Buildings" (U.S. Army Construction Engineering Research Laboratory 1990). According to the USACERL report, the use of laminated trusses was perhaps the most important contribution to building design by the Navy during the war years.

The 75' x 150' pool has upper galleries consisting of two wooden steps on the long sides, reached by two flights of wooden stairs. The galleries lead to two platforms of wooden boards, supported by pipe scaffolding bolted to the laminated arch and to the ceiling, at the deep end of the pool. These platforms, approximately 25' high, have pipe fences surrounding them. The platforms simulated the height of an aircraft carrier deck, and were used for practicing lifeboat drills and abandon-ship maneuvers in preparation for a war that saw the first large-scale use of aircraft carriers.

In accordance with the original design plans for the 75' x 150' swimming pool dated 1 June 1943, the first floor plan of this facility measured approximately 119' x 258', or 30,702 square feet. This facility housed the 75' x 150' pool with lockers, showers, latrines, towel issue stations, a utility basement, and a balcony. The length of the pool was designed to be 164', and the width 75'. The swimming pool and foundation were constructed of steel reinforced concrete. The bottom of the deep end of the pool was constructed at an elevation of 788.47'. The shallow end of the pool was constructed at an elevation of 794.97', and the water in the pool was designed to be maintained at an elevation of 798.47'.

The 75' x 150' swimming pool was originally constructed with three diving boards, located on the north end of the facility (end opposite of the gymnasium or building No. 137). The center diving board was three meters above the water level in the pool and the diving boards on either side were one meter above the water level in the pool. The swimming pool contained six ladders for ingress and egress, which were strategically located along the length of the pool (on the east and west sides).

Behind the diving boards was a locker room measuring approximately 38'-3" x 49'-0", an equipment and storage room measuring approximately 10'-0" x 38'-3", and a chlorine room measuring approximately 8' x 10'. Stairs located in the locker room on the north east side of the facility lead down to a basement which housed a boiler room; coal bin; space heater; a water treatment system comprised of a coagulation basin, a primary filter, and a secondary filter; steam pipes; hot air ducts; return air ducts; boiler pipes; a smoke chamber; and transformers. The finished floor elevation at the bottom of the stairs in the basement was 785.8'

The coagulation basin measured approximately 20'-7 $\frac{1}{4}$ " x 12'-8" x 10.0' and was equipped with two baffles. The primary and secondary filters measured approximately 20'-7 $\frac{1}{4}$ " x 12'-8" x 10'-0", and were each equipped with two pre-cast backwater wash troughs and 12.0" drains. The coagulation basin and filters were all constructed of steel reinforced cast-in-place concrete. The boilers in Building 143 were originally coal powered until the mid-1970s. The building was connected to the base heat plant in the mid-1970s. The boiler room contained two K44-S14-LPS boilers measuring 5'-0" in diameter. The boiler room measured approximately 22'-6" x 24'-6". Adjacent to the boiler room was a room containing a fan/blower and a space heater, which measured 19'-0" x 24'-6". These rooms were all constructed of steel reinforced cast-in-place concrete.

This facility contained four showers with integral footbaths and four latrines. The showers and latrines measured approximately 9'-3" x 12'-6". Two of the showers and two of the latrines were located on the west side of the swimming pool and two of the showers and two of the latrines were located on the east side of the swimming pool. Each side also contained two locker rooms and two towel issue stations. The towel issue stations were located adjacent to each of the locker rooms in the interior corners of the main structure.

The swimming pool facility was designed with a balcony that was constructed along the length of the west side. The finished floor elevation of this balcony was 813.21'. The staircase was constructed of 1 1/8" maple treads and 3/4" fir risers. The pool was constructed inside of a Quonset style building with a 58' radius of curvature on the roof. The roof was designed as a 3-ply built-up constructed over 1.0" of insulation on a 3/4" decking material.

General lighting of the swimming pool and promenade was accomplished through the use of twenty-six 500-watt overhead lamps and twenty-six 750-watt overhead lamps. Upgrades to the swimming pool were apparently planned in the early 1980s. Engineering drawings by Superior Engineering Corporation were submitted to the Strategic Air Command, Grissom Air Force Base, Indiana on 20 September 1982 and included the addition of a wading pool, HVAC upgrades, concrete flatwork, new hot and cold water lines and drains, new doors and doorjamb, and a new roof. Heating and ventilation modifications included the installation of new supply registers and return air grilles, the installation of four new propeller ventilation fans, and the installation of new ductwork.

The wading pool and new walkway was designed to extend approximately 51'-5" to the west of the existing structure. The wading pool measured 20' x 20'. Additional foundation work included replacement of cracked concrete sections and degraded interior curbs.

Plumbing renovations included the replacement of sections of existing hot and cold water lines to the latrines and showers, the removal of all plumbing fixtures from one of the latrines and showers on the north side of the structure, capping of drains, lines, vents, etc. associated with the removal of the latrines and showers, the installation of new plumbing vents, the installation of new floor drains and related pipe, and the re-connection of waste drains.

Additional renovation work included the installation of new right and left hand doors, the installation of new door jamb, acid etching of the concrete and epoxy painting of the concrete, painting of the walls, the removal and replacement of deteriorated wall studs, and roof renovations. The roof renovations included the removal of the existing roof, the installation of a new vapor barrier, the installation of 6" batt insulation, the installation of new 3/4" plywood decking with 1" rigid insulation, and a new roof membrane. The pool was in use until 1994 for recreational purposes.

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