

U.S. NAVAL AIR STATION, ASSEMBLY & REPAIR SHOP
(Building No. 604)
East Avenue
Pensacola
Escambia County
Florida

HABS No. FL-494

HABS
FL-494

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Buildings Survey
National Park Service
Southeast Region
Department of the Interior
Atlanta, Georgia 30303

HISTORIC AMERICAN BUILDINGS SURVEY

U.S. NAVAL AIR STATION, ASSEMBLY & REPAIR SHOP (Building No. 604) HABS No. FL-494

- Location: East Avenue
Pensacola
Escambia County
Florida
- USGS Fort Barrancas Quadrant, Universal Transverse Mercator
Coordinates: Zone 16, 474323N, 335729N
- Present Owner: United States of America
Department of the Navy
Commander, Naval Installations (CNI)
2713 Mitsler Rd. SW
Suite 300 Ancostia Annex
Washington, D.C. 20373-5802
- Present Occupant: National Museum of Naval Aviation and Marine Aviation Training Support Group (MATSG)
- Present Use: Museum storage and training/classroom and office space (MATSG); however, the building is slated for demolition.
- Significance: Constructed in 1937 as the Assembly & Repair Shop, Building No. 604 played a major support role for defense preparedness prior to and during World War II, as well as for the ongoing aircraft maintenance and repair that supported training missions at Naval Air Station (NAS) Pensacola. While the architect is not known, the contractors were the Virginia Engineering Company of Newport News, Virginia, and Foster and Creighton of Mobile, Alabama. NAS Pensacola experienced a major building campaign during the mid- to late 1930s in support of the expansion of the installation's aviation training program. Building No. 604 housed 800 civilian engineers, machinists, and foundry workers who could, theoretically, repair or replace any part of an aircraft with the tools, equipment, and facilities provided. Within the building, nearly any industrial process required to repair or manufacture aircraft parts was supported. The massive, three-story, steel-frame structure encompasses more than three acres and features hangar bays with a batten seam copper canopy and large, riveted steel doors that dominate three facades and open into the service bay area. The remainder of the Moderne-style utilitarian building is clad in brick, stone, cement, and metal.
- Interior modifications to Building No. 604 began shortly after the main contractors finished the building, with the periodic addition of office and storage space, as well as improved ventilation to several of the shops. Two small exterior additions, built in 1944, housed the Cleaning Shop and Drop Hammer Shop. An exterior women's lavatory was built during this time, as well. In 1969, the Cleaning Shop and adjacent Building No. 29 were demolished prior to the construction of the contiguous Consolidated Plating Facility at the same location.

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After 1998, NAS Pensacola used the facility for museum storage. With only minor modifications to its exterior, such as the addition of the plating facility, Building No. 604 remains compatible in form, massing, scale, and materials to its original design.

Building No. 604 is located in the southeastern section of NAS Pensacola, within the boundaries of the Pensacola Naval Air Station Historic District, which is listed in the National Register of Historic Places (NRHP). The National Park Service designated this district as a National Historic Landmark (NHL) in 1976. Neither nomination clearly defines the district's period of significance; however, the text only references buildings erected prior to 1919. Because of its 1937 construction date, Building No. 604 was not mentioned in either nomination.

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection: 1937.
2. Architect(s): The original architect of Building No. 604 is not known. The 1969 addition was designed by Patchen, Mingledorff and Associates, Consulting Engineers of Augusta, Georgia.
3. Original and subsequent owners, occupants, uses: United States of America, Department of the Navy; originally built as Overhaul and Repair Shop, currently used as a storage facility for the National Museum of Naval Aviation and training support space for the MATSG.
4. Builder, contractor, suppliers: A property record card dated March 1955 lists Virginia Engineering Company, Newport News, Virginia, and Foster and Creighton of Mobile, Alabama, as contractors for Building No. 604.
5. Original plans and construction: Construction drawings, dated December 16, 1935, provide the original first- and second-floor plans, roof plan, exterior elevations, and miscellaneous sections and details of exterior and interior conditions. Also included are structural, mechanical, electrical, and plumbing drawings. Original plans for the building are on file with contractors, Hill-Griffin, at NAS Pensacola (Building No. 458), Pensacola, Florida. An entry in the Public Works of the Navy-Buildings, 1945, lists the original construction cost as \$680,972.00.
6. Alterations and additions: In 1936, prior to the completion of the building, the locations of the Dope and Fabric and Upholstery shops were reversed creating a larger space for the Dope Shop. The spray booths in the Dope Shop were reoriented to accommodate the new shop space.

Alterations to the spray pond in 1937 included new wood posts and louvers. The same year several steel wicket doors were added to different shops including the Propeller, Battery, Dope and Fabric shops.

In 1938, the Structural Engineering Log rooms in the mezzanine above the washrooms and locker rooms adjacent to the Machine Shop were extended at the north end, requiring the relocation of the north access stairs to the south end. The two mezzanine spaces located along

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the east and west walls of the cleaning space were bridged together to form one upper unit (Mezzanine 9). A new jib crane was added in the Anodic Room while a new salt bath tank measuring 13'-9-1/2" x 23'-6-1/2" was built east and adjacent to the Sand Blast Room. The taxiway to the Assembly and Repair Shop was extended to the southwest during the same year.

In 1940 a new jib crane was installed along the outside west wall in the Sand Blast Room. A 20'-0" x 80'-0" mezzanine (No. 8) constructed along the south wall of the shop stores, extended over the Wing and Woodworking Shop.

Six additional mezzanines (Nos. 1, 2, 3, 4, 5, and 7) were added to the interior of Building No. 604 in 1941 along with a catwalk constructed between Mezzanines 1 and 8. Major portions of the building sustained lighting revisions, and an extension over the transformer room provided more shop offices.

An automatic sprinkler system was installed in 1942, in addition to supplementary electric power expansion. During 1943, a swaging machine was added on the mezzanine above the shop stores. Alterations to the metal spray booth necessitated ventilation improvements.

Mezzanine 10 was inserted along the west wall of the Engine Disassembly and Cleaning Room in 1944 to create a second floor drafting room. In the same year, Mezzanine 4 was enclosed to create a shop office. Between the west side of Building Nos. 604 and 21 an exterior addition included a new Drop Hammer Shop and an extension to the Cleaning Shop.

In 1945 the addition of a hydraulic press required a new foundation in the new Drop Hammer Shop. A Heat Treat Shop with pit foundations was built at the east end of the Electroplating and Anodic Room. Mezzanine 9, at the west end of the assembly hangar was extended further. The areas between Mezzanines 1 and 8 were connected to form a larger area. Platforms, ramps, and paving were added along the west exterior wall, while stairs were added in Pylon 2.

Adjacent to the shop stores, a foundation to support a 12'-0" sheer was built in 1946. The Metal Shop received a foundation for a press brake in 1947.

In 1951, the southeast entrance received a new canopy. Plans were developed and implemented in 1952 to modernize the Alrok Shop. Mezzanine 9 received a ceiling in 1953, while a new fan platform was built in the Alrok Shop.

In 1964, new roofing consisting of 1" rigid insulation and a four-ply, built-up roof was installed on the building. The main door along the east side sustained modifications in 1966. A new helicopter transmission test facility was built in Pylon 1 on the northeast corner of the building in the same year.

In 1969, interior renovations to existing fenestration were made to the Machine Shop. A large addition on the southeast corner of building involved the construction of a two-story Consolidated Plating Facility, requiring the demolition of Building Nos. 29 and 604-A.

The Machine Shop area received a new foundation for an OM3 Omnihil metal lathe in 1970. The restrooms adjacent to the Machine Shop were also renovated at this time. In 1971 Mezzanines 1 and 8 were enclosed.

The Propeller Bonding Room received alterations in 1974. During the same year, extensive repairs that included the reconfiguration of some interior walls were made to Mezzanine 10.

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A new bridge crane was installed in the northeast corner of the building.

A new computer room was constructed in the southeast corner of the building in 1977. In 1978 a new foundation for a Numeramatic 10V machining center was built in the Propeller Room. The Manufacturing and Planning Office sustained alterations, and major building egress improvements enhanced Building No. 604 in the same year.

A computer terminal room was built inside the existing computer room in 1979. The following year, a spill containment pit was built in the southwest corner of the building. Later, a 250 lb hoist was installed in the southwest corner of the new Consolidated Plating Facility in 1983.

Building No. 604 underwent a large modernization effort in 1984. Some of the repairs and alterations included stair replacements, changes to fenestration and glazing, the installation of a new freight and passenger elevator, changes to some restrooms, and repairs to exterior walls.

In 1987, a new two-level office area measuring 67'-0" x 32'-0" was constructed adjacent to the Production Engineer Office along the south wall of the building. A hazardous waste containment was also built at this time. Two years later, in 1989, a new stretch press foundation was constructed.

B. Historical Context:

INTRODUCTION

The U.S. Navy established NAS Pensacola (then called Naval Aeronautic Station Pensacola) in 1914, choosing as its site the old Pensacola Navy Yard, already steeped in its own long military history dating back to early Spanish occupation in 1698. Although European nations fought for control of the region because of the strategic value of the Pensacola Bay, and the U.S. Naval Yard stood on the site for eighty-six years, the naval station's most profound legacy is associated not with maritime traditions, but with aviation. The naval aeronautic station that eventually became NAS Pensacola was tasked with creating the Navy's first aviation program at a time when manned flight was scarcely a decade old. At first, the fledgling program vied with the Army's early aviators in logging spectacular (and sometimes fatal) flight records, training a select handful of military pilots, and improving on the simple mechanisms of the earliest airplanes. When, during the first months of the new station's existence, pilots demonstrated that they could take off and land from the deck of a ship, a unit was dispatched to the United States' intervention in Mexican Revolutionary activities at Veracruz. After successfully operating reconnaissance missions from the USS *Mississippi* and sustaining the first mark of rifle fire from combat experienced by military aviators, the future of naval aviation was assured. The flight school at Pensacola became the premier training ground for naval pilots in the United States. Additional training courses at NAS Pensacola multiplied rapidly, and the program provided hundreds of pilots and thousands of trained technicians for World War I. The arrival of the first aircraft carriers in the 1920s further enhanced the possibilities for aviation at sea, and training programs at NAS Pensacola evolved rapidly to keep pace with new developments. The station, improved and augmented through increased defense spending and New Deal public works programs in the late 1930s, was able to provide the Navy with a steady stream of pilots and other trained personnel to meet the demands of World War II. Today, NAS Pensacola continues to lead the Navy's flight training program, and it anchors the Pensacola community.

NAS Pensacola's physical plant has changed constantly to reflect its evolving mission. The current station incorporates remnants of the early Spanish forts, as well as the core of the old Pensacola Navy Yard complex, now listed as an NHL. In addition, the station retains structures from every major building period, all reflecting NAS Pensacola's important role in military history. One factor governing development at the station has always been the damaging hurricanes and windstorms that rise from the Gulf of Mexico and periodically strike the base, damaging buildings and infrastructure, and necessitating extensive repairs or rebuilding. The phases of construction related to storm damage are also evident in the structures present at the station today. This historic overview provides the background for placing Building 636 within a national, regional, and local context.

Building No. 604 was completed in 1937 as the Assembly & Repair Shop at NAS Pensacola. Its construction was a direct result of the Vinson Trammell Act of 1934, which authorized a major buildup in the number of ships, aircraft, and service facilities in the U.S. Navy. This effort was a preliminary step to the much greater buildup of forces prior to the United States' entry into World War II. According to plans prepared in 1935 by the Bureau of Yards and Docks (BuDocks), the vast, 436,806 square foot Assembly & Repair Shop was devised as a self-contained industrial plant for everything having to do with the upkeep and repair of aircraft, staffed by civilian employees. Although no aircraft were manufactured at NAS Pensacola, numerous specialized shops were needed to repair, maintain, and improve the Navy's landplanes and seaplanes. Building No. 604 continued in use as the heart of the Assembly & Repair (A&R) Department, renamed Naval Air Rework Facility (NARF) in the 1960s, until the 1990s.

EUROPEAN SETTLEMENT AND FORTIFICATION IN THE PENSACOLA BAY AREA

NAS Pensacola occupies a peninsular spit of land projecting eastward into the broad Pensacola Bay in Escambia County, Florida. Entry to the bay from the Gulf of Mexico is protected by Santa Rosa Island and Perdido Key, forming an ideal defensive arrangement exploited as early as the seventeenth century by the Spanish, followed by French, British, and American forces. The first permanent settlement and military fortification in the immediate area was Fort San Carlos de Austria, built in 1698 by Spanish troops under the direction of Andrés de Arriola. Arriola maintained that the Gulf of Mexico—a vital link in the trade routes between Europe and Spanish colonies in Peru and Mexico—would be controlled by the nation that held the Bay of Pensacola.¹ The simple, wood-and-earth fort stood until 1719, when it fell to invading French forces.

Domination of the Pensacola Bay alternated between Spanish and French forces during the following decades, during which the Spanish also built a small fort on Santa Rosa Island. After winning control of Florida following the French and Indian War, the British arrived at Pensacola Bay in 1763 and completed a new palisade fortification in 1771 to protect the growing town of Pensacola, just north of the military site, then called the Royal Navy Redoubt. A decade later, in 1781, the Spanish again regained control of the site, renaming the British palisade Fort San Carlos de Barrancas. This time, they fortified the entrance to the bay more securely, constructing Bateria San Antonio (San Antonio Battery) in 1797—a solid brick water battery of semicircular shape designed as a gun emplacement facing the bay.² The Spanish remained in control of the Pensacola Bay area, despite skirmishes with the British and with American forces led by Andrew Jackson in 1814, until 1821, when Spain finally ceded Florida to the United States via the Adams-Onís Treaty (*Figure 1*). Andrew Jackson presided over ceremonies in the Plaza of Pensacola on July 17, 1821, celebrating the surrender of the territory by the Spaniards. Jackson then dispatched four army infantry companies to Fort San Carlos and the San Antonio Battery, marking the first occupation of the site by U.S. military forces.³

THE U.S. NAVY YARD AT PENSACOLA

The creation of the Territory of Florida by act of Congress on March 30, 1822, with Pensacola as the seat of government, replaced the interim government created by Jackson.⁴ A Florida Legislative Council, formed to promote the interests of the new territory, quickly moved to petition the U.S. Senate and President James Monroe for new fortifications on the Pensacola Bay, to include a naval station at Pensacola. Both the president and Secretary of the Navy Samuel Southard approved the plan, agreeing with the recommendation of the Senate Committee on Naval Affairs that the coast of Florida was the ideal site for a new naval depot. Southard commented that such an installation was “indispensable for the economical and efficient management of that portion of our navy which is employed in the West Indies and Gulf of Mexico.”⁵ Despite recommendations by the Board of Naval Commissioners to await the results of engineering studies on potential Gulf Coast sites, by March 3, 1825, both the House and Senate approved a bill authorizing construction of a navy yard at Pensacola. Objections to the Pensacola Bay site voiced by some military authorities included the shallowness of its channel, which precluded passage by some larger vessels, and its vulnerability to attack from the mainland. Notwithstanding these arguments, a party of three officers, including Commodore Lewis Warrington, Captain James Biddle, and Captain William Bainbridge, embarked for Pensacola in autumn 1825 to select the best location for the new navy yard. After surveying the bay and surrounding area, the three officers confirmed the depth of the channel at a consistent 21’-0”, and identified a point near Fort Barrancas, already owned by the U.S. government, as the ideal location.⁶

President John Quincy Adams approved the site selected a day after the report was delivered to him on December 2, 1825, and assigned Commodore Warrington as the first commandant of the Pensacola Navy Yard. Warrington arrived back at Pensacola in April 1826, and construction was soon underway. Construction materials, however, were difficult and expensive to acquire, as was skilled labor. Both had to be brought from the east at inflated prices, although southern slaves apparently provided menial labor at a lesser charge. Due to the high cost and delay in acquiring men and materials, as well as the onset of yellow fever epidemics in summer 1826 and 1827, construction proceeded slowly, and most facilities were left in a primitive state for some time.⁷

The most urgent need was for a fully equipped hospital. A contractor from Boston charged with building the new wharf, Samuel Keep, complained that yellow fever patients were being cared for in “...a little house called by that inappropriate name, hospital...If the yellow fever comes to the Yard I shall not remain here unless I am absolutely obliged to do so.” Although the old Fort Barrancas hospital had been pressed into service, it was rapidly disintegrating, and the new commandant arriving in September 1826, Melancthon T. Woolsey, was forced to rent a two-story wood house near Fort Barrancas to serve the sick of the depot and of the West India Squadron.⁸ The yard’s surgeon, Dr. Isaac Hulse, also worked to pressure lawmakers to provide a better facility for the squadron’s increasing number of sick seamen. Although a hospital was under construction by November 1828, lack of funding kept the work from proceeding. In a letter to Florida Congressman Joseph White, Hulse admonished that “...it is impolitic, as well as inhuman in a government to neglect [the needs] of its servants.”⁹ By summer 1828, construction had almost ceased at the yard, due primarily to a halt in funding engendered by new hopes of peace with the European forces that had so long beleaguered the Gulf.

Lacking even the most basic facilities needed for the comfort and health of the squadron, the navy yard was even less equipped to address its shipbuilding and repair needs. By the 1840s, the yard still had no permanent wharf, no dry dock, few workshops and even fewer skilled workers. Construction of the yard’s infrastructure continued on a piecemeal basis, without any general plan of development, halting every

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summer when workmen returned to the east to avoid yellow fever, and whenever the scarce funds allocated by Congress were used up. "The decline in piracy and slave running had largely removed the need for a fleet to suppress such operations and had undoubtedly influenced congressional decisions on appropriations for Pensacola. Moreover, the West India Squadron was renamed the Home Squadron in 1841, and its cruising ground was extended farther into the Caribbean Sea and Atlantic Ocean. Consequently, ships of the Home Squadron could make the larger and more adequate navy yards on the East Coast as easily as Pensacola."¹⁰

While the Pensacola Navy Yard stagnated, it was at least well defended. Between 1829 and 1859, the Army completed four defensive forts to protect Pensacola Bay. Fort Pickens stood on the extreme western tip of Santa Rosa Island, with Fort McRae on the western shore directly opposite. Fort Barrancas was built to the north, on the site of the old Fort San Carlos de Barrancas and next to the San Antonio Battery. The Advanced Redoubt to the north occupied the highland site that dominated Fort Barrancas. Most of the construction was supervised by Major William Chase, a U.S. Army engineer, who persevered in his task despite suffering the same scarcity of materials, manpower, and funding experienced at the navy yard. It would appear that the defensive forts benefited from a comprehensive design by the U.S. Corps of Engineers.¹¹

Annual Reports from BuDocks to the secretary of the Navy reveal the slow struggle waged by the station's commandants against weather, yellow fever, contractors, and financial deficits. On November 19, 1844, the BuDocks Report took an optimistic tone on the progress of the navy yard:

At Pensacola, the sum of \$166,708 was granted at the last session of Congress for the commencement of works of importance, and for the purpose of gradually enabling that establishment to afford repairs and supplies to the vessels standing in need of them and to place it, as rapidly as circumstances permit, in a situation to become the secure resource of the navy in that quarter....A plan of the yard has been prepared and approved; and, as soon as materials can be procured in a sufficient quantity, the works will be commenced, and the yard have an organization corresponding with that of the others, by the employment of additional master mechanics, with the necessary workmen and laborers.¹²

An act of Congress dated July 1, 1844, authorized construction of the permanent wharf, although little action seems to have been taken afterward.¹³ Additional requests between 1842 and 1845 included such basic conveniences as officers' quarters, a permanent wharf, and a system of supplying fresh drinking water.

When the Mexican-American War broke out on May 11, 1846, Pensacola was the closest naval establishment to the blockading Home Squadron at Veracruz, 900 miles away. Without a dry dock, the yard was unable to provide more than minor repairs to vessels, and had little food, water, or other goods on hand to supply the ships. A yellow fever epidemic in the squadron sent hundreds of diseased sailors to the Pensacola Naval Hospital, which struggled to support such a burden.¹⁴ The deplorable condition of the only Gulf Coast naval station finally caught the attention of the public and, more importantly, the legislators who could act to fund its improvement.

CONSTRUCTION AND DESTRUCTION IN THE LATE NINETEENTH CENTURY AT THE PENSACOLA NAVY YARD

From 1847 through the 1850s, the Pensacola Navy Yard was abuzz with new activity. BuDocks requested funds for vital infrastructure, such as paving of roads, grading and leveling the yard, adding rail tracks to ease the movement of machinery, and finishing the permanent wharf. The station's commandant was also forced to ask for funds to repair the buildings that were already disintegrating because of the humid climate or poor maintenance.¹⁵ By 1853, a dry dock, a basin for loading and unloading ships, and a railway were in place; in 1856, dredging and the construction of a deep basin for larger ships was accomplished, although the permanent granite wharf was still unfinished. In 1858, shipbuilding finally began at the Pensacola Navy Yard, despite the lack of some important resources, such as a wet basin and fully functional foundry. Two sloops of war, the *Pensacola* and *Seminole*, were launched from the yard in 1859, marking the depot's coming of age after twenty-five years of struggle.¹⁶

Just as the Pensacola yard was attaining the status of a truly functioning maritime facility, the Civil War put an end to its progress. When Florida seceded from the Union in January 1861, the seventy-man federal garrison at the naval installation was faced with defending itself using only a few operable guns. Therefore, when more than 600 Alabama and Florida troops arrived at the Pensacola Navy Yard on January 12, 1861, Commandant James Armstrong surrendered the yard to the Confederates. The company garrisoned at Fort Barrancas was able to quickly move all men and supplies across the bay to Fort Pickens, which they defended throughout the war, even bombarding the Confederate forces at the navy yard and causing considerable damage in winter 1862. When the Confederates evacuated the area on May 9, 1862, they burned the navy yard to the ground.¹⁷ The BuDocks report to the secretary of the Navy on November 4, 1862, states:

The yard at this place has also been repossessed by the government, but, like that of Norfolk, was found a mass of ruins, the buildings having been burnt and every effort made to destroy all the government property....A statement of the bids received and contracts entered into by this bureau, for the fiscal year ending June 30, 1863, will be presented at as early a day as practicable.¹⁸

In fact, little progress was made in rebuilding the navy yard in the following years. The BuDocks Report to the secretary of the Navy for 1864 reads in part:

This yard was also almost entirely destroyed by the rebels, and thus far but little has been done to restore it to its former condition. Some small amount of machinery has been erected to meet the most pressing want of the Gulf Squadron, and it is now proposed to repair a few of the buildings for the accommodation of the officers, stores, &c. . . .¹⁹

After the termination of the conflict, BuDocks encouraged the secretary of the Navy to fully repair the station, which was needed by the Gulf Squadron. However, by 1869, the chief of BuDocks advised the secretary of the Navy that he found the location of the Pensacola Navy Yard "objectionable" due to its exposure to long-range guns from outside the harbor. "The great importance of having a well-equipped yard on the Gulf of Mexico suggests that, before heavy expenditures are made toward reconstructing the yard, it is worth while to institute an examination to ascertain if some more favorable location cannot be found."²⁰

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Although the Pensacola installation was not abandoned, work to repair the damage of the Civil War was again slowed by poor funding and an ambiguous status within the Navy. Appropriations were too small to permit large-scale building, although work on the commandant's quarters did continue. Commandant Woolsey was even permitted a trip to New York accompanied by the architect of BuDocks to choose prefabricated windows, doors, and other accessories for his new home. The other officers' quarters, however, consisted of the brick kitchens of the old quarters destroyed during the war, with makeshift second-story additions and galleries added. One visitor to the yard in 1881 called the lower floors of those quarters "uninhabitable."²¹ Although deemed important as the only Gulf Coast naval base, its poor equipment and isolation from East Coast materials and workers, added to its various faults of location, endangered the very existence of the yard. An act of Congress closed it on March 3, 1883, pending further investigation by the Navy. Basic maintenance on the public property was performed during its 17-year hiatus from active service.²² Although no new work was performed at the yard in 1898, the Spanish-American War of that year once again focused attention on Pensacola, and by 1900 the navy yard reopened with new energy.

The BuDocks Report of October 1, 1901, provides a summary of the Pensacola Navy Yard's status at the time:

Very few works of improvement have been made at this navy-yard since the civil war. At the time of the Spanish war, when it seemed probable that considerable service might be required of this yard, several appropriations by way of repairing and improving the buildings, wharves, dredging, and construction of better coaling facilities were made. The improvement of navigation from the Gulf to the yard has bettered the situation at this yard considerably, and the meager accommodations upon the Gulf coast have appeared to require better facilities for work at this station in case of emergency. Also, the board upon storing torpedo vessels has recommended that the yard be availed of as a site for one of the plants for housing such vessels....This is the only station of this kind recommended by the Board for the Gulf coast, and it is believed that provision should be made for storing a portion of those vessels in these waters.²³

In 1902 a new floating dry dock was purchased from Spain and hauled to the navy yard, and in 1905 the base served as a rendezvous point for all U.S. squadrons participating in training in the Gulf of Mexico.²⁴ Despite the positive outlook, unforeseen circumstances once again took their toll on the Pensacola Navy Yard. A massive hurricane struck the Florida Panhandle on September 26, 1906, severely damaging the yard's infrastructure and most buildings. The new dry dock was damaged, and the older, smaller dry dock was completely destroyed, incapacitating the yard's repair functions. Worse still, very limited funds were made available for the rebuilding of the yard due to the financial obligations associated with the brand new Navy base at Guantanamo Bay, Cuba. Although some new structures were built in the years following the hurricane, the Pensacola Navy Yard was officially closed on October 20, 1911 (*Figures 2 and 3*).²⁵

THE CRADLE OF NAVAL AVIATION: NAVAL AERONAUTIC STATION PENSACOLA, 1914-18

The closure of the Pensacola Navy Yard provoked consternation in the town of Pensacola, whose residents still valued the yard for the jobs it provided and the income gathered from its activities, as well as for the sense of pride they felt at hosting a U.S. naval installation. Furthermore, the impending completion of the new Panama Canal held the promise of increased military and commercial activity in the Gulf of Mexico. In fact, while it was officially closed, the yard continued to host U.S. Marines performing experimental testing with torpedoes in the Pensacola Bay in 1913.²⁶

But while Pensacola's citizens fretted over the fate of the old navy yard, Navy officials looked toward a growing field of expertise that would soon revitalize the old base—naval aviation. Although wary of the experimental new technology, the Navy made tentative steps toward investigating the military applications of aviation by sending Annapolis graduate Lieutenant T. G. Ellyson to learn to fly with airplane manufacturer Glenn Curtiss at his Aviation Camp in San Diego, California, in December 1910. While at the camp, Ellyson assisted Curtiss in outfitting the first "hydroaeroplane," designed to take off and land from the water's surface. The Navy participated in these tests by providing the armored cruiser *Pennsylvania* to hoist the plane aboard after landing. The same month, civilian Eugene Ely was able to successfully take off from the deck of the *Pennsylvania*, proving that airplanes could easily be adapted to serve the Navy in conjunction with maritime vessels. In March 1911, a preliminary appropriation of \$25,000.00 was made for the establishment of the Navy's first aviation installation at Annapolis, Maryland.²⁷

With just a handful of planes and trained pilots in 1912 and 1913, plus a few enlisted mechanics, the aviation camp bounced between Annapolis and training locations including San Diego, California, and Guantanamo Bay, Cuba. Aviators took advantage of Curtiss' offer to train one pilot for each airplane sold to the Navy, thus increasing the ranks of aviators until an official training program could be started. The experimental and record-breaking flights accomplished by the Annapolis pilots impressed Secretary of the Navy Josephus Daniels enough to appoint a board to create plans for the first Naval Aeronautic Service in 1913. Within weeks the board of officers responded with a recommendation of the old Pensacola Navy Yard as the site for a new naval aeronautic station, and suggested an appropriation of \$1,297,700.00 to implement the program. Once approved by Secretary Daniels, the Annapolis aviation group once more packed up their camp to move to Pensacola, arriving on January 20, 1914. The unit, consisting of "nine officers, twenty-three enlisted men, seven aircraft, and portable hangars and other gear...arrived at Pensacola on board the battleship *Mississippi* and the collier *Orion* to establish a flying school. Lieutenant John Towers was in charge of the unit, and Lieutenant Commander Henry C. Mustin commanded both the *Mississippi* and the aeronautic station."²⁸

Although the Pensacola Navy Yard had officially been closed since 1911, it had not been totally abandoned as previously mentioned. Less than two months before the arrival of the *Mississippi* with her cargo of aviators, 856 Marines had temporarily occupied the yard while performing torpedo exercises in the Pensacola Bay, and "...a considerable amount of work was done adapting buildings and quarters for their use." Several hundred Marines stayed on at the new aviation camp for training until at least 1915.²⁹ Nonetheless, upon his arrival, Lieutenant Commander Mustin reported that the beach was littered with stones, driftwood, and piling, and needed extensive work to clear it for the use of flying boats. In addition, he reported that, "the buildings in general are dilapidated and disreputable in appearance inside and outside."³⁰ Lacking adequate housing on base, the aviation unit made their home aboard the *Mississippi* and turned their attention to the work at hand. After clearing the beach, the men erected ten temporary canvas hangars along the beach, each with an individual wood runway extending down to the water to ease the planes over the thick sand. In less than two weeks, aviators made the first flight at the new aeronautic station.³¹

The first months at the station were fraught with excitement and novelty, especially for Pensacolians who witnessed the first flights over the Pensacola Bay. Within weeks, they also witnessed the base's first aviation fatality when Lieutenant J. M. Murray crashed into the bay in a Burgess D-1 flying boat on February 15, 1914. The following month, five submarines and two transport ships from the Atlantic Fleet arrived in the bay for extended operations with the aviation unit to determine visibility of the submarines

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from the air. Later in the spring, nineteen destroyers converged on the former navy yard in response to rising tension with Mexico, which was suffering revolutionary upheaval. On April 21, 1914, a detachment from the Pensacola station, commanded by Lieutenant P. N. L. Bellinger, was sent aboard the *Mississippi* to assist American forces in seizing the Customs House at Veracruz, Mexico. Another detachment was dispatched to Tampico. At Veracruz, Pilot Bellinger, with three students and two airplanes, formed a unit that proved useful, flying observation missions daily over the city and attempting to locate the camps of enemy attackers. Bellinger even came under fire while flying low, and his plane bore the first marks of naval aviation combat.³² Soon after the detachment's return to Pensacola, the handful of officers and students settled into their new home, and the base was officially designated as the Pensacola Naval Aeronautic Station (NAS) on July 1, 1914.³³

As Pensacola NAS's officers worked to develop a more extensive pilot training program, they also labored to improve the base and its equipment, constructing permanent facilities to replace early temporary ones. With a complement of nine officer-pilots and almost fifty enlisted men, the aviation school had a limited number of aircraft for use in training pilots and mechanics. According to a Navy historian in 1930, "The equipment of the Aviation School, at this time, consisted of 3 old Curtiss flying boats, 3 new Curtiss flying boats, 2 Curtiss pontoon-type planes, and 1 Burgess flying boat."³⁴ In the Annual Report to BuDocks for 1915, Commandant Mustin reported:

During the year, the establishment and operation of the Station as an Aeronautic School were carried forward. The quarters were occupied by Naval Officers and a start was made at placing the shops in operation...There is no space on the reservation suitable for operation or practice with land aircraft. It is proposed to clear, grade, and surface the area North of the Navy Yard wall, and East of the electric railway; clearing out such residences and buildings [in the nearby town of Woolsey] as may be necessary, and extending on the water front so far as is practicable.³⁵

Major hurricanes were reported on July 5, 1916, and October 18, 1916, both reaching wind speeds of over 100 miles per hour and causing extensive damage totaling \$420,000.00 for repair or replacement of government property.³⁶ America's declaration of war on Germany on April 6, 1917, however, ensured that the station received full funding for damage repair, new construction, and the enhancement of its training programs. At the advent of direct U.S. participation in World War I, the Pensacola station was the only naval aviation facility in the country. In 1921 Navy historian Earle Corliss wrote a detailed inventory of the early station: "Its facilities, though efficient, were limited, consisting of three seaplane hangars of steel construction, a brick structure used as a hangar, an airship shed mounted on a barge (capable of accommodating a small type of nonrigid craft), and a few service buildings."³⁷ In addition to the hangars and shops needed for aviation training, new structures were built for the new "lighter-than-air" dirigible program, and to accommodate maritime supply vessels and other ships visiting the port.³⁸ By the end of the war in November 1918, over 100 new buildings had been erected and four temporary camps established outside the bounds of the station to serve the needs of the growing training programs. A major extension to the original navy yard was made to the north, in compliance with Commandant Mustin's recommendation. In addition, Camp Bennett to the west, Camp Mustin to the south, Camp Saufley on Santa Rosa Island, and Camp Bronson north of Pensacola, were all established either to house and process incoming recruits or to serve as training grounds.³⁹ A 200'-0" observation tower was erected, and most of the hangars on the beach were painted in camouflage patterns to avoid detection by the enemy. Including a completely new 300-bed hospital unit with independent water and sewerage system, expenditures for building and maintenance for Fiscal Year 1918 amounted to the staggering sum of \$2.6 million.⁴⁰

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With the war effort came ever increasing demands for more naval pilots and mechanics, necessitating changes in the training programs offered at NAS Pensacola (the aeronautical station was officially designated as Naval Air Station Pensacola in December 1917). Both elementary and advanced flight training were provided to officers until May 1918, when NAS Pensacola switched to providing only advanced flight training. "The mission of the station had changed from teaching beginners how to fly to teaching flyers how to fight in the air."⁴¹ In fact, most naval aviators serving in Europe spent their missions patrolling coastlines for mines and submarines, and bombing submarine bases.⁴² Training had changed for enlisted men, too. A historian commented in 1930:

In the early era of the Station each enlisted man was expected to be a jack-of-all-trades. He was expected to know something about such diversified things as motors, rigging, blacksmithing, balloons, and beach work. Naturally, with the widening of the scope of the Station's mission, schools were established to teach the men to be specialists in one given occupation.⁴³

To meet the demands of war, NAS Pensacola established new schools for carpenter's mates, radio operators, instrument men, machinist's mates, and specialized mechanics. Between April 1917 and November 1918, the station churned out 5,382 air "mechanicians." During the same period, 921 naval aviators trained at the station, plus sixty-three dirigible pilots and fifteen free balloon pilots.⁴⁴ The pace of training accelerated even more rapidly in the final months of the war, when pilots were urgently needed in Europe. In the final frenzied nine months before peace was declared in Europe, NAS Pensacola witnessed eighteen student deaths from crashes and twenty-four serious injuries.⁴⁵ Despite the losses, naval aviation had made enormous strides in an incredibly short amount of time, proving itself effective in both combat and observation duties. The station itself reflected the new specialization taking place in naval aviation, with many new shops, hangars, and classrooms to meet the needs of the more varied training programs (*Figure 4*).

DEMOBILIZATION: 1919-35

The population at NAS Pensacola plummeted quickly after the end of World War I. Within months, approximately 5,000 Pensacola servicemen were discharged, leaving much of the station vacant. The Annual Report to BuDocks in June 1920 stated that Camp Bennett had been closed; buildings at Camp Mustin were being used for storage of equipment from other stations; and the buildings at Camp Saufley were deteriorating from disuse. Some structures built especially for the war effort were allowed to disintegrate, since reduced funding limited maintenance capabilities.⁴⁶ Many legislators were reluctant to fund naval activities in the post-war climate of disarmament and demilitarization. Furthermore, factions within the Navy, itself, argued over the role of aviation in naval warfare, which depended upon the success of aircraft carriers over traditional battleships. When the USS *Langley* was converted to an aircraft carrier and sent to Pensacola for testing in 1922, the station's future looked bright. Nonetheless, the 1920s were characterized by a lack of direction within the Navy, perhaps characteristic of the United States' own confusion over its role in the world. Throughout the decade, the aviation school at NAS Pensacola dealt with low reenlistment and few new applicants, and even allowed enlisted men to train as pilots (the term Naval Aviator remained reserved for officers). The Navy tinkered constantly with the program to try to increase the number of aviators graduated annually, with disappointing results. Although 100 students completed the course each year by 1925, only half that number actually passed their flight qualification tests.⁴⁷ Officials were reluctant to simplify the tests, however, for fear that the already excessive accident rate would increase as a result.

In the 1920s, the concept of dedicated aircraft carriers began to revolutionize naval aviation. Instead of taking off and landing in water, aircraft could begin to rely on carriers as a home base, with more extensive runways than earlier battleships had provided for planes. Furthermore, new landplanes with increased flying range enabled pilots to make extended forays over land to carry out a variety of missions. Therefore, landplane training was added to NAS Pensacola's curriculum in 1922. With the landplanes came a new system of outlying fields radiating from the naval air station. These fields provided the extra space for take-off and landing required by conventional landplanes, and relieved congestion in the air caused by growing numbers of student pilots in training. Since the dirigible program had been cancelled, the former dirigible and balloon field, Station Field (later called Chevalier Field), was enlarged and re-sodded in 1923 to accommodate landplanes. It was enlarged again in 1926.⁴⁸ Another landing field was carved out of the town of Woolsey to the north of the station and named Corry Field. Problems with the lease on Corry Field, however, caused the Woolsey airfield to be abandoned, and a new 250-acre Corry Field, donated by the residents of Escambia County, was located approximately three and one-half miles northwest of NAS Pensacola.⁴⁹

The geographical problems that had plagued the old navy yard for almost a century did not present a problem for the workings of the air station, but the base once again suffered from the effects of violent weather in the Gulf. The Annual Report for 1927 described the most recent devastation:

On September 20, 1926 a tropical hurricane of great intensity struck this station. This storm involved wind velocities of 110 miles per hour from the northeast with gusts much higher than this and it was accompanied by a rise in tide of 8 feet 4 inches above mean high tide, resulting in complete inundation of practically the entire station, and great damage to Public Works and Public Utilities.⁵⁰

Repair and rebuilding began once again, and in 1929 Assistant Secretary of the Navy for Aeronautics David Ingalls testified before the House Appropriations Committee, recommending a \$5 million "re-organization and re-modernization" of NAS Pensacola.⁵¹ Although the onset of the Depression prevented the immediate implementation of the planned project, steps were taken to prepare the base for expansion. In 1930, the town of Warrington, established just west of the old navy yard in the nineteenth century, was razed to make room for a planned airfield, and to allow the station to continue growing to meet its training goal.⁵²

MOBILIZATION AND WORLD WAR II

After suffering budget cuts that effectively crippled the aviation training program from 1932 to 1933, NAS Pensacola effectively sprang back to life in mid-decade. Legislators passed the Vinson-Trammell Act in 1934, authorizing the maximum buildup of naval forces allowed under the Washington and London treaties made following World War I. Although the government still had little funding for military projects, the act help set the stage for future growth at U.S. naval stations. Then, in 1935, the Aviation Cadet Act of April 15 created the grade of Aviation Cadet in the Navy, opening up recruitment to a wider range of applicants. The Annual Report of 1936 stated,

The cadets are selected from graduates of various colleges and universities throughout the country. Classes of about 75 were received monthly, the first arriving July 20, 1935. They undertook an intensive twelve months' course in aviation training, including ground school work and rudimentary naval training. The graduates are assigned to fill aviation cadet quotas in the Fleet.⁵³

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In addition to augmenting the training program, legislators also granted the station \$3,081,500.00 for a new building program in the Authorization Bill approved April 15, 1935.⁵⁴ The principal items included in the program anticipated an expanded role for the station in the coming years and included two 500-man barracks, eleven individual married officers' quarters, two steel-and-brick hangars for Station Field, and new roads. All the major contracts were granted to a single firm, the Virginia Engineering Company of Newport News, Virginia. Commandant G. S. Burrell noted in 1936 that the selection of one firm for the whole program "...has greatly simplified the co-ordination of the work and minimized interferences, questions of junctures of work items, [and] duplication of submission of samples and drawings for approval. The Company's performance has been on the whole very satisfactory."⁵⁵ Most of the buildings also featured similar massing and details, typified by Building No. 604 with its massive brick pylons and inset glass panels, providing a uniformity and sense of cohesiveness to the growing base. The construction program, which eventually included "26 modern brick buildings," was completed in 1937, "making it an outstanding year in the history of the Station."⁵⁶

A valuable construction program at NAS Pensacola was obtained by BuDocks through the Works Progress Administration (WPA)—a Depression-Era work relief program—in 1936 and 1937. The work, eventually valued at \$243,626.00, included the repair and improvement of buildings and the rail system at the station, in addition to "modernization of plumbing and improvement of sanitation and ventilation [at the] Naval Hospital."⁵⁷ In addition, the 457 workers employed on the job helped to prepare the new Corry Field on leased property northwest of the station.⁵⁸ Another WPA project completed in 1938 and employing 513 men provided for "a) the construction of an arch type magazine and barricade; b) concrete taxiway...; c) revamping and relocation of railroad tracks; d) slag-asphalt road-paving and parking areas; e) rehabilitation and painting of buildings; and f) miscellaneous items of grading and planting."⁵⁹ In 1938 and 1939, the WPA and the Public Works Administration (PWA) constructed a new marine barracks, new dispensary, steel and brick hangars at Corry Field and Chevalier Field (formerly called Station Field) (with structural steelwork provided by a non-WPA contractor), and two sets of cadet quarters. Part of the same WPA/PWA project included the construction of "a modern 3-story, 3-wing hospital of concrete, brick hollow tile and stone construction...provided to replace the inadequate war-time structure now serving that important activity."⁶⁰ Thus, the great public works programs initiated to relieve the economic catastrophe of the Depression also played an important role in preparing the nation's largest naval aviation center for the coming conflict in Europe.

In 1938 the Vinson Navy Bill gave an additional boost to naval aviation, and to NAS Pensacola in particular, by increasing the authorized number of planes to be maintained by the Navy to 3,000—up from only 1,000 aircraft. The bill also established a board of officers to report on the current readiness of naval stations to meet the national defense needs, and to advise on development plans where needed. The board, called the Hepburn Board after its senior member, Rear Admiral Arthur J. Hepburn, recommended a fifty percent increase in pilot training facilities at NAS Pensacola to meet defense needs. A new construction program beginning in 1939 and continuing throughout the war eventually left the station with eleven hangars and personnel facilities for 15,000.⁶¹

As the United States entered World War II in 1941, NAS Pensacola stepped up training activities to meet the demand for new pilots, while still busily erecting both makeshift and permanent buildings. Although aviation in the First World War was still in a fledgling state, by 1941, technological advances and the development of combat flying techniques created the bombers and fighter planes that soon became familiar sights over European and Pacific skies. Four new training fields were opened between 1940 and 1942, including Saufley Field in 1940, Ellyson Field in 1941, and Bronson and Barin Fields in 1942.⁶²

With its six auxiliary training fields now in operation, the station qualified 28,562 fliers between 1941 and 1945. Pilots were trained in one of various schools operating at the base. There was a Naval Photography School, an aerial gunnery school, a flight instructor's school and the Navy's only School of Aviation Medicine to qualify flight surgeons. In addition, patrol maneuvers and scouting and observation from seaplanes were both important areas of instruction. In 1943, NAS Pensacola became the headquarters of Naval Air Training Command. By the end of the war, thousands of metalsmiths, machinists' mates and other technical crew were also trained at NAS Pensacola.

THE COLD WAR: 1946-89

At war's end, rapid demobilization again took its toll at NAS Pensacola. Barin and Ellyson fields were deactivated, while the other training fields were reassigned to new purposes. Naval Air Training Command was reorganized with a number of different subcommands including Naval Air Advanced Training, Naval Air Basic Training, Naval Air Reserve Training, and Naval Air Technical Training Command, which moved to NAS Memphis in 1946. NAS Corpus Christi took charge of basic training duties, while NAS Whiting Field also took on training responsibilities. Within a few years, however, naval organization changed again, and Naval Air Basic Training Command headquarters relocated to NAS Pensacola, where it stayed throughout the Korean War. In 1947, the old Fort Barrancas cantonment, operated by the U.S. Army since the nineteenth century, was officially deactivated and transferred to NAS Pensacola, marking the station's continued westward expansion.

During the following decades, military conflicts in Korea and Vietnam ensured that naval aviators remained in demand. Between 1950 and 1953, NAS Pensacola produced 6,000 aviators at a cost of almost \$70,000.00 each.⁶³ NAS Pensacola's auxiliary fields were reopened in 1951, and helicopters made their first appearance at Pensacola the same year. The first class of helicopter pilots was trained at Ellyson Field beginning in January. The most dramatic development in naval aviation training was the introduction of jet aircraft to the advanced training syllabus in 1955. Sherman Field was built in 1954 on over 900 acres near the old Fort Barrancas cantonment west of NAS Pensacola to accommodate the new jet requirements. In 1955, the Blue Angels jet fighter demonstration team, originally formed in 1946 to demonstrate the capability of naval aviators, relocated from NAS Corpus Christi to NAS Pensacola, where their air shows are still a popular attraction.

During the Cold War period, the U.S. military raced to develop new technologies to maintain heightened strategic advantages over the Soviets. Naval aircraft achieved supersonic flight, adopted complex computerized navigational systems and missile systems, and took off from nuclear-powered aircraft carriers. Aerospace medicine became part of the studies undertaken at the Naval Aviation Medical Center, originally commissioned in 1957. In addition to studying the effects of gravity forces and disorientation on pilots in combat, scientists worked to understand the potential effects of space travel on humans. In the early 1960s, astronauts from the Mercury and Gemini programs all underwent physical testing and training for water landings at NAS Pensacola.⁶⁴

After the conflict in Vietnam escalated in 1964, pilot training again increased in response. "Pilot production had been as low as 1,413 [annually] in 1962, and as high as 2,552 in 1968, increasing and decreasing with the heat of battle involving carrier deployments in the Far East."⁶⁵ Despite financial limitations instituted as the Vietnam War dragged on, NAS Pensacola grew in both size and responsibility as more training and study were needed for highly specialized systems (*Figure 5*). Major damage incurred during Hurricane Camille in August 1969, was quickly repaired and some buildings rebuilt. By 1971, the station covered over 5,500 acres. New training centers were commissioned in the early 1970s, including

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the Naval Technical Training Center (formerly Naval Communication Center), which was the Navy's locus for electronic warfare and photography training, and the Naval Education and Training Program Development Center, established at Saufley Field in 1974.⁶⁶

Following the Vietnam conflict, Navy budgets fell victim to a large-scale demilitarization campaign in the U.S. government. Nonetheless, NAS Pensacola persevered in its training mission, instructing 1,697 officers and 2,188 enlisted men in 1982. The station also continued as a major contributor to the local and regional economies, with a military payroll of \$144,352,908.00, a civilian payroll of \$187,635,344.00, and almost \$10 million in supply purchases in the same year.⁶⁷

In 1988, the Defense Secretary's Commission on Base Realignment and Closure (BRAC) was formed to recommend base closures in order to streamline the military base structure worldwide. BRAC reflected the general trend toward military downsizing in the 1980s, when long-range nuclear missiles and subsequent arms control talks were the focus of many military leaders. In the 1990s, the end of the Cold War caused further financial cutbacks for the U.S. military, resulting in a greater rate of base closures. NAS Pensacola successfully avoided closure due to its vital position in the Navy's aviation program and its important tenant commands.

Today, NAS Pensacola occupies 8,423 acres, including Corry Station, Saufley Field, Bronson Field, and Sherman Field. The station hosts over ninety defense-related tenant commands, including the Chief of Naval Education and Training, Training Air Wing Six, Naval Aviation Schools Command, the Naval Aerospace Medical Research Lab, and the Naval Air Technical Training Center. The military population consists of over 16,000 people, in addition to 6,000 civilian employees. The station continues to provide top qualified naval aviators and other personnel; over 25,000 Navy and Marine students passed through the various training programs housed at NAS Pensacola, in addition to 1,300 officer candidates.⁶⁸

The considerable history of military occupation in the Pensacola Bay remains evident at NAS Pensacola in structures such as the Fort Barrancas cantonment and the NHL Pensacola Naval Air Station Historic District at the heart of the station. The presence of these early buildings has exerted a significant force in shaping the modern base, as have external factors including periodic destructive hurricanes and legislative favor. Most importantly, the change from a traditional naval shipyard to a modern naval aviation installation with associated technological advances and demands produced a gradual metamorphosis that has resulted in the modern NAS Pensacola. The shift from maritime vessels to aircraft likely saved the Pensacola base from abandonment and led to the development of an active installation vital to the regional economy and to the Navy's aviation program.

DETAILED BUILDING HISTORY

The construction of Building No. 604, the Assembly & Repair Shop, in 1937 represented a major step in the growth of the naval aviation program at NAS Pensacola prior to World War II (*Figure 6*). After the Vinson Trammell Act of 1935 authorized an increase on the number of aircraft maintained by the Navy, technical facilities also had to be built to keep pace with the growing number of planes. As the country's premier naval air station, NAS Pensacola was required to expand its technical shops to the level that would support the larger Navy envisioned by military planners. The Assembly & Repair Shop was built as part of a major building program initiated in 1935 that added twenty-six modern, brick buildings to the station at a cost of over 3 million dollars. The huge, hangar-like structure contained individual shops including a Propeller Shop, Battery Shop, Electric Shop, Tool and Die Shop, Paint Shop, Upholstery Shop, Instrument Shop, Engine Overhaul Shop, and others. In addition, larger spaces were designated as

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assembly and disassembly areas, and as the offices of the Engineering Division. Men's and women's toilets were also included, indicating that civilian women were envisioned as workers in the Assembly & Repair Division from an early date.

Property records indicate that the primary contractor for Building No. 604 was the Virginia Engineering Company of Newport News, Virginia, which also built the other twenty-six structures initiated as part of the same program. Although original architectural plans are from BuDocks, and are not signed by an architect, the designs may have come from an unknown civilian architectural firm. Building No. 604's Moderne-style massing and detailing are typical of other industrial structures built at NAS Pensacola at this time, and help to unify the station visually.

During Building No. 604's long career, it underwent modifications on an almost constant basis as naval aviation developed. Features such as improved ventilation and electrical wiring, monorails, new machinery, and additions to the technical shops were constantly needed to keep the facility up to date with the current needs of aircraft. The facility's shops were modified to service jet engines and helicopters during the 1950s, and were even involved in creating tools, equipment, and testing apparatus for the Mercury and Gemini Space Programs in the 1960s⁶⁹. In the 1960s, the A&R Department housed in Building No. 604 was renamed NARF (*Figure 7*). A major renovation in 1984 modernized the building, adding two new precision machining areas, a pattern shop, and new office space. The building was used continuously until the late 1990s, and is now used by the Naval Air Museum and other tenant commands.

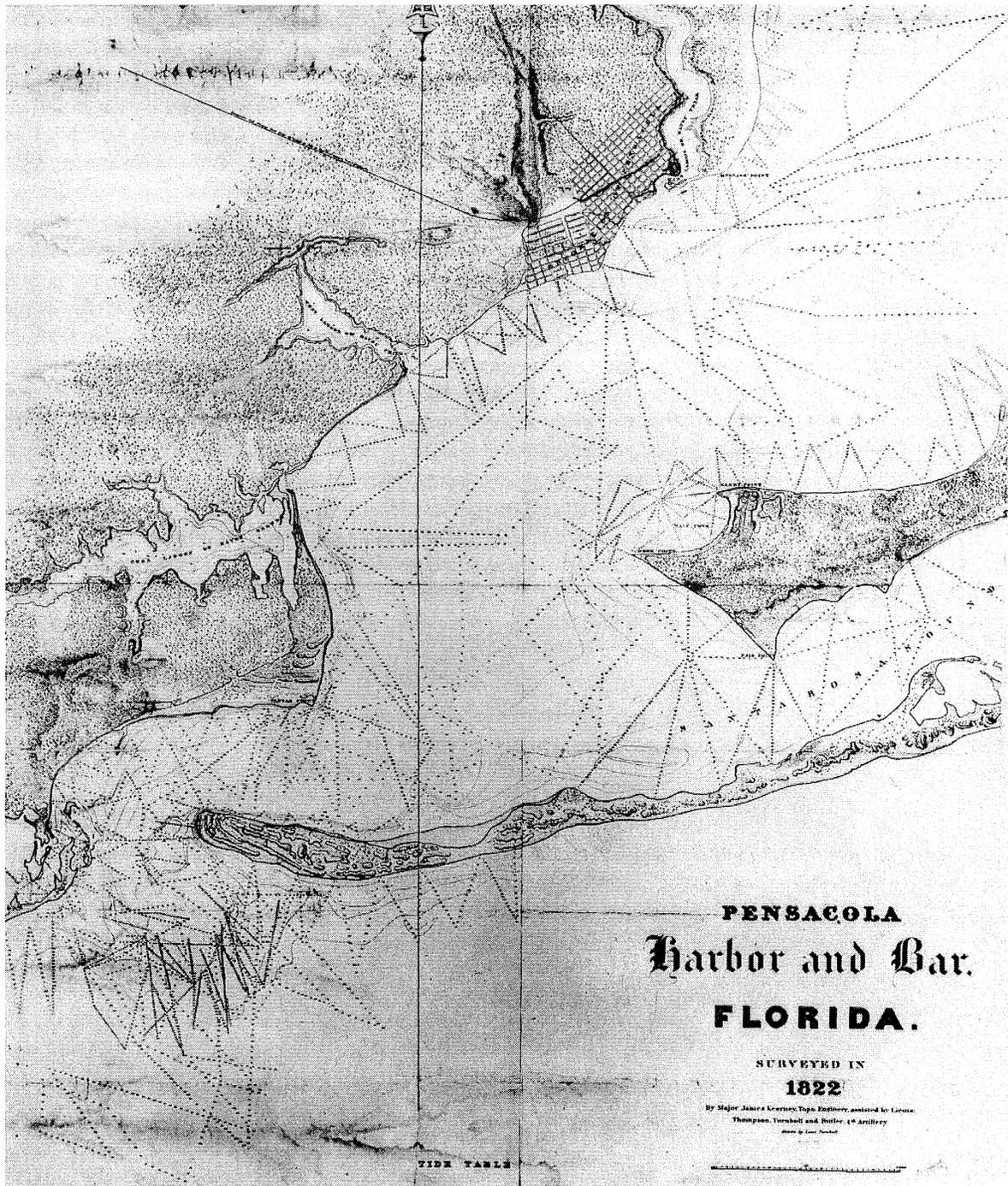
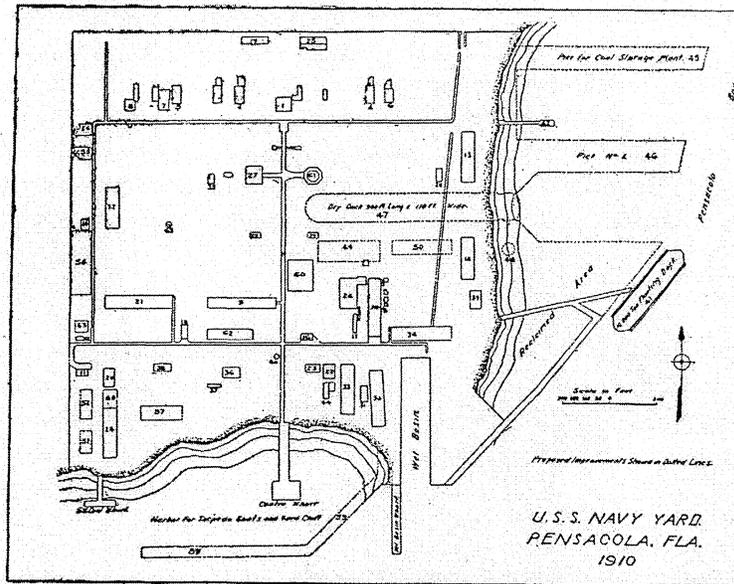


Figure 1. Map and Tide Table of the Pensacola Bay surveyed by the U.S. Army 4th Artillery in 1822, a year after Spain's transfer of Florida to the United States (Map courtesy of the Public Affairs Office, NAS Pensacola, Florida).

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Figures 2 and 3. Hand-drawn plan and index showing the state of the Pensacola Navy Yard in 1910, one year before it was officially closed. (Map and index courtesy of the Public Works Center, NAS Pensacola, Florida).



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| 1. Commandant's Quarters | 36. Sawmill |
| 2. Captain's of Yard Quarters | 37. Dry Kiln |
| 3. Doctor's Quarters | 38. Locomotive shed |
| 4. Naval Constructor's Quarters | 39. Paint Shop |
| 5. Civil Engineer's Quarters | 40. Pump house for cess pool of sewer system |
| 6. Paymaster's Quarters | 41. Floating steel dry dock, 10,000 tons capacity |
| 7. Engineer Officer's Quarters | 42. Bath House |
| 8. Pay Clerk's Quarters | 43. 100,000-gallon water tank, 150 feet elevation |
| 9. Joiners, Boatshop and Shipwrights | 44. Coal and coke storage |
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| 11. Prison | 46. Proposed Pier No. 1 |
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| 14. S. & A. Paint and Oil Room | 49. Proposed building, machine shop |
| 15. Fire Engine House | 50. Proposed building, plumbers and allied trades |
| 16. Not used | 51. Proposed building, storage of combustible material |
| 17. Not used | 52. Proposed building, storage cement |
| 18. Marine Barracks | 53. Proposed building, guardhouse |
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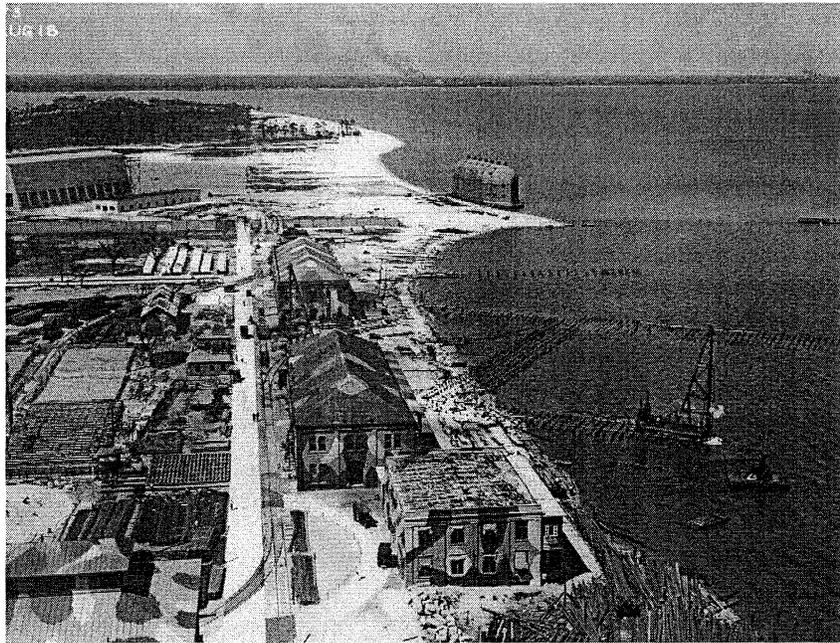


Figure 4. Bird's-eye view of NAS Pensacola in 1918 (facing northeast), with buildings painted in camouflage patterns to avoid aerial detection by enemies during World War I. The large building moored at the shoreline is a floating dirigible hangar (Photo courtesy of the Public Affairs Office, NAS Pensacola, Florida).

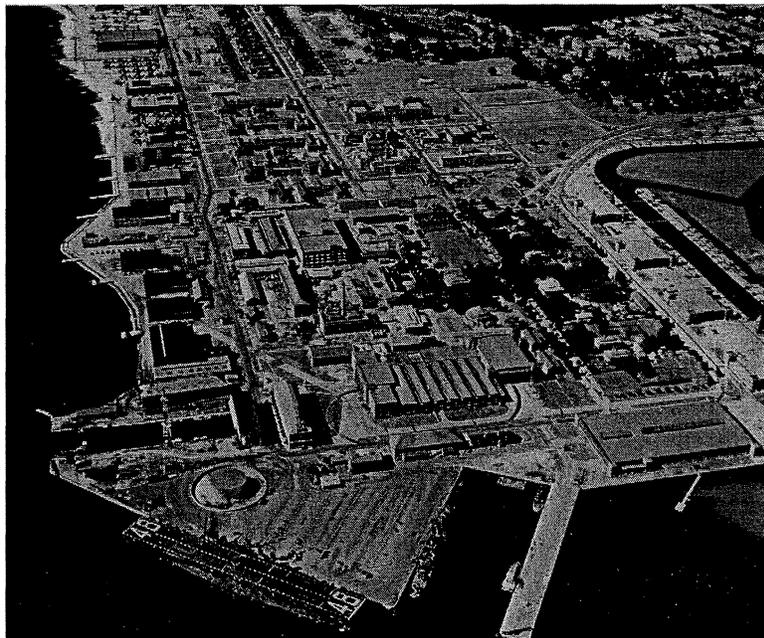


Figure 5. View of NAS Pensacola ca. 1967, facing west. Note Chevalier Field (originally called Station Field) to the right (Photo courtesy of the Public Affairs Office, NAS Pensacola).

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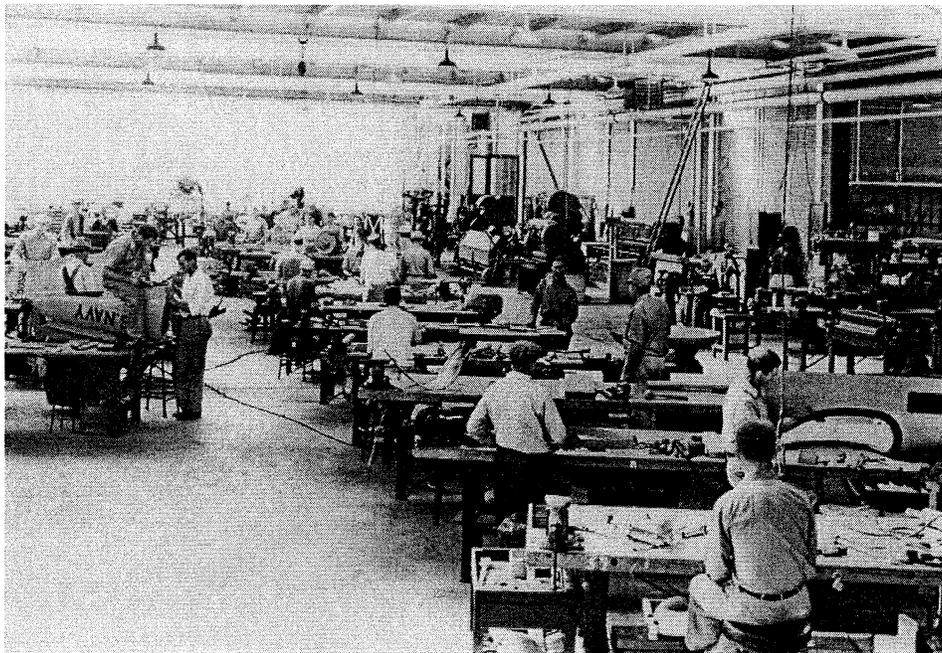


Figure 6. 1937 photo of the Metal Shop in the south end of Building No. 604 (Photo from Delaney, The Cradle, 95).



Figure 7. Aerial of view of NAS Pensacola in 1967 looking northeast, with Building No. 604 at center right and Chevalier Field in the background (Photo courtesy of the Public Works Center, NAS Pensacola, Florida).

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural character: Building No. 604, constructed in 1937, is a three-story, irregular-plan building. It exhibits a steel-frame structural system. Concrete, brick, and metal clad the exterior. Hangar bays with batten seam cooper canopies over large, riveted, steel doors with divided lights dominate the elevations. Large crenellations on the east facade correspond with rectangular roof monitors lighting the single-story workspaces below.
2. Condition of fabric: The overall condition of the building is fair. The building envelope has suffered severe damage as a result of Hurricane Ivan. Cracks appear in both the concrete foundation walls and the brick and mortar of the exterior walls. In various locations around the building the concrete perimeter foundation wall, brick and mortar, and cast stone details exhibit staining both from rust and copper oxidation. The south wall of the 1969 addition suffered major damage from Hurricane Ivan, and the upper portion is currently missing. Paint at windows is chipping and peeling, frames and lintels are corroded, rotted or rusting, and a few lights are cracked or broken. Many windows have been covered with plywood panels and louvered vents installed. Gutters and downspouts are bent and detached, or missing entirely from some sections of the building. In many locations, the roof is missing its primary cladding material, leaving exposed roofing felt and, in some cases, the roof decking.

B. Description of Exterior:

1. Overall dimensions: Building No. 604 is a steel-framed resource ranging in height from one to three stories. The original two-bay building, including assembly and disassembly area and workshops, measures 523'-5" x 210'-4", with a rectangular cutout from the northeast corner that measures 140'-7" x 92'-0". The 1944 Drop Hammer Shop expansion added 64'-2" x 41'-9" between the west facade of Building No. 604 and the east wall of Building No. 121. The 1969 plating facility addition to the southwest corner of the facility measures 189'-7" x 91'-8". Sometime between 1973 and 1978 Building No. 121 was reduced in size to approximately 52' x 28'. The 1984 rectangular storage addition to the center of the east facade measures 66'-10" x 26'-0".
2. Foundations: The original portion of Building No. 604 employs a raised reinforced structural concrete slab supported on interior piers and a continuous reinforced concrete perimeter wall. The 1969 addition has a reinforced concrete slab-on-grade foundation.
3. Walls: A low concrete perimeter wall runs along the base of the original Building No. 604. The brick wall above features a common bond pattern with five stretcher courses between headers. Cast stone belt courses run continuously below the first-floor windows, and cast stone coping appears along the parapets on all sides of the building. An additional belt course is located above the second-floor windows at the two-story portions. Masonry soldier courses serve as headers above the remaining windows. All three hangar bays have had sections of the original doors replaced with ribbed metal siding.

Walls of the Drop Hammer Shop are constructed of hollow-clay tile with two concrete belt courses. A brick rowlock sill is located below the windows. Clay-tile walls with masonry brick end-caps project east from what was originally Building No. 121, northwest of the Drop Hammer Shop. The open stalls formed by the projecting walls are marked with

different compressed gas types, although they are currently empty. The extant west wall of Building No. 121 features running bond brick with a single concrete belt course and brick pilasters, forming three distinct bays. Windows are framed in concrete. The north wall also exhibits running bond brick, but a thin layer of concrete coats the brick on most of the west portion of the wall.

The 1969 addition utilizes distinctive architectural features from the original structure. It features brick walls with a common bond pattern and cast stone belt courses that align with those on the original building. Vertical control joints appear where the wall connects to the interior I-beams. An open, steel-framed chemical storage shed with a batten seam metal roof is located along the west facade.

The exterior walls of the 1984 addition feature a concrete perimeter foundation wall, topped by running bond brick coursing. The six louvered vents on the east facade exhibit cast stone sills and a rowlock course above.

4. Structural system:

- a. Foundation: The original building has a 6-1/4" thick, one-way, raised reinforced structural concrete slab on interior piers and a continuous reinforced concrete perimeter wall. Concrete piers and footings are spaced 20'-0" in both directions. Reinforced concrete beams span each interior pier. The foundation of the 1969 addition is a reinforced concrete slab-on-grade.
- b. Floor, walls: The primary structural system consists of bolted steel columns and load-bearing masonry walls. Exposed steel columns feature decorative column bases composed of steel channels and filler panels. Concealed columns are encased in a 4" brick wall. Exterior walls have a 16-1/2" brick base and a 14" brick wall above. Interior load-bearing walls are 12-1/4" thick. Lateral steel cross-bracing is exposed at the interior face of exterior walls. Mezzanine floors are steel-frame construction with a concrete deck.

The primary structural system for the 1969 addition consists of steel columns and load-bearing masonry walls of 8" concrete block faced with 4" brick veneer. Steel columns are located 45'-0" apart. A secondary steel-frame floor system is elevated above the concrete slab. The second floor is steel-frame construction with a concrete deck.

- c. Ceiling, roof: The hangar bays feature a twelve-panel, closed, flat Howe truss that spans the 120'-0" interior space. The truss is 13'-0" deep at the center and 9'-6" at each end. Along the west side and the southwest and southeast corners of the south hangar, the roof system is supported by a closed shed truss system. Above the one-story Dope Ship and Fabric Upholstery Shop, this eight-panel truss is 9'-0" deep at the east end and 7'-0" deep at the west end. At the west and east corners, this ten-panel truss is 5'-0" deep at the north end and 7'-0" at the south end. Remaining roof sections are framed by 8" steel I-beams. Roofs of each section feature either timber decking or precast concrete slabs topped by built-up roofing. The roof framing system of the 1969 addition consists of steel, wide-flange beams and lateral cross-bracing members that span between each interior column.
5. Porches, stoops: Three elevated, ramped, reinforced concrete loading docks are extant on the west facade. The loading dock also features a four-step concrete stair and platform along the northwest corner with metal pipe handrails on either side of the steps. The dock at the central

portion contains two, four-step stairs with metal pipe handrails along either side of the stairs. An additional dock is located in front of the segmented overhead door on the 1969 addition.

6. Openings:

- a. Doorways and doors: Each hangar entrance originally featured six, large, steel doors on tracks with eight panels of divided lights. On the east facade, the right and left doors have been reduced in width, and a solid corrugated metal panel, the width of one door, has been placed in the center. On the west facade, the southern door has been removed and the one just to its north has been reduced in width. On the south facade, the three doors to the east have been filled. A large, steel, double folding door with five hinges and vision panel on each half, is present in place of the missing hangar doors. A similar door is located on the 1984 addition, but this one includes a smaller wicket door.

There are fifteen single, steel doors with glazed vision panels, the most common door type on Building No. 604. The inserts vary in size from two small to thirteen large panels. Six feature divided lights. One door has plywood covering the glass and another has a galvanized steel panel in place of the glass. Three of the doors are paneled. In addition, the north and west facades of Building No. 604 each exhibit one single, steel, flush door.

Six, paired, steel doors with glazed vision panels are located along the central portion of the west wall with an additional one on the north end of what was once Building No. 121. Four sets of the glazed panels are divided into four lights; the others are single lights.

There are three, oversized, steel paired doors; each features an eight-light divided glazed vision panel. A single wicket door is located within the right door of each pair. Two doors are located on the north facade, southeast of the north hangar bay. The vision panels are covered at these units. The third door is located at the center of the west wall.

The north facade of Building No. 604-B (the Drop Hammer Shop) originally featured a paired batten door with three, nine-pane, pivoting windows forming a transom, but this has since been replaced with a segmented overhead door. Three additional segmented doors are located on the south, west, and north facades.

Three unique door types appear on Building No. 604. A single wood, flush door and a framed opening appear on the south facade. An oversized, paired, steel panel door with four hinges is located at the center of the west facade.

- b. Windows and shutters: The primary fenestration on Building No. 604 includes steel-sash window units, each consisting of two, six-light pivoting sashes and three, three-light fixed sashes. A variation of this primary window type appears on the north, south, and west facades and contains four-light across instead of three. Plywood partially covers six of these windows. A grouping of two and three window units with pivoting sashes are located on the north, south, and west walls. Louvered vents replacing glazing are common on the north facade.

Similar divided-light windows are located on the west wall. Each fenestration is composed of three window units with two, six-light pivoting sashes and three, three-light fixed sashes. Of the six windows of this type, two have louvered inserts, one has an air-conditioning unit, and one is partially filled with mechanical ventilation equipment.

Eight-light, steel, pivoting windows are extant on the original portions of all four

elevations, at the top of the hangar pylons. One of these windows on the east facade has been filled with brick, and one on the south facade has been replaced with a fixed single-light and a window air-conditioning unit. Eight, six-light steel pivoting windows are located along the top level of the north facade; an additional two are located on the east facade of Building No. 121.

The only windows with wood sashes are located on the west facade of Building No. 121's annex. Six, nine-over-nine, double-hung, wood-sash windows are extant. Three windows have been modified and either partially or completely covered with plywood or sheet metal. A window air-conditioning unit is located within one of the modified windows.

Seven, nine-light, steel-frame windows are located on the east facade of Building No. 604. Four of the windows are fixed, two have pivoting panels, and one is filled with a galvanized panel and a louvered vent.

Roof monitors feature two rows of continuous sash window units. The top row has awning windows, while the bottom row is fixed.

The north facade of Building No. 604-B (the Drop Hammer Shop) originally featured twelve, nine-light, pivoting windows along the top of the wall and nine, six-over-six, double-hung, wood-sash windows paired with nine-light pivoting windows above. Some of the original windows have been filled with metal louvers, some with clay tile to match the surrounding wall; one has been replaced by a door.

Three aluminum-frame window types on the southeast corner of Building No. 604 are non-original and the only non-steel windows on the building. Seven windows feature two rows of three, large, fixed-light glazing over one row of three hopper units. The top row of each window has been filled. In the same area, are twelve, two-over-two, aluminum-frame, single-hung windows with screens. Four additional one-over-one windows are located on the south corner of the east facade.

Building No. 604 has four unique steel-frame window types. Three are located on the north facade. The top two rows of one twelve-light unit are covered with a plywood panel. Another nine-light unit features a six-light pivoting upper sash. The remaining unique window on the north facade features a pair of six-light pivoting sashes. An additional unique three-part window type appears on the south facade and is composed of a center steel panel flanked by two fourteen-light units containing one, four-light pivoting sash.

7. Roof:

- a. Shape, covering: The low-slope shed roofs over the shops are supported by 8" I-beam purlins over exposed steel trusses. Precast concrete slabs are clipped to the purlins, then covered with 1" rigid insulation and built-up roofing. The hangar bays feature the same construction but exhibit low-slope gable roofs. A flat monitor system over the south hangar bay is framed with 8" steel I-beams with a precast concrete deck and a built-up roof over 1" rigid insulation. A batten seamed copper canopy, supported by 6" steel I-beam purlins, is positioned above each set of hangar doors. This canopy features 1-1/2" thick wood sheathing forming a 5'-9" radius. The copper is missing from some areas of the canopies, exposing roofing felt below. The hipped roofs over the hangar door pylons

feature 2" x 10" rafters spaced 16" apart. The rafters connect to a 2" x 12" ridge beam, and the roof is covered by wood sheathing, and clad in copper with 2" x 2" beveled wood battens.

The 1944 Drop Hammer Shop addition exhibits a built-up roof over 1" insulation. The roof system is supported by a 2" concrete slab over 2" x 4" wood joists spaced 16" apart.

The 1969 addition features a low-slope gable roof with cast stone coping above the parapet wall. An air handling penthouse and stair penthouse, each with a shed roof, are located on the north side of the roof, with access provided through an interior stairwell at the northeast corner of the addition, and by a caged steel ladder extending up from the fire escape on the east facade.

The 1984 addition to the east facade features a low-slope, built-up roof with metal-clad coping at the parapet wall. Three gravity ventilators are located near the back of the roof.

- b. Cornice, eaves: A cast stone coping runs along the roofline of Building No. 604 with the exception of the 1984 addition on the east facade, which has metal-clad coping.

The copper downspouts located on the original portion of Building No. 604 are missing or severely damaged. There is a gutter located along the canopy between the hangar doors of the west, south, and east facades. Downspouts have been damaged in some locations.

The remaining portion of Building No. 121 features scuppers and downspouts on the west facade. Downspouts were not visible on the Drop Hammer Shop addition at the time of the field survey.

The 1969 addition features scuppers that penetrate the parapet wall and feed into 4" x 6" metal downspouts. The downspouts suffered damage from Hurricane Ivan, and many are now broken.

The 1984 addition features gutters along the perimeter and two downspouts on the east facade. Both the gutters and downspouts are badly damaged.

- c. Dormers, cupolas, towers: Pylons flank either side of each set of hangar doors and provide storage space for the hangar doors when retracted.

C. Description of Interior:

1. Floor plans: The original construction drawings for the 1937 main building and the 1969 southwest corner addition are included in this report. Due to limited access to the interior after structural damage sustained during Hurricane Ivan, not all interior spaces were verified at the time of the field survey. Significant alterations have occurred since the original construction of Building No. 604. Refer to Part I, Section A-6 for a description of specific interior alterations and additions.
2. Stairways: There are two original types of stairway construction. The primary stair consists of concrete-filled steel pans with safety treads and risers on 10" steel stringers. A decorative 4" metal newel post and balustrade capped with a 2-1/2" diameter wood handrail was designed along both sides of the stair run. The secondary stairway design was steel construction with concrete-filled steel pans with non-slip metal safety treads on 10" steel stringers. A utilitarian

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1-1/2" diameter pipe handrail and metal posts were installed at the inside of each stair run.

According to renovation drawings, an additional stair to Mezzanine 10 was added in 1978. This steel stair was designed with 1/8" metal checker plate treads and risers. A 1-1/2" diameter pipe column handrail with an intermediate rail was installed 2'-9" above the stair treads. A new stair tower, constructed as part of a passenger elevator installation at the southwest corner of Mezzanine 10, was constructed in 1984. Drawings from this renovation project indicate that the new stair was steel construction with treads of concrete-filled metal pans. Treads were finished with rubber safety treads. A metal, 1-1/2" diameter pipe handrail with 1/8" thick metal panels enclosing the balustrade were located at either side of the stair.

New stairs to five different mezzanines replaced original wood stairs in 1984. The new stairs were designed with metal checker plate treads and risers. Metal, 1-1/2" diameter pipe handrails were located on both sides of the stair run, and the balustrade was enclosed with 1/8" thick metal panels.

Renovation drawings from a 1984 modernization project provide the most current information regarding the current configuration of interior spaces. According to these drawings, the southeast quadrant of Building No. 604 contains one stairway at the northeast corner that leads to Mezzanine 4. Three stairways lead to Mezzanine 6—one at the northwest corner, one at the southwest corner, and one in the center, east portion of the mezzanine. Mezzanine 10 can be accessed by three stairways—two in the southwest corner and one in the center, south portion of the mezzanine. In the southwest quadrant, stairs lead to Mezzanines 2, 3, and 9. Mezzanine 2 is accessed by stairways at the northeast, southeast, and southwest corners. Stairs at the northeast and southwest corners provide access to Mezzanine 3. Two stairways lead to Mezzanine 9 from the northeast and northwest corners. The northwest quadrant contains stairways to Mezzanines 7, 1 and 8, and Pylon 3. Stairs at the center, east portion lead to Mezzanine 7. Mezzanines 1 and 8 have stairways at both the northeast and southwest corners. Access to the second and third floors of the northwest quadrant is provided by the stairway in Pylon 3. The northeast quadrant contains stairs to Mezzanine 11 at the northeast corner and the second and third floors of Pylon 1.

3. Elevator: Building No. 604 houses one, five-ton freight elevator in the northwest corner and an additional twelve-passenger, one-ton elevator, located in the southeast corner of the main building. Both were installed as part of a 1984-85 modernization project for Building No. 604. A five-ton freight elevator was included in the design for the 1969 addition.
4. Flooring: The floor finish for all spaces accessible during the time of the field survey were either painted or unfinished, reinforced concrete floor slab with a 1" concrete topping. An examination of original and alteration construction drawings has provided information for other interior finishes. Originally, most first-floor shops except the Oil Issue Room, Dope Shop, Air Conditioning Plant, Transformer Electroplating and Anodic Room, Cleaning Space, Cleaning Gear, and the stair halls had a 'creosoted' wood block floor. Restrooms typically had either a vitreous tile or linoleum floor finish. Most second-floor rooms originally had either linoleum or vitreous tile over a concrete slab. Most third-floor rooms, accessible from the hangar door pylons, had a concrete floor with a 1" concrete topping finish.

The 1969 addition at the southeast corner of Building No. 604 was constructed with an unfinished concrete floor at each aisle and metal grating under the chemical tanks on the first

floor. The second floor was constructed with an unfinished concrete floor with 4" painted stripes defining the aisles between equipment.

Renovations to the interior spaces of Mezzanine 10 in 1974 added carpet with a rubber wall base over the existing vinyl asbestos tile. A 1984 modernization to the restroom facilities of the main building included the installation of 1" x 1" ceramic mosaic tiles to interior floors of the central restroom facilities. Vinyl tile with a vinyl base was installed at two new first-floor offices in 1987.

5. Wall and ceiling finish:

- a. Walls: Originally, walls were either exposed brick, or brick/ hollow-clay tile with a plaster finish. Restrooms featured a frit glazed tile wainscot, 6'-11" high, with a glazed tile base. Other shop/office walls had no wainscot, but featured a 6" metal wall base. Wire mesh partitions were installed to enclose additional interior spaces (Tool and Die Shop, Store Room and Electric Shop) in the northeast corner. The walls of the primary stairwell at the southeast corner of the building received a glazed wall tile finish in 1939.

Limited investigation of interior spaces provided some information regarding current interior wall finishes. Interior walls of the full-height hangar bays are either painted or exposed brick with exposed steel columns with intermediate, lateral cross-bracing. The shaft enclosure and equipment room of the freight elevator, installed in 1984 at the northwest quadrant, is painted concrete block. The interior enclosure of Pylon 1 is exposed concrete block. The wall finish of the first-floor restroom at Pylon 3 is painted hollow-clay tile. Two interior spaces in the southeast quadrant of Building No. 604 are located within self-contained painted, corrugated metal units. Remaining information regarding interior wall finishes came from evaluation of renovation plans. Most mezzanines and first-floor partitioned spaces feature painted or unpainted gypsum board on wood or steel studs. The interior spaces of Mezzanines 1 and 8 have a vinyl wall covering on gypsum board. Renovations to Mezzanine 10 in 1974 added moveable partition walls and pre-finished paneling to interior spaces. Renovations to the central restroom facilities in 1984 installed new 4-1/4" x 4-1/4" ceramic tiles to interior walls up to the 8'-6" ceiling height.

- b. Ceilings: The original drawings indicate that a suspended fireproof reinforced concrete ceiling slab was installed at several first-floor shops, including the Dope Shop, Fabric and Upholstery Shop, Paint Shop, Electroplating and Anodic Room, Sand Blast Room, and the Dope Spray Booth Nos. 1 and 2. Ceilings for other interior spaces, including the full-height hangar bays were left unfinished, exposing the steel structure and wood, metal decking, or a pre-cast, lightweight concrete slab.

Currently, most first-floor interior spaces feature their original ceiling finish, including the full-height hangar bays. Renovations of some mezzanines' interior spaces added suspended acoustical tile ceilings.

6. Openings:

- a. Doorways and doors: Original doors included twenty-one different types as illustrated on original drawing No. 122016, dated December 16, 1935. Many original door types remain. New door types added include a single hollow metal door (2'-7" x 5'-6" x 1-3/4") with clear, wire glass vision panels (1'-0" x 1'-0") was added during the 1969

repairs to the facility.

The 1971 enclosure of Mezzanines 1 and 8 added two single, flush-panel, hollow-core doors, a pair of flush-panel, hollow-core doors, and a pair of flush-panel, solid-core doors.

Building egress improvements in 1978 added a 3'-0" x 7'-0" "B" label hollow-metal door and frame at Mezzanine 10.

During major renovations in 1984 a louvered, hollow-metal door at the first-floor elevator equipment room was installed.

A single, hollow-metal door with clear, wire glass vision panel (8" x 3'-3-1/2"), a pair of hollow metal doors with clear, wire glass vision panel, and a pair of flush hollow metal doors were added during a 1987 office renovation.

- b. Windows: Originally, some interior mezzanine office/shop spaces had interior windows, typically with 3'-6" steel bottom panels topped with two glazed panels. First-floor shops with glazed partition walls featured four rows of fixed, glazed panels 3'-4" x 3'-0" above a 3'-10" wainscot and cast stone sill.

Renovations to Mezzanines 1 and 8 in 1971 added interior wood windows with 3'-0" x 3'-2" single-hung units.

7. Mechanical equipment:

- a. Heating, air-conditioning, ventilation: Separate air-conditioning systems serve the mezzanine areas of Building No. 604, and not all systems were accessible at the time of the field survey. Most mezzanines contain air-conditioning systems with an air-cooled packaged chiller, air-handling units, and chilled water and steam heating coils with separate circulating pumps for each system.

Some windows on the north, west, and east facades have been modified to include louvered exhaust fans. Awning windows at the roof monitors provide ventilation for the south hangar. Roof ventilation stacks are located throughout the facility.

Due to limited access during field survey, mechanical systems in the 1969 addition could not be verified. However, construction drawings from a 1983 renovation indicate seven ventilation fans were added to the addition's roof.

- b. Lighting: Building No. 604 features a variety of fluorescent, high intensity discharge (H.I.D.), and incandescent lighting. These fixtures are either surface-mounted, pendant, wall-mounted, or installed within lay-in acoustical ceiling grids.

The full-height spaces in the northwest quadrant, including the Cable Manufacturing, Metal Saws, and Toolmaking areas, are lit by H.I.D. lighting fixtures. Some of these are connected to an emergency lighting circuit. Exit lights are present above each exit. Fluorescent fixtures illuminate the mezzanine area and the areas below the mezzanines and production control.

In the northeast quadrant, fluorescent fixtures illuminate the Tooling Crib and Storage areas and the mezzanine. The Precision Machining Area, N/C Tooling, Drills, Grinders, and Metal Saws work areas feature H.I.D. fixtures.

Fluorescent lighting fixtures are located in the restrooms, lathing work areas, Substation 16, Production Engineering offices, and mezzanines of the southeast quadrant. The Electron Beam Weld, Metal Manufacturing, Quality Assurance, Spar Mill, Wheels and Brakes, Non-destructive Testing, and N/C Machines areas of the southeast quadrant are illuminated by H.I.D. fixtures.

In the southwest quadrant, fluorescent fixtures are located in the Storage, Welding, and mezzanine areas. The Metal Manufacturing, Electron Beam Welding, Metal Manufacturing, Welding, Production Control, Grit Blast, Metal Wax, Paint Shop, and Heat Treat areas are illuminated by H.I.D. fixtures.

- c. Plumbing: Six heads, including five men's restrooms and one women's restroom, are located in Building No. 604. A men's and women's head is located in Mezzanine 10 of the southeast quadrant. The men's head contains four water closets, three urinals, and three lavatories. The women's head contains four water closets and four lavatories. Another men's head, in the southwest quadrant, contains five water closets, five urinals, and two lavatories. The central head in the southeast quadrant contains a women's head with four water closets and two lavatories and two men's heads each containing six water closets, ten lavatories, and four urinals. A men's head in the northwest quadrant contains three water closets, two urinals, and six lavatories.

D. Site:

1. General setting and orientation: The long axis of Building No. 604 is oriented north/south. North Avenue, East Avenue, South Avenue, and Rockwell Avenue border the facility, which is situated in the southeast corner of the naval air station within the Pensacola Naval Air Station Historic District.
2. Historic landscape design: Building No. 604 is located within a grouping of industrial building, and original construction drawings did not provide a landscape design for the surrounding site. Paved concrete and asphalt driveways and a large grass lawn at the north side border the building.

NOTES

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⁶ Pearce, *U.S. Navy in Pensacola*, 5-10.

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⁸ *Ibid.*, 13, 18.

⁹ *Ibid.*, 19.

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¹³ Annual Report, BuDocks to Secretary of the Navy, October 17, 1849, NAVFAC Archive, Port Hueneme.

¹⁴ Pearce, George F. "NAS Pensacola, Florida," in *U.S. Naval and Marine Corps Bases*, 466.

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²¹ Pearce, *U.S. Navy in Pensacola*, 95; 98.

²² Annual Report, BuDocks to Secretary of the Navy, October 26, 1883, NAVFAC Archive, Port Hueneme.

²³ Annual Report, BuDocks to Secretary of the Navy, October 1, 1901, NAVFAC Archive, Port Hueneme.

²⁴ Pearce, George F. "NAS Pensacola, Florida," in *U.S. Naval and Marine Corps Bases*, 468.

²⁵ *Ibid.* 468-469.

²⁶ Pearce, *U.S. Navy in Pensacola*, 123-125.

²⁷ *Ibid.*, 128-129.

²⁸ *Ibid.*, 132.

²⁹ Annual Reports of Expenditures and Operations, Commandant to BuDocks, Pensacola Fla., June 30, 1914, NAVFAC Archive, Port Hueneme.

³⁰ Pearce, *U.S. Navy in Pensacola*, 134.

³¹ *Ibid.*

³² *Ibid.*, 135.

³³ *Ibid.*, 136.

³⁴ *Air Station News, Pensacola, Florida*. 1930. "An Historical Note," November 20, 4.

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⁵³ Annual Reports of Expenditures and Operations, Commandant to BuDocks, Pensacola, Florida, June 30, 1936, 32, NAVFAC Archive, Port Hueneme.

⁵⁴ Annual Reports of Expenditures and Operations, Commandant to BuDocks, Pensacola, Florida, June 30, 1936, 32, NAVFAC Archive, Port Hueneme. In the report, NAS Pensacola's commandant attributes funding of the new building program to the "Authorization Bill approved April 15, 1935." He also notes that "Two million dollars of funds were carried in the Deficiency Act, approved August 12, 1935, while \$1,081,500 was made available from the continuing appropriation 'Public Works, Bureau of Yards and Docks.'" The Annual Report contradicts the authoritative U.S. Government Printing Office publication *Building the Navy's Bases in World War II of 1947*, which states that in 1935 "the Congress made no appropriation for naval public works, and such work as could be done was financed out of the ends of appropriations made in earlier years and by allocation from the funds provided by the 1935 Emergency Relief Appropriation Act" (p. 25).

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⁵⁶ Annual Reports of Expenditures and Operations, Commandant to BuDocks, Pensacola, Florida, June 30, 1937, 47, NAVFAC Archive, Port Hueneme.

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⁵⁹ Annual Reports of Expenditures and Operations, Commandant to BuDocks, Pensacola, Florida, June 30, 1938, 54, NAVFAC Archive, Port Hueneme.

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⁶² Shettle, 177.

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⁶⁴ *Ibid.*, 136.

⁶⁵ *Ibid.*, 149.

⁶⁶ Pearce, George F. "NAS Pensacola, Florida," in *U.S. Naval and Marine Corps Bases*, ed. Paolo Coletta, 474 (Westport: Greenwood Press, 1985).

⁶⁷ *Ibid.*

⁶⁸ Pensacola Bay Area Chamber of Commerce, "NAS Pensacola: The Cradle of Naval Aviation," electronic document, www.pensacolachamber.com. Accessed February 18, 2005.

⁶⁹ Delaney, *The Cradle*, 136. At that time the former Assembly & Repair Department was called the Overhaul and Repair Department.

PART III. SOURCES OF INFORMATION

- A. Early views: Archived at the NAS Pensacola Public Affairs Office and Public Works Center, the National Museum of Naval Aviation at NAS Pensacola, and the University of West Florida Library, Special Collections, the NAS Pensacola Photograph Collection and the navy yard at Pensacola Photograph Collection, Pensacola, Florida.
- B. Current views: The team from Hardy•Heck•Moore, Inc. (HHM) took all 4" x 5" photos between January and February 2005.
- C. Maps: From the NAS Pensacola Real Property Management Office and modified by HHM staff.
- D. Original architectural drawings: All original and subsequent architectural drawings are on file with Hill-Griffin at NAS Pensacola (Building No. 458), Pensacola, Florida.
- E. Bibliography:
 1. Primary and unpublished sources:
 - Naval Facilities Engineering Command (NAVFAC) Archive, Port Hueneme, California.
 - Annual Reports of the Bureau of Yards and Docks, NAS Pensacola, Florida, 1842-1939.
 - Construction Contracts, NAS Pensacola, Florida, various dates, Record Group 2.
 - Detailed Inventory of Naval Shore Facilities, NAS Pensacola, Florida, various dates, Record Group 2.
 - General Development Maps, NAS Pensacola, Florida, various dates.
 - Property Record Cards, NAS Pensacola, Florida, various dates, Record Group 2.
 - NAS Pensacola Public Works Center, Pensacola, Florida.
 - Facilities Files, General.
 - Facilities Files, Photographs.
 - Photograph Collection. NAS Pensacola Public Affairs Office, Pensacola, Florida.
 - Photograph Collection. National Museum of Naval Aviation, Pensacola, Florida.
 - University of West Florida Special Collections Department, Pensacola, Florida.
 - Manuscript and Archival Collections.
 - Rare Books and West Florida regional Publications.
 - Map Collection.
 - Photograph Collections.
 - Young, Rear Admiral Lucien. *A Brief History of the United States Navy Yard and Station, Pensacola, Florida and its Possibilities*. Pensacola, Florida: privately printed, no

date, copy available at the Rare Books Collection, University of West Florida.

2. Secondary and published sources:

Air Station News, Pensacola, Florida, "An Historical Note," November 20, 1930.

Coleman, James C. and Irene S. *Guardians on the Gulf: Pensacola Fortifications, 1698-1980*. Pensacola: Pensacola Historical Society, 1982.

Corliss, Earle. *Activities of the Bureau of Yards and Docks, Navy Department, World War: 1917-1918*. Washington: U.S. Government Printing Office, 1921.

Delaney, Michelle M., ed. *The Cradle: Naval Air Station, Pensacola*. Pensacola: Pensacola Engraving Company, Inc., 1989.

Manuel, Dale. *Pensacola Bay: A Military History*. Charleston, South Carolina: Arcadia Publishing, 2004.

Pearce, George F. *The U.S. Navy in Pensacola: From Sailing Ships to Naval Aviation (1825-1930)*. Pensacola: University of West Florida Press, 1980.

Pearce, George F. "NAS Pensacola, Florida," in *U.S. Naval and Marine Corps Bases*, ed. Paolo Coletta, 464-471. Westport: Greenwood Press, 1985.

Pensacola Bay Area Chamber of Commerce, "NAS Pensacola: The Cradle of Naval Aviation," electronic document, www.pensacolachamber.com. Accessed February 18, 2005.

Shettle, M.L., Jr. *United States Naval Air Stations of World War II, Volume One*. Bowersville, Georgia: Schaertel Publishing Company, 1995.

E. Likely sources not yet investigated:

Correspondence and other records from the Pensacola Navy Yard and NAS Pensacola are located at the National Archives and Records Administration, Washington D.C. in the following Record Groups:

Record Group 45, "Naval Records Collection of the Office of Naval Records and Library" (1776-1927).

Record Group 72, "Records of the Bureau of Aeronautics" (1911-46).

Record Group 80, "General Records of the Department of the Navy" (1804-1958).

These records have been thoroughly explored and published by George F. Pearce (see above) for the period 1825-1930, but not for later periods.

PART IV. PROJECT INFORMATION

U.S. NAVAL AIR STATION, ASSEMBLY & REPAIR SHOP (Building No. 604)
HABS No. FL-494 (Page 36)

The mitigative documentation of Building No. 604 at U.S. Naval Air Station Pensacola, Florida, was undertaken from January to February 2005 by HHM Inc, of Austin, Texas, in accordance with a Memorandum of Agreement among the Department of the Navy (DON), NAS Pensacola, and the Florida State Historic Preservation Officer. The project was sponsored by DON, Naval Facilities Engineering Command, Engineering Field Division South (NAVFAC EFD SOUTH), Charleston, South Carolina, and managed by Ron N. Johnson, Registered Preservation Architect, Head of Cultural Resources Branch, and Historic Preservation Officer for NAVFAC EFD SOUTH. The principals involved in managing the documentation included David Moore (HHM), Project Director; Laurie A. Gotcher (HHM), Project Manager; and Anna Madrona (HHM), Quality Assurance Manager. The field project was developed and executed under the direction of Karen Hughes (HHM), Architectural Historian and Field Director and Beth Valenzuela (HHM), Intern Architect. The fieldwork was conducted by Eve Trester-Wilson (HHM), Architectural Historian; Kristen von Minden (HHM), Architectural Historian; C. Lynn Smith (HHM), Architectural Historian; and Leah Roberson (HHM), Field Technician. Olivia Chacón (HHM), Architectural Historian prepared the historic documentation sections, and Justin Edgington, Historian (HHM) conducted technical reviews. Editing, report layout, and graphics were managed by Lori Smith (HHM), Copy Editor and Production Manager; Julio Chacón (HHM), Graphic Artist; and Sara Sabzevari (HHM), Production Assistant. Large-format photography was undertaken by HHM Architectural Historian, Karen Hughes.