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United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES MULTIPLE PROPERTY DOCUMENTATION FORM

This form is used for documenting multiple property groups relating to one or several historic contexts. See instructions in *How to Complete the Multiple Property Documentation form* (National Register Bulletin 16B). Complete each item by entering the requested information. For additional space, use continuation sheets (Form 10-900-a). Use a typewriter, word processor, or computer to complete all items.

__x__ New Submission _____ Amended

A. Name of Multiple Property Listing

Florida's Historic World War II Military Resources

B. Associated Historic Contexts

(Name each associated historic context identifying theme, geographical area, and chronological period for each.)

Mobilization, War, and Demobilization, 1938-1947

C. Form Prepared by

name/title Sidney Johnston/Historic DeLand, Inc., & Barbara E. Mattick/Deputy SHPO for Survey & Registration

organization Bureau of Historic Preservation **date** December 2001

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city or town Tallahassee **state** Florida **zip code** 32399-0250

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in **36 CFR Part 60** and the **Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation.** (☐ See continuation sheet for additional comments.

Barbara E. Mattick, Deputy SHPO for Survey & Registration — 12/26/01

Signature and title of certifying official — Date

State Historic Preservation Officer, Division of Historical Resources

State or Federal agency and bureau

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Signature of the Keeper — 2/15/02

(X) — Date of Action

Table of Contents for Written Narrative

Provide the following information on continuation sheets. Cite the letter and the title before each section of the narrative. Assign page numbers according to the instructions for continuation sheets in *How to Complete the Multiple Property Documentation Form* (National Register Bulletin 16B). Fill in page numbers for each section in the space below

Historic Context, 1938-1947

Introduction

Florida played a significant role in World War II, arguably the pivotal event in the twentieth century history of the United States. The war changed the face of Florida's landscape beginning in the late-1930s, when the War Department expanded some existing facilities and began construction of several large installations. Increased development occurred after Germany attacked Poland, and Congress raised spending levels to new heights after Japan attacked Pearl Harbor. By 1945, the United States had allocated more resources to the war effort and supported more construction projects than anytime in its history. Florida supported a significant amount of that military construction and activity.

The activity essentially began in 1938, when President Franklin D. Roosevelt issued a rearmament message to the nation, declaring that the existing defense system was inadequate for the purposes of national defense in light of the multiplying armaments of other nations. Roosevelt's speech, coupled with concerns about Germany and Japan breaking treaties regarding the build-up of weapons arsenals, launched a significant campaign of military spending. Led by Senator Claude Pepper and measured by Gallup polls, Floridians ranked among the most ardent interventionists and supporters of an expanded military. By May 1940, Congress was acting with uncommon speed, appropriating new resources to the military. Expenditures increased exponentially after Pearl Harbor. By March 1942, the South set a new national record for military spending with Florida representing a significant part of those expenditures.

In 1944, Donald Nelson, chairman of the United States War Production Board, characterized the American South as an armed campground and arsenal that had "rubbed Aladdin's lamp." By then, so much wartime industry had poured into the region that the South now supported millions of jobs where few could be found a decade earlier. Nelson noted that the South contained the country's largest powder and explosives plant, the largest repair and supply depot, and the largest bomber plant. He explained that dozens of military installations sprinkled the region. Indeed, many Floridians rubbed their eyes in amazement at the transformation of their landscape during the conflict. By 1943, the state hosted about sixty primary military installations, and dozens of smaller support facilities. Because both the Department of the Army and the Department of the Navy expressed such great interest in the state, an agreement was reached in 1942 that established spheres of influence. Called the Stratemeyer-Towers Line, the agreement, with a few exceptions, gave the Army jurisdiction primarily over interior peninsula regions and west Florida, and granted the Navy authority over Florida's east coast sites.

The vast majority of Florida's World War II military bases trained flight crews for the Army Air Forces and the Navy, but large Army camps near Carabelle and Starke provided instruction to ground troops. Several

previously existing bases expanded significantly, and a few remained permanent facilities after the war. Several of those today stand at the vanguard of the nation's defense. Some tangible reminders testify to Florida's military contribution during the war. Eglin Air Force Base (AFB), MacDill AFB, Patrick Air Force Station, and Tyndall AFB, and naval facilities at Jacksonville, Key West, and Pensacola derive much of their heritage from World War II. Each of those retain some of their war-time built fabric, and a few have been listed in the National Register of Historic Places (NRHP), or determined eligible by the State Historic Preservation Officer (SHPO).

By the end of 1947, most of Florida's World War II military installations were returned to civilian authorities following the conflict. Over subsequent decades, many of those war-time resources were either burned as training exercises for fire departments, demolished, moved, or severely altered. Consequently, the historic building fabric on Florida's World War II-era military installations has largely disappeared. The few remaining tangible reminders of the era are worthy of recognition for their contribution to the greatest mobilization period in the nation's history.

This section provides contexts outlining the development of military bases in Florida during the era. Documenting the significant activities of the military during the war, the narrative discusses many of the installations developed during the war, and a shelf list enumerates bases long ago decommissioned. A research tool and predictive model to identify potential resources at current and former military installations, the document provides the necessary historical context for the listing of Florida's World War II era military resources within historic districts and as individual properties in the NRHP.

Mobilization, War, and Demobilization, 1938-1947

Since the 1820s, when Florida became a United States Territory, the state's long coastline supported various forts and military installations. Indeed, in its territorial period (1821-1845), Florida became the nation's most heavily fortified region. A century later, however, Fort Barrancas, Fort Clinch, the Castillo San Marcos, Fort DeSoto, Fort Jefferson, Fort Pickens, and Fort Taylor were relics of the past with little military value. Installations at Key West and Pensacola represented America's scant investment in military preparedness in the Sunshine State. Even during the "Great War," only a few significant military training installations existed in Florida. Those included the Army's Camp Joseph E. Johnston near Jacksonville; a naval aviation station at Pensacola; a naval base at Key West; and air fields for the Army Air Corps at Arcadia and Miami. The Coast Guard's personnel patrolled the coastal waters of the Atlantic Ocean and Gulf of Mexico. Although the Navy maintained a reduced presence at Pensacola and Key West following the conflict, the Army dismantled

Calstrom Field in Arcadia and conveyed Camp Johnston to Florida's National Guard, which renamed the facility Camp Foster.[1]

During the 1920s and Great Depression, most attempts by municipal governments and civic leaders to attract the military into their respective communities met with dismal failure. Although a few Coast Guard stations were established, including those at Ft. Pierce and Lake Worth, most lobbying efforts for a military presence by community leaders fell on deaf ears, in part, because of the nation's reluctance to maintain a large standing military force, and, in part, because of insufficient funds and political support to increase the nation's armed forces. This ground work would soon pay rich dividends, however, as military leaders searched for suitable areas and willing partners in the development of installations.[2]

A growing awareness of the effectiveness of air power and the first faint rumblings of trouble in Europe prompted various Florida cities to renew their pleas for a military base. Indeed, most of the ground work for persuading the Department of the Army and the Department of the Navy to build air bases, air stations, and camps in Florida was laid during the decade of the Great Depression. Much of this activity occurred concurrently, if disjointedly, at the local and national levels. Sustained local efforts at various Florida cities began about 1935. That year, a group of Jacksonville residents persuaded its chamber of commerce to approve a resolution urging the President and the Congress to expand the coastal air defense system of the nation. The resolution cited the inadequacy of present defenses and the vulnerability of the nation's--particularly Florida's--long coastline.[3]

Even smaller cities became involved in these political campaigns. The repeated requests of the citizens of Vero Beach for a military presence was rewarded in December 1935, when the city hosted an Army Air Corps's war games. Commanded by General Henry H. "Hap" Arnold, later chief of the Army Air Forces, two hundred aircraft participated in the maneuvers. The fifteen-day exercise occurred in December 1935, during which squadrons of bombers staged mock raids from Vero Beach to "destroy" docks and ships at Biscayne Bay and

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[1]Works Progress Administration, *Florida: A Guide to the Southernmost State* (New York: Oxford University Press, 1939), 61, 199, 240; Junius Dovell, *Florida: Historic, Dramatic, Contemporary,* 4 vols., (New York: Lewis Historical Publishing Company, 1952), 2: 768; T. Frederick Davis, *History of Jacksonville, Florida and Vicinity* (St. Augustine: Record Press, 1925), 264-266; Ernest Dibble, "Giveaway Forts: Territorial Forts and the Settlement of Florida," *Florida Historical Quarterly* 78 (Fall 1999), 207.

[2]Works Progress Administration, *Florida,* 61, 199, 240; Dovell, *Florida,* 2: 768; Davis, *Jacksonville,* 264-266.

[3]*Jacksonville Florida Times-Union,* 15 October 1940; William R. Adams, "Architectural and Historical Survey of the Pensacola Naval Air Station, Pensacola, Florida," unpub. mss., St. Augustine: Historic Property Associates, Inc., 1986, p. 1, 36-37; William R. Adams, "Historic Architectural Survey of the Jacksonville Naval Air Station, Duval County, Florida," unpub. mss., St. Augustine: Historic Property Associates, Inc., 1997, p. 6.

Tampa Bay. The brief interlude in civilian service at Vero Beach airport presaged a much longer and more intensive military use five years later.[4]

At the national level, the Military Affairs Committee of the House of Representatives held hearings in 1935 on the need for an improved air defense system, directing the War Department to begin the process of selecting sites for air bases. Jacksonville authorities proposed a site for installation of an air base, but lost their bid to Tampa, where MacDill Field was constructed. Undaunted by the setback, the Jacksonville lobbyists persisted, and in December 1935, Carl Vinson, chairman of the House Naval Affairs Committee, announced a forthcoming visit to Florida's gateway city to examine a site for a naval project.[5]

Florida's U.S. Senator Claude Pepper, elected to office in 1937, played an instrumental role in encouraging the military to establish installations in Florida. Led by Pepper, the state's residents ranked among the most interventionist in the nation. They largely supported his efforts to bring the military into Florida, and later take the nation into war. Pepper often moved ahead of the White House in calling for larger military appropriations. His enthusiasm for war and arms build-up won him the disdain of the Congress of American Mothers, who burned him in effigy in front of the Capitol. Yet, in part because of coaxing by Pepper, the Congress in May 1938 named a six-member committee, created for the purpose of studying the need for establishment of additional naval bases. Designated as the "Statutory Board on Submarine, Destroyer, Mine, and Naval Air Bases" and headed by Rear Admiral A. J. Hepburn, the newly-formed Hepburn Board began at once to consider sites for establishment of naval air bases.[6]

The Hepburn Board visited locations along the east coast of the United States between Charleston and Key West. The board gave local authorities at each site an opportunity to present their best case. Key factors considered by board members included the strategic position of the locale and its potential for easy and rapid development as a naval air station. Two basic costs were associated with each site: acquisition and preliminary development. With a view toward use of each site by seaplanes, the board reviewed water depth, environmental hazards (especially hurricane potential), presence of obstacles, and the proximity of civilian centers that might

[4]M. L. Shettle, *United States Naval Air Stations of World War II,* 2 vols., (Bowersville: Schaertel Publishing Company, 1995), 1: 217; *Vero Beach Press-Journal,* 29 November, 1, 6, 13 December 1935.

[5]Ronald Williamson, *NAS Jax: an Illustrated History of Naval Air Station Jacksonville, Florida* (Paducah, Kentucky: Turner Publishing Company, 1990), 15.

[6]Julius Furer, *Administration of the Navy Department in World War II* (Washington, D. C.: Naval History Division, 1959), 381, 535; U. S. Congress, 76th Cong, 1st Sess, House Doc. 54, "Supplemental Report of the Hepburn Board Relative to Establishment of a Naval Air Base in the Southeastern Section of the United States," March 21, 1939; James Clark, "The 1944 Florida Democratic Senate Primary," *Florida Historical Quarterly* 66 (April 1988), 381-382; Gary Mormino, "Senator Claude Pepper Plans for War," *Forum* 22 (Fall 1999), 10; Ben Rogers, "Florida in World War II: Tourists and Citrus," *Florida Historical Quarterly* 39 (July 1960), 34.

object to noise. Operation of a base would also require an adequate labor supply and adjacent land transportation facilities. The Hepburn Board made its recommendations in 1938, which included spending sixty-five million dollars on naval aviation facilities over a three year period. Naval facilities at the Florida cities of Jacksonville and Pensacola represented approximately thirty percent of that recommended expenditure.[7]

In 1938, in the interest of national defense, President Franklin D. Roosevelt issued a rearmament message to the nation. While reiterating America's policies of isolationism and neutrality, he expressed concerns over the breaching of weapons treaties by Germany and Japan, which had been established after World War I to limit their military forces. Roosevelt's speech helped push America's armed forces spending to new levels. By then, the Department of the Navy maintained about forty major installations in the continental United States. The eruption of war in Europe in 1939 accelerated the work of the Hepburn Board selecting sites and the subsequent construction of naval facilities. In 1940, the Congress allocated one hundred sixty million dollars for the Navy's continental air bases, and two hundred million dollars for yards.[8]

By the end of the war, the Navy had spent several billions to develop facilities in the United States, a significant percentage of that in Florida. Because of Florida's long coastline, relatively inexpensive property values, and good weather, the Sunshine State by war's end contained twenty-three naval air stations and auxiliary fields, more than any other state in the union. Pensacola Naval Air Station, the nation's oldest, underwent expansion at the same time that architects and contractors were building Jacksonville's naval air station. Soon operational training fields were under construction at Daytona Beach, DeLand, Melbourne, and several other cities. Although some were built from scratch, the Navy developed many of these from former municipal airport. In most cases, the Navy was heavily lobbied by cities that often offered an existing air field at little cost, a source of labor, and a good supply of inexpensive housing.[9]

On the eve of World War II, the Department of the Army also gained a significant presence in the Sunshine State. It established both camps and air fields. Military spending increased in the late-1930s, and, in 1940, the War Department set aside over half a billion dollars for training camps and posts, and one hundred million dollars for air field construction. Organized in 1939, Camp Blanding near Starke began its existence as a

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[7]Furer, *Navy Department,* 381; U. S. Congress, 76th Cong, 1st Sess, House Doc. 54, "Supplemental Report of the Hepburn Board Relative to Establishment of a Naval Air Base in the Southeastern Section of the United States," March 21, 1939.

[8]Shettle, *Naval Air Stations of World War II,* 1: 7, 233; Furer, *Navy Department,* 381; "Building for Defense," *Engineering News Record,* 125 (October 1940), 37; John Wiltz, *From Isolation to War, 1931-1941* (New York: Crowell Company, 1968), 56-70.

[9]Shettle, *Naval Air Stations of World War II,* 1: 7, 233; Furer, *Navy Department,* 381; "Building for Defense," *Engineering News Record,* 125 (October 1940), 37.

Florida National Guard facility known as Camp Foster. Activated as an Army training camp in September 1940, the camp would soon become the fourth largest city in Florida. Construction at Blanding eventually soared to sixty million dollars. In 1942, the Army broke ground at Camp Gordon Johnston, which became Florida's second largest military facility in terms of physical size and troops trained during the war. Camp Johnston became one of the Army's primary Amphibious Training Centers (ATC). A March 1943 *Newsweek* magazine observed that the training received by troops at Camp Johnston was "probably the closest approach to actual combat given any American troops."[10]

The Army had an equally significant presence through its widely-scattered air fields. Competition for air field sites became so fierce between the Army and Navy that in 1942 Rear Admiral John H. Towers of the Navy and Major General George E. Stratemeyer, chief of staff of the Army Air Forces, met in Washington, D. C. to hammer out a compromise. Known as the Stratemeyer-Towers Line, their agreement divided Florida into spheres of jurisdictional influence, which roughly extended down the middle of the peninsula. With a few exceptions that comprised existing military bases, such as Pensacola, the Army received jurisdiction over inland regions, sites along the Gulf of Mexico, and west Florida. The Navy received authority to designate sites along the east coast of the peninsula. One of the exceptions to the agreement was the development of Morrison Army Air Field in West Palm Beach, which the Army had leased in 1940, over the objections of the Department of the Navy.[11]

The Army developed nearly forty air fields in Florida, which ranged in size from sprawling Eglin Field and MacDill Field to smaller facilities at Keystone Heights, Perry, Sarasota, and Williston. The development of these facilities was part of one of the longest and most bitter disputes in twentieth century American military affairs: the independence of the air forces from the command of ground forces. Air power proved crucial to the war effort, and the existing organizational framework was stretched to its limits. The experience gained during World War II demonstrated the necessity for creating the U. S. Air Force, which was established as an independent branch of the armed forces in 1947.[12]

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[10]"Building for Defense," *Engineering News Record,* 125 (October 1940), 37; *Jackson County Times,* 19 December 1941, 3 April 1942; *Bradford County Telegraph,* 23, 30 August 1940; *Tallahassee Daily Democrat,* 1 April 1941; Robert Billinger, *Hitler's Soldier's in the Sunshine State: German POWs in Florida* (Gainesville: University Press of Florida, 2000), 9; Michael Gannon, ed., *The New History of Florida* (Gainesville: University Press of Florida, 1996), 323-324; Roland Gask, "Prelude to Invasion: Real Bullets Enforce Lesson at Army Amphibious Training Center," *Newsweek* 22 March 1943, 22-23.

[11]Shettle, *United States Naval Air Stations of World War II,* 1:7; *New York Times,* 26 June 1942; Richard Osborne, *World War II Sites in the United States* (Indianapolis: Riebel-Roque Publishing Company, 1996), 56.

[12]Herman Wolk, *Planning and Organizing the Postwar Air Force* (Washington, D. C.: Office of Air Force History, 1982), iii-v.

The antecedents to the nation's air force extends to 1907, when the Aeronautical Division, Office of the Chief Signal Officer was established. In 1920, Secretary of War Newton Baker appointed a board, which recommended an air corps separate from the Army. Steps were taken in 1926 and 1935 to develop the plan. But, during the period, many Americans saw little need for a larger armed forces. Most failed to appreciate the advantages of the aircraft as a military weapon until the late-1930s. Against the advice of the Army and Navy, the War Department organized the General Headquarters Air Force within the Army's command structure in 1935. This move was a harbinger of the objectives, development, and organization of America's air force in World War II. Then, in 1941, America's air power was further reorganized as the Army Air Forces, but remained within the command structure of the Department of the Army. Two major components contributed to the Army Air Forces: the Air Corps was the material and training division, and the General Headquarters Air Force division was charged with combat operations. Although the Army Air Forces would enjoy virtual autonomy within the War Department, it remained dependent on the Army's Corps of Engineers for the development of its facilities.[13]

After Roosevelt's 1938 speech, the Congress authorized the Army to spend eight billion dollars on its air corps facilities and aircraft. As part of this expansion program, various bomber and pursuit aircraft were developed, including the Boeing B-17, Consolidated B-24, North American B-25, Lockheed P-38, and Republic P-47. In 1938, General Arnold became chief of the Army Air Forces, and began lobbying for the expansion of bases. As its first priority, the air corps began work with the Civilian Aviation Administration (CAA) and Works Progress Administration (WPA) to improve all civilian airports lying within one hundred miles of the coast from Maine to Alabama. Virtually all of Florida's civilian airports received some assistance under this program. The experience provided military leaders with a broad knowledge of Florida's relatively flat topographical features, ideal flying weather, moderate climate, and other advantages to train pilots. Not surprisingly, nearly all of the fields receiving military assistance during the Great Depression were brought into military use after Pearl Harbor. By 1943, after two large Army camps, and dozens of the Army's air fields and the Navy's air stations sprinkled the landscape, the state had become an armed campground where thousands of soldiers received training for combat in the air, land, and sea.[14]

The air fields and air stations built by the military were supported by numerous other facilities called auxiliary fields and outlying fields. These secondary fields typically occupied sites nearby the primary facility. Some auxiliary fields were as large and well-developed as the bases they supported. Most were significantly smaller,

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[13]Wesley Craven and James Cate, *The Army Air Forces in World War II,* 7 vols., (Washington, D. C.: Office of Air Force History, 1983), 1: 23-24, 31, 32, 108-109, 114-115, 6: 130; Wolk, *Planning and Organizing the Postwar Air Force,* iii, 3, 15, 21.

[14]Craven and Cate, *The Army Air Forces in World War II,* 1: 23-24, 31, 32, 108-109, 6: 130; Wolk, *Planning and Organizing the Postwar Air Force,* iii,, 3.

however, and contained only a few buildings and a small runway system. Even more rudimentary were the outlying fields, most of which were little more than emergency grass landing strips. Although barracks and even hangars stood at some outlying fields, they generally supported few buildings or structures. Still, these support facilities played an important role providing safeguards in the mobilization effort to train pilots. When assessing the number of military installations in Florida during the war, some historians have included these smaller facilities within the framework of the larger primary bases, accounting for nearly one hundred seventy-two military installations in the state.[15]

Because of Florida's location, the Army's air transportation command used several bases in south Florida to move hundreds of aircraft through the state on route to North Africa and to the China-Burma-India region, on a trip known as the "Hump." Homestead Field and Morrison Field at West Palm Beach contributed to the global network. The Army leased the West Palm Beach field in 1940, after which the WPA expanded the runways. The Lend-Lease Act, which decisively committed the economic resources of the United States to the Allies, took the nation to the brink of war in January 1941. The legislation provided weapons of war to the Allies in exchange for bases in the Atlantic. Soon cargo, bomber, and fighter aircraft moved through Morrison Field and other south Florida fields on their way to Asia and Europe. Then, after Pearl Harbor, hundreds of aviators trained at the West Palm Beach facility. In the eight months prior to June 6, 1944, or D-Day, nearly six thousand aircraft in the air transportation commanded moved through Morrison Field.[16]

If the Army and Navy dramatically increased their presence in the Sunshine State, the U. S. Coast Guard and U. S. Marine Corps remained virtually unchanged with regard to their installations. In 1939, the Coast Guard maintained two hundred life-saving stations throughout the country, including nine facilities in Florida. Some of the stations that sprinkled Florida's shores had been constructed in the late-nineteenth century, although several dated to the early and mid-1930s. Issued by President Roosevelt in November 1941, Executive Order 8929 directed the Coast Guard to operate as part of the Navy. During the war, the operations of the Coast Guard were analogous to those of the Marine Corps, in that, the Guard maintained independent staff facilities, such as engineering, finance, personnel, and supply, but was controlled by the Naval District Command structure. One of the few new stations or facilities assembled in Florida for the Coast Guard was a training station for the Guard's maritime commission, which was completed in 1941 in St. Petersburg.[17]

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[15]Shettle, *Naval Air Stations of World War II,* 1: 7-8; David Ramsey, "Military Installations in Florida During World War II," unpublished typescript, Gainesville, 1975.

[16]Eliot Kleinberg, *War in Paradise* (Melbourne: Florida Historical Society Press, 1999), 42-43; Wiltz, *From Isolation to War, 1931-1941,* 85-86.

[17]Furer, *Navy,* 598-611; Malcolm Willoughby, *The U. S. Coast Guard in World War II* (New York: Arno Press, 1980); Leslie Divoll, "Lake Worth Inlet Station, Palm Beach County, Florida," unpub. mss., West Palm Beach, 1992, p. 12; Gannon, *The New History of Florida,* 326-327; "Florida Training Station for Maritime Commission," *Architectural Forum* (December 1941), 418-420.

Notwithstanding its revised command structure and limited facilities in Florida, the Coast Guard played an important role guarding the state's coastline and rescuing sailors from ships in distress and those sunk by German U-boats. In 1942, submarines sank twenty-four merchant ships off Florida's Atlantic and Gulf coasts. Destruction of sixteen of those vessels occurred in Atlantic waters in the period of February and May of 1942 between Cape Canaveral and Boca Raton. Some of the destruction occurred within several miles of the coast, presenting unsettling spectacles of wartime conditions at home to residents and visitors alike. During the period, personnel based at Coast Guard stations rescued five hundred sailors from Florida's waters. Increased naval action and aircraft patrols from area naval air stations and air fields helped drive the submarines from Florida's shoreline.[18]

The Civil Air Patrol (CAP) also participated in the anti-submarine and other routine patrol activities between 1941 and 1943. In the latter year, the CAP was subsumed into the Army Air Forces. But, by then, CAP volunteers, both men and women, had flown twenty-four million air miles, contributed to the sinking of fifty-seven submarines, and helped rescue countless downed Army and Navy pilots. In addition, CAP aircraft often pulled sleeved targets used by pilots in aerial gunnery practice and land-based soldiers firing anti-aircraft guns.[19]

Although the military made significant investments building its infrastructure in Florida, in the initial stages of the war it did not maintain sufficient space to house its personnel. To help quarter trainees, it appropriated numerous properties outside bases, most often in downtowns. Nationwide, the Army Air Forces housed airmen in four hundred thirty four hotels and apartment buildings in Atlantic City, Boca Raton, Chicago, Grand Rapids, Miami, and St. Petersburg. Florida contained the bulk of those properties. At Miami and Miami Beach alone, which the Army Air Forces considered best adapted to training recruits, almost three hundred apartment buildings and hotels were either leased or purchased. In addition to several military installations, the city hosted a military replacement training center, officer's candidate school, and officer's training school. By the fall of 1942, airmen trainees occupied nearly seventy thousand rooms in Miami and Miami Beach. Nearly one-quarter of all Army Air Force officers and one-fifth of enlisted men received their basic training in Dade County, Florida. At St. Petersburg, a flood of ten thousand airmen arrived in 1942, many of whom were housed in the Pennsylvania Hotel, Palais Royale Building, and other downtown facilities.[20]

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[18]Furer, *Navy,* 598-611; Willoughby, *The U. S. Coast Guard in World War II;* Divoll, "Lake Worth Inlet Station," p. 12; Gannon, *The New History of Florida,* 326-327; Kleinberg, *War in Paradise,* 34.

[19]Thomas Reilly, "Florida's Flying Minute Men: The Civil Air Patrol, 1941-1943," *Florida Historical Quarterly* 76 (Spring 1998), 437-438.

[20]Gannon, *The New History of Florida,* 324-325; *New York Times,* 20 June, 11 November 1943.

Soon rumors flew that Florida had no room for tourists. To combat the speculation, the state chamber of commerce conducted a survey that showed the military had occupied only forty percent of the hotel rooms in the state. Notwithstanding the military influx, the survey showed that over a quarter million vacancies remained, about one-half of those in Miami and Miami Beach. Oddly, some wives who followed loved ones to Miami and elsewhere often found hotels rooms were only available to tourists, not spouses of servicemen, even those with children. By June 1943, however, many more rooms would become vacant as the movement of personnel overseas, and increased numbers of barracks and quarters on installations prompted the military to cancel many of its hotel leases. That year, over one hundred leases were terminated at Miami. Undeterred by the change, Miami's business leaders predicted that those rooms would soon be filled by tourists and civilian laborers working to expand area military installations. At St. Petersburg, the Army Air Forces returned thirty-three of its leased hotels and apartment buildings to their owners in July and August, and the fashionable Boca Raton Club went back to its owners in September 1943. Other fashionable Florida hotels leased by the military included the Don Ce Sar in St. Petersburg Beach. In addition, the Breakers at Palm Beach was enlisted as an Army hospital, and the Ponce De Leon in St. Augustine housed Coast Guard trainees. Mobilization of the military spread across the Florida landscape, filling hotels empty during the Great Depression, and bringing new jobs and reviving local economies.[21]

Accounting for two-thirds of the state's wartime industry, Florida shipyards expanded in Jacksonville, Panama City, Pensacola, and Tampa. Almost one-half of Florida's wartime industrial contracts were in Bay, Duval, and Hillsborough Counties alone. During the war, Jacksonville's docks built nearly one hundred Liberty ships, and dozens of patrol boats and minesweepers for the Navy. The Merrill-Stevens Company dry docks in Jacksonville, a million dollar facility, was reputed to be the largest in the South when it was completed in February 1943. The Wainwright Company of Panama City launched over one hundred boats, employing nearly fifteen thousand shipbuilders. Seven thousand laborers found work at the Pensacola Shipyard and Engineering Company. Assault boats were assembled in Orlando, and Army tugboats at Lake Beresford near DeLand. Various firms also built small aircraft, primarily gliders, for the War Department. Among those were Orlando's Florida Aircraft Corporation and Babcock Corporation in DeLand.[22]

Part of Florida's mobilization effort included housing prisoners of war (POW). The first POWs arrived in Florida in 1943. In all, nearly four hundred thousand German soldiers were housed at camps throughout the country. In Florida, more than nine thousand POWs were interned in twenty-two camps that stretched between

[21]Gannon, *The New History of Florida,* 325, 339; *New York Times,* 20 June 1943; Rogers, "Florida in World War II," 35; Thomas Graham, "Flagler's Magnificent Hotel Ponce de Leon," *Florida Historical Quarterly* 54 (July 1975), 15-16.

[22]George Buker, *Jacksonville, Riverport-Seaport* (Columbia: University of South Carolina Press, 1992), 150; *Jacksonville Florida Times Union,* 16 February 1940; Charlton Tebeau, *A History of Florida* (Coral Gables: University of Miami Press, 1971), 416-417; Gannon, *The New History of Florida,* 328-329.

Eglin Field and Homestead Field. Camp Blanding served as the primary POW camp in the state. The larger air fields and stations, such as Camp Johnston, Drew Field, Eglin Field, Jacksonville NAS, MacDill Field, and Orlando Air Base, were among the first installations to receive POWs. Smaller POW camps, such as Page Field at Fort Myers and Welch Hospital at Daytona Beach, were opened as late as 1945. The Venice Army Air Field received two hundred POWs in February 1945. Organized into a camp of forty-one five-man barracks, and an infirmary, mess hall, and recreation building, the POWs helped to expand the Venice air field and labor in mess halls and officer's clubs. Some even worked in the local hospital. But, complaints flooded in that the POWs were replacing civilians and military veterans who needed those jobs. Although the POWs at Venice enjoyed a relatively well-built camp and good jobs, their counterparts at Clewiston and Homestead toiled in sugarcane fields and lived in crude agricultural camps. Other installations put POWs to work in the citrus and lumber industries. Most Germans were unaccustomed to the humidity, heat, and swarming insects. Some POWs, such as Karl Behrens, became despondent and committed suicide.[23]

In 1942, German submarines delivered saboteurs onto America's beaches, the first invasion of the continental United States by military forces since the War of 1812. One group of four spies landed on Long Island, New York, and four other Germans landed at Ponte Vedra Beach in northeast Florida. Known as Operation Pastorius for Franz Daniel Pastorius, America's first German immigrant, the German spies in Florida buried their supplies on the beach. Those supplies included over seventy thousand dollars and boxes of explosives and incendiary and detonation devices. They walked to Jacksonville Beach, where they boarded a bus for Jacksonville. Eventually, two of the agents traveled to New York, and two others to Chicago.[24]

The espionage team was given orders for an ambitious schedule of sabotage, including the destruction of factories and power plants, and disrupting railroads in Alabama, Chicago, Illinois, Missouri, New Jersey, and New York. But, before they could establish themselves and set any explosives, the New York team betrayed the operation. The four spies who landed in Florida were captured at Chicago and New York in June 1942. After their arrest, trial, and conviction they were executed. Subsequent reports of other German infiltrators remained unsubstantiated. Nevertheless, the sight of merchant marine ships sinking along the coast and reports of German saboteurs and spies made most Floridians uneasy during the early years of the war. The mobilization of air fields, camps, and naval stations went far to alleviate those concerns.[25]

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[23]Eliot Kleinberg, *War in Paradise: Stories of World War II in Florida* (Melbourne: Florida Historical Society Press, 1999), 79-90; Robert Billinger, *Hitler's Soldiers in the Sunshine State: German POWS in Florida* (University Press of Florida, 2000), 32, 39-40.

[24]Leon Prior, "Nazi Invasion of Florida!" *Florida Historical Quarterly* 49 (October 1970), 129-139.

[25]Kleinberg, *War in Paradise,* 37-40; Prior, "Nazi Invasion of Florida!," 129-139.

Only one arrest for spying was made in Florida during the war. Apprehended in 1941, Carl Schroeter was tried and convicted of spying. A resident of Miami, Schroeter had assisted Kurt Ludwig, a German operative in New York, by obtaining photographs and developing reconnaissance about various military installations in south Florida. He later committed suicide in an Atlanta prison.[26]

African-Americans in the Military

World War II was the last American conflict fought with segregated fighting forces. Although mobilization and war-time conditions brought African Americans into military service, it did little to redefine America's cultural landscape. At the onset of the war, African Americans embarked on a "Double Victory" campaign, that is, the defeat of fascism abroad and discrimination at home. The armed forces, however, simply reaffirmed segregation, making few attempts to alter the traditional racial attitudes of whites. Although the Army and Army Air Forces received African-Americans for military service in 1941, the Navy only permitted blacks in the mess halls. In 1940, the Navy had four thousand black personnel, and five years later although sixty officers were black, most of the enlisted men held steward's ratings. The Marine Corps enlisted very few African Americans on the pretense that the Corps was too small to form racially separate units. Despite the discriminatory climate, a quarter century after the war the armed forces had moved from reluctant inclusion of a few segregated units to a racially integrated establishment. World War II helped set the agenda for the challenges faced by the military and a white society hesitant to end segregation.[27]

Florida's legal system made a few small encouraging steps to improve civil rights during the war. Several court cases in Florida ensured a place for blacks on local civil juries. Later, the U. S. Supreme Court ruled against whites-only primaries in Florida, which helped sow the seeds for the later civil rights movement. Despite these rulings, few other advances were made in race relations in Florida during the war years.[28]

On Florida's military installations blacks remained in segregated facilities. Initially, the Army Air Forces organized nine all-black squadrons of two hundred fifty men each to be stationed at various installations throughout the country. Two of the first nine air bases to receive African-American men were Dale Mabry

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[26]Leon Prior, "German Espionage in Florida During World War II," *Florida Historical Quarterly* 39 (April 1961), 374-377.

[27]Morris MacGregor, *Integration of the Armed Forces, 1940-1965* (Washington, D. C.: United States Army Center of Military History, 1981), 3, 13, 17, 58, 98-101; Alan Osur, *Blacks in the Army Air Forces During World War II* (Washington, D. C.: Office of Air Force History, 1977), 25, 28, 87; Gannon, *The New History of Florida,* 335.

[28]Gannon, *The New History of Florida,* 335; Osur, *Blacks in the Army Air Forces During World War II,* 25, 28, 87; Gordon Patterson, "Hurston Goes to War: The Army Signal Corps in Saint Augustine," *Florida Historical Quarterly* 74 (Fall 1995), 166-176.

Field near Tallahassee and MacDill Field near Tampa. Commanded by white officers, the men stationed at these and later air fields largely performed driving, guard, and maintenance duties. Almost immediately protests began with black personnel voicing objections over being termed aviation squadrons when all their work was common labor.[29]

At Eglin Field, the commanding officer protested the assignment of African Americans even before they arrived, citing the distant recreational facilities at Pensacola and potential problems with the "lower caste white population" who lived near the air field. Despite his objections, separate facilities were constructed at Eglin Field for the black airmen, who eventually totaled about one thousand. Their initial duties consisted of performing large-scale clearing operations of satellite fields. Although some local citizens voiced complaints to the War Department about black troops, the Army Air Forces maintained a policy to "assign colored troops in practically all Air Corps Stations in the continental United States." One Tuskegee pilot stationed at Eglin Field reported that the white post contained green lawns and beautiful buildings, but the section for black troops "was nothing but mud, dirt, unpainted shacks, and Gloom!"[30]

Black troops stationed at Dale Mabry Field and Camp Johnston at Carabelle frequented Tallahassee's "colored recreation center," otherwise known as Frenchtown. In 1944, a small contingent of Tallahassee police, with guns drawn and tear gas canisters at hand, arrested five black soldiers for disorderly conduct. Soon, they found themselves surrounded by two hundred black soldiers, who protested the action and demanded that black military police take the offenders into custody. A subsequent investigation resulted in banning blacks stationed at Camp Johnston from visiting Tallahassee. At Dale Mabry Field, officials began preparing weekly racial reports.[31]

In 1943, a notable riot in Army Air Force history occurred at MacDill Field, Tampa. Labeled by one historian as "a microcosm of the urban race riot of the mid-twentieth century," the disturbance had its roots early in the appearance of blacks at the base. Upon their arrival by train, the troops were met by a "big red-necked sheriff who told them that there was only one place in town they could socialize--along Central Avenue." At the air field, African Americans were quartered at segregated facilities capable of housing thirty three hundred troops. Rooted in the separate quarters and limited contacts between whites and African Americans, racial tensions increased. Unprepared for southern discrimination, a large percentage of the blacks at MacDill Field, and, indeed, many other Florida installations, were from northern cities. Part of a pattern of the base's leadership

[29]Osur, *Blacks in the Army Air Forces During World War II,* 25, 28, 87.
[30]Osur, *Blacks in the Army Air Forces During World War II,* 31-33, 90.
[31]Gannon, *The New History of Florida,* 336; Coles, "Camp Gordon Johnston," 18-20.

failing to respond to the escalating disharmony, the commanding officer turned a deaf ear to their objections about whites supervising the exchange in their sector.[32]

Typical of later race riots in post-war America, the May 1943 event at MacDill erupted following a relatively insignificant encounter between an allegedly intoxicated African American soldier and a "tired, irritable white saleswoman" at the exchange. After a verbal clash ensued, a white soldier interfered, leading to a fist fight between the two soldiers. Soon a crowd of African Americans surrounded the combatants, and then rumors circulated of the imminent arrival of the military police. Fearful of how the police would handle blacks soldiers under these circumstances, some returned to their barracks and obtained rifles. Upon the approach of officers and police, many refused to disperse or obey orders from their superiors. Various groups broke off from the scene and wandered the base, and several hours passed before order was restored.[33]

Following the mutiny, as it was officially designated, the base provided better training for non-commissioned officers. But, the investigating board charged with studying the riot did not seek to uncover its causes. Eventually, responsibility for the mutiny was placed on the local commander, who failed to resolve grievances, and to improve the low quality and ability of white officers who were assigned to the African American units. But, other charges were levied against several enlisted men who had stored guns in their barracks. They were court-martialed and sent to jail. Later, black morale at MacDill plummeted from "humiliation to disgust" after German prisoners of war objected to working in mess halls where blacks ate. Some blacks believed that prisoners of war were treated with more respect and better food than African American soldiers. Partly because of the heightened racial tensions at MacDill, the American Civil Liberties Union assessed Tampa as one of the top centers of repression in the United States during the war.[34]

Most military installations in Florida, as elsewhere in the South, quartered African American troops in separate facilities. Many were not equal. At Camp Johnston blacks spoke of not being permitted to attend church services, and found the club service buildings off limits. Investigations of Camp Johnston, Dale Mabry Field, and MacDill Field by William Hastie, dean of Howard University's law school, Thurgood Marshall, and a commission appointed by the NAACP resulted in few changes. Still, some attempts were made to improve the morale of black troops. At Boca Raton Air Field, the base purchased musical instruments and formed a volunteer black band and orchestra. At MacDill Field, a band shell and concrete dance area were assembled near the exchange in the black section of the base. Dr. Mary McLeod Bethune, Joe Louis, and Sugar Ray

[32]Osur, *Blacks in the Army Air Forces During World War II,* 90, 103.

[33]Osur, *Blacks in the Army Air Forces During World War II,* 103.

[34]Osur, *Blacks in the Army Air Forces During World War II,* 103, 106-107; Gary Mormino, "GI Joe Meets Jim Crow: Racial Violence and Reform in World War II Florida," *Florida Historical Quarterly* 73 (July 1994), 27-29, 32.

Robinson entertained troops at several Florida military installations. In contrast to military bases in Florida and elsewhere in the South, such as bases in Colorado and Maine, blacks could use all the facilities, including the chapel, exchange, gymnasium, and theater. Black officers ate with their white counterparts at the base in Pueblo, Colorado.[35]

Several black Floridians gained fame in the renowned Tuskegee Air Force. Trained at the Alabama's Tuskegee Army Air Field, Charles Bailey, a native of Punta Gorda, flew one hundred thirty three missions in Europe. In 1945, the War Department awarded him the Distinguished Flying Cross. Pensacola native Daniel James, Jr. was another Tuskegee airman. He flew hundreds of missions in World War II, and the Korean and Vietnam conflicts. In 1975, he became the first African American four-star general in U. S. Air Force history.[36]

Not all uniformed blacks were stationed at camps or air fields in Florida. The Army established its only Signal Corps training school in the nation for African Americans west of St. Augustine. Located at the Florida Normal & Industrial Institute, the Signal Corps occupied some of the brick buildings that supported the education center. Poor cafeteria food and overcrowded dormitories provoked protests from Zora Neale Hurston, who then lived in St. Augustine. She wrote Walter White of the NAACP, lamenting that, rather than Fisk, Hampton, or Tuskegee, the relatively insignificant St. Augustine school had been selected for house and train black troops. Hurston opposed the Signal Corps at St. Augustine and even the Air Corps' program at Tuskegee, in part, because she believed they entrenched racism and segregation. Still, her objections helped sparked better conditions at the institute, and eventually the Army's training program for blacks at St. Augustine was accorded among the highest ratings in the country. In the process, Florida Normal and Industrial greatly improved its physical plant, and emerged from the war an improved center of higher education. Its president, William Gray, was hired to lead Florida Agricultural & Mechanical University in 1944.[37]

Women in the Military

If the status quo of race relations showed some signs of crumbling during World War II, the role of women was among the most visible and powerful images on America's homefront. Women assumed a variety of new roles, including workers in the citrus industry and on farms, delivery services, bus and trolley operators, and municipal police forces. Even heavy industry, such as lumber mills and shipyards in Jacksonville and Tampa, hired women who personified the images of "Joan of Arc" and "Rosie the Riveter." Legislatively, women made

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[35]Osur, *Blacks in the Army Air Forces During World War II,* 103, 106-107; "MacDill Field, Florida," *Architectural Forum* 80 (February 1944), 64-65; Mormino, "Racial Violence and Reform," 27-29, 30-31.

[36]Lynn Homan and Thomas Reilly, *Wings Over Florida* (Charleston: Arcadia Publishing, 1999), 108-109.

[37]Patterson, "Hurston Goes To War," 166-183; unfortunately, the Florida Normal & Industrial Institute was razed in the mid-1990s.

important gains. Voters in St. Petersburg elected Mary Lou Baker to the Florida House, where she introduced the "Women's Emancipation Bill," which was signed into law and strengthened the rights of married women.[38]

Like blacks, women, too, trained at and worked on military installations in the Sunshine State. They were mobilized early in the conflict. Thousands of women trained in Daytona Beach, and then served at various camps and air fields in the state. Wartime positions led to lifelong careers for some women in either the Army Air Forces (WASP), Army (WAC), Coast Guard (SPAR), Marine Corps (MCWR), or Navy (WAVE). Even though precedents for women in military uniform extended to World War I, the War Department was reluctant to re-introduce women into the military on the eve of World War II. In May 1941, Edith Rogers introduced legislation into the House of Representatives to establish the Women's Auxiliary Army Corps (WAAC), which became public law in May 1942. The WAAC later became the Women's Army Corps (WAC). Creation of the WAC led to the establishment of the Naval Women's Reserve (WAVE) in July 1942.[39]

Similarly, women flyers had been considered by the Army since 1939, but the formation of the WASP did not occur until 1942. The Army Air Forces appointed Jacqueline Cochran as director, and training began in November 1942. Most of their training occurred in Texas, but women pilots ferried aircraft into Florida and throughout the United States. The program was deactivated in November 1944, but the Women's Auxiliary Ferrying Squadron (WAFS) continued transporting aircraft between air fields. Many WASPs were stationed at Florida installation, including Fort Myers and Orlando. Trained as a civilian pilot in 1939, Dorothy Ebersbach was Tampa's only WASP. Her tasks included test-flying aircraft, repair work, and towing targets for gunnery practice. Lakeland's Ruth Clifford also served in the WASP, having previously logged over four hundred fifty civilian hours with her commercial pilot's license. Despite legislation supporting women in the military, the federal government "never completely succeeded in putting across the idea that women were really needed and wanted in the armed forces."[40]

Commissioned in October 1942, a WAC camp in Daytona Beach became Florida's primary center to train women in administration, communication, nursing, and various other occupations on military bases. Political pressure applied to Senator Pepper from Dr. Mary McLeod Bethune and several Daytona Beach businessmen helped bring "skirted soldiers" to the "World's Most Famous Beach." In 1942, base officials established a headquarters in the Wingate Building on U. S. Highway 92, and leased other structures, such as the Osceola Hotel and Halifax Hospital, to house and train recruits. Eventually, the Army developed a camp, which grew to

[38]Gannon, *The New History of Florida,* 337-338.

[39]Furer, *Navy Department,* 281-282; Craven and Cate, *Army Air Forces in World War II,* 6:674-680, 7:503-505, 508.

[40]Homan and Reilly, *Wings Over Florida,* 106,-107; Craven and Cate, *Army Air Forces in World War II,* 6:674-680, 7:503-505, 508.

about one hundred buildings. By January 1944, when the WAC forces left Daytona Beach, over twenty thousand women had received training.[41]

Women were assigned to various roles at Florida's military bases. The first WAC to arrive at MacDill Field assumed the post of a cook. Later, other women at MacDill attended aircraft maintenance classes. Some graduated to become mechanics who cleaned, maintained, and repaired aircraft. Other women attended nursing school, and then were appointed to base hospitals. At Drew Field in Tampa, the military hired civilian Helen McBride to teach pilot recruits to fly. Although she trained over three hundred pilots and hit targets with unerring accuracy, the military never considered her for either overseas or combat duty. Jacqueline Cochrane, the prominent aviator who organized and directed the WASP, was a native of West Florida. She inspired many women to enroll in the WASP program, which was one of the few military services with a plethora of applicants.[42]

Congress authorized the WAC to enlist one hundred fifty thousand women in November 1942. The Army conducted a study which determined that of six hundred twenty eight military occupations, only two hundred twenty two were suitable for women. The restrictive policy, poor recruitment practices, and inadequate facilities resulted in fewer than one hundred thousand women serving in the WAC. Experimental in nature and often pieced together haphazardly, the WAC program and other corresponding women's auxiliaries in the other military branches never reached the objectives set by the War Department. Still, by March 1943, WAC personnel served on one hundred seventy-one air fields throughout the country, including most of those in Florida. The WASP graduated over one thousand pilots, who became adept flyers at transporting most types of military aircraft. They flew bombers, fighters, and transport aircraft, often better than combat veterans who only specialized in flying one type of aircraft. In twenty seven months, WASP personnel transported nearly thirteen thousand aircraft over nine million miles. In December 1944, WACs serving in the Army Air Forces reached their high point, numbering thirty-one thousand with most of those in training commands. The vast majority of women in the military served in the continental United States. The militarization of women during the war, especially with regard to aircraft, but ranging across America's armed forces, stands as one of the significant achievements of World War II.[43]

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[41]Ellen Babb, "Women and War: St. Petersburg Women During World War II," *Florida Historical Quarterly* 73 (July 1994), 48; Gordon Patterson, "The Skirted Soldiers: How the WACs Came to Daytona Beach and Saved the Town," *Forum* 23 (Fall 1999), 32-34.

[42]Babb, "Women and War," 50-51; Kathleen Arsenault, "Jacqueline Cochran: The Panhandle's Secret Weapon," *Forum* 22 (Fall 1999), 34.

[43]Craven and Cate, *Army Air Forces in World War II,* 7:509-510, 514-518, 530-533.

Florida's World War II Military Bases Developed by the Department of the Army

U. S. Army Corps of Engineers Context

The U. S. Army Corps of Engineers supervised the development of the Army's camps and air fields during World War II. The Corps fell within the jurisdiction of the Office of the Quartermaster General, which reported to the Office of the Adjutant General. Major-General J. L. Schley served as chief of the Corps, and the construction section was headed by Brigader-General Thomas Robins. Frank E. Lamphere served as chief of the engineering branch, where drawings and specifications were prepared and reviewed. L. M. Leisenring was the supervising architect of the Corps. Leisenring maintained a team of architects, many of whom were professionally trained in colleges and had practiced in private industry. The Corps successfully recruited several prominent architects in private practice to join their ranks. One of those, George Bergstrom, president of the American Institute of Architecture, was made chief of the Corps' architecture unit in 1941. Leon Zach, a staff member with the landscape firm of Olmstead & Associates, Inc., joined the construction division in 1941, and would design many of the Army's divisional camps and air fields. Other prominent professionals in the building trades to enter the Corps' service included A. J. Hammond, president of the American Engineering Council; Frederick Fowler, president of the American Society of Civil Engineers; and Warren McBryde, past president of the American Society of Mechanical Engineers.[44]

In August 1939, the President signed a fixed-fee bill, which authorized negotiated contracts for architectural and engineering services in the private sector. Consequently, when it became necessary to accelerate construction schedules, the quartermaster general designated private organizations to draft plans for air fields, campgrounds,

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[44]John Garner, "World War II Temporary Buildings: A Brief History of the Architecture and Planning of Cantonments and Training Stations in the United States," Champaign: U. S. Army Construction Engineering Research Laboratory, 1990, p. 49, 73; Lenore Fine and Jesse Remington, *The Corps of Engineers: Construction in the United States* (Washington, D. C.: Office of the Chief of Military History, United States Army, 1972), 102-103, 564; "Organization: Defense Building Agencies," *Architectural Forum* 73 (November 1940), 334; Diane Wasch, Perry Bush, Keith Landreth, and James Glass, "World War II and the U. S. Army Mobilization Program: A History of 700 and 800 Series Cantonment Construction," Washington, D. C.: Department of Defense, c. 1992, p. 39-40. At National Archives in College Park, Maryland, Record Group 18, Records of the Army Air Forces, Air Adjutant General, Central File, contains some information about the bases developed by the Corps in Florida. Other holdings with some useful information include Record Group 77, Records of the Corps of Engineers; and Record Group 107, Records of the Secretary of War. Unfortunately, agreements between the Corps and the Department of the Army and architects, contractors, and other professionals in the building trades were discarded years ago. Most of the available materials contain correspondence, and occasionally maps and plans of bases. At National Archives in East Point, Georgia, Record Group 270, War Assets Administration, contains correspondence regarding the disposal by the government of Florida's military installations and their return to civilian control following World War II.

and buildings. In 1939, soon after the Army created its expansion division, private architects and engineers began work on seven large projects across the country, which included MacDill Field at Tampa. By December 1941, the Corps had completed three hundred seventy-five defense projects, including sixty-one camps, and construction had begun on three hundred seventeen other installations. Between December 1941 and September 1942, the most intensive period of wartime construction, the Corps negotiated almost eight hundred billion dollars in contracts. Many of Army's camps and air fields in Florida were part of this expansion program.[45]

World War II Army camps and air fields typically displayed a triangular or quadrangular layout, differing from earlier camp arrangements that employed linear and U-shape configurations. Offering a centralized plan for improved administrative oversight, these new designs were created by Leon Zach, the former Olmstead associate. Zach suggested planning the camps with each leg containing a brigade, which would permit each brigade to move into the field without crossing into other brigade areas.[46]

The principal architectural and landscape features of the Army's air fields and camps included the post gates, open space of the parade field, command post, hangars, runways and aprons, and rows of barracks. Many air fields and camps were laid out from plans developed by the Corps, but sometimes with the assistance of architects and engineers. Standardized plans, the urgency of wartime, local environmental conditions, and the availability of construction materials dictated the design of the buildings at the Army's military bases. Those plans and specifications emphasized conservation, flexibility, safety, and simplicity. The floor plans, configuration, window placement, roof patterns and other features that distinguished one building from another came from plans shared by military bases throughout the country, which faced an unprecedented mobilization requirement in the early years of the war. Local architects often adapted a design to a specific base requirement. The Corps redrafted the plans for other buildings, employing designs provided by the War Department. What distinguished the buildings at some of Florida's largest air fields, such as Eglin and MacDill Fields, especially, was the use of structural clay tile in the construction of the walls of some buildings. This material change provided a durability which wooden buildings hastily constructed at most bases did not possess.[47]

Corps personnel engaged in a significant debate regarding the building types used to assemble the Army's bases. Most of the early discussion involved the use of mobilization-type buildings developed by the War Department,

[45]Fine and Remington, *The Corps of Engineers,* 102-103, 564; "Organization: Defense Building Agencies," *Architectural Forum* 73 (November 1940), 334; Wasch, Bush, Landreth, and Glass, "World War II and the U. S. Army Mobilization Program, p. 40.

[46]Garner, "World War II Temporary Buildings," 64, 73.

[47]Fine and Remington, *The Corps of Engineers,* 99-100, 172; Garner, "World War II Temporary Buildings," 64, 73.

and the use of prefabricated buildings from private industry. Quartermaster General A. Owen Seaman found that contractors who based their bids on mobilization drawings consistently underbid firms using prefabricated designs. Although Seaman disagreed with General Arnold, chief of the Army Air Forces, over the use of mobilization type buildings, the two eventually ironed out their design differences and the prefabricated industry began to compete more effectively with those firms using plans for mobilization type buildings.[48]

Mobilization buildings were assembled according to standardized plans prepared by the War Department. Standardized plans for wooden buildings used by the military dated to the nineteenth century. Then, in 1914, the advisory architect of the Army Quartermaster Corps Construction Division drafted a set of drawings for mobilization camps. The Quartermaster Corps altered the design of these mobilization buildings in 1928, when it named them the "700 Series," and, again, in 1935. By 1939, the Army had begun constructing buildings on its installations using these standardized plans. These buildings became known as mobilization type construction. With several minor revisions, they became the basis for the Army's air field and camp construction during World War II.[49]

A comprehensive review of the 700 Series came from the renowned Chicago architectural firm of Holabird & Root, which praised the Quartermasters' drawings, but suggested alternating materials such as asbestos, cinder block, concrete, steel, terra cotta, and tile. The architects also recommended preserving the natural beauty of the landscape, and that camp layouts follow the contours of the natural terrain. In part, because of their recommendations, the Corps designed a new 800 Series building, but critics thought it "too permanent" for wartime use.[50]

The shortcomings of speed in the development of air fields and camps soon became apparent. In 1941, reports filtered in enumerating various deficiencies, including insufficient nailing, omission of braces and scabs, inferior lumber, and faulty installation of wiring, siding, flooring, and roofs. The first application of wide-spread mobilization construction and its associated trials and errors occurred at air fields. The Army Air Forces found numerous instances of buildings constructed with unseasoned wood, faulty roof decking, and the use of inadequate finishing nails. Flooring contracted excessively. Not surprisingly, because of the temporary nature

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[48]Wasch, Bush, Landreth, and Glass, "World War II and the U. S. Army Mobilization Program," p. 11, 25-26, 38-39; Fine and Remington, *The Corps of Engineers,* 99-100, 172; Garner, "World War II Temporary Buildings," 26.

[49]Wasch, Bush, Landreth, and Glass, "World War II and the U. S. Army Mobilization Program," p. 11, 25-26, 38-39; Fine and Remington, *The Corps of Engineers,* 99-100, 172; Garner, "World War II Temporary Buildings," 26, 32.

[50]Wasch, Bush, Landreth, and Glass, "World War II and the U. S. Army Mobilization Program," p. 11, 25-26, 38-39; Fine and Remington, *The Corps of Engineers,* 99-100, 172; Garner, "World War II Temporary Buildings," 26, 32.

of the buildings, some overlooked the complaints. Frank Lamphere, chief of engineering, preferred to keep mobilization buildings flimsy, something akin to a "cardboard box," to reduce costs and advance projects along at a quick pace.[51]

In early 1942, the need to increase industrial military production compelled the Corps, once again, to adjust its construction program. Copper screens that protected window and door openings yielded to plastic mesh, and the Corps instructed contractors to stop installing gutters and downspouts. The new guidelines called for the use of asbestos, gypsum, or wood products where metal had once been employed. In response to the need for even cheaper buildings more quickly constructed, the Corps developed new methods of construction. The Army built tent camps, but because of a shortage of canvas, many of the tents were converted into hutments. In that process, the tents were made into huts by replacing the pyramidal roof fabric with a two-by-four truss systems surfaced with plywood and finished with tar paper. The Corps also briefly used prefabricated barracks derived from New Deal-era Civilian Conservation Corps (CCC) camps. Typically assembled in three hours, those temporary buildings consisted, in part, of wooden foundation piers and paneled units assembled with lag screws. None of these stop-gap measures, however, adequately addressed the need for cost-efficient, temporary housing.[52]

Another attempt to produce cheaply-constructed buildings began in February 1942, when the Corps began using a version of theater-of-operations buildings, which typically had been employed only in theaters of war. Assembled with the flimsiest of frames finished with tar paper and batten siding, these structures were the least expensive of all buildings to construct. But, some members of the Corps' construction division remarked that modified theater of operations buildings were a "sorry thing." Still, the War Department's construction policy became: "Construction at camps, posts, and stations will be Theater of Operations type modified, or mobilization type temporary construction. Modified Theater of Operations type construction will be used for all new camps. Mobilization type temporary construction may be used in the expansion of existing post, camps, and stations when this type of construction has been previously used.... In general, all construction shall be the cheapest, temporary character with structural stability only sufficient to meet the needs of the service which the structure is intended to fulfill during the periods of its contemplated war use."[53]

In October 1942, in line with its new policy, the War Department canceled its use of the 800 Series, after which the Corps assembled buildings using mobilization and theater of operations plans. Still, the chief of engineers

[51]Wasch, Bush, Landreth, and Glass, "World War II and the U. S. Army Mobilization Program," 29, 31.

[52]Wasch, Bush, Landreth, and Glass, "World War II and the U. S. Army Mobilization Program," 45-47; Fine and Remington, *The Corps of Engineers,* 172.

[53]Wasch, Bush, Landreth, and Glass, "World War II and the U. S. Army Mobilization Program," 45-47, 49; Fine and Remington, *The Corps of Engineers,* 172; Garner, "World War II Temporary Buildings," 8-98.

permitted district engineers to use alternative plans for buildings used in frigid or tropical climates. Further refinements led to the temporary 700 Series buildings, in part, because theater of operations buildings were "incapable of resisting snow and wind loads of more than moderate intensity." For these buildings, the millwork was standardized, eaves were eliminated, and siding options included asbestos-cement shingles, horizontal siding, plywood, and vertical siding.[54]

The Development of the Army's Air Fields and Camps in Florida During World War II

Development of new military infrastructure began in Florida in the late-1930s, after President Roosevelt issued his rearmament message to the nation. The pace accelerated as the nation edged toward war. Florida's Governor Spessard Holland (1941-1945), in his inaugural address, presaged the state's wartime significance, prophetically stressing the unusual importance of Florida in the nation's defense program. The state's long coastline, flat terrain, mild climate, and large areas with little development provided ideal sites for military installations. Training flight crews became the impetus for the construction of the Army's air fields. Florida's significance as a pivotal location in America's military defense and training system became increasingly evident in 1941, when MacDill Field became the Army Air Forces command base for the southeastern United States. Most of the subsequent air fields developed in Florida by the Army were operational training bases that coordinated their activities with those at MacDill.[55]

In 1940, the Army Air forces embarked on a forty million dollar program to improve many of the nation's air fields. In association with the WPA, the Air Forces initially selected seventy-two airports throughout the country for improvement, but then expanded the program to two hundred fifty airports. The first of those in Florida was at Gainesville, where approximately a quarter million dollars was allocated to lengthen and light runways, assemble a hangar, and install a beacon and field lights. Development began in mid-1940, and was supplemented in late-1941 by additional funding through the Army's Corps of Engineers and Civil Aeronautics Administration (CAA). Within several months of its completion, the field had been acquired by the War Department, which designated it as Alachua Army Air Field. Typical of the transformation at these smaller bases, the airport at Marianna, Florida had been allocated two hundred thousand dollars by Congress in December 1941. Within months of the attack on Pearl Harbor, the War Department had acquired the nascent facility, and appropriated five million dollars for the development of an air base. Eventually, the Army established nearly forty air fields, which ranged in size from sprawling installations at Tampa and Valparaiso to relatively small air fields at Bartow, Brooksville, and Bushnell.[56]

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[54]Wasch, Bush, Landreth, and Glass, "World War II and the U. S. Army Mobilization Program," 45-47, 49; Fine and Remington, *The Corps of Engineers,* 172; Garner, "World War II Temporary Buildings," 8-98.

[55]*Tallahassee Daily Democrat,* 16 January 1941.

[56]*Gainesville Sun,* 18 July 1940, 5 December 1941; *Lakeland Ledger,* 29 October 1940; *Jackson County Times,* 19 December 1941, 3 April 1942.

Airports at Fort Myers, Lakeland, Marianna, Punta Gorda, St. Petersburg, Sarasota, Sebring, Venice, and other Florida cities experienced a similar transition from a joint improvement program between civilian and government cooperation to acquisition as an Army Air Forces facility. Lakeland's municipal airport received a three hundred eighty million dollar improvement in early-1941 with assistance for the WPA and CAA. Within a year, the Department of the Army had secured the air field and twenty-eight hundred acres around it. The Corps of Engineers allocated approximately four million dollars to improve the facility. By May 1942, Army crews were training in B-17 Flying Fortresses at Drane Army Air Field, named for Lakeland businessman and Congressman Herbert J. Drane. The County of Pinellas broke ground for a municipal airport in March-1941. Following Pearl Harbor, the federal government acquired the facility, expanded it, and renamed in Pinellas Army Air Field. Following the war, the facility was expanded into St. Petersburg-Clearwater International Airport, and also contained a Coast Guard Air Station.[57]

Commissioned in 1941, Homestead Field had served as an auxiliary field for the Pan American Air Ferries Corporation during the Great Depression. As a military facility, it primarily served the purpose of a transition point in the ferrying of aircraft overseas. Destinations from Homestead initially included the renowned "Hump" route to the China-Burma-India theater of operations. In 1942, the Army's air transport command was established at Homestead. Later, ferry operations extended to the Caribbean and North Africa. In 1943, the air field was expanded to accommodate the training of Army Air Forces pilots. Because of its long runways and other facilities, the air field was well-suited to heavy bombers. In 1945, a hurricane heavily damaged the air field, which was deactivated in December of that year. In 1954, early in the Cold War, the U. S. Air Force commissioned the base as Homestead AFB. In 1992, Hurricane Andrew devastated the installation, which was closed following the calamity.[58]

In contrast to its air fields, the Army established several large training camps. Organized in 1939, Camp Blanding near Starke began its existence as a replacement facility for Camp Foster for Florida's National Guard. Activated as an Army training camp in September 1940, Blanding would eventually cost taxpayers nearly sixty million dollars to construct. By 1943, the Department of the Army had created another huge facility for training amphibious troops at Camp Johnston. The Army also established a signal corps radar school in southeast Martin County. Named Camp Murphy, the installation cost fifteen million dollars and occupied an eleven hundred acre tract near Hobe Sound. Boca Raton hosted an Army air field, complete with a technical school

[57]*Lakeland Ledger,* 27 March, 1 November 1945; de Quesada, *World War II in Tampa Bay,* 1-2.

[58]David Ramsey, "Military Installations in Florida During World War II," unpublished typescript, Gainesville, n.d., p. 7; Osborne, *World War II Sites in the United States,* 58.

that trained radar detection of German submarines, and a flight program that trained pilots in various aircraft. Boca Raton also became a departure point for heavy bombers bound for Asia and Europe.[59]

Politics played an important role in bringing military bases to most Florida cities. In Sebring, a group of citizens developed a prospectus, which they delivered to Congressman J. Hardin Peterson, U. S. Senator Claude Pepper, and U. S. Senator Charles Andrews, who lobbied for a designation and appropriation for an air field at the Highlands County seat. Pepper, especially, championed the development of military bases throughout Florida. Residents of Sebring were rewarded for their efforts in 1941, when the Army allocated nearly six million dollars for an air field. Cleary Brothers Construction Company broke ground for the facility in July 1941. Named Hendricks Field in honor of Lt. Laird Hendricks, a native of Ocala, Florida, who died in England, the field was commissioned in early-1942. Coordinating its activities at MacDill, the Army trained crews in Flying Fortresses at Hendricks Field. The political story of bringing a military presence into Sebring was played out in many other Florida cities.[60]

Significant expansion of the nation's Army facilities began in the months following the attack on Pearl Harbor. In January 1942, new requirements for Army pilots and other air corps aspirants made two million young men eligible for enlistment. President Roosevelt asked Congress for nine billion dollars to enlarge the Army Air Forces, and nearly thirty billion dollars in war appropriations. Much of that early allocated filtered into Florida, where numerous bases, many of them costing approximately five million dollars each, were built in 1942.[61]

Army air fields developed later in the war included those at Perry and Punta Gorda. At Perry, as part of the selection and surveying process, the Army flew bombers in the vicinity of the town to test atmospheric conditions and wind currents. In mid-1942, after the Army determined that no airport was located near the area believed to be most suitable for an air field, federal officials began negotiating with property owners and filing condemnation proceedings. In March 1943, the Corps awarded contracts for the facility to the Paul A. Miller Construction Company of Leesburg, Florida, and Everrett Brothers Construction Company of Valdosta, Georgia. The plans included the development of fifty-eight buildings, aprons and runways, and several hangars. At Punta Gorda, the Corps began construction of an air field in October 1942. Flight crews arrived in

[59]W. Stanford Smith, *Camp Blanding: Florida Star In Peace and War* (Fuquay-Varina: Research Triangle Publishing, 1998), 25-55; Coles, "Camp Gordon Johnston," 1-22; George Thompson, Dixie Harris, Pauline Oakes, and Dulany Terrett, *The Signal Corps: The Test, December 1941 to July 1943* (Washington, D.C.: Office of the Chief of Military History, Department of the Army, 1957), 212-214; *New York Times,* 26 February 1942; Jacqueline Waldeck, "How Boca Won the War," *Boca Raton* 37 (Mid-Winter 1998), 143-145.

[60]*Lakeland Ledger,* 29 October 1940, 11 April 1941; *Highlands County News,* 19 June, 3, 10 July 1941; Charles Farr, ed. *Four Years of Progress and Service: Hendricks Field, Sebring Florida* (Sebring: Army Air Corps, 1945), n.p.

[61]*New York Times,* 16, 20 January 1942.

November 1943, and Senator Pepper attended the dedication in March 1944. By then, the base included sixty-one buildings, several hundred hutments, and three runways.[62]

Ft. Myers Army Air Field, also known as Page Field, was located south of the city. Developed by the WPA in the late-1930s, the municipal airport was acquired by the Army, which extended its runways, and constructed barracks, hangars, and administration buildings. During its peak of activity, nearly four thousand soldiers were based at the facility. In early-1942, impressed by the number of soldiers on the streets of Ft. Myers, Mrs. Thomas A. Edison asked if she could tour the base. After receiving approval from the base's colonel, the inventor's wife inspected aircraft, buildings, and guns, and then ate spaghetti, veal, and sweet potatoes in the mess hall. Later, she invited some of the soldiers to a dinner party at her Ft. Myers home. Of more significance, pilots serving in the Women Air Force Service Pilots (WASP) often flew into Page Field from Orlando, flying B-25s that towed targets, or test flew aircraft recently repaired.[63]

Centrally located Orlando supported two of the early Army Air Forces' facilities, Orlando Army Air Field and, later, Pine Castle Army Air Field. Along with Tampa, Orlando was among the earliest cities to garner a major military presence. Completed in 1928, the City's municipal airport was acquired by the Department of the Army in the fall of 1940. Nearly nine hundred thousand dollars was allocated for the purchase and initial construction. A subsequent appropriation and enlargement program occurred in mid-1941. By September 1943, hundreds of buildings had been constructed and six five-thousand-foot runways laced the landscape north of Lake Underhill. Eventually, Orlando and Pine Castle air fields comprised part of an eight thousand square mile region in central Florida used as a simulated theater of operations training center.[64]

A sprawling complex, the Orlando base gained national attention after the Army installed an applied tactics training school at the base. Popularly described as the base that produced the "Ph.D.s of military aviation," Orlando Army Air Field hosted tactical mock battles and invasions. Bomber pilots would take off for New Orleans or Galveston, bomb targets in the Gulf of Mexico, and return to the base at night. Fighter attacks simulated "invasions" by German fighter aircraft and responses to these attacks by trainees. Recruits from New York learned jungle warfare, a necessary skill for pilots shotdown by enemy aircraft over the Pacific Ocean. Service and quartermaster squadrons based at Orlando trained at "Brooklyn-in-the-Jungle," a simulated jungle

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[62]*Taylor County News,* 14 May, 20 August 1942, 11 March 1943; Vernon Peeples, *Punta Gorda and the Charlotte Harbor Area* (Norfolk: Donning Press, 1986), 150.

[63]*New York Times,* 12 April 1942; Osborne, *World War II,* 58; Lynn Homan and Thomas Reilly, *Wings Over Florida* (Charleston: Arcadia Publishing Company, 1999), 106-107.

[64]*New York Times,* 12 May 1943; Eve Bacon, *Orlando: A Centennial History* 2 vols. (Chuluota: Mickler House, 1977), 2: 100, 106, 109, 115.

near Leesburg, which one colonel reported as "some of Florida's wildest country, outside the Everglades." Pine Castle served as an auxiliary base to Orlando, used primarily for tests and demonstrations.[65]

Several Florida communities, such as Arcadia and Vero Beach, had pressed hard for a local military presence in the 1930s. At Arcadia, the municipal government, in partnership with the County of DeSoto, formed in 1934 an "All-Florida Committee for Arcadia Air Base." They pointed with pride to their World War I military heritage, when the Army had established Carlstrom Field. The military had abandoned the facility about 1922, however, dismantling the hangars and support buildings. Carlstrom Field and its nearby companion facility, Dorr Field, would capture the attention of the Army again, but only after John Paul Riddle, an civilian aviation leader, acquired the site from the federal government and built a training facility for Riddle Aeronautics Institute, a predecessor of Embry-Riddle Institute. Based in Miami, the Riddle Institute invested over three million dollars in its flight training program by October 1941, when American and British officers toured the facility. By then, Riddle had encouraged the British government to send trainees to his flight school, one of thirty-five private flying schools operated in connection with the Southeastern Army Air Corps Training Center. Eventually, Riddle trained pilots at Arcadia, Clewiston, and separate landplane and seaplane aviation facilities at Miami. Both civilian and military instructional staff were installed at Carlstrom Field and Dorr Field, which trained pilots for the Royal Air Force and the Army Air Forces.[66]

The Army turned to other private companies in Florida to train its pilots. Albert I. Lodwick established a school of aeronautics at Lakeland and an aviation military academy at Avon Park during World War II. Lodwick carved out small flight training facilities from existing air fields held by municipal governments at these cities. A native of Iowa, Lodwick graduated from Harvard University in 1929, and worked for the Curtiss-Wright Corporation of New Jersey, and eventually served as assistance to the company's president. He became president of Stinson Aircraft Corporation of Michigan in 1938. In 1939, he managed Howard Hughes renowned flight around the world. By 1941, Lodwick had become a renowned aviation businessman. He acquired a small flying school in Lakeland, and worked out an agreement with the Army and the municipal government to operate the school as a military flight academy. The same year, Lodwick reached an agreement for a similar facility in Avon Park. At the latter, he acquired several buildings at Highland Lakes Resort, and adapted them for use as an academy. Nearly nine thousand pilots trained at Lodwick's Lakeland facility alone, thirteen hundred of those British pilots. Thousands more trained at Avon Park. Although these and other

[65] *New York Times,* 12, 13, 15, 28 May 1943.

[66] *The Arcadian,* 18, 25 September, 16 October 1941; *Clewiston News,* 12 September 1941; All-Florida Committee for Arcadia Air Base, "Brief and Exhibits for an Army Air Base on the "Big Prairie" of DeSoto County, Florida," (Arcadia: All-Florida Committee for Arcadia Air Base, 1935), n.p.

private facilities trained many pilots, the bulk of the flight training of Army's pilots in Florida came from military installations. At most of these, crews learned flying skills in both combat and training aircraft.[67]

Cities and towns supporting the Army's military bases during the conflict included Apalachicola, Boca Raton, Bartow, Brooksville, Bushnell, Carabelle, Cross City, Dunnellon, Ft. Myers, Homestead, Keystone Heights, Hobe Sound, Kissimmee, Leesburg, Naples, Orlando, Perry, Punta Gorda, St. Petersburg, Sarasota, Starke, Tampa, Valparaiso, Venice, West Palm Beach, Williston, and Zephyrhills. Each of these bases was developed by the Army's Corps of Engineers. Countless outlying fields, little more than grass strips in clearings, supported these air fields. The Army Air Corps lobbied to retain most of its Florida bases following the war. But, in November 1945, the War Assets Administration (WAA) declared eighteen of these bases as surplus, and soon most were returned to civilian authorities. Relatively few resources remain at these World War II installations to indicate the extent of the Army's presence in Florida during the conflict. The following narratives, arranged in alphabetical order, briefly describe the largest and most significant air fields and camps built and operated in Florida by the Department of the Army during World War II.[68]

Selected Army & Army Air Forces Installations Developed in Florida During World War II

Camp Blanding

Located several miles east of Starke and radiating outward from the east shore of Kingsley Lake, Camp Blanding, named for Major General Albert Blanding of Bartow, briefly enjoyed the title of Florida's fourth largest city. Development of the National Guard summer camp began in 1939. Initially, the state's five-man armory board planned and guided its construction. Then, in 1940, Congress enacted the National Guard Mobilization Bill, which authorized the War Department to expand several National Guard facilities into Army camps and training centers. The federal government activated Camp Blanding as a federal military facility on 14 September 1940. In October 1940, the townspeople of Starke could scarcely imagine that twenty-one thousand laborers were assembling the nearby camp, which then contained fifteen times the population of Starke. An initial authorization provided nearly four million dollars to construct the facility, and allocated an additional eight million for the entire project. By April 1941, however, nearly thirty million dollars had been

[67]Waneta Sage-Gagne, *Pilots in the Sun: Primary Pilot Training Schools in Lakeland and Avon Park, Florida: 1940-1945* (Lakeland: Friends of the Library, Lakeland, 1990), 2-11; *New York Times,* 23 October 1961; Alejandro de Quesada, *World War II in Tampa Bay* (Dover: Arcadia Publishing Company, 1997), 71.

[68]*Jacksonville Florida Times-Union,* 16 October, 21 November 1945; *Lakeland Ledger,* 21 November 1945; *Gainesville Sun,* 19, 20 February 1946.

provided for its construction, and, despite cries of "gross inefficiency and total disregard for the taxpayers interests" by members of Congress, costs eventually spiraled to sixty million dollars.[69]

The Army hired Solomon & Kies, civil engineers with offices in Troy, New York, and Fort Lauderdale, Florida, to draft the plans for the camp. Gabriel R. Solomon, a retired Army colonel, had provided similar services to develop large bases for the Army during World War I. A native of New York, Solomon had graduated from Rensselaer Polytechnic Institute in 1902, and then earned a law degree from Mercer University in Macon, Georgia. He helped design portions of the renowned New York City subway system, and then worked in the Army's Corps of Engineers in the Great War. In the interlude between world wars, Solomon formed the civil engineer firm of Solomon, Abbott & Company and then Solomon & Kies. At Blanding, he laid out the camp using a circular design based on the contours of the lake. A curvilinear road served as the primary transportation corridor, set back from the shore one hundred feet and bisected by smaller secondary roads that radiated out from it like spokes in a wheel. Solomon's plan called for regimental encampments to face the main road.[70]

In September 1940, the War Department awarded a contract to Andrew Eken and Starrett Brothers Construction Company to supervise the construction of nearly five hundred buildings within ninety days. Those buildings included two hundred fifty mess halls, thirty-three administration buildings, and twenty-eight officer's quarters. The contractors at Blanding were among the first to perfect the prefabrication process for the Corps of Engineers. Installing a sawmill at a lumberyard, Starrett Brothers manufactured buildings in sections. A standardized mess hall could be assembled in ten minutes. Journeyman carpenters were placed next to inexperienced men to show them how to measure, cut, and nail.[71]

Notwithstanding its hundreds of wood-frame buildings, Camp Blanding largely remained a "tent camp" early in its history. Organized in orderly rows, hundreds of tents sprinkled the landscape, accommodating trainees. Some tents were converted into hutments, which simply replaced the pyramidal roof fabric with two-by-four truss systems surfaced with plywood. Senator Claude Pepper, ever a passionate spokesman of the war effort, joined other southern legislators who objected to southern military "tent cities" that stood at Camp Blanding, Florida; Camp Jackson, South Carolina; Camp Shelby, Mississippi; Fort Clark, Texas; and Fort Sill, Oklahoma. To help speed delivery of building materials and transport personnel into Blanding, both the Seaboard Air Line Railway and Southern Railway built spurs from their main lines into the camp. Most of Blanding's buildings

[69] *Bradford County Telegraph,* 23, 30 August 1940; *Tallahassee Daily Democrat,* 1 April 1941; Robert Billinger, *Hitler's Soldier's in the Sunshine State: German POWs in Florida* (Gainesville: University Press of Florida, 2000), 9; Gannon, *The New History of Florida,* 323-324.

[70] *Bradford County Telegraph,* 13 September 1940; *New York Times,* 17 February 1956.

[71] Fine and Remington, *Corps of Engineers,* 234; *Bradford County Telegraph,* 30 August, 20 September, 4, 18 October 1940.

were classified as temporary, and by October 1940 over seventy four million feet of lumber had arrived at the camp.[72]

From a reservation of approximately thirty-one thousand acres, the camp grew to one hundred eighty thousand acres. The Army's 31st, or "Dixie," Division, comprised of twenty thousand troops from the southeast, arrived in December 1940. Several months later, the 43rd Division, soldiers largely from Connecticut, Maine, Rhode Island, and Vermont, rode troop trains into the camp. Their arrival swelled the camp's population to thirty-two thousand; eventually it reached nearly seventy thousand. By September 1944, over three hundred thousand soldiers had trained at the camp.[73]

Blanding also served as the state's main POW camp. Most POW camps in the continental United States stood in the rural South and Southwest. Generally attached to military bases, some were established in farming or heavily forested areas to provide labor in the agriculture and lumber industries. By 1942, the War Department had organized nine POW camps in the country, and twenty-two others stood in various stages of development. That number soon grew exponentially. In Florida, POW camps occupied twenty-six locations, including naval air stations at Banana River, Daytona Beach, and Green Cove Springs. Agricultural camps at Clewiston, Leesburg, and Winter Haven also housed captured soldiers. Camp Blanding was the largest POW facility in Florida.[74]

Blanding's early POW compound consisted of hutments and old CCC barracks, and its first prisoners were civilian "enemy aliens," largely Germans deported to the United States from Latin America. In September 1942, after the War Department shipped them to more permanent internment centers, Blanding received its first German U-boat and Navy captives. Then, in November 1943, German Army POWs arrived. The compounds developed for the Army and Navy personnel were separated by one-half mile; the Army camp, which eventually housed one thousand prisoners, briefly enjoyed the title of largest POW camp in the state. But, when a collection of sixteen hundred prisoners were delivered to Jacksonville NAS in 1944, Camp Blanding lost its rank. Most POW camps around the state quartered between two hundred fifty and three hundred prisoners. After the war, the Army returned Camp Blanding to Florida's National Guard, which continues to use the facility as its summer camp.[75]

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[72]*Bradford County Telegraph,* 30 August, 20 September, 4, 18 October 1940.
[73]*Tallahassee Daily Democrat,* 10, 17 March 1941; *Jacksonville Florida Times-Union,* 14 September 1944.
[74]Billinger, *German POWs in Florida,* xx, 9, 19, 32-33, 206, 207.
[75]Billinger, *German POWs in Florida,* xx, 9, 19, 32-33, 206, 207.

Camp Gordon Johnston

Camp Gordon Johnston, Florida's second largest military facility in terms of physical size and troops trained during World War II, sprawled along Florida's Gulf Coast near Carrabelle. Initially, the Army named the facility Camp Carrabelle, but, in January 1943, redesignated it for a distinguished cavalry officer and a recipient of the Congressional of Medal-of-Honor, Colonel Gordon B. Johnston. Soldiers nicknamed the camp "Hell-by-the-Sea" and "Alcatraz of the Army." Camp Johnston became one of the Army's primary Amphibious Training Centers (ATC). Established in May 1942, the ATC initially trained troops at Camp Edwards at Cape Cod, but broke ground on Florida's Gulf Coast in July 1942. The War Department purchased approximately ten thousand acres and leased an additional one hundred fifty-five thousand acres, primarily from St. Joe Paper Company. The camp, divided into fourth discrete areas, stretched for twenty miles east of Apalachicola between St. George Island and Alligator Point. Contractors completed the initial ten million dollars of construction in sixty days. Early development activities included large cargo net towers to replicate the disembarking of troops from ships, obstacle and infiltration courses, and mock landing craft. Piers stretched into the Gulf of Mexico. As part of its construction project, the Army transformed an abandoned lumber mill and town known as Harbeson City into a mock German village called "Shickelgruber Haven" to help troops hone their skills in sweeping the enemy from urban areas.[76]

The first troops arrived in September 1942, and a month later, nearly twenty thousand soldiers occupied the camp. By late-1943, the camp contained about thirty thousand troops. Amphibious landings occurred on Dog Island and St. George Island, while gunnery ranges were established on Alligator Point for Army Air Forces pilots. A writer for *Newsweek* magazine thought that the training received by troops at Camp Johnston was "probably the closest approach to actual combat given any American troops." Some soldiers found both the training and living conditions equally daunting. Soldiers endured sub-tropical, swampy, jungle-like conditions barely fifty yards from the various compounds. Largely developed in an isolated wilderness, the camp shocked many trainees who fought off fleas, mosquitoes, snakes, and wild hogs as part of their daily activities. General Omar Bradley, a future Army group commander, commented that Johnston had been "hacked out of palmetto scrub along a bleak stretch of beach," and believed that the man responsible for selecting the site should have been court-martialed for stupidity. Still, Bradley grudgingly admitted the value of Camp Johnston, for it taught Army commanders to respect the tactical and logistical challenges of coordinating amphibious landings. Three Army divisions completed their amphibious training at Camp Johnston by September 1943.[77]

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[76]Coles, "Camp Gordon Johnston," 1-7; Billinger, *German POWs in Florida,* 28-29.

[77]Coles, "Camp Gordon Johnston," 7-15; Roland Gask, "Prelude to Invasion: Real Bullets Enforce Lesson at Army Amphibious Training Center," *Newsweek* March 22, 1943, 22-23.

In March 1944, Camp Johnston received its first POWs. Among the largest POW camps in Florida, the facility by June consisted of two hundred fifty prisoners housed in fifty tents. By November, the POW population reached five hundred, and theater-of-operations buildings had been assembled as quarters. Camp Johnston served as one of the main POW camps in Florida, with branch facilities established at Dale Mabry Field, Eglin Field, MacDill Field, and Telogia. Other branch camps were established, most of them in civilian areas, where POWs worked in peanut fields, and the citrus, sugarcane, and pulpwood industries.[78]

By the spring of 1945, Camp Johnston contained, in addition to hundreds of barracks and administrative buildings, six chapels, five theaters, three service clubs, a library, and several clubs for officers. In February 1946, its mission accomplished, Camp Johnston was decommissioned, and the Army began disposing of thousands of acres under lease or ownership. In one transaction, the Army conveyed to the St. Joe Paper Company thirty-seven thousand acres and six hundred barracks. Despite the divestiture, the site of the main camp at Carrabelle still amounted to nearly two thousand acres and approximately one thousand buildings, including the post headquarters, hospitals, mess halls, recreation centers, and theaters. The War Department sold those properties to the St. Joe Paper Company in 1947, and although some buildings were converted into tourist cottages, within several decades few traces of the camp remained evident. One veteran who returned in the 1980s recalled spending four months at Camp Johnston, but could not recognize a thing.[79]

Camp Murphy

During World War II, the Army developed Camp Murphy, a signal corps radar school in southeast Martin County. The Army named the camp for William H. Murphy, a lieutenant colonel and pioneer in radio technology, who was killed in action in the western Pacific theater in February 1942. The federal government allocated fifteen million dollars for the camp, which opened in July 1942. The site occupied an eleven hundred acre tract near Hobe Sound on the mainland. By the summer of 1942, more than four hundred one-story buildings had been assembled, and crushed shell roads provided vehicle access throughout the camp. Neighboring property owners on Jupiter Island offered a private beach, docks, and boat facilities to the trainees.[80]

At Camp Murphy, the Army trained nearly nine hundred officers and six thousand enlisted men from the Army Air Forces, Army Ground Forces, and the Army's Signal Corps during its two-year existence. Students learned

[78]Billinger, *German POWs in Florida,* 28-33.

[79]Coles, "Camp Gordon Johnston," 17-21.

[80]George Thompson, Dixie Harris, Pauline Oakes, and Dulany Terrett, *The Signal Corps: The Test, December 1941 to July 1943* (Washington, D.C.: Office of the Chief of Military History, Department of the Army, 1957), 212-214; *New York Times,* 26 February 1942.

electricity, radio repair, pulse goniometry, and radar. In November 1944, the camp closed, and the buildings not already dismantled were sold beginning in 1946. Author, diplomat, and Jupiter Island developer Joseph Reed had been stationed at the camp during the war. He took advantage of the surplus buildings, and by barge moved many of them across Hobe Sound to Jupiter Island. Those buildings presently serve as seasonal labor housing, storage, and warehouses. Nearly fifteen other former military buildings lie scattered throughout Martin County, presently serving as boat manufacturing facilities, commercial buildings, community centers, and office buildings. In February 1947, the State of Florida purchased the former military camp for use as a wildlife refuge and state park. Initially, it was called Jupiter State Park, but, in February 1950, the name was changed to Jonathan Dickinson State Park.[81]

Avon Park Field (Avon Park Bombing Range)

In 1942, the Department of the Army acquired property in Highlands and Polk Counties for a General Bombing and Gunnery Range at Avon Park. The name of the facility change over time, and is currently known as Avon Park Air Force Range. Construction began in March 1942, and, by the close of the year, the Corps of Engineers had transformed the site into the "world's largest bombing range," which provided training for hundreds of air crews and ground personnel. By March 1943, the bombing range sprawled across two hundred thousand acres. Contractors had assembled two hundred seventy-six buildings, several practice ranges, and a runway complex. War-time exercises at Avon Park included aerial gunnery, moving targets, and submarine bombing. Early exercises included bombing runs by B-26 Marauder aircraft. To simulate wartime conditions, a full-size mock-up of a Japanese submarine was assembled in the center of a small lake. In addition to a bombing range, current exercises at Avon Park include artillery firing, parachute jump training, and ground training for Army Reserve and National Guard units.[82]

Eglin Field (Eglin Air Force Base)

One of the largest military bases in the western hemisphere, Eglin AFB occupies approximately seven hundred twenty-five square miles of land north of Choctawhatchee Bay on the Gulf of Mexico. Most of the base lies within the County of Okaloosa, but also physically extends into Santa Rosa and Walton Counties. Hundreds of

[81] *New York Times,* 26 February 1942; *Stuart News,* 5 February, 5 July 1942, 7 September, 30 November 1944, 29 July 1946, 25 February 1947, 9 February 1950; Florida Board of Parks and Historic Memorials, *A Report to the People of Florida* (Tallahassee: Florida Board of Parks and Historic Memorials, 1953), 20; Sidney Johnston, "Historic Architectural Survey of Martin County, Florida," St. Augustine: Historic Property Associates, 1997, p. 38.

[82] *Jacksonville Florida Times-Union,* 18 March 1943; J. Sanderson Stevens, Dennis Knepper, Madeleine Pappas, and Irvy Quitmeyer, "Phase I Archaeological Survey, Avon Park Air Force Range, Avon Park, Florida," unpub. mss., Avon Park, 1997, p. 77.

buildings were constructed at Eglin during World War II. Their design largely followed standard plans for military structures, adapted to accommodate the exigencies of wartime, local conditions, and availability of construction materials.

Since the early-1930s, military officials had looked enviously at the expansive and uninhabited area as a potential site for a gunnery and bombing range. Located within the Choctawhatchee National Forest, which was designated in 1908 as one of America's eleven initial national forests, many of the area's features that led the federal government to create the forest preserve contributed to its military usefulness. Principal among them were its large geographical extent and sparse population. Military planners appreciated the tract's proximity to the Gulf of Mexico, which offered a large area over which weapons and aircraft might be tested.[83]

Development of a military base in the area began in 1933 when Army Air Forces officials from Maxwell Field, Alabama, met with a private developer to determine the suitability of a site for a bombing and gunnery range. In 1935, the War Department acquired a lease near Valparaiso on which to build an airport. The department also requested Congressional authorization to construct facilities for military operations, as well as to secure transfer of a larger area within the forest for weapons testing.[84]

As America edged toward war in the late-1930s, a special board concluded that Eglin provided the most suitable site for an armament proving ground. In 1940, the War Department secured a large tract of Choctawhatchee National Forest to expand the air field. Standard plans for military buildings largely came from those shared by military bases throughout the country, which faced an unprecedented mobilization requirement in the early years of the war. Local architects adapted the designs to base requirements and available materials for construction. The Corps of Engineers redrafted the design for other buildings, employing features provided by the War Department. The buildings at Eglin were distinguished by the use of structural clay tile in their wall systems, providing a durability which the wooden buildings assembled at many bases throughout the country did not possess. The widespread use of structural tile may have resulted from a shortage of wood at the time, a desire to create more durable buildings, or both. The use of tile construction along the southeastern coast of the United States helped to address the severe environmental conditions found in the region. Insects, moisture, rainfall, and the salt mist from the ocean wreaked havoc upon wood and metal buildings. Clearly, Eglin was not meant to be a temporary base, its life confined to the war's duration, like so many other bases.[85]

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[83]Office of History, "A History of the Army Air Proving Ground Command: Part One, Background of Eglin Field, 1933-1940," Eglin Air Force Base: Armament Division, 1989, p. 80-96.

[84]Office of History, "A History of the Army Air Proving Ground Command: Part One, Background of Eglin Field, 1933-1940," 48-49.

[85]Office of History, "History of the Army Air Forces Proving Ground Command: Part Two, Origin and Growth: Acquisition of Land," Eglin Air Force Base: Air Force Development Test Center, 1991, p. 16, 30.

The Corps of Engineers assembled buildings with several general uses on the base, common themes on most bases developed for the Army Air Forces: aircraft maintenance and storage; administration; and personnel housing. The Pensacola architectural firm of Yonge and Hart prepared the plans for many of these buildings from standard drawings provided by the War Department. The firm adapted each from standardized plans provided by the Mobile District Corps of Engineers, or from standard Quartermaster building types. The firm also designed more specialized buildings, such as a maintenance hanger and an armaments research testing facility. Some officer's residences were built with the same structural clay tile used for the administrative buildings.[86]

During World War II, Eglin Field served as the nation's principal station for air warfare experimentation. In May 1941, the Army Air Corps designated Eglin as the Air Corps Proving Ground. The primary purpose of the proving ground was to provide a station for tactical tests of aircraft armament and accessory equipment and of aviation tactics and techniques. Tests began in September 1941, three months before Pearl Harbor. These early tests varied greatly, including a determination of efficient tactics and materials for night attacks upon enemy aircraft, comparisons of low- and high-altitude bombing, the effectiveness of specific weapons of various caliber, tests of specific aircraft, and such mundane items as tests of storage cabinets and spark plugs. Shortly after the United States entered the war in the Pacific against Japanese forces, Eglin received an assignment to develop an aircraft that could compete against the Japanese Zero fighter plane, which was lighter, faster, and more maneuverable than comparable American models. Among the most specialized buildings developed at Eglin during the war was the McKinley Climatic Testing Laboratory (National Historic Mechanical Engineering Landmark 1987). The initial plans were drafted by the Jones-Robert Company, and the Army completed the facility in stages between 1944 and 1947. The building was designed to permit testing of aircraft and weapons at extreme temperatures, as low as one hundred degrees Fahrenheit below zero. Other climatic tests were conducted on equipment, shelter, food, medicine, clothing, and even the selection and care of personnel.[87]

Eglin Field became associated with many spectacular events of the war. Among the earliest was the legendary raid upon Tokyo in April 1942, led by Lt. Col. James "Jimmy" Doolittle, a mission immortalized in film and biography. America's leaders ordered the raid against Japan to bolster civilian morale in America and subvert Japanese confidence about their nation's invulnerability. During March 1942, B-25 crews from the 89th

[86]William R. Adams, "Elgin Field Historic District," National Register proposal, St. Augustine, 1995, n.p.

[87]Office of History, "A History of the Army Air Proving Ground Command: Part One, Background of Eglin Field, 1933-1940," 34-35; Office of History, "History of the Army Air Forces Proving Ground Command: Part One-Appendices," Eglin Air Force Bases: Armament Division, 1989, p. 44-45; Office of History, "History of the Army Air Forces Proving Ground Command: Part One, Historical Outline 1933-1944," Eglin Air Force Base: Munitions Systems Division, 1989, p. 74-75; Grandison Gardner, "Memoirs of Grandison Gardner, Commander, Army Air Forces Proving Ground, Eglin Field, 1944," Columbia University, 1959, n.p.

Reconnaissance Squadron and 17th Bombardment Group practiced short-field take-offs at Eglin while maintenance crews worked to modify B-25s to accommodate extra gasoline and additional firepower. The bombers, launched from the carrier *U.S.S. Hornet* six hundred fifty miles from the Japanese coast on 18 April 1942, achieved complete surprise in the raid upon the Japanese capital. Although the bombs inflicted relatively little damage, the raid strengthened America's resolve.[88]

Eglin expanded rapidly in the first year of the war. By 1943, the personnel stationed at the base numbered nearly six hundred officers and eight thousand enlisted men. Activities undertaken at the base in pursuit of its mission included service tests of aircraft and equipment, and special operations projects. As the strategic bombing offensive in Europe gathered momentum, Eglin tested heavy bombers and experimented with electronic warfare equipment. Soon after final tests of the B-17, the workhorse of the allied air effort against Nazi Germany, were completed evaluations began of the B-29, which was to be employed against the Japanese isles. Charles Lindbergh accompanied a flight from Eglin Field on 21 January 1944 in an experimental XB-29. The crew of the flight included 1st Lt. R. A. Lewis and Lt. Col. Paul Tibbets, who flew the *Enola Gay,* which dropped the first atomic weapon on Hiroshima; and Capt. Charles Sweeney, who flew in the B-29 that dropped the second atomic weapon upon Nagasaki. Electronic warfare techniques, such as radar and radio beam target acquisition, were becoming increasingly important to air operations, both offensive and defensive. The 1st Proving Ground Electronics Unit began operations in late-1943 to test such equipment. The operations were code named "Florosa Project" because of their proximity to a town of that name in the vicinity of Eglin.[89]

Another project conducted at Eglin in 1943 was the development of tactics to surmount the beach defenses along the coast of France, in preparation for the invasion of Europe. A full-scale model of the defenses erected by the Germans was created at Eglin for testing of aircraft ordnance and underwater demolition techniques. The tests resulted in tactical changes that were used in the assault upon Normandy in June 1944.[90]

Heavy losses of bombers, principally B-24s and B-17s, in raids deep within the heart of Germany demonstrated the need for long-range fighter aircraft that could accompany such missions and provide cover for the bombers. Tests to develop a long-range fighter aircraft, which included the P-38, P-47, and P-51, proceeded at Eglin Field. Fitted with additional fuel tanks to permit longer flights, the aircraft were tested to measure their speed and maneuverability. Range trials conducted from Eglin Field led to the development of a version of the P-47

[88]Office of History, "Chronological Syllabus of the Armament Development and Test Center. Part One, the Forest Transformed, 1913-1942," Eglin Air Force Base: Armament Development and Test Center, 1976, p. 32.

[89]Office of History, "Chronological Syllabus of the Armament Division. Part Two, the War Years: 1942-1945." Eglin Air Force Base: Armament Division, 1982, 15, 29; Office of History, Eglin Air Force Base, Vertical Files.

[90]Office of History, "Chronological Syllabus of the Armament Division. Part Two, the War Years: 1942-1945," Eglin Air Force Base: Armament Division, 1982, p. 72.

that could accompany missions over two thousand miles. The swift, agile P-51 had been available since the beginning of the war, and its virtues were discovered at Eglin Field. By the end of the war American fighter planes had all but destroyed both the Japanese and German fighter plane inventories, and American bombers flew to their targets virtually unmolested.[91]

In 1944, Germany launched rockets against England. Although scientists from several nations had engaged in research concerning pilotless aircraft and rockets before World War II, the Germans made the greatest strides. After the rockets wreaked havoc on London, English and American military leaders scrambled to find and destroy the launch sites while scientists worked feverishly to discover what they could about the new weapons. In January 1944, General Arnold ordered construction at Eglin of two full scale models of the launching sites which the Germans were erecting along the coast of France. The sites consisted of a long launch ramp, thick concrete bunkers to protect the missiles, a fuel depot, and quarters. Military and civilian workers hastily constructed the models over a twelve-day span. During training runs, heavy and medium bombers and fighter bombers made over twelve hundred sorties against the sites from varying altitudes and approaches. General Gardner, the commander at Eglin, personally delivered the findings to the Supreme Allied Commander, General Dwight Eisenhower, in England.[92]

By late-1944 development of a United States version of the V-1 missiles began at Eglin's proving grounds. The first missile, the JB-2, was essentially a copy of a captured, ground-launched V-1. The Army developed at least three launch sites at Eglin, and the military conducted its first launch on 12 October 1944. The missiles were launched from permanent concrete ramps, portable and fixed-steel lattice frame ramps, steam powered ramps, and various aircraft. Researchers also experimented with radio controlled guidance systems. All of the tests proved important in subsequent missile research. By mid-1945 launches of the JB-2 missile had become routine. The Army organized a launching squadron to deliver the weapon against Japanese targets from the Philippines, but the war ended before the weapon could be used. At the time of Japan's surrender in August 1945, the proving grounds was also involved in testing a radio-controlled bomb. Well into the 1970s, missile-launching experiments featuring several generations of weapons continued at Eglin. Several resources at Eglin AFB have been listed in the NRHP or determined eligible by the SHPO.[93]

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[91]Office of History, "Chronological Syllabus of the Armament Division. Part Two, the War Years: 1942-1945," p. 68-69.

[92]Craven and Cate, *The Army Air Forces in World War II,* 3:99.

[93]Office of History, "Chronological Syllabus of the Armament Division. Part Two, the War Years: 1942-1945," 75-77.

MacDill Field (MacDill Air Force Base)

MacDill Air Force Base derives its history from the Wilcox National Defense Act of 1935. Sponsored by Congressman J. Mark Wilcox of West Palm Beach, the act authorized the Department of the Army to develop seven air bases, including one at Tampa, Florida. Although the base was authorized in 1935, the Congress did not appropriate the necessary funding for several years. In 1939, the Army selected a site at Catfish Point on Tampa Bay because of its excellent year-round weather and transportation facilities by land and sea. Effective lobbying by Tampa and Hillsborough County officials resulted in an appropriation by the Florida Legislature of two hundred fifty thousand dollars to purchase three thousand acres for the installation. In 1939, Congress appropriated nearly three million dollars for the development of the "Southeastern Air Base," as MacDill was first called. The Army anticipated that the base would support one thousand aircraft and approximately five thousand personnel.[94]

The Corps of Engineers began the base's design work in May 1939. Major Lawrence Simpson directed the survey work, which began in September. Laborers supplied by the WPA arrived in November, and the work force peaked at twenty six hundred in late-1940. Their assignments included road construction, pouring concrete for sidewalks and curbs, and grading land. Although WPA labor did not assemble buildings or construct runways and aprons, they eventually cleared nearly three thousand acres, excavated nearly two million cubic yards of dirt, and built six miles of roads and thirteen miles of storm sewers. In December 1939, the Army renamed the emergent base MacDill Field for Colonel Leslie MacDill, who had died during a training exercise in Virginia in 1938. Troops and aircraft arrived in March 1940, and the Army activated the base on 15 April 1941.[95]

Four houses occupied the site prior to the Army gained control of the property. The Corps of Engineers left those dwellings in place, and used them as models for some of the new, permanent construction. As part of its overall policy during the era, the Army usually adopted the architectural styles of existing buildings for its new construction. Perhaps the most elaborate of the older buildings at MacDill, the Benjamin House had been constructed about 1925 in the Mediterranean Revival genre. It initially served as the officer' club, and then as officer's quarters. Executed in late-1940, new officer's quarters displayed similar architectural roots. Because of their design excellence and fashionable appearance on a military base, the buildings appeared in

[94]*Tampa Daily Times,* 28 December 1939; *Tampa Tribune,* 14, 20, 29 July, 8, 14, 26, 29 August 1939.
[95]*Tampa Daily Times,* 28 December 1939; *Tampa Tribune,* 17 April 1941.

Architectural Forum. Other new buildings exhibiting Mediterranean Revival features were constructed, including the fire and guard house in 1941.[96]

The design of the base formed the shape of a pentagon with a triangular void, and a centralized administrative section. Located near the main entrance on the highest ground, the quarters for the officers and enlisted men formed symmetrical lines adjacent to the administrative area. To the west radiated aircraft hangars in the shape of an arrowhead. The hangars supported six runways with water approaches that minimized vertical obstructions in the flight paths. The Corps assembled both permanent and temporary buildings at MacDill Field. Temporary buildings, the dominant building type on the base, included administrative offices, barracks, and some warehouses. Initially, only thirty-one of these types of buildings were planned for the base, but those numbers soon swelled into the hundreds. Fewer in number, permanent buildings included the commissary, hangars, officer's club, and mess hall.[97]

The first period of construction extended between 1940 and 1941. The Corps assembled many major buildings during this initial phase, including barracks, a fire and guard station, hangars, post office, and warehouses. In addition, three NCO duplexes and five officer's quarters, seventeen two-story barracks, eight mess halls, and six recreation facilities supported the base. The Arch Roof Construction Company of New York City drafted the plans for the hangars in 1940, and the Central Construction Company completed the first three hangars in December 1940. The A. C. Honeycutt Company completed three duplexes in August 1940. To help fill a housing shortage on the base, the Paul Smith Construction Company of Haines City, Florida, built three hundred houses in the Gadsden Park subdivision, which spread through residential streets immediately outside the base. Containing over one thousand seats, a theater was completed in September 1941. Extending between 1942 and 1943, a second period of development saw the installation of one hundred eleven buildings of temporary construction. Part of the Second Aviation Program Expansion, the S. S. Jacobs Company of Jacksonville assembled the buildings.[98]

During this second period, the north area of the base was developed to accommodate African-American soldiers. Black troops were typically assigned to engineering units and maintenance duties. Despite racial

[96]"Military and Naval Buildings," *Architectural Forum* 73 (November 1940), 358; Charissa Wang, Donald Durst, and Douglas Jacobs, "Historic Building Survey for MacDill Air Force Base," 2 vols., unpub. mss., Columbus, Ohio: Hardlines Design & Delineation, 1994, 1: section IV, p. 20-21, 2: section VII, p. 53.

[97]Wang, Durst, and Jacobs, "Historic Building Survey for MacDill Air Force Base, Florida," 1: section IV, p. 11-12, 19, 21.

[98]Wang, Durst, and Jacobs, "Historic Building Survey for MacDill Air Force Base, Florida," 1: section IV, p. 11-12, 19, 24, 26, 27.

tensions and the segregated nature of the base, black troops became carpenters, electricians, mechanics, pharmacists, and heavy equipment operators. The buildings in this area were dismantled following the war.[99]

The War Department organized a small WAC detachment at MacDill Field. The women received their training at the primary WAC center in Daytona Beach, and then were ordered to MacDill. The 99th WAC Company, which arrived at MacDill Field in May 1943, consisted of women who worked in various capacities, including dental and medical corps assistants, photograph technicians, and stenographers. Nearly two hundred fifty WAC members occupied the base, performing their duties and living in standardized buildings. None of the specific buildings assigned to the WACs during the war, such as their two-story barracks, remain standing at MacDill.[100]

In 1943, developments at MacDill Field again caught the attention of the editors of *Architectural Forum.* A new post exchange with arcades, outdoor patios, restaurant areas, and well-executed murals demonstrated the design skills of the Corps's officers and some of MacDill's own officers and enlisted men who possessed backgrounds in architecture and art. Based in Washington, D. C., Major Meyer Katzman drafted the plans for the new exchange. Between 1930 and 1936, Katzman had worked for the R. C. Macy Company designing department stores. Late in the Depression decade, he opened his own practice in New York, which specialized in department stores throughout the country. Kratzman joined the Corps during the war and was assigned the responsibility of head of the Army Exchange Service, which expanded the military's exchange posts.[101]

Another architect who helped design the built environment at MacDill was Lieutenant Joseph Roberto, who had studied architecture at New York University. He won several competitions for industrial and furniture designs, later an award at the New York World's Fair for prefabricated housing. His creative design skills contributed to the attractiveness of MacDill Field. Three enlisted men, Sergeant John Cabore and Privates Robert Limpus and Harmes Ritchie, executed murals in the new post exchange. Cabore had studied art at the Art Student's League of New York and operated a studio there until the war. His grand prize at the Florida State Fair depicted scenes of the Army Air Forces in Florida. In the 1930s, Limpus had won prizes for his work in Indianapolis and at the nation's capitol, and Ritchie studied art at the National Art School in Washington, D. C. Most of his pre-war commercial art was for advertising agencies, churches, and theaters.[102]

Between February 1942 through 1945, MacDill Field trained crews in B-17 Flying Fortress and B-26 Marauder bomber aircraft. MacDill's personnel trained inexperienced soldiers in an assembly line format. Divided into

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[99]Wang, Durst, and Jacobs, "Historic Building Survey for MacDill Air Force Base," 1: section IV, p. 12, 34, 36.

[100]Wang, Durst, and Jacobs, "Historic Building Survey for MacDill Air Force Base," 1: section IV, p. 37-38.

[101]"MacDill Field, Florida," *Architectural Forum* 78 (June 1943), 55.

[102]"MacDill Field, Florida," *Architectural Forum* 78 (June 1943), 55.

four phases, the schedule trained students for specific duties aboard specific aircraft, or for field operations. Later training phases emphasized working together as a unit. On average, twenty-two hundred men and officer arrived at MacDill every seven weeks to participate in the training program. By the close of the war, tens of thousands of troops had trained at MacDill Field, making a significant contribution to the Allied air war.[103]

After World War II, MacDill became part of the Strategic Air Command (SAC). B-29 Superfortress aircraft replaced the B-17s in 1949, and B-47 Stratojets and KC-97 Stratotankers arrived in 1951. During the era of the Cold War, MacDill possessed "the capability to send two combat-ready wings of jet bombers capable of carrying atomic warfare to any quarter of the globe." In 1962, MacDill's role as a bomber base ended, and new operations supported the Tactical Air Command (TAC). Phantom F-4 fighters occupied the base, and, to train troops for the Vietnam conflict, instruction of pilots began in 1966. During the 1980s, MacDill became the largest F-16 fighter training center in the world, and, in 1992, the National Oceanic and Atmospheric Administration (NOAA) made plans to manage its aircraft operations from the base in 1993.[104]

Tyndall Field (Tyndall Air Force Base)

The Army commissioned Tyndall Field in 1941, naming the base for Frank B. Tyndall, a native of Florida and a World War I flying ace. The Army Air Forces developed Tyndall east of Panama City as a gunnery school, training fighter pilots and gunners in bombers. Classes began in February 1942, and by the close of the year over eight thousand trainees had graduated from the facility. The Army expanded the base dramatically during the war. A high altitude chamber installed at the base permitted the simulation of flying at thirty-five thousand feet. In addition to flight instruction, a school taught bomber crew members aerial gunnery. Clark Gable was among the thousands of soldiers trained at Tyndall Field. Gable arrived in 1942, and practiced firing machine guns at stationary targets and cloth sleeves towed from aircraft. Tyndall's excellent reputation prompted a visit by Senator Pepper in early-1943. By 1945, Tyndall had become one of the nation's largest gunnery schools, second only to an installation in Las Vegas, Nevada. In 1946, the Army designated Tyndall as its air tactical school, and transferred operations to the Air Force in 1947. Several years later, it became a weapons control center and jet interceptor training facility. Since the 1950s, Tyndall has served as an air-to-air weapons testing and training center.[105]

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[103]Wang, Durst, and Jacobs, "Historic Building Survey for MacDill Air Force Base," 1: section IV, p. 32-34.

[104]Wang, Durst, and Jacobs, "Historic Building Survey for MacDill Air Force Base," 1: section IV, p. 41-43, 46.

[105]*Jacksonville Florida Times-Union,* 3 January, 26 April 1943; Osborne, *World War II Sites in the United States,* 62.

World War II Army Installations

The following list identifies the primary installations developed in Florida by the Department of the Army during World War II. Decommissioned soon after the war ended, the vast majority of the installations were returned to civilian authorities. On most, little tangible evidence of World War II activities remains. Believed to be a comprehensive list of the primary military sites, this enumeration is not intended to be an exhaustive inventory of all Army-related bases in Florida during the war. The Army's auxiliary and outlying air fields, primarily grass strips or paved runways with few or no supporting structures, are not part of this inventory. Neither are nineteenth-century forts, which largely derive their military significance and heritage from earlier periods of development. Instead, the list serves as a practical guide for future survey and registration purposes associated with Florida's World War II military related installations. It enumerates the primary Army installations in Florida that may contain historic resources from the era.

Alachua Army Air Field
Apalachicola Army Air Field
Avon Park Army Air Field
Boca Raton Army Air Field
Bartow Army Air Field
Brooksville Army Air Field
Bushnell Army Air Field
Calstrom Field (Arcadia)
Camp Blanding
Camp Gordon Johnston
Camp Murphy
Dale Mabry Army Air Field
Dorr Field (Arcadia)
Drane Army Air Field (Lakeland)
Drew Army Air Field (Tampa)
Carabelle Flight Strip
Cross City Army Air Field
Dunnellon Army Air Field
Eglin Army Air Field
Hendricks Field (Sebring)
Hillsborough Army Air Field (Tampa)
Homestead Army Air Field
Keystone Army Air Field (Keystone Heights)
Kissimmee Army Air Field

Leesburg Army Air Field
MacDill Army Air Field
Marianna Army Air Field
Montbrook Army Air Field (Williston)
Morrison Field (West Palm Beach)
Naples Army Air Field
Orlando Army Air Field
Page Field (Fort Myers)
Perry Army Air Field
Pine Castle Army Air Field (Orlando)
Pinellas Army Air Field (St. Petersburg)
Punta Gorda Army Air Field
Riddle Field (Clewiston)
Sarasota Army Air Field
Tyndall Army Air Field
Venice Army Air Field
Zephyrhills Army Air Field

Florida's World War II Military Bases Developed by the Department of the Navy

Bureau of Yards and Docks Context

In 1938, the federal government maintained twenty-one navy bases and naval air stations in the continental United States. Although Pensacola's navy yard had been established in 1825, that facility underwent its most significant period of development during the 1930s and World War II. In June 1940, following the fall of France, President Roosevelt signed a bill authorizing forty-five million dollars for the development of naval air stations in Florida and Texas. Later, in May 1942, the Department of the Navy announced that seven Florida cities would become the sites of naval air stations. Naval air stations developed at that time with a similar mission and size included those at Daytona Beach, DeLand, Fort Lauderdale, Melbourne, Lake City, Sanford, and Vero Beach. They served as training and operational installations for Jacksonville NAS. Each cost about five million dollars to construct, including an administration building, barracks and other residential facilities, dispensary, instruction buildings, a wooden hangar, and a main field and several satellite fields. Each station initially was designed to support about fourteen hundred enlisted men and three hundred officers.[106]

[106]*New York Times,* 28 May 1942; U. S. Navy, *Building the Navy's Bases in World War II,* 1: 236; Coletta, *U. S. Navy and Marine Corps Bases,* 306; Shettle, *Naval Air Stations of World War II,* 1:7; *Jacksonville Florida Times-Union,* 15 October 1940; William R. Adams, "Architectural and Historical Survey of the Pensacola Naval

Strategically placed along the east coast, those stations complemented existing Navy facilities at Jacksonville, Key West, and Pensacola. Existing naval stations at the latter two cities were expanded, and a new naval station was developed at Mayport, near Jacksonville. Part of the Hepburn Board recommendations, the new naval station was developed to support the larger naval air station at Jacksonville. The Navy selected a site at Mayport, and arranged its buildings in spatial relationship to an airfield and basin. By July 1942, a ship basin had been constructed, the area cleared to for buildings, and, by 1943, an air field had been built.[107]

The air fields built by the Navy offered a wide array of geometric designs. Overall designs often displayed circles, octagons, squares, or triangles, which led to runways. A few fields consisted of two squares superimposed on each other, providing eight runways and making it possible to take off and land directly into the wind. Most naval air facilities employed a single field plan, but some stations, such as Barin, Miami, and Whiting, had two field designs, which appeared from the air as barbells.[108]

Plans and specifications for many of the Department of the Navy's stations during World War II were prepared, or at least reviewed, by the Navy's Bureau of Yards and Docks (BYD). The Congress authorized the BYD in 1842, and, seven decades later, the BYD's Shore Station Development Board was established to coordinate public works and develop general long range goals. Funding shortfalls, however, limited the Navy's development of bases. Between 1921 and 1938, the BYD operated with about two hundred personnel in Washington, D.C.[109]

In 1938, the Secretary of the Navy ordered the Hepburn Board to conduct an exhaustive survey of the strategic needs for naval defense. Among its recommendations, the board indicated the need to expand the Navy's existing bases and create three new air bases on each coast. The extensive study became known to naval officers as the "Yards and Docks Bible," or "BuDocks Bible," which outlined the facilities required to meet the Navy's needs. Rear Admiral Benjamin Moreell served as chief of the BYD. The contract and design divisions reported directly to Moreell, and project managers supervised various construction activities, including aviation facilities; hospital and naval buildings; fleet, yard, and base facilities; housing section; ordnance establishments;

Air Station, Pensacola, Florida," unpub. mss., St. Augustine: Historic Property Associates, Inc., 1986, p. 1, 36-37.

[107]J. W. Joseph, "Historic Building Inventory and Assessment, Naval Station Mayport, Duval County, Florida," Stone Mountain, GA: New South Associates, 1994, p. 11-23.

[108]Shettle, *Naval Air Stations of World War II,* 1: 8.

[109]U. S. Navy, *Building the Navy's Bases in World War II: History of the Bureau of Yards and Docks and the Civil Engineering Corps, 1940-1946,* 2 vols., (Washington, D. C.: Government Printing Office, 1947) 1: 61, 373-374; Eugene Peltier, *The Bureau of Yards and Docks of the Navy and the Civil Engineering Corps* (New York, San Francisco, and Kittery: Northpoint Press, 1961), 10.

and yard and station development. Notwithstanding these design specialists, the BYD consistently turned to professional architects and engineers in private practice for assistance in the layout of air stations and individual building design.[110]

During World War II, the BYD increased in size to approximately two thousand personnel who became responsible for the design and supervision of a host of projects, including air stations, ammunition depots, barracks, hospitals, and housing on naval facilities. The design division employed the largest number of professionals. They developed engineering standards and prepared plans and specifications for various projects. The construction department was responsible for the selection of architectural engineers and construction contractors. During World War II, the BYD's shore construction program amounted to nearly eight billion dollars. Indicative of Florida's significance in early mobilization efforts, almost all work initiated by the BYD in the first five months of 1940 was performed at Jacksonville NAS. Overseas, the BYD developed a specialized team of contractors that became renowned as the "Seabees." In the continental United States, the BYD relied on civilian contractors, but in theaters of operation, or war zones, the Navy used its Seabees, who were trained to work and fight.[111]

The BYD developed standardized plans for building and structure types in the late-1930s, which were refined and used on many naval installations during the war. Standard designs were drafted and then revised for barracks, dispensaries, hangars, power plants, and warehouses. Single family, two-family, and multiple-family units were readily adapted to provide additional living areas. Various stylistic influences could be applied to the exteriors of buildings. Administrative and maintenance buildings were typically executed from standardized wood frame structures devoid of ornamentation. Derived from common, frame vernacular construction techniques, these buildings were designated mobilization type structures, which some later students of architectural history referred to as military vernacular. Resources developed for an industrial function sometimes displayed the influences of the related Art Deco and Art Moderne styles, but generally were simply industrial vernacular buildings. Barracks were most often derived from standardized plans, but some, especially those in officer's areas, were based on typical civilian housing plans of the era, exhibiting the influences of the Classical Revival, Colonial Revival, Ranch, or even Split Level styles.[112]

The BYD often worked closely with professional architects in private practice to develop specialized buildings, such as hangars. More than any other firm, the BYD turned to Albert Kahn of Detroit, Michigan, to draft its

[110]U. S. Navy, *History of the Bureau of Yards and Docks,* 1: 4-8; "Organization: Defense Building Agencies," *Architectural Forum* 73 (November 1940), 335.

[111]U. S. Navy, *History of the Bureau of Yards and Docks,* 1: 4-87, 61-63, 231; Benjamin Moreell, "The Bureau of Yards and Docks," *Military Engineer* 35 (January 1943), 22.

[112]U. S. Navy, *History of the Bureau of Yards and Docks,* 1: 373-374; Moreell, "The Bureau of Yards and Docks," 22.

plans for hangars. Industrial vernacular forms, hangar footprints were rectangular with gently sloped shed or flat roofs obscured by straight parapets. Beyond their sheer size, which often reached one hundred thousand square feet of interior floor space, the buildings displayed a sliding door system of metal-and-wire-glass leaves that slid into pockets to reveal cavernous openings for aircraft. Stucco and reinforced concrete served as exterior wall fabrics. Fenestration was typically regular with vertical banks of wire glass windows divided with metal mullions and cantilevered or hopper style sections that opened to provide ventilation and natural interior lighting. Poured concrete foundations supported the buildings.

For the layouts of air stations and naval stations, the BYD often used the services of Robert & Company of Atlanta, Georgia. During the mobilization period, the Robert & Company designed various systems and buildings air stations at Corpus Christi, Texas; Jacksonville, Florida; and Pensacola, Florida. Later, the company designed the air station plan for naval air stations at Daytona Beach, DeLand, Vero Beach, and several other locations. Working in association with the BYD, the company often incorporated existing resources, such as hangars, residences, and other resources, into the overall plans of an installation. The plans often took in existing runways, which began the basis for the flight line buildings. Base designs often assumed a rectangular or triangular shape, depending on the number of resources and the size of the installation. Ordnance magazines were typically clustered distant from the hub of the base, but near a runway to facilitate loading ordnance onto aircraft.[113]

Ordnance resources were among the most unusual resources at military installations. Like the Army's Corps of Engineers, the Navy's BYD used a variety of buildings and structures to house its ordnance. Typically built of masonry materials, magazines for high and bulk explosives, fuses, and detonators were reinforced-concrete earth-covered arch structures, generally twenty five feet wide and twenty, fifty, or eighty feet long. Other types of magazines were developed for less hazardous materials, such as smokeless powder, fixed ammunition, and projectiles. Above-ground buildings were assembled with masonry walls, either reinforced concrete or brick with light steel roof trusses supporting a pitched roof surfaced with corrugated cement asbestos. The other type was earth-covered built either as three-span multiple arches, or as vertical-walled, flat roofed reinforced-concrete structures.[114]

The following narratives, arranged in alphabetical order, briefly describe the naval air stations, naval stations, and naval auxiliary air stations operated in Florida by the Department of the Navy during World War II. Few of

[113]Sidney Johnston, "Historic Architectural Resources of NAS Jacksonville, Florida Multiple Property Submission," St. Augustine, Historic Property Associates, 1995; Robert & Company Associates, Inc. & Harry Griffin, Daytona Beach, "Plot Plan United States Naval Air Station DeLand, Florida," December 7, 1942; *Vero Beach Press-Journal,* 12, 26 June, 25 September, 30 October, 27 November 1942.

[114]U. S. Navy, *History of the Bureau of Yards and Docks,* 1: 339.

those survive as active installations today, and only a scattering of resources remain to indicate the works of the Bureau of Yards and Docks and the extent of the Navy's presence in Florida during World War II.[115]

The Development of the Navy's Installations in Florida During World War II

On 27 May 1942, the Department of the Navy announced the development of naval air stations in the Florida cities of Daytona Beach, DeLand, Fort Lauderdale, Melbourne, Lake City, Sanford, and Vero Beach. Part of a larger thirty-thousand-pilots-a-year-program, the Navy established the installations to expand its pre-fleet operational training system. Including an eighth base in Brunswick, Georgia, the new bases increased the strength of the Navy's pilot training program to twelve installations throughout the United States.[116]

As part of the early negotiations, U. S. Senator Claude Pepper had encouraged several of the municipal governments to lease their airports to the Department of the Navy for one dollar's for the duration of the war. The Navy predicted that each new station would cost about five million dollars to construct. These cities already maintained airports with runways, although some consisted of little more than one hangar and a limerock runway. In addition to improving the main field with concrete runways, aprons, and hardstands, the Navy would build an administration building, dispensary, housing facilities, a wooden hangar, instruction buildings, storage facilities for gasoline, and several satellite fields. Later buildings and structures followed. The Navy commissioned the stations in late-1942, and training began in various naval aircraft, including Curtis SBC Helldivers; Douglas SBD Dauntless dive bombers; Grumman F4F Wildcats, F6F Hellcats, and TBF Avenger torpedo bomber; North American SNJ Texan; Consolidated PBY Catalinas; Stearmans; and a variety of scout and patrol aircraft. Strategically placed along the east coast, those stations complemented existing Navy facilities at Jacksonville, Key West, Miami, and Pensacola.[117]

Although the naval air station at Jacksonville was then only three years old, the military's facilities at Key West and Pensacola dated into the nineteenth century. Organized in 1825, the Pensacola Navy Yard expanded significant in the nineteenth century. On the eve of the Civil War, nearly sixty buildings and structures stood on the base. In 1913, the Navy selected Pensacola for its first flying school, and in November 1914 it became the first naval aeronautic station in the United States. The Navy re-designated the station as Pensacola Naval Air Station in December 1917. Aviation cadet training began in 1932. After enlarging the facility in the late-1930s, the Navy renamed the station Chevalier Field for a naval aviator who lost his life in an aircraft accident.

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[115]Shettle, *Naval Air Stations of World War II,* 1: 7, 233.

[116]*New York Times,* 28 May 1942.

[117]*New York Times,* 28 May 1942; Shettle, *Naval Air Stations of World War II,* 1: 65; Coletta, *U. S. Navy and Marine Corps Bases,* 171-172; U. S. Navy, *Building the Navy's Bases in World War II,* 1: 236.

Known for decades as the "Cradle of Naval Aviation," Pensacola NAS was the largest naval air station in the country by World War II and gained a new reputation as the "Annapolis of the Air."[118]

The U. S. Navy occupied Key West in 1822, and officially designated naval depot on the island in 1856. Renewed development occurred during the Spanish-American War, and World War I sparked further expansion. A naval air station was also commissioned at Key West during the Great War, but both the naval station and naval air station were decommissioned following the conflict. In 1939, with the outbreak of war in Europe, the naval station was reopened, and, in January 1942, the Seventh Naval District established headquarters there. The Navy re-commissioned Key West naval air station in December 1940. During World War II, Key West became an island fortress, consisting of a naval base district headquarters, naval air station with two fields, a naval hospital, naval submarine base, and a sonar fleet school. The naval station played a key role in the formation of convoys, supplying escorts, and combating German submarines.[119]

Various auxiliary and outlying fields were built to support naval air training in Florida. At Daytona Beach, outlying fields included Bunnell, New Smyrna Beach, and Tomoka. The outlying field at New Smyrna Beach included an operations building, a tower, barracks, and catapult and arresting gear. The New Smyrna Beach facility included a gunnery field, which the station shared with DeLand NAS. The Bunnell outlying field, which also served the Green Cove Springs auxiliary station, had facilities similar to those developed at New Smyrna Beach. A nearby boat dock was built to assist trainees with search-and-rescue missions.[120]

Training activities at Lake City and Sanford NAS included twin engine patrol bombers and fighter aircraft. Near the height of its activities, over three hundred aircraft occupied the Sanford station. The Lake City facility included an assembly and repair department, and an outlying field near Lake Butler. Outlying fields at Sanford NAS included an older municipal airport, Osceola, and Titusville. A gunnery range, called target rock, was built on the east side of Mosquito Lagoon in present-day Canaveral National Seashore. Fabricated with reinforced concrete, the target consisted of a scaled-down version of a Japanese aircraft hangar and several aircraft. German POWs arrived at Sanford NAS in 1945 to perform duties as mechanics and in the mess hall.[121]

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[118]Adams, "Architectural and Historical Survey of the Pensacola Naval Air Station," p. 3, 8, 11-12, 30, 34, 40; Coletta, *U. S. Navy and Marine Corps Bases,* 467-469; Shettle, *Naval Air Stations of World War II,* 1: 177.

[119]Wright Langley, "Key West," *Forum* 22 (Fall 1999), 27; Coletta, *United States Navy and Marine Corps Bases,* 259-263.

[120]Shettle, *Naval Air Stations of World War II,* 1: 64-65; Coletta, *U. S. Navy and Marine Corps Bases,* 171-172.

[121]Shettle, *Naval Air Stations of World War II,* 1: 117, 197; Coletta, *U. S. Navy and Marine Corps Bases,* 275-276, 589-590.

Pilots at Melbourne NAS trained in fighter aircraft. The Navy's Bureau of Aeronautics also used Melbourne to test aircraft and engines. Outlying fields supporting the station included Malabar and Valkaria. The latter field included a catapult and arresting gear. In 1944, Melbourne's personnel amounted to nearly fifteen hundred troops. In 1945, the Navy assembled a compound to house nearly three hundred German POWs.[122]

At DeLand and Vero Beach, Robert & Company supplied the plans for the designs of the stations and their various buildings in 1942. Roads were closed at each and local traffic diverted onto adjacent streets. Because the plan closed the federal highway between Daytona Beach and DeLand, a new alignment was devised and constructed. In July, after building materials arrived by rail spur, the Hillyer and Lovan Construction Company of Jacksonville, broke ground for the Vero Beach facility. Both Robert & Company and Hillyer and Lovan had developed several large facilities at Jacksonville NAS and other military facilities. By August, twelve hundred workers were assembling buildings and constructing runways. By the time of its formal commissioning in November 1942, an armory, assembly and repair, barracks, cold storage, control tower, landplane hangar, magazines, and warehouses were some of the buildings and structures installed at the Vero Beach station. Outlying field included those at Fort Pierce, Roseland, and Stuart.[123]

At Vero Beach, Navy pilots specialized in night fighting and trained in Grumman F6F Hellcats. Later, station pilots trained in F7F Tigercat and SB2C Helldiver aircraft. Near its peak period of activity, Vero Beach NAS accommodated fourteen hundred personnel and two hundred fifty airplanes. One pilot later commented that "We would fly all night, and then we would fly all the next day looking for the guys who didn't come back the night before." Some pilots, such as Ensign David Proudman and Ensign Lemuel Harrison, never returned. Both lost their lives in November 1944 while on "routine training missions" over the Atlantic Ocean. In all, nearly one hundred pilots died while training at Vero Beach. A station newspaper, *The Buccaneer,* established in 1943, published columns of local activities and national events. The Bombadears, a Vero Beach social group, was organized to provide entertainment for service men.[124]

At DeLand, military activities consisted largely of training pilots and airmen in bombers, dive bomber, and fighter aircraft. The station maintained a PBY seaplane and rescue station on nearby Lake George, a boat facility and rescue station on Crescent Lake and at DeLeon Springs; a bombing and strafing target range at Paisley in Lake County; a satellite field at Spruce Creek; and a gunnery field near New Smyrna Beach.[125]

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[122]Shettle, *Naval Air Stations of World War II,* 1: 131; Coletta, *U. S. Navy and Marine Corps Bases,* 302.

[123]Coletta, *U. S. Navy and Marine Corps Bases,* 641; Shettle, *Naval Air Stations,* 217; *Vero Beach Press-Journal,* 12, 26 June, 25 September, 30 October, 27 November 1942; *Jacksonville Florida Times-Union,* 17, 19, 27 January 1940.

[124]Shettle, *U. S. Naval Air Stations of World War II,* 217; *Vero Beach Press-Journal,* 10 November 1944, 22 June, 3 August 1945.

[125]*DeLand Sun News,* 30 April, 13, 25 May 1942; Shettle, *Naval Air Stations of World War II,* 1: 67.

Commissioned in October 1942, Fort Lauderdale's naval air station trained pilots in dive bombers, fighters, and torpedo bomber aircraft. Outlying or satellite fields supporting the station included North Pompano and West Prospect. Ensign George Bush, later President of the United States, trained at Fort Lauderdale. He later recalled "training up and down the East Coast...dropping dummy bombs and torpedoes in Lake Okeechobee...Miami." One of Florida's most infamous aviation stories comes out of Fort Lauderdale. On 5 December 1945, Flight 19 consisting of five Avenger aircraft departed the station on a training mission and were never seen again. A Martin Mariner aircraft dispatched from Banana River NAS was also lost at sea. The loses contributed to the mystery of the so-called "Devil's Triangle" or "Bermuda Triangle" east of Florida's southeast coast. In all, ninety-five pilots and airmen lost their lives in training at Fort Lauderdale. By 1945, the physical features of the naval air station included two hundred seventeen buildings. Only one remains standing, the former link trainer facility, which is listed in the NRHP and contains a museum operated by the Fort Lauderdale NAS Historical Association.[126]

By 1945, the U. S. Navy maintained eighty-six naval air stations in the eastern half of the United States, twenty-three of which occupied sites in Florida. Reflecting the dramatic mobilization effort, only eleven air bases had been scattered across the country in 1939. But, following the traditional national policy of reducing its military resources after a war, the Navy decommissioned most of its stations and auxiliary facilities in 1946 and 1947. By 1948, fewer than ten Naval installations remained in the Sunshine State. The installations were returned to the respective municipal governments. Most of the former World War II installations were air field, and continue to function as airports. Several of those, however, such as international airports at Daytona Beach, Fort Lauderdale, and Melbourne, have little tangible evidence of their World War II heritage.[127]

Selected Navy Installations Developed in Florida During World War II

Banana River Naval Air Station

Banana River NAS was designated as a support facility for Jacksonville Naval Air Station by the Hepburn Board, in association with authorization through the Naval Expansion Act of 1938. Named for a river near Cocoa Beach, the Banana River station was commissioned in October 1940. Its early mission included an outlying patrol plane base for the Jacksonville. At the beginning of the war, crews trained in Martin Mariner

[126]Wynne, *Florida At War,* 114; Paul George, "Fort Lauderdale: Creating a Wartime Boom," *Forum* 22 (Fall 1999), 29; Shettle, *Naval Air Stations of World War II,* 1: 64-65; Coletta, *U. S. Navy and Marine Corps Bases,* 171-172.

[127]Coletta, *U. S. Navy and Marine Corps Bases,* 641; Shettle, *Naval Air Stations of World War II,* 1: 7, 65, 79.

patrol bombers, and conducted antisubmarine patrols. In 1942, the Navy created a photographic laboratory and navigation school at the station, which also served as a supply base for naval air stations at Daytona Beach, Melbourne, and Vero Beach. Its assembly and repair department overhauled some of the aircraft from those installations. Landplane operations began in January 1943, and a hangar for landplanes was assembled in 1944. Antisubmarine patrols and search-and-rescue missions were conducted using a dirigible detachment for Richmond NAS in Dade County. Physical facilities included four runways, a seaplane base, and a dirigible mooring circle. Near the height of its development, the station included two hangars and approximately fifty additional buildings. Because of superb flying conditions, the station gained personnel, even during the closing months of the war. But, the Navy decommissioned the station in September 1947, and transferred custody in September 1948 to the U. S. Air Force, which adapted the facility for its purposes, and renamed it Patrick Air Force Station. Part of the former naval air station became the Eastern Space and Missile Center.[128]

Dinner Key Naval Air Facility

A naval air facility, Dinner Key was commissioned in 1918 as a seaplane and dirigible base for the Navy. It was the nation's first continental naval air station. Following World War I, the facility became a commercial operation, but was designated a U. S. Coast Guard facility in 1932. Pan American completed a terminal building there in 1934, which now serves as Miami's City Hall. The Navy began use of the facility in 1942, and commissioned Dinner Key NAF in August 1943. Its primary mission supported naval air transport services, especially using the Martin Mariner seaplane. The U. S. Coast Guard also actively used the facility during World War II. At the facility, the Navy assembled two barracks, two bachelor's officers quarters, dispensary, hangar, and a mess hall. Facility personnel in 1944 consisted of nearly six hundred enlisted men and one hundred officers. The Navy decommissioned Dinner Key NAF in June 1945, and the U. S. Coast Guard remained there until 1965. Hurricane Andrew heavily damaged the facility in 1992.[129]

Fort Pierce Naval Amphibious Training Base

Developed in 1943 to conduct underwater demolition training for the Navy's "frogmen," Fort Pierce NATB was selected for its protected harbor, warm water, and good weather. In addition, the U. S. Army Corps of Engineers had earlier established a beach obstacle test base on nearby Hutchinson Island, which would provide additional training facilities. Training was conducted in demolition of obstacles, secret beach reconnaissance, and invasion onto beaches by Underwater Demolition Teams (UDT) and landing craft. By war's end, one hundred fifty thousand men had trained at the base. These specialized warriors played a vital role in helping to

[128]Coletta, *U. S. Navy and Marine Corps Bases,* 39-40; Shettle, *Naval Air Stations of World War II,* 1: 22-23.

[129]Shettle, *Naval Air Stations of World War II,* 1: 69; Coletta, *United States Navy and Marine Corps Bases,* 305.

clear beachheads for troops in Europe and the Pacific. The Army and Navy cooperated in many joint exercises at the base. One training exercise consisted of the U. S. Army Air Force bombing the beaches of North Hutchinson Island, followed by Navy demolition teams using explosive devices to destroy "enemy" obstacles. Other UDT teams practiced blowing up obstacles built by Seabees in nearby Martin County between Jensen Beach and Stuart.[130]

The Fort Pierce trainees also contributed to the economy and navigation channels of various cities in the region. UDT trainees blasted shoals at Sebastian Inlet in Indian River County to improve that navigation channel. At St. Lucie Inlet, UDT personnel set explosive charges on a coral reef, which, when detonated, sent a plume of water three hundred feet into the air. A flotilla of Navy landing craft then tested the new channel. Eight thousand pounds of charges created a channel three hundred feet long by ten feet deep at Ponce DeLeon Inlet near New Smyrna Beach. UDT personnel also created deep watering holes on cattle ranches in inland regions of Martin, St. Lucie, and Volusia Counties. Dismantling of the base began in the fall of 1945. Personnel buried some buildings deep into the sand on the former base; others were demolished. By February 1946, when the base was decommissioned, few traces of the former naval training base remained.[131]

Jacksonville Naval Air Station

Following a presentation in March 1939 of the Hepburn Board's recommendation, an amendment to a naval appropriations bill was filed authorizing the Navy Department to spend seventeen million dollars on the development of Jacksonville NAS. The initial vision for the station included a three-year plan for construction. Commander C. H. Cotter, a 1916 graduate of the University of Michigan with a degree in Civil Engineering and more than two decades of Navy experience in places such as Haiti, Puget Sound, Pearl Harbor, and Portsmouth, was assigned to supervise construction. Work began with the dismantling of Camp Foster, the state's former military grounds. Many of the old military buildings at the camp were removed to a newly-selected site for a National Guard installation at Camp Blanding, some thirty miles to the west.[132]

By the end of June 1940, more than one thousand workers were engaged in construction at Jacksonville NAS. The official date of commission--15 October 1940--exceeded the original completion estimates by well over a year. The decision to hasten the installation's construction undoubtedly owed much to the alarming situation in Europe, for in September 1939, Germany invaded Poland, drawing France and Great Britain into a conflict that

[130]Gannon, *The New History of Florida,* 325; Robert Taylor, "The Frogmen in Florida: U.S. Navy Combat Demolition Training in Fort Pierce, 1943-1946," *Florida Historical Quarterly* 75 (Winter 1997), 289-291, 293-294, 296-297, 300-302; *Vero Beach Press-Journal,* 19 October 1945.

[131]Gannon, *The New History of Florida,* 325; Taylor, "Frogmen in Florida," 289-291, 293-294, 296-297, 300-302; *Vero Beach Press-Journal,* 19 October 1945.

[132]*Jacksonville Journal,* 15 October 1940; Coletta, *United States Navy and Marine Corps Bases,* 27.

at once assumed global dimensions. It was, then, hardly coincidental that by early 1940 new contracts were signed and the construction activity expanded. On 19 January 1940, Commander Cotter announced that the largest overhaul shop in the Navy would be built at the station. A week later, the Jacksonville firm of Hillyer and Lovan was selected to build three large storehouses.[133]

In November 1939, the elevations for a seaplane hangar were delivered to the Navy Department for approval. The architectural firm of Albert Kahn drafted the plans for the four seaplane hangars that were to stand astride the river, separated from the water by an extensive concrete apron. The Navy Department released the drawings for construction bids in February 1940, and construction commenced in late March. The architect's preliminary sketch of the overhaul shop was released in March 1940, and work began on the land plane hangars, positioned on an east-west axis south of the main landing field. Kahn's firm also prepared the plans for the land plane hangars located on the south side of the landing field. In January bids were accepted for four miles of runways.[134]

The Jacksonville firm of Marsh & Saxelbye was awarded the contract to design the central administration building. The firm's drawing were approved by the Navy in December 1939. Marsh & Saxelbye also undertook drafting of plans for nine Bachelor Officer's Quarters, a storehouse, a dispensary, and the commanding officer's residence in late 1939.[135]

The call for bids to design plans for four industrial buildings were distributed in April 1940. Albert Kahn won the contract to design the Torpedo Workshop Building, which reflects his extensive use of glass and steel. In March 1940, the local paper carried a story about a new gate house that was to be placed at the main entrance. Construction of the assembly and repair shops, boat house, boiler plant, fire station, radio control tower, and water plant began in April.[136]

By the autumn of 1940, work on the immense landing fields was well underway. Grading operation began in August, and by September seventy-five carloads of limestone arrived each day by rail car. Constructed at a cost of more than one million dollars and completed in December, the field took its place as one of the nation's largest, its longest runway stretching approximately six thousand feet. The steel skeletons of a number of buildings could be seen rising in the main part of the base, while to the south, along the river and beneath a canopy of trees, the senior officers quarters neared completion. An expansive, three-story, rectangular supply

[133] *Jacksonville Florida Times-Union,* 17, 19, 27 January, 15 October 1940; Williamson, *NAS Jax,* 19.

[134] *Jacksonville Florida Times-Union,* 13 March 1940. Building Plans, Vault, NAS Jacksonville. Hereinafter cited as Building Plans.

[135] *Jacksonville Florida Times-Union,* 20 January 1940; Williamson, *NAS Jax,* 21; Building Plans; Marsh & Saxelbye Design Plans on File. Copy on file in the Planning Department, City of Jacksonville.

[136] Williamson, *NAS Jax,* 21; *Jacksonville Florida Times-Union,* 13 March 1940.

building with symmetrical bands of windows, presented a finished face to the crowds assembled for the official commissioning in October 1940. The solemn ceremony took but a few minutes before military and civilian workers returned to their tasks.[137]

The Assembly and Repair Department constituted a major activity assigned to the base. By January 1941, men from other bases throughout the southeast had begun transferring to Jacksonville to form the initial work force. Albert Kahn submitted his rendering of the main elevation of the immense Assembly and Repair Department Building in March 1940, and the Navy placed the building in use in May 1941. The gargantuan building, whose main facade, facing west upon Wasp Street, offered a splendid example of Art Deco styling. The work of overhauling and repairing aircraft and aircraft engines engaged as many as three thousand employees by the war's end.[138]

The senior officers quarters near the river and south of the base industrial and maintenance area became available for occupancy in mid-summer 1941. A sprawling, two-story wood frame building that served as a bachelor's officers quarter was completed in August 1941. The enlisted men's barracks rose to completion the same month. By June 1941, contractors completed the individual quarters for junior officers.[139]

The hospital complex was commissioned in July 1941, and the Jacksonville firm of Marsh & Saxelbye released their plans for the Dispensary. The hospital complex grew throughout the war as additional buildings arose and improvements, such as air conditioning, were added to existing facilities.[140]

The social requirements of a large contingent of men and women assigned to Jacksonville for periods of service that may have ranged from a few weeks to more than a year demanded appropriate facilities. The first of them was an enlisted men's Recreational facility, designed by the Atlanta-based architectural firm of Robert and Company. The Officer's Club was completed in early 1942. Service personnel played golf at a nine-hole course, which was later expanded to eighteen holes. The base chapels, also designed by Robert and Company, were completed in December 1942, and dedicated in early 1943. That year, the company drafted the design for an extension to the Assembly and Repair Shop, the largest facility on the base, one originally completed in 1941, but which continued to grow throughout the war and after. In 1944, construction began on three additional storage buildings, designed by Robert and Company, in the base warehouse section. These spacious structures accommodated over one hundred thousand square feet of floor space each. In the same year, the firm completed plans for the Synthetic Device Building. Erection of one hundred forty new housing units

[137]*Jacksonville Florida Times-Union,* 24 September 1940; Williamson, *NAS Jax,* 22.
[138]Williamson, *NAS Jax,* 22.
[139]Williamson, *NAS Jax,* 22.
[140]Building Plans.

commenced in May 1945. The following month, contractors installed a swimming pool new the housing complex, and later built an intelligence training building.[141]

Expansion of the golf course and construction of a series of brick-walled drainage ditches through the middle of the base were completed by German prisoners of war. The first contingent of five hundred POWs arrived in June 1945, and their number grew to over sixteen hundred by October. By May 1946, almost a year to the date after the surrender of Germany, all were gone.[142]

The principal mission assigned to Jacksonville NAS during the war was to provide training for naval aviators and the support personnel required to maintain naval air capability. Cadets received their primary instruction at Jacksonville NAS, many of whom received secondary instruction at stations at Daytona Beach, DeLand, Fort Lauderdale, Melbourne, or other neighboring facilities. Those assigned to carrier planes went on to Pensacola or Corpus Christi for advanced flight school. Repair and overhaul of engines and air frames constituted another significant work task at the station. The station also coordinated air patrol activities flown from small naval air stations and auxiliary stations scattered along the coasts of Florida and Georgia. Planes from Jacksonville NAS conducted patrols over the Atlantic Ocean, where German submarine warfare reached a crescendo in 1942.[143]

The station's largest activity consisted of naval air technical training, the so-called "trades school." The school provided training in a broad array of technical skills required to support naval air operations. By the war's end the list of schools included aviation metal smith, aviation machinist's mate, aviation radioman, aviation ordinance-man, aviation fire control, searchlight maintenance, aviation storekeeper, and many others. Construction of temporary wooden buildings to house the classes and equipment consisted of thirty buildings covering the equivalent of six city blocks. They included an administration building, six classroom buildings, a mess hall, an auditorium, six shop buildings, and a land plane hangar. By December 1941, the school's roster included nearly thirty-two hundred students and officers.[144]

Many important figures associated with political and military affairs during the war visited or passed through the station. President Franklin D. Roosevelt paid a visit in March 1941. A former Secretary of the Navy, Roosevelt took a close personal interest in the development of naval power and strengthening of naval aviation capabilities. Secretary of the Navy Frank Knox and his successor, James V. Forrestal, made occasional visits. In June 1942, Joseph Kennedy, Sr., former ambassador to England, visited the base to attend graduation

[141]Building Plans; Williamson, *NAS Jax,* 40; *NAS Jax Air News,* 10 May, 7 June 1945..

[142]*Jacksonville Florida Times-Union,* July 15, 1978; Vertical Files, 1945-1947 Notebook, Office of Environmental Services, Jacksonville Naval Air Station.

[143]Shettle, *United States Naval Air Stations of World War II,* 1: 103.

[144]Williamson, *NAS Jax,* 32-33; *Jacksonville Florida Times-Union,* 24 September 1940.

ceremonies for his son, Joseph Jr. The senior Kennedy pinned the naval aviator's wings on his son that day. Another Kennedy, John F., the future president, spent time at the base, including a two-week stay at the hospital after developing a high fever during PT boat operations. Ensign George H. Gay, who was shot from the air by Japanese gunners in the battle of Midway and, from a raft in the Pacific Ocean, witnessed the destruction of the Japanese fleet by American dive bombers, trained at Jacksonville NAS from April 3 to August 14, 1941.[145]

By the war's end, over sixty-eight million dollars had been spent on the construction of the station. Jacksonville NAS became one of the three largest naval air stations in the world, rivaling installations at Corpus Christi and Pensacola. In 1945, the three thousand-acre base included nearly seven hundred buildings. Over thirty thousand civilian and military people worked there. By 1949, one-half of the Atlantic Fleet's striking naval air power was located at Jacksonville NAS, which remains one of the nation's largest naval air stations. Numerous buildings and districts at Jacksonville NAS have been determined eligible by the SHPO.[146]

In 1944, near the height of activities at Jacksonville NAS, the station supported nearly thirteen thousand enlisted men and officers, and nearly one thousand aircraft. Auxiliary and outlying fields supporting the facility dotted the surrounding landscape. Located sixteen miles west of Jacksonville, Cecil Field began its existence as an outlying field to the larger naval air station. It was named for Henry Cecil, the commander of the dirigible USS *Akron,* which crashed in 1933. Development began in 1941, and commissioning of Cecil Naval Air Auxiliary Station occurred in February 1942. Initial training activities included instruction in dive bombing and piloting fighter aircraft. The Navy also created an officer's school and a gunnery school range at Cecil. North of the station lay the Yellow Water Naval Gunnery School, which contained the ranges where the station's pilots practiced. After March 1943, when all fighter training activities were transferred to Green Cove Springs, training at Cecil became exclusively dive bombing. Nearby Whitehouse Field was an outlying field supporting Cecil Field. Peak activity occurred in late-1944, when nearly three hundred aircraft and twenty-five hundred enlisted men and officers were stationed at the field. In June 1952, the facility was upgraded to Cecil Field Naval Air Station, and it became a Master Jet Base. But, in 1993, the Defense Base Closure and Realignment Commission recommended closure of Cecil Field NAS, which occurred in the late-1990s.[147]

The Navy commissioned Jacksonville Municipal # 1 as an auxiliary station for Jacksonville NAS in April 1944. The City of Jacksonville had opened the facility in 1927, and by World War II the airport consisted of an administration building, six hangars, and maintenance shops. Five runways supported the airport, the longest measuring seven thousand feet. In March 1941, the City leased the municipal airport to the U. S. Army, which

[145]*Jacksonville Journal,* 9 June 1942; *Jacksonville Florida Times-Union,* 6 May 1942.

[146]*Jacksonville Journal,* 21 January 1942; *Jacksonville Florida Times Union,* 11 October 1945.

[147]Coletta, *U. S. Navy and Marine Corps Bases,* 75-77; Shettle, *Naval Air Stations of World War II,* 1: 47, 103, 105.

used the facility to conduct antisubmarine patrols. The Army expanded the base, and continued its patrols until conveying the base to the Navy. In 1944, when the station reached its peak of activity, sixty-seven B-24 Liberators were stationed there for photo-reconnaissance training.[148]

Green Cove Springs became the site of another auxiliary air station that supported Jacksonville NAS. The City of Green Cove Springs had developed the airfield, but even before the United States entered World War II, the Navy found the site attractive because of its proximity to Jacksonville and its location astride the St. Johns River. Briefly known as "Lee Field," named for a naval aviator who died in England during World War I, the Green Cove Springs facility was commissioned in 12 March 1941. Contractors assembled sixteen buildings, and paved four runways. Outlying fields supporting the facility included Fleming Island, St. Augustine, and Switzerland, and a gunnery range was also established near St. Augustine.[149]

Key West Naval Station and Key West Naval Air Station

Although the U. S. Navy occupied Key West in 1822, it officially established a naval depot on the island in 1856. Construction of the depot began in 1856, but was not completed until after the outbreak of the Civil War. During the conflict, the depot remained in Federal custody, one of few Federal facilities in the South not seized or held by Confederates. Key West served as the Navy's base of operations for its East Gulf Blockading Squadron. Following the war, the Navy retained the base, but downgraded its operation to a coaling station. Activities included the development of a pier (1881), deepening of the channel (1883), and the purchase of additional land (1895). The Spanish-American War inspired the development of approximately two million dollars worth of projects, which transformed the coaling depot into a top-ranked naval station. World War I witnessed a further expansion of the station, which included the installation of a submarine basin. Key West NAS was also commissioned during the Great War, but both the naval station and naval air station were placed out of commission following the conflict. Most of the buildings at the naval air station were dismantled by 1930, and the naval station was placed on caretaker status in 1932.[150]

In 1939, with the outbreak of war in Europe, the naval station was reopened, and, in January 1942, the Seventh Naval District opened its headquarters at Key West. The naval air station at Key West was recommissioned in December 1940. The military's presence increased dramatically. The former Florida East Coast Railway yard became the Navy's docks and a housing project, and the Navy's acreage on the island rose from fifty to thirty-two hundred. During World War II, Key West was designated a naval base consisting of, in addition to the

[148]Shettle, *Naval Air Stations of World War II,* 1: 107-109.

[149]Shettle, *Naval Air Stations of World War II,* 1: 90-91; Coletta, *U. S. Navy and Marine Corps Bases,* 221-222.

[150]Coletta, *United States Navy and Marine Corps Bases,* 259-261.

district headquarters, a naval air station with two fields, a naval hospital, a naval submarine base, and a sonar fleet school. New construction at the naval station amounted to thirty-one million dollars during the conflict. Naval Station Key West served a critical role in the formation of convoys, supplying escorts, and combating German submarines. In 1974, Naval Station Key West was decommissioned and renamed the Harry S. Truman Annex. All naval activities were then placed under the administration of Key West NAS.[151]

During most of the war, naval air operations at Key West operated from three separate facilities, which were combined into one overall operation in March 1945. Those three facilities were Boca Chica, Meacham Field, and Trumbo Point. Boca Chica, located five miles northeast of Key West, was developed as Key West's second municipal airport during the New Deal. Completed in 1939, this new airfield replaced the city's earlier municipal airport known as Meacham Field. Boca Chica was hardly a year old when the U. S. Army assumed its control, and installed an antisubmarine patrol at the airfield. By early 1943, because few German U-boats prowled Florida's east coast, the Army relinquished the field to the Navy. Commissioned in February 1943, the facility was renamed Boca Chica NAAF, which supported Key West NAS, then located at Trumbo Point. Training activities at Boca Chica included flight instruction, night flying, and torpedo bombing. The Boca Chica facility included three runways measuring seven thousand feet, and a fourth runway at Marathon that measured ten thousand feet and served as an outlying field to Boca Chica. The Navy folded Boca Chica into Key West NAS in March 1945, but the Boca Chica facility was not returned to the City of Key West. Instead, it became the primary location for the operations of Key West NAS. Presently, all naval activities at Key West are under the command of Key West NAS at Boca Chica.[152]

Meacham Field opened as the municipal airport of Key West in 1927. It was named for Malcolm Meacham, a prominent New York real estate developer who heavily invested in Florida real estate during the land boom and was a seasonal visitor of Key West. Eleven days after the United States entered World War II, the Army occupied the airfield and the Army Corps of Engineers paved its runways. The Navy assumed control of the base in 1944, and paved two additional runways, the longest of which measured four thousand feet. But, little else development occurred, in part, because the geography would not allow expansion of the auxiliary station, and, in part, because the main station was only several miles away. Air traffic control was handled from the tower at Boca Chica, and the Meacham facility only contained several barracks, and classrooms were installed in the East Martello Tower, a former Civil War fort. The Navy primarily operated dirigibles from Meacham Field, but the facility also operated as an outlying field for land planes based at Boca Chica.[153]

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[151]Wright Langley, "Key West," *Forum* 22 (Fall 1999), 27; Coletta, *United States Navy and Marine Corps Bases,* 262-263.

[152]Coletta, *United States Navy and Marine Corps Bases,* 262; Shettle, *Naval Air Stations of World War II,* 1: 113-114.

[153]Shettle, *Naval Air Stations of World War II,* 1: 113-114.

Established in 1917, Trumbo Point was the original Key West NAS. The Navy closed the station in 1920, but reactivated it in 1939. The station functioned primarily as a seaplane base. In 1944, nearly twenty-three hundred enlisted men and officers were stationed there. During the war, the station supported seaplane patrols in the Caribbean and the nation's southeast coast. Following the conflict, the Trumbo Point facility became a helicopter base, and, in the 1990s, a headquarters for a hydrofoil squadron, which falls under the command of Key West NAS.[154]

Mayport Naval Station and Naval Auxiliary Air Station

Selected for development by the Department of the Navy in 1939, Mayport Naval Station was conceived as a major naval base capable of handling aircraft carriers and an accompanying military airfield to support Jacksonville Naval Air Station. Construction of the naval station began in 1941, and instruction began shortly thereafter in patrol and crash boat training. In 1943, Mayport became a Sea Frontier Base that supported submarines and minesweepers. It was only after the war, however, that the Navy expanded the station into a major port. In 1951, additional land was acquired and the channel was deepened. Then, in 1952, the first aircraft carrier steamed up the St. Johns River into the base. In 1959, Sea Frontier Base Mayport was redesignated Mayport Naval Station, and significant development of the station occurred in the 1960s and 1970s.[155]

Located in the same site as the naval station, Mayport Naval Auxiliary Air Station served as an outlying field of Jacksonville NAS for the duration of the war. Construction began in 1941, and the auxiliary air station was commissioned on 20 March 1943. The primary mission of the station was to provide refueling and rearming of aircraft; airmen typically serviced sixty aircraft each day. Four runways supported the station, and barracks were available for about two hundred fifty troops. In 1946, the auxiliary station was transferred to the U. S. Coast Guard, which returned the facility to the Navy in 1948. During most of the 1950s, it served as an outlying field to Jacksonville NAS, but a significant expansion occurred, when, in 1959, it became part of Mayport Naval Station.[156]

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[154]Shettle, *Naval Air Stations of World War II,* 1: 113; Coletta, *United States Navy and Marine Corps Bases,* 262, 264.

[155]Shettle, *Naval Air Stations of World War II,* 1: 129; Coletta, *U. S. Navy and Marine Corps Bases,* 299-301.

[156]Shettle, *Naval Air Stations of World War II,* 1: 129; Coletta, *U. S. Navy and Marine Corps Bases,* 300.

Miami Naval Air Station

During the war, Miami NAS operated from three separate facilities, which were controlled from the primary facility at Opa Locka. The other two facilities were Master Field and Miami Municipal. Miami NAS derives its roots from 1931, when the Navy established a naval reserve air base at Opa Locka. Built around a dirigible hangar moved from Key West to Miami, the naval air base also contained a scouting squadron and elimination training. In 1939, the Navy selected Miami as a naval air station and embarked on a seven million dollar construction program. In August 1940, the Navy commissioned Miami NAS, and subsumed the operations of the older naval reserve air base within the new station, which it named Mainside.[157]

Miami Mainside NAS had two separate fields: East Field and West Field, which were connected by a common taxiway. Each field supported four runways. In June 1942, the Navy purchased two additional airports from the City of Miami to expand its military operations. With those additions, Miami NAS became a major facility in the Navy's battery of air stations. By the end of the war, the station contained hundreds of buildings, including four hangars, large assembly and repair buildings, medical, and supply departments, and two hundred concrete block dwellings located one mile from the station. The station also supported a Gulf Sea Frontier Headquarters, a Marine Corps Air Station, a naval air gunners school, a floating dry dock, inshore patrol headquarters, and a small craft training center. The station's complement near the height of war-time activities consisted of approximately seventy-five hundred soldiers. Outlying fields consisted of Davie, Forman, North Perry, and South Perry. At Forman and North Perry, the Navy assembled barracks, garages, and operations buildings. The Navy decommissioned Mainside in 1947, and returned the field to the City of Miami.[158]

Master Field and Miami Municipal were large air fields that supported Miami NAS. Located one mile southeast of Mainside, these two fields stood adjacent to each other, divided by railroad tracks. The two airports were acquired by the Navy from the City of Miami in 1942. Master Field had been developed before the war to serve as Miami's International Airport. Built about 1938 at the prompting of Eddie Rickenbacker of Eastern Air Lines, who expressed displeasure at the short runways of the existing airport, Master Airport contained four runways, two measuring five thousand feet and two others seventy-four hundred feet. The latter were some of longest then in the country, and greatly facilitated the Navy's largest land-based planes. When the Navy purchased the field they retained the name Master, which the City of Miami had given the facility, and acquired two existing hangars and several small buildings. Another hangar and thirty-five temporary buildings were assembled for barracks, classrooms, and offices. In 1947, Miami NAS was consolidated at Master Field,

[157]Shettle, *Naval Air Stations of World War II,* 1: 139, 143; Coletta, *U. S. Navy and Marine Corps Bases,* 306.

[158]*New York Times,* 25 June 1942; Shettle, *Naval Air Stations of World War II,* 1: 139, 143; Coletta, *U. S. Navy and Marine Corps Bases,* 306-307.

but the station closed in 1959. Already possessing an international airport, the City of Miami closed Master Field, which became the site of Miami-Dade Community College.[159]

Miami Municipal began as a landing field in 1918, and was acquired by the City of Miami in 1927 for a municipal airport. When the Navy acquired the airport in 1942, the facility already contained three hangars. Seventeen additional buildings were constructed, but no barracks were assembled. Enlisted men found quarters at Master Field, and officers lived off the station or at Mainside. The Navy returned Miami Municipal to the City in 1947, which renamed the facility Amelia Earhart Field. Several years later, the City of Miami closed its municipal airport. United Parcel Service presently uses the former naval air station, and several hangars support local law enforcement departments.[160]

Pensacola Naval Air Station

Organized in 1825, the Pensacola Navy Yard underwent significant develop in the early nineteenth century. By 1859, nearly sixty buildings and structures contributed to the facility, but few of those resources remain from that era. The yard entered a period of decline in the late nineteenth century, and closed in October 1911. In 1913, the former yard was selected as the Navy's flying school, and in November 1914 it became the first naval aeronautic station in the United States. The Navy re-designated the station as Pensacola NAS in December 1917. Until 1922, the station supported only seaplanes and hydroplanes. Aviation cadet training began in 1932, and the Navy enlarged the facility in the latter half of the 1930s, and named the field Chevalier Field for a naval aviator who lost his life in an aircraft accident. During this era, Pensacola shed its heritage as the "Cradle of Naval Aviation," and gained a new reputation as the "Annapolis of the Air." By World War II, Pensacola NAS was the largest naval air station in the country.[161]

After the United States entered the war, flight instruction increased from eight hundred to twenty-five hundred students per month. By the war's end, more than twenty-eight thousand pilots had been designated naval aviators at Pensacola. The main field, Chevalier Field, supported five runways, the longest only thirty-one hundred feet. Consequently, longer runways were built at six outlying and auxiliary fields, which included Barin, Bronson, Corry, Ellyson, Saufley, and Whiting near Milton. The Navy also acquired or leased thirty-two additional fields near the station for expansion and to provide landing strips for disabled aircraft. Station

[159]*New York Times,* 25 June 1942; Shettle, *Naval Air Stations of World War II,* 1: 139, 143.

[160]*New York Times,* 25 June 1942; Coletta, *U. S. Navy and Marine Corps Bases,* 308; Shettle, *Naval Air Stations of World War II,* 1: 143.

[161]Adams, "Architectural and Historical Survey of the Pensacola Naval Air Station," p. 3, 8, 11-12, 30, 34, 40; Coletta, *U. S. Navy and Marine Corps Bases,* 467-469; Shettle, *Naval Air Stations of World War II,* 1: 177.

personnel in 1944 consisted of approximately ten thousand enlisted men and officers; aircraft totaled nearly nine hundred.[162]

Between 1935 and 1943, nearly one hundred eighty-five buildings and structures were constructed at the station. The School of Aviation Medicine, School of Naval Photography, and the assembly and repair department occupied large buildings. The station boasted the only medicine school in the Navy, and the assembly and repair department employed thousands of personnel who worked on aircraft from various stations and several fleet units. Following the war, Pensacola NAS remained the headquarters of the Naval Air Training Command, and the first jets arrived in the 1950s. The Blue Angels flight demonstration team moved to Pensacola NAS during the era, and maintains its headquarters at the station. Because of its short runways, Chevalier Field was closed in 1965. Dedicated in 1975, the National Museum of Naval Aviation is located at Pensacola NAS. It contains forty aircraft, pictorial displays, and two hundred models of aircraft and ships. Numerous buildings supporting the station, developed between 1937 and 1941, have been determined eligible for listing in the NRHP. The Pensacola NAS Historic District is listed in the NRHP.[163]

Because of its significance training military personnel, numerous auxiliary and outlying fields supported Pensacola during World War II. Located about twelve miles west of Pensacola, Bronson Field served as an auxiliary field to the larger naval air station. It was named for naval aviator Clarence Bronson, who died in a bomb explosion in Maryland. The Department of the Navy had purchased land for the site in 1939, and construction began in March 1942. Commissioned on 18 November 1942, it was organized around a circular mat, the field was crisscrossed by four runways. The Navy acquired additional land along Perdido Bay, where a seaplane facility was completed in January 1943. The facilities assembled at Bronson Field NAAS could accommodate 1,889 enlisted men, 892 students, and 147 officers. Near the peak of its development during the war, the field included two seaplane hangars, two additional hangars supporting the runways, and approximately forty additional buildings. Training activities included dive bombing, gunnery, night flying, and seaplane courses. Baseball legend Ted Williams trained at Bronson Field in 1944, which won the Naval Air Training Command baseball championship that year. Outlying fields used for emergencies included grass strips known as Faircloth and Kaiser's Tract in Alabama.[164]

Developed as an outlying field for Pensacola Naval Air Station, Saufley Field was renamed for naval aviator Richard Saufley, who died in 1916 while attempting to establish an endurance record. Saufley's existence

[162]Adams, "Pensacola Naval Air Station," 36; Wynne, *Florida At War,* 130-131; Coletta, *U. S. Navy and Marine Corps Bases,* 467-469; Shettle, *Naval Air Stations of World War II,* 1: 177.

[163]Adams, "Pensacola Naval Air Station," 49, 52-53; Coletta, *U. S. Navy and Marine Corps Bases,* 467-469; Shettle, *Naval Air Stations of World War II,* 1: 177-178.

[164]Shettle, *Naval Air Stations of World War II,* 1: 36-37.

began in 1933 as a small outlying field. In 1940, following the outbreak of war in Europe, the station formally opened, and formal commissioning occurred in 1943. Activities at the station included training pilots in basic and primary flight, fighter aircraft, and instrumentation. It had four runways, the longest of which stretched sixty-one hundred feet. Near the height of its development during the war, the station had four hangars and approximately seventy buildings.[165]

Corry Field, located three miles north of Pensacola NAS, was also built as an outlying field to the older facility. Training operations began in 1927, and official commissioning occurred in 1934. Hangars, an administration building, recreation building, mess hall, and power plant were built in the 1930s. In 1943, the Navy re-designated Corry as an auxiliary air station. Wartime training activities included dive bombing and torpedo bombing. The auxiliary station contained two separate air fields--East Field and West Field. Near the height of its development during the war, the field included five hangars and approximately fifty buildings. The station complement in 1944 consisted of nearly twenty-five hundred enlisted men, officers, and students. Six outlying fields in the Pensacola area contributed to Corry Field. Although the station closed in 1958, numerous buildings and structures at Corry Field, including the operations and tower building, have been determined eligible for listing in the NRHP.[166]

Initially known as Base Field, Ellyson Field was commissioned in January 1943 to support Pensacola. Named for Theodore G. Ellyson, America's first naval aviator, the facility had opened for operations under the name Base Field in February 1941 with runways, a hangar, and repair building. Its primary mission included basic flying instruction in Valiant Vultee aircraft and practice on a nearby gunnery range. The field consisted of three hangars, six runways, and approximately twenty-five buildings. Aircraft located at the field near the peak of operations in 1944 totaled about three hundred. Bagdad and Spencer served as outlying fields to Ellyson. Although the Navy decommissioned the installation in September 1945, between 1950 and 1979 the Coast Guard, Marines, and Navy used the field for helicopter training. The hangars contribute to a present-day industrial park, and the former tower and operations building serve as a headquarters for the Florida National Guard.[167]

Located six miles north of Milton, Florida, Whiting Field began its existence as an auxiliary field to Pensacola's naval air station. Commissioned in July 1943, it became the largest of Pensacola's auxiliary fields. Named for Kenneth Whiting, a pioneer in naval aviation, Whiting supported two separate fields (North and South), each of which contained four runways of six thousand feet each. The fields lie about one mile apart, and between them

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[165]Shettle, *Naval Air Stations of World War II,* 1: 200-201; Coletta, *U. S. Navy and Marine Corps Bases,* 471, 474.

[166]Shettle, *Naval Air Stations of World War II,* 1: 56-57.

[167]Shettle, *Naval Air Stations of World War II,* 1: 74-75.

the Navy constructed its administration building and tower, barracks, hangars, instruction buildings, and other facilities. The Navy allocated nearly three million dollars for the development of Whiting Field in 1943 alone. Near the height of its wartime development the station consisted of several hangars and approximately eighty buildings. The station complement in 1944 amounted to nearly thirty-five hundred soldiers and nearly five hundred aircraft. German POWs installed at a camp near North Field assisted in soil erosion control and construction projects. Whiting had outlying fields at Pensacola Municipal Airport and two others in Alabama. Following the war, the field became a naval air station for primarily heavy and medium bombers. In the 1970s, Whiting Field became a training station for primary and intermediate students in propeller aircraft and helicopter training. Presently, three-fourths of the Navy's pilots received some phase of their training at Whiting, which is one of the busiest naval air stations in the country.[168]

Richmond Naval Air Station

Richmond NAS, located nineteen miles southwest of Miami, was created as a lighter-than-air station to conducted coastal and harbor patrols. Construction began in 1941, and the Navy commissioned the station in September 1942. The S. S. Jacobs Company of Jacksonville, Florida drafted the plans for some of the station's facilities. Blimp Headquarters Squadron Two was established there, and consisted of fifteen dirigibles. The station dispatched air ships to Banana River NAS, Guantanamo in Cuba, Isle of Pines, Key West, and San Julian. Richmond became a showplace of lighter-than-air craft. The station supported three one-thousand-foot-long hangars and two runways. The station's complement in 1944 included approximately seven hundred soldiers. The Navy decommissioned the station in June 1945. A hurricane in September 1945 damaged the three main hangars, which caught fire. In the resulting destruction, twenty-five dirigibles and over three hundred aircraft were lost. Many of the destroyed aircraft had been brought to Richmond from Miami NAS and even area civilian airports for protection. The site now contains a Drug Enforcement Agency (DEA) facility, the Gold Coast Railway Museum, and Miami's Metro Zoo.[169]

World War II Navy Installations

The following list identifies primary installations developed in Florida by the Department of the Navy during World War II. Most were air fields that supported the training of pilots in fighter and bomber aircraft. Decommissioned soon after the war ended, the installations were returned to civilian authorities. Most of the evidence of World War II activities has disappeared from these bases, although some historic resources may

[168]*Milton Gazette,* 12 August 1943; Wynne, *Florida At War,* 131; Shettle, *Naval Air Stations of World War II,* 1: 222-223; Coletta, *U. S. Navy and Marine Corps Bases,* 474.

[169]Dovell, *Florida,* 4: 629; Coletta, *U. S. Navy and Marine Corps Bases,* 538-539; Shettle, *Naval Air Stations of World War II,* 1: 191.

remain. Believed to be a comprehensive list of the major sites, this enumeration is not intended to be an exhaustive inventory of all Navy-related bases in Florida during the war. The Navy's auxiliary and outlying fields, primarily grass strips or paved runways with few or no supporting structures, are not part of this inventory. Instead, the list serves as a practical guide for future survey and registration purposes. It enumerates the primary Navy installations in Florida that may contain historic World War II military-related resources.

Banana River Naval Air Station
Bronson Field Naval Air Auxiliary Station
Cecil Field Naval Air Auxiliary Station
Corry Field Naval Air Auxiliary Station
Daytona Beach Naval Air Station
DeLand Naval Air Station
Dinner Key Naval Air Facility
Ellyson Field Naval Air Auxiliary Station
Fort Lauderdale Naval Air Station
Fort Pierce Naval Amphibious Training Base
Green Cove Springs Naval Air Auxiliary Station
Jacksonville Naval Air Station
Jacksonville Municipal # 1
Key West Naval Air Station
Lake City Naval Air Station
Mayport Naval Air Auxiliary Station
Mayport Naval Station
Melbourne Naval Air Station
Miami Naval Air Station
Pensacola Naval Air Station
Richmond Naval Air Station
Sanford Naval Air Station
Saufley Field Naval Air Auxiliary Station
Vero Beach Naval Air Station
Whiting Field Naval Air Auxiliary Station

Architects and Builders of Florida's World War II Military Installations

This section describes the careers and activities of some of the prominent and most active architects and builders who helped designed military installations in Florida during World War II. The list is not intended to

be exhaustive, but offers documentation on some of the most prominent and active professionals for whom research has been obtained.

Architects and Engineers

Harry Griffin

A native of Illinois, Harry Griffin received his education at the University of Illinois, and then opened a practice in Connersville, Indiana, in 1912. Within a decade, he had built his design business into a team of six professionals. He gained his first experience with military architecture during World War I, when he helped design an air defense station at Hants, England. Following the Great War, he returned to Indiana, a by 1924, the company had drafted the plans for fifty-five schools amounting to five million dollars. One of his largest projects, Lexington Plant, was an automobile assembly facility. His expertise earned him the respect of his colleagues, who elected him president of the Indiana Society of Architects in 1924.[170]

In 1925, after vacationing in Daytona Beach, he relocated his firm and residence to Seabreeze, Florida. He promptly gained the attention of developers, professionals, and government agencies. Gifted and tireless in his craft, Griffin supervised projects ranging from apartment buildings, churches, commercial and office buildings, gymnasiums, mausoleums, municipal stadiums, post offices, radio stations, and schools. Locally, the firm prepared plans for Tide's Apartment, Johnston's Restaurant, Peninsula Women's Club, News-Journal Corporation Building, Young Men's Christian Association Building, and S. Cornelia Young Library (NR 1992), and the Tourist Church (NR 1995). He also prepared the plans for Boston Avenue School in DeLand, Leesburg Senior High School, and Florida State Hospital in Chattahoochee. Completed in 1928, his own residence on North Grandview Avenue contributes to the Seabreeze Historic District (NR 1996).[171]

Between 1934 and 1939, Griffin was a director of the Florida State Board of Architecture, and in 1940 he served as president of the state board. During the Great Depression and World War II, Griffin executed work for various federal agencies, including the Navy's Bureau of Yards and Docks, Public Housing Authority, Public Works Administration, the Treasury Department, and Works Progress Administration. His wartime projects often consisted of collaborating with Robert & Company of Atlanta and the Bureau of Yards and Docks. His company helped design several naval air stations in Florida, including those in Daytona Beach and DeLand. By the early-1950s, Griffin's architecture practice consisted of twenty-three staff, and earned annual revenues of two million dollars.[172]

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[170]Dovell, *Florida,* 4: 854-855.
[171]Dovell, *Florida,* 4: 854-855.
[172]Dovell, *Florida,* 4: 854-855.

Albert Kahn

Albert Kahn, Associated Architects & Engineers, Inc., was for many years the foremost designer of automobile plants. A native of Germany, Kahn arrived in Detroit in 1881, and first worked as an errand boy in an architect's office. He studied architecture under George Mason, and then established a partnership with three of his brothers. A pioneer in modern industrial design, he revolutionized the factory concept. In 1903, his Packard Company design won acclaim for its beauty and utility that created the design philosophy of "all-under-one-roof." Kahn earned recognition as a master designer of large facilities tailored for the industrial age. He pioneered in the extensive use of glass and steel that permitted natural lighting of interior spaces. His "all-on-one-floor" design furnished the imaginative idea for the conveyor belt and mass production innovations in American industry.[173]

He earned a reputation as a master designer of large facilities tailored for the industrial age. Significant projects included automobile plants for Chrysler, Ford, General Motors, Hudson, and Packard, and a plant for the Burroughs Adding Machine Company. Located in the heart of America's automobile center, his firm designed more than one thousand buildings for Ford Motor Company, and 127 for General Motors Corporation. No stranger to Florida, Kahn in the 1920s drafted the plans for a Ford assembly plant and a parts depot for Chevrolet Motor Company in Jacksonville. In the late-1920s and 1930s, he designed hundreds of factories in the Soviet Union, and trained Soviet engineers in industrial operations. His firm reached gargantuan dimensions by 1940, when it employed three hundred fifty architects. That year, he designed approximately ten percent of all industrial buildings constructed in the United States.[174]

Kahn's first experience with military projects came during World War I, when he served as official architect for the aircraft construction division of the U. S. Army. He built airfields, camps, hangars, and warehouses throughout the country, and naval bases at Alaska, Honolulu, and Midway Island. His military projects amounted to two hundred million dollars by 1918. New demands placed on bases resulted in new military contracts even before the United States entered World War II. In the early-1940s, he designed a standardized hangar that the Navy's Bureau of Yards and Docks used for landplanes at Corpus Christi NAS, Jacksonville NAS, and several other installations throughout the country. His Willow Run bomber plant for Ford Motor Company transformed to an unprecedented level the scale and massing of military-related facilities. By early

[173]*New York Times,* 9 December 1942.

[174]Henry Withey, *Biographical Dictionary of American Architects (Deceased)* Los Angeles: Hennessey & Ingalls, Inc., 1970), 329-330; A. N. Marquis, *Who's Who in America* (Chicago: Marquis Company, 1944), 1111; *New York Times,* 9, 10, December 1942; Wayne Wood, *Jacksonville's Architectural Heritage* (Jacksonville: University of North Florida, 1989), 203, 206, 228.

1942, his firm had started designing Chrysler's tank arsenal in Detroit. The Bureau of Yards and Docks honored Kahn with a special commendation "for outstanding services rendered in designing buildings and facilities." After his death in December 1942, his brother Louis Kahn succeeded Albert Kahn as head of the massive engineering firm, and continued to develop plans for the Navy's bases.[175]

Kahn's design of the large hangars at Jacksonville NAS were among the last of his projects in Florida. Upon his death, the editors of the *New York Times* commented that Kahn "played a vital part in the creation of the automobile industry of America, the wonder of the industrial world. On this basis, when the war emergency came, he was able to design, with a speed which kept pace with the hunger of the men of machines, a prodigious number of huge buildings from which now roll out the arms to keep men free. . . . Both architecture and industry have lost a leader." In four decades, his firm supervised the design and construction of two billion dollars worth of industrial buildings. In all, Kahn's firm drafted over sixteen hundred drawings for the Navy by April 1943.[176]

Elton J. Moughton

A native of Ohio, Elton J. Moughton was trained in Minneapolis, Minnesota, and was the 153d architect to register to practice in the profession in Florida. He opened a studio in Sanford in 1916, and over the following decades prepared the plans for the many of Seminole County's public buildings, including the Sanford City Hall, Sanford Public Library, Sanford Armory, Sanford Fire Station, Seminole County jail, and Seminole Memorial Hospital. Church projects consisted of the Christian and Missionary Alliance Church, Congregational Christian Church, First Christian Church, Holy Cross Episcopal Church. The Hotel Forrest Lake was among his largest designs of the 1920s. During World War II, he served as an architect in the building section of the U. S. Army Corps of Engineers for the construction of military bases and buildings in Florida and Georgia.[177]

Marsh & Saxelbye

Organized in 1914, the architecture firm Marsh & Saxelbye emerged as a primary force in the development of downtown Jacksonville in the 1920s. Harold Saxelbye, a British native and graduate of England's Royal Institute of Architects, initially apprenticed in the City of Hull, England, and then immigrated to the United

[175]Withey, *Biographical Dictionary of American Architects,* 329-330; *New York Times,* 23, 27 May, 31 August 1941, 24 February, 9 December 1942; Garner, "World War II Temporary Buildings," 56.

[176]Building Plans, Vault, NAS Jacksonville; *New York Times,* 10 December 1942; Garner, "World War II Temporary Buildings," 56.

[177]*Sanford Herald,* 4 January 1926, 17 October 1955.

States in 1904 and worked for various New York City firms. In 1913, he moved to Jacksonville. The sixtieth registered architect in Florida, Saxelbye's first major commission was the eleven-story Mason Hotel. William Mulford Marsh, a Jacksonville native, began his career as a construction laborer for the O. P. Woodcock Company. After studying architecture through correspondence courses, Marsh became registered to practice his craft in Florida, the thirty-fourth member listed in the register of the Florida State Board of Architects. He established a firm in 1912, and executed the plans for several notable schools exhibiting the influences of the Prairie style in Jacksonville's downtown. Within a decade of organizing their company, Marsh & Saxelbye had gained a reputation as one of the best design firms in the city. That reputation increased after an article in *Architecture and Design* showcased the partner's work.[178]

Though Marsh & Saxelbye initially focused on designing small commercial and residential buildings, the company quickly adapted its focus to large commercial, industrial, and educational designs. Their residential commissions displayed popular revival styles of the period, including those from the Colonial, Classical, Mediterranean, and Tudor genres. A talented, gifted, and energetic team, Marsh & Saxelbye designed numerous buildings in Jacksonville during the 1920s and 1930s. Notable projects include the Levy-Wolf Building, Jacksonville Police Headquarters, Cummer Gallery, Woman's Club, Mayflower and George Washington hotels, Hildebrandt Building, Western Union Building, Landon High School, Hope Haven Hospital, and several apartment buildings in the Riverside Historic District. The firm also designed an inn at the fashionable seaside community of Ponte Vedra Beach, the Bolles Military School in San Jose, the Alfred I. DuPont estate at Epping Forest, and the Alfred I. DuPont Building in Miami. The company also drafted the plans for numerous historic dwellings in the San Jose and Epping Forest subdivisions, both of which have been listed in the NRHP.[179]

Marsh & Saxelbye's work for the Navy began in 1939, when the firm undertook planning nine bachelor officer's quarters, a storehouse, a dispensary, and the commanding officer's residence at Jacksonville NAS. In 1940, it delivered site plans and construction drawings for the senior officers quarters at the station. The hospital complex, a major base component, was commissioned in July 1941. The hospital complex grew throughout the war as additional buildings arose and improvements were added to existing facilities. In all, Marsh & Saxelbye designed nearly twenty-five buildings at Jacksonville NAS, and may have drafted plans for buildings at other naval installations in Florida.[180]

[178]Dovell, *Florida,* 3: 232-233.
[179]Dovell, *Florida,* 3: 232-233; Wood, *Jacksonville,* 6, 11-13, 34-81.
[180]Building Plans; Marsh & Saxelbye Design Plans.

Robert & Company, Inc.

Established in 1917, Robert & Company, Inc., developed quickly as one of the major architectural and engineering firms in the Southeast. The firm was founded by Lawrence Wood "Chip" Robert, Jr., a native of Monticello, Georgia, and a 1909 graduate of Georgia School of Technology with degrees in civil and experimental engineering. Robert initially worked for Dallas & Company of Atlanta, became a partner in the firm Dallas-Robert Company, and then formed Robert & Company, Inc. Robert's goals included encouraging Northern businessmen to relocate in the South, a philosophy consonant with the "New South" movement organized in the aftermath of the Civil War by Atlanta publisher Henry Grady. This approach to rebuilding the South emphasized the importation of northern business expertise and methods to fashion a modern industrial economy in the region. Trained as a construction engineer, Robert offered services in architectural, engineering, and planning, all of which the Navy utilized during World War II.[181]

Between 1917 and the onset of World War II, Robert & Company completed over twenty-eight hundred projects in more than two hundred fifty cities and towns in thirty seven states. The firm's work included drafting plans for textile mills that relocated from New England to the South, infrastructural systems, hospitals, hotels, powers plants, prisons, schools, and stadiums. The company completed significant projects for the well-known American corporations of Coca-Cola, B. F. Goodrich, and Westinghouse.[182]

In 1933, President Franklin Roosevelt appointed Robert as assistant secretary of the Treasury, and, from that post, he supervised much of the Treasury Department's public works. Later, in 1936, he became treasurer of the Democratic National Committee. In 1940, he resigned the position, in part, to return to full-time to his company, whose workload had increased significantly with the outbreak of war in Europe.[183]

Robert & Company's Atlanta location and its reputation gave the firm an excellent position for participation in the vast program of military mobilization and expansion that began in the American South. The region's warm climate and extensive coastline made it a particularly choice venue for military installations, especially airfields that emphasized pilot training. The firm's extensive war experience included design work at the nation's three largest naval air stations, Corpus Christi, Jacksonville, and Pensacola. The Navy engaged Robert & Company in planning and design work in Florida beginning in 1940, and, by 1943, the firm had emerged as the most prolific civilian design team at Jacksonville NAS and several other naval air stations in Florida. The company also designed and supervised the construction of an aircraft assembly plant in Marietta, Georgia, one of the largest manufacturing plants in the world, a job that went from ground breaking to production in less than

[181]Albert Marquis, comp., *Who's Who in America* (Chicago: A.N. Marquis Company, 1940), 2191.
[182]*New York Times,* 10 June 1976; Corporate Brochure, Robert & Company, Atlanta, 1992.
[183]*New York Times,* 6 June 1976; *Jacksonville Florida Times-Union,* 6 June 1976.

eleven months. The wartime production of Robert & Company greatly increased its presence nationally, and, following the war, the company opened offices in Washington, D. C. and West Palm Beach, Florida.[184]

Robert & Company drafted military base plans and a variety of designs for buildings, structures, and systems at Daytona Beach NAS, DeLand NAS, Jacksonville NAS, Vero Beach NAS, and several other naval air stations. In the first year of construction at Jacksonville's naval air station, the firm drafted plans for underground utility services for the landplane hangars, and systems for fire alarms and fire suppression. The company's creative plans for the enlisted men's recreation building included an auditorium and gymnasium. In 1941, the year before preparing the plans for the chapel at NAS Jacksonville, Robert & Company had been engaged to design the Protestant Chapel at NAS Corpus Christi in Texas. The innovative design of incorporating twin chapels into one building at NAS Jacksonville brought the firm national acclaim through an article in *Architectural Record.* In 1943, the company drafted the design for an extension to the assembly and repair shop, the largest facility on the base. Completed in 1941, the building continued to grow throughout the war and after. In 1944, construction began on three additional storage buildings, designed by Robert & Company. These spacious structures accommodated over one hundred thousand square feet of floor space each. In the same year, the company completed plans for the synthetic device building. By the end of the war, Robert & Company had designed approximately five hundred buildings and structures at Corpus Christi NAS, and nearly as many at Jacksonville NAS.[185]

Steward & Skinner

Steward & Skinner was the successor to the design company Paist & Steward. The company derives its roots from Phineas Paist, who organized the firm and served as the senior partner. A native of Pennsylvania, Paist apprenticed in Philadelphia in the 1890s, and entered a partnership with William Hewitt. In the early-1920s, Paist moved to New York City, and then, about 1924, to Miami, where he formed a partnership with Harold Steward. A native of New Jersey, Steward was trained at Syracuse University, and arrived in Miami in the early-1920s. Paist died in 1937, and, in 1941, Steward formed a partnership with brothers Coulton and John Llewellyn Skinner, natives of Ohio. The Skinner brothers were trained at the University of Toronto. The brothers then worked several years in Detroit for Albert Kahn. Coulton Skinner left Kahn's office about 1920 to open his own business, and John Skinner attended Harvard University, studied in Europe, and then headed the

[184] *New York Times,* 6 June 1976; *Jacksonville Florida Times-Union,* 6 June 1976.

[185] "Flexible Plan for Flyer's Chapels," *Architectural Record* 95 (February 1944), 66-68; William R. Adams, "Historic Architectural Survey of the Jacksonville Naval Air Station, Duval County, Florida," Jacksonville: Florida Archeological Services, 1997), 15-16, 40.

architecture department at the Georgia School of Technology. In 1925, the brothers left their respective positions and moved to Miami, where they formed a partnership that specialized in large residential designs.[186]

In 1941, the brothers formed a partnership with Howard Steward. By then, Steward had gained prominence designing fashionable residences in Dade and Palm Beach Counties, and large public facilities, including the original campus of the University of Miami, Miami Post Office and Federal Building, and Coral Gable's City Hall. Many of Florida exhibit buildings appearing at World's Fairs in Chicago and New York City during the 1930s were also designed by Steward. As chief architect for the Miami Federal Housing Authority and a consulting architect for the United States Housing Authority, Steward was well positioned to take advantage of contracts when the federal government's military expansion began with the outbreak of hostilities in Europe.[187]

The firm exclusively worked on large civilian and military projects during World War II. The firm specialized in hospital design, preparing the plans for the Nautilus Hospital at Miami Beach, Doctor's Hospital at Coral Gables, Bahamas Mental Hospital in Nassau, and the South Florida Children's Hospital in Miami. During the war, the firm designed four hospitals for the United States Army Air Corps, and hospitals for the U. S. Army at Tampa, Florida, and the U. S. Navy at Key West, Florida. In all, the firm drafted the plans for ten hospital projects for the War Department during World War II.[188]

S. S. Jacobs Company

A native of Atlanta, civil engineer S. S. Jacobs graduated from Washington University in Missouri in 1909. His career began in Nebraska, but he moved to Florida about 1927, settling in Jacksonville. There he formed the S. S. Jacobs Company, which specialized in construction and engineering. He worked on several projects with the Marsh & Saxelbye architectural firm, including the Haddon Hall Apartments, a Tudor Revival estate. In the 1930s, he began to specialize in aviation projects. During World War II, he prepared plans for Tallahassee's Army Air Base, MacDill Field in Tampa, and the dirigible base at Richmond, Florida.[189]

Yonge & Hart

One of Pensacola's most prominent firms, Yonge & Hart was organized by C. C. Yonge and R. Daniel Hart in the 1920s. A son of lumberman, politician, and educator Philip Keyes Yonge, Chandler Cox Yonge was born in 1887 and registered with the Florida State Board of Architecture in 1925. Some of Yonge and Hart's early work

[186]Withey, *Architects,* 452-453; Dovell, *Florida,* 4: 708-710.
[187]Dovell, *Florida,* 4: 708.
[188]Dovell, *Florida,* 4: 709.
[189]Wood, *Jacksonville,* 143; Dovell, *Florida,* 4: 628-629.

included residences for R. R. Freeman, John C. Pace, and Carlton Sexton in Pensacola, and the Walton County Courthouse in DeFuniak Springs in 1926. Later, the partners designed several buildings in Tallahassee's Capital Center. During World War II, Yonge & Hart prepared plans for numerous buildings at Eglin Field, including administrative and supply buildings, enlisted men's quarters, headquarters, maintenance hangars, and warehouses. Many of the plans they provided were adapted from standardized drawings, redesigned for a specific purpose.[190]

Contractors

Hillyer & Lovan

Established about 1930, the firm of Hillyer & Lovan was organized by H. Hansell Hillyer and Charles Lovan of Jacksonville. Some of their early contracts included houses in the fashionable seaside community of Ponte Vedra Beach. Large contracts during World War II included three large storehouses at Jacksonville Naval Air Station in 1940. Completed at a cost of nearly seven hundred thousand dollars, two of the storehouses were reinforced concrete and the other steel frame. In 1942, the Department of the Navy hired Hillyer & Lovan to assemble most of the buildings at Vero Beach Naval Air Station, which included an armory, assembly and repair, barracks, cold storage, control tower, hangar, magazines, and warehouses. In 1943, Hillyer & Lovan constructed a warehouse and machine shop at Mayport Naval Station.[191]

George D. Auchter Company

Organized in Jacksonville about 1920, the George D. Auchter Construction Company specialized in commercial architecture and road construction projects. In the early-1930s, Auchter built the Crane Company and Western Union Telegraph buildings in Jacksonville. The company's road construction projects amounted to over two million dollars, most of those in northeast Florida between 1923 and 1942. Its largest year came in 1937, when the company constructed nearly eight hundred thousand dollars worth of road systems, including the Palm Valley bridge in northern St. Johns County (1937). In July 1940, the Navy Department announced that a giant contract at Jacksonville Naval Air Station amounting to nearly thirteen million dollars had been awarded to three firms, including the Auchter Company. In addition to its other military projects, the company assembled the Navy's officers' quarters along the St. Johns River. The company also assembled many buildings at

[190]Dovell, *Florida,* 3:5; Florida Site File; Eglin Field National Register Nomination.

[191]Coletta, *U. S. Navy and Marine Corps Bases,* 641; Shettle, *Naval Air Stations,* 217; *Vero Beach Press-Journal,* June 12, 26, September 25, October 30, November 27, 1942; *Jacksonville Florida Times-Union,* 17, 19, 27 January, 15 October 1940; Deed Book 113, p. 489, Deed Book 133, p. 304, 310, Deed Book 164, p. 4, St. Johns County Courthouse.

Mayport Naval Station between 1941 and 1943. Another large war-time project was the Merrill-Stevens Company dry docks in Jacksonville, a million dollar facility reputed to be the largest in the South when completed in February 1943.[192]

Conclusion

Temporarily buoyed by jobs in the industrial and military sectors associated with the wartime activities, Floridians experienced a brief recession as the economy returned to citrus and tourism as vital sources of revenue. But, many veterans who had served on military bases in Florida during the war returned in the 1950s seeking permanent residence. The GI Bill, which allowed veterans to purchase a home with no money down, fueled Florida's housing boom. One historian of the conflict speculated that "perhaps the greatest legacy of World War II was that it exposed Florida to the vast cross-pollination of millions who passed through the state." Some Florida cities cultivated the image of a retirement haven, and the state's growth during the 1950s and 1960s resulted, in part, because of Florida's role as a military training camp during World War II.[193]

But, the wartime growth that lifted many Florida cities out of the Depression appeared to be ephemeral as most of the state's military installations were decommissioned, dismantled, and returned to civilian authorities following the conflict. In an effort to attract new development and expand their airports, many municipal governments demolished, moved, or severely altered the remaining aging military facilities, and assembled new buildings and added expanded runways. Over time, some former military sites in Daytona Beach, Fort Lauderdale, Melbourne, and Tampa were redeveloped into modern international airports. Other facilities, including many outlying grass fields, simply languished and soon were reclaimed by nature.

In the mid-1950s, at what might be termed the height of the Cold War, Florida's remaining military installations, Eglin AFB, Jacksonville NAS, Key West NAS, MacDill AFB, Patrick AFS, Pensacola NAS, and Tyndall AFB, contributed to the primary operating military bases on the east coast and the headquarters for nearly fifty percent of the nation's air strike force on the Atlantic seaboard. Jacksonville NAS alone served as the primary supply base for carriers and patrol bomber assigned to NATO, and the major supply base for naval commands from the Carolinas to Panama. Anti-submarine patrolling and long-range surveillance aircraft became major responsibilities for the naval air station whose runways supported more landings and take-offs than any other military airport in the United States in the 1950s.[194]

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[192]George Buker, *Jacksonville, Riverport-Seaport* (Columbia: University of South Carolina Press, 1992), 150; Kendrick, *Florida Trails to Turnpikes,* 254; *Jacksonville Florida Times Union,* 16 February 1940; Wood, *Jacksonville Architectural Heritage,* 71, 93.

[193]Howard Troxler, "Heroes All: Personal Stories of Those Who Fought and Died," *Forum* 22 (Fall 1999), 21.

[194]*Jacksonville Florida Times Union,* 9 October 1955.

During this post-World War II era, the Department of Defense responded to military challenges with new aircraft and missions, placed upon aging installations. In some cases, existing buildings were demolished, moved, or modified, new buildings were constructed, and runways lengthened to support ever-larger aircraft. But, the end of the Cold War resulted in a reduction of defense expenditures and the elimination of numerous military bases throughout the United States. In Florida, both Cecil Field in Jacksonville and Orlando Naval Training Center closed, and most of the World War II resources at those installations were demolished.

Despite the huge number of resources built on military installations in Florida during World War II, numbering in the thousands, relatively few remain as tangible reminders of the nation's greatest period of mobilization. Fewer than one thousand buildings associated with Florida's World War II military resources have been recorded in the Florida Master Site File, the state's principal research tool for assessing historic resources. Far fewer have been listed in the NRHP, or determined eligible by the SHPO. Relatively few World War II military buildings remain; some have been rediscovered by preservationists who have adapted them into museums. Still others, removed to new locations, serve a variety of civilian uses in industry and for residences. Decommissioned and dismantled following the war, most of Florida's World War II military installations and the resources that comprised them appeared to be a largely forgotten part of the state's heritage.

PROPERTY TYPE: F.1

1. Name of Property Type: Residential Buildings

2. Description: The historic residential buildings constructed on Florida's World War II era military bases represent an important collection of historic resources, which includes barracks, quarters for petty officers and non-commissioned officers, bachelor officers' quarters, and single-family detached housing and double-houses (apartment buildings and duplexes) for officers. According to data compiled from the Florida Master Site File, approximately seven hundred buildings and structures have been inventoried on several of Florida's military bases developed during World War II. Approximately two hundred of those are residential buildings. In addition, several military-related residential buildings have been inventoried on former World War II bases that now serve various civilian functions.

Plans of World War II military installations indicate that the residential building was among the most prolific type of building on a military base during the war. This property type includes buildings of both permanent and temporary construction, as classified by the War Department in the late-1930s and World War II.

Residential buildings were, with few exceptions, designed and assembled by architects, engineers, and builders who drew upon traditional building techniques for their inspiration. In some cases, architects and engineers serving either in the U.S. Army Corps of Engineers, or in the Department of the Navy's Bureau of Yards and Docks prepared the plans. In other cases, the military turned to architects in private industry to design houses for officers and quarters for enlisted men.

Primary consideration was given to providing functional spaces to house personnel. A variety of formal styles or influences are evident on some bases, including Classical Revival, Colonial Revival, Mediterranean Revival, Ranch, and Split Level. Most barracks are derived from a frame vernacular tradition, known in military parlance as temporary or mobilization buildings. Notwithstanding that long-standing tradition, some barracks were fabricated with masonry materials and designed by professional architects in private practice.

Housing for officers, petty officers, and non-commissioned officers was built either as single-family detached dwellings, double-houses, or duplexes. Most of these residential buildings display a simple design with a moderate setback from roadways, and conform to a relatively small scale, ranging between fifteen hundred and thirty-five hundred square feet of floor space. Many rise two stories, but some are one story or one-and-one-half stories in height. Building plans display varied, irregular footprints with either side-facing or front-facing gable roofs generally surfaced with composition shingles. A few dwellings were assembled with hip roofs. Some dwellings executed in the Mediterranean Revival genre display a gable or complex roof plan with barrel

tile surfacing and cresting, or a flat roof with parapets. Corbeled brick chimneys and dormers interrupt some roof lines.

Despite the relatively broad range of styles, most residential buildings were assembled with wood frame structural systems covered with clapboard, drop siding, shiplap siding, or weatherboard exterior wall fabrics. Synthetic sidings, such as aluminum or vinyl, cover the original exterior wall fabric of some wood-frame residences. Other residential buildings were assembled with concrete blocks, or hollow tiles surfaced with textured stucco. Porches, gable extensions, and small bays project from the central mass to create projecting surfaces and asymmetrical massing. Porch roofs include integrated, hip, gable, and shed designs, and roof supports take the forms of posts or round columns. Full-height porticos project from the facades of some large residences. Transoms and sidelights embellish entrances on most dwellings that display the influences of formally executed architecture.

Fenestration varies depending on the particular style of dwelling and the materials available during construction. Residences that display Classical and Colonial revival influences typically have symmetrical facades with regular fenestration of multi-pane double-hung sash windows. Those dwellings with Mediterranean Revival, Ranch, and Split Level stylistic influences often exhibit asymmetrical facades and irregular fenestration. Casement and double-hung sash with multiple panes are common window types, although some residences have replacement metal awning or sash windows. Brick and concrete piers support most houses, although some rest on continuous concrete slabs, or continuous foundation footers of brick or concrete.

A few bachelor officer's quarters buildings have been documented from the World War II era in Florida. Some large models display restrained Colonial Revival influences, rise two stories, and contain approximately eighty-five thousand square feet of living space. Assembled with wood frame structural systems, they have an irregular plan with hip-roof extensions that project at right angles from each other. A relatively small one-story hip-roof extension protrudes from the juncture at the intersection of the longer extensions. Vinyl or aluminum siding generally covers the original wood exterior wall fabric, and metal sash windows often fill the openings originally executed with wood double-hung sash windows. Poured concrete serves as the foundation.

Other relatively small bachelor officer's quarters stand on some installations. Derived from masonry vernacular traditions and arranged as duplexes or even triple houses, they generally rise one story and contain approximately three thousand square feet of interior floor space. Assembled with ceramic hollow tile walls finished with stucco, the buildings display a gable or hip roof, double-hung sash windows with either six-over-six lights or eight-over-eight lights, and rest on poured concrete foundations.

The vast majority of enlisted men's barracks built on Florida's World War II era military bases were derived from plans developed by the War Department, which classified them as mobilization or temporary buildings. These barracks generally were one or two stories in height and assembled with wood stud construction. Those developed by the Army's Corps of Engineers typically displayed a gable roof with a roof-ridge monitor to provide ventilation. Barracks developed by the Navy's Bureau of Yards and Docks typically displayed gable, hip, or flat-roof profiles, the latter finished with tar-and-gravel. Stud walls were sheathed with diagonal boards and finished with shiplap siding, drop siding, or cementitous asbestos shingles. On some, vinyl or aluminum siding was installed as those materials became available in the post-World War II era.

Entries were located at the ends, and fenestration generally consisted of wood double-hung sash windows with six-over-six-light or eight-over-eight-light configurations. One feature often provided for World War II buildings were the so-called aqua-medias, or pent roofs. These skirt substructures were assembled over the fenestration to protect window openings from rain. Aqua medias were also known as canopies, eyebrows, and rain hoods. On some barracks, the pent roofs extended around all four elevations. Other variations included pent roofs above the ground-story windows, but only the second-story windows on the gable ends of barracks. Other building components included chimneys and second-story fire exits. Various foundation systems were employed, including concrete piers resting on footings, or continuous concrete or brick foundation walls.[1]

Asbestos siding became a popular siding material in the late-1930s, and was eventually applied to almost all temporary military buildings. The development of strong resins in the early-1940s helped popularize plywood as a construction material. Exterior sheathing with damp-proof courses beneath plywood or wood siding and the laying of subfloors helped seal buildings against weather and insects. Other improvements during the World War II era included better heating and ventilation systems. The buildings were designed for a life span of five to seven years, but many remain in use seven decades later.[2]
A few residences have been documented on World War II military installations pre-dating the development of a base. Those residences ranged between relatively large well-executed examples of the Mediterranean Revival style to relatively small dwellings with no formal stylistic influence. During the war, the military often acquired tracts in close proximity to an installation that contained numerous buildings. Many of those existing buildings were destroyed, but often a few were retained because they were well-built and occupied an ideal location for a projected use. In some cases, the style of a preserved building was adopted by architects and engineers who designed subsequent buildings on the base in a similar genre.

[1]Garner, "World War II Temporary Military Buildings," 42-59.

[2]Wasch, Bush, Landreth, and Glass, "World War II and the U. S. Army Mobilization Program," 50-51.

Architectural Styles and Construction Types

Classical Revival

Some officer's quarters display the influences of the Classical Revival style, which evolved from an interest in the architecture of ancient Greek and Roman cultures. The first period of interest in Classical models in the United States dates from the colonial and national periods, which extended between the 1770s and 1850s. Held in Chicago in 1893, the World's Columbian Exposition sparked a renaissance of interest in classical architecture. Many of the best known architects of the day designed buildings for the Exposition based on classical precedents. Examples varied from monumental copies of Greek temples to smaller models that drew heavily from designs of Adam, Georgian, and early Classical Revival residences assembled in the early nineteenth century. The Exposition, which drew large crowds, helped make the style fashionable again. In Florida, Classical Revival became a popular design for commercial and government buildings. The application of the style to residences is less common.

The prominent characteristic of Classical Revival architecture are full-height classical columns supporting a porch roof, typically with Ionic or Corinthian capitals. The facade is generally symmetrical, and gable or hip roofs are trimmed with a roof-line balustrade, boxed eaves, dentils or modillions, and a wide frieze band. Accentuated doorways feature classical surrounds, decorative pediments, transoms, and side lights. Fenestration is regular with double-hung sash windows, usually with six or nine panes per sash.

Colonial Revival

Often applied to officer's quarters, the Colonial Revival style was a dominant influence in American residential architecture during the first half of the twentieth century. The term, Colonial Revival, refers to a rebirth of interest in the early English and Dutch houses of the Atlantic Seaboard. The Georgian and Adam styles were the backbone of the Revival, which also drew upon post-medieval English and Dutch Colonial architecture for references. The style was introduced at the Philadelphia Exposition of 1876, when the centennial of the Declaration of Independence sparked renewed interest in colonial architecture. Many of the buildings designed for the Exposition were based on historically significant colonial models. Publicity on the Exposition occurred simultaneously with efforts made by national organizations to preserve Old South Church in Boston and Mount Vernon. About the same time a series of articles on eighteenth century American architecture appeared in the *American Architect* and *Harpers'*. The publicity the Colonial Revival style received helped popularize the style throughout the country.

The typical Colonial Revival house in Florida is an eclectic mixture of several of colonial designs rather than a direct copy of a single plan. The influences of the Prairie style and American Foursquare plan often appear on

later models. The style emerged in the state in the late-1880s, and reached the height of its popularity in the second and third decades of the twentieth century. Some identifying characteristics of Colonial Revival architecture include gable, hip, or gambrel roofs, often pierced by dormers; a simple entry porch with round columns; an accentuated door, normally with a classical surround, either solid or glazed, and a transom and side lights; a symmetrical facade, although it is fairly common for the door to be set off-center; double-hung sash windows frequently arranged in pairs and usually with multi-pane glazing in each sash.

Frame Vernacular

The frame vernacular description refers to wood frame buildings that do not display a defined architectural style. The term, frame vernacular, does not, however, imply inferior or mundane architecture. Buildings characterized as vernacular lend themselves to categorization by building form associated with a particular era, function, or region of the country, rather than classification within a particular genre of formal architecture. The Oxford English Dictionary defines vernacular architecture as "native or peculiar to a particular country or locality . . . concerned with ordinary domestic and functional buildings rather than the essentially monumental."

Vernacular building forms changed with the Industrial Revolution, which brought about the standardization of construction parts and materials. On the eve of World War II, the military refined its own standardized plans, guided by five principles: speed, simplicity, conservation of materials, flexibility, and safety. Designated as temporary, or mobilization, by the War Department, the redesign of these buildings was based on standardized plans prepared for World War I mobilization efforts. Assembled from a simple plan fabricated with wood and devoid of ornamentation, this new design became the basis for thousands of buildings constructed on military installations during the war. These temporary buildings were not simply barracks, but included administration, commissary, dispensaries, headquarters, hospitals, supply, and store house buildings. Regardless of its use, each building was similar in design and construction. Indeed, the vast majority of buildings developed on Florida's World War II era military bases employed wood frame structural systems.

The War Department developed standardized plans for temporary wood buildings in the nineteenth century. Then, in 1914, drawings were prepared for mobilization camps by the advisory architect of the Army's Quartermaster Corps construction division. These drawings remained unchanged throughout World War I. In June 1940, the War Department issued a construction policy that required the use of "mobilization type temporary construction" for additional buildings at the nation's military installations. Consequently, these World War I-era drawings were updated under the supervision of Major Elsmere J. Walters, advisory architect

of the Corps' construction division. The revised plans became the basis for many buildings developed by the Corps of Engineers on Army and Army Air Forces bases in Florida during World War II.[3]

The Navy relied on the same World War I-era plans, and, in response to the War Department's directive, implemented its revised temporary barracks plans, which were designed by the architectural firm of Eggers and Higgins of New York. Despite the redesigns, both types of "new" temporary barracks were often modified depending on location and available materials. Thousands of these buildings were assembled on Florida's military bases during the war. Notwithstanding the temporary classification and the standardized features of the buildings, their essential design and construction methods were patterned on the practices of contemporary house building. The chief departures from standard practice included the use of composition roofing and wallboard.[4]

Once a common sight on most military installations, this distinctive type of architecture began to disappear soon after the close of the war. Following demobilization, a large number of these buildings were dismantled and moved to new locations. Some buildings were demolished, moved, or severely altered on active bases. Others remained in place after bases were returned to civilian authorities, but were demolished, burned, severely altered, or moved over the subsequent decades. Consequently, relatively few temporary buildings, even barracks, remain as reminders of the state's greatest period of military mobilization. This most common of buildings during World War II has become a relatively scarce resource on military bases and former installations in the early twenty-first century. Contributing to America's diverse vernacular architectural genre, these buildings epitomize the use of standardized plans, readily available materials, and simple ornamentation, symbolic of the greatest period of military mobilization in the nation's history.[5]

Masonry Vernacular

Most masonry buildings on military bases were classified as permanent buildings by the War Department. The term, masonry vernacular, applies to buildings assembled with structural systems of brick, hollow tiles, concrete

[3]Garner, "World War II Temporary Military Buildings," 42, 56-57; Wasch, Bush, Landreth, and Glass, "World War II and the U. S. Army Mobilization Program," 26.

[4]"Housing the New Army," *Engineering News Review* 125 (October 1940), 43; Garner, "World War II Temporary Military Buildings," 42, 56-57; Wasch, Bush, Landreth, and Glass, "World War II and the U. S. Army Mobilization Program," 26.

[5]Garner, "World War II Temporary Military Buildings," 42, 56-57; Wasch, Bush, Landreth, and Glass, "World War II and the U. S. Army Mobilization Program," 26.

blocks, or poured concrete that display no formal style of architecture. Prior to the Civil War, vernacular designs were local in nature, transmitted by word of mouth or by demonstration and relying heavily upon native building materials. With the coming of the American Industrial Revolution mass manufacturers became a pervasive influence in the construction industry. Popular magazines featuring standardized manufactured building components, and house plans flooded consumer markets and helped to make building trends universal across the country. The railroad aided the process by providing cheap and efficient transportation for manufactured building materials. Ultimately, the individual builder had access to a myriad of finished architectural products from which to select to create a design of his own, or to please a prospective homeowner.

Masonry vernacular architecture is more commonly associated with commercial building types than with military-related residential architecture. In Florida, most masonry residences constructed before 1920 were brick. During the 1920s, clay tiles finished with stucco became a popular building material. Then, during the 1930s, masonry vernacular buildings took on an increasing variety of forms, in part, because of the influences of the International and Modernistic styles, and, in part, because of the increased use of reinforced concrete construction techniques in house construction. The use of structural clay tile in construction of buildings at Eglin AFB, Jacksonville NAS, MacDill AFB, Pensacola NAS, and several other bases distinguishes, in part, those installations from most of Florida's World War II-era military bases, which were largely assembled with wood-framed buildings. The origins of structural tiles are associated with the application of terra cotta in the late nineteenth century as a covering for steel buildings. Tile for use in wall construction developed from terra cotta and remained in use until its replacement by standardized concrete block in the 1930s. Since World War II, concrete block construction has been the leading masonry building material used in Florida.

Most masonry vernacular residential buildings on military installations display little ornamentation. Some barracks were design by architects in private industry and built with masonry materials. Designed by the firm of Yonge & Hart, those barracks assembled at Eglin AFB during the war are one-story hollow tile buildings with hip roofs and stucco exterior wall fabric. Displaying a U shape, the buildings contain approximately forty-five hundred square feet of interior floor space. Fenestration consists of double-hung sash windows with eight-over-eight lights, and the building rests on a poured concrete foundation. Other World War II-era masonry vernacular examples include two-story officer's double-houses at MacDill AFB that displayed irregular plans, gable roofs, stucco exterior walls, and double-hung sash windows.

Mediterranean Revival

The Mediterranean Revival style, largely found in those states with a Spanish colonial heritage, embraces a broad category of subtypes of Spanish revival architecture in America. The style gained popularity in the American Southwest and Florida during the early twentieth century. The influence of the Spanish and other Mediterranean-derived styles found expression through a detailed study of Latin American architecture made by

Bertram Goodhue at the Panama-California Exposition in San Diego in 1915. The exhibition prominently featured the Spanish architectural variety of Central and South America. Encouraged by the publicity afforded the exposition, architects began to look to the Mediterranean basin where they found more building traditions, and often used regional historical precedents to design buildings within a local context.

In Florida, the popularity of the style soared in the 1920s and maintained a pervasive influence on building design until World War II. The style came to symbolize Florida architecture during the 1920s and was adapted for a variety of building types ranging from churches, country clubs, town houses, commercial and government buildings, hotels, mansions, railroad depots, theaters, and small residences, the latter often referred to as "Spanish bungalows." Journals, such as *Architectural Record,* featured articles on the style. In June 1925, *House Beautiful* characterized the style as "a new composite style. . . producing a type of small villa distinctly for and of Florida." Even small models were often picturesque, displaying an "architectural blend that make it essentially appropriate for adaptation in Florida. Informal in its essence as well as in its execution, this Mediterranean style accords well with the informal life of the great winter resort to which yearly thousands repair to escape all that reminds them of the North."

For a brief period during the 1920s, the style gained popularity throughout the country. In the 1930s, even as its popularity waned, the style was applied to large public facilities built using New Deal assistance monies, especially in the American Southwest. During World War II, the style was adopted for some buildings on a few military bases in Florida. This process occurred where existing dwellings executed in the genre were preserved after the War Department appropriated real estate to develop a base. Then, architects and engineers used those stylistic influences to develop new buildings, generally officer's quarters and club houses.

Identifying features of the style include complex roof plans, often a combination of flat, gable, and hip roofs with ceramic tile surfacing or cresting along parapets or pent roofs. Porches or arcades generally protect entrances. Textured stucco exteriors often originally displayed pigments mixed with the cement to form a rich intensity, or a light tint. Medallions, sconces, and ceramic tiles adorn walls and chimneys exhibit arched vents and caps with barrel tile cresting. Arched openings and fenestration consists of multi-light casement and double-hung sash windows, often deeply set in the walls or arched openings. Wrought-iron balconets typically protect small balconies with French doors. Patios and loggias extend from the main body of houses, or appear in gardens or other landscaped areas. Pergolas, fountains, and trellises often appear in the surrounding landscape.

Ranch

A few officer's quarters display the influences of the Ranch style, which originated in California during the mid-1930s and emerged as a dominant style for suburban residences between the mid-1940s and the 1960s.

Widespread application of the style gained impetus from an increasing dependence of Americans on the automobile during the post-World War II period. Prior to the war, Americans lived in close proximity to the areas in which they worked, typically close to commercial districts to which they walked or rode trolleys. Following the war, land prices in those areas soared as commercial districts expanded. The booming post-war economy encouraged homeowners to purchase larger homes than those commonly built in the Great Depression and World War II. Increased wealth and affordable automobiles enabled Americans to move away from congested cities to suburbs with large residential lots necessary to accommodate "rambling" Ranch houses.

Ranch architecture, loosely based on Spanish Colonial precedents and sometimes displaying influences of the Craftsman or Prairie styles, typically displays a long one-story block with a low-pitched gable or hip roof set parallel to the street. Secondary gables or hip extensions are common and often contain a built-in garage. Few models display porches, which often appear in the forms of courtyards or patios along the rear elevation. Brick serves as a common wall construction material in early examples, but later versions of the style were often assembled with wood framing and brick veneer. Adornment is sparse, sometimes including wrought-iron railings or wood purlins. Fenestration is commonly asymmetrical and irregular with ribbons of sash and awning windows and large picture windows punctuating the facade.

Split Level

Some officer's quarters exhibit the influences of the Split Level style. It was created as a multi-story version of the Ranch style, which gained popularity in the 1940s and 1950s. Early Ranch and Split Level models that appeared in the 1930s were typically small, modest versions. Widespread application emerged with the increasing dependence of Americans on the automobile during the post-World War II period. Prior to the war, many Americans lived in or adjacent to the areas in which they worked. Because land was at a premium in those areas houses generally were constructed on relatively small, narrow lots. The increased mobility afforded by the automobile enabled many people to move away from congested cities to suburbs where comparatively large building lots could accommodate larger houses. The style was most popular in the suburbs of the Northeast and Midwest, with fewer examples constructed in western and southern states.

Split Level homes retain the horizontality and the low-pitched roof with over-hanging eaves typical of the Ranch style, but include a two-story block to increase interior living space. A built-in garage is often placed on the ground floor of the two-story extension. A wide range of exterior wall fabrics are used, such as brick, concrete block, and wood siding often applied to a single model. Decoration is sparse and usually confined to vague Colonial precedents.

3. Significance: The historic residential buildings of Florida's World War II military bases possess significance in the areas of architecture, community planning and development, and military under NRHP Criteria A and C.

They represent a distinctive building type developed by the U.S. Army's Corps of Engineers, the Department of the Navy's Bureau of Yards and Docks, and consulting architects, engineers, and contractors. In some cases, they display the influences of a particular style and contribute to larger trends in formal architecture. Designed by professional architects in private industry, some historic residential buildings are relatively simple masonry barracks exhibiting no stylistic influence. In other cases, barracks represent a standardized wood frame military building developed on military installations throughout the United States during World War II.

Formal designs appearing on some bases include Classical Revival, Colonial Revival, Mediterranean Revival, Ranch, and Split Level. The majority of barracks were executed from standardized plans developed for temporary, or mobilization, buildings. In addition, a number of residential buildings derived from the wood frame vernacular and masonry vernacular traditions also appear. Some existing dwellings were preserved by the military after the War Department appropriated property for a base. Those properties were often incorporated into the overall plan for the base. In some cases, architects and engineers used the stylistic influences of existing buildings to develop new buildings.

Florida's historic World War II military-related architecture is consistent with architecture developed by the War Department throughout the United States during the conflict. As examples of national trends in residential military architecture from the World War II era, the buildings have significance for their association with the architectural military heritage of the state and nation. Contributing to America's diverse vernacular and formal architectural genres, these buildings epitomize the use of standardized plans, the work of professional architects in private industry, and the work of the Navy's Bureau of Yards and Docks and the Army's Corps of Engineers during the greatest mobilization period in the nation's history.

The War Department developed military installations with overall plans that organized spaces for various functions, including administration, flight-line, gunnery ranges, ordnance storage, public works, religion, residences and barracks, and warehouses. The process of assigning specific spaces for the location of buildings and structures was a critical part in developing a smoothly operating military base. Consequently, the community planning and development aspect of military bases was a significant part of Florida's World War II heritage.

These resources also possess historical significance for their association with Florida's role in training soldiers for combat during the war. They contributed to an interrelated system or network of military installations developed throughout the nation to train troops for combat and defeat the Axis Powers. In no period of its history did the State of Florida play as crucial role in the training of the nation's military forces.

Most bases also possess historical significance derived from their association with the local community in which they were built. The vast majority of Florida's military installations were developed close to a town or

city, in part, because of political lobbying by citizens, in part, because the military found ideal conditions at that location, and, in part, because those municipalities offered important resources, such as an airport and a ready source of labor. The development of a military installation during World War II represented a substantial investment within a community, generally costing between five million dollars and thirty million dollars to develop. These investments buoyed local economies by providing jobs and revitalizing commercial centers still reeling from the Great Depression.

Much of nation's front-line continental defense system, a substantial percentage of which stands in Florida, is derived from military bases developed during this conflict. Yet, by definition, because of the country's reluctance to maintain a large standing army and because of its policy of de-mobilization following major wars, Florida has relatively few World War II-era military-related resources as reminders of the state's greatest period of military mobilization. Amounting to thousands in number, residential buildings were perhaps the most common type of building constructed on military installations in Florida during the conflict. Not surprisingly, after the war many of those were altered for other uses, dismantled, or relocated. Consequently, the World War II era residential buildings on Florida's military bases have become relatively scarce resources in the early twenty-first century, and represent an important type of historic architecture that reflects the state's role in that conflict.

4. Registration Requirements: For buildings to be eligible for nomination under the F.1 property type they must have been used for a residential function on a military base in Florida during World War II. The majority of these resources were constructed during the historic period outlined in Section E. Not all of these buildings, however, were constructed during the conflict. Some dwellings were built a decade or more before the war. Indeed, at some bases, such as MacDill AFB and Mayport Naval Station, previously existing buildings were retained by the military, and their stylistic characteristics had some influence on the wartime development of the base. On other bases, however, the military retained small residences, which had no particular stylistic influence on the development of a base, but simply served as quarters for personnel. Within this property type, a pre-existing building on a military installation that was used during the war has a period of significance that only extends during the World War II era, and not to its original date of construction.

A residence that has been moved from its original site, but still remains within a historic residential sector of the base may still contribute to a historic district, or be individually eligible for listing in the NRHP, depending upon the extent of its original architectural integrity, its integrity of function, and the extent to which it contributes or disrupts the setting, spatial relationships, and circulation pattern of the district. But, those buildings relocated outside a historic residential area of a base, or outside a base entirely, are not eligible under this MPS cover.

Eligibility for individual buildings is restricted to (1) exceptional examples of a style or type of architecture; (2) buildings that contribute to a specific historic program or mission; or (3) buildings associated with important historical events. Individual buildings must retain their original appearance to a high degree. The Secretary of the Interior's *Standards for Rehabilitation,* codified in 36 CFR 67, and NRHP Bulletin 15, *How to Apply the National Register Criteria for Evaluation,* shall serve as guides for gauging the eligibility of buildings. Alterations sensitive to the original design and appearance of a dwelling will not preclude its eligibility. Such additions generally appear on the rear of buildings. But, the addition of small bays or oriels, porte cocheres, and dormers that contribute to the character of a dwelling and do not disrupt the original rhythm and styling are acceptable. Asbestos shingles installed over the original exterior siding during the historic period does not preclude a property from eligibility. Enclosing porches in a manner that results in a diminution or loss of historic character, such as using solid materials--wood, stucco, or masonry--will exclude a building from eligibility. Replacement windows should reflect the original fenestration and display original glazing patterns. A building that has been altered by significant additions, exhibits materials inconsistent with the historic period in which it was constructed, or the removal of significant architectural details is excluded from eligibility.

As with individual buildings, the eligibility of residential buildings within historic districts should be assessed using criteria developed in NRHP Bulletin 15. In general, for a district to be eligible it should retain its historical integrity, that is, the majority of the components that comprise the district's historic character should display their original features and integrity, even if they are individually undistinguished. Relationships between resources should be substantially unchanged since the period of significance. The design, number, scale, and size of resources that do not contribute are important factors to consider when evaluating a historic district. Non-contributing resources of a district include those that have been substantially altered since the period of significance, or built outside the period of significance. A district is not eligible if it contains so many new intrusions or alterations of older buildings that it no longer conveys a sense of a historic environment.

PROPERTY TYPE: F.2

1. Name of Property Type: Administration, Education, Health Care, Supply, and Personnel Support Buildings and Structures

2. Description: The historic administration, education, health care, supply, and personnel support buildings and structures on Florida's World War II era military bases represent a small but meaningful property type. According to data compiled from the Florida Site File, approximately seven hundred buildings and structures have been inventoried on several of Florida's military bases developed during World War II. Approximately one hundred of those are buildings from this property type, which includes administrative offices, brigs, clubs, chapels, commissaries, dispensaries, fire stations, headquarters, hospitals, infirmaries, instructional and training

buildings, laboratories, laundries, libraries, mess halls, post exchanges, post offices, theaters, and recreation buildings.

Plans of World War II military installations indicate that the administration, education, health care, supply, and personnel support buildings were relatively few. Indeed, some bases only contained one example of a chapel and infirmary during the war. This property type includes buildings of both permanent and temporary construction, as classified by the War Department in the late-1930s and World War II. The vast majority of these resources, however, are derived from wood frame vernacular influences and standardized plans for temporary buildings, although a few are examples of industrial vernacular and masonry vernacular architecture.

Many are single story buildings, but some rise two or three stories. Building plans included L-shape, T-shape, U-shape, and other irregular shapes, but some are rectangular. Roof systems include flat, gable, and hip types, and exterior walls are typically built with wood studs and finished with asbestos cementitous panels or drop siding. Vinyl or aluminum sidings cover the walls of some buildings. Masonry examples generally display flat roofs and either concrete block, brick, or stucco exterior walls. Fenestration is often regular, but asymmetrical with windows typically set in single and paired arrangements. Most display little ornamentation. Some larger buildings, such as hospitals, display paired or ribbon arrangements of windows. Typically, the original windows were double-hung sashes displaying six-over-six or eight-over-eight lights. Exterior detailing is sparse. The foundation systems include poured concrete, continuous concrete block, and concrete piers.

These buildings were, with few exceptions, designed and assembled by architects, engineers, and builders who drew upon traditional building techniques and contemporary stylistic preferences for their inspiration. In some cases, architects serving either in the Army's Corps of Engineers, or in the Navy's Bureau of Yards and Docks prepared the plans. In other cases, the military turned to architects in private industry either to draft plans for a resource, or adapt a standardized plan for a specific location or slightly different purpose. Primary consideration was given to providing functional spaces for personnel to perform their duties.

One example of the creativity and flexibility of architects and engineers exercised on some bases in adapting buildings for a new purpose was the expansion of the post exchange at MacDill AFB in 1943. Using standardized buildings containing an exchange, recreation hall, and mess hall, the Corps' architects in Washington, D.C. and at MacDill reconstituted three buildings into a social center. The adaptation included arcades leading to soda and restaurant gardens, which unified the buildings in their expanded and revised use. The structural forms of new canopies suggested airplane wings, and new ribbon arrangements of windows broke with the traditional single and paired fenestration patterns of most administration and personnel support buildings. This development at MacDill caught the attention of the publisher of *Architectural Forum,* which featured the transformation in its June 1943 issue. Adjacent to the post exchange and service club, Corps' architects Major Meyer Katzman and First Lieutenant Joseph Roberto developed a bandshell, radio broadcast

booth, and dance floor. The dance floor and bandshell also served as an outdoor theater capable of seating thirty-five hundred people.

Located at Jacksonville NAS, only one historic chapel, or religion-related, building has been documented at a military installation in Florida. Based on the New England Protestant meeting house form, chapels were easily distinguished as Christian landmarks on military installations. The standardized World War II chapel on most bases displays a rectangular shape and a gable roof. Interrupting the roof ridge at the front of the building, a steeple generally consists of a square tower with a louver and a tall pyramidal spire. Projecting from the front elevation, a small, enclosed vestibule contains the entrance of a pair of paneled wood doors. One modification to the standard chapel was the introduction of additional double-hung windows on the front elevation, which opened onto a balcony on the interior. Clapboard or weatherboard served as the exterior wall fabric, and fenestration included large double-hung sash windows with sixteen-over-sixteen lights that open into the nave and smaller double-hung sash windows in the chancel and sacristy areas. Larger bases, such as Dale Mabry and MacDill, had multiple chapels during the war. Smaller bases, such as those at DeLand and Sebring, supported only one chapel. Camp Blanding, the largest of the military installations in Florida during World War II, had twenty-four chapels developed from the standardized plan, and Camp Gordon Johnston contained six chapels. The chapel at Sebring Army Air Field cost twenty-one thousand dollars to construct.[6]

The chapel at Jacksonville NAS, again, demonstrates the flexibility exercised by architects in designing buildings on military bases in Florida during the war. Although the chapel is derived from vernacular influences, it displays an unique curvilinear design and exceptional art glass designs. Its irregular plan places two rectangular buildings at right angles, connected by a curvilinear hyphen that contains a meeting hall, offices, and loggia. Each rectangular building contains a chapel--one Catholic, one Protestant. Those components have gable roofs, the curvilinear hyphen a flat roof. Composite asbestos-cement shingles cover the original wood siding exterior walls, and distinctive leaded stain-glass windows appear on several elevations. The building rests on a poured concrete foundation. Robert & Company, a prominent architectural-engineering firm in Atlanta, Georgia, drafted the plans for the unusual resource.[7]

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[6]Fine and Remington, *Corps of Engineers,* 237, 239; *Highlands County News,* 19 June 1941; *Tallahassee Daily Democrat,* 29 July 1945; W. Stanford Smith, *Camp Blanding: Florida Star in Peace and War* (Fuquay-Varina: Research Triangle Publishing, Inc., 1998), 97; David Coles, "`Hell-by-the-Sea': Florida's Camp Gordon Johnston," *Florida Historical Quarterly* 73 (July 1994), 17.

[7]"Flexible Plan for Flyers' Chapels," *Architectural Record* 95 (February 1944), 66-68; *Jacksonville Florida Times Union,* 3, 7, 17, 18 January, 14, 17, 24, 28 February 1943.

Another exceptional, if unusual, feature of the chapel is its stain glass windows. They were prepared in the studio of Charles Connick, a stained glass artist who opened a studio in Boston in 1913. Gifted and tireless in his craft, he rose to world renown, receiving a gold medal for stained glass work at the Panama-Pacific International Exposition in San Francisco, the Logan Medal of Applied Arts from the Art Institute of Chicago in 1917 and 1921, and the Craftsmanship Medal of the American Institute of Architects in 1925. His 1937 *Adventures in Light and Color* became considered one of the most notable contributions ever made to the literature on the subject. He was made an honorary member of the American Institute of Architects in 1932 and received honorary graduates degrees from Boston University and Princeton University. His work at the chapel at Jacksonville Naval Air Station and at the chapel at the United States Submarine Base, New London, Connecticut are the only projects associated with Connick on military installations, which are typically devoid of this type of ornamentation.[8]

Industrial Vernacular

The term, industrial vernacular, applies to buildings that display no formal style of architecture, but characterizes buildings constructed for explicit commercial, industrial, and military applications. No single building type exists in a greater profusion of scales, styles, shapes, and materials than industrial structures. The most prevalent type of industrial building is the nonspecific factory, repair facility, or warehouse. Steel framing and reinforced concrete were typically utilized, depending on resources and desired strength. Industrial buildings were designed by factory owners until the mid-nineteenth century, when architects and specialty firms began designing pre-manufactured buildings for industrial applications. Generally, by the late-nineteenth century, steel framing was used in industrial buildings as I-beams became more available and widely used in large construction projects. Steel skeletal framing was often revealed as an architectural feature in the facade. The most important specialist in concrete factory design was architect Albert Kahn of Detroit, whose 1905 Packard Number 10 Building helped initiate a new era of industrial designs.

The design of industrial vernacular buildings, generally simple in plan and modest in detailing, was generally inspired from pragmatic, functional needs of a client. In Florida, industrial buildings served many purposes. The citrus, fertilizer, and railroad industries regularly produced, processed, repaired, or stored products within industrial buildings. During World War I, the aircraft industry and military began using industrial architectural forms to construct, house, and repair aircraft. Many of the same components refined for use in industrial buildings--steel curtain walls with concrete panels, wire-glass windows, and simple, functional designs--were well-suited to large hangers, warehouses, and repair and assembly buildings developed for the military. During

[8]*New York Times,* 29 December 1945; A. N. Marquis, comp., *Who's Who in America* (Chicago: Marquis Company, 1946), 480.

the Great Depression, the Public Works Administration (PWA) helped finance the development of large airfields, including hangers built of steel skeletal frames and reinforced concrete walls, a technology used for several decades. In the 1940s, metal buildings displaying the unusual semicylindrical quonset huts became popular for industrial and military applications.

3. Significance: The historic administration, education, health care, supply, and personnel support buildings and structures on Florida's World War II era military bases possess significance in the areas of architecture, community planning and development, and military under NRHP Criteria A and C. They represent a distinctive, if varied, building type developed by the Army's Corps of Engineers, the Navy's Bureau of Yards and Docks, and consulting architects, engineers, and contractors. The vast majority of these buildings were assembled from standardized plans developed for military installations throughout the United States during World War II. A few were drafted from the desks of architects and engineers, and represent an unusual resource. Despite their widespread use on many based in Florida during the war, relatively few examples remain standing in the state.

Contributing to America's diverse vernacular architectural genre, these buildings epitomize the creative use of both standardized plans and those individually drafted for a particular use to develop military installations. Some standardized buildings were adapted and revised for uses other than those for which they were intended. The use of readily available materials and simple ornamentation were other hallmarks of these buildings developed during the greatest mobilization period in the nation's history. Florida's historic World War II military-related architecture is consistent with the architecture developed by the War Department during the conflict. As examples of national trends in military architecture from the World War II era, the buildings have significance for their association with the architectural military heritage of the state and nation.

The War Department developed military installations with overall plans that organized spaces for various functions, including administration, flight-line, gunnery ranges, ordnance storage, public works, religion, residences and barracks, and warehouses. The process of assigning specific spaces for the location of buildings and structures was a critical part in developing a smoothly operating military base. Consequently, the community planning and development aspects of military bases should be considered a significant part of Florida's World War II heritage.

These resources also possess historical significance for their association with Florida's role in training soldiers for combat during the war. They contributed to an interrelated system or network of military installations developed throughout the nation to train troops for combat and defeat the Axis Powers. In no period of its history did the State of Florida play as critical role in the training of the nation's military forces.

Some bases also have historical significance derived from their association with the community in which they were built. The vast majority of Florida's military installations were developed in close proximity to a town or city, in part, because of political lobbying by citizens, in part, because the military found ideal conditions at that location, and, in part, because those communities offered a previously existing resource, such as an airport, or a ready source of labor. The development of a military installation during World War II often represented a huge investment, generally costing between five million dollars and thirty million dollars. These investments buoyed local economies by providing jobs and revitalizing commercial centers still reeling from the Great Depression.

Much of nation's front-line continental defense system, a substantial percentage of which stands in Florida, is derived from military bases developed during this conflict. Yet, by definition, because of the country's reluctance to maintain a large standing army and because of its policy of de-mobilization following major wars, Florida has relatively few tangible World War II-era military-related resources as reminders of the state's greatest period of military mobilization. Because many of these buildings were assembled for temporary purposes, and many more were later destroyed or relocated, they have become relatively scarce resources in the early twenty-first century. Consequently, the World War II era resources on Florida's military bases represent an important type of historic architecture that reflects the state's role in that conflict.

4. Registration Requirements: For buildings to be eligible for nomination under the F.2 property type they must have been used for an administration, education, health care, or personnel support function on a military base in Florida during World War II. Eligibility for individual buildings is restricted to (1) exceptional examples of a style or type of architecture; or (2) buildings associated with important historical events. Individual buildings must retain their original appearance to a high degree. The Secretary of the Interior's *Standards for Rehabilitation,* codified in 36 CFR 67, and NRHP Bulletin 15, *How to Apply the National Register Criteria for Evaluation,* shall serve as guides for gauging the eligibility of buildings. Alterations sensitive to the original design and appearance of a building will not preclude its eligibility. Such additions generally appear at the rear. Asbestos shingles installed over the original exterior siding of buildings during the historic period does not preclude a property from eligibility. Enclosing entrances and porches in a manner that results in a diminution or loss of historic character, such as using solid materials like wood, stucco, or masonry, can exclude a building from eligibility. Replacement windows should display the original type of window and its glazing pattern. Buildings that display materials inconsistent with the historic period in which they were constructed, or the removal of significant architectural details are excluded from eligibility.

As with individual buildings, the eligibility of historic districts should be assessed using criteria developed in NRHP Bulletin 15. In general, for a district to be eligible it should retain its historical integrity, that is, the majority of the components that comprise the district's historic character should display their individual integrity, even if they are individually undistinguished. Relationships between resources should be substantially unchanged since the period of significance. The design, number, scale, and size of resources that do not

contribute are important factors to consider when evaluating a historic district. Non-contributing resources of a district include those that have been substantially altered since the period of significance, or built outside the period of significance. A district is not eligible if it contains so many new intrusions or alterations of older buildings that it no longer conveys a sense of a historic environment.

PROPERTY TYPE: F.3

1. Name of Property Type: Industrial Buildings and Structures

2. Description: The historic industrial buildings and structures on Florida's World War II era military bases represent a small but meaningful property type. This property type includes assembly and repair buildings and shops, engineering shops, maintenance shops, metal fabrication plants, torpedo workshops, and other buildings used to perform an industrial function. According to data compiled from the Florida Site File, approximately seven hundred buildings and structures have been inventoried on several of Florida's military bases developed during World War II. Approximately twenty buildings serving this purpose have been recorded in the Florida Site File. This property type consists primarily of buildings of permanent construction, as classified by the War Department in the late-1930s and World War II. The vast majority of these resources are derived from industrial vernacular or masonry vernacular architectural influences. Most display little ornamentation.

These buildings were, with few exceptions, designed and assembled by architects, engineers, and builders who drew upon traditional building techniques and contemporary stylistic preferences for their inspiration. In some cases, architects serving either in the Army's Corps of Engineers, or in the Navy's Bureau of Yards and Docks prepared the plans. In other cases, the military turned to architects in private industry either to draft plans for a resource. Because these types of buildings represent a specific type and method of construction intended for an industrial function, they were often developed by prominent architects with experience in developing industrial infrastructure, such as Albert Kahn of Detroit, Michigan, and Roberts & Company of Atlanta, Georgia.

Many are single story buildings, but some rise two or three stories. A few buildings of this type exhibit a distinctive two-story "airplane" monitor with a shallow-pitched gable roof, and tapered purlins mounted under the eaves. Assembly and repair buildings are often among the largest resources on a base. Displaying Art Deco styling, the sprawling assembly and repair shop at Jacksonville NAS contains over eight hundred thousand square feet of interior floor space. Building plans included L-shape, T-shape, U-shape, and other irregular shapes, but some are rectangular. Roof systems include flat, gable, and hip types, and exterior walls are typically built with either steel skeletal frameworks and hollow tiles or reinforced concrete, or poured concrete walls. Fenestration generally consists of banks of wire-glass windows set in metal mullions, and foundations are poured concrete.

Art Deco

The term, Art Deco, was first coined in 1968 by historian Bevis Hillier to describe America's last national style, and the first of the modernistic styles to gain popularity in America. It represented a complete break with traditional design, emphasizing futuristic concepts rather than invoking architectural precedents. The style received its name from the Exposition Internationale des Arts Decoratifs and Industriels Modernes held in Paris in 1925. Like the European Art Nouveau movement of the 1890s and early twentieth century, Art Deco was an artistic movement that transcended all areas of the art world from architecture to painting. Its decorative geometric patterns were applied to a wide variety of products including household appliances, clothing, furniture, and jewelry.

Art Deco was most popular as a commercial building style during the 1920s and early-1930s because its decorative designs were especially suited to tall buildings. In Florida, Art Deco buildings are most often found in cities that continued to grow despite the collapse of the speculative land boom in 1925. Miami contains the most extensive collection of Art Deco buildings in Florida. After 1930, the related Art Moderne style emerged as the most popular modernistic style. Both eventually yielded to the International style, a favorite of intellectual practitioners who scorned the decorative influence of Deco.

Characteristics of the Art Deco style include a flat roof, irregular plan, angular geometric forms with stucco facades, and polychromatic relief ornamentation in straight line, zig-zag, geometric floral, and chevron designs. In Europe, the ornamentation was influenced by Cubanism; in the United States, Art Deco designs were derived largely from North and South American Indian art work.

3. Significance: The historic industrial buildings on Florida's World War II era military bases possess significance in the areas of architecture, community planning and development, and military under NRHP Criteria A and C. They represent a distinctive building type developed by the Army's Corps of Engineers, the Navy's Bureau of Yards and Docks, and consulting architects, engineers, and contractors. Most were assembled with steel skeletal frameworks and displayed masonry walls. Relatively few of these buildings from the World War II remain standing in Florida.

Florida's historic World War II military-related architecture is consistent with architecture developed by the War Department throughout the United States during the conflict. As examples of national trends in military architecture from the World War II era, the buildings have significance for their association with the architectural military heritage of the state and nation. Contributing to America's diverse vernacular architectural genre, these buildings were largely designed by professional architects, although some were drafted by military personnel for a specific purpose.

The War Department developed military installations from overall plans that organized spaces for various functions, including administration, flight-line, gunnery ranges, ordnance storage, public works, religion, residences and barracks, and warehouses. The process of assigning specific spaces for the location of buildings and structures was a critical part in developing a smoothly operating military base. Consequently, the community planning and development aspects of military bases endure as a significant part of Florida's World War II heritage.

These resources also possess historical significance for their association with Florida's role in training soldiers for combat during the war. They contributed to an interrelated system or network of military installations developed throughout the nation during World War II to train troops for combat and defeat the Axis Powers. In no period of its history did the State of Florida play as critical role in the training of the nation's military forces.

Some bases also have historical significance derived from their association with the community in which they were built. The vast majority of Florida's military installations were developed in close proximity to a town or city, in part, because of political lobbying by citizens, in part, because the military found ideal conditions at that location, and, in part, because those communities offered a previously existing resource, such as an airfield, or a ready source of labor. The development of a military installation during World War II often represented a huge investment, generally costing between five million dollars and thirty million dollars. These investments buoyed local economies by providing jobs and revitalizing commercial centers still reeling from the Great Depression.

4. Registration Requirements: For buildings to be eligible for nomination under the F.3 property type they must have been used for an industrial function on a military base in Florida during World War II. Eligibility for individual buildings is restricted to (1) exceptional examples of a style or type of architecture; (2) works of a master; or (3) buildings associated with important historical events. Individual buildings must retain their original appearance to a high degree. The Secretary of the Interior's *Standards for Rehabilitation,* codified in 36 CFR 67, and NRHP Bulletin 15, *How to Apply the National Register Criteria for Evaluation,* shall serve as guides for gauging the eligibility of buildings. Alterations sensitive to the original design and appearance of a building will not preclude its eligibility. Such additions generally appear at the rear. Asbestos shingles installed over the original exterior siding of buildings during the historic period does not preclude a property from eligibility. Replacement windows should display the original type of window and its glazing pattern. Buildings that display materials inconsistent with the historic period in which they were constructed, or the removal of significant architectural details are excluded from eligibility.

As with individual buildings, the eligibility of historic districts should be assessed using criteria developed in NRHP Bulletin 15. In general, for a district to be eligible it should retain its historical integrity, that is, the majority of the components that comprise the district's historic character should display their individual integrity, even if they are individually undistinguished. Relationships between resources should be substantially

unchanged since the period of significance. The design, number, scale, and size of resources that do not contribute are important factors to consider when evaluating a historic district. Non-contributing resources of a district include those that have been substantially altered since the period of significance, or built outside the period of significance. A district is not eligible if it contains so many new intrusions or alterations of older buildings that it no longer conveys a sense of a historic environment.

PROPERTY TYPE: F.4

1. Name of Property Type: Public Works Buildings and Structures

2. Description: The historic public works buildings and structures on Florida's World War II era military bases represent a small, but meaningful property type. This property type includes offices, power plants, storage and tool houses, telephone exchanges, transformer stations, vaults, water towers and tanks, and treatment plants. According to data compiled from the Florida Site File, approximately seven hundred buildings and structures have been inventoried on several of Florida's military bases developed during World War II. Fewer than five percent of the resources inventoried on Florida's World War II era military bases originally served a public works function. In most cases, only one power house and one treatment plant stood on a military base, although some larger installations had multiple examples.

The property type includes important infrastructural resources, many of which were classified as permanent when they were constructed. As such, most were assembled with concrete blocks, hollow tiles, steel skeletal frames, or reinforced concrete, although a few were built with wood frames. The appearance of many resources is derived from common traditions taken from frame vernacular, industrial vernacular, and masonry vernacular construction forms of the period; a few buildings display the influences of the International style. Some of the plans for these resources were developed by the Army's Corps of Engineers and the Navy's Bureau of Yards and Docks. In other cases, the military turned to architects and engineers in private industry to design these facilities.

Footprints are rectangular or irregular, often with flat roofs obscured by straight parapets. Stucco and reinforced concrete generally serve as exterior wall fabrics. Fenestration is typically regular with vertical banks of wire glass windows divided with metal mullions and cantilevered or hopper style sections that open to provide ventilation and natural interior lighting. Poured concrete foundations support the buildings and structures.

International

The International style was a dominant commercial building style in the United States between 1930 and the mid-1970s. A group of architects working independently in post-World War I Europe conceived the style for laborer housing. Eschewing architectural precedent, the innovators found a common theme in the exploitation of contemporary building materials and technologies. They shunned ornamentation often executed on more traditional styles, and exposed structural elements to produce a starkly functional design.

Architects introduced the style to Americans in an exhibit at the Museum of Modern Art in 1932. Entitled "Modern Architecture," the exhibit featured designs of the style's most prominent practitioners, including Le Corbusier, Walter Gropius, and Mies van der Rhoe. The style derived its name from a book published for the exhibit entitled *The International Style: Architecture Since 1922.* Later, fleeing the rise of Nazi Germany, many of the originators of the style immigrated to the United States. They were appointed to positions at some of the most influential schools of architecture in the country, and subsequently influenced several generations of leading American architects. With its streamlined appearance and lack of ornamentation, the style was readily adapted to military-related architecture that gradually gained popularity in the late-1930s, and became prolific during World War II.

In Florida, International style buildings are most often found in cities that continued to grow despite the collapse of the speculative land boom, and military bases with a heritage derived from the late-1930s and 1940s. There are numerous examples in coastal cities where tourism remained popular during the Great Depression. Few private residences exhibit this style, which most often architects applied to commercial, office, military, or apartment buildings. Identifying features include flat roofs, straight parapets, smooth exterior surfaces without ornamentation, bands of windows, exposed structural elements, asymmetrical facades, and metal windows set flush on outer wall surfaces.

Water Tanks

Water tanks are specialized vertical structures generally associated with municipal water works systems. Early settlers relied on hand-dug and natural artesian wells. Technological advances in the manufacture of steel in the middle of the nineteenth century permitted the construction of water tanks that set upon steel skeletal towers that rose upwards of one hundred feet above the landscape. By World War I, many Florida municipalities provided their residents with fresh water stored in these large above-ground tanks. Because of their height, the tanks supplied sufficient pressure to move water through an underground network of pipes to spigots in private homes, emergency sprinkler systems in commercial buildings, and standpipes and fire hydrants along streets. Among the most prominent firms to fabricate water tanks and towers were the Chicago Bridge & Iron Works Company and the Virginia Bridge & Iron Company of Roanoke, Virginia. Water towers built in the early

twentieth century typically display a steel structural framework upon which rested a large cylindrical tank with a conical roof. Most tanks used in early municipal and military systems were fabricated with metal plates fastened together with large bolts or rivets. On the eve of World War II, some companies began offering water tanks fabricated with seamless construction.

3. Significance: The World War II era public works buildings and structures on Florida's military bases possess significance in the areas of architecture, community planning and development, and military under NRHP Criteria A and C. The resources have historical significance for their association with the development of military bases throughout Florida during World War II, and the state's role in training soldiers for combat during the conflict. They represent stylistic trends in architecture consistent with those found on military bases throughout the United States between the late-1930s and 1940s.

4. Registration Requirements: For buildings and structures to be eligible for nomination under the F.4 property type they must have been used for a historic public works function on a military base in Florida during World War II and have been constructed during the historic period outlined in Section E. Eligibility for individual nominations is restricted to (1) exceptional examples of a style or type of architecture; or (2) buildings associated with important local historical events. Buildings and structures nominated under this area of significance must retain their original appearance to a high degree. A building or structure that has been significantly altered by additions, the application of materials inconsistent with the historic period in which they were constructed, or the removal of significant architectural details is excluded from eligibility. The Secretary of the Interior's *Standards for Rehabilitation,* codified in 36 CFR 67, and NRHP Bulletin 15, *How to Apply the National Register Criteria for Evaluation,* shall serve as guidelines for gauging the eligibility of resources.

As with individual buildings, the eligibility of historic districts should be predicated on criteria developed in NRHP Bulletin 15. In general, for a district to be eligible it should retain its historical integrity, that is, the majority of the components that comprise the district's historic character should display their individual integrity, even if they are individually undistinguished. Relationships between resources should be substantially unchanged since the period of significance. The design, number, scale, and size of resources that do not contribute are important factors to consider when evaluating a historic district. Non-contributing resources of a district include those that have been substantially altered since the period of significance, or built outside the period of significance. A district is not eligible if it contains so many new intrusions or alterations of older buildings and structures that they no longer convey a sense of a historic environment.

PROPERTY TYPE: F.5

1. Name of Property Type: Flight Line Buildings and Structures

2. Description: The flight line buildings and structures on Florida's World War II era military bases represent a relatively small, but important collection of historic resources. According to data compiled from the Florida Site File, approximately seven hundred buildings and structures have been inventoried on Florida's military bases developed during World War II. Approximately five percent of the resources inventoried at Florida's World War II era military bases originally served a flight line function, or were in direct support of it. Several buildings, primarily hangars, within this property type have been determined eligible by the Florida SHPO.

The property type includes air control towers, hangars, runway systems, aviation shops, and administration and supply buildings that directly supported the day-to-day operations of the flight line during World War II. Runways and support structures, such as aprons and ramps, were critical features of each base. Among the first features to be developed at an installation, these structures were built with reinforced concrete.

The buildings of the property type include some of the largest and most distinctive resources on Florida's military bases, such as expansive hangars that contain upwards of one hundred thousand square feet of floor space. The appearance of many support facilities, such as aviation shops and flight line administration buildings, is derived from common traditions taken from frame vernacular, industrial vernacular, and masonry vernacular construction forms developed by the military during the period. Some buildings display the influences of the International style.

In Florida, most aircraft hangars developed by the Navy exhibited a rectangular footprint, straight roof trusses rather than arches, and a gently sloped shed or flat roof obscured by straight parapets. Hangars built at the larger naval air stations, such as Jacksonville and Pensacola, were built with steel skeletal frames. At smaller air stations, such as those at Ft. Lauderdale, Lake City, and Sanford, the Navy assembled wood frame hangars.

The Corps of Engineers employed various designs for its hangars with tied-steel arches, bowstring arches, and barrel arches. Both branches of the military used distinctive full-height, multi-leaf sliding doors that protect cavernous aircraft bays. Spans range between two hundred and two hundred seventy-five feet. The exterior walls consist of brick, reinforced concrete, corrugated asbestos panels, or asbestos-protected metal sheets. Fenestration is typically regular with vertical banks of wire glass windows divided with metal mullions and cantilevered or hopper style sections that open to provide ventilation and natural interior lighting. Poured concrete foundations support the buildings.

Most runway, apron, and ramp systems at airfields and naval air stations were adapted from existing systems built in the 1920s and 1930s by a municipal government. Runways were typically lengthened, widened, and paved, and new aprons built adjacent to hangars. In a few cases, new airfield systems were built on undeveloped property, laid out from plans developed by the Army's Corps of Engineers or the Navy's Bureau of Yards and Docks.

Plans and aerial photographs of Florida's World War II military installations indicate that these systems were built in an interesting array of geometric designs. For the Navy, the Bureau of Yards and Docks designed naval air stations with airfield mats that displayed either circular, octagonal, square, or triangular shapes, which led to runways. A few runway systems consisted of two squares superimposed on each other, providing eight runways, which made it possible to always take off and land directly into the wind. Naval air stations developed along rivers generally contained both seaplane and landplane hangers. Inclined ramps led directly from rivers into seaplane hangars.[9]

Designed by the Corps of Engineers, the Army's air fields often employed a standardized airfield design with three runways laid out in a large triangle shape. Ramps, or taxi-ways, roughly forming a lazy "C," often surrounded the runways. Shaped as keyhole or frying pan designs, hardstands (where aircraft were tied down) radiated off the ramps. At both air fields and naval air stations, hangars anchored the ramps and aprons that led to runways. Administrative buildings, barracks, and various support buildings radiated out from the flight-line areas. Ordnance and warehouses districts were typically built at some distance from this central hub of a base.[10]

3. Significance: The World War II era flight line resources on Florida's military bases possess significance in the areas of architecture, community planning and development, and military under NRHP Criteria A and C. The buildings have historical significance for their association with the development of military bases throughout Florida during World War II, and the state's role in training soldiers for combat during the conflict. They represent stylistic trends in architecture consistent with those found on military bases throughout the United States during World War II.

The development of large aircraft hangars was among the most important military-related architectural improvements of the late-1930s and World War II. Assembled with a wooden framework, hangars used during World War I generally displayed openings between sixty-six and one hundred ten feet. During World War II,

[9]Shettle, *Naval Air Stations of World War II,* 1: 8; Jacksonville NAS study.

[10]Shettle, *Naval Air Stations of World War II,* 1: 8; John S. Garner, "World War II Temporary Buildings: A Brief History of the Architecture and Planning of Cantonments and Training Stations in the United States," Champaign: U. S. Army Construction Engineering Research Laboratory, 1990, 64, 73.

larger hangars at major air fields and air stations, such as Jacksonville NAS and MacDill Field, were fabricated with steel skeletal frameworks, permitting openings up to two hundred seventy-five feet. Hangers built at smaller air fields and air stations, such as DeLand and Sebring, were wood frame buildings. Although hangars typically exhibit little ornamentation, they are architecturally distinctive because of their large scale, massing, and materials. Some of these buildings reflect the works of a nationally prominent architectural engineering firm of Albert Kahn, Inc., of Detroit, Michigan.[11]

Historic runway systems possess significance in the areas of community planning and development and military under NRHP Criteria A and C. They represent a distinctive component of a flight-line area. These systems are consistent with the engineering traditions developed by the War Department throughout the United States during the conflict.

The War Department developed military installations with overall plans that organized spaces for various functions, including administration, flight-line, gunnery ranges, ordnance storage, public works, religion, residences and barracks, and warehouses. The process of assigning specific spaces for the location of buildings and structures around the runway system, arguably the most critical component of most installations, was a significant step in developing a smoothly operating military base. Consequently, the community planning and development aspect of the flight line represents a significant part of Florida's World War II heritage.

The flight line possess historical significance for their association with Florida's role in training soldiers for combat during the war. They contributed to an interrelated system or network of military bases developed to train troops for combat and defeat the Axis Powers. In no period of its history did the State of Florida play as crucial role in the training of the nation's military forces.

Most bases also possess historical significance derived from their association with the local community in which they were built. The vast majority of Florida's military installations were developed close to a town or city, in part, because of political lobbying by citizens, in part, because the military found ideal conditions at that location, and, in part, because those municipalities offered an important resource, such as an airport, or a ready source of labor. The development of a military installation during World War II represented a substantial investment within a community, generally costing between five million dollars and thirty million dollars to develop. These investments buoyed local economies by providing jobs and revitalizing commercial centers still reeling from the Great Depression.

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[11] "Buildings at the Airbases," *Engineering News Record* 125 (October 1940), 56-58; Fine and Remington, *Construction in the United States,* 170.

Much of nation's front-line continental defense system, a substantial percentage of which stands in Florida, is derived from military bases developed during this conflict. Yet, by definition, because of the country's reluctance to maintain a large standing military force and because of its policy of de-mobilization following major wars, Florida has relatively few World War II-era military-related resources as reminders of the state's greatest period of military mobilization. Redevelopment came to many bases during the Korean War and Vietnam War, which resulted in the alteration of the physical characteristics of some military bases. Not surprisingly, in that process, many runway systems were extended, widened, and reconfigured. Some flight lines were altered with the addition of new hangars and support buildings and the demolition of others. Consequently, because most of Florida's World War II military bases display little of their physical characteristics, those that remain intact are a relatively scarce resource, and represent an important historic resource that reflects the state's role in that conflict.

4. Registration Requirements: For buildings and structures to be eligible for nomination under the F.5 property type they must have been used for a flight line function on a military base in Florida during World War II. Resources must also have been constructed during the historic period outlined in Section E. An exception is made for hangars and other flight line buildings constructed before the historic period, but which played a flight line role during the war. Those resources derive their significance only during the historic period. Individual buildings must retain their original appearance to a high degree. The Secretary of the Interior's *Standards for Rehabilitation,* codified in 36 CFR 67, and NRHP Bulletin 15, *How to Apply the National Register Criteria for Evaluation,* shall serve as guides for gauging the eligibility of buildings. Alterations sensitive to the original design and appearance of a building will not preclude its eligibility. A building or structure that has been significantly altered by additions, the application of materials inconsistent with the historic period in which it was constructed, or the removal of significant architectural details, is excluded from eligibility.

As with individual buildings, the eligibility of historic districts should be assessed using criteria developed in NRHP Bulletin 15. In general, for a district to be eligible it should retain its historical integrity, that is, the majority of the components that comprise the district's historic character should display their individual integrity, even if they are individually undistinguished. Relationships between resources should be substantially unchanged since the period of significance. The design, number, scale, and size of resources that do not contribute are important factors to consider when evaluating a historic district. Non-contributing resources of a district include those that have been substantially altered since the period of significance, or built outside the period of significance. A district is not eligible if it contains so many new intrusions or alterations of older buildings that it no longer conveys a sense of a historic environment.

PROPERTY TYPE: F.6

1. Name of Property Type: Ordnance and Magazine Structures

2. Description: The historic ordnance and magazine structures on Florida's World War II era military bases represent a small, but important collection of historic resources. According to data compiled from the Florida Site File, approximately seven hundred buildings and structures have been inventoried on several of Florida's military bases developed during World War II. Approximately twenty-five of those are ordnance and magazine structures. Several structures within this property type have been determined eligible by the Florida SHPO.

Plans from several of Florida's World War II military installations indicate that ordnance and magazine structures were a common, if unusual, feature on military installations. Contained within discreet compounds, or yards, far removed from other activities of a base, these structures often differ in size and appearance, depending on the types of ordnance to be stored. In some cases, a magazine area was designed by a professional engineer in private industry. Some ordnance compounds were serviced by a railroad to facilitate the transportation and storage of munitions and arms arriving at a base, and later resupply to other areas on the base.

The design, materials, shape, and size of ordnance and magazine structures often depended on their intended contents: small arms, ammunition, fuses and detonators, high explosives, pyrotechnics, or other devices. A magazine office, which controls access into the area, is often a relatively small wood frame building that rises one story, has a gable roof, and wall surfaces finished with wood siding, synthetic sidings of vinyl or aluminum, or composite asbestos panels.

Often the first structures built on a military base, ordnance and magazines structures represent some of the smallest and most unusual resources at military installations. They display no formal style of architecture, but instead represent a distinctive method and type of construction. Their appearance is derived from practical architectural, engineering, and construction solutions for the protection of highly explosive and destructive ordnance. Quaint, earth-covered magazines have an arched "tortoise shell" appearance. Walls and foundations are built with reinforced concrete. To help prevent decontamination from moisture and enhance security, these structures were designed and built without windows. A single revetment, or wall, contains a single entrance, often protected by a metal or steel-and-concrete door, to provide access into the interior. These revetments and doorways typically face north to absorb as little heat as possible from the sun. The magazines are spaced widely apart, often a distance of four hundred feet between the sides and eight hundred feet between the rear of one structure and the front of another. A road system provides access through the compound, and administration buildings serve as transfer points.

By way of contrast, small arms ammunition magazines generally are conventional structures that display rectangular footprints with gable roofs. Derived from masonry vernacular traditions, the buildings are generally based on a single plan, and consequently are similar in appearance, plan, and orientation. Typically facing north, they contain between ten thousand and twenty thousand cubic feet of storage space. Built of reinforced concrete, they display a gable roof with ventilators standing along the roof ridge. Other features include poured concrete walls with exposed structural pilasters, rake molding, and wall corner members. The facades are symmetrical with pairs of centrally-located entrance doors bracketed by shuttered window openings. Shed-roof overhangs supported by steel brackets protect loading platforms.

Pyrotechnics magazines are a feature of many bases. They are generally based on a single rectangular plan built with a steel skeletal frame containing approximately fifteen hundred square feet of floor space. Derived from Industrial Vernacular traditions, the buildings display a shallow-pitched gable roof and corrugated metal panel walls. Sliding metal doors protect entrances.

The Navy's Bureau of Yards and Docks developed standardized plans for magazines in the late-1930s, which were used on many naval facilities during the war. Typically built of masonry materials, magazines for high and bulk explosives, fuses, and detonators were reinforced-concrete earth-covered arch structures, generally twenty-five feet wide and twenty, fifty, or eighty feet long. They typically rose about between twelve and twenty feet above the ground, and access alleys often divided a structure with opposing revetment walls facing the alley and containing access doors.

Other types of magazines were developed for less hazardous materials, such as smokeless powder, fixed ammunition, and projectiles. One model, an above-ground building, was built with masonry walls, either reinforced concrete or brick with light steel roof trusses supporting a pitched roof surfaced with corrugated cement asbestos. Another type was earth-covered built either with three-span multiple arches, or as vertical-walled, flat roofed reinforced-concrete structures.[12]

The Army's Corps of Engineers also used various designs to fabricate ordnance structures and buildings. Impetus for new designs came in 1926, after a lightning storm destroyed an ammunition depot and part of an arsenal near New Denmark, New Jersey. Designed in 1928, new igloo magazines were assembled with a steel framework of barrel arches and waterproofed reinforced concrete covered with a minimum of two feet of earth. Not a true igloo shape, the structure displayed a front retaining wall, also assembled with reinforced concrete, which provided access into the interior through a vault-like steel-and-concrete door. The rear wall was a simple barrel head that closed the arch. Slightly revised in early-1941, the standardized plans for the igloo magazines

[12]U. S. Navy, *History of Bureau of Yards and Docks*, 1: 339.

featured a semi-cylindrical shape that would direct the force of an accidental explosion upwards, rather than outward. Increased steel in the concrete walls and lightning rods embedded deep into the earth increased protection from lightning.[13]

The Corps also developed elliptical concrete dome magazines. Popularly known as the Corbetta Beehive, the structure was designed jointly by Lt. Col. Benjamin F. Vandervoot of the Corps and Francis MacLeay, chief engineer of Corbetta Construction Company of New York City. Although the structure was patented by Louis P. Corbetta, owner of the construction company, both Corbetta and MacLeay credited Vandervoot with conceiving the idea for the magazine.[14]

To simplify construction, the beehive structure was assembled as a polygon rather than half a spheroid. The Corbetta Beehive was not designed to withstand a direct bomb hit or internal explosion, but protect its contents from moisture and unauthorized use by personnel. The steel structural frame consisted of bar-trusses joined by tension members of wire welded to the frame. Waterproofed reinforced concrete finished with two feet of earth served as the exterior walls. The steel-domed framework was not fastened to a concrete base. This design feature permitted free contraction and expansion, and also released pressures caused by an internal explosion, thereby reducing the magnitude of a blast.[15]

3. Significance: The historic ordnance and magazine structures on Florida's World War II era military bases are significant under NRHP Criteria A and C in the areas of architecture, community planning and development, and military. The resources have historical significance because they played an integral mission on military bases, that is, they protected the ammunition and explosive devices that were necessary to training soldiers for combat.

Some of the most unusual resources at military installations, they have architectural significance because they represent a distinctive method and type of architecture specifically developed to house munitions and ordnance. Developed from various standardized plans, these structures were designed to protect their contents from

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[13]Fine and Remington, *Corps of Engineers,* 333-334; "Igloos for Munitions Storage," *Engineering News Review* 127 (September 1941), 4-5.

[14]Francis MacLeay, "Concrete Beehive for Munitions Storage," *Engineering News Review* 128 (March 1942), 74-76; Louis P. Corbetta, "Corbetta Beehive," *Engineering News Review* 128 (April 1942), 60-61; Fine and Remington, *Corps of Engineers,* 530-531.

[15]Francis MacLeay, "Concrete Beehive for Munitions Storage," *Engineering News Review* 128 (March 1942), 74-76; Fine and Remington, *Corps of Engineers,* 530-531.

moisture, and, for some, direct the contents, upon accidental internal explosion, upward so that adjacent structures would not also explode.

Florida's historic World War II ordnance structures are consistent with the architecture developed by the War Department during the conflict. As examples of national trends in military architecture from the World War II era, the structures have significance for their association with the architectural military heritage of the state and nation. Contributing to America's diverse vernacular architectural genre, these structures epitomize the use of standardized plans, the works of professional engineers in private industry, and the works of the Navy's Bureau of Yards and Docks and the Army's Corps of Engineers during the greatest mobilization period in the nation's history.

The War Department developed military installations with overall plans that organized spaces for various functions, including administration, flight-line, gunnery ranges, ordnance storage, public works, religion, residences and barracks, and warehouses. The process of assigning specific spaces for the location of buildings and structures was a critical part in developing a smoothly operating military base. Contained within discreet compounds, or yards, ordnance buildings and structures were far removed from other activities of a base, but connected to the hub of a base by a network of roads and sometimes railroad tracks. Consequently, this property type possesses significance in the area of community planning and development at Florida's World War II military bases.

4. Registration Requirements: For structures to be eligible for nomination under the F.6 property type they must have been used for an ordnance or magazine storage function on a military base in Florida during World War II. Eligibility for individual structures is restricted to (1) exceptional examples of a style or type of architecture; or (2) structures associated with important local historical events. Individual structures must retain their original appearance to a high degree. The Secretary of the Interior's *Standards for Rehabilitation,* codified in 36 CFR 67, and NRHP Bulletin 15, *How to Apply the National Register Criteria for Evaluation,* shall serve as guides for gauging the eligibility of dwellings. Alterations effecting eligibility of structures includes a modification or extension of the original design, reorientation of its entrance, replacement of the reinforced concrete revetment, or retaining wall, with sandbags or berms, or construction of sub-structures around its base, or on its curved walls. Alteration of the original profile and significant architectural details will cause a structure to be excluded from eligibility.

As with individual resources, the eligibility of historic districts should be predicated on criteria developed in NRHP Bulletin 15. In general, for a district to be eligible it should retain its historical integrity, that is, the majority of the components that comprise the district's historic character should display their individual integrity, even if they are individually undistinguished. Relationships between resources should be substantially unchanged since the period of significance. The design, number, scale, and size of resources that do not

contribute are important factors to consider when evaluating a historic district. Non-contributing resources of a district include those that have been substantially altered since the period of significance, or built outside the period of significance. A district is not eligible if it contains so many new intrusions or alterations of older structures that it no longer conveys a sense of a historic environment.

PROPERTY TYPE: F.7

1. Name of Property Type: Warehouse Buildings

2. Description: The historic warehouse buildings on Florida's World War II era military bases represent a small, but important collection of historic resources. According to data compiled from the Florida Master Site File, approximately seven hundred buildings and structures have been inventoried on several of Florida's military bases developed during World War II. Relatively few of those, however, are warehouses. Several warehouses have been inventoried and determined eligible by the Florida SHPO. These buildings typically were developed in a discrete area some distance from the central hub of a base. Warehouses were typically grouped into small districts near a railroad to facilitate the transportation and storage of goods arriving at the base, and later resupply to other areas on the base.

Because some warehouses contain approximately one hundred thousand square feet of floor space, this property type comprises some of the largest resources on a military installation. The appearance of many buildings is derived from common traditions taken from industrial vernacular and masonry vernacular construction forms developed by the War Department during the period. On occasion, the military turned to professional architects for assistance in designing these large warehouses, such as the Atlanta firm of Robert & Company, Inc.

Footprints are typically rectangular with various roof profiles. Some buildings exhibit flat roofs obscured by straight parapets; others display tripartite barrel arch roof systems pierced with monitors to improve interior lighting and circulation. Concrete block, stucco, and reinforced concrete serve as exterior wall fabrics. Fenestration consists of vehicle bays and double-hung sash windows. Poured concrete foundations support most of these buildings.

3. Significance: The historic warehouse buildings of Florida's World War II military bases possess significance in the areas of architecture, community planning and development, and military under NRHP Criteria A and C. They represent stylistic trends in architecture consistent with those found on military bases throughout the United States during World War II. Built to meet the storage needs of an installation during World War II, they represent a distinctive building type developed by the Army's Corps of Engineers, the Navy's Bureau of Yards and Docks, and consulting architects, engineers, and contractors.

Florida's historic World War II military-related architecture is consistent with architecture developed by the War Department throughout the United States during the conflict. As examples of national trends in military architecture from the World War II era, these resources contribute to America's diverse vernacular architectural genre, and represent the works of professionals in the military and private industry during the greatest mobilization period in the nation's history.

The War Department developed military installations with overall plans that organized spaces for various functions, including administration, flight-line, gunnery ranges, ordnance storage, public works, religion, residences and barracks, and warehouses. The process of assigning specific spaces for the location of buildings and structures was a critical part in developing a smoothly operating military installation. Contained within discreet compounds, or yards, warehouses were typically built far from other activities of a base. These warehouse districts were connected to the hub of a base by a network of roads. They were also serviced by railroad tracks, which generally connected them to mainline systems for resupply of materials, and subsequent transfer elsewhere on a base. Consequently, this property type possesses significance in the area of community planning and development at Florida's World War II military bases.

These resources also possess historical significance for their association with Florida's role in training soldiers for combat during the war. They contributed to an interrelated system or network of military installations developed to train troops for combat and defeat the Axis Powers. In no period of its history did the State of Florida play as crucial role in the training of the nation's military forces.

Most bases also possess historical significance derived from their association with the local community in which they were built. The vast majority of Florida's military installations were developed close to a town or city, in part, because of political lobbying by citizens, in part, because the military found ideal conditions at that location, and, in part, because those municipalities offered an important resource, such as an airfield, a ready source of labor, and additional housing for personnel. The development of a military installation during World War II represented a substantial investment within a community, generally costing between five million dollars and thirty million dollars to develop. These investments buoyed local economies by providing jobs and revitalizing commercial centers still reeling from the Great Depression.

Much of nation's front-line continental defense system, a substantial percentage of which stands in Florida, is derived from military bases developed during this conflict. Yet, by definition, because of the country's reluctance to maintain a large standing army and because of its policy of de-mobilization following major wars, Florida has relatively few World War II-era military-related resources that stand as reminders of the state's greatest period of military mobilization.

4. Registration Requirements: For buildings to be eligible for nomination under the F.7 property type they must have been used for a warehouse function on a military base in Florida during World War II, and have been constructed during the historic period discussed in Section E. Eligibility for individual buildings is restricted to (1) exceptional examples of a style or type of architecture; or (2) buildings associated with important historical events. Individual buildings must retain their original appearance to a high degree. The Secretary of the Interior's *Standards for Rehabilitation,* codified in 36 CFR 67, and NRHP Bulletin 15, *How to Apply the National Register Criteria for Evaluation,* shall serve as guides for gauging the eligibility of buildings. A building that has been altered by significant additions, exhibits materials inconsistent with the historic period in which it was constructed, or the removal of significant architectural details is excluded from eligibility.

As with individual buildings, the eligibility of buildings within historic districts should be assessed using criteria developed in NRHP Bulletin 15. In general, for a district to be eligible it should retain its historical integrity, that is, the majority of the components that comprise the district's historic character should display their individual integrity, even if they are individually undistinguished. Relationships between resources should be substantially unchanged since the period of significance. The design, number, scale, and size of resources that do not contribute are important factors to consider when evaluating a historic district. Non-contributing resources of a district include those that have been substantially altered since the period of significance, or built outside the period of significance. A district is not eligible if it contains so many new intrusions or alterations of older buildings that it no longer conveys a sense of a historic environment.

PROPERTY TYPE: F.8

1. Name of Property Type: Quonset Huts

2. Description: The historic quonset huts on Florida's World War II era military bases represent a small, but important collection of historic resources. According to data compiled from the Florida Site File, approximately seven hundred buildings and structures have been inventoried on several of Florida's military bases developed during World War II. Although no quonset huts have been inventoried on a World War II era military base in Florida, their probability justifies creating a property type.

Most quonset huts were developed for the Department of the Navy to served a residential function at overseas installations. Some of these buildings, however, may have been installed on Navy or other military installations in Florida. Patterned after the Nissens of World War I, the buildings were designed by the George A. Fuller Company of New York as a prefabricated portable resource. The original Nissens had been manufactured at Quonset, Rhode Island, which was also the location of Quonset Point Naval Air Station. Consequently, the redesign of the curved building was designated for that place name and naval air station. The Fuller Company

produced two designs in 1942, and the Anderson Sheet Metal Company of Providence, Rhode Island, perfected a process for forming the curved corrugated metal panels.[16]

Displaying a distinctive appearance, quonset huts were assembled with segmental arch steel ribs strengthened by metal purlins. Wooden headers, sills, and windows that extended the length of the building and sheets of plywood flooring comprised the only non-metal components. Developed in response to the rapid expansion of Navy and Marine bases overseas, the buildings were used in place of tents for emergency construction. But, because of their durability and adaptability, quonset huts frequently were not replaced by wood frame construction, and may remain on some bases.[17]

3. Significance: The historic quonset huts are significant under NRHP Criteria A and C in the areas of architecture, community planning and development, and military. They represent stylistic trends in architecture consistent with those found on Navy bases during World War II. A distinctive form of architecture, the buildings have significance for their association with the development of military installations during World War II.

4. Registration Requirements: For quonset huts to be eligible for nomination under the F.8 property type, they must have been constructed during the historic period discussed in Section E, and stand on a military installation in Florida that was developed during World War II. Eligibility for individual buildings is restricted to (1) exceptional examples of a style or type of architecture; (2) buildings that contributed to a specific program or mission; or (3) buildings associated with important historical events. Individual buildings must retain their original appearance to a high degree. The Secretary of the Interior's *Standards for Rehabilitation,* codified in 36 CFR 67, and NRHP Bulletin 15, *How to Apply the National Register Criteria for Evaluation,* shall serve as guides for gauging the eligibility of buildings. A building that has been altered by significant additions, exhibits materials inconsistent with the historic period in which it was constructed, or the removal of significant architectural details is excluded from eligibility.

As with individual buildings, the eligibility of buildings within historic districts should be assessed using criteria developed in NRHP Bulletin 15. In general, for a district to be eligible it should retain its historical integrity, that is, the majority of the components that comprise the district's historic character should display their individual integrity, even if they are individually undistinguished. Relationships between resources should be substantially unchanged since the period of significance. The design, number, scale, and size of resources

[16]Garner, "World War II Military Buildings," 61-63.

[17]Garner, "World War II Military Buildings," 61-63.

that do not contribute are important factors to consider when evaluating a historic district. Non-contributing resources of a district include those that have been substantially altered since the period of significance, or built outside the period of significance. A district is not eligible if it contains so many new intrusions or alterations of older buildings that it no longer conveys a sense of a historic environment.

PROPERTY TYPE: F.9

1. Name of Property Type: Specialized Buildings, Structures, Sites, and Objects

2. Description: The historic specialized buildings, structures, sites, and objects on Florida's World War II era military bases represent a small, but important collection of historic resources. According to data compiled from the Florida Site File, approximately seven hundred resources have been inventoried on several of Florida's military bases developed during World War II. Because a few specialized resources have been inventoried in the Florida Site File, their probability of contributing to other bases justifies creating a property type. This property type essentially provides for resources at historic bombing ranges, gunnery ranges, strafing ranges, and weapons proving grounds.

Resources under this property type were typically conceived, designed, and assembled to train soldiers to accomplish a specialized mission. Because of the nature of the activity, bombing ranges, gunnery ranges, and strafing ranges contained relatively few permanent buildings or structures. Bombing ranges were typically developed on large tracts of land far removed from the central hub of a base. Large installations, such as Avon Park, supported heavy bombardment exercises. Smaller installations often relied on bombing ranges developed miles away from the base, even over bodies of water. Pilot trainees at naval air stations, especially, conducted bombing and torpedo runs over the ocean, or on large lakes. Docks, boathouses, and, perhaps, a barracks or administration supported these facilities, but few other buildings or structures were assembled at any of these locations.

Gunnery and strafing ranges typically displayed a linear arrangement to support gunfire from land based weapons and aircraft. Earthen mounds and berms were built to support targets, and protect the personnel who counted hits and replaced the bulls eyes in the targets. As with bombing ranges, few buildings or structures stood in these areas.

Beyond the conventional bombing and gunnery ranges, some specialized resources were developed at several larger installations. War-time exercises at Avon Park included aerial gunnery, moving targets, and submarine bombing. To simulate wartime conditions, a full-size mock-up of a Japanese submarine was assembled in the center of a small lake, which B-26 Marauder aircraft used for target practice. One gunnery range, called target rock, was built on the east side of Mosquito Lagoon in present-day Canaveral National Seashore. Fabricated

with reinforced concrete, the target consisted of a scaled-down version of a Japanese hangar and several aircraft.[18]

Other compelling examples of this property type are the model City of Tokyo and the Operation Crossbow Site built at Eglin AFB. Fabricated with flimsy wood framing, the Tokyo model was designed to help familiarize pilots with the skyline and profile of the Japanese capital city. It was assembled between late-1941 and early-1942. Then, between March 3 and March 29, 1942, Martin B-25 bomber crews under the command of Lt. Col. James "Jimmy" Doolittle practiced short-field take-offs and overflew the model city. The bombers, launched from the carrier *U.S. S. Hornet* six hundred fifty miles from the Japanese coast on 18 April 1942, achieved complete surprise in the raid upon the Japanese capital.[19]

The Operation Crossbow Site, constructed at Eglin, essentially operated as a weapons proving ground and a specialized bombing range. Named by Winston Churchill, Operation Crossbow was designed to develop tactics and weapons to combat German V-2 missiles. Also known as "buzz bombs," these weapons were flying bombs and long-range missiles, which Germany had launched at English sites in 1942. Based on reconnaissance of German missile sites along the French coastline, several concrete and brick structures were built at Eglin in 1944 to replicate a V-2 launch site. The Eglin V-2 site included a power house, shop, fuselage assembly tunnels, and sloping ramps. Tracked by radar and fighter aircraft, several missiles were launched from Eglin into the Gulf of Mexico. Later, the sites at Eglin were used for bombing practice to help military engineers determine the best plan of attack and perfect the kills of pilots in destroying these sites on the French coast.[20]

3. Significance: The historic specialized buildings, structures, sites, and objects are significant under NRHP Criteria A and C in the areas of architecture, community planning and development, and military. They represent unusual architectural forms developed to accomplish a specific mission by the military during World

[18]*Jacksonville Florida Times-Union,* 18 March 1943; J. Sanderson Stevens, Dennis Knepper, Madeleine Pappas, and Irvy Quitmeyer, "Phase I Archaeological Survey, Avon Park Air Force Range, Avon Park, Florida," unpub. mss., Avon Park, 1997, p. 77.

[19]Office of History. Eglin Air Force Base. "Chronological Syllabus of the Armament Development and Test Center. Part One: The Forest Transformed, 1913-1942." Eglin Air Force Base: Armament Development and Test Center, 1976, 32.

[20]Office of History, "Chronological Syllabus of the Armament Division. Part Two, the War Years: 1942-1945." Eglin Air Force Base: Armament Division, 1982, 31, 33, 44-45; National Archives, Record Group 218, U. S. Joint Chiefs of Staff, Records of the Joint Committee on New Weapons and Equipment, Box 2, War Department Crossbow Committee, 12 May 1944; Craven and Cate, *The Army Air Forces in World War II,* 3: 84-106, 524-546.

War II. Typically, they will be found on bombing ranges, weapons proving grounds, or outlying fields of larger bases.

4. Registration Requirements: For specialized buildings, structures, sites, and objects to be eligible for nomination under the F.9 property type they must have been constructed during the historic period discussed in Section E, and stand on a military installation developed during World War II. Eligibility is restricted to resources that contributed to a specific program or mission, or are associated with important historical events. Individual resources must retain their original appearance to a high degree. Because of the nature of these resources, some will show the deleterious effects from use as a target and gunnery range during World War II. The Secretary of the Interior's *Standards for Rehabilitation,* codified in 36 CFR 67, and NRHP Bulletin 15, *How to Apply the National Register Criteria for Evaluation,* shall serve as guides for gauging the eligibility of the sites. A resource that has been altered by significant additions, exhibits materials inconsistent with the historic period in which it was constructed, or the removal of significant architectural details is excluded from eligibility.

As with individual resources, the eligibility of resources within historic districts should be assessed using criteria developed in NRHP Bulletin 15. In general, for a district to be eligible it should retain its historical integrity, that is, the majority of the components that comprise the district's historic character should display their individual integrity, even if they are individually undistinguished. Relationships between resources should be substantially unchanged since the period of significance. The design, number, scale, and size of resources that do not contribute are important factors to consider when evaluating a historic district. Non-contributing resources of a district include those that have been substantially altered since the period of significance, or built outside the period of significance. A district is not eligible if it contains so many new intrusions or alterations of older resources that it no longer conveys a sense of a historic environment.

Geographical Data

The geographical limits are World War II military installations within the boundaries of the state line and coastal limits of the State of Florida.

Summary of Identification and Evaluation Methods

In 2000, Historic DeLand, Inc., a non-profit historic preservation organization, was awarded a grant by the Florida Secretary of State, Division of Historical Resources, Bureau of Historic Preservation to prepare a Multiple Property Submission (MPS) covering Florida's World War II military related resources. The methodology used to prepare the MPS largely consisted of a literature search to determine the periods of development, emphasizing important activities, individuals, and significant themes in the construction of Florida's World War II military related facilities. The development of property types and historical contexts for evaluating World War II military-related resources in Florida constituted important parts of the project.

Various studies of military installations in Florida provided an important framework for the document. Naval air stations at Jacksonville and Pensacola, and Eglin Air Force Base (AFB) and MacDill AFB are among the best documented installations in the state. National Register nominations and historical reports for the military installations were especially useful. Additional contextual and site specific information was derived from historical reports prepared for Avon Park Air Force Range, Cape Canaveral Air Force Station, Mayport Naval Station, Orlando Naval Training Center, and several other bases.

Research was also conducted at various repositories, including the Map & Imagery Library and P. K. Yonge Library of Florida History at the University of Florida in Gainesville, and the Florida State Archives and the State Library of Florida in Tallahassee. Newspapers from Florida towns and cities held at the University of Florida and State Library of Florida furnished substantial information about Florida's development as an armed camp. Despite a reluctance of most editors to publish wartime military-related activities, most newspapers published some information on local bases and several included substantial details.

Numerous articles in *Florida Historical Quarterly* describe various aspects of the war in Florida. Other useful periodicals contemporaneous to the war include *Engineering News Review* and *Military Engineer.* Several recently-published books about the war in Florida also supplied substantial research material, and new interpretations of how the war effected the Sunshine State. Important among those are Billinger's *Hitler's Soldiers in the Sunshine State: German POWs in Florida* (2000); Kleinberg's *War in Paradise: Stories of World War II in Florida* (1999); and Wynne's (ed.) *Florida at War* (1993).

Site visits to active and former installations elicited useful information. Archivists at the National Archives in East Point, Georgia; Beltsville and College Park, Maryland; and Maxwell Air Force Base in Alabama maintain cartographic and textual information about several installations. Various record groups at National Archives hold useful research materials, including RG 18 (Records of the Army Air Forces); RG 71 (Records of the Bureau of Yards and Docks); RG 77 (Records of the Corps of Engineers); RG 270 (War Assets Administration; RG 373 (Records of the Defense Intelligence Agency). Archivists confirmed that most records regarding

contracts between the military and civilian architects and builders for the construction of military installations were discarded soon after those records were delivered to the archives. Still, a voluminous amount of correspondence, and numerous maps and photographs pertaining to Florida's World War II installations are held by the Archives.

The Florida Site File maintains files and reports of previously documented historic World War II military-related installations and properties. Nearly seven hundred military-related properties have been recorded in the site file. Some of those have been recently demolished, and others are scheduled for demolition. Despite the relatively large number of recorded resources at the Site File, only a handful of Florida's World War II military-related resources have been listed in the National Register of Historic Places. Nearly one hundred other properties have been determined eligible.

National Register nominations prepared for military installations in Florida, North Carolina, and Texas were consulted, and provided models for organizing the Florida document. Histories of cantonment construction and a study prepared for the U. S. Army Corps of Engineers regarding methodologies for assessing World War II-era construction were consulted. The research furnished sufficient information to prepare the narratives appearing in sections E and F of the MPS.

Following the collection of research, Florida's World War II installations and documented resources were analyzed and evaluated for architectural themes and historic context. The methodology included pinpointing the type and categories of properties on military bases, and assessing their particular significance. Comparisons of properties and periods of development were made between Eglin AFB, Jacksonville NAS, MacDill AFB, Mayport Naval Station, and Pensacola NAS, each of which have been inventoried for historic buildings and several of which contain districts that have been determined eligible or listed in the National Register of Historic Places. A period of development extending between 1938 and 1945 was selected because it reflects America's pre-war mobilization efforts, sparked by the build-up of weapons of war in Germany and Japan. The period allows for the inclusion of property types developed by the United States military on the eve of the war, property types which played a critical role in the infrastructure of virtually every installation in Florida during the conflict.

A MPS nomination was prepared using the necessary forms and text. One nomination proposal for listing a property in the National Register of Historic Places was prepared as part of the project. Owner consent was obtained. Then, the necessary forms and text were drafted, and maps with associated photographs were prepared to provide reviewers with documentation and visual aids that convey a sense of the significance of the historic resource.

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