1. NAME OF PROPERTY

Historic Name: U.S.S. *Lexington*

Other Name/Site Number: (CV-16, CVA-16, CVS-16, CVT-16, AVT-16)

2. LOCATION

Street & Number: U.S.S. Lexington Museum on the Bay
2914 North Shoreline Blvd.
Not for publication: N/A

City/Town: Corpus Christi
Vicinity: N/A

State: Texas County: Nueces Code: 355 Zip Code: 78402

3. CLASSIFICATION

Ownership of Property		Category of Property	
Private:	X	Building(s):	___
Public-Local:	___	District:	___
Public-State:	___	Site:	___
Public-Federal:	___	Structure:	X
		Object:	___

Number of Resources within Property

Contributing	Noncontributing
___	___ buildings
___	___ sites
1	___ structures
___	___ objects
1	0 Total

Number of Contributing Resources Previously Listed in the National Register: 0

Name of Related Multiple Property Listing: N/A

4. STATE/FEDERAL AGENCY CERTIFICATION

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this __X__ nomination ____ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property __X__ meets ____ does not meet the National Register Criteria.

Signature of Certifying Official Date

State or Federal Agency and Bureau

In my opinion, the property __X__ meets ____ does not meet the National Register criteria.

Signature of Commenting or Other Official Date

State or Federal Agency and Bureau

5. NATIONAL PARK SERVICE CERTIFICATION

I hereby certify that this property is:

___ Entered in the National Register
___ Determined eligible for the National Register
___ Determined not eligible for the National Register
___ Removed from the National Register
___ Other (explain): _____

Signature of Keeper Date of Action

6. FUNCTION OR USE

Historic: Defense Sub: Naval Facility

Current: Recreation and Culture Sub: Museum

7. DESCRIPTION

Architectural Classification: Other: *Essex*-class aircraft carrier

Materials:

Foundation: Steel
Walls: Steel
Roof: Steel
Other: N/A

Describe Present and Historic Physical Appearance.

U.S.S. *Lexington* (CV-16) 1943-1951

U.S.S. *Lexington* (CV-16) was launched in 1942 as a welded, steel hull, *Essex*-class aircraft carrier with an overall length of 872 feet and a length along the waterline of 820 feet. The flight deck ran 862 feet with an additional 4 foot 9 inch ramp curving down at each end. The flight deck width was 108 feet. The vessel's beam at the waterline was 93 feet and the depth of hull was 54 feet 8 inches with a draft of 28 feet 7 inches. Her design displacement was 33,440 tons, standard displacement was 27,100 and the full load displacement was 36,380 tons. Her eight Babcock and Wilcox boilers drove four Westinghouse geared steam turbines that delivered a speed of 32.7 knots. She carried a crew of 2,486.

Armament for CV-16 included twelve five-inch 38 caliber dual-purpose guns mounted in four MK 32 DP twin mounts and four MK 40 MOD 33 single mounts. These mounts were directed by two MK 37 fire control directors, one mounted forward on the island, the other aft, and eight MK 51 directors. The MK 37 directors were served by two MK 4 fire control radars. When launched she had a total of eight MK 2 quadruple 40-mm Bofors anti-aircraft platforms. Four quad 40-mm mounts were located on the island, two forward of the flag bridge and two aft of the funnel. She also had a single quad 40-mm mount on the stem, a single quad 40-mm on the fantail and one each on the port and starboard catwalks. When refitted at Puget Sound in 1944 seven outboard quad 40-mm mounts were added, five on the starboard hull and two on the port hull. These tubs were attached directly to the hull rather than on the catwalk and could be removed to allow passage through the Panama Canal. *Lexington* also carried sixty-two 20-mm anti-aircraft guns. *Lexington* had hangar deck capacity for 103 aircraft. *Lexington's* first air group (AG-16), consisted of 89 aircraft that included thirty-two F6F-3 Hellcat fighters, thirty-five SBD-5 Dauntless dive-bombers and eighteen TBF-1 Avenger torpedo bombers.[1]

Lexington's armor was designed to meet the requirements of resistance to fire from 6-inch guns at a distance of 11,250 to 18,700 yards.[2] The hull was protected by steel armor, although unlike British aircraft carriers of the time and the future *Midway* class, her flight deck was not armored. The hangar deck had an armored deck of 2.5 inches of Special Treatment Steel (STS) steel. The fourth deck was armored with 1.5 inch STS to further protect the engine and fire room spaces. Side belt armor varied from 2.5 to 4 inches. The steering spaces were enclosed with 4 inches of class B armor on the sides and 2.5 inches of STS on top. *Lexington* was the only *Essex*-class carrier to serve throughout the war without the "dazzle pattern" camouflage measure. Instead she wore the solid "Measure 21" paint scheme of Navy Blue until 1945 when she was repainted in “Measure 12” a two-tone system of Ocean Gray and Navy Blue.[3]

Lexington's flight deck arrangements included three aircraft elevators and three bomb lifts. The elevator layout included two hydraulic actuated "centerline" lifts measuring 48.3' x 44.3' each capable of lifting 28,000 pounds. These elevators were situated fore and aft of the island just off the centerline. The third elevator, on the port

---

[1] It was the practice early in the war to carry spare aircraft suspended above the hangar deck, thus the discrepancy between 103 standard complement versus the active squadron number of 89. The Air Group numbers are from the Action report 22 September 1943, describing the 18 September 1943 raid on Tarawa, *Lexington's* first mission. By the end of the war the fighter squadron had been increased to seventy-eight aircraft to meet the Kamikaze threat, while the torpedo and bomber units were comprised of fifteen aircraft each.

[2] Norman Friedman, *U.S. Aircraft Carriers: An Illustrated Design History* (Annapolis, MD: Naval Institute Press, 1985), 142.

[3] Stefan Terzibaschitsch, *Aircraft Carriers of the U.S. Navy*, 2d ed. (Annapolis, MD: Naval Institute Press, 1989), 75; Lawrence Sowinski, “Champions of the Pacific, the Essex Class Carriers, part 1.” *Warship*, vol. 2, ed. Robert Gardiner (London: Conway Maritime Press, 1978), 28-37; Lawrence Sowinski, "Champions of the Pacific, the Essex Class Carriers, part 2.” *Warship*, vol. 2, ed. Robert Gardiner (London: Conway Maritime Press, 1978), 96-103.

deck edge across from the island, measured 60' x 34' and had an 18,000 pound lift capacity. The hangar deck included large openings along the port and starboard side that could be closed with roller doors. These side openings provided ventilation which allowed starting aircraft on the hangar deck to warm up prior to their positioning on the flight deck. The hangar deck could be internally divided laterally into three isolated bays. Division was accomplished with asbestos curtains which could be closed from control stations in each bay. Aircraft maintenance was also divided by bay. Bay 3, in the stern was for heavy maintenance, Bay 2 was for flight operations and Bay 1, in the bow, was for storage and light maintenance.

While other *Essex* class carriers were equipped with a 1H 4A catapult on the forward hangar deck with hinged extensions on each side through the side ports, *Lexington's* hangar catapults were not ready by the time she was launched and were never installed. *Lexington* did have a 1H 4B catapult on the flight deck. Aircraft recovery was accomplished with a sixteen wire MK 4 arresting gear cable system later modified so that the wires were spaced from the stern to just aft of the island. The arresting wire system was augmented by a set of four wire cable barriers. Each barrier wire was suspended several feet above the deck to snag aircraft that missed the arresting system cables.

The ship's island is on the starboard side of the flight deck, halfway between the bow and stern. Island arrangements were placed on five decks comprised of a communications platform, flag bridge, navigation bridge, gun deck atop the pilothouse and an anti-aircraft platform. The island spaces provided the areas for control of ship operations. The *Essex*-class of aircraft carriers were not designed with radar fixtures in mind, thus each ship had a distinctive antenna array at different points in its career. *Lexington* as CV-16 carried a "bedspring" shaped SK long-range air search radar on a frame mounted to the starboard side of the funnel. An SC-2 air search antenna was mounted on the opposite side and a prototype height finder SM (CXBL) mounted in March 1943 sat atop the tripod mast. SG surface search antenna was also mounted on the mast. In 1945 *Lexington* was equipped with a SO-11 zenith search, prototype air search antenna designed to fill the blind spot directly above the carrier. This system proved unusable, however. *Lexington* also had five hinged radio antenna masts arranged along the starboard edge of her flight deck, three forward of the island and two aft.

U.S.S. *Lexington* (CVA-16, CVS-16, CVT-16, AVT-16) 1952-1991

Lexington's present appearance is a result of her 1953-55 conversion. As a result of the Korean War and the continuing "Cold War," the Navy found enough money to update some of its mothballed *Essex*-class aircraft carriers. The *Essex* hulls offered the navy three advantages; first they were well built, second they were plentiful and third, they were a cost effective alternative to building new carriers from the keel up. In 1953 *Lexington* entered dry dock to undergo conversions designated by the Ship Characteristic Board as plans SCB-27C and SCB-125. The purpose of these conversions was to adapt the carriers to the requirements of jet-age aircraft. The jet engine, introduced to U.S. aircraft with the Army Air Force P-80 Shooting Star in 1945, led to a significant increase in aircraft weight and a decrease in low speed handling characteristics. The Navy's jet propelled F2 Banshee introduced in 1949 had a takeoff weight of 16,200 pounds, a marked contrast to the standard Navy fighter of World War II, the F6F Hellcat, which weighed 12,441 pounds.

Lexington was dry-docked in 1953 to undergo conversion SCB-27C (which included modifications from the previous conversion plan SCB-27A). The modifications involved strengthening of the flight deck in the landing area, removing all 5-inch twin turrets from the flight deck and relocating new, open, single 5-inch mounts. Larger more powerful elevators were installed as well as fittings (such as electrical outlets) to permit operation of jet aircraft. Stronger bomb and ammunition lifts (to accommodate "special" or nuclear weapons) were installed. Three standby rooms for aircrews were transferred to below deck and an escalator from the standby room to the flight deck was added. The island was shortened and the bridge and stack combined and side armor

was removed at the waterline. A deck landing mirror and higher capacity aircraft cranes were added, and storage capacity for aviation fuel was increased. Blast deflectors behind the catapults were installed and hangar space was divided by two fire and splinter proof steel doors.

The SCB-27C specific changes included an increased beam of 103' at waterline (to increase stability), replacement of the Type H-4-1 hydraulic catapults with two Type C-11 steam catapults to handle heavier aircraft, and strengthening of the entire flight deck. As well, elevator number 3 (centerline lift) was replaced with a larger, folding, deck-edge lift, and hull bulges were added. SCB-125 conversions were incorporated during the same dry-dock period as the SCB-27C changes. These modifications added an angled flight deck, an enclosed "hurricane" bow, and improved dual arrester wire system (MK 7), which halved the number of arrester wires from sixteen to eight. The forward elevator length was increased to 70' 3", air-conditioning was added to certain areas such as the crew ready rooms, and crash barriers were strengthened. There were also improvements made to the primary flight control center and flight deck illumination as well as installation of improved soundproofing to island accommodations adjacent to the flight deck.

The conversions, completed in 1955, altered the outward appearance of *Lexington* but left the World War II interior spaces largely intact. *Lexington* went from a carrier with a straight deck, open bow and a low rat's nest of radar antenna, to an angled deck carrier with an enclosed hurricane bow and a single pole antenna mast. The angled deck was a significant change, adding additional flight deck space and catapults.

Despite these changes in her outward appearance, *Lexington* retains a strong sense of her World War II *Essex*-class heritage. Internal crew and machinery spaces are 90% unchanged from the original. Fixtures such as wall lockers, lighting, ventilation and passageway features date mostly from 1943. The machinery spaces (engines and boilers) date from 1943 as do the majority of the lesser machinery such as generators and pumps. The current owners of the ship have kept her in good repair, and have incorporated a minimum of changes to her historic structure. In 1997, *Lexington* received two sets of quad 40-mm anti-aircraft guns, partially restoring her World War II armament. Two changes of concern are the sealing over of the flight deck catapult track and the cutting of an access way hatch through the armored deck above the engine spaces to facilitate visitor access. The former is probably reversible; the latter is probably not. As well, on April 3, 2001 *Lexington* suffered a fire on the fifth level of the superstructure. The navigation and flag bridges were damaged and are currently closed to the public while the area is being restored.[4]

Lexington's current specifications, incorporating the above conversions, are a flight deck of 910 feet, waterline 889 feet, freeboard 52 feet, draft 30 feet, displacement 42,000 tons, and two C-11 steam catapults.

[4] Lety Laurel, "Lex is Open Today," *Corpus Christi Times Caller*, April 4, 2001.

8. STATEMENT OF SIGNIFICANCE

Certifying official has considered the significance of this property in relation to other properties:
Nationally: X Statewide:_ Locally:_

Applicable National Register Criteria:	A X B_ C_ D_
Criteria Considerations (Exceptions):	A_ B_ C_ D_ E_ F_ G_
NHL Criteria:	1
NHL Theme(s):	IV Shaping the Political Landscape 3. Military institutions and activities
Areas of Significance:	Military
Period(s) of Significance:	1943-1945
Significant Dates:	N/A
Significant Person(s):	N/A
Cultural Affiliation:	N/A
Architect/Builder:	Bethlehem Steel Company, Quincy Massachusetts
Historic Contexts:	Warships Associated with World War II in the Pacific (1985) Maritime Heritage of the United States (ongoing)

State Significance of Property, and Justify Criteria, Criteria Considerations, and Areas and Periods of Significance Noted Above.

Summary

The aircraft carrier U.S.S. *Lexington* (CV-16) qualifies for National Historic Landmark designation under Criterion 1, Theme IV- Shaping the Political Landscape, and Topic 3 – Military institutions and activities. The property may be considered under the theme study *Warships Associated with World War II in the Pacific*, completed in 1985 and the ongoing theme study *Maritime Heritage of the United States*.

Lexington is significant for her association with events of World War II, having participated in almost every major naval campaign in the Pacific from 1943 to 1945. She was a highly decorated warship, receiving numerous citations acknowledging her exemplary service.[5] As an *Essex*-class carrier, *Lexington* is also important for illustrating the development of aircraft carrier design, the refinement of multi-carrier operations, and the integration of aviation as a primary strike weapon in naval strategy.

Although naval aviation was utilized during World War I, aircraft assigned to warships generally provided only reconnaissance support for the fleet. The possibility of using planes as a naval strike weapon did not begin until the 1920s when aircraft capable of performing heavy bombardment against land or sea targets were built. Naval vessels capable of carrying several squadrons of such aircraft were developed concurrently. Thus the first eight carriers constructed by the U.S. Navy varied in size, speed, protection, and aircraft complement in order to provide the greatest number of carriers capable of launching the greatest number of air strikes, yet still comply with treaty-imposed tonnage restrictions. *Essex* (CV-9), the ninth U.S. carrier authorized, was a product of these earlier designs. A total of twenty-six *Essex*-class carriers were ordered by the U.S. Navy between February 1940 and June 1943 and twenty-four were completed. This was the largest class of carriers ever built by the United States and over half, including *Lexington* (CV-16), served as part of the Pacific Fleet during World War II.

Prior to World War II, the Navy had no practical battle experience for its carriers. It was in the Pacific Theater that aircraft carrier operations were developed and refined. Serving as mobile air bases, carriers could maneuver aircraft around the open waters and the scattered island chains of the Pacific. By employing a combination of scouting, fighter or bomber aircraft to control the enemy's air power, groups of carriers, screened by surface ships, could open the way for island invasions, cover and support amphibious operations, and help to hold the conquered areas. Thus carriers became an integral component of nearly every island campaign throughout the Pacific War. With aircraft that extended the fleet's firepower beyond the range of large caliber battleship guns, the carrier's status was elevated from reconnaissance platform to that of major surface combatant.

World War II and the carrier campaigns of the Pacific firmly established the role of aviation within naval operations and the aircraft carrier replaced the battleship as the Navy's primary strike weapon. With postwar advances in nuclear arms and jet propulsion, the *Essex* carriers were upgraded to facilitate these new weapons and aircraft. Thus with modifications, *Lexington* continued to serve through the Cold War where air power played an increasingly important role in the major wars and limited engagements of that period. As well, *Lexington's* final duty as an aviation training vessel serves to illustrate the Navy's continued emphasis on

[5] *Lexington* received battle stars for operations in the Gilbert Islands, Marshall Islands, Hollandia, the Marianas and Western Caroline Islands, Leyte, Luzon, Iwo Jima, and Third Fleet Operations against Japan. As well, she was awarded the Presidential Unit Citation, American Area Service Medal, Asiatic-Pacific Area Campaign Service Medal, World War II Victory Medal, Navy Occupation Service Medal, National Defense Service Medal, Armed Forces Expeditionary Service Medal, Philippine Liberation Campaign Ribbon, and the Republic of the Philippines Presidential Unit Citation Badge.

aviation as a means to carry out its mission.

Comparison of *Lexington* with Other *Essex*-Class Carriers

Only four of the *Essex*-class carriers commissioned during World War II remain extant. All others have been dismantled.[6] *Lexington* (CV-16), and *Yorktown* (CV-10) located at Patriots Point, South Carolina, *Intrepid* (CV-11) at New York, and *Hornet* (CV-12) at Alameda, California are preserved as floating museums; the latter three are National Historic Landmarks. All share a common history as part of the World War II *Essex*-class carrier campaigns in the Pacific and all were modernized during their careers to provide service for decades after the war. However, each made individual contributions to these historical events and the maturing of naval aviation from a doctrine of fleet support to one of primary fleet weapon. *Lexington* is unique from the other *Essexes* for having served in every pivotal Central Pacific campaign except Okinawa. As well, she had the longest service record, operating from 1943 to 1991 with nearly thirty of those years spent as the Navy's aviation training carrier.

Beginnings of Naval Aviation

In 1910 the U.S. Navy, recognizing the potential value that flight would have in naval operations, appointed non-flyer Captain Washington Irving Chambers to keep informed of developments in aviation. Chambers worked closely with Glenn Curtiss, an aircraft manufacturer, Eugene Ely, an associate of Curtiss, and Lieutenant T.G. Ellyson, the first naval aviator (trained in aviation by Curtiss at no cost to the government) to demonstrate the advantages of aviation to the Navy. Together they showed that planes could be launched at sea when the cruiser *Birmingham* and the armored cruiser *Pennsylvania* were fitted with platforms from which aircraft could take off. They also developed a plane that could land at sea and be hoisted by crane onto the deck of *Pennsylvania*. These early endeavors helped secure funds for the purchase of two Curtiss aircraft by the Navy. In 1911 through the efforts of Chambers and the superintendent of the Naval Academy, the first naval air station was established at Greenbury Point, near Annapolis. In 1913 the station was relocated to the navy yard at Pensacola and the first aviation exercises were conducted with the fleet. Between 1914 and 1917 the Navy concentrated on modifying existing warships to facilitate aircraft.[7]

Although the value of aviation in naval operations was recognized prior to World War I, it was during that conflict when British, Japanese and American navies began implementing the use of aircraft. Planes assigned to battleships and cruisers were used for scouting and reconnaissance, providing information about an enemy's fleet size and location. They could also assist in fire control during a surface ship engagement by observing where shots fell and conveying corrections, via radio, back to the firing vessel. As well, anti-submarine warfare benefited from patrolling aircraft that could locate surfaced submarines before they submerged to attack and prevent submerged submarines from resurfacing. In 1919 the General Board of the Navy recommended

---

[6] According to the Navy's online version of the Vessel Register (http://www.nvr.navy.mil/) *Bennington* (CV-20), commissioned in 1944, was disposed of by sale to the Defense Reutilization and Marketing Service (DRMS) for scrapping 01/12/94. Per 06/22/01 conversation, the Naval Historical Center Curator Branch confirms she was partially dismantled at Port Angeles, WA before being towed to Alang, India where she was broken up. *Shangri La* (CV-38), also commissioned in 1944, was disposed of by MARAD exchange 08/09/88. Per a 06/22/01 conversation, the Naval Historical Center Curator Branch confirms she was sold and scrapped in Taiwan. *Oriskany* (CV-34) was commissioned in 1950 and saw no World War II service. As of 07/30/97 the ship remains at Beaumont Reserve Fleet, Beaumont, TX and will eventually be sold for scrap. Per a 06/22/01 conversation with the Naval Historical Center Curator Branch she is the only other remaining *Essex*-class carrier and her condition is very poor. As well, CVs 1-8 were either lost during the war or scrapped shortly thereafter while the World War II-era CVL light carriers and the CVE escort carriers have all either been sold or scrapped. Of the three CVB large carriers completed after the war, only *Midway* (CVB-41) remains.

[7] Captain Richard C. Knott, ed., *The Naval Aviation Guide*, 4th ed. (Annapolis, MD: Naval Institute Press, 1985, second printing with corrections, 1988), 1-4.

establishing a naval air service and developing fleet aviation. In 1921 the Bureau of Aeronautics was established which helped to integrate aviation into the Navy. The 1920s proved to be a decade of extensive growth for naval aviation in the United States as aircraft were regularly based aboard battleships and cruisers and the first aircraft carriers were developed. As well, the use of air support for expeditionary forces was explored and aircraft capable of carrying sufficient munitions, were built allowing navies to begin considering the possibilities of using aircraft as strike weapons against land targets or other warships.[8]

Concurrent to the introduction of aviation into naval operations was a prevailing strategy that emphasized the use of naval power to gain control of the sea while denying its use to the enemy. Formulated in the late nineteenth century by naval historian and strategist, Alfred Thayer Mahan, U.S. Navy, "command of the sea" was achieved by drawing the enemy surface fleet into a decisive sea battle that would result in its total defeat.[9] With elimination of the enemy fleet, that nation's coasts and ports were open to invasion or blockade and its shipping left unprotected. As well, the victor nation succeeded in securing its own shoreline and commerce from a potential belligerent force. Under this strategy a navy was used primarily to engage and defeat an enemy at sea, away from domestic shores. Coastal defense or direct attacks to the enemy's shipping were secondary operations. Central to the success of such warfare was the possession of a battleship navy in which armored surface ships with large caliber guns were the main weapons used against an enemy navy or to carry out shore bombardment in support of invasion. Early naval aviation was thus viewed as a secondary weapon, a useful technology to provide support for the fleets of battleships, cruisers, and other major surface combatants.[10]

The concept of the battleship navy as the key to a nation's security dominated naval strategy from the late nineteenth century up through the opening phases of World War II. Such thinking was adopted by many of the world's major maritime powers including Great Britain, Japan, the United States, Germany, and Russia. Its effectiveness had been demonstrated in at least two notable naval confrontations at the turn of the century. In both these incidents, the victorious navies had engaged the enemy fleet and through superior tactics and firepower neutralized the opposing force, secured their own shores, and made territorial gains. During the Spanish-American War, it had been through a decisive sea battle in 1898 that the United States defeated the Spanish Navy in the Philippines and expanded her sphere of influence not only to these islands but also to Guam and American Samoa as well as Puerto Rico and Cuba. During the Russo-Japanese War, Japan also gained her place among the world's naval powers. As a small island nation, Japan had experienced invasion and warfare with her continental neighbors since the thirteenth century. Fearful of this history of aggression, Japan began to modernize her navy and establish a defensive barrier of annexed Russian and Chinese island-territories during the last quarter of the nineteenth century. During the Sino-Japanese War, 1894-1895, she gained Port Arthur in Manchuria, China as well as the islands of Formosa and the Pescadores.[11] Having temporarily lost Port Arthur to Russia, it was through her profound defeat of the Russian Navy at the Battle of Tsushima, 1905, that she regained control over the important seaport and also acquired southern Sakhalin from Russia.[12] With the benefits of a superior navy clearly apparent, naval ship building policies became increasingly competitive among the major maritime powers. At the end of the nineteenth century there existed an open international arms race in which the United States, Japan, and Germany competed with the leading naval power, Great Britain, to establish a formidable presence at sea. World War I, however, eliminated Germany from this race and established the desire among the victor nations to maintain peace through naval arms limitation.[13]

---

[8] Knott, *Naval Aviation Guide*, 9-11,13; Friedman, *U.S. Aircraft Carriers*, 8-11.
[9] Discussed in the 1890 publication *The Influence of Seapower upon History, 1660-1783*, and subsequent writings by Mahan.
[10] Ronald H. Spector, *Eagle Against the Sun*, MacMillan Wars of the United States Series, ed. Louis Morton (New York: The Free Press, 1985), 19; and E. B. Potter, ed. *Sea Power* (Englewood Cliff, NJ: Prentice-Hall, Inc., 1960), 378-379.
[11] The Pescadores are situated between mainland China and Formosa, currently Taiwan.
[12] Potter, *Sea Power*, 347, 350-365.
[13] Ibid., 379-382, 480-481.

Although Great Britain, Japan and the United States had all explored naval aviation during World War I, it was the British who took the lead in aircraft carrier development and formulated a body of knowledge which the others would adopt and modify for their own use. The Royal Navy was the first to assign aircraft to ships on a regular basis and by the end of World War I had completed two experimental carriers. By the 1930s under the threat of another war with Europe, five more carriers were constructed. Ultimately, Britain's carrier operations during the forthcoming conflict would emphasize escort protection of cargo and troopships moving along the sea-lanes between bases in the British Isles and her colonies throughout the Mediterranean, Middle East, India, and the Pacific. Because Royal Navy carrier operations were often conducted within more confined waters these vessels were highly vulnerable to enemy bombings from land-based aircraft. As such, British carriers had armored decks (a design detail not duplicated in American carriers until the end of the war) to withstand such attacks in addition to dual-purpose guns, anti-aircraft batteries and any protection their planes could provide. Such geographic considerations that drove British carrier design and strategy differed somewhat for Japan and the United States.[14]

At the close of World War I, Japan, having sided with Great Britain and France, gained control over the former German possessions in the Central Pacific that included the Marianas, Marshall, and Caroline Islands. These strategically placed island chains stood directly across the U.S. route to the Philippines thus establishing the potential for conflict. The possibility of a Japanese attack on America's holdings in the Central Pacific was addressed in the RAINBOW strategic war plan, under the code-name ORANGE.[15] The ORANGE plan was one of a number of contingency war plans developed by a joint U.S. Army and Navy Board in the early twentieth century. After World War I, it was updated to reflect the current world situation. The ORANGE plan of the 1920s and 1930s assumed that the Philippines, strategically placed between Japan and the resources of the Netherlands East Indies[16], would be attacked. It called for the U.S. garrisons in the Philippines as well as Guam, Midway, and Wake, to hold the islands until the Navy's forces arrived to engage and eliminate the Japanese fleet. In crossing the Pacific, the U.S Navy would be required to establish a series of island bases to facilitate en route refueling and repair. They would also need to secure bases that placed them within reach of Japan's major naval installations. Under the ORANGE plan, the aircraft carrier increased the battle fleet's reconnaissance range and supported its mission to attack and secure strategic island targets within Japan's sphere of influence. As such, the U.S. began developing carriers to support fleet operations in the open waters of the Pacific. In response, Japan began developing her own force to both combat a U.S. carrier fleet and to aid in carrying out an expansionist policy throughout the South and Central Pacific and Southeast Asia.[17]

Development of Aircraft Carriers in the United States

The aircraft carrier became a component of the U.S. Navy fleet with the conversion of the collier *Jupiter* (AC-3) to the experimental carrier *Langley* (CV-1) in 1922. Subsequent carrier development would be highly influenced, until the outbreak of World War II, by the arms limitation treaties stemming from World War I. The 1921 Washington Naval Conference had been the first in a series of attempts by the United States, Great Britain, Japan, France, and Italy to maintain peace by limiting the total warship tonnage for each nation. The resulting

---

[14] Reynolds, *Fast Carriers*, 2-4.

[15] Under the RAINBOW strategic war plan, each hypothetical enemy was assigned a color; for example: Great Britain - red, Germany - black, Mexico - green, Japan – orange; Spector, *Eagle Against the Sun*, 55-56.

[16] The former Dutch colony consists of the islands that currently make up the Independent Republic of Indonesia, established in 1949.

[17] Spector, *Eagle Against the Sun*, 55-56; Friedman, *U.S. Aircraft Carriers*, 13; Reynolds, *Fast Carriers*, 5; Samuel Eliot Morison, *The Rising Sun in the Pacific 1931 – April 1942*, vol. 3, *A History of United States Naval Operations in World War II* (Boston: Little, Brown and Company, 1948; reprint, 1988), 7-8.

1922 treaty established a scrapping program and restricted new capital ship construction in an attempt to limit the warship tonnage of the United States and Great Britain to 500,000 tons each, Japan to 300,000 tons, and France and Italy to 175,000 tons each. The treaty also included clauses that prevented the arming or fortifying of bases in Pacific island possessions (except for the Japanese home islands and the American Hawaiian islands). The conference also endorsed (accepted by the United States, Great Britain, Japan, France, Italy, Netherlands, Belgium, Portugal, and China) an open door policy with China that acknowledged her territorial integrity. However, subsequent naval disarmament conferences throughout the 1930s were limited in their effectiveness and ultimately the treaty process as a means to curb the naval arms race came to an end.[18]

A warship can be thought of as a series of components that add up to the vessel's total tonnage or displacement. Thus, the tonnage limits imposed by the Washington Naval Treaty had a direct effect upon carrier size and development. The basic factors that dictate warship design include (1) dimension, (2) armament, (3) armor, (4) speed, and (5) endurance or cruising range. An increase in any one of these five factors will increase the overall tonnage, as well as cost, unless there is a reduction in one of the other factors. Every warship is designed according to a series of strategic requirements that reflect the vessel's function within naval operations. They must also be constructed within budgetary limits. The dimensions of the ship affect not only its costs but also its accessibility to existing harbors, docks, and canals and thus its geographic mobility. A warship must also carry appropriate armament to allow it to defeat an enemy or survive an enemy assault. However, guns, armor, and aircraft add weight and dimension as well as cost. Heavy protection can therefore affect operational speed, cruising range, and fuel consumption that are dictated by the efficiency of the power plant. Powerful propulsion machinery can increase weight, take up valuable internal munitions and fuel storage space and of course, add to the cost. Warship design, therefore, requires setting priorities and working through a series of compromises in order to meet strategic and budgetary requirements.[19] In addition to the pre-World War II treaty considerations and economic factors that affected capital ship construction, fleet exercises, and ultimately wartime operational experience had a significant impact on carrier development.

For the United States, the Washington Naval Treaty resulted in the cancellation of six battle cruisers scheduled for construction. The treaty also set the limits on new carrier construction at 27,000 tons each. Carrier conversions were set at 33,000 tons with an additional 3,000 tons allowed for protection against air and underwater attack as authorized under the treaty's capital ships modernization clause. Total carrier tonnage for the United States was set at 135,000 tons. In an attempt to salvage the work that had already begun on the *Lexington*-class battle cruisers, Congress authorized the conversion of two partially constructed hulls. Completed in 1928, these vessels became the second and third carriers of the U.S. Navy fleet, *Lexington* (CV-2) and *Saratoga* (CV-3). The two 36,000-ton *Lexington*-class carriers were 888 feet overall and supported a compliment of sixty-three aircraft. They were designed to operate at high speeds within a fleet of fast-moving surface combatants.[20]

With the conversion of *Lexington* (CV-2) and *Saratoga* (CV-3) approximately 69,000 tons remained for additional carriers. Based on the *Lexington* class, the next desired carrier would provide high speed, high airplane carrying capacity, and suitable armor and armament. Of the five 13,800-ton carriers proposed by the

---

[18] Potter, *Sea Power*, 480-484.

[19] Warship requirements were referred to as "characteristics" within the U.S. Navy. Initially, characteristics were developed by the Navy General Board based on evidence derived during hearings where both technical bureaus and seagoing officers provided data. However, by 1945 the characteristics function was absorbed by a Ship Characteristics Board within the office of the Chief of Naval Operations. Norman Friedman, *Battleship Design and Development 1905-1945* (New York; Mayflower Books, 1978), 7, 14, 19-21.

[20] Friedman, *U.S. Aircraft Carriers*, 43; Terzibaschitsch, *Aircraft Carriers*, 30-31, 39; Roger Chesnau, ed., *Conway's All The World's Fighting Ships 1922-1946* (London: Conway Maritime Press, 1980), 101.

Navy for a five-year building plan (1929-1933), Congress approved one construction. *Ranger* (CV-4) entered service in 1934 and was the first U.S. carrier built from the keel up. At 769 feet overall, she was significantly smaller than the *Lexington* class. However, *Ranger* had much larger hanger area for greater aircraft stowage and could support some seventy-six aircraft. This was achieved by reducing armor and armament and sacrificing speed. With her lower propulsion power, *Ranger* was designed to operate within slower moving battle fleets.[21]

As with the previous carriers, the *Yorktown* class was limited by treaty-imposed tonnage restrictions. However, they differed from their predecessors in that their design was based on the experience gained by the large carriers *Lexington* and *Saratoga*, and the small carrier *Langley* in fleet exercises rather than war games data. Under the remaining tonnage available, a maximum of two 27,000-ton carriers could be constructed. Studies for 15,000-, 20,000-, and 27,000-ton ships that emphasized aircraft capacity, and the protection, armament, and speed that had been lacking in *Ranger* were developed. The final design produced two 20,000-ton ships of 809 feet overall. The *Yorktown* (CV-5) and the *Enterprise* (CV-6) were both launched in 1936. Remaining tonnage was allocated to the construction of another small carrier, *Wasp* (CV-7), launched in 1939. *Hornet* (CV-8), a slightly improved version of the *Yorktowns*, was launched in 1940 when treaty limitations were no longer in force. The *Yorktowns*, more heavily armored and with increased speed as well as a capacity for eighty to ninety aircraft, were essentially an improved version of *Ranger*. As well, it was from their design that the next and largest group of U.S. Navy aircraft carriers was derived, the *Essex* class.[22]

Development of the *Essex*-class Aircraft Carrier and Carrier Operation

Between 1939 when studies for the *Essex*-class carriers began and April 1941 when the first vessel, *Essex* (CV-9) was laid down, war had erupted in Europe, the Pacific was in turmoil, and United States entry into a conflict against Japan and the European Axis powers was just months away. Within this span of time Germany had occupied most of Europe and gained Italy and Japan as allies under the Tripartite Pact where the three countries pledged mutual military support and recognized each other's regional supremacy. Great Britain was left to face the Axis powers alone, and her colonies throughout the Middle East, Asia, and the Pacific as well as those of the Netherlands and France were left with minimal defenses. Tensions were mounting in the Pacific, as well, as Japan continued to expand her influence throughout the area. Between 1931 and 1939, Japanese forces had occupied Korea, Manchuria and Hainan Island, and carried out air raids and other acts of aggression against cities on the Chinese mainland. As well, they occupied the Spratly Islands held by French Indochina.[23] By August 1940, with permission of Vichy France, Japan began to assert more control over Indochina and showed a keen interest in the resources of the Netherlands East Indies, Malaysia, Borneo, Singapore, and Burma. In November 1940, Japan began fortifying the Marshall and Caroline Islands with airfields and seaplane bases. With a preference not to be drawn into conflict, the United States initially sought to protest Japan's military expansion through economic sanctions. In July 1940 Congress began restricting the export of resources associated with industrial production and wartime operations in Japan. All movement of such goods was halted in July 1941 through an executive order freezing Japanese assets in the United States. Concurrently, the United States sought to support Great Britain's European war by supplying those resources and products that would facilitate an Axis defeat.[24]

With a strong possibility of a two-ocean conflict on the immediate horizon, development of the *Essex*-class

---

[21] Friedman, *U.S. Aircraft Carriers*, 58-62, 68-72; Terzibaschitsch, *Aircraft Carriers*, 3-9; Chesneau, *Conway's All the World's Fighting Ships*, 102.

[22] Friedman, *U.S. Aircraft Carriers*, 79-81, .88-93; Terzibaschitsch, *Aircraft Carriers*, 44; Chesneau, *Conway's All the World's Fighting Ships*, 102.

[23] Vietnam, Laos, and Cambodia make up the former French colony.

[24] Morison, *The Rising Sun*, vol. 3, 14-16, 37-39, 44-48, 58-60; Spector, *Eagle Against the Sun*, 61, 63, 64-69.

carriers reflects the United States' urgent need to prepare for such a confrontation. Although no longer limited by treaty tonnage restrictions as with previous classes, there was a pressing need for carriers and thus little time to develop a design radically different from a proven predecessor, the *Yorktown* class.[25] Keeping in mind that ship-based air power would play an important role in naval warfare, the Navy's major concern affecting the *Essex* design was the ship's capacity to carry and operate aircraft. Under the desired characteristics developed, the new class would be capable of carrying four squadrons, a fifth reserve squadron, and sufficient aircraft replacement parts. As well, the *Essexes* would be fitted with armor and armament capable of withstanding bomb and torpedo attack. It was also important that they be able to accommodate wartime advancements in aircraft technology, anti-aircraft weapons, and radar. Based on the *Yorktown* class, six designs were developed between July 1939 and January 1940. The design that was chosen would result in a ship that had a straight flight deck, as with all her predecessors, and was heavier than the *Yorktown* at 27,000 tons. With an overall length of 872 feet it would support a complement of ninety-one aircraft. Although sacrificing the extra weight of flight deck armor for increased speed, like the *Yorktowns*, *Essex* had an armored hanger deck and 4-inch belt armor. Armament specifications included twelve 5-inch 38 caliber dual purpose guns, thirty-two 40-mm and forty-six 20-mm anti-aircraft guns along with two Mark 37 and eight Mark 51 directors for fire control. The *Essexes* were initially designed without radar specifications; these would be subsequently added through wartime modifications and upgrades. In early 1940 four *Essex*-class vessels were ordered (CVs 9-12). By May 1940 seven more were authorized (CVs 13-19) in conjunction with a 70% expansion of the Navy. In December 1941, CV-20 and CV-21 were authorized followed by CVs 31-40 in August 1942 and CVs 45-47 in June 1943. CV-35 and CV-46 were cancelled after the war.[26]

The *Essexes* as authorized in the early phases of World War II underwent upgrades and modifications throughout the course of the conflict as combat experience was gained and wartime technologies advanced. One of the major wartime modifications affecting the external design of the *Essexes* resulted from the need to increase the number of anti-aircraft guns carried by the ships. This lead to a redesign of the bow, making it longer and wider and shortening the flight deck by 11 feet forward and 7 feet aft in order to accommodate the additional anti-aircraft batteries. In March 1943 the Secretary of the Navy approved these alterations. With several carriers currently under construction, not all could receive this modification without significantly delaying delivery of the class. The "Short Hull" group (CVs 9-13, 16-18, 21, and 31) were completed without the modification; the remaining authorized carriers were altered and became the "Long Hull" group. Combat experience also drove a need for advances in the radar and radio technology that was used to locate enemy forces, coordinate carrier movements, and to direct offensive and defensive tactics. As such, more specialized radars were developed to fine-tune their detection and identification function. Ship-to-air and ship-to-ship long-range and short-range communications were also upgraded to increase the number of frequencies for transmission and reception. These improvements meant more radio channels, radio sets, radar sets, as well as antennas all of which had to be arranged and rearranged within the upper levels of the carrier superstructure in a manner that would ensure their effectiveness and minimize interference between the different signals.[27]

Wartime modifications helped to improve the carrier's ability to withstand enemy assault and inflict damage upon enemy forces. With speeds that allowed them to outrun most enemy combatants and keep pace with the Navy's fast fleets of cruisers and destroyers, the *Essex*-class carriers were most vulnerable to other carrier air attack. Advanced communication, coordinated through the carrier's central location for synthesizing tactical data –the combat information center (CIC), became the key to successful fast multi-carrier task force operations.

---

[25] Friedman, *U.S. Aircraft Carriers*, 201.
[26] Terzibaschitsch, *Aircraft Carriers*, 57-58; Friedman, *U.S. Aircraft Carriers*, 136, 144-145; Alan Raven, *Essex-Class Carriers* (Annapolis, MD: U.S. Naval Institute Press, 1988), 3-4, 9.
[27] Raven, *Essex-Class Carriers*, 8, 10-11; Friedman, *U.S. Aircraft Carriers*, 144-145, 151.

With radar and radio used to track ships and aircraft and to coordinate air group operations and anti-aircraft fire, carrier groups could conduct long-range air offensives while being assured of mutual anti-aircraft protection against enemy air and surface attacks. No longer considered just a reconnaissance platform, the *Essexes* elevated carriers to the status of major surface combatant. With aircraft that extended the fleet's firepower beyond that of battleship guns, the *Essex*-class carriers were to become the primary strike weapon for World War II operations in the Pacific Theater.[28]

In addition to the *Essex* class, which served as the Navy's primary fleet carrier, the United States built two other classes of carriers. These consisted of an emergency light carrier designated CVL, and an escort carrier, the CVE. As well, the design of a large, armored-deck carrier, designation CVB, was developed. In 1941, the United States had seven carriers but by early 1942 all but one had become casualties of the war. The *Independence*-class light carriers (CVLs 22-30) were therefore developed to meet the Navy's pressing demand for carriers while the *Essex* class was under construction. Ordered in June 1942, all nine carriers, converted from *Cleveland*-class light cruiser hulls, were completed by the end of 1943. At 10,000 tons with a compliment of thirty aircraft, the light carriers served with the fast fleet groups in air combat and aircraft transport missions. The escort carrier program included four major classes of vessels: *Sangamon*, commissioned in 1942, *Casablanca*, commissioned 1943-1944, *Bogue*, commissioned 1942-1943, and *Commencement Bay*, commissioned 1944-1945. Close to ninety escort carriers were constructed for the use of both the U.S. and Royal Navies in convoy and trade route protection as well as movement of expeditionary forces and support of landing operations in the Pacific. Plans for the *Midway* class of large carriers began in 1941 after Great Britain's wartime carrier experience had illustrated the effectiveness of deck armor against aerial bombardment. The first contract went out in 1942. However, the three ships of this class completed, *Midway* (CVB-41), *Franklin D. Roosevelt* (CVB-42), *Coral Sea* (CVB-43), were not available until 1946-1947, and did not participate in World War II.[29]

Early Carrier Operations in the Pacific 1941-1942

The December 7, 1941 attack on Pearl Harbor was designed to prevent the U.S. Pacific Fleet from interfering with Japan's plans to occupy areas of Southeast Asia and gain control of the region's natural resources that were essential to industrial and military production. In order to maintain unhindered access to this area, Japan sought to establish a protective island barrier running from the Kuriles in the north through the Central Pacific, around the Netherlands East Indies to the Burmese-Indian border. The comprehensive plan called for strikes to neutralize U.S. forces in Hawaii followed by the occupation of Wake, Guam, and strategic points in the Philippines and Malaysia. Once this phase was completed, Japan would move towards consolidating and expanding these Southeast Asia holdings to include Singapore, Sumatra, Borneo, Java and other key islands.[30] Although a number of surface combatants were destroyed or significantly damaged during the Japanese aerial assault of Pearl Harbor, untouched were the submarines, repair shops, power plant and fuel tanks as well as those vessels at sea during the attack. These included carriers *Lexington*, (CV-2), *Saratoga* (CV-3), and *Enterprise* (CV-6). As well, *Langley* (CV-1) was in the Philippines while *Ranger* (CV-4), *Yorktown* (CV-5), *Wasp* (CV-7) and the newly commissioned *Hornet* (CV-8) were stationed on the East Coast.[31]

---

[28] Reynolds, *Fast Carriers*, 54-55.

[29] Friedman, *U.S. Aircraft Carriers*, 159-160; Terzibaschitsch, *Aircraft Carriers*, 97, 114; Chesneau, *Conway's All the World's Fighting Ships* 105.

[30] Morison, *The Rising Sun,* vol. 3, 80-82, 164,187; Reynolds, *Fast Carriers*, 8-10.

[31] Sunk were: *Oklahoma* (BB-37), *West Virginia* (BB-48), *Utah* (AG-16), *Arizona* (BB-39), *California* (BB-44). Damaged were: *Tennessee* (BB-43), *Nevada* (BB-36), *Pennsylvania* (BB-38), *Vestal* (AR-4), *Regal* (AR-11), *Tangier* (AV-8), *Curtiss* (AV-4), *Dobbin* (AD-3), *YDF-2*, *YG-17*, *Cassin* (DD-372), *Downes* (DD-375), *Helm* (DD-388), *Hull* (DD-350), *Oglala* (CM-4), *Helena* (CL-50), *Honolulu* (CL-48), *New Orleans* (CA-32). Pacific Fleet ships out on mission in addition to the carriers included: heavy cruisers

The first strikes against the Philippines, Wake, and Malaysia began December 8 followed by Guam on December 10. Guam fell the same day and Wake held out until the end of the month. In the Philippines, portions of the U.S. Navy Asiatic Fleet began to evacuate to Borneo while those American forces remaining behind entered into a six-month, losing battle to hold the islands. In early December, the Japanese had also occupied the Gilbert Islands and were preparing for landings at Rabaul, New Britain. In late January, Japan secured Borneo after the Naval Battle of Balikpapan (January 23-25). By February 15, Singapore had surrendered and southern Sumatra, the Celebes, Ambon, Timor and Rabaul were all in enemy hands. The Battle of the Java Sea (February 27) in which *Langley* (CV-1) was sunk, followed by the Battle of Sunda Strait (February 28 - March 1) secured the surrender of Java. Rangoon, the chief seaport of Burma, and the Andaman Islands, 250 miles south of Rangoon, were occupied by Japanese forces on March 8 and March 23, respectively. As well, the Japanese had landed at Lae and Salamaua on the Papua Peninsula in New Guinea and were conducting air strikes against Port Moresby, also on the Papua Peninsula, and Tulagi in the Solomon Islands. On May 6, 1942 the Philippines finally capitulated. Thus, within the first five months of 1942, Japan's sphere of influence encompassed the Kuril Islands to the north, the Marianas, Marshalls, Gilberts, and Carolines in the Central Pacific, the Philippines, Indochina, Thailand, Burma, Malaysia, Borneo, Netherlands East Indies, and portions of China, New Guinea and the Bismarck Archipelago.[32]

During this period the American, British, Dutch, and Australian forces that remained in the Pacific worked to consolidate their commands and coordinate defense of their territories. With limited resources the combined forces could not halt Japan's conquest of the area. However, several carrier raids conducted by the U.S. Navy did help slow the process and also reveal weaknesses and strengths in the current methods for carrier operations. These missions were generally built around a task force consisting of one carrier plus escorts for protection. The composition of each task force changed with the requirements of each mission. Task Force 17 (TF 17) was organized around *Yorktown* (CV-5) and used to secure the U.S. presence on Samoa. From Samoa Task Force (TF 8), built around *Enterprise* (CV-6), and TF 17 (*Yorktown*, CV-5) conducted raids on Japanese bases in the Marshalls and Gilberts to protect Fiji from enemy attack. Task Force 11 (TF 11) (*Lexington*, CV-2) carried out raids on Rabaul in February which helped delay Japanese landings on Lae and Salamaua in New Guinea. Then in March, TF 11 accompanied by TF 17 (*Yorktown*, CV-5) inflicted damage to the Japanese forces in the Lae-Salamaua area. In April Task Force (TF 16), built around *Enterprise* (CV-6) and *Hornet* (CV-8) carried out raids on Tokyo in a joint Army-Navy effort lead by Army Air Force Lt. Col. James H. Doolittle and Admiral William F. Halsey. Under this arrangement the *Enterprise* would provide defensive fighter coverage for *Hornet* as she carried the Army's B-25 bombers that would be launched from her flight deck to conduct the assault on Tokyo. This was the first time that U.S. Navy had utilized multiple carriers as part of a single task force.[33]

Following her rapid advance through the Pacific, Japan could further secure her gains and move towards establishing additional controls around India, Australia, or other Central Pacific islands. Because Rabaul, New Britain and points along the northern shores of New Guinea were already under their occupation, Japanese command chose to further isolate Australia by cutting British and American supply and communication lines in the South Pacific. This would entail securing access to allied-held Port Moresby on the southern shores of New Guinea and then advancing southeast into the Solomon Islands, New Hebrides, New Caledonia, Fiji and Samoa.

Chicago, *Portland*, *Astoria*, *Indianapolis*, *Minneapolis*, *Pensacola*, *Louisville* while the battleship *Colorado* and carrier *Saratoga* were stationed on the West Coast. Robert J. Cressman, *The Official Chronology of the U.S. Navy in World War II* (Annapolis, MD: Naval Institute Press, 2000), 60-61; Morison, *The Rising Sun*, vol. 3, 125, 143, 211-213.

[32] Potter, *Sea Power*, 659-661. Morison, *Rising Sun*, vol. 3, 166-169, 184-191, 198-206, 277-278, 285-291, 363, 357-358, 379, 381-386.

[33] Marc D. Bernstein, "The Early Carrier Raids: Proving Japanese Vulnerability," *Naval Aviation News* (March-April 1992): 27-29.

Japan's naval leaders also sought to remove the threat that U.S. carrier forces had presented to their recent gains in the Pacific. As such, it was decided that in addition to the New Guinea-Solomons drive, engagements against Midway and the Aleutians would also be initiated in order to draw the U.S. carriers out into battle.[34]

By late April, Japan was ready to begin the southeast advance and strikes against Port Moresby and Tulagi in the Solomons were initiated. In response, a U.S. carrier group organized around *Lexington* (CV-2) and *Yorktown* (CV-5) was sent into the southeast area of the Coral Sea to halt the two Japanese carrier forces headed towards Tulagi.[35] The resulting Battle of the Coral Sea (May 4-8, 1942), consisting of a series of air strikes, was the first carrier battle where opposing ships never came within sight of each other. American losses from enemy air strikes included the *Neosho* (AO-23), *Sims* (DD-409), and *Lexington* (CV-2). American air power, however, was able to inflict enough damage to enemy carriers to convince Japan to postpone the Port Moresby invasion for lack of sufficient air cover to protect the landing forces. Neither a victory nor a defeat for either side, this was the first time the Japanese advance through the Pacific had been successfully challenged.[36]

The outcome of Coral Sea had no effect on the Aleutian and Midway campaign plans. Although the Japanese succeeded in occupying portions of the Aleutians after initial strikes on June 3, the Battle of Midway (June 4-7, 1942) was the first major defeat for Japan. For the United States, the *Yorktown* (CV-5) and the destroyer *Hammann* (DD-412) were sunk against Japan's loss of four carriers and one cruiser.[37] As well, the U.S. losses in aircraft were significantly lower compared to the four Japanese carriers that were each lost with their entire complement of planes. Casualties on the Japanese side were also greater and included a significant number of experienced pilots. With such high losses in materials and lives, Japan's margin of military superiority and their rapid advance through the Pacific were checked. Plans to move beyond the Solomon Islands were cancelled and Japan focused on strengthening current holdings. This gave the allied forces the opportunity to introduce some offensive measures into what had been a purely defensive strategy in their campaign to maintain some control in the Pacific.[38]

It was felt that Japan's major air base on Rabaul would be a key launching point for any forthcoming advances. Allied control over this facility would ultimately open the way for a southern advance into the Philippines and subsequent assaults against Japan. As such, the Allies developed a strategy whereby they sought to establish a series of airfields and advance bases through the Solomons, New Guinea, and the Bismarck Archipelago that could support a drive towards the capture of Rabaul. The first phase of this campaign focused on securing Guadalcanal, Tulagi, and Santa Cruz on the eastern end of the Solomons and Buna on Papuan Peninsula in New Guinea. With operations being conducted out of allied-held Port Moresby, the Papuan campaign would not require extensive additional naval support. However, taking Guadalcanal and the eastern Solomons would first require amphibious landings supported by carriers and surface ships. Once the landing sites were secured, airfields would be constructed to provide land-based air cover for subsequent landings further up the chain. As each island was secured, bases would be established that would ultimately bring air power to within range of Rabaul. Operations began August 7, 1942 with landings in the Solomons and continued until the Japanese withdrew north from the Papuan Peninsula in January 1943 and began evacuating Guadalcanal the following

---

[34] Potter, *Sea Power*, 662-663.

[35] *Lexington* (CV 2) and *Yorktown* (CV 5) were part of Task Group 17.5 (TG 17.5) and included a protection screen of four destroyers and a fueling group of two oilers and two destroyers. TG 17.5 was part of the larger Task Force 17 that included TG 17.2, an attack group of five cruisers and five destroyers, and TG 17.3, a support group of three cruisers and two destroyers. Samuel Eliot Morison, *Coral Sea, Midway, and Submarine Actions, May 1942 – August 1942*, vol. IV, *A History of United States Naval Operations in World War II* (Boston: Little, Brown and Company, 1949; reprint, 1988), 19.

[36] Potter, *Sea Power*, 664-667.

[37] Morison, *Coral Sea*, vol. 4, 87.

[38] Potter, *Sea Power*, 686-688.

month. In the six months it took to secure the waters around Guadalcanal and the eastern Solomons there were six major naval battles resulting in the loss of carriers *Wasp* (CV-7) and *Hornet* (CV-8) and over two dozen surface combatants in addition to auxiliaries and patrol boats. As well, Japan had expended tremendous military resources at Guadalcanal. Unable to recover from these losses Japan, after Guadalcanal, essentially fought a defensive war for the remainder of the conflict. Conversely, the allied forces, backed by increasing military production, were able to initiate and maintain an offensive drive that would result in the defeat of Japan.[39]

With the first phase of the Rabaul campaign completed, there was a pause in military operations as allied leaders developed a basic overall strategy for the offensive against Japan. In January 1943 the Combined Chiefs of Staff agreed to allocate a greater percentage of men and material to the Pacific and by May, it was decided that the American Joint Chiefs of Staff would lead the campaign. The basic structure of the campaign involved three major drives across the Pacific carried out by the Central, South, and Southwest Forces of the Navy's Pacific Fleet in conjunction with the Army's forces for the Southwest Pacific Area. The Central Pacific Force was to advance from Pearl Harbor towards securing the major Japanese naval base on Truk in the Caroline Islands. The South Pacific Force in the Solomons and Southwest Pacific Force in New Guinea were to cooperate in a drive to Rabaul with the Southwest Pacific Force then continuing on to secure the north coast of New Guinea. Under a fourth drive, North Pacific Forces were to liberate the Aleutians from Japanese occupation forces.

Prior to World War II, the U.S. Navy was organized on a task basis. Under the jurisdiction of a Commander in Chief, the United States Fleet was divided into a Battle Force (consisting of battleships, destroyers, and some cruisers), based in the Pacific and a Scouting Force (consisting mostly cruisers to carry out fleet reconnaissance) stationed in the Atlantic. Each task-based force was organized into vessel types that were further divided into flotillas, squadrons, or divisions. Each vessel type commander reported to the force commander who in turn reported to the Commander in Chief, the United States Fleet. With the advent of war in Europe and a pending conflict in the Pacific, a 1941 Executive Order reorganized the United States Fleet into three area fleets – the United States Pacific Fleet, the United States Atlantic Fleet, and the United States Asiatic Fleet. This organizational structure was designed to allow for more flexibility in the composition of forces within the fleets in order to meet changing international conditions. By early 1942 the Asiatic Fleet no longer existed and by early 1943 the Pacific and Atlantic Fleets were organized into numbered fleets consisting of type forces (for administrative purposes) and task forces (for operational purposes) assigned to geographic areas. Types were subdivided into flotillas, squadrons, and divisions for distribution among task forces.[40]

Under Fleet Admiral Chester W. Nimitz, commander of the U.S. Pacific Fleet and the Pacific Ocean Area, the Central Pacific Force became the U.S. Fifth Fleet under Admiral Raymond A. Spruance and the South Pacific Force became the U.S. Third Fleet under Admiral William F. Halsey, Jr. The Southwest Pacific Force became the U.S. Seventh Fleet under Admiral Thomas C. Kincaid. The Seventh Fleet, however, was not under the jurisdiction of the Pacific Fleet and the Pacific Ocean Area but instead was placed under the command of General Douglas MacArthur's forces for the Southwest Pacific Area. Type Forces for the Pacific Fleet included Air Force, Amphibious Force, Battleships, Cruisers, Destroyers, Service Force, Minecraft, Motor Torpedo Boat

---

[39] Major naval battles included: August 9, 1942, Battle of Savo Island (night surface action); August 24-25, 1942, Battle of the Eastern Solomons (carrier action); October 11-12, 1942, Battle of Cape Esperance (night surface action); October 26, 1942, Battle of Santa Cruz Islands (carrier action, *Hornet* lost); November 12-15, 1942, Naval Battle of Guadalcanal (cruiser, battleship/night surface action); November 30, 1942, Battle of Tassafaronga (night surface action). Potter, *Sea Power*, 692-710; Reynolds, *Fast Carriers*, 60-66.

[40] John C. Reilly, "Organization of Naval Aviation in World War II," *Naval Aviation News* (May-June 1991): 26-31; idem, "Island Hopping in WWII, from the Gilberts to the Marshalls," *Naval Aviation News* (January-February 1994): 31-35; Standards and Curriculum Division, Training, Bureau of Naval Personnel. *Naval Orientation*, NAVPERS 16138, Revised. (n.p., June, 1945), 236-244.

Squadrons, and Submarine Force. Task Forces (TF) were subdivided into Task Groups (TG), and Task Units (TU) as needed. Thus TU 58.2.3 was a component of TG 58.2 which was a component of TF 58 which was a component of the Fifth Fleet. The carriers and their support ships were organized as the Fast Carrier Task Force and were accordingly subdivided into task groups or units. Each carrier had its own air wing that consisted of aircraft organized into various squadrons. Each squadron was identified by its alphanumeric designation indicating the type and function of the aircraft; Fighter Squadron One, consisting of fighter aircraft, thus had the designation VF-1.[41] Groups of squadrons were assigned to various ships within the task force and subsequent groups, units and individual ships. Under the task force organizational system various components ranging from an individual ship or aviation squadron to a task unit or task group could be withdrawn from the force once the mission was completed and placed on a new reassignment. This approach allowed tremendous flexibility in utilizing naval resources.[42]

The goal of the Central Pacific and South/Southwest drives was threefold: (1) to establish control over the Luzon Strait between Luzon Island in the Philippines and Formosa and block Japan's access to the resources of the Netherlands East Indies; (2) to establish bases close enough to sustain strategic bombing of Japan's military and industrial sites; and (3) to secure key areas to facilitate a possible invasion of the Japanese home islands.[43] A general timetable was established to meet these objectives. Beginning in November 1943, the Fifth Fleet would commence actions against the Gilbert Islands to obtain advance bases for attacking the Marshall Islands. Landings in the Marshalls would begin by January 1944 in order to move towards carrier assaults on Truk by June 1944. Landings on Guam and other Marianas islands would begin by October 1944 to establish airfields for B-29 land-based bombers. Truk was to be secured by December 1944 with the Palau Islands as the next goal. The dual advance by the Third and Seventh Fleets on Rabaul was to continue up through the Japanese-held islands in the central and northern Solomons and along the Huon Peninsula of New Guinea. Rabaul was to be taken by February 1944. Hollandia, on New Guinea's northern coast was to be taken by August 1944. After securing and gaining control of key bases in the Central Pacific and New Guinea/Solomons area, the allied forces could move towards the Philippines, the Ryukyu Islands, and the four major Japanese home islands.[44]

World War II-era land-based aircraft were larger and carried heavier weapons loads and were not designed to cover long distances like the smaller, lighter carrier-based bombers. As well, U.S. carriers, with unarmored flight decks were highly vulnerable to air assault, especially from land-based aircraft. Thus, land-based air power was much more suitable to neutralize targets or intercept attack within the confined waters and land areas of New Guinea and the Solomons. Aircraft carriers, on the other hand, serving essentially as mobile air bases were highly suitable for operation in the vast stretches of the Central Pacific with the ability to maneuver aircraft in and around the open waters between the scattered island chains. Through the use of scouting aircraft, carriers could conduct reconnaissance operations and air searches to evaluate the enemy's strength and position. With fighter aircraft, carriers could protect the fleet and landing forces by intercepting and destroying enemy aircraft. As well, the carrier's bomber aircraft could strike enemy airfields and naval forces ashore or at sea, and inflict

---

[41] The "V" referred to the class of fixed wing aircraft that included airplanes, gliders and drones; the "F" referred to its function as a fighter. With wartime improvements in aviation and changing priorities throughout the war, numerous different designations evolved during World War II for naval fixed wing aircraft squadrons. By mid-1943 these included VSB for scout bombers, VTB for torpedo bombers, VO/VS for observation scout, VPB for patrol bombers as well as VR for transports, VJ for utility planes and VSN/VN for training. Roy A. Grossnick, *Dictionary of American Naval Aviation Squadrons* (Washington, DC: Naval Historical Center, 1995), 1-4; Knott, *Naval Aviation Guide*, 71-73.

[42] Potter, *Sea Power*, 689-692, 712; Cressman, *Official Chronology of the U.S. Navy*, 350-351; Office of the Chief of Naval Operations, *U.S. Naval Aviation in the Pacific*. (n.p.: United States Navy, 1947), 1-3, 5; Roy A. Grossnick, *United States Naval Aviation 1910-1995* (Washington, DC: Naval Historical Center, 1997), 451-459; Idem, *Dictionary*, 537-540.

[43] Reynolds, *Fast Carriers*, 52-53, 113, 117; Potter, *Sea Power*, 711.

[44] The four main islands of Japan were Hokkaido, Honshu, Shikoku, and Kyushu. See also Potter, *Sea Power*, 717-718; Reynolds, *Fast Carriers*, 114.

sufficient damage to render them neutral and unable to attack or defend. By controlling the enemy's air power, groups of heavy and light carriers, screened by surface ships, could open the way for island conquests, cover and support amphibious operations, and help to hold the conquered areas. Thus carrier operations were to dominate the Central Pacific campaign.[45]

U.S.S. *Lexington* (CV-16) 1943-1945

Laid down as *Cabot* on July 15, 1941 by Bethlehem Steel Company at Quincy Massachusetts, CV-16 was renamed *Lexington* on June 16, 1942 in honor of *Lexington* (CV 2), lost earlier in the Battle of the Coral Sea. She was launched on September 26, 1942, commissioned February 17, 1943 and arrived at Pearl Harbor in August. *Lexington's* first mission came in September 1943 as the flagship for a task group conducting raids on the Gilbert Islands.

Gilbert Islands Campaign (September – November 1943)

The goal of the Gilberts campaign was to establish advance bases for future assaults on the Marshall Islands from which bases would be secured for strikes on major Japanese installations in the Carolines and the Marianas. Japan occupied the atolls of Makin, Tarawa and Abemama in the Gilberts.[46] The U.S. held Samoa and, by June 1943, had established airfields at Funafuti, Nukufetau and Nanumea in the Ellice Islands, southeast of the Gilberts, and on Baker Island, due east of the Gilberts. Operations were to begin mid-November with the objective of securing Makin, Tarawa, and Abemama.

The preliminary phases of the campaign were carried out September 1 through October 6 with carrier air strikes against select islands. On September 18-19 planes from *Lexington* (CV-16), *Independence* (CVL-22), *Belleau Wood* (CVL-24) and *Princeton* (CVL-23) flew missions against Betio Island in Tarawa Atoll. The raids resulted in damage to some Japanese military resources, but the most important outcome was *Lexington's* reconnaissance photos that were essential for planning the Tarawa landings. Three weeks later the same ships along with *Essex* (CV-9), *Yorktown* (CV-5), and *Cowpens* (CVL-25) carried out raids against Wake Island in order to misdirect the Japanese about the location of the upcoming assault. In anticipation of a major U.S. attack against Wake Island, the Japanese Navy did move a number of their warships away from the Gilberts area and into the northern Marshalls.

Amphibious operations in the Gilberts began on November 20 with simultaneous landings on Makin and Tarawa. The assault was organized around a Northern Attack Force (TF 52) destined for Makin and a Southern

---

[45] At the beginning of World War II a typical carrier aircraft group included fighting, bombing, scouting, and torpedo squadrons. Although the squadrons carried specific designations, their duties and functions often overlapped. Fighters, designed primarily for combat with enemy planes, carried machine guns as well as bombs and rockets and could therefore also be employed as bombers to attack ship and land targets. Torpedo bombers launched torpedo attacks and were also used as light bombers. Both scouting and bomber squadrons employed dive-bombers, the most accurate of the bomber aircraft. This allowed the scouting squadron to carry out reconnaissance and then join with the bomber squadrons to carry out strike missions. As surface and airborne radar evolved and took over the search and detection function of scouts, these squadrons began to disappear, generally replaced by increasing the number of planes to the fighter and bomber squadrons. World War II fighters included the Grumman F4F Wildcat (with folding wings) introduced in 1941, the F6F Hellcat, 1943, and the Vought Corsair F4U introduced in 1944 (night fighter with inverted gull wing). The Navy's primary torpedo bomber after the Battle of Midway was the TBF-1 Avenger. Scout/dive-bombers included the Douglas SBD Dauntless introduced in 1940 and SB2C Helldiver, introduced in 1943. John C. Reilly, "Organization of Naval Aviation in World War II," *Naval Aviation News* (May-June 1991): 26-28; Office of the Chief of Naval Operations, 5-6; Reynolds, *Fast Carriers*, 51-52, 75-58, 75-76.

[46] An atoll is a ring of small coral islands and reefs that partially enclose a lagoon. Several small islands make up each of the Makin, Tarawa, and Abemama atolls. On some of the islands the Japanese had constructed airfields and other military installations.

Attack Force (TF 53) headed for Tarawa, each consisting of numerous surface combatants and amphibious vessels.[47] The Fast Carrier Task Force (TF 50) was divided into four task groups to provide support for the amphibious forces. Carrier Interceptor Group (TG 50.1) consisted of *Lexington* (CV-16), *Yorktown* (CV-5), and *Cowpens* (CVL-25) and was supported by two battleships and six destroyers. November 19-23, TG 50.1 carried out strikes on Japanese airfields on Jaluit and Mili, located on the southern end of the Marshalls. These assaults served to suppress any air power that might interfere with the Tarawa landings. When amphibious operations began on Tarawa, aircraft from *Lexington* and *Cowpens* assisted in intercepting Japanese planes attempting to counteract the landings. The Northern Carrier Group (TG 50.2), built around *Enterprise* (CV-6) and light carriers *Belleau Woods* (CVL-24) and *Monterey* (CVL-26) as well as three battleships and six destroyers, conducted pre-assault aerial bombardment of Makin and then joined TF 52 to cover the landings. The Southern Carrier Group (TG 50.3) consisted of *Essex* (CV-9), *Bunker Hill* (CV-17) and light carrier *Independence* (CVL-22), four cruisers and five destroyers. TG 50.3 had conducted strikes on Rabaul in early November to neutralize any Japanese forces that might try to cover the Gilberts and supported TF 53 with pre-landing bombardment of Tarawa. Relief Carrier Group (TG 50.4) included *Saratoga* (CV-3) and *Princeton* (CVL-23), two light cruisers and four destroyers. TG 50.4 also carried out pre-assault strikes against Rabaul as well as Nauru to neutralize Japanese support for the Gilberts and then provided air cover for the Tarawa and Makin forces.[48]

Both Makin and Abemama fell in two days with little opposition from land forces and virtually no interference from Japanese air power. Tarawa was taken in four days but with heavy loss of life due in part to the island's heavy fortifications which were not sufficiently neutralized in the pre-assault bombardment. With objectives in the Gilberts met, there were now air bases from which to launch the upcoming campaign against the Marshalls. The Gilberts campaign also contributed towards the development of coordinated multi-carrier operations and illustrated that air coverage provided throughout all phases of amphibious assault was essential to the success of such operations.[49]

Marshall Islands Campaign (December 1943 – February 1944)

Operations against the Marshalls immediately followed the Gilberts campaign with carrier strikes on Kwajalein and Wotje atolls in early December 1943. Continuing her work with TG 50.1, *Lexington* carried out raids on the airfield and lagoon area of Roi Island in Kwajalein Atoll that damaged two Japanese light cruisers, sunk a 10,000-ton military cargo transport, downed twenty-seven aircraft and destroyed three bombers on the ground.[50] However, during the assault *Lexington* was struck on the starboard side of her stern by a Japanese torpedo bomber killing nine men, wounding thirty-five and inflicting sufficient damage to remove her from further action in the Marshalls.[51] *Lexington* was sent on to Pearl Harbor and then Bremerton Navy Yard in Washington

---

[47] The Northern Attack Force (TF 52) included four battleships, four cruisers, six transports, three escort carriers, three LSTs (Landing Ship Tank), and one LSD (Landing Ship Dock). The Southern Attack Force (TF 53) included sixteen transports, three battleships, five cruisers, five escort carriers, twenty-one destroyers, and one LSD. Samuel Eliot Morison, *Aleutians, Gilberts and Marshalls, June 1942 – April 1944*, vol. 7, *A History of United States Naval Operations in World War II* (Boston: Little, Brown and Company, 1951; reprint, 1975), 114-116.

[48] Morison, vol. 7, *Aleutians, Gilberts, and Marshalls*, 116-118, 141, 336-342.

[49] With the introduction of the *Essex*-class carriers into Central Pacific operations, the Navy also brought improvements in carrier aircraft. The Grumman F6F Hellcat fighter plane, which replaced the Grumman F4F, gave U.S. Navy aviators an advantage over their Japanese counterparts with an engine that possessed the speed and maneuverability which allowed it to out dive and out climb the Zero, Japan's top naval fighter aircraft. It also had greater firepower. The Navy had also upgraded the Douglas SBD Dauntless scout/bomber and introduced the SB2C Helldiver in the Pacific by fall 1943. Reynolds, *Fast Carriers*, 57-58; see also Potter, *Sea Power*, 738-749 and Morison, *Aleutians, Gilberts, and Marshalls*, vol. 7, 92-98, 136 for campaign details.

[50] TG 50.1 included *Lexington* (CV-16), *Yorktown* (CV-5), *Cowpens* (CVL-25), four heavy cruisers, one light cruiser, and six destroyers. Morison, *Aleutians, Gilberts, and Marshalls,* vol. 7, 189-194.

[51] Japan announced that they had sunk *Lexington*. This would be the first of several such claims that led to the carrier's nickname

for comprehensive repairs.

The Marshalls campaign called for the capture of key Japanese holdings on the atolls of Kwajalein in the middle of the chain and Eniwetok on the northwestern reaches as well as the occupation of undefended Majuro. The first pre-invasion strikes came at the end of January 1944 from land-based planes in the Ellices and the Gilberts which focused their raids on neutralizing Japanese air fields on Mili and Jaluit. These were followed by strikes from the Fast Carrier Task Force, now designated Task Force 58 under the command of Vice Admiral Marc A. Mitscher.[52] As with the Gilberts operations, the carriers were divided into four task groups that conducted pre-assault bombardment of strategic sites on Maloelap, Wotje, and Kwajalein. The carriers also provided cover during the Kwajalein invasion which helped to secure the area in four days. Because of its western location, Eniwetok could be protected by Japanese air cover provided from the Marianas and the major naval installation at Truk Atoll in the Caroline Islands. As such, when the assault on Eniwetok began in mid-February one carrier group remained to cover amphibious operations while the other three headed towards Truk. Eniwetok was secured in three days and the carriers succeeded in not only neutralizing the Japanese air bases on Truk but also in conducting strikes on Guam, Tinian and Saipan which destroyed grounded aircraft and provided reconnaissance photographs of airfields and beaches suitable for assault.

By securing and establishing operating bases on Tarawa, Makin, Abemama, Kwajalein, and Eniwetok, allied forces were able to conquer remaining Japanese-held areas in the Gilberts and Marshalls. Or, rather than expend troops and supplies for a total occupation of the area, some islands would simply be contained and rendered inoperable to the enemy with occasional air raids and the interception of supplies and reinforcements.[53] With control of this region in allied hands, Japan moved the majority of its fleet at Truk to safer waters in the Palau Islands on the western end of the Carolines. This action served to further isolate the Japanese installations at Rabaul, which were subject to periodic neutralizing raids launched from allied-held areas in the Solomons, and helped facilitate the allied advance through New Guinea. As well, with the power of Truk significantly reduced, allied forces could control the island as well as other Japanese bases in the eastern Carolines with a combination of carrier and land-based air power which helped paved the way for an invasion of the Marianas.

Under the leadership and direction of Rear Admiral Marc A. Mitscher, the carrier raids conducted at Truk, Guam, Tinian and Saipan in conjunction with the Marshalls campaign clearly demonstrated both the tactical and strategic advantages of multi-carrier operations. As the first to take full advantage of the "extreme mobility" of the carriers, Mitscher successfully utilized the carriers to concurrently cover amphibious landings, conduct neutralizing strikes, and carry out reconnaissance and pre-invasion bombardment for upcoming campaigns, thus setting the pattern for subsequent carrier operations. Mitscher came to command the carriers in December 1943 at the request of Nimitz who, in consultation with a small group of close colleagues, sought to replace the current commander Rear Admiral Charles A. Pownell with a leader who would use the carriers more aggressively. At the time Mitscher was Commander Fleet Air West Coast. As a 1910 graduate of the U.S. Naval Academy and a Naval Aviator since 1916 he was chosen in part because of his extensive experience in naval air. Primarily though, he was selected for his proven leadership in current carriers operations that included command of the *Hornet* (CV-8) during the Doolittle Raid on Tokyo, and participation in the Battle of Midway and the Guadalcanal and Central Solomons campaigns. In early January Mitscher took command of Task Force 58 as senior carrier division commander of Carrier Division Three. In March, after the Marshalls campaign, Mitscher was upgraded from senior carrier division commander to Commander Fast Carrier Forces

---

"Blue Ghost."

[52] "Vice Admiral Mitscher emerged from the war as the acknowledged leader of carrier aviation. Providing inspiring leadership to the previously misused carriers, he lead the Fast Carrier Task Force in all its major operations." Reynolds, *Fast Carriers*, 388.

[53] For example, although the majority of the Marshalls chain was occupied by allied forces, Mili, Jaluit, Wojte and Maloelap remained Japanese until the end of the war. Morison, *Aleutians, Gilberts, and Marshalls*, vol. 7, 311.

Pacific Fleet and promoted to the rank of Vice Admiral. From this date until May 1945, Mitscher commanded a task force of 12 fast carriers, 650 airplanes, 8 battleships, as well as cruisers and destroyers. He also made *Lexington* his flagship from March to November 1944.[54]

Hollandia Campaign (March 1944 – May 1944)

By March 1944 the Southwest Pacific Forces had secured the Admiralty Islands and the Huon Peninsula and were ready to strike Hollandia in northern New Guinea. In addition to allied land-based air power, the Hollandia campaign would require carrier forces to support the invasion and to neutralize any Japanese air strikes launched from the Palau Islands and the western Carolines.

With repairs completed, *Lexington* returned to the Pacific in early March 1944 as flagship for Task Force 58. The carriers gathered at Majuro and *Lexington* and the members of Task Group Three (TG 58.3) departed on March 22 to carry out neutralizing strikes against naval installations in the Palaus.[55] By April, three groups of Task Force 58 were preparing to support the Hollandia landings and TG 58.3 was assigned to bombard enemy installations. Between April 21 and 23 planes from *Lexington* and the other carriers destroyed most of the Japanese aircraft and ships that had not already departed Hollandia and damaged several ammunition dumps and fuel areas. Showing little resistance, Hollandia was quickly secured and the *Lexington* group moved on to carry out strikes against Truk which had been heavily reinforced since the February raids. These assaults followed by routine air raids from heavy bombers based out of Eniwetok rendered Truk useless to Japan for the remainder of the conflict.[56]

The drive up the New Guinea coast continued with the fall of Wakde Island in mid-May followed by landings on Biak Island at the close of the month. To combat the allied invasion of Biak, a highly desirable site for land-based air support, Japan directed aircraft and surface ships from the Central Pacific to the waters off New Guinea for a mid-June assault on Biak. Concurrently, the U.S. carrier forces had begun raids on the Marianas in preparation for an invasion of Saipan. In response, the Japanese redirected their ships to depart the New Guinea area and join surface units off the Philippines headed for the Marianas. This move allowed the allied forces to secure Biak and to complete the drive to Cape Sansapor at the western end of New Guinea, some 500 miles off Mindanao, the southern-most island of the Philippines. With control over northern New Guinea and the Admiralty Islands allied forces could now employ a combination of air, sea and land-based power to keep the Japanese installations at Rabaul neutralized and suppress any other enemy interference emanating from the New Guinea area.[57] By the end of July 1944, a Philippines invasion was possible.

Marianas Campaign (June 1944 – August 1944)

Securing and controlling Saipan, Tinian, and Guam were the main objectives of the Marianas operations. These

---

[54] Reynold, *Fast Carriers*, 124, 125, 133, 140-141, 145.

[55] In all, the group sank some thirty-six Japanese vessels totaling close to 130,000 tons. This included a destroyer, a large cargo ship, three large, one medium and one small tanker, six medium and three small transports. Samuel Eliot Morison, *New Guinea and the Marianas, March 1944 – August 1944*, vol. 8, *A History of United States Naval Operations in World War II* (Boston: Little, Brown and Company, 1953, reprint, 1989), 32.

[56] TG 58.1 consisting of *Hornet*, *Belleau Wood*, *Cowpens*, and *Bataan* was to hit airfields and defenses at Wakde, Sawr, Sarmi April 21-24; TG 58.2, *Bunker Hill*, *Yorktown*, *Monterey,* and *Cabot*, was to strike Wakde and Hollandia airfields April 21 and support landings in Humbolt Bay. The assaults on Truk resulted in the destruction of some fifty-nine aircraft in the air and another thirty-four on the ground as well as two fuel dumps and numerous buildings and barges. Morison, *History of United States Naval Operations*, vol. 8, 27-41.

[57] Ibid., 27-41; Potter, *Sea Power*, 757-760.

islands would provide the allies with bases from which they could control the Japanese supply lines to the western Carolines and New Guinea and carry out assaults on the Palaus, Leyte and Luzon in the Philippines, Formosa, and the Bonin and Volcano Islands north of the Marianas. They could also provide bases to conduct long-range air strikes against the Japanese home islands. The first landings were set for Saipan on June 15 while assaults on Guam and Tinian depended upon the success of events in Saipan. Task Force 58 was again divided into four task groups and *Lexington* served as part of TG 58.3. Following neutralization strikes June 3-9 on airfields at Peleliu in the Palaus, and Woleai and Yap in the central and western Carolines, carrier air groups and surface ships began bombardment of Saipan and Tinian, June 11-13. *Lexington* and TG 58.3 succeeded in sinking two transports, destroying oil tanks and inflicting extensive damage to a railroad yard. With the Saipan assault under control, two of the carrier groups were detached on June 14 to carry out raids on Iwo Jima airfields.[58]

When the allied invasion forces learned that Japanese naval units were en route from New Guinea and the Philippines to counteract operations, the Guam, Tinian, and Iwo Jima campaigns were temporarily cancelled and the carrier groups were ordered to rejoin in anticipation of a confrontation. By June 18 the Task Force had reassembled some ninety miles southwest of Saipan and eighty miles northwest of Guam. The opening phases of the subsequent Battle of the Philippine Sea (June 19-20) began on the morning of June 19 when Japanese planes from Guam and Truk were spotted and intercepted by Task Force planes before they could inflict any damage to the carriers. Shortly thereafter, a large group of Japanese carrier aircraft was detected some 40-50 miles from the Task Force and also downed by carrier planes. This was followed by a series of air battles that continued for nearly eight more hours as the planes of Task Force 58 succeeded in destroying significant numbers of Japanese aircraft launched either from carriers or Guam air bases.[59] On June 20, the Japanese fleet was located and planes from Task Force 58 succeeded in severely damaging several warships, auxiliaries, and more aircraft. *Lexington's* contribution included major damage to two carriers and three transports.

With the threat of interference by Japan's naval forces removed, the carriers of Task Force 58 resumed support of the Marianas operations. *Lexington* carried out pre-invasion strikes on Guam (June 25-July 5, July 18-21). She also conducted neutralization strikes on the Palaus (July 25-27) and the Bonin Islands (August 4-5). First Saipan, then Tinian and finally Guam came under allied control and by mid-August the Marianas were secured. The Japanese not only lost their advance bases into the Carolines but also, with over 450 carrier- and land-based planes destroyed during the two-day Battle of the Philippine Sea, incurred losses in naval air power from which they would not recover for the duration of the conflict.[60]

Philippines Campaign (September 1944 – April 1945)

With the loss of the Marianas, Japan began a defense strategy that focused primarily on the home islands, the Ryukyu Islands, the Philippines, and Formosa to control the Luzon Strait and ensure the passage of oil and other essential resources from the Netherlands East Indies. However, for some time U.S. submarine forces had concentrated on the destruction of enemy tankers operating in the straits. This initiated a fuel crisis forcing the Japanese Navy to divide its fleet, allocating the majority of carriers to northern home island ports for repair and training while surface ships operated out of the Singapore area where fuel was plentiful. The allied strategy was thus to gain control of the Philippines in order to permanently divide the Japanese fleet, to blockade supplies to

[58] Potter, *Sea Power*, 749-768; Morison, *History of United States Naval Operations*, vol. 8, 149-179.

[59] Cdr. Paul D. Buie of the *Lexington* compared the downing of enemy planes to a wild turkey shoot. This phase of the battle is therefore referred to as the "Marianas Turkey Shoot." Morison, VIII, 257 note.

[60] Total aircraft losses for Task Force 58 were about 130 planes. Tinian and Guam were more lightly garrisoned than Saipan and their conquest less costly in lives. Overall casualties for the southern Marianas were 5,000 American and 60,000 Japanese. Potter, *Sea Power*, 760-770.

Japan, and to establish advance bases for strikes against Japanese-occupied territories in Southeast Asia as well as Formosa, and the Ryukyus and home islands.

The Philippines campaign was to begin September 15, 1944. On that date the Central Pacific Forces, now designated as the Third Fleet, would commence operations to establish staging and support bases in the Palaus and the western Carolines.[61] The command was also to support MacArthur's Southwest Pacific Forces as they secured advance bases on Morotai and the Talaud Islands off Mindanao at the southern end of the Philippines. Mindanao was to be invaded on November 15 and Leyte Island, in the central Philippines, by December 20. Assaults on Luzon, the northern most island, would take place once the other invasions were under control. *Lexington* carried out raids against Yap and Ulithi in the western Carolines (September 6) followed by strikes on Mindanao (September 9-10), and Manila and Luzon (September 21-22). *Lexington's* work as well as that of the other carrier groups revealed the islands to be more lightly defended than initially believed. As such, the invasions of Yap, the Talauds, and Mindanao were cancelled and the invasion of Leyte was moved up to October 20. Invasions of Morotai, Angaur and Peleliu in the Palaus, and Ulithi proceeded. The carriers of Task Force 38 as well as planes from the Seventh Fleet and the Fifth Air Force out of Biak provided air support. Allied control of these islands, essential to the Philippines invasion, was completed between September and November.[62]

Leyte (October 1944 – December 1944)

October 10-12, the Third Fleet carried out neutralization strikes against the Carolines, Formosa and the China coast, Luzon and other Japanese-held areas that could possibly launch interference against the Leyte invasion. Planes from *Lexington* and her task group conducted raids on Okinawa in the Ryukyus and Formosa, contributing to the overall work of Task Force 38 that included destruction of enemy shipping facilities, aircraft installations, ammunition dumps, freighters, small craft, and numerous planes. The Third Fleet proceeded to Leyte to join the main invasion forces that were moving in from Manus, in the Admiralty Islands and Hollandia. In support of the landings, planes from all four carrier groups struck airfields and shipping sites near Manila Bay and key points in Northern Luzon while planes from the Southwest Pacific Force struck enemy sites in the Netherlands East Indies and Mindanao, Oct 17-24. With potential enemy interference effectively suppressed, some 60,000 troops and 100,000 tons of equipment were put ashore at Leyte on October 20, the first day of amphibious operations.[63]

In response to the Leyte landings Japan launched a major four-pronged naval attack to contain the invasion force and halt the transport of allied troops and supplies into the area. Two Japanese forces embarked from the home islands to attack Leyte from the north and two forces steamed out of Singapore to strike from the south. The U.S. Third Fleet, stationed off of Luzon, was reduced in size to the carriers and support ships of Task Force 38; the remaining vessels were reassigned to support the Seventh Fleet stationed in and around Leyte Gulf. The Task Force was again divided into four task groups and *Lexington* was assigned to Task Group Three (TG 38.3). As the forces converged, the subsequent Battle for Leyte Gulf consisted of several actions over several days

---

[61] This included Peleliu and Anguar in the Palaus and Ulithi Atoll and Yap Island between the Palaus and the Marianas in the western Carolines. In September the Central Pacific Force was designated the U.S. Third Fleet under the command of Admiral William F. Halsey who replaced Admiral Spruance who had commanded it as the Fifth Fleet. Vice Admiral Marc A. Mitscher remained in command of the Fast Carrier Task Force now called Task Force 38. Potter, *Sea Power*, 771-774.

[62] Potter, *Sea Power*, 771-774, 777-780.

[63] Tacloban, the capital, and Dulag, some 17 miles south, were the two sites for the amphibious landings. The Tacloban airstrip was in allied hands and both landing sites had expanded a mile inland by the close of the first day of the invasion. Potter, *Sea Power*, 771-774; Samuel Eliot Morison, *Leyte, June 1944 – January 1945*, vol. 12, *A History of United States Naval Operations in World War II* (Boston: Little, Brown and Company, 1958; reprint, 1988), 86-108.

which included four major naval battles: the Battle of Sibuyan Sea (October 24), the Battle off Cape Engano, the Battle of Surigao Strait, and the Battle off Samar (October 25).[64]

As one branch of the Japanese southern force headed through the Sibuyan Sea, it was intercepted and severely damaged by Third Fleet aircraft. The *Lexington* group helped to sink a battleship and damage three cruisers during the October 24 action. The remaining Japanese ships retreated from the area. Three carrier groups of TF 38 were then ordered to intercept the carrier branch of the Japanese northern force that was assembling off Cape Engano, Luzon. During the October 25 battle, the task groups succeeded in neutralizing the Japanese carrier force while the *Lexington* group sunk one heavy and two light carriers. Meanwhile, the Seventh Fleet was left to handle what remained of the Japanese forces heading for Leyte. The vessels of the Sibuyan branch of the southern force had reversed their retreat and were now steaming around Samar to reach Leyte from the north. As well the second branch of the southern force had been joined by the second branch of the northern force and the combined group was headed through the Surigao Strait to attack Leyte from the south. Most of the major surface combatants of Seventh Fleet were ordered to the Surigao Strait leaving the escort units located off Samar and the northern approaches of Leyte Gulf to be covered by the Task Force 38 carriers. The October 25 action at Surigao resulted in severe losses for the Japanese. However, with the TF 38 carriers engaged off Cape Engano, the escort units were not adequately protected against Japan's heavy combatants moving in from the north. One of the escort units, caught in the fire of this force, lost three destroyers and one escort carrier in the subsequent Battle off Samar. This confrontation also saw the first use of the Kamikaze (Divine Wind) Special Attack Corps as six planes struck the escort group damaging several more vessels and sinking one.[65]

The Japanese, without achieving their main objective of containing the amphibious invasion, lost over 300,000 tons of combat ships in the Battle for Leyte Gulf.[66] These losses, as well as those inflicted at the Marianas, resulted in irreparable damage to Japan's naval strength. However, this severe defeat did not prompt an immediate withdrawal of Japanese forces from the island and pave the way for an uncontested occupation of the Philippines by allied forces. Throughout October and November 1944, planes from the Third Fleet carriers continued strikes against enemy airfields and shipping in and around the Philippines and in spite of heavy kamikaze attacks succeeded in significantly reducing the area's Japanese naval forces. On November 5, *Lexington*, although heavily damaged in such an attack, was able to continue flight operations which allowed her to sink an enemy heavy cruiser and prevent a kamikaze strike on the carrier *Ticonderoga* (CV-14). It would take until the end of December before all Japanese resistance in Leyte was contained. With the island in allied hands, Manila and Luzon became the next Philippine objectives.[67]

---

[64] Each task group consisted of about twenty-three ships that included two heavy carriers, two light carriers, two battleships, three cruisers, and fourteen destroyers. One group could be dispatched for fuel and supplies while three would remain on duty. The Seventh Fleet included amphibious forces of transports, cargo vessels, and craft as well as bombardment and fire support groups that included battleships, destroyers, and cruisers. Escort carrier units that included destroyers and destroyer escort screens were located east of Leyte Gulf and were assigned to carry out anti-submarine, anti-aircraft and ground patrol support. Potter, *Sea Power*, 777-780; Morison, *History of United States Naval Operations*, vol. 10, 86-108.

[65] The Japanese force of four battleships, six heavy cruisers, two light cruisers and eleven destroyers arrived off Samar a little after 1:00 AM on October 25. When they encountered one of the carrier escort task units consisting of six escort carriers, three destroyers and four destroyer escorts they assumed it was a heavy carrier task group and they opened fire. The escort unit was unable to combat the heavy shelling and turned south towards Leyte in hopes of meeting Seventh Fleet surface ships. Although the destroyers and escort carrier planes did inflict some damage to the Japanese ships, the unit was eventually overtaken in the chase. However, when the Japanese flagship turned to evade torpedoes, it fell behind in the chase and its commander lost touch with both the enemy and his own forces. His attempt to regain order over his vessels ended the battle before the escort unit was completely destroyed. The Japanese force withdrew with four battleships, two heavy cruisers, a light cruiser and seven destroyers. Potter, *Sea Power*, 780-795.

[66] Losses included three battleships, four carriers, ten cruisers, and nine destroyers. Ibid., 795.

[67] The kamikaze attack to *Lexington* left fifty men killed or missing, 132 injured; the island gun platform was destroyed and the signal bridge was heavily damaged. Overall during this period carrier planes sunk three cruisers, ten destroyers as well as numerous transports, other auxiliaries and aircraft as well as a complete convoy. Potter, *Sea Power*, 795, 814-816.

Luzon (December 1944 – April 1945)

To recapture Manila on Luzon, allied forces would need to secure airfields north of the city and on Mindoro Island, situated to the southwest. Task Force carrier planes covered Japanese-held airfields on Luzon while amphibious forces landed on Mindoro, December 15, unopposed. The Luzon landing was scheduled to take place at Lingayen Gulf, north of Manila on January 9, 1945. Having returned to the Philippines after a month of repair work, *Lexington* joined the other carrier groups as well as Seventh Fleet escort carriers and Army Air Forces to support the upcoming operations. On January 4-7 the carriers neutralized most of the Luzon airfields and then departed to cover the South China Sea and prevent reinforcements from reaching Lingayen. On January 10-22 *Lexington* and the other carriers sunk enemy freighters and tankers and carried out strikes against Hong Kong, the Pescadores and Formosa as well as Saipan and conducted a photo reconnaissance mission over Okinawa. With Lingayen and most of Luzon secured and potential enemy reinforcements contained, allied forces landed unopposed near Subic Bay January 29, 1945 to begin the drive to Manila. Between February and April some thirty-eight more landings were carried out to liberate and secure the Philippines.[68]

Iwo Jima Campaign (February 1945 – March 1945)

Beginning in late November 1944, land-based air strikes against Tokyo had been launched from bases in Saipan. However, because of the vast distance between islands, bomb loads had to be reduced to ensure that the B-29 aircraft conducting the raids would have enough fuel to return from their mission. As well, enemy bases on the Volcano and Bonin Islands could intercept or provide advance warning to Tokyo of the approaching planes. The objective of securing Iwo Jima in the Volcanos was to neutralize both of the island chains and to establish a closer base to launch an invasion of Okinawa in the Ryukyus and to conduct air strikes against Tokyo and other strategic areas of the home islands. Landings on Iwo Jima were scheduled for February 19, 1945. The Central Pacific Force was once again designated the Fifth Fleet under the command of Admiral Raymond A. Spruance and the Fast Carrier Forces became Task Force 58.

On February 16-17 planes from *Lexington*, as part of TG 58.2, and the rest of the carriers of TF 58 struck Tokyo airfields to neutralize potential reinforcements and conducted pre-landing bombardment of Iwo Jima. They also provided close coverage through the first days of the invasion until waves of kamikaze planes began a counterattack against the Fifth Fleet and the carrier forces on February 21. On February 22 *Lexington* and TF 58 departed the area to rendezvous with 200 B-29 aircraft for a massive raid on Tokyo scheduled for February 25. *Lexington* continued more strikes against the Japanese home islands until March 7 when she departed for a stateside overhaul at Bremerton Navy Yard.

It took over a month, rather than the forecasted five days, to seize and secure Iwo Jima. Operations were hindered from start to finish by the island's soft volcanic ash shoreline that bogged down the landing vessels, to the intricate fortifications and the highly trained troops that had been installed by the Japanese in anticipation of the invasion, to the kamikaze attacks. By the close of March, with heavy casualties on both sides, the island was held by allied force and the assault on Okinawa was in the opening phases.[69]

Okinawa Campaign (April 1945 – July 1945)

The allied conquest of Okinawa, at the southern end of Japan's Ryukyu Islands was essential for establishing

[68] Potter, *Sea Power*, 818-822.
[69] Ibid., 824-828.

bases to complete the blockade of Japan and for launching sustained air strikes upon key industrial centers and supporting a possible invasion of the home islands.

Landings on Okinawa were scheduled for April 1. The initial task of the carriers was to contain potential interference from the airfields in Formosa, the Ryukyus and Kyushu, Japan's southern-most home island. Once bases were established they were to protect the steady stream of troops and supplies that would be moving into the area to complete the conquest of the island. In mid-March, Task Force 58, without *Lexington* but supported by land-based bombardment from the Marianas, China and the Philippines, commenced pre-assault strikes on Okinawa. On the first day of landings about 50,000 troops went ashore and seized two airfields, meeting only scattered resistance. However, this light opposition was soon countered by the island's 100,000 defenders and sustained, large-scale kamikaze attacks. By mid-June the attacks began to decline as the carrier forces steadily improved their response techniques and strengthened early detection with more surface radar patrols and more radar stations in northern Okinawa and other offshore islands. As well, allied ground forces had steadily built up Okinawa's air power that, supplemented by B-29s operating out of the Marianas and China, could contain any reinforcements embarking out of Kyushu. The carrier forces were able to depart the area to prepare for a series of July strikes against Japan. Okinawa was declared secure on July 21 with high casualties on both sides.[70]

Third Fleet Operations Against Japan (July 1945 – August 1945)

In mid-May, the Fifth Fleet was again designated the Third Fleet and *Lexington*, after completing her stateside overhaul, rejoined Task Force 38 on May 22 to carry out strikes against the Japanese home islands.[71] Throughout the month of July, Task Force 38 planes conducted raids on airfields and factories at Honshu and Hokkaido which included strikes against Tokyo and naval bases at Yokosuka and Kure where remnants of the Japanese fleet were either sunk or heavily damaged. Concurrently, Third Fleet surface combatants bombarded the Japanese coast.

Meanwhile, in May, Germany surrendered leaving Japan without an ally and Russia announced it would not renew its neutrality pact with Japan. In June, the Japanese emperor had begun to seek a means to end the war in spite of strong political factions in Japan that were against surrender. In July, the Potsdam Conference, which specified postwar treatment of the defeated Germany, also included a general proclamation calling for the unconditional surrender of Japan. Japanese leaders would not accept an unconditional surrender which did not in some way preserve the imperial system. The allied powers agreed that an unconditional surrender would apply only to the armed forces but did not provide a specific answer regarding the fate of the emperor or the imperial system. Without a clarification on this point, Japan was not prepared to respond to the Potsdam Proclamation and the allied leaders interpreted this silence as a decline to surrender.

The July bombardment of Japan continued unbroken into August when the first atomic weapons were dropped from a B-29 on Hiroshima, August 6. Russia invaded Manchuria and declared war on Japan, August 8. On August 9 another bomb was dropped on Nagasaki. August 10, Japan and the allied powers agreed to discuss a surrender where the imperial system would be preserved under an emperor that was chosen by the Japanese people through free elections and subject to the authority of the Supreme Allied Commander in Japan. The Third Fleet continued to conduct raids against the islands. Japan accepted the terms of surrender on August 14. On August 15 *Lexington* launched her final strikes against Japan. When word of surrender reached the Third

[70] Ibid., 828-833.

[71] Admiral Halsey once again relieved Admiral Spruance and Admiral John S. McCain relieved Mitscher as commander of the Fast Carrier Task Force. Ibid., 828-833.

Fleet, a cease-fire was ordered and all planes returned to task force carriers. On September 2, aboard the battleship *Missouri* in Tokyo Bay, the instruments of surrender were signed.[72]

With the end of hostilities, planes from *Lexington* flew precautionary patrols over Japan, dropped supplies to prisoner of war camps on Honshu and stood guard off shore during the surrender ceremony. She continued to support the occupation until December 3 when she departed Tokyo Bay with homeward bound veterans, arriving in San Francisco on December 15, 1945.

The Cold War and U.S. Security Policy

As the United States, Great Britain, and the Soviet Union began to work towards establishing stability in postwar Europe and Asia, tensions developed when the allies disagreed over implementation of various peace provisions that had been agreed upon during wartime conferences. This early discord found the U.S. and Britain frequently united in their views and in opposition to the Soviet perspective. Ultimately the peace process became a contest between the western allies and Soviet Union to rebuild Europe according to political and economic systems strongly influenced by either communist or democratic principles. Military tensions also accompanied these diplomatic struggles. In 1945, the Soviet Union possessed the largest army in the world and was still capable of overrunning the war-weakened areas of Western Europe, the Middle East, and Asia. The U.S. had the world's most powerful weapon, the atom bomb, but faced a diminished military force as Congress responded to public demand and authorized swift demobilization and reductions in the defense budget. The bomb did provide the U.S. with military superiority until 1949 when the Soviet Union acquired atomic weapons.

This post-war struggle gradually evolved into a quasi-global conflict in which opposing sides allied with either the U.S. or the Soviet Union and their respective political and economic philosophies.[73] During the first years of the so-called "Cold War" the Soviet Union was seen by the U.S. and her allies as the only source for a serious military threat. It was assumed that any future war would be a land-based confrontation with the Soviet Union and the use of nuclear weapons could ensure a swift defeat while their destructive power could also serve as a deterrent to any major confrontation. However, the next war was a United Nations-sponsored, conventional war

---

[72] Ibid., 833-835.

[73] The 1945 peace brought armies of liberation to the countries of Europe and Asia. In accordance with the agreements reached at Yalta and Potsdam the allied forces were to jointly occupy Germany and Berlin, ensure liberated peoples the opportunity to establish their own governments, and negotiate peace settlements with the former Axis states. Japan was to be occupied solely by American forces under the Supreme Allied Commander and the Allied Council for Japan with direction from the Far Eastern Commission. By 1950 most of Western Europe, which had been host to American and British liberating forces, had established predominately democratically influenced, post-war governments. This included France, Belgium, the Netherlands, Italy, Austria and the French, British and American occupation zones in Germany and their respective sectors in Berlin. Most of Eastern Europe, which had been liberated by Soviet forces, had established communist governments. This included Poland, the Baltic States, Hungary, Bulgaria, Rumania, Czechoslovakia, Yugoslavia and the Soviet sector in Berlin. Korea was divided along the 38th parallel. The northern portion of the peninsula, liberated from Japanese occupation by Soviet forces had set up a communist government. The southern portion, liberated by U.S. forces, now had a democratic government. China's nationalist government had evacuated to Taiwan after falling to the communist forces who in turn entered into a 30-year pact of mutual assistance with the Soviet Union. In French Indochina, civil war was also on the horizon as Nationalist and Communist forces sought to exploit the power vacuum left upon the withdrawal of Japanese troops. As well, Indonesia and other colonial governments in Southeast Asia and elsewhere were struggling for independence and dealing with communist forces and other political factions competing for power. These geopolitical boundaries established shortly after the war would become the lines of demarcation in the quasi-global conflict between communist and anticommunist forces. They would also be the sites for many of the uprisings, or wars, which characterized world events over the next fifty years. Hallie Brooker, *US Navy Ships from the Cold War 1945-1989, Potential Candidates for National Historic Landmark Designation, A Preliminary Report* (Unpublished draft report, National Historic Landmarks Program, National Park Service, 2001), 1-10.

in Korea where the joint UN forces took every measure to contain communism to North Korea and not to provoke the direct participation of China or the Soviet Union for fear of nuclear retaliation.

The Korean War (1950-1953) marked the beginning of a national security policy in which the U.S. sought to maintain superiority in weapons and military strength in order to wage or deter war and to contain communism within the lines of demarcation established at the end of World War II. This policy was characterized by a nuclear arms race between the U.S. and Soviet Union and a series of conventional wars and limited engagements where smaller countries, with the assistance of the major nuclear powers, fought to establish communist or democratic governments. It continued until 1989 when the communist governments of Europe and the Soviet Union collapsed. The guaranteed mass destruction of nuclear weapons did serve to prevent a direct confrontation between the two superpowers and the Soviet policy to promote communism and the U.S. policy advocating democracy was carried out indirectly through the political struggles of other nations.[74]

Essex-class Carriers and Post-War Carrier Development

After 1945, the U.S. Navy, as well as the Army and Air Force (established as an independent service from the Army in 1947) began to develop strategies to address the growing tensions of the postwar world and to implement the nation's security policy. As such the Navy sought to build a fleet capable of waging or deterring war, one which would complement the Army and the Air Force's ability to deliver nuclear weapons against land-based targets.

World War II firmly established the role of aviation within naval operations and carriers replaced battleships as the Navy's primary weapon of force. As well, by the late 1940s, nuclear weapons could be delivered by carrier bombers or guided missiles carried on submarines, cruisers, or carriers. Thus, carrier aircraft, which had transitioned from propeller to jet propulsion, were initially the preferred means for the Navy to carry out nuclear bombardment of strategic sites. To meet this objective, the Navy began to center its fleet on the carrier attack force. Postwar developments in carrier design thus involved the construction of larger carriers capable of supporting heavier jet aircraft and nuclear weapons. In addition to increased size, three major design changes reflective of these needs would be developed and incorporated into postwar carrier designs. These included an angled flight deck which allowed simultaneous take-off and landing of carrier air groups, steam catapults which provided the additional boost jets needed for take-off, and mirrored landing systems which assisted the jet pilot

---

[74] Numerous limited engagements began as early as 1946, when Russia began pressuring Turkey for access and control of the Dardanelles and civil war rebels in Greece were supported by Soviet ally, Yugoslavia. The U.S. provided arms and military advisors to Greece, sent the U.S.S. *Missouri* to Istanbul and two months later established a new command in the Mediterranean, the Sixth Fleet. In 1948, Czechoslovakia's coalition government, no longer under postwar Soviet occupation, was seized by the Communist Party. Between 1948 and 1949 the Soviets implemented the Berlin Blockade as they tried to force the Western Allies from their occupation sectors in Berlin by blocking supply and communication lines. In 1953 and 1958 when Communist forces from the Chinese mainland threatened to invade the Nationalist-held islands of Quemoy and Matsu, the U.S. ordered the Seventh Fleet to the Taiwan Strait in a show of force. The 1955 Suez Crisis occurred when Egypt sought to purchase arms from communist controlled Czechoslovakia and the U.S. sought to discourage such interaction. In 1956, Hungary attempted and failed to overthrow their communist government. In 1958 the U.S. provided direct military aid to Lebanon to contain a communist uprising and ensure a peaceful transition to a non-communist government. In the 1961 Berlin crisis, Soviets succeeded in erecting a wall to seal off the communist and non-communist zones and halt the fiow of East Germans into West Germany via Berlin. In 1968, Soviet forces succeeded in abruptly halting Czechoslovakia's attempt to introduce reform to their communist government. In 1961, CIA-sponsored Cuban refugees attempted to, and ultimately failed in, invading Cuba to overthrow the Castro regime in the Bay of Pigs incident. The Cuban missile crisis, in which the U.S. succeeded in forming a blockade to intercept the Soviet arms shipment headed for the island, occurred in 1962. The U.S. also intervened in the Dominican Republic in 1965, Grenada in 1983, and Panama in 1989 in order to contain the spread of communism in the Caribbean. The Korean War (1950-1953) and Vietnam War (1954-1975) were the longest sustained confiicts faced by America during the Cold War. Ibid.

in carrier landings.[75]

Due to restricted defense budgets in the first years following World War II, the Navy was not authorized to construct new carriers. However, conversion of existing vessels and completion of vessels begun under wartime appropriations were authorized. As such, the 24 *Essex*-class carriers remaining at the end of the war provided the Navy with its initial fleet of postwar attack carriers. Most of these ships were modernized under various conversion programs beginning in 1948 and continuing into the 1960s in which they received angled decks, steam catapults, and upgrades in weapons and fire control systems.[76] These modifications allowed them to meet the postwar naval mission until replaced by new carriers and re-designated to serve in anti-submarine, training, or other carrier support roles.

Although the *Midway* class of carriers was developed during World War II none were completed before the end of hostilities. Unlike the *Essex* design that was based on pre-war *Yorktown* class, the CVB large carriers were not limited by 1922 treaty-imposed restrictions in displacement. Thus, the *Midways* were much larger than the *Essexes* and incorporated an armored flight deck to protect against surface fire and aerial bombardment. With these characteristics, the *Midways* were the only carriers that could operate postwar weapons and early jet aircraft without any modifications until the late 1950s at which time they received upgrades that included angled flight decks and steam catapults. The *Midway* class bridged the transition from the pre-jet, treaty-limited carriers of World War II and the large postwar type "supercarriers" designed to accommodate heavier aircraft and weapons.

The *United States* was to be the first postwar class of large supercarriers. Development of the design, the size and shape of the hull, and angled flight deck was to be determined primarily by the characteristics of the heaviest aircraft the carrier would operate. Although Congress cancelled construction of the *United States* in 1949, the concepts of the design were carried over into the *Forrestal* class and subsequent carrier designs. The four ships of the *Forrestal* class, completed 1955-1959, were the first large postwar supercarriers built from the keel up, incorporating angled deck, steam catapults, and the capacity to launch nuclear and conventional strikes. After *Forrestal*, the U.S. Navy brought nuclear propulsion to carrier operations with the construction of *Enterprise*, completed in 1961. The Navy returned to conventional power with the *Kitty Hawk* class, completed 1961-1968, which was essentially an improved version of *Forrestal*. With the *Nimitz* class, completed 1975-2001, the Navy returned to building nuclear-powered carriers.[77]

U.S.S. *Lexington* (CVA-16, CVS-16, CVT/AVT-16) 1946-1991

---

[75] Development of the attack carrier forces would also involve advances in anti-aircraft, anti-ship, and anti-submarine weapons to provide protection to the carriers. Designs in cruisers, destroyers, and destroyer escorts evolved to carry these nuclear or conventional weapons and focused more exclusively on protection duty. Ultimately the submarine would become the Navy vessel most suitable to deliver long-range nuclear warheads. The Regulus I and II, long-range cruise missiles designed to be launched from submarines and adapted for cruisers and carriers, were used from 1954-1964 and provided a means for delivering nuclear warheads to land targets. Regulus II was cancelled in favor of developing the Polaris intercontinental ballistic missile system. Polaris differed from earlier submarine-launched missiles in that it could be fired from underwater. Polaris was followed by the Poseidon (early 1970s) and Trident (early 1980s) systems. Ibid., 11-16.

[76] Most of the *Essexes* were modernized under the SCB 27A and 27C and the later SCB 125 and 125A programs. In all, there were five distinct modernization programs: SCB 27A (1948-1953), SCB 27C (1951-1956), SCB 125 (1954-1957), SCB 125A (1957-1959), and SCB 144 (modernization of 27A CVs in 1960). SCB 27A was the first program carried out 1948-1953. The next program, SCB 27C was carried out in two versions: basic 27C included the modifications under SCB 27A plus several other changes. Advanced SCB 27C, which was *Lexington's* program, included the alterations under basic SCB 27C plus additional changes as well as SCB 125 modifications all completed in one dockyard period. *Terzibaschitsch, Aircraft Carriers*, 143-145.

[77] Brooker, *U.S. Navy Ships from the Cold War*, 11.

Lexington arrived in Puget Sound in May 1946 and, after a short period of operations along the West Coast, was decommissioned and placed in reserve at the Bremerton Naval Shipyard on April 23, 1947. While still in reserve and decommissioned, *Lexington* was redesignated as an attack carrier (CVA-16) on October 1, 1952. Modernization of the carrier commenced on September 1, 1953 when *Lexington* began her SCB-27C and SCB-125 conversions. With modernization completed, the Navy recommissioned *Lexington* on August 15, 1955.

After a shakedown cruise, *Lexington* joined the Seventh Fleet at San Diego in March 1956. She operated off California until May 1956 when she was deployed to the Far East with the Seventh Fleet. Based at Yokosuka, she conducted exercises and search and rescue operations off the coast of China before returning to San Diego in December 1956. After a period of coastal training, *Lexington* again deployed to the Seventh Fleet at Yokosuka where she served from June 1 to October 17, 1957 before returning to San Diego. Following an overhaul at Bremerton, she was ordered to join the Seventh Fleet off Taiwan.

In July 1958, when Communist forces from the Chinese mainland threatened to invade the Nationalist-held islands of Quemoy and Matsu, *Lexington* and the Seventh Fleet began patrolling the Taiwan Strait, in accordance with the U.S. pledge to support the Chinese Nationalists in Taiwan. This show of naval force prevented an invasion and the outbreak of hostilities between the U.S. and China. *Lexington* remained off Taiwan until departing for San Diego on December 19, 1958.

On April 26, 1959, when she departed the West Coast for another tour of duty in the Taiwan Strait with the Seventh Fleet, on board were the Navy's first air-to-surface "Bullpup" guided missiles. In August and September she was on standby alert during the Laotian crisis and then exercised with British forces before departing for San Diego in November. In early 1960 she was overhauled at Bremerton Naval Shipyard before departing on another Far East tour that lasted until late 1961. After returning to the West Coast, *Lexington* was ordered to replace U.S.S. *Antietam* (CVS-36) as the Navy's training carrier at Pensacola, Florida and was reclassified as CVS-16 on October 1, 1962.[78] However, she was forced to delay this duty and resumed her attack carrier designation in late October when the U.S. confirmed the construction of Soviet missile sites in Cuba. During the Cuban Missile Crisis, *Lexington* stood by at Mayport Naval Station[79] as other ships were detached to the Caribbean, including the modernized *Essex* (CVS-9), to form a blockade to intercept the Soviet arms shipment headed for the island. By December, with the missile sites removed and a nuclear confrontation avoided, *Lexington* arrived at Pensacola to begin her training carrier duty.

The Navy's training program for its pilots and observers (those with expertise in operational aspects of naval aviation but not pilots) evolved as aviation became more integrated into naval operations. Initially, Naval Aviator pilots and observers were drawn from Naval Academy graduates, naval reservists, and select enlisted men that volunteered for flight training. As well, a number of senior officers sought flight training because federal law specified that only qualified Naval Aviators could command carriers, seaplane tenders or naval air stations. The increased need for pilots beginning in the 1930s and continuing through World War II helped establish a more streamlined and rigorous training program. In the mid-1930s, the Navy's aviation program included a one-year course involving 465 hours of ground school and 300 flight hours. By 1941 the program included a month of pre-flight training at a naval reserve air base followed by extensive instruction at Naval Air Station (NAS) Pensacola or Jacksonville that included two weeks of indoctrination, 13 weeks of ground school, 13 weeks of flight training and 200 flying hours before graduation. During training students were evaluated and assigned to patrol and utility, battleship-cruiser observation, or carrier planes. Those selected for carrier duty

[78] Anti-submarine Warfare Support Aircraft Carrier. The term established by the Navy on August 8, 1953 and applied to former CVs or CVAs.

[79] Located near Jacksonville, Florida.

went to NAS Miami for additional training in fighter, dive-bomber and torpedo planes as well as carrier landing qualification, gunnery and tactics for fighter pilots. By the end of 1943 the program included 8-12 weeks of pre-flight training conducted through the Civilian Aeronautics Authority War Training Service (CAA-WTS) and numerous colleges or universities that sponsored this service. This was followed by 35-40 hours of flight instruction and three months of physical training. Pre-flight was followed by Primary, Intermediate, and Operational Training. Primary lasted 11-14 weeks and included 90-100 flight hours in naval training aircraft. Intermediate was 14-18 weeks with 160 hours flight time specializing in carrier, multi-engine sea or land, or observation type training aircraft. Students selected for carrier aircraft concluded with two months of Operational Training in combat-type aircraft and carrier qualifications conducted on the training carriers *Wolverine* (IX-64) or *Sable* (IX-81) stationed in submarine-free Lake Michigan.[80]

At the end of World War II the need for Naval Aviators decreased but the basic structure of the training program remained quite similar. Navy flight training begins at NAS Pensacola. Candidates may enter from civilian life through the aviation officer candidate (AOC) program or as an officer already commissioned through another program such as the Naval Academy or NROTC or as an active duty enlisted member (earning a commission through the flying limited duty officer (FLDO) program). The AOC program lasts fifteen weeks and includes an introduction to military life and coursework in seamanship, organization and administration, military law, and the principles of sea power as well as aerodynamics, navigation and power plant academics. After completion candidates become commissioned ensigns in the U.S. Naval Reserve. Officers with commissions forego the military training received by AOCs but receive similar coursework through a six-week indoctrination to aviation. Both groups are instructed in flight physiology and water and land survival. Upon successful completion of this phase, candidates begin an approximately eighteen month training program to become a pilot or twelve month program to become a naval flight officer (formerly naval observer). Primary flight training for pilots is a twenty week course in which students must master all aspects of flight, instrumentation, navigation, and communication. Upon successful completion, they enter into Intermediate training and specialize in jet, maritime patrol (multi-engine/propeller) or rotary wing aircraft. Student jet pilots receive about 100 hours of flight instruction and other technical coursework. Intermediate training is completed with carrier qualifications that include field carrier practice landings as well as shipboard touch-and-goes, arresting landings, and catapult launches. The successful student then moves on to advanced training that includes instruments, night flying, formation, air combat maneuver, weapons training, field carrier-landing practice, and another round of carrier qualifications in a new aircraft. Students specializing on rotary wing aircraft or those in maritime patrol specializing in the carrier-based airborne-early-warning aircraft or carrier-on-board-delivery (COD) aircraft must also complete carrier qualifications.[81]

A modernized carrier was an essential part of the Navy's aviation training program, for nearly every pilot trainee was required to demonstrate superior skill in maneuvering their aircraft on and off the flight deck before being designated a Naval Aviator. January 1963 saw the commencement of *Lexington's* long career as the Navy's training carrier. This duty as a training vessel grew in significance as naval aviation played an increasingly important role in the Vietnam War as well as other crises of the Cold War and thereafter.[82] In 1968, the Navy

---

[80] John B. Lundstrom, *The First Team*: *Pacific Naval Air Combat from Pearl Harbor to Midway* (Annapolis, MD: Naval Institute Press, 1984), 451-454; Matt Portz, "Aviation Training and Expansion, part 2" *Naval Aviation News* (September-October 1990): 23-27.

[81] Knott, *Naval Aviation Guide*, 47-62; *Naval Aviation News*, ed. *Naval Aviation Training*. 75th Year of Naval Aviation. (Washington, DC: Deputy Chief of Naval Operations Air Warfare and the Commander, Naval Air Systems Command, n.d.), 9-20, 24-25.

[82] In February 1965, the U.S. began an extensive air campaign against North Vietnamese military and industrial targets as a means to control North Vietnam and not provoke Chinese intervention. However, after thirty-seven months of sustained bombings, combat, and the steady built up of ground forces, only limited improvement had occurred in the military and political situation in South

created the designation CVT, Training Aircraft Carrier and on January 1, 1969 *Lexington* was redesignated CVT-16. In 1978 she was again redesignated as AVT-16, auxiliary aircraft landing training ship, after the Navy adopted the term. For over a quarter-century she operated out of Pensacola as well as Corpus Christi and New Orleans supporting carrier qualifications for naval aviation students and continued training for both active duty and reserve naval pilots. During that time, the aviators that rotated through *Lexington* helped the ship attain a Navy record of 493,248 aircraft deck landings.

Lexington was also the first U.S. Navy ship to include women in her regular crew. The first female crew members came aboard July 19, 1980 and at the close of her active career 273 members of her complement of 1,200 were women. On November 26, 1991 *Lexington* was decommissioned as AVT-16 and was relieved as the Navy's training carrier by U.S.S. *Forrestal* (CV-59). After making the successful bid to preserve, display and interpret *Lexington*, the city of Corpus Christi, Texas prepared a new berth for the carrier as a museum ship. The U.S.S. *Lexington* Museum on the Bay opened on October 14, 1992. At the end of her naval career, which spanned nearly fifty years, *Lexington* was the last operational unit of the *Essex*-class carriers.

Vietnam relative to the escalating cost of U.S. support. On November 2, 1968, President Johnson ordered the war be turned over to the South Vietnamese. Brooker, *U.S. Navy Ships from the Cold War*, 8.

9. MAJOR BIBLIOGRAPHICAL REFERENCES

Belote, James H. and William M. Belote. *Titans of the Sea*. New York: Harper & Row, 1975.

Bernstein, Marc D. "The Early Carrier Raids: Proving Japanese Vulnerability." *Naval Aviation News* (March-April 1992): 27-29.

Brooker, Hallie. *US Navy Ships from the Cold War, 1945-1989, Potential Candidates for National Historic Landmark Designation, A Preliminary Report*. Washington, DC: Unpublished draft report, National Historic Landmarks Program, National Park Service, 2001.

Bryan III, Lt. Cmdr. J. *Mission Beyond Darkness.* Corpus Christi, TX: Historical Publications, 1995.

Chesnau, Roger, ed. *Conway's All the World's Fighting Ships, 1922-1946*. London: Conway Maritime Press, 1980.

Cressman, Robert J. *The Official Chronology of the U.S. Navy in World War II*. Annapolis, MD: Naval Institute Press, 2000.

Friedman, Norman. *U.S. Aircraft Carriers: An Illustrated Design History*. Annapolis, MD: Naval Institute Press, 1985.

_____. *Battleship Design and Development 1905-1945*. New York: Mayflower Books, 1978.

Grossnick, Roy A. *United States Naval Aviation 1910-1995*. Washington, DC: Naval Historical Center, 1997.

_____. *Dictionary of American Naval Aviation Squadrons*. Washington, DC: Naval Historical Center, 1995.

Kinzey, Bert. *U.S.S.* Lexington *in Detail and Scale*. Waukesha, WI: Kalmbach Publishing Company, 1993.

Knott, Captain Richard C., ed. *The Naval Aviation Guide*, 4th edition. Annapolis, MD: Naval Institute Press, 1985, second printing with corrections, 1988.

Laurel, Lety. "Lex is Open Today." *Corpus Christi Times Caller*, April 4, 2001.

Lundstrom, John B. *The First Team: Pacific Naval Air Combat from Pearl Harbor to Midway*. Annapolis, MD: Naval Institute Press, 1984.

Morison, Samuel Elliot. *The Rising Sun in the Pacific 1931 – April 1942*, vol. 3. *A History of United States Naval Operations in World War II*. Boston: Little, Brown and Company, 1948; reprint, 1988.

_____. *Coral Sea, Midway, and Submarine Actions, May 1942 – August 1942*, vol. 4. *A History of United States Naval Operations in World War II*. Boston: Little, Brown and Company, 1949; reprint, 1988.

_____. *Aleutians, Gilberts and Marshalls, June 1942 – April 1944*, vol. 7. *A History of United States Naval Operations in World War II*. Boston: Little, Brown and Company, 1951; reprint, 1975.

_____. *Leyt, June 1944 – January 1945*, vol. 12. *A History of United States Naval Operations in World War II*. Boston: Little, Brown and Company, 1958; reprint, 1988.

Navy Department, Office of Chief of Naval Operations, Naval History Division. *Dictionary of American Naval Fighting Ships*, vol. IV. Washington, DC: Government Printing Office, 1969.

Office of the Chief of Naval Operations. *U.S. Naval Aviation in the Pacific*. n.p.: United States Navy, 1947.

Portz, Matt. "Aviation Training and Expansion, part 2." *Naval Aviation News* (September-October 1990): 23-27.

Power, Hugh. *Carrier Lexington*. College Station, TX: Texas A&M University Press, 1996.

Potter, E. B., ed. *Sea Power*. Englewood Cliff, NJ: Prentice-Hall, Inc., 1960.

Raven, Alan. *Essex-Class Carriers*. Annapolis, MD: U.S. Naval Institute Press, 1988.

Reilly, John C. "Island Hopping in WWII, from the Gilberts to the Marshalls." *Naval Aviation News* (January-February 1994): 30-35.

_____. "Organization of Naval Aviation in World War II." *Naval Aviation News* (May-June 1991): 26-31.

Reynolds, Clark G. *The Fast Carriers, the Forging of an Air Navy*. Annapolis MD: Naval Institute Press, 1968.

Sowinski, Lawrence. *USS Intrepid Album*. Levittown, New York: Gerard Graphics, 1976.

_____. "Champions of the Pacific, the Essex Class Carriers, part 1." *Warship*, vol. 2, ed. Robert Gardiner, 28-37. London: Conway Maritime Press, 1978.

_____. "Champions of the Pacific, the Essex Class Carriers, part 2." *Warship*, vol. 2, ed. Robert Gardiner, 96-103. London: Conway Maritime Press, 1978.

Spector, Ronald H. *Eagle Against the Sun*. MacMillan Wars of the United States Series, ed. Louis Morton. New York: The Free Press, 1985.

Standards and Curriculum Division, Training, Bureau of Naval Personnel. *Naval Orientation*, NAVPERS 16138, Revised. n.p., June, 1945.

Terzibaschitsch, Stefan. *Aircraft Carriers of the U.S. Navy*, 2nd ed. Annapolis MD: Naval Institute Press, 1989.

U.S.S. Lexington *CV-16, Action Reports, 22 September 1943 - 15 August 1945*. Washington DC: Naval Historical Center, Operational Archives Branch.

U.S.S. Lexington *CV-16, War Diary, September 1943 - August 1945*. Washington DC: Naval Historical Center, Operational Archives Branch.

Utz, Curtis A. *Cordon of Steel: The U.S. Navy and the Cuban Missile Crisis*. Washington, DC: Naval Historical Center, 1993.

Weigley, Russell. *The American Way of War*. Bloomington, IN: Indiana University Press, 1977.

Previous documentation on file (NPS):

__ Preliminary Determination of Individual Listing (36 CFR 67) has been requested.
__ Previously Listed in the National Register.
__ Previously Determined Eligible by the National Register.
__ Designated a National Historic Landmark.
__ Recorded by Historic American Buildings Survey: #
__ Recorded by Historic American Engineering Record: #

Primary Location of Additional Data:

__ State Historic Preservation Office
__ Other State Agency
_X_ Federal Agency : National Archives and Records Administration, Naval Historical Center
__ Local Government
__ University
__ Other (Specify Repository):

10. GEOGRAPHICAL DATA

Acreage of Property: Approximately 2 acres

UTM References:

	Zone	Easting	Northing
A	14	658600	3077670

Verbal Boundary Description:

The ship is accessed at 2914 North Shoreline Boulevard off State Highway 181 and berthed in Corpus Christi Bay along side the jetty that is adjacent to the sea wall located north of Corpus Christi Channel. The boundary encompasses the extreme length and breadth of the vessel as she stands at her berth.

Boundary Justification:

The boundary incorporates the entire area of the vessel.

11. FORM PREPARED BY

Name/Title:
David B. Whipple/Maritime Historian, National Maritime Initiative, National Park Service.
Revised May 1997 by: James P. Delgado/Executive Director, Vancouver Maritime Museum.
Revised and expanded July 2001 by: Hallie Brooker/Maritime Historian, Maritime Heritage Program, National Park Service.

Address: National Park Service
Maritime Heritage Program
1849 C St., N.W. (2280)
Washington, DC 20240

Telephone: (202) 343-8170

Date: July 9, 2001

Edited by: Hallie Brooker
National Park Service
National Historic Landmarks Survey
1849 C St., N.W.
Room NC-400
Washington, DC 20240

Telephone: (202) 354-2216

DESIGNATED A NATIONAL HISTORIC LANDMARK
July 31, 2003