

directional control during rough air conditions and at low speeds. However, it was felt this was because of its small size and not due to the design of the airship. On the sixth anniversary of the ZMC-2's first flight, she had flown more than 57,000 miles and had been in the air over 1,400 hours. The ZMC-2 remained in service for 12 years until she was scrapped in 1941. When she was stricken, her total time in the air exceeded 2,200 hours, a testimony to the experimental/operational capabilities and durability of this prototype airship. A contract was awarded by the Bureau of Aeronautics in 1932 to the Metalclad Airships Corporation (successor to the Aircraft Development Corp.) for a design and engineering analysis of metal-clad airships. However, none were built for the Navy.

## **XI. Pre-WW II Blimps and the Evolution of the K-class**

With the economic depression in 1929, plans for the development of an experimental non-rigid airship were scaled back. Congress would not authorize specific funds for the new airship, but the Navy was able to appropriate funds from several different sources for construction of the airship.

The envelope was built by Goodyear and the control car by the Naval Aircraft Factory. The airship was the first in a series of K-types, the K-1, and its design had several new features. The engines burned a fuel gas (similar to propane) instead of the traditional liquid fuel. This gas could be contained in cells within the airship envelope and, since it was of approximately the same density as air, its consumption did not change the buoyancy of the airship. In addition, the gas proved to be a more efficient fuel than liquid gasoline, and eliminated the necessity of valving lifting gas or condensing water from the exhaust to compensate for the weight of fuel burned in flight. The K-1 had a special ballonnet of 51,700 cubic feet for carrying the fuel gas. She was also the first Navy non-rigid to employ an internally-suspended control car.

The components of the K-1 were mated in 1931 and the airship was delivered to NAS Lakehurst by Lieutenant Commander T. G. W. Settle on August 10, 1931. Evaluation of the experimental K-1 began on October 7, 1931. She was the largest non-rigid airship the Navy had operated up to that time. The K-1 was reasonably successful, although at that time it was believed she was too large for a non-rigid (less than three-quarters of the size of K-types used during WW II).

The K-1 made her last flight in September 1940. She was dismantled and surveyed in the fall of 1941 to make space for new airships in the defense buildup. The K-1 was an experimental prototype and no other airships of this type were built.

After the acquisition of the experimental K-1, the Navy changed its approach and procured its next non-rigid off the shelf. Under contract 44308 of September 23, 1935, the Navy purchased Goodyear's airship *Defender*, the largest of the Goodyear fleet of advertising and passenger airships. She was delivered to NAS Lakehurst on October 5, 1935, and put into service as a training and general utility ship with the designation G-1. The G-1 was lost in a midair collision with another airship on June 8, 1942. The two airships were on a night flight, conducting visual and photographic observations of an experimental nature. Twelve people were killed in the crash, including five civilian scientists. The G-1 prototype had demonstrated her capabilities as a training and utility airship.

The Navy's need for training and utility airships in WW II led to the acquisition of seven more G-type airships. Under contract number 151 of December 24, 1942, seven more G-type airships were ordered, with a 13,700-cubic-foot increase in volume over the G-1. They were used for advanced training and utility purposes. The first group of G-types (G-2 through 5) was received in the latter part of 1943 and the next group (G-6 through 8) was received in mid to late 1944. During WW II, the G-type airships operated primarily at NAS Moffett Field and Lakehurst for training and with Airship Utility Squadron One and its detachments on the East Coast.

In 1937, the Navy contracted for two different types of airships on the same contract, the L-1 and K-2. The L-1 design

The ZMC-2, shown here on a flight over Washington, D.C., was the only metal-clad airship.



was the standard small, advertising and passenger airship developed and used by Goodyear. It was delivered in April 1938 and operated out of NAS Lakehurst until lost in a midair collision on June 8, 1942.

The L-1 was followed by a contract for two more L-types on September 25, 1940 (L-2 and L-3), which were delivered in 1941. When hostilities commenced, the Navy took over the operation of Goodyear's fleet of five advertising airships. These five airships, named *Resolute*, *Enterprise*, *Reliance*, *Rainbow* and *Ranger*, were given the designations L-4 through L-8. The characteristics and performance for these five airships varied from ship to ship.

The next series of L-types were constructed at NAS Moffett Field in its assembly and repair shops. They were the L-9 through L-12 and were completed by April 1943. The last group of L-types was ordered from Goodyear on February 24, 1943, 10 airships covering the numbers L-13 through L-22. All 10 were delivered before the end of 1943.

Training was the primary mission of the L-type and the airships operated mostly at Moffett Field and Lakehurst. They were involved in some local coastal patrols but their small size precluded any extensive patrols. However, they were excellent training airships. Some of the L-types were returned to Goodyear after the war.

In 1937, the Army Air Corps ended its airship program and transferred all its LTA material to the Navy. Only two Army airships, the TC-13 and TC-14, were considered serviceable. The TC-14 was reassembled at NAS Lakehurst in 1938,

but the TC-13, which was at Moffett Field, had to wait for a new envelope and was not reassembled until 1940. The TC-14 was later transferred to Moffett Field and the two airships became the nucleus of Airship Squadron ThirtyTwo (ZP-32) in 1942.

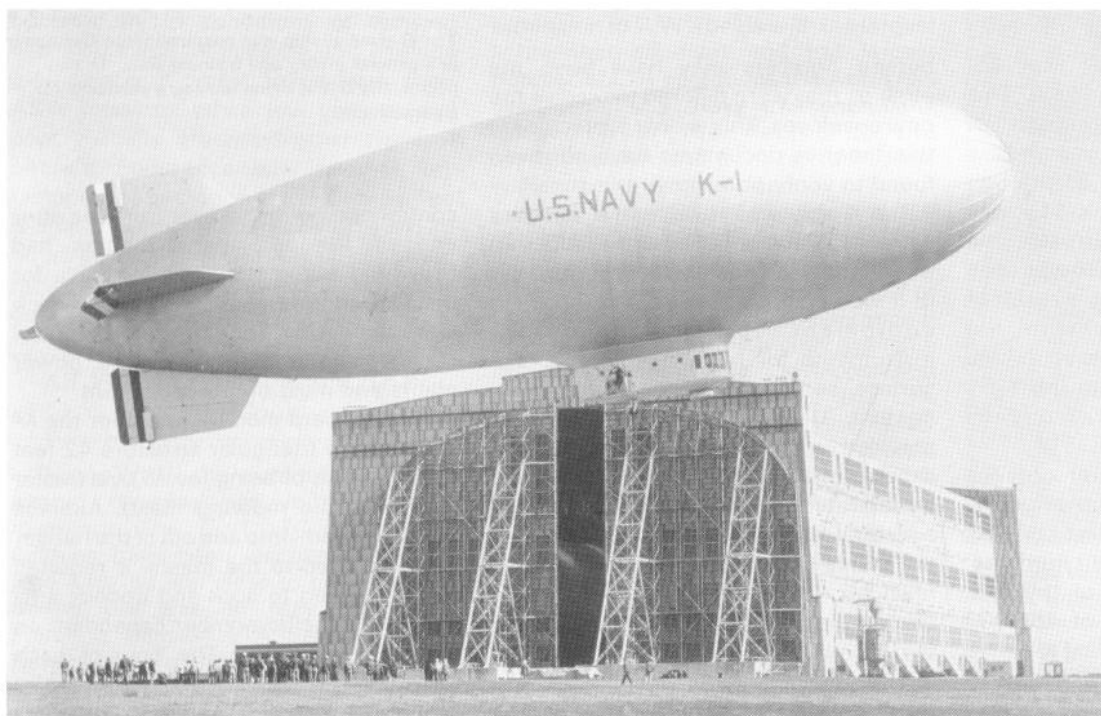
During the 1930s, the Navy's LTA program was severely limited, particularly after the loss of *Akron* and *Macon*. The LTA program received a boost in 1937 when the General Board recommended the revival of the non-rigid coastal patrols. It was during this time that the Army removed itself from any LTA activity and the Navy assumed all responsibilities in the LTA field. Although earlier purchases of airships had been made in the mid-1930s, it was not until fiscal year 1939 that the expansion of the airship fleet really got under way.

The K-types became the backbone of the Navy's airship fleet in WW II and had the largest production run of any airship type/class operated by the Navy or, in fact, of any in the world. The K-1 had been an experimental type and differed considerably from the K-2 which became the prototype for the wartime K-series. The K-2 was procured under the same contract (No. 56352) as the L-1, on August 11, 1937. She made her first flight on December 6, 1938, at Akron, Ohio, and was delivered by Goodyear to the Navy at NAS Lakehurst on December 16, 1938. At that time she was the largest non-rigid airship in the Navy's inventory, with an envelope capacity of 404,000 cubic feet. K-2 was assigned bureau number 1211 with a primary mission of patrol.

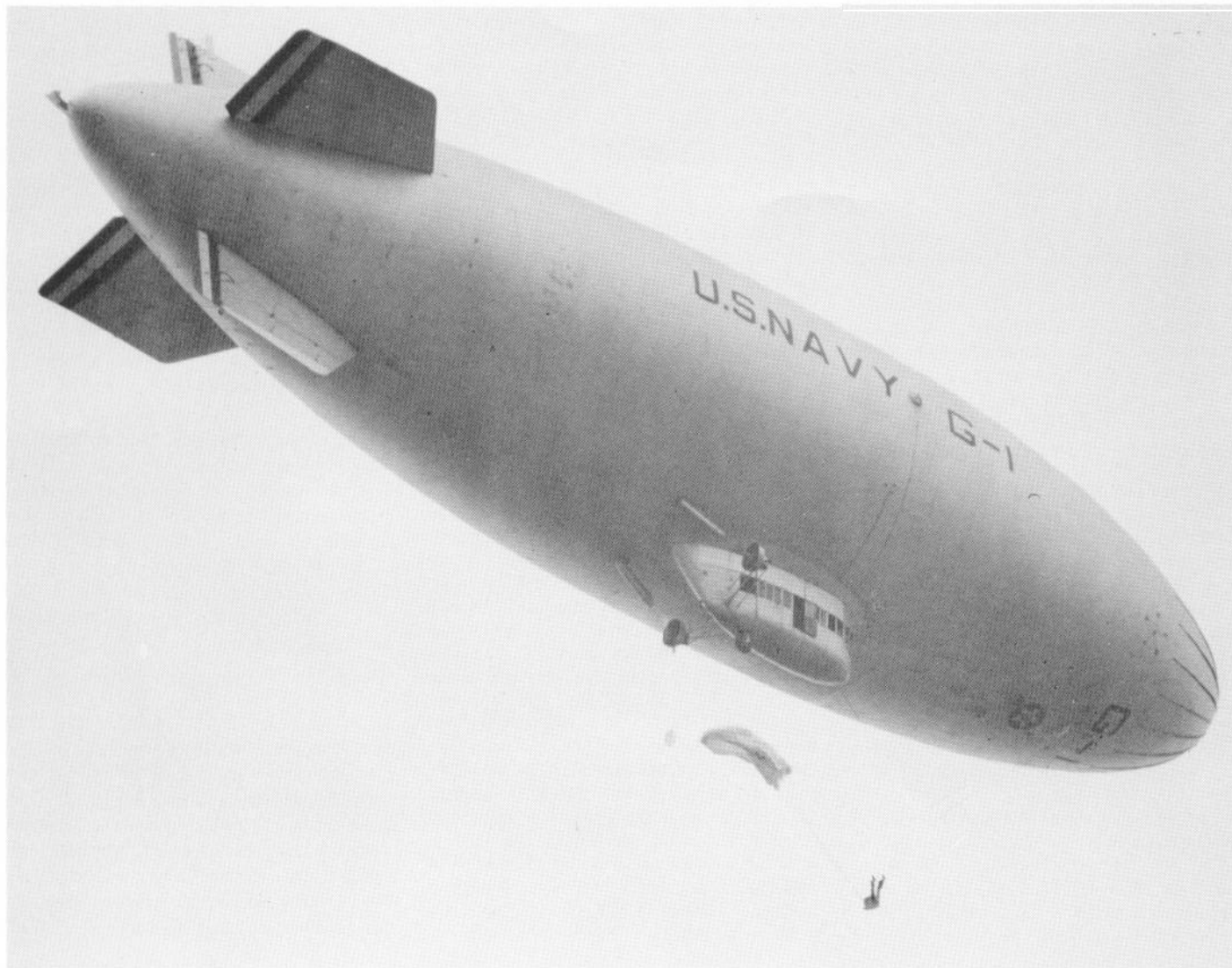
The next contract (No. 78121) for K-types was issued on October 24, 1940, for six ZNP-K airships. The designation breakdown indicated Z for lighter-than-air, N for non-rigid, P for patrol and K was the type/class. The bureau numbers assigned to the K-3 through 8 were 7025 through 7028, and 01729 and 01730. Four of these airships were delivered to the Navy in 1941 and the other two K-types were received in 1942. Five, K-3 through K-8, were designed for patrol and escort duties but were also used for training.

On October 14, 1941, the contract for the first group of six K-series was extended to include 21 additional airships. An order for still another 21 airships was signed January 9, 1943. The two additional orders for K-series airships were assigned bureau numbers 04359 through 04379 and 30152 through 30172, covering airships designated K-9 through K-50. By the end of 1942, 19 of the airships had been delivered and the remaining 23 were delivered in 1943. The first group of five airships, K-9 through K-13, had an envelope capacity of 416,000 cubic feet, and the remaining K-series had an envelope capacity of 425,000 cubic feet.

In September 1942, Goodyear was building five K-ships a month and by May 1943, the company reached its production peak of 11 K-ships monthly. The final contract for the wartime K-series airships was submitted in mid-



The K-1 was an experimental airship and the first type to have the control car suspended internally.



The G-class airship was acquired from Goodyear as a general utility and training ship. In this photo, the G-1 is being used as a platform for a parachutist.

1943 (contract NXsa-10086, May 25, 1943/NOa(s)-257, June 8, 1943). This contract was for 89 of the K-series, but four were cancelled. K-series numbers for the remaining 85 were K-51 through K-136. The control car for K-113 was destroyed by fire and, as a result, the control car scheduled for K-136 was used for K-113. It appears that as a result of this transfer an airship with the designation K-136 was never flown. Bureau numbers assigned to the K-51 through K-135 include 30173 through 30196 and 33467 through 33514.

The bureau numbers cover only 72 airships. Consequently, it appears all of the K-ships ordered in the last contract may not have received bureau numbers. An undetermined number of this last series had new envelopes of 456,000 cubic feet mated to the existing K-series control cars. It is possible that the 13 K-series airships which did not receive

bureau numbers may have been the airships that were tailored to receive the new envelopes. This is only conjecture at this time, as documents have not been found to verify or disprove this theory.

The K-ship was used as the standard patrol type for antisubmarine duties in the Atlantic and Pacific fleets during WW II. It was equipped with communication equipment and the necessary instruments for blind/night flying. For surface search operations, particularly against U-boats, each airship was provided with an ASG-type radar unit capable of detecting objects at 90 miles. Underwater search equipment included sonobuoys and MAD gear. Armament for the K-ship normally included four torpex-filled Mk 47 (350-pound) depth bombs, two on external bomb racks and two in the bomb bay. A 50-cal. Browning aircraft machine gun was placed in a turret in the forward part of the K-ship's

control car. For fire power from the after end of the car, many K-ships had Browning automatic rifles available for installation in the aft windows which were removable. The 40 foot-long control car carried the crew, armament, power plants and most of the equipment.

The standard mooring mast for the K-ships was a triangular structure 42 feet high, capable of being towed by a tractor (called mobile mooring mast). Airships were "walked" into and out of the hangar while moored to the masts. It required about 40 men to dock and undock a K-ship, the specific number dependent on weather conditions. The bow of each airship was equipped with a round disc mounted on a horizontal spindle with a

cone fastened to it. A cup on the top of the mooring mast would engage the cone on the bow of the ship and secure the airship to the mooring mast. Another type of mooring mast was called the stick mast, a single mast securely anchored in a particular location by guide wires. The mast was not mobile in the sense that it could not be moved when an airship was moored to it. The stick mast was important for use at advance bases or for expeditionary missions. It was easy to transport and erect, and required very little room to be set up.

During the war, blimp squadron (ZP, LTA patrol squadrons) flight personnel were divided into combat air crews that normally consisted of 10 people. The officer complement included a senior or command pilot (flight captain), two copilots and a navigator who also was a pilot. Enlisted personnel were composed of an airship rigger, an ordnanceman, two mechanics and two radiomen. The radiomen operated the radar, the MAD equipment, Loran equipment, and the standard radio transmitters and receivers.

For their duties of escort and patrol, K-ships possessed the advantages of hovering and making slow-speed searches at altitudes of 100 feet or less for extended periods of time. These long-endurance, low-altitude, slow-speed searches resulted in the detection of numerous enemy submarines, as well as locating and assisting in the rescue of many vessels, aircraft and persons in distress. The ability to operate successfully in conditions of reduced visibility made it possible for airships (particularly K-types) to perform their ASW missions when low ceilings and poor visibility grounded other types of aircraft. Endurance was another key factor in the operation of the K-ships. The K-ship's normal endurance of over 26 hours at cruising speed was an important factor in the employment of ASW tactics during WW II.

## XII. WW II Airships and Their Operations

During WW II, there were five different airship classes/types in the Navy's inventory. The G, L, TC and K-type airships have been discussed. The M-type was the last class to be developed during the war. In May 1942, the Planning Division LTA Section of the Bureau of Aeronautics issued a directive regarding the development/procurement of M-type airships. This was

followed by a contract (NXs-7298) on June 17, 1942, dealing with the prototype for the M-class, followed by more directives until, on August 16, 1943, Planning Directive 11-ZZ-43 indicated a total of 22 M-type airships had been requested for procurement. Contract number NOa(s)-146 was signed on September 11, 1943, for 21 M-type airships (ZNP-M). Planning Directive 16-ZZ-43 of November 22, 1943, requested action to reduce the total number of M-types ordered from 22 to 4. The prototype M-1 was delivered to the Navy on November 27, 1943. Two other M-types were received by the Navy in 1944, one in February and one in March, and the last in April 1944. No bureau numbers were assigned to the four M-type airships procured by the Navy.

The M-types were constructed by Goodyear. A Navy press release, dated October 16, 1943, indicated the M-1 prototype had completed her first test flights and that she was the largest non-rigid airship built at that time. A distinctive feature of the airship was the control car which was 117 feet long, nearly three times as long as the control car on the K-ship. The large car consisted of three sections connected by universal joints to allow for freedom of movement in coordination with the helium-filled envelope. The control car arrangement kept the catenary loads on the envelope at the same level, thereby reducing or eliminating the possibility of wrinkles in the envelope. The M-type airships made their debut in Atlantic Fleet ASW operations in August 1944. However, they were used on a very limited basis during the war.

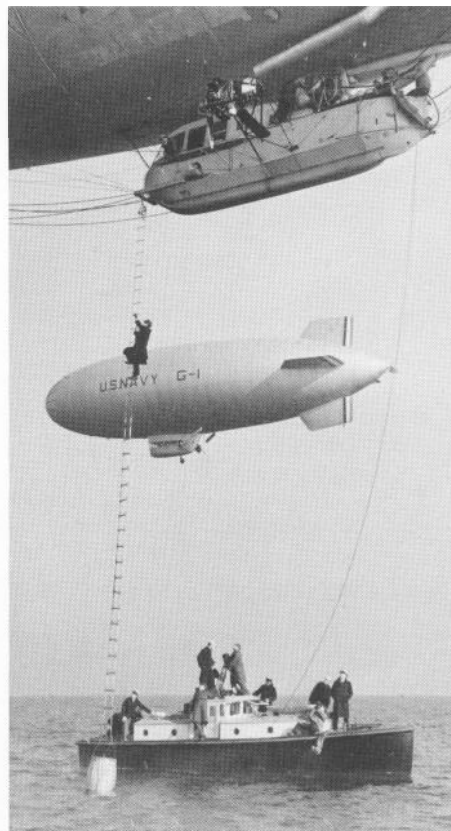
The story of airship operations and expansion in WW II deals with the largest lighter-than-air fleet and the largest number of LTA operations the world has ever seen. U.S. Navy LTA operations ranged from the Pacific to the Mediterranean and from North Atlantic waters to the South Atlantic.

WW II is considered the apex of LTA operations, while the period from the loss of the *Macon* on February 12, 1935, to June 1940 might be called the nadir of LTA activity. There was little operational activity in LTA and little money available for experimental and developmental work during 1935 to 1940. The LTA inventory reached a maximum of six airships in 1938. This inventory included the G-1, L-1, K-1, K-2, TC-13 and TC-14. Of these six airships, only the K-2, the prototype for the K-series, and the TC-types were capable of ASW operations.

The need for modern airships was compounded by the lack of naval air stations capable of handling LTA operations. NAS Lakehurst was the only LTA operational and training air station in existence from October 1935 to April

1942. The threat of war spurred Congress into action, and it passed Public Law 635 in June 1940, providing for the construction of 48 non-rigid airships. This was the beginning of the LTA buildup. The opening salvo at Pearl Harbor found LTA still lacking modern airships, operational air stations and the administrative and operational organizations necessary to direct LTA activities. The story of LTA in WW II is not just the story of successful operations but also the organizational evolution that developed and directed LTA activity.

At the beginning of WW II the Navy's LTA inventory consisted of 10 airships, which included two old TC-type Army trainers (TC-13 and 14); one G-type (G-1); three L-type trainers (L-1, 2 and 3); and four K-type ASW/patrol airships (K-2, 3, 4 and 5). NAS Lakehurst was still the Navy's only operational LTA station. There was none on the West Coast until NAS Sunnyvale was established on April 16, 1942. LTA had no official organization to conduct fleet operations when war was declared. The existing airships were attached to NAS Lakehurst for training, experimentation and operational activities.



An air-sea transfer is demonstrated by a J-class airship, with the G-1 in the background. Note the difference between the two airship control cars. The G-class car is attached directly to the envelope and completely enclosed, while the older J-class car is suspended by wires from the airship envelope.



During the first few weeks of the war, all airship ASW and patrol operations were conducted by airships assigned to NAS Lakehurst. The first step in the evolution of LTA's operational and administrative structure was the establishment of Airship Patrol Group One and Airship Squadron 12 at NAS Lakehurst on January 2, 1942. This was the beginning of an extensive LTA organization that developed within the Atlantic and Pacific Fleets.

Nine major LTA naval air stations were established in the continental U.S. after the war began: NAS Weeksville (Elizabeth City), N.C.; Tillamook, Ore; South Weymouth, Mass.; Santa Ana, Calif.; Richmond, Fla.; Glynco, Ga.; Houma, La.; Hitchcock, Texas; and Moffett Field (Sunnyvale), Calif. Numerous auxiliary stations and HTA air stations in the continental U.S. had LTA detachments assigned. This list includes: Apalachicola, Banana River, Key West and Eglin Field, Fla.; Brunswick and Bar Harbor, Maine; Cape May, N.J.; Fisher's Island, N.Y.; Solomons and Patuxent River, Md.; Charleston, S.C.; Dahlgren, Va.; Lompoc, Del Mar, Watsonville and Eureka, Calif.; Astoria and North Bend, Ore.; and Shelton and Quillayute, Wash.

LTA also operated from air stations outside the continental U.S.: San Julian, Isle of Pines and Guantanamo Bay, Cuba; Chorrera Field and Mandinaga, Panama; San Juan, Puerto Rico; Vernam Field, Jamaica; Edinburgh, British West Indies; Panama; Atkinson Field, British Guiana; Barranquilla, Columbia; Fortaleza, Sao Luiz, Igarape Assu, Amapa, Maceio, Ipitanga, Fernando do Noronha, Caravellas, Santa Cruz, Victoria and Recife, Brazil; Carlsen Field, Trinidad; Zandery Field and Paramaribo, Dutch Guiana; Port Lyautey, Morocco; British Gibraltar; British Malta; Bizerte, Tunisia; Cagliari, Sardinia; Cuers, France; Venice, Pisa and Rome, Italy; and Ensenada, Mexico.

Within the LTA organization there were two senior commands that administered the Pacific and Atlantic Fleet LTA activities: Fleet Airships, Pacific and Fleet Airships, Atlantic.

During the war there were various reorganizations within the LTA structure. Fleet Airships, Pacific had been originally established as Patrol Group Three on October 1, 1942, and was then redesignated Fleet Airship Wing (FASW) 31 on December 1. On July 15, 1943, it was again redesignated as Fleet

Airships, Pacific with administrative duties and as Fleet Airship Wing Three with operational responsibilities. In this dual role, the command reported to Commander Fleet Air, West Coast. This dual-hatted command organization continued until January 23, 1946, when both organizations were disestablished.

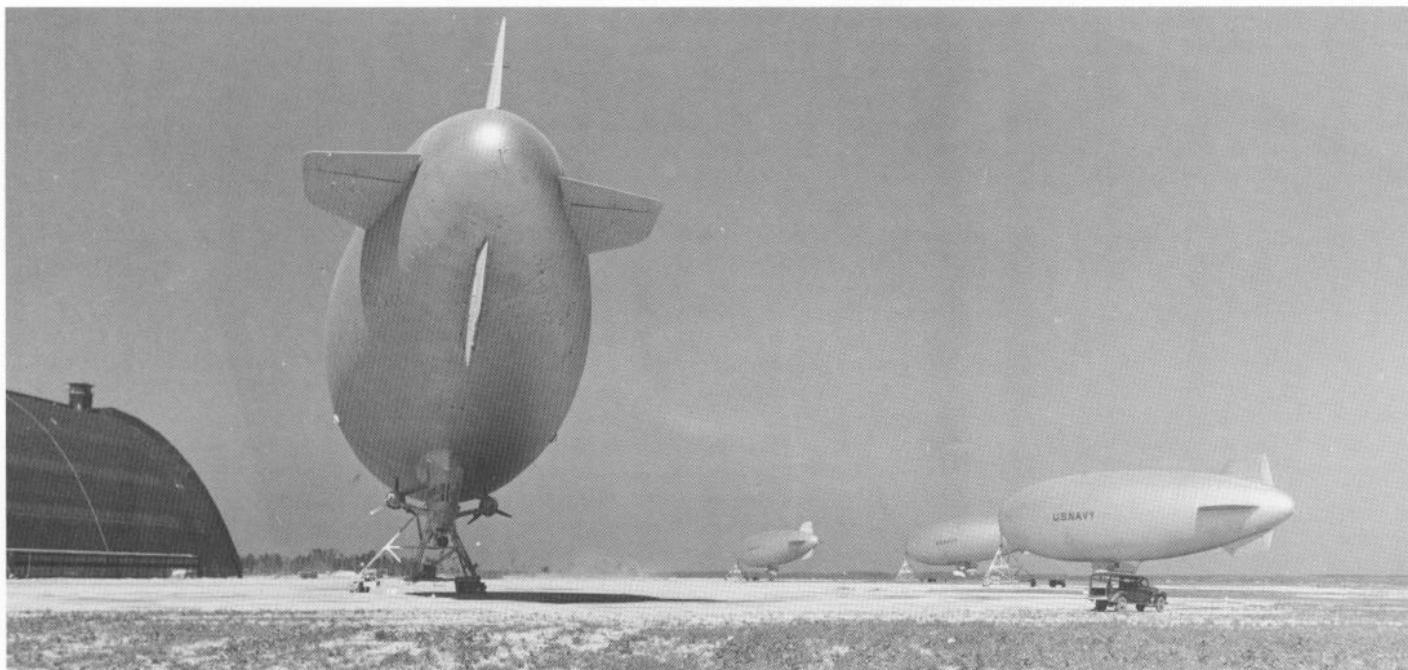
A similar change in organization occurred in Fleet Airships, Atlantic. It was established as Fleet Airship Wing 30 on December 1, 1942, and redesignated Fleet Airships, Atlantic on July 15, 1943.

Fleet Airships, Atlantic was established to administer the airship wings and their component squadrons. It reported to the Commander Air Force, Atlantic. The operational units under the administrative control of Fleet Airships, Atlantic were assigned to various task forces and task groups for the purpose of tactical employment.

During the war, five Fleet Airship Wings came into existence. Besides FASW-3 on the West Coast, FASWs 1, 2, 4 and 5 operated on the Atlantic coast. Fleet Airship Wing One had originally been established as Airship Patrol Group

**L-class airships on a training flight near NAS Moffett Field, Calif., in February 1944.**





K-class airships moored at NAS Weeksville, N.C., during WW II.

One on January 2, 1942, which was redesignated Fleet Airship Group One on November 1. Fleet Airship Group Two was established on March 1, 1943. On July 15, a major reorganization of the LTA structure was instituted in which Fleet Airship Group designations were changed to Fleet Airship Wings hence, Fleet Airship Group One and Two became Fleet Airship Wing One and Two. Several weeks later the last two Fleet Airship Wings, Four and Five, were established on August 2, 1943. Fleet Airship Wings 1, 2, 4 and 5 were the intermediate administrative and operational commands between their operational fleet squadrons and Fleet Airships, Atlantic.

The next lower command echelon in the LTA structure was the blimp squadrons, the operational units of the fleet. Prior to the war there were none, but by the end of the war the Navy had established 14 operational blimp squadrons. The designation for these squadrons was ZP and their mission was ASW, patrol and escort. The July 15, 1943, modification of the airship organization also included redesignating airship squadrons to blimp squadrons. The blimp squadrons established were: ZPs-11, 12, 14, 15, 21, 22, 23, 24, 31, 32, 33, 41, 42 and 51. Another blimp squadron, ZP-52, was redesignated ZP-41, a month after its establishment. Only one other type of blimp squadron was established during the war, with a different mission from that of the ZPs.

Airship Utility Squadron (ZJ) One was established on February 10, 1944. Its mission was torpedo recovery, photographic and calibration services

and other general utility functions. It had been formed to relieve the operational ZP squadrons of these duties, so that they could concentrate on their ASW mission. ZJ-1 was also assigned the additional function of administering Airship Antisubmarine Training Detachment, Atlantic Fleet.

To support the operational activities of the blimp squadrons, a maintenance and repair organization was established. Blimp headquarters squadrons (BLPHRN) were established in the reorganization of the LTA structure on July 15, 1943. Four, BLPHRNs 1, 2, 3 and 4 were established on that date. BLPHRN-5 was established August 2. The mission of these squadrons was to completely divorce all maintenance, repair and upkeep of aircraft from the flying and operational blimp squadrons, thereby freeing combat air crews from all duties except those involving flying. The blimp headquarters squadrons were directly responsible to the fleet airship wings.

Various detachments from the blimp headquarters squadrons were assigned to the different blimp squadrons which supported the maintenance of the blimp squadron aircraft.

The expansion of the LTA fleet increased the demand for qualified LTA pilots, observers and the enlisted ratings necessary to make LTA successful. LTA training was instituted at NAS Moffett Field after the war started and the training program was continued at NAS Lakehurst where it had been conducted prior to the war.

On May 15, the Naval Airship Training Command was established at Lakehurst to administer and direct LTA training

programs at NAS Lakehurst and Moffett Field, and direct the Experimental and Flight Test Department at Lakehurst. Two specialized training units were established in 1944 to conduct experiments and training separate from the Naval Airship Training Command.

Prior to its formal establishment, the Airship Antisubmarine Training Detachment, Atlantic Fleet had operated as part of the Naval Airship Training Command. On January 1, 1944, it was established. Initially, the unit's chain of command was Fleet Airship Wing Two and then Fleet Airships, Atlantic. On February 10, when ZJ-1 was established, the unit operated under this squadron, which reported to Fleet Airships, Atlantic. The mission of the unit was to establish an airship ASW program of training, and experimental development; advance airship antisubmarine training, both on the ground and in the air for combat air crews who had seen operational experience in Atlantic Fleet blimp squadrons; and to build a basis, through extensive operations with friendly submarines and with surface craft, for increasing the usefulness of the airship as an antisubmarine weapon.

The counterpart of the Airship Antisubmarine Training Detachment, Atlantic Fleet was the Fleet Airships Pacific Tactical Unit which was established on March 20. Its mission was similar to that of the Atlantic Fleet detachment. It was geared to training combat crews in airship ASW techniques, particularly in the use of MAD gear, as well as navigation, tactical doctrine and carrier landing procedures. The unit operated under the control of

Commander Fleet Airships, Pacific. After training 64 combat air crews, the unit was disestablished on June 27, 1945.

A detailed history of airship operations during WW II is not possible in this brief narrative, but various squadron activities will be highlighted to provide some background on their role in the war. In order to grasp the scope of LTA activities, the following charts show the five Fleet Airship Wings, the units assigned to them and their location.

#### Fleet Airship Wing 1

Jan 1942 - Sep 1945

NAS Lakehurst, NJ

#### Headquarters Squadron 1

Jul 1943 - Sep 1945

Units/Locations	Dates
HEDRON Det 11 S Weymouth, MA	Jul 1943- Jun 1945
ZP-11 S. Weymouth	Jun 1942- Jun 1945
HEDRON Det 12 Lakehurst	Jul 1943- Sep 1945
Sub-det Fisher's Island, NY	Mar 1944- Sep 1945*
Sub-det Dahlgren, VA	Nov 1944- Jun 1945
Sub-det Solomons, MD	Nov 1944- Sep 1945
Sub-det S. Weymouth	Jun-Sep 1945
Sub-det Weeksville, NC	Jun-Sep 1945
ZP-12 Lakehurst	Jan 1942- Sep 1945
Det Cape May, NJ	Jun-Nov 1943
Det Fisher's Island	May 1944- Sep 1945
Det S. Weymouth	May 1944- Sep 1945
Det Solomons	May 1944- Sep 1945
Det Weeksville	Jun 1944- Sep 1945
Det Glynco, GA	Jun 1944- Sep 1945
HEDRON Det 14 Weeksville	Aug 1943- Jun 1945
ZP-12 Weeksville	Jun 1942- May 1944
HEDRON Det 15 Glynco	Aug 1943- Jun 1945

Units/Locations	Dates
Sub-det Charleston, SC	Aug 1943- Jun 1945
ZP-15 Glynco	Feb 1943- Jun 1945
Det Charleston	Mar 1943- Jun 1945
Det Eglin Field, FL	Mar-Apr 1945
Det Apalachicola, FL	Apr-May 1945
HEDRON Det 21 Richmond, FL	Jun-Sep 1945
Sub-det San Julian, Cuba	Jun-Sep 1945
Sub-det Banana River, FL	Jun-Sep 1945
Sub-det Key West, FL	Jun-Sep 1945
Sub-det Houma, LA	Jun-Sep 1945
Sub-det Panama	Jun-Sep 1945
Sub-det Jamaica	Jun-Sep 1945
Sub-det Glynco	Jun-Sep 1945
ZP-21 Richmond	Nov 1942/ May-Sep 1945
Det Apalachicola	May-Aug 1945
Det Chorrera Field, Panama	May-Sep 1945
Det San Julian	May-Sep 1945
Det Banana River	May-Sep 1945
Det Key West	May-Sep 1945
Det Glynco	Jun-Jul 1945
HEDRON Det 24 Weeksville	Jun 1944- Jun 1945
ZP-24 Weeksville	Jun 1944- Jun 1945
Det Weeksville	May-Jun 1944
Det Patuxent River, MD	Oct-Nov 1944

#### Fleet Airship Wing 2

Dec 1942 - Feb 1943

NAS Lakehurst

Mar 1943 - Jun 1945

Richmond

#### Headquarters Squadron 2

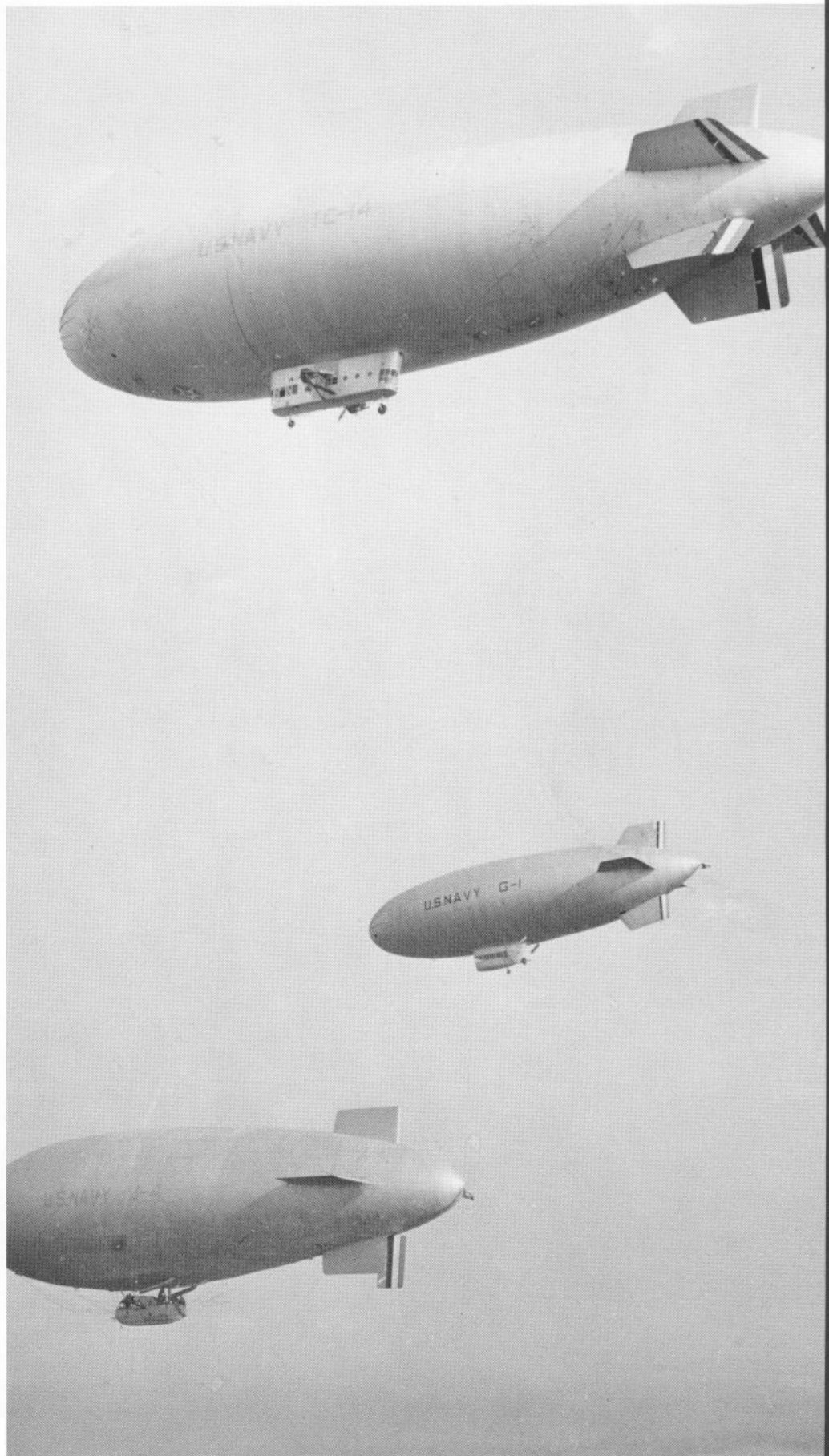
Jul 1943 - Jun 1945

NAS Richmond, VA

Units/Locations	Dates
HEDRON Det 21 Richmond	Sep 1944- Jun 1945
Sub-det Houma	Sep 1944- Jun 1945
Sub-det Chorrera Field	Dec 1944- Jun 1945
Sub-det Jamaica	Dec 1944- Jun 1945
Sub-det San Juan, PR	Dec 1944- Jun 1945
Sub-det Trinidad	Dec 1944- Sep 1945
Sub-det British Guiana	Dec 1944- Jun 1945
HEDRON Det 21-1 Isles of Pines, Cuba	Jul-Dec 1943
San Julian	Dec 1943
Isles of Pines	Dec 1943- Sep 1944
San Julian	Sep 1944- Jun 1945
HEDRON Det 21-2 Banana River	Nov 1943- Jun 1945
HEDRON Det 21-3 Key West	Jul 1943- Jun 1945
HEDRON Det 21-6 Guantanamo Bay Cuba	Jul 1943- Jan 1944/ Dec 1944- Jan 1945
ZP-21 Richmond	Dec 1942- May 1945
Det Key West	Feb 1943- Apr 1944
Det Isles of Pines	Mar 1943- Sep 1944*
Det Guantanamo Bay	Apr 1943- Feb 1944
Det Banana River	Nov 1943- May 1945
Det Houma	Sep 1944- May 1945
Det San Julian	Sep 1944- May 1945/ Dec 1944

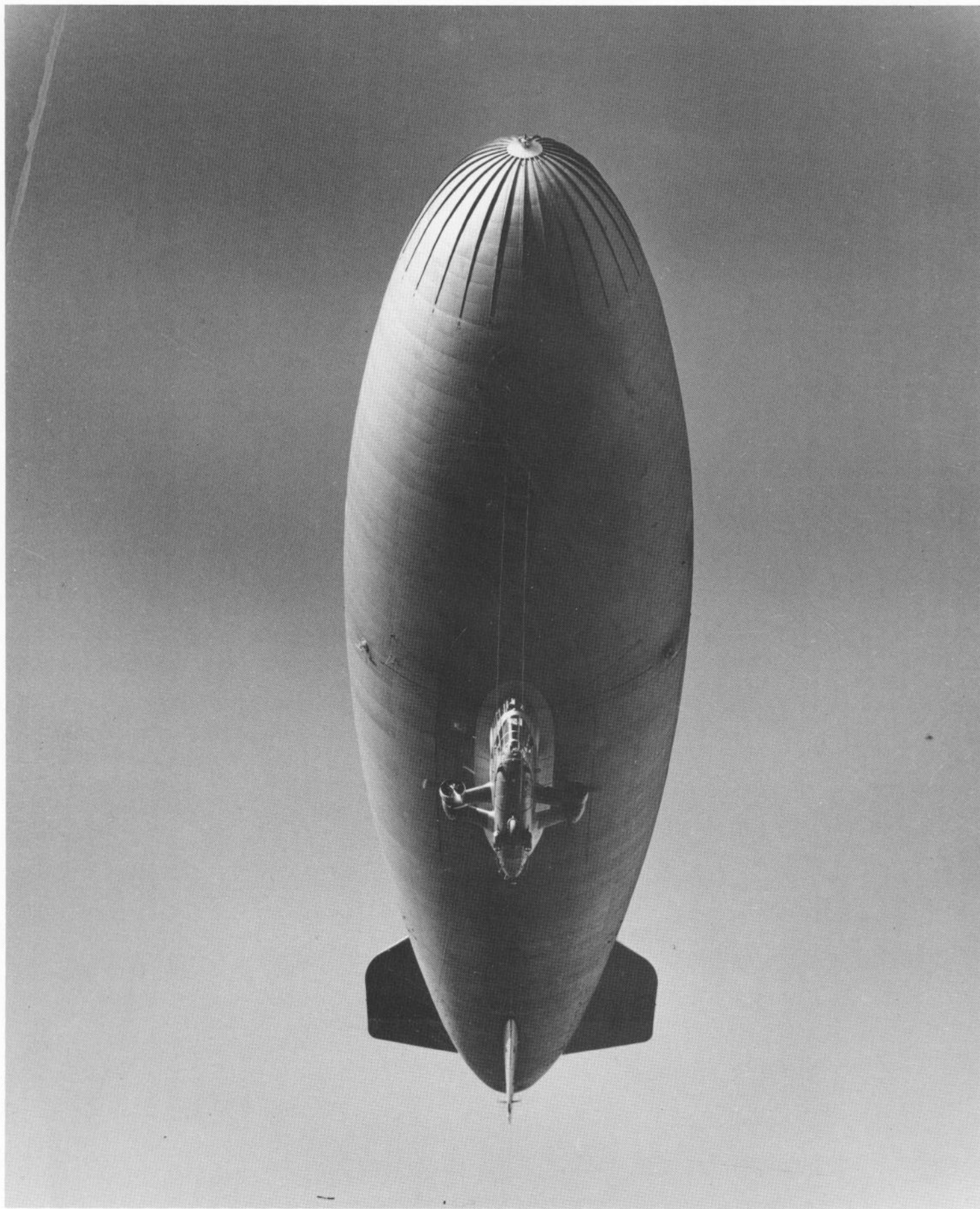
\*On inactive status during this period.

Units/Locations	Dates
Det Panama	Dec 1944- May 1945
HEDRON Det 22 Houma	Aug 1943- Mar 1944
Sub-det Hitchcock, TX	Jun-Sep 1944
ZP-22 Houma	May 1943- Sep 1944
Det Hitchcock	Jun-Sep 1944
HEDRON Det 23 Hitchcock	Aug 1943- Mar 1944
Jamaica	Mar-Dec 1944
Sub-det Mandinga, Panama	Feb-Aug 1944
Sub-det Columbia	Mar-Aug 1944
Sub-det Chorrera Field	Sep-Dec 1944
ZP-23 Houma	Jun 1943
Hitchcock	Jun 1943- Mar 1944
Jamaica	Mar-Nov 1944
Det Mandinga	Apr-Aug 1944
Det Columbia	May-Nov 1944
Det Chorrera Field	Sep-Nov 1944
HEDRON Det 24 Hitchcock	Mar-May 1944
ZP-24 Hitchcock	Feb-Jun 1944
ZP-52 Lakehurst	Jun-Jul 1943
Airship Anti-Sub Training Det, Atlantic Fleet Key West	Jan-Feb 1944



The TC-14, G-1 and J-4 in formation.





A K-ship on patrol. Note the depth bombs on the underside of the control car.

**Fleet Airship Wing 3**Oct 1942 - Sep 1945  
NAS Moffett Field, CA**Headquarters Squadron 3**

Aug 1943 - Sep 1945

Units/Locations	Dates
HEDRON Det 31 Santa Ana, CA	Aug 1943- Sep 1945
Det Mast Base Unit Del Mar, CA	Aug 1943- Sep 1945
Det Mast Base Unit Lompoc, CA	Aug 1943- Sep 1945
ZP-31 Santa Ana	Oct 1942- Sep 1945
Auxiliary Base Ops Lompoc	May 1943- Sep 1945
Auxiliary Base Ops Del Mar	Jun 1943- Sep 1945
Auxiliary Base Ops Ensenada, Mexico	Oct 1944- Sep 1945
HEDRON Det 32 Moffett Field	Aug 1943- Sep 1945
Det Mast Base Unit Watsonville, CA	Aug 1943- Sep 1945
Det Mast Base Unit Eureka, CA	Aug 1943- Sep 1945
ZP-32 Moffett Field	Oct 1942- Sep 1945
Auxiliary Base Ops Watsonville	Oct 1942- Sep 1945
Auxiliary Base Ops Eureka	May 1943- Sep 1945
HEDRON Det 33 Tillamook, OR	Aug 1943- Sep 1945
Det Mast Base Unit North Bend, OR	Nov 1943- Sep 1945
Det Mast Base Unit Quillayute, WA	Mar 1944- Sep 1945
Det Mast Base Unit Shelton, WA	Oct 1944- Sep 1945
ZP-33 Tillamook	Dec 1942- Sep 1945
Auxiliary Base Ops Eureka	Feb-May 1943
Auxiliary Base Ops Astoria, OR	Nov 1943- Sep 1945

**Units/Locations****Dates**

Auxiliary Base Ops North Bend	Nov 1943- Sep 1945
Auxiliary Base Ops Quillayute	Mar 1944- Sep 1945
Auxiliary Base Ops Shelton	Dec 1944- Sep 1945
Fleet Airships Pacific Tactical Unit Del Mar	Mar 1944- Jun 1945

**Fleet Airship Wing 4**Aug 1943 - Jul 1945  
Recife, Brazil**Headquarters Squadron 4**

Units/Locations	Dates
HEDRON Det 41 Sao Luiz, Brazil	Sep 1943- Jul 1945
Sub-det Amapa, Brazil	Sep 1943- Jul 1945
Sub-det Fortaleza, Brazil	Sep 1943- Jul 1945
Sub-det Igarape Assu, Brazil	Sep 1943- Apr 1945
ZP-41 Lakehurst	Aug-Sep 1943
Fortaleza	Sep 1943- Jan 1944
Sao Luiz	Jan 1944- Jul 1945
Det Igarape Assu	Oct 1943- Apr 1945
Det Amapa	Jan 1944- Jul 1945
Det Fortaleza	May 1944- Jul 1945
Det British Guiana	Jun-Jul 1945
Det Edinburgh Field, BWI	Jun-Jul 1945
Det San Juan	Jun-Jul 1945
Det Cuba	Jun-Jul 1945
HEDRON Det 42 Maceio, Brazil	Sep 1943- Jul 1945
Sub-det Fernando do Noronha, Brazil	Sep 1943- Feb 1945
Sub-det Recife	Sep 1943- Jul 1945
Sub-det Ipitanga, Brazil	Sep 1943- Jul 1945
Sub-det	Sep 1943-

**Units/Locations****Dates**

Caravellas, Brazil	Jul 1945
Sub-det Santa Cruz, Brazil	Sep 1943- Jul 1945
Sub-det Victoria, Brazil	Feb 1944- Jul 1945
Sub-det Richmond	Apr-Jul 1945
ZP-42 Lakehurst	Sep-Oct 1943
Richmond	Oct-Nov 1943
Maceio	Nov 1943- Mar 1945
Det Ipitanga	Nov 1943- Apr 1945
Det Fortaleza	Nov 1943- May 1944
Det Fernando do Noronha	Jan 1944- Oct 1944
Det Caravellas	Mar 1944- Jan 1945
Det Santa Cruz	Mar 1944- Mar 1945
Det Victoria	Mar 1944- Jan 1945

**Fleet Airship Wing 5**Aug 1943 - Dec 1944  
Trinidad**Headquarters Squadron 5**

Units/Locations	Dates
HEDRON Det Atkinson Field British Guiana	Aug 1943- Dec 1944
Det Paramaribo Dutch Guiana	Sep 1943- Aug 1944
Det Guantanamo Bay	Feb-Dec 1944
Det San Juan	Nov-Dec 1944
ZP-51 Trinidad	Aug 1943- Nov 1944
Det Atkinson Field	Aug 1943- Nov 1944
Det Paramaribo	Sep 1943- Jul 1944
Det Guantanamo Bay	Feb-Nov 1944
Det San Juan	Nov 1944

# Operational Statistics

## Fleet Airship Wing One\*

	2 Jan-31 May 1942	1 Jun-30 Nov 1942	1 Dec-30 Jun 1943
Operational Missions	337	918	1,953
Enemy Ships Damaged or Sunk	1 submarine damaged	1 submarine damaged	None
Own Blimps Lost (Combat)	None	None	None
Own Blimps Lost (Operations)	None	1	None
Own Blimps Damaged (Combat)	None	None	None
Own Blimps Damaged (Operations)	None	4	1
Personnel Lost	None	None	None
Personnel Rescued	None	None	None
Rescue Mission Assists	5 (5 grps of survivors)	10 (8 grps of survivors; 2 vessels in distress)	10 (4 grps of survivors; 1 crashed aircraft; 5 vessels in distress)
Hours flown by All Airships Assigned	4,731	12,946	29,093

## Fleet Airship Wing Two\*

	1 Dec 1942- 28 Feb 1943	1 Mar-30 Jun 1943
Operational Missions	176	1,057
Enemy Ships Damaged or Sunk	None	None
Own Blimps Lost (Combat)	None	None
Own Blimps Lost (Operations)	None	None
Own Blimps Damaged (Combat)	None	None
Own Blimps Damaged (Operations)	None	None
Personnel Lost	None	None
Personnel Rescued	None	None
Rescue Mission Assists	None	4 (3 survivor grps; 1 crashed aircraft)
Miscellaneous	None	None
Hours flown by All Airships Assigned	2,791	15,924

## Fleet Airship Wing Three\*

	1 Oct- 30 Nov 1942	1 Dec 1942- 30 Jun 1943
Operational Missions	118	1,360
Enemy Ships Damaged or Sunk	None	None
Own Blimps Lost (Combat)	None	None
Own Blimps Lost (Operations)	None	3
Own Blimps Damaged (Combat)	None	None
Own Blimps Damaged (Operations)	None	3
Personnel Lost	None	None
Personnel Rescued	None	None
Rescue Mission Assists	1 (1 cr. a/c)	5 (2 vessels in distress; 2 survivor groups; 1 lighter adrift)
Miscellaneous	None	None
Hours Flown by All Airships Assigned	1,007	13,710

1 Jul-30 Nov 1943	1 Dec 1943- 31 May 1944	1 Jun-30 Nov 1944	1 Dec 1944- 30 Apr 1945	1 May-15 Sep 1945
2,478	2,319	2,435	1,483	1,236
None	None	None	None	1 sub sunk (assist)
None	None	None	None	None
2	None	3	None	9 (due to hurricane and fire)
None	None	None	None	None
6	6	3	2	2
9	None	8	None	None
None	None	None	None	None
10 (2 vessels in dis- tress; 2 lifeboats; 4 grps of survivors; 2 aircraft crashes)	13	12 (5 crashed aircraft; 4 vessels in distress; 2 grps of survivors; 1 hospital case.)	8	5 (3 crashed aircraft; 2 grps of survivors)
37,343	51,147	34,745	19,994	11,373

\*Established as Airship Patrol Group 1, redesignated Fleet Airship Group 1 and then redesignated Fleet Airship Wing 1

1 Jul-31 Dec 1943	1 Jan-30 Jun 1944	1 Jul-30 Nov 1944	1 Dec 1944- 16 Jun 1945
2,315	1,799	1,381	1,022
1 submarine damaged	None	None	None
1	None	None	None
None	4	2	1 utility PBV
None	None	None	None
5	6	3	5
1	9	1	1
2	None	4	None
16 (2 survivor grps; 6 crashed air- craft; 6 vessels in distress; 2 hos- pital cases)	11 (8 vessels in distress; 2 crashed aircraft, 1 survivor grp)	14 (7 vessels in distress; 3 crashed aircraft; 2 survivor grps; 1 hospital case; 1 air- craft in distress)	7 (2 vessels in distress; 2 crashed aircraft; 2 survivor grps; 1 hospital case)
27 Jul: NAS Hitchcock struck by hurricane — minor damage.	None	None	None
29,208	31,234	22,274	13,218

\*Established as Fleet Airship Group 2 and redesignated Fleet Airship Wing 2.

1 Jul 1943- 28 Feb 1944	1 Mar-30 Sep 1944	1 Oct 1944- 31 Mar 1945	1 Apr 1944- 15 Sep 1945
3,877	4,073	3,360	3,268
None	None	None	None
None	None	None	None
2	1	1	3
None	None	None	None
4	3	4	5
5	None	6	8
None	6	None	None
11 (4 vessels in distress; 7 crashed aircraft)	20 (5 crashed aircraft; 8 survivor groups; 5 vessels in distress; 1 house on fire; 1 hospital case)	19 (7 survivor grps; 3 vessels in distress; 2 hospital cases; 2 forest fires; 4 crashed air- craft; 1 lost tow)	13 (8 vessels in distress; 3 crashed aircraft; 1 survivor group; 1 hospital case)
None	None	None	None
41,479	35,926	34,412	30,202

\*Established as Airship Patrol Group 3, redesignated Fleet Airship Wing 31, and then redesignated Fleet Airship Wing 3/Fleet Airships, Pacific.



## Fleet Airship Wing Four

2 Aug-31 Dec 1943

1 Jan-30 Jun 1944

Operational Missions	268	858
Enemy Ships Damaged or Sunk	None	None
Own Blimps Lost (Combat)	None	None
Own Blimps Lost (Operations)	None	2
Own Blimps Damaged (Combat)	None	None
Own Blimps Damaged (Operations)		1
Personnel Lost	None	None
Personnel Rescued	None	15
Rescue Mission Assists	2 (1 crashed aircraft; 1 hospital case)	11 (4 crashed aircraft; 1 crashed blimp; 1 stranded aircraft; 2 vessels in distress; 1 jungle rescue; 2 survivor groups)
Miscellaneous	None	None
Hours flown by All Airships Assigned	4,692	14,520

## Fleet Airship Wing Five

2 Aug 1943-  
31 Jan 1944

1 Feb-31 Jul  
1944

1 Aug-11 Dec  
1944

Operational Missions	605	1,020	391
Enemy Ships Damaged or Sunk	None	None	None
Own Blimps Lost (Combat)	None	None	None
Own Blimps Lost (Operations)	2	1(1 JRF)	1
Own Blimps Damaged (Combat)	None	None	None
Own Blimps Damaged (Operations)	None	2 (1 JRF)	1
Personnel Lost	8	None	None
Personnel Rescued	None	None	None
Rescue Mission Assists	5	6 (3 vessels in distress; 1 aircraft in distress; 2 survivor groups)	2 (2 boats in distress)
Miscellaneous	None	None	None
Hours Flown by All Airships Assigned	8,976	14,136	5,716

## ZP-32 Operations

LTA operations on the West Coast centered around the three main operating bases: Santa Ana, Moffett Field and Tillamook. NAS Moffett Field was the first operational LTA air station to be established after hostilities began. The first squadron assigned to the West Coast was Airship Patrol Squadron 32 (later redesignated Blimp Squadron (ZP) 32). The squadron was established on January 31, 1942, at Sunnyvale.

A directive was signed by the CNO on December 29, 1941, authorizing the formation of ZP-32. Work began immediately on the airships TC-13 and 14 to make them fit for service and prepare them for transportation from

NAS Lakehurst to Moffett Field. These two airships were the nucleus for ZP-32's operations. On January 7, 1942, Lieutenant Commander George F. Watson, the prospective commanding officer, left NAS Lakehurst headed for Moffett Field. Five days after his departure, 11 railroad cars loaded with the dismantled TC-13 and 14, plus spare parts, tools and miscellaneous gear followed. The first of these cars reached Moffett Field on January 24 and work on the TC-14 began the next day. The day after the squadron was established, the TC-14 made her first test flight. A week later, on February 8, the TC-13 was placed in service and flown by the squadron.

The first mission for the TC-14 was on February 4 when she made a wartime

patrol with other units of the Pacific fleet. On February 23, an enemy submarine lying off the coast of California shelled an oil field of Santa Barbara. ZP-32 sent the TC-14 to search for the submarine and to escort any merchant ships in the area. The airship flew from Moffett Field to Morro Bay and operated in the area on February 24. She escorted several tankers and searched for the submarine without any definite results. Even though the airship did not locate the submarine, the squadron was able to demonstrate its capability to respond to crisis situations.

ZP-32 continued to expand its fleet of airships, receiving its first L-type airship on February 28. This new airship, L-6, was the former *Reliance* from the Goodyear commercial fleet. The L-8 was