Missions for America
Semper vigilans!
Semper volans!

The Coastwatcher

Publication of the Thames River Composite Squadron
Connecticut Wing
Civil Air Patrol

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SCHEDULE OF COMING EVENTS

01 MAR-CTWG Pilot Meeting-MMK
05 MAR-CTWG Commander's Call
13-15 MAR-CTWG Staff Assisted Visit
19 MAR-CTWG Staff Call
29-30 MAR-CTWG West Group SLS-DXR

19 APR-CSRRA AR-15 Rifle Rifle Clinic
26 APR-04 May-NER Mission Aircrew School
29 APR-Wing Wide SAREX-GON

10-11 MAY-CTWG East Group CLC-HFD
17 MAY-Commander's Cup Rocketry (tentative)
17-18 MAY-Quonset Airshow
30 May-Ledyard Aerospace Festival

16-21 JUN-Tri-State SAREX (CT/RI/MA)
19 JUL-02 AUG-Nat'l Emergency Services Acad.
08-16 AUG-CTWG Encampment-Camp Niantic
23 AUG-Wing Wide SAREX-HFD
01 OCT-CTWG Commander's Call and CAC
17-19 OCT-CTWG.NER Conference
18-25 OCT-NER Staff College-New Jersey
20 SEP-Cadet Ball-USCGA (tentative)

CADET MEETING

25 February, 2014
submitted by
C/SrA Virginia Poe

An inspection was conducted byC/CMS Carter.

Following the inspection, C/Capt Shultz moderated a debate: Resolved, that the USAF should become a branch of the US Army to better serve our country. The exercise enabled cadets to practice public speaking and reasoned argument.

C/CMS Johnstone followed with an aerospace lesson on the atmosphere and air currents.

The lesson was reinforced by an activity led by C/SrA Eichelberg which involved heat and its effect on air currents.

SENIOR MEETING

25 February, 2014

The meeting, organized by Lt Dickinson was devoted to the subject of safety.

Lt Ray presented the latest information about the Cadet Protection Program and explained the regulations regarding the number of senior members and cadets allowed for different kinds of activities.

Maj Bourque then briefed the squadron on tire safety. His discussion covered tire wear, tire pressures, and methods to inspect tires.

Elements of ground team safety was covered by Maj Welch. One unusual circumstance, provoked a round of questions: the finding of a lost person who suffers from senility or diabetes. These

conditions might cause a violent reaction in which the subject might injure the rescuer. Tactics to prevent the occurrence of such an incident were discussed.

The definitions and categories of accidents, mishaps, and incidents were explained by Lt Dickinson. A screen display was used to show the details required by CAPF 79 and the protocol for reporting was noted.

Capt Farley's interactive discussion of ground safety when approaching or preparing an airplane for movement brought out the manifold steps necessary even before one gets to the airport. Starting from the discrepancy report on WIMRS to the first sight of the aircraft to manual movement on the ground was covered in detail

Lt Dickinson concluded the meeting, fittingly, with a video on fatigue while driving.

2014 SQUADRON OBJECTIVES

Maj Paul Noniewicz, TRCS Squadron Commander, has issued the yearly objectives. Aside for the usual general administrative statements such as adherence to regulations and upkeep of paperwork, a number of specific objectives were listed.

Annual training plans are already in draft form. Maj Farley, our Emergency Services Officer has sent out a year long plan. Maj Welch, Health Services, has indicated that CPR and first aid training will be available. Lt Dickinson, Safety Officer, has already presented his first briefing on the Safety Down Day.

The Professional Development objective states that every officer will, at a minimum, earn a technician rating in some specialty track. LtCol Doucette, TRCS PDO will bear this responsibility.

Public Affairs is charged to reaching out to the public at large. Our weekly publication, *The Coastwatcher*, reaches over 200 subscribers, 30% of which are not CAP members. An informational powerpoint display has been prepared and a squadron team will soon solicit engagements with civic, public, and fraternal organizations to tell the CAP story.

All officers are asked to attend two meetings per month. One should be Commander's Call and one should involve training. All members are charged with supporting the annual citrus fruit fund raiser and should contribute three hours/month of time to the Squadron.

Finally, all hands need to chip in with ideas to meet some of our less concrete objectives. The Squadron is looking for ideas on utilizing ground vehicles and aircraft. Essentially, this means that we need ideas for training missions and field trips which will allow us to demonstrate a need to maintain custody of an aircraft and van.

2014 AEROSPACE EDUCATION PLAN OF ACTION

The aerospace Education plan dove-tail nicely with the squadron's over-all plan.

The Cadet program will earn the AEX award for the ninth straight time and compete in the Commander's Cup Rocketry Contest.

Cadets will also reach out to the community and take part in external informational and educational activities at venues such as the Ledyard Aerospace Festival, Groton Fall Festival, and Wings Over Westerly.

A number of other week-end activities are also planned: field trips, rifle training, and flight simulator work.

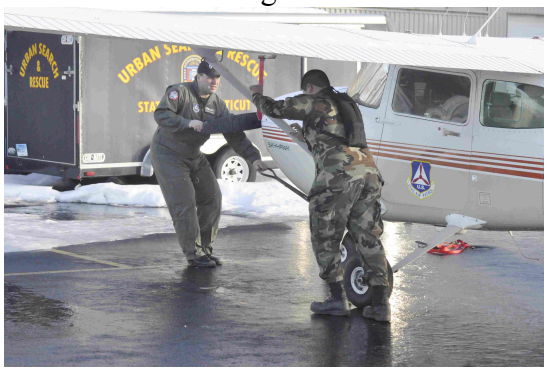
Cadet Orientation Flights will be organized and run as weather, funding, and aircraft availability permit.

The Squadron will maintain a 100% record with all officers achieving the Yeager Award within six months of reaching Professional Development Level One.

Lt Ray, DCC, Maj Bourque, AEO-Cadets, and LtCol Rocketto, AEO-Officers will be responsible for meeting the aforementioned goals.

CTWG TRAINING EXERCISE

The Wing ran a full scale training exercise on Saturday, 22 February based at Brainard Field's Homeland Security Building. Experienced and qualified officers and cadets practice skills. Other members trained for new ratings or were evaluated to determine if they can qualify for new ratings. Overall, the leadership looked for weaknesses or mistakes in our planning, procedures, and implementation which will be improved or rectified in future training missions.



Maj Noniewicz and a cadet gingerly maneuver 44L on an ice slick ramp to face into the sun to de-ice the aircraft.

Thames River provided 11 of the roughly 55 participants, an aircraft, and a vehicle. LtCol John deAndrade served as Incident Commander, Maj Roy Bourque led one ground team accompanied by Lt David Meers. LtCol Tom Wisehart and Lawrence Kinch, Maj Paul Noniewicz, Capt Scott Farley, and Lt Dickinson flew as aircrew members. LtCol Rocketto, Maj Welch, and Lt Simpson received Mission Staff training and took the CTWG Evaluator's course and test.

Incident Commander deAndrade studies the incoming data and ponders his next decision.

A number of scenarios were postulated. Teams were dispatched to investigate Middletown's Arrigano Bridge for ice damage, search for a lost hiker in the vicinity of East Haddam's Hurd State Park, find an emergency locator beacon south of Hartford, and photograph the new UConn health facility construction in Farmington.

The assigned crews had moderate successes and returned to Hartford for debriefing, uploading photographs and data, and discussing lessons learned.

AEROSPACE CURRENT EVENTS

Skyhawk Upgrade

With 43,000 aircraft sold, the Cessna 172 has the highest production figures in the aviation industry. There have been many changes and upgrades. The 1956 model had a Continental 145 HP engine and sold for around $9,000.. The Continental engine was replaced with a Lycoming 150 HP engine in 1968. Gradually engine power was increased and 180 HP upgrades are relatively common.

Along the way, the turtle-back was replaced with what the stylists call “Omnivision,” flaps became electric and settings were reduced to 30 degrees, and glass cockpits are now appearing.

Some years ago, Cessna experimented with a diesel engine by cancelled its program. Now, Premier Aircraft Sales are offering a used Skyhawk with the Continental/Centurion 2.0 diesel engine, new interior and paint, and a glass cockpit for $289,000. A new aircraft costs about $360,000.

The new engine is rated at 135 HP and burns Jet-A rather than the more expensive 100LL. The company claims a 6 gallon/hour burn compared to the normal 9 gallon/hour gasoline burn. Given the price differential at Groton, the diesel engine will save $3/hour in fuel costs. No data for flight performance has been given other than fuel burn.

AEROSPACE HISTORY

Lakehurst Bound
by
Hap Rocketto

As a kid, back in the early 1950s, one of my big thrills was watching the US Navy's K-class blimps glide over New London while on antisubmarine patrol between Naval Air Station Lakehurst in New Jersey and Naval Air Station South Weymouth in Massachusetts. If we were in the classroom the windows of Harbor School quickly filled with little boy's excited upturned faces. Our teachers quickly herded us back to the dreary world of spelling or fractions, but I have never forgotten a little boy's excitement at the sight of the dignified silver behemoths quietly cruising over head keeping the Soviet submarine fleet at bay.

Recently my brother Steve and I, needed to log a few hours aloft to maintain our currencies, an exercise which required the expenditure of another kind of currency. We thought a cross country flight would be in order with a specific historic destination in mind. It was a beautiful day for flying. There were few clouds in the sky, the visibility was 25 miles-good for the East coast, and the winds aloft were pushing us along with nary a bump.

We departed Westerly with Steve, befitting his majestic status as Pilot In Command sitting imperially in the left seat. I sat, below the salt, in the right hand co-pilot's seat preoccupied with the duties of the vassalage germane to my humble office, communications, navigation, and keeping the aircraft commander supplied with position reports, cold drinks, and snacks. We crossed to the south coast of Long Island and followed it westward. To avoid the cluttered New York City airspace, and its odious flying regulations, we swept south over the Atlantic Ocean and made a beeline for Sandy Hook, New Jersey.

Flying a single engine airplane out of gliding distance of land always makes for a little pilot anxiety. Perhaps it was the life vests and rubber dingy that seemed to make the airplane make strange noises and caused the engine to sound a bit rough, perhaps not. Even though the gas tanks had been visually checked to insure that they were filled to the top, the fuel gauges seemed to unwind faster than expected. As we raised Sandy Hook the odd rattles stopped, the engine smoothed out, and there now seemed to be plenty of gas. Crossing the coast of New Jersey we intersected Victor 16, and turned to port to follow it southward.

In a few minutes our turning point, NAS Lakehurst's Hanger Number One, came into view. At 961 feet in length, 350 feet in width and standing 200 feet high it would be hard to miss. The building, a Registered National Historic Landmark, was built in 1921 at the height of the lighter than air era. Many of the air ship hangers built during that time still exist, notably Hanger Number One at Moffett Field California and The Goodyear Air Dock in Akron, Ohio.

During its active service Lakehurst's Hanger Number One housed every type of American lighter than air ship from 1921 until the demise of lighter than air Naval Aviation in 1960. The massive building was, at one time or another, home port for the US Navy's four rigid airships, the ill fated trio of *USS Shenandoah, USS Akron and USS Macon,* as well as the *USS Los Angeles*, who avoided the disastrous fates of her sisters only to be ignominiously dismantled in 1939.

It was also at Lakehurst, on May 6, 1937, that the largest flying object in the world, the German zeppelin *Hindenburg*, burst into flames as it was mooring. The immolation of the flag ship of the Third Reich's air fleet, emblazoned with giant Nazi swastikas, was a great blow to the pride of the totalitarian state and its leadership.

There is a tenuous family connection with the disaster. Our mother once told us that her father had taken her out the site some time after the disaster and she had seen some of the ruined framework of the *Hindenburg*.

Over the frying bacon-like sizzle in our headsets Steve, the walking footnote, delivered a detailed lecture on the disaster. With the muted chatter of the New York Air Traffic Control Center as back drop he closed with his best imitation of Herbert Morrison's famous narration of the Hindenburg

disaster, “There’s smoke, and there’s flames, now, and the frame is crashing to the ground, not quite to the mooring mast. Oh the humanity....”

Ending his little monologue with a humorous play on words Steve said, “I bet that burst Herr Hitler's and Herr Doctor Goebbels’s giant propaganda balloon.”

A Short History of the U.S Navy's Dirigible Program

Part I

The U.S.S. Shenandoah, *R-38/ZR-2*, and *U.S.S. Los Angeles*

The two decade span of years beginning with the “Roaring Twenties” and ending with the “Great Depression” saw the U.S. Navy experimenting with the use of rigid airships as scouts for the battle fleet. During World War I, the Germans had experienced some success using their Zeppelins as naval scouts and lesser success as long-range bombers. Our Navy became interested in exploring the military potential of these airships and set out to study the possibilities. But the United States had no airships.

Lakehurst

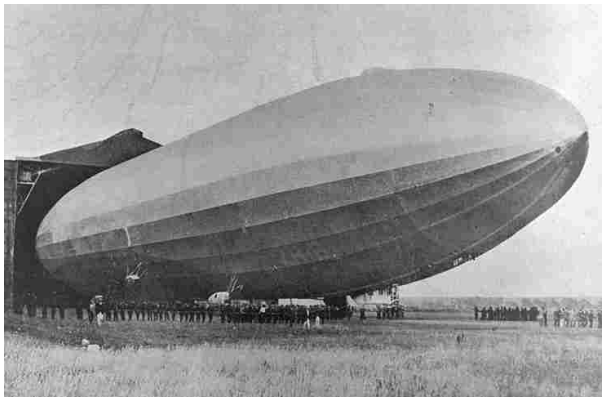
A 1919 Congressional appropriation provided funds for the establishment of a dirigible base and to procure two airships. A decision was made to purchase on in Europe and build the second one in the United States.

At Lakehurst, New Jersey, Hangar No. 1 was constructed, over three football fields long, a football field wide, and 200 feet tall! The highly flammable hydrogen was the lifting gas of choice and tanks, a pumping station, compressors, and piping were installed along with special safety features to prevent accidental ignition.

The base was opened in first week of June, 1921. This was none too soon as the British built airship, R-38, which the Navy had contracted for in Europe had already flown and was being prepared for delivery.

The ZR-2

The R-38, due to be re-designated ZR-2 upon commissioning had made three proving flights while training a detachment of 18 Navy aircrew members. The Navy was unhappy with the reported performance of the R-38 and also uneasy about the engineering analysis performed on its structure. In late August, on its last test flight before its Atlantic crossing, the R-38 engaged in a series of high speed maneuvers, suffered structural failure and crashed, killing 44 of the crew, 17 of whom were Navy men.



The ill-fated R-38 is walked out of its shed at RNAS Howden for its fourth and tragically last test flight.

Lakehurst would wait for over two years before receiving its first dirigible, ZR-1, the *U.S.S. Shenandoah* and that would be in parts!

The U.S.S. Shenandoah (ZR-1)

Lt. Cmdr. Jerome Hunsacker, an MIT trained engineer assigned to the Navy's Bureau of Construction and Repair had designed the Curtiss NC aircraft, the first to cross the Atlantic Ocean. He then undertook the design of the Navy's first dirigible, ZR-1, which became the *U.S.S Shenandoah.*

The technical problems facing airship designers

were numerous. The knowledge needed to determine bending moments and airframe stress due to gust loads on the long structure of an airship was non-existent. Little was known about the optimal materials for the manufacture of the airframe, gas bags, and outer covering. Engine technology was further advanced but the appalling problem of a suitable lifting gas needed a solution.

There would also be modifications at Lakehurst. The combustible properties of hydrogen were well known and feared but it had advantages. Hydrogen was cheap, plentiful, and provides 10% more lifting energy than helium. But hydrogen's history precluded its use by the U.S. Navy. In 1921, three blimps were lost at Rockaway Naval Air Station in a hydrogen fueled fire. A year later, the Army semi-rigid airship *Roma* was destroyed with heavy casualties.

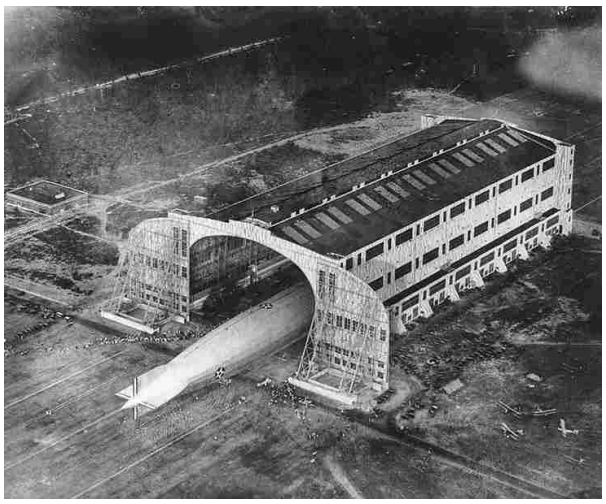
Foreign operators stuck with hydrogen which ultimately led to the Hindenburg disaster. Not only was helium far more expensive than hydrogen but the United States controlled the entire world's supply, which was miniscule and treated it as a strategic resource. *Herr* Hitler would get no helium from Uncle Sam.

Hunsacker had visited France where he had inspected the L-49, a German dirigible which has been forced down over France. Detailed drawings had been made by the French and turned over to their allies and Hunsacker obtained copies. Design work commenced and the airship sections were fabricated at the Naval Aircraft Factory in Philadelphia and transported to Lakehurst.

The entire process was highly empirical since almost little theory existed to guide the engineers. countless discussions and varied layouts took place during the two and a half years from commencement of work until first inflation.

The use of the German design was problematic at best. The L-49 had been optimized as a high altitude bomber in order to escape anti-aircraft fire and fighter interceptors. The altitude performance was excellent but gained by reducing the structural weight of the aircraft and consequently compromising its strength.

The *Shenandoah* was officially launched in the late summer of 1923 and training flights commenced. The crew practices docking and undocking and found that the substitution of hydrogen reduced its range. A flight to the North Pole was considered and wisely rejected.



Shenandoah is led out of Lakehurst's Hangar No. 1 by gangs of bluejackets hauling on a web of lines. To judge scale, note the size of an individual man.

During January of 1924, the *Shenandoah* was moored to a mast when gale force winds tore her free. The nose was wrenched off and the two of the forward gas cells deflated and the rudder was damaged. As the storm swept the ship stern first towards a tree line, the crew desperately worked to start the engines, adjust the ballast and gain control. Temporary repairs restored a modicum of control and after ten hours, the damaged airship returned to Lakehurst.

Shenandoah was docked for three months for repairs and modifications. Lt. Comdr. Zachary Lansdowne, one of the most experienced airship officers in the fleet took command when the *Shenandoah* returned to active service.

Lansdowne took the *Shenandoah* out to see to operate with the battle fleet and ran tests during which the airship moored to the *U.S.S. Patoka*, a converted oiler which had been fitted out with the

special mast required by the airship.

Shenandoah moored to its tender, U.S.S Patoka. The Patoka served as a mobile base for the airships and ranged from Newport, Rhode Island to the Panama Canal in support of operations.

A transcontinental journey was made with some difficulty due to turbulence and the need to climb to higher altitudes. The Shenandoah moored at North Island, San Diego and used it as a base to visit various venues as far north as Seattle. However the flight used so much helium that the Shenandoah had to be docked and deflated. By then, the Navy was operating a second airship, the ZR-3, *Los Angeles*, and there was only enough helium in the supply system to keep one ship in operation at a time.

Moffett was always interested in publicity and many of the flights were conducted to "show the flag" and build enthusiasm for naval aviation. Requests for publicity cruises were constantly received from public officials and the Navy attempted to comply.

In the fall of 1925, *Shenandoah* was re-inflated with hydrogen form *Los Angeles* and sent on a tour of the midwest. Over Ohio, the ship entered a region of convective activity. The vertical air currents overwhelmed the ship's power and control authority and she started to break up. The control car broke loose and carried Lansdowne and five crew mates to their deaths. In the forward section, Lt. Charles Rosendahl and six men rode an updraft to 10,000 feet. The managed to gain control of some of the gas valves and "free-ballooned for an hour and landed safely. Twenty-nine of the crew of forty three survived.

The fate of the Shenandoah was one of the incidents which provoked Billy Mitchell to state the following:

> *These incidents are the direct result of the incompetency, criminal negligence and almost treasonable administration of the national defense by the Navy and War Departments... The bodies of my former companions in the air moulder under the soil in America, and Asia, Europe and Africa, many, yes a great many, sent there directly by official stupidity.*

A few days later, the War Department with a violation of the 96th Article of War which forbids "conduct of a nature to bring discredit upon the military service." Mitchell's court martial and conviction soon followed.

The U.S.S. Los Angeles (ZR-3)

The acquisition of ZR-3, the *U.S.S. Los Angeles,* involved a four sided struggle among the Navy, the Army, the Zeppelin Company, and the victorious European allies. After the 1918 armistice that ended World War I, the Allies seized German airships as war reparations. In 1919, when the German's scuttled their interned battle fleet at Scapa Flow, seven dirigibles were also destroyed in Germany. Germany was then forced to compensate the victorious allies. The United States had not received any of the Zeppelins and was offered cash. Dr. Hugo Eckner, the director of the Zeppelin company, *Luftschiffebau-Zeppelin,* the German company which built the airships saw and opportunity to preserve their business and keep Germans employed.

The Americans wanted a ship large enough to cross the Atlantic but the Europeans, who were also embarking on large airship programs neither wanted the Germans to build the ship nor the United States to acquire it. The victorious Europeans, notably France and Great Britain, had a dual purpose. They wished to cripple Germany industry and forestall American entry into a future commercial air transport business.

A compromise was reached. The airship would not be as large as originally requested but it would be the largest airship ever built. Ir would also be operated as a commercial and experimental aircraft. Military use would require special permission. When its final cost exceeded the reparation payment the Navy chipped in to pay the balance.

The Joint Airship Board had crafted and agreement in which The Army would take control of non-rigid airships and the Navy would fly the rigid airships. But the Army, which had ambitious officers, notably Billy Mitchell, saw an opportunity to expand their control of military airpower and strike a blow against the Navy. If they could seize control of the dirigible force, they could use them for off-shore patrols to protect our coastline and trump the Navy's arguments for their battle fleet.

A plan, which some believe was formulated by Mitchell, was devised in which the Army would purchase a dirigible in Europe. Lt. Col. William Hensley, Army Air Service, was dispatched to Europe where he would purchase a German airship, the LZL-114. The LZ-114 had been constructed by *Luftschiffebau-Zeppelin* and was still the property of the company. However, the international commission which handled reparations cottoned on to the American plan and awarded the LZ-114 to France.

The Army then signed a contract with *Luftschiffebau-Zeppelin t*o construct the LZ-125, a larger aircraft than the R-38 which the Navy had on order in England. Since the U.S. Senate had not ratified the Allied Peach Treaty, we were still technically at war with Germany and Hensley was dealing with the enemy! The Navy complained and Secretary of War Newton Baker ordered cancellation of the contract.

Although the Joint Airship board had placed dirigibles under Navy control, the Navy was obliged to keep the Army informed and permit Army officers to observe their operations. Major Harry Geiger, an Army attache in Berlin not only tracked the construction of the LZ-125 but advised the Army to find some way to take control of the airship.

So Army machinations to take over the dirigible program continued. William Moffett, the officer in charge of the Navy program, recorded a number of instances of Army Air Service interference. He countered by pointing out that the LZ-126, the Zeppelin company for the new ship, was contracted to the Navy and that international agreements would be violated if the Army assumed control.

In the fall of 1924, the aircraft left Friedrichshafen and landed Lakehurt after an 81 hour Atlantic passage, the fourth time an aircraft had crossed the Atlantic. The ship was docked, inspected, and emptied of its hydrogen. When the *Shenandoah* returned, it would enter the same dock and her helium would be transferred to the purification facility and used to inflate the *LZ-126.* This swapping of the scarce helium was a feature of airship operation.

The *Los Angeles* was commissioned on 15 November. The LZ-126 became the ZR-3, *U.S.S. Los Angeles* and was christened by Mrs. Calvin Coolidge using a bottle of water from the River Jordan, a sop to the 18th Amendment and Prohibition.

U.S.S. Los Angeles over Manhattan. Interestingly, when the Empire State Building was constructed, the 16 story art deco tower was intended to be a mast to moor dirigibles. Practical mechanisms to moor the airships were never developed and the wind and turbulence at the 1200 foot level would have made docking impossible.

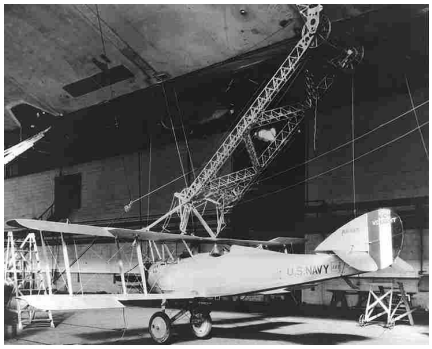
The terms of its purchase disallowed military use but the *Los Angeles* was owned and operated by the U.S. Navy, a military service. The Navy had to be extraordinarily imaginative in finding missions for the SR-3.

One mission was testing the commercial potential of airships. This was aided by part of the sales deal worked out in Friedrichshafen. The American firm Goodyear, acquired patent rights and technical support from the German airship builders so operational data would be shared among the Navy, Goodyear, and *Luftschiffebau-Zeppelin.* The Germans were happy with this arrangement because the growth of international air transport would be fostered and that would be good for their business.

Another mission found for the *Los Angeles* was scientific research. On one occasion, airborne astronomers observed a solar eclipse with the airship stationed off Block Island, Rhode Island. Meteorological data was constantly being recorded and a number of communications experiments were carried out.

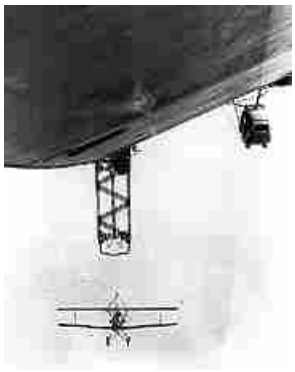
Training lighter-than-air crews was a primary duty and the methodologies of mooring the ship to various types of masts were explored, evaluated, and standardized.

The Los Angeles also carried out the first tests of air launching and recovering small aircraft from dirigibles. Two gliders were launched and a series of tests using the Vought UO-1 were accomplished.

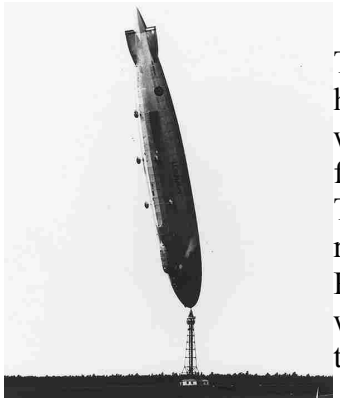


The trapeze used to hook the aircraft was developed. However, the Los Angeles had no hangar and the aircraft could not be brought aboard. Her successors would be so equipped.

A pilot guides his plane towards the trapeze in an attempt to "hook-on."



One of the most exciting moments for the Los Angeles occurred on 25 August, 1927. She was moored to the high mast at Lakehurst when a gust lifted her stern into a layer of cooler, denser air.



The tail rose even higher as the on-board watch crew desperately fought to regain control. The angle eventually reached 85 degrees. Remarkably, damage was slight and she flew the next day.

The *Los Angeles* remained in active service for eight years and was the only one of the four commissioned airships to survive. Between 1924 and 1932, she 336 flights totaling 4126.36 hours of air time.

But problems plagued the Navy's rigid airship program and airships in general. Safety was a primary consideration. Budgetary restraints forced curtailment of flying and equipment development. Internal struggles with the heavier-than-air and surface fleet components weakened the LTA program. On 30 June, 1932, the ZR-3 was decommissioned. For a time, she was used for structural testing but never flew again. She was stricken from the Navy List on 24 October, 1939 and dismantled. Reynolds Metal paid $3,667.80 for the scrap. The Navy's involvement with rigid airships had ended.

(All photos in this section are credited to the U.S.Navy or U.S. Navy Historical and Heritage Command)