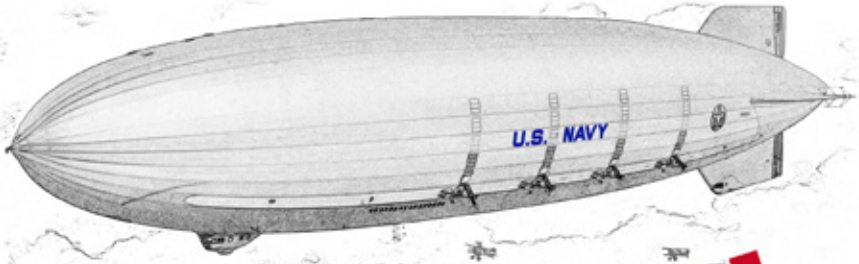
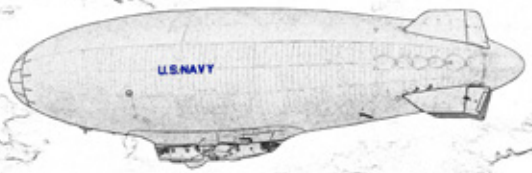
THE NOON BALLOON





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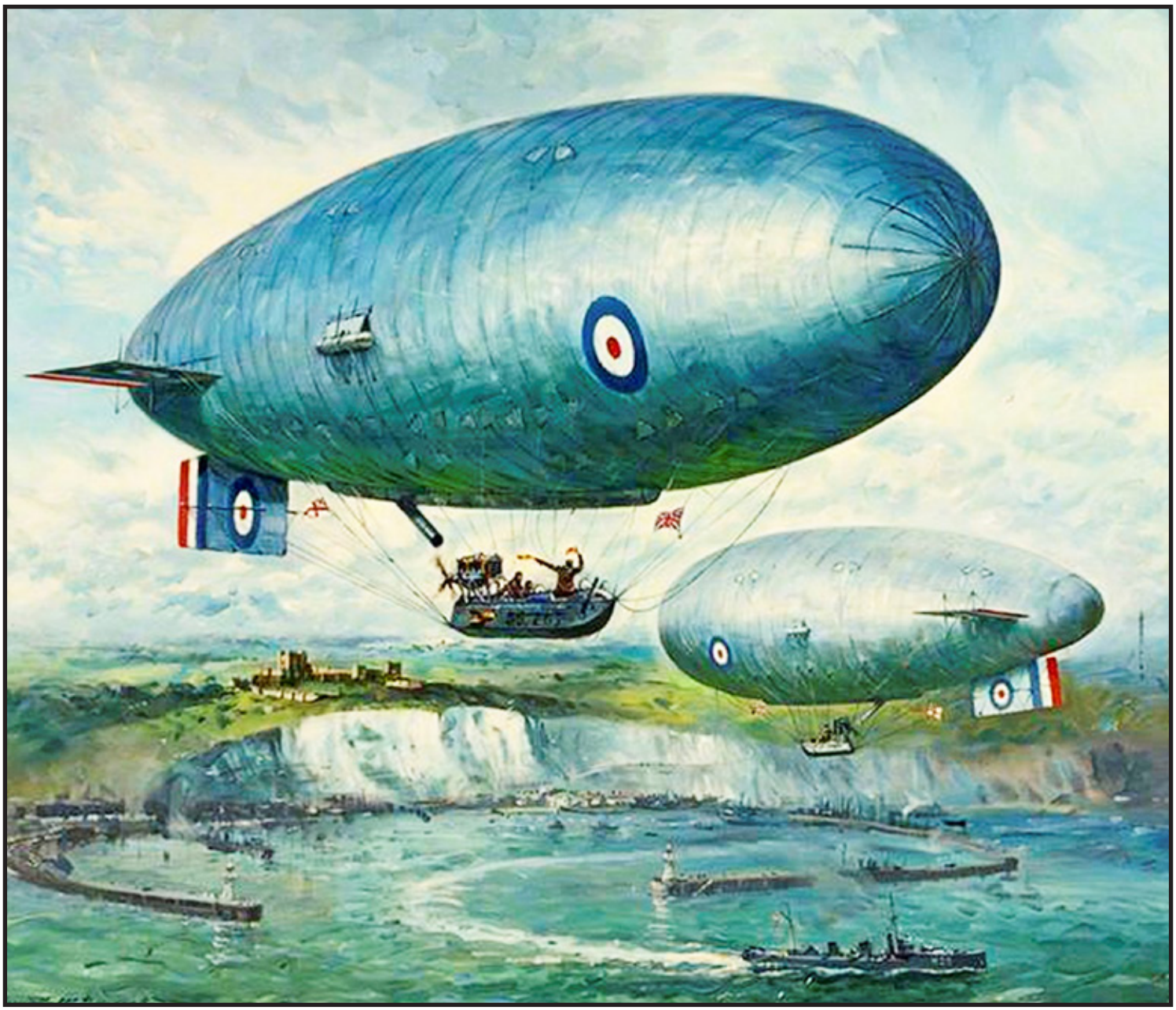
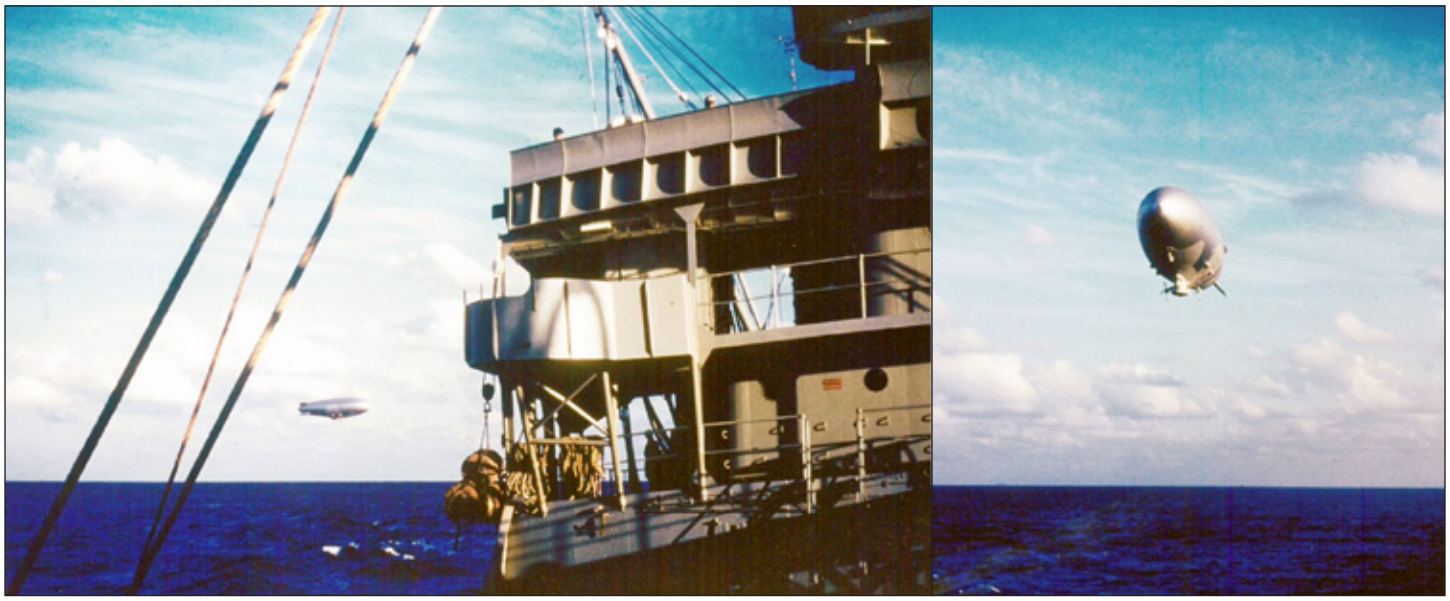


The Armistice: 100 Years Ago



At the Scottsdale NAA Reunion years ago, a visiting ex-oiler sailor name of Ted Boyer offered to send Ed. some snapshots he took from the deck of his ship, USS Canasted (AO-99) in 1958 as a ZPG-2 came over to refuel. Ted sent them right away, & we thought we'd scanned them long ago. Now we have some questions. Were there two types of paint being tested to slow helium seepage… or just two colors… or is that just a trick of the twilight? (See also back cover) In Charlie Weithaus' snapshot at right, an exterior suspension panel is painted… we ask again, anyone remember why, or what that was all about?

THE NOON BALLOON

Official Publication of the Naval Airship Association, Inc.

ISSUE #120 WINTER 2018

One hundred years ago, a $20 bill and a Twenty Dollar gold piece were interchangeable. Either one would buy a new suit, new shoes and a night on the town. The Twenty Dollar gold piece will still do that. ☺

On the Cover: "The Hand-Over" by Kenneth A. McDonough, Fleet Air Arm Museum at RNAS Yeovilton, Somerset, England. (Thanks to our 'mates in the AA and AHT.) Our 100th year observance continues. Ω

THE NOON BALLOON
Newsletter of the NAA

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EDITORIAL

Richard G. Van Treuren, PO Box 700, Edgewater, Florida 32132-0700, rgvant@juno.com

Debbie and I just attended the life celebration services for Sam Mastrogiacomo, a B-24 tail gunner who'd hired us to publish his personal WWII history while back. (You may remember we ran this photo of Sam who, visiting family in 'Jersey, boldly took a "selfie" with the "secret" LEMV.) Sam's passing reminds us how precious few WWII vets we have left – and how unlikely we'll get all their stories.

Sad as that situation is, where does that put us with the previous war, in which victory was declared 100 years ago? Back in 2013, the US Congress created the US WWI Centennial Commission to honor America's First World War veterans. I just checked their website and, after sifting through lots of memorial fundraising pages and merchandise offers, finally got to their Air History pages. They actually have quite a bit about LTA – if you assume Zeppelins getting shot down was the extent of it. I was unable to find even a token mention of French, UK or USN LTA. So, what to do? Send them the last two year's worth of TNBs and get a form letter back thanking us for a donation? As I wrote on this page back in 2017 when I proposed we should observe the 100th, if we do not commemorate our Great War USN LTA heritage, you can bet no one else will – even paid professionals.

Imagine my surprise and delight to meet Lou Young at the Reunion in Akron. Lou's scrapbook contains images of the Wingfoot Air Express, and Lou had written down first-person details from that uniquely tragic accident 100 years ago. It's this sort of as-told-to history we are blessed with again this issue, and we're grateful to Lou for sharing.

That accident - if familiar at all, usually just blown off by applying retro-fitted "wisdom" – resulted in (and hopefully always will be) the only fatalities of uninvolved people on the ground. (That includes Alan Hagaman, who either tripped over the mooring circle rail and had a heart attack, or an LZ-129 engine car fell on him, depending on which version you heard. He was a paid line handler.) Also, consider that the 1919 Chicago politicians were way ahead of their time – in light of how many countries have recently begun to prosecute surviving air crash victims, if they happened to be in command.

Speaking of leaving things out, the ZPG-2 photos gracing our back and inside front covers are explained in the caption. While back, we'd run similar photos and credited them to the oiler crewman, only to have past NAA Pres. Ross Wood politely remind me the photos run were actually his, taken when he was assigned to an oiler as an observer. Your Ed. had placed Ted Boyer's donated snapshots in the Archives box and promptly mixed up the digital scans in my befuddled mind. I re-found them while making one more complete examination of every single thing in the mighty pile as part of a final effort to make sure everything we've ever been exposed to would be considered for inclusion into our LTA Textbook effort. Those attending the Reunion were exposed to a nearly-complete pasteup of the book I've been working on for so long. I am happy to report: it is finally finished, and I'm quite proud of it.

In 2003, Prof. Dr.-Ing. Berthold Knauer and his co-chair of the LTA-Committee, (DGLR), Dipl.-Phys. Jüergen K. Bock, published LEICHTER ALS LUFT. TRANSPORT- UND TRAGERSYSTEME. BALLONE, LUFTSCHIFFE, PLATTFORMEN. It included a paper by CDR Charlie Mills (that 'Hep' Walker had presented for him) on US Navy Nan experience, given as the Zep-NT design was in progress. I had proposed NAA, AA and AIAA co-sponsor an English translation. Instead, over these last ten years the translation was slowly accomplished via a few of the original authors and other volunteers. Ed. sought to expand on Mills' real-world experience with more articles by NAA members, as well as papers presented by AIAA LTA TC members. One of Norm Mayer's papers on airship design parameters was incorporated before his passing, and Jüergen Bock's subsequent volunteering as NAA Tech Comm Chair. So, included are many of the lessons learned, and historical and technological high points gleaned from my 12 years' (and the older) NOON BALLOON issues. and other book publishing's. The original pages were enhanced with many new photos and illustrations, many which have never been published elsewhere. You can read CP Hall's review of LIGHTER-THAN-AIR TRANSPORT AND CARRIER SYSTEMS on page 29.

– R G Van Treuren

VIEW FROM THE TOP – PRESIDENT'S MESSAGE

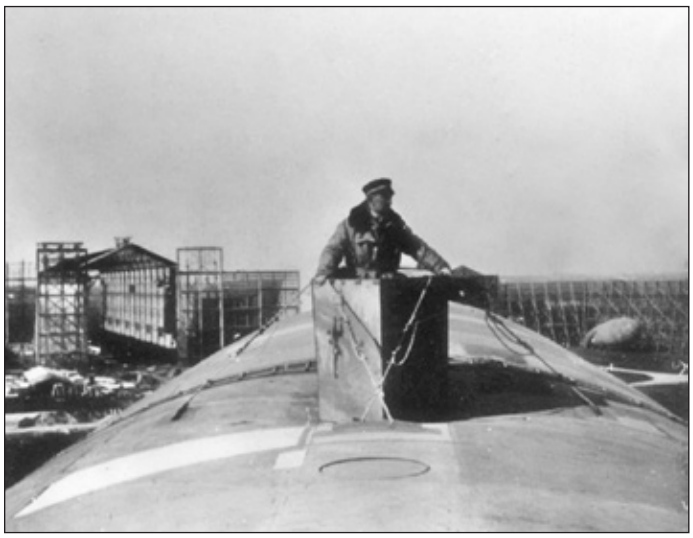
Fred Morin, PO Box 1926, Lecanto, Florida 34460-1926, frmorin@verizon.net

This is the 27th President's Message I have prepared for *The Noon Balloon.* I would have thought I would have run out of material for publication. However, we have some exciting news to cover and look forward to a much more efficient operation and growing membership.

Since the Reunion in Akron, matters have been relatively quiet save for our decision to terminate our relationship with Wild Apricot for maintaining our website. The yearly fee, while discounted for paying in full for a year, was over $1700.00, a little too steep for our liking as well as some technical issues that they could not resolve and the added expenses we incurred. While Wild Apricot did provide a good format for our website, the benefit to the NAA was very narrow. Their control over our paid membership list left a lot to be desired. *The Noon Balloon* mailing list contained a significant number of errors and we mailed about 300 extra copies to unpaid members and deceased members each year. The NAA had to pay for printing, mailing cost, returned postage costs and processing fees. This amounts to roughly a fifth edition of *The Noon Balloon* per year at our expense. Our decreasing membership numbers do not provide enough funds to continue paying these extra costs. We have already reduced the edition size of *The Noon Balloon* to save money and will resist raising our dues. There is no benefit to any one in raising dues to pay for things we do not need.

We have embarked on a program to salvage as much information as possible from the existing website and to develop a new NAA website. Member Don Kaiser has graciously volunteered to lead this project. There will be more information on this project soon. We will issue updates in *The Noon Balloon* and send broadcast emails when we can.

We have also made significant progress in developing a spreadsheet system to account for all members and their relevant data. This will make life much easier for our Treasurer when updating membership renewals and also produce an accurate and efficient mailing list for our Publisher and mailing house. Like any new idea, there will be a learning curve and some hiccups as we get into the program, but these should be quickly overcome. David Smith has made one of his employees, Keith, available to us to create the spreadsheet program and to see it through to its successful integration. David has done this at his own expense as well as covering the extra *Noon Balloon* expenses due to the inefficient Wild Apricot mailing list.



Growing our membership has always been an ongoing issue. As our memberships decrease so does our funds for paying expenses and *The Noon Balloon*. We have appointed member Wick Elderkin to be our Membership Director and I am very pleased and encouraged to report that he has hit the ground running. Over the next few months he will contact as many members as he can by telephone to discuss the NAA and gather as much information from each of you as to our future. Please extend him every courtesy when he contacts you. All the comments and suggestions he gets will be put to good use by our Executive Council to make the NAA a more vibrant and worthwhile organization. Hopefully, many comments and suggestions will lead us to bring in more, new members and to keep our renewals progressing.

– Frederick R. Morin

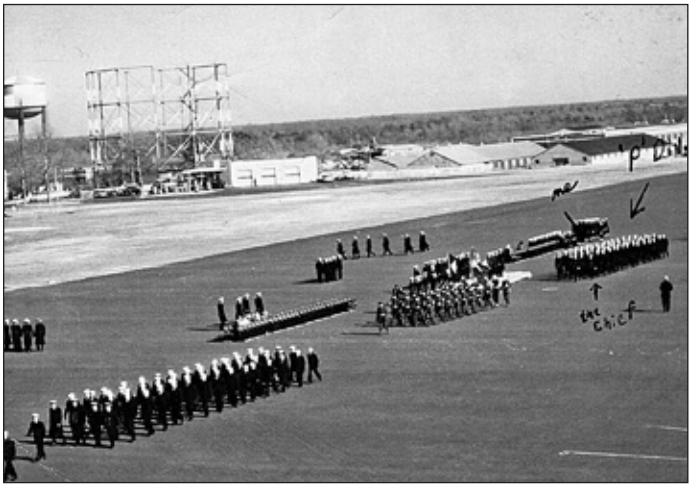
TREASURER'S STRONGBOX

As of the end of November, we are still maintaining a healthy balance in our cash accounts. As leadership has elected to phase out our subscription software, we have gone to a month-to-month plan until all the data has been downloaded, rather than paying for an annual subscription in the face of a dwindling number of memberships. We have paid for four newsletters this calendar year, so that expense is behind us. The Reunion would have been a near break-even situation if all expenses had been turned in. As it stands, we have a benefactor who elected to help out in a very nice way. We all thank you, as well as all our other donors, your efforts unacknowledged but nonetheless greatly appreciated.

– Deborah Van Treuren

PIGEON COTE

Following up on last issue's letters: Ross Glover had e-mailed History Chair Mr. Lutz, "I attach pictures of events at Lakehurst in 1960. There was a March snow, these pictures show the snow up to the bottom of the door on a 1954 Ford and the Personal Division walking in tracks to work at the Administration Building in the foreground. There are pictures of a Station inspection (see last TNB, Fall). This inspection picture is as overall view. As you can see, I pointed out the Personal Division, and at that time one of the best Chiefs in the Navy. I worked in PIO and edited the Station Break. I don't mind admitting it, I cried when I left the base for home. This was my home and my family for two years. I keep in touch with my mates that are still kicking. Most have gone to their rewards. Occasionally, I see someone or something that reminds me of Chief Woody Forest, Commander Virgil Eckert, Ensign Eaton, LTG Donald Small, PN3 Charlie McDonald and a host of others. I wish I could get together with some of these men to tell tall tales and talk about our service at Lakehurst. I was one of the three men who knew the Administration Building was haunted. But that's another story." Ω



Webmaster Don Kaiser e-mailed, "I want to share an interesting story about how I gained possession of my uncle's logbook. My uncle was ENS and later LTJG William K. Kaiser of ZP-14. I received an email from a woman who had just purchased his logbook at a hospital tag sale in Maine. It was one of those sales where they give you a bag for $1-3 and let you fill it up with books. This woman selected my uncle's logbook and was going to sell it on her Etsy website but after looking at it, she decided that someone in the family might like to have it. She went online and found my website about ZP-14: http://www.warwingsart.com/LTA/zp-14.html and contacted me by email. I was astounded.

Anyway, I now have my uncle's logbook. He was from Merrick, New York, so how it made its way to a hospital tag sale in Maine is a mystery to me? I am very grateful to the woman who salvaged it for me and the family. I copied it and put it online here in case anyone is interested.
http://www.warwingsart.com/LTA/Kaiser%20Blimp%20Logbook.pdf

Because they were fellow crew mates on many missions, I found it interesting to compare William K. Kaiser's logbook with the logbook of ARM2/c Paul Galbraith:
http://www.warwingsart.com/LTA/galbreath.html

I'm a real fan of logbooks because they have lots of details and are generally an excellent first-hand, original source of often otherwise undocumented historical information."

History Chair Mark Lutz responded, "First - it is absolutely wonderful that your Uncle's log book has come to you after more than 60 years!! What a story that is! Sometimes WWII blimp flights show up in the Squadron History and shed more light one what the crew was doing. Here are the flights in your Uncle's log book which correspond with entries in the Blimp Squadron 14 WWII History:

5 Oct 1943: K-89 located crashed Navy Curtiss SO3C 2-man spotter float plane and lowered raft and emergency rations to the lone survivor, and directed CG cutter and a destroyer to pick him up.

20 Oct 1943: K-89 located Navy patrol craft in distress and summoned surface aid.

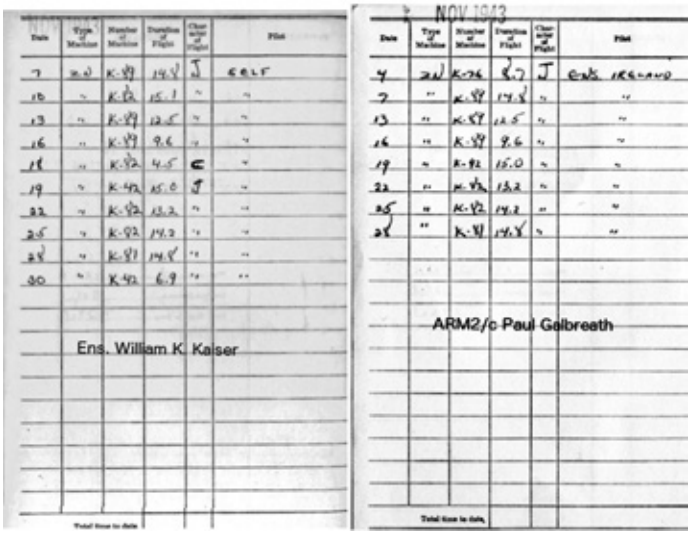
Six Airships were flown (ferried) to NAS Port Lyautey, Morocco, Africa, arriving in June 1944 (flight character N) Your Uncle piloted the final leg of the ferry flights for 3 of them, that being the leg from the Azores Islands to Port Lyautey.

He flew K123 which left the Azores 31 May 1944, arriving 1 June (along with K130), flight took 20.8 hours, then K109 which left 14 June 1944, arriving 15 June (along with K 134), took 25.3 hours, and finally K122, which left 30 June 1944, arriving 1 July (along with K101), took 19.8 hours. On the first flight (K123) there were heavy rain squalls from 02:00 to 04:00, The ship made an airspeed of 54 kts at 1520 rpm; fuel consumption about 30 gallons per hour (roughly 200 pounds per hour) Winds up to 27 kts were blowing. Altitude was 300 to 400 feet above the ocean. Loran worked well, and there was a Navy weather ship radioing in reports. K-ships on these long ferry flights sometimes took off as much as 3,000 pounds heavy.

The next year, two more airships were sent out from Weeksville on 28 April, 1945: these were the K-89 and K-114, flying to Port Lyautey via the southern route - Bermuda to Lagens to NAS Port Lyautey. Your Uncle was not involved in their transfer, but did fly K-89 out of Pisa, Italy.

Your Uncle's MAD night patrols over the Straights of Gilbraltar were in July - Sep 1944. Typically the airships left Port Lyautey at 18:00, arriving at the Straits at 20:00, going off station at 06:15, landing at 08:30, for 14:30 hours of flight time, flight character JY (patrol, night). Your Uncle's log book shows times of 15 or so hours for these flights.

The Airships flew blacked out, in pairs going opposite directions, passing as close as 1,000 feet apart. They used radar to prevent collisions. Flight height was 100 feet above the sea, which made MAD detection range down 300 feet below the surface. If enemy aircraft were reported coming in, the airships would fly 50 feet



above the sea, slowly, so as to seem like a fishing boat. In tests with a British submarine, the airships detected 14 of 16 transits the submarine made through the straits.

On 29 Sep 1944, your Uncle made the first mine sweeping run by an airship during WW2, from Cuers, and continued sweeping from Cuers through March 1945. I was pleased to see this; I had not been aware the mine sweeping started so early, and mine sweeping is considered one of the things airships were best at, and there were a lot of mines. Cuers is in the middle of the French Mediterranean Coast. Cuers had two 800 foot long WW1 French Airship hangars, and 5 Hydrogen gasometers. Officers lived in a Villa; food was excellent. The infamous Mistral winds blowing down the Rhone Valley would sometimes impact Cuers with 60 kt gusts; this happened 3 times in October 1944, while the K-112 was on a stick mast; it survived. The next month aerologists arrived, and predicted the Mistral winds in advance, so that the airships could be hangared before the winds arrived.

Mine spotting had to be done repeatedly, because German aircraft would fly over at night, and it is thought some were dropping new mines. As your Uncle's Oct 1944 log entry says, mine spotting out of Cuers was done from the Spanish Mediterranean border to the Italian Mediterranean border. A loudspeaker was fitted to the K-112, and when working with French mine-sweepers, a French officer flew on board the airship, talking to the French minesweepers. The mines were about 20 feet below the water's surface, and could be spotted if the airship flew directly over them about 300 feet up. Other times the airship crew, working alone without mine sweepers, would plot the location of the mines, using their radar to determine the location of each mine.

Minesweepers would come through later to cut and sink the mines. On 14 October 1944, the K-112 spotted 11 mines which the French minesweepers below cut and sank. The airship marked the mines with smoke flares, and the French officer issued loud-speaker commands.

Mine sweeping from Cuers was switched to the K-109 on 24 Oct 1944 while the K-112 was undergoing an engine change; you can see from your Uncle's log book that the K-112 was back minesweeping by 5 November 1944. Similarly, the K-134 replaced the K-112 in December 1944. It appears only one airship was used for mine-sweeping from Cuers.

On 17 July, 1945, Liberty Ship John N Hammond struck a mine 11 miles North of Elba Island. While the Hammond was damaged and disabled, it did not sink. On 19 July, 1945, K-89, operating from Pisa, located 82 mines near the stricken ship, and directed mine sweepers to clear a path through the mines for 2 tugs.

On 25 July, 1945, K-89 located 2 mines in waters which had already been swept and declared safe off of Pisa. In the last 2 weeks of July 1945, K-89, flying under various pilots, plotted the location of 430 mines and assisted surface ships in cutting and sinking 65 of them.

Unfortunately, the history does not list all the mines found during the months of K-ship mine sweeping - it seems like it might have been thousands of them.

Don responded, "Wow! Thank you for connecting all of this ZP-14 Squadron airship history with the entries in my uncle's logbook. I was aware of some of these things but not all of them and not in the detailed context you provided.

At least one of those October 1943 rescue missions made the news and was carried by many newspapers around the country. I have copies of some of the articles. The squadron movement to Port Lyautey was secret, so there were no articles about that.

The mine sweeping has been generally unrecognized but was very important for several reasons. Besides the obvious general safety of all Mediterranean craft, many mine sweepers were blown-up by the mines they were searching for prior to the use of blimps and the French in particular were extremely grateful to the Navy for the K-ships. But most importantly, Toulon was the unloading port for approximately 1/3 of all the arms and provisions sent up to the Allied armies in northern France so the clearing of mines there was crucial.

I'm still rather confused about why Galbreath's logbook indicated "Ens. Ireland" as the pilot and my uncle's logbook indicated "self" for the same missions.

I vaguely recall my uncle talking about free balloons but it doesn't appear as if he trained in them from his logbook. I'm pretty certain he never went to the west coast despite the attached newspaper article."

Mark Lutz continued in response, "Self" is the pilot entry in my Father's WW2 Blimp log book when he was pilot-in-charge of the Blimp. (Different from Command Pilot - I think usually WWII K-ships did not have a Command Pilot on board until late in the

One of the pilots helping guard the West Coast from possible attack is Ensign William K. Kaiser, son of Mrs. Catherine Kaiser of 15 Chelsea court, Freeport. Young Kaiser, a Jamaica High graduate, has already seen a good deal of service.

Enlisting as an apprentice seaman in October, 1940, he served for 16 months in the West Indies, and after reaching the rating of petty officer second class was appointed an aviation cadet last December. He attended the pre - flight school at the University of North Carolina and was graduated from the Officers' Airship Training School at Lakehurst, N. J. He was commissioned in August.

William Kaiser

war) My Father said the pilot-in-charge had to sign out the Blimp and the Navy impressed on the signer that they expected it to come back intact. "Skipper" seems to correspond to "pilot in charge".

The back of your Uncle's book shows he was designated a "Senior Pilot" on 24 August 1944. I had the impression the designation "Senior Pilot" meant you could be the pilot-in-charge, sign out a Blimp for a mission, and take charge of a crew. In my Father's log book, he does not fly with "Self" in the Pilot column until he was designated a "Senior Pilot" In your Uncle's case, he's first flying under pilot "Self" on 24 August 1943, but in the back it shows he was made Senior Pilot on 24 August 1944. I wonder if there isn't a typo in that rear page, in which case your Uncle was made Senior Pilot on 24 August 1943, one year earlier to the day than the log book rear page indicates. But I don't know for sure.

I'm a bit surprised to see NO training balloon flight in your Uncle's log book. That would be a "ZF" type of machine (the F standing for free, the Z for "airship" including balloons - or Zeppelin if you like.)

I'm thinking Navy LTA was very happy with your Uncle's skills, as shown by all the "Self" flights - trusting him to be in command (skipper) of an airship just 1 month after graduation from flight school, then for long ferry flights to Morocco, then night flying over the Straits of Gibraltar, and then running many mine spotting missions.

Command Pilot seems to have been a bit of an honorific in WWII (my opinion). It does indicate considerable experience commanding K-ships, I think. This idea fits with your Uncle not being made a Command Pilot until July 1945 - the war is pretty much over by that time - I think your Uncle deserved that designation earlier. In my Father's case, once he is made a Command Pilot, he seems to NOT be pilot-in-charge, and rather seems to ride as an advisor pilot, with someone else listed in the "pilot" column. My Father served as a Command Pilot at Airship Squadron 31, NAS Santa Ana, in 1945.

Verner L. Smith - yes, I'm quite sure he was at Lakehurst - my Father's training flights in L ships were also signed by Verner L. Smith - I know Dad trained at Lakehurst (Jan-March 1943).

Some flight codes in your Uncle's log book:

Z = "special flight". All the mine sweeping flights are "Z" in his log book.
C = training flight - for "green" crews newly graduated from flight school, or crews learning new skills, such as MAD runs with a "tame" submarine, or mine sweeping.
A = training flight - while in flight school, not yet graduated / "qualified".
G = bombing flight, so CG is a training flight with bombing practice, I believe.
Y= night flight
J = patrol flight Many of the Strait of Gibraltar flights are JY -patrol flight made during the night.
N = ferry flight - moving airship from one base to another.
O = Utility flight - towing targets for gun practice, locating practice torpedoes."

Past NAA Pres. John Fahey also responded, "I counted 72 "J" flights in your uncle's log, enough under the award criteria at that time for a DFC and Air Medal with gold and silver stars. I would advise checking with your Senator or Congressman for possible submission. I am battling to get the logs used for confirmation of J flights.

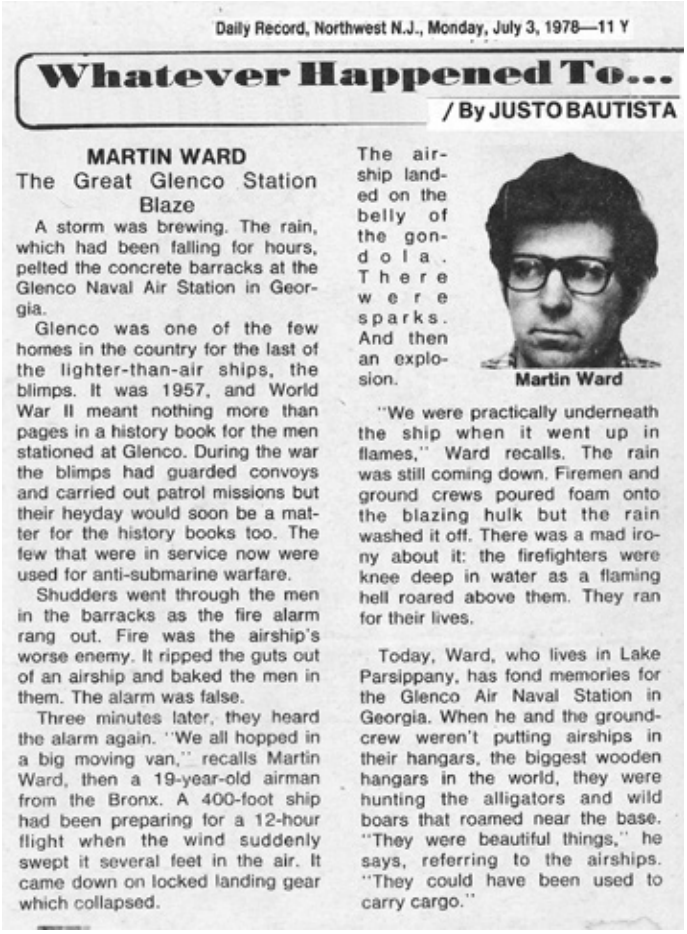
I was aware of the balloon tragedy. Between your uncles's training and my classes beginning in July 1943, our class was sent to Moffett Field, CA to first fly free balloons and L-ships. in CA the balloon appendix was tied, but in VA kept open and oxygen mixed with the hydrogen. When I was an instructor years later at Lakehurst, only helium was used which was cheaper by that time." Ω

Scale model balloons proved to be more manageable in classrooms than the real McCoy. Class in balloons and gases shown.

Joe Punderson e-mailed, "I came across an obituary in the Asbury Park Press, which mentions Frank Colbert's LTA service at Lakehurst in the 1950's. [See Black Blimp, page 31] By the way, reading in TNB no. 118 about the passing of "Airship Al" brought back memories of going to visit him in Flushing with my mother (Jeanne) and my brother John and swapping pictures of some of the advertising ships my dad (Jim Punderson) flew for Douglas Leigh in the late 1940's." Ω

Alastair Reid e-mailed, "It is with much sadness that I announce the death of my father, Iain Reid. Many of you who were associated with Airship Industries will recall that he was Roger Munk's Deputy, then Chief Designer. He was the aeronautical engineer charged with turning their dreams into harsh reality. His work on the Skyship 500 and 600 designs included defining the hull profile, the gondola and flight deck layout, the tail surfaces and designing all new air and helium valves. But he was also responsible for the initial work on the SK 5000, the semi-rigid SK 3000, and a series of small non-rigid concepts, the SK 75, 120, 200, 250 and SK 300. Iain Reid designed the first ever pressurized hot air balloon gondola (now on display in the Smithsonian Museum) for Julian Nott's successful world altitude record attempt in 1977, and again for the next in 1980 with the balloon 'Innovation'. He also worked on a larger version for Julian's later abortive round the world balloon venture.

In his formative years in the Royal Navy, he saw service as a steam engineer on the battleship HMS King George V, then as an Air Engineering Officer in the Fleet Air Arm, in HMS Glory and Indomitable. After leaving the Navy, he worked for Hunting Engineering before teaming up with Roger Munk and John Wood in 1974 to bring much needed aeronautical credibility and expertise to Aerospace Developments (which later became Airship Industries). His work with former Royal Navy test pilot Nick Bennett resulted in the Skyship 500 and 600 designs becoming the first ever modern airship designs to gain full CAA passenger carrying certification. In 39 years of operation, not a single Skyship passenger has ever been injured. The Skyship designs went on to gain Certification in the USA, Canada, Europe, Australia, Japan, Korea and Trinidad. They were the first airships to cross the Australian continent (in 1988) and SK 600-01 achieved a 52 hour non-stop flight in 1990. Ultimately however, the collapse of the Bond business empire led to the demise of Airship Industries UK in September 1990, and at that point, Iain finally decided to retire. Iain Reid was one of the last great slide rule designers in the uneasy transition to a more computer focused world. Immensely humble and modest about his design achievements, he was also a talented athlete, devoted husband, father and family man. He was our rock and guiding light and will be sorely missed. Ω



Daily Record, Northwest N.J., Monday, July 3, 1978—11 Y

Whatever Happened To...

/ By JUSTO BAUTISTA

MARTIN WARD

The Great Glenco Station Blaze

A storm was brewing. The rain, which had been falling for hours, pelted the concrete barracks at the Glenco Naval Air Station in Georgia.

Glenco was one of the few homes in the country for the last of the lighter-than-air ships, the blimps. It was 1957, and World War II meant nothing more than pages in a history book for the men stationed at Glenco. During the war the blimps had guarded convoys and carried out patrol missions but their heyday would soon be a matter for the history books too. The few that were in service now were used for anti-submarine warfare.

Shudders went through the men in the barracks as the fire alarm rang out. Fire was the airship's worse enemy. It ripped the guts out of an airship and baked the men in them. The alarm was false.

Three minutes later, they heard the alarm again. "We all hopped in a big moving van," recalls Martin Ward, then a 19-year-old airman from the Bronx. A 400-foot ship had been preparing for a 12-hour flight when the wind suddenly swept it several feet in the air. It came down on locked landing gear which collapsed.

The airship landed on the belly of the gondola. There were sparks. And then an explosion.

Martin Ward

"We were practically underneath the ship when it went up in flames," Ward recalls. The rain was still coming down. Firemen and ground crews poured foam onto the blazing hulk but the rain washed it off. There was a mad irony about it: the firefighters were knee deep in water as a flaming hell roared above them. They ran for their lives.

Today, Ward, who lives in Lake Parsippany, has fond memories for the Glenco Air Naval Station in Georgia. When he and the groundcrew weren't putting airships in their hangars, the biggest wooden hangars in the world, they were hunting the alligators and wild boars that roamed near the base. "They were beautiful things," he says, referring to the airships. "They could have been used to carry cargo."

The clipping above, donated to the NAA Treasurer long ago without notation, contains some hiccups but seems to explain something about this Glynco ZS2G-1 accident not contained in the official report. (Officially the envelope was struck by lightning and burned in two minutes, in spite of the pouring rain, but the crew escaped.) Since firefighters arrived quickly, the car should have been saved; Ward says the rain was so intense as to wash off their foam. Does anyone remember Ward or that accident? Ω

SHORE ESTABLISHMENTS:

Akron

On September 15th, the Ohio Canal Society (OCS, a historical society whose primary interest is preserving the history of canals built throughout Ohio) included a stop at Goodyear's Wingfoot Lake Blimp Base. It was the first stop on their semi-annual tour of historic sites in Northeast Ohio, primarily those relating to canals. The OCS requested that a member of the Lighter-Than-Air Society meet them at the hangar and give them a brief history of the hangar which recently celebrated 100 years of existence. Due to their tight schedule, the event was limited to a talk aboard their bus as they did not have the time to get 50+ members off the bus and back on again. The summary of the history of the blimp base was given by Alvaro Bellon.

The Peninsula Public Library asked that the Lighter-Than-Air Society give a talk about the use of German Zeppelins during World War I, on occasion of the 100th anniversary of the end of the Great War. Eric Brothers talked about the use of the Zeppelins, their design as it evolved throughout the war and the connection of Zeppelin with Goodyear and Northeast Ohio. Alvaro Bellon talked about the sound or acoustic mirrors that were developed in Great Britain in an effort to detect incoming airships in order to evacuate the apparent targets and if available scramble aircraft to confront the Zeppelins. Wayne Buchanan curated an exhibit with artifacts from WWI Zeppelins from the LTAS collection. The Library displayed two period books with pictures of the Zeppelins as well as two books with a series of comic book panels about the war and a copy of Timeline magazine featuring World War I posters. At the end of the presentation, the Library donated the books and magazine to the Lighter-Than-Air Society.

On October 30th, the Akron Public Library hosted the premiere of "Lost Voices of the Great War." This movie, co-produced by Vic Fleischer, head of the University of Akron Archives and LTAS member, is a collection of comments that soldiers from Summit County made in the letters they wrote while deployed in Europe. One segment of the movie addresses lighter-than-air aircraft used in the war, many of which had been built and assembled in Akron. After the movie was shown, there was a panel made up of producers and directors who fielded questions from the audience at the standing room only event. The movie has been shown on local PBS stations and should become available on YouTube in the near future.

– Alvaro Bellon

United Kingdom

The European Aviation Safety Agency (EASA) has awarded Hybrid Air Vehicles Ltd a Design Organization Approval. This is an important milestone on HAV's path to getting the production Airlander 10 in service with customers. It is also a major achievement: just eight other organizations hold an EASA Design Organization Approval (DOA) for type certifying large aircraft.. Ω

"Project Zero" reached the final stage of our centenary project where volunteers from around the world have kindly supported and contributed to our research since 2016. The project has just launched a crowdfunding campaign in an attempt to raise the remaining funds to start building the replica Zero class dirigible control car (gondola) and equip our costumed interpreters to tell the story of the airship service in WWI.

Full details can be viewed using this link: https://www.crowdfunder.co.uk/project-zero
www.projectzerohistorymatters.blogspot.co.uk Ω

Lyon, France

Thales Alenia Space has completed a design review for its Stratobus surveillance and communications airship program, allowing the company to proceed with development. In its latest iteration, the airship is 140 m (460 ft.) long.

A quarter of the surface area of the airship's envelope 1,000 m² (almost 108,000 ft² will be covered in solar cells. Thales Alenia Space, with French renewable energy research institute CEA Liten, has developed flexible, lightweight PV modules covering a 4 mÂ² area and weighing less than 800 g/mÂ² (0.1 lb/ftÂ²), with a power output of 800 W/mÂ² (75 W/ftÂ²). Thales Alenia Space has completed static mechanical tests on the first full-scale (PV) modules. Recent tests have demonstrated the high stability of the encapsulation materials in the presence of ultraviolet radiation, combined with low relative power loss after thermal cycling. Ω

Moffett Field

"Back in the Day", K-class blimps from Patrol Squadron ZP-32 patrolled the west coast from Moffett Field, searching for Japanese submarines, and conducting special missions as well as occasionally rescuing downed Army Air Corps flyers. One of those early blimps was K-22, which suffered a collision with a hilltop near Hollister in the Spring of 1943. The nose and tail sections of K-22's gondola were returned to Moffett Field and were stored in Hangar One until the Navy contractor began stripping its siding off in 2010 and the MFHS took custody of them.

K-22 on patrol

K-22 is about to undergo restoration

The Moffett Field Museum Restoration Team obtained a complete set of microfilm copies of the original Goodyear engineering drawings from the Smithsonian Institute to use as blueprints to reconstruct the middle sections of the gondola. We've recruited young college and graduate students who are developing three-dimensional solid model computer aided designs (CAD) from which a Bill of Materials can be developed and used to acquire and build the middle framework.

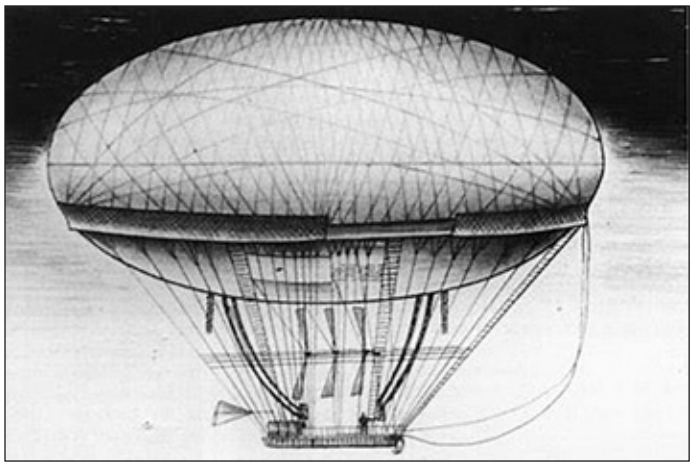
We also found a welding and manufacturing company here in Silicon Valley willing and ready to build up the missing frame sections.

It won't be easy and it won't be quick, but interest grew overnight once we made a decision to go ahead with the restoration. Stay tuned!

– Thomas Winant

The design team in front of the remains of K-22 nose section; tail section in background.

Ed. recently visited MFHS and was treated like royalty by Pres. Herb Parsons, Museum Curator Bill Stubkjaer and other volunteers about the museum and its outside storage facility. I asked Bill to pose in front of the K-22 stern section (flat topside down) so our readers can see how much K-22 frame will need to be recreated. We have been promised not only an update but some behind-the-scenes details on how this will be accomplished. Ω

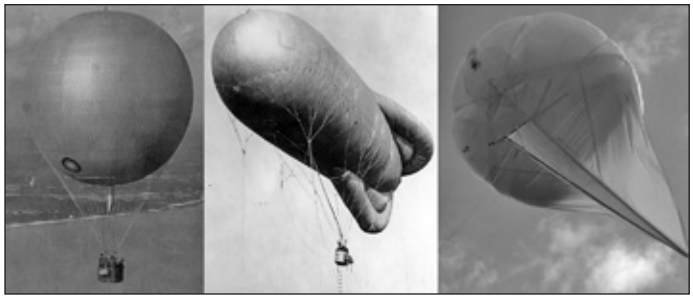


Morphology and Evolution of the Lighter-Than-Air Technology and Airships

By Dipl.-Phys. Jürgen K. Bock,
NAA Tech Comm. Chair

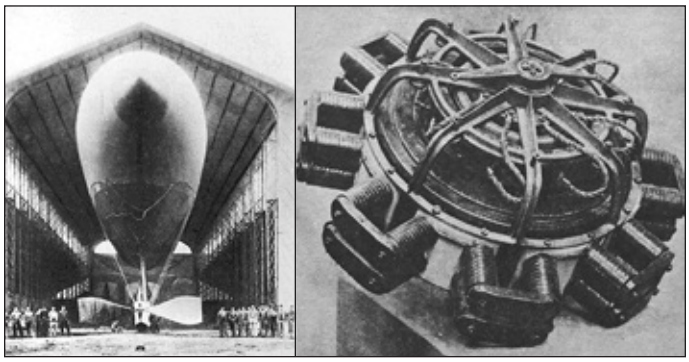
The morphology of airships can be visualized in the manner of a simplified Darwin's evolution tree and started from the first spherical balloons at the end of the 18th century. Very early, even before the conception of a viable propulsion system, Meusnier de la Place, a French mathematician and military engineer conceived a slender elongated balloon (above) as a low-drag airship, which actually became the prototype for practically all following airship projects.

The alternative deformation would be the squeezing of the sphere to an ellipsoidal discus, a shape which was known since the antique age as a far-ranging projectile by virtue of its additional aerodynamic lift. However, the discus is aerodynamically instable and requires therefore the gyroscopic stabilization of a spin when being thrown at a distance.



The elongated airship proved likewise to be aerodynamically unstable and required a rudder-type stabilizer in addition to the pendulum effect of a suspended gondola. Remarkably, the spherical type of an airship remains to be indifferent, which makes most balloon rides smooth and relaxing.

The breakthrough of airship technology came early in 1884 when Renard and Krebs constructed a streamlined airship la France (below), driven by an electric motor, keeping a constant weight due to the power batteries, and performed a round trip, i.e. they returned safely to the take-off place. This airship represented, indeed, a far into the future oriented system with respect to aerodynamic shape, usage of electric propulsion, maintaining the balance of lift and weight. No wonder that this had effectively triggered the subsequent development of airship concepts; particularly the introduction of compartmented rigid airships by Zeppelin brought the breakthrough.



The evolution of common airship designs since that time determined the traditional airship configurations, primarily w.r.t. the aerodynamic streamlined slender zeppelins which generally characterized the perception per se of an airship. However, the adherence to this classical design and operation has primarily caused a one-sided view. Instead of following the dead-ended road of helium ships which used a water recuperation system, the earlier concept of weightless fuel, as applied to the earlier LZ-127 *Graf Zeppelin*, is definitely more future-oriented. The "weightless" fuel was "Blaugas", a mixture of fuel gases having the same specific weight as the ambient air. Not only that this gas caused no strain on the structure, but also it allowed the lifting gas to gradually expand during a mission and thus gaining a more economical height and range capability.

For instance, during the world-flight of the LZ-127 in 1929, the fuel-gas consumption would – according to Eckener – have allowed a non-stop flight to Los Angeles via Russia and Japan. The stop-over in Japan was a recommendation by the German embassy in Tokyo for political reasons and was, finally, a diplomatic success!

Coming back to the early date of 1884, when the systems concept of streamlined airship was experimentally developed, the development of a practical spherical airship had to wait until 1990, when a Swedish balloon manufacturer in Canada, Hokan Colting and the 21st Century Airships Corporation, succeeded in constructing a number of spherical airships which were controlled by differential thrust, vectored thrust and thrust deflectors. (Below) Several designs tested and flown in the 90s and had shown excellent maneuverability, STOL/VTOL properties and ample payload space, however limited airspeed due to the high drag coefficient, which still requires more research in the field of drag reduction.

For practical use and payloads in the order of 10 tons, however, a minimum sphere size of 30 m diameter and a rigid substructure like a geodesic dome are necessary, which exceeded the potentials of the 21st Century Airship Corporation, although the spherical airship concept would fulfill urgent transportation requirements.

At the same time (1990), Michael Walden and his associate Sanchez Rodan constructed in Mexico the MLA-32-B, which was the first manned rigid airship since the end of the Zeppelin era and was designed as a hybrid lenticular airship. During the finals of the World Cup 1990 in Mexico City, the airship MLA-32-B performed daily advertising flights for one week, where it was seen by 20 millions of people. The ship was controlled from an eccentrically suspended gondola by means of differential thrust from two lateral engines.

On its last flight, MLA-32-B (above) had engine problems and was forced to an emergency landing on the field of Aztek farmers who were so enraged that they destroyed the ship. The insurance company would not pay on the grounds that they did not cover damages done by infuriated savage aboriginals.

Evaluation of the Three Species

Buoyant Airships allow long mission durations and are therefore of interest to tourism and surveillance missions. They may be flying research laboratories for exploration and research; they are adaptable to amphibious missions including Search and Rescue.

The problem area is the specific ground infrastructure which may be extensive due to size of the airship plus the required specific ground equipment (mooring mast, mules, etc.)

Spherical Airships are predestinated as flying cranes for short-range operations. The voluminous interior allows luxurious passenger accommodation (panoramic view). They are suited as short-range surveillance platforms, flying laboratory for exploration and research due to their landing capability in unprepared grounds, including amphibious missions.

The ground infrastructure is very moderate, since no mooring mast is required due to the radial-symmetric shape (ground anchors only).

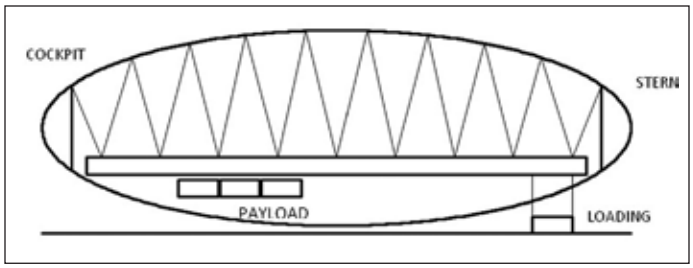
Lenticular Airships are hybrid airships and candidates for future air freight transportation causing minimum pollution of the atmosphere due to the predominant use of gaseous hydrogen as a fuel gas. Lenticular airships require only moderate airfields and ground anchors for parking and they are predestinated for electric propulsion based on the use of future fuel cells and photovoltaic systems as well as ample hydrogen supplies.

The lenticular hybrid requires no aerodynamic control

surfaces and is stall-free, even at high angles of attack.

The Baseline Lenticular Hybrid Cargo Airship

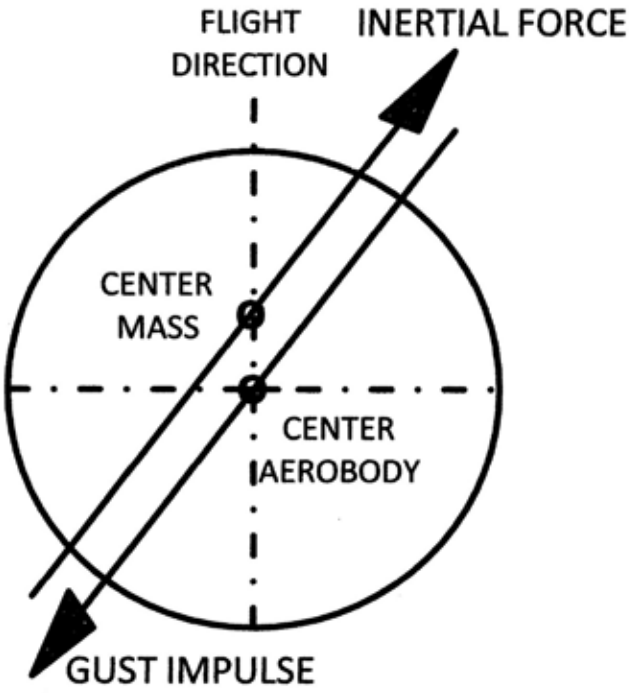
The baseline cargo airship is shown above, giving a perspective overview and showing the configuration of eight electric propulsion units. Otherwise, there are no external aerodynamic controls foreseen.



A longitudinal section (above) shows the containerized cargo suspended on an overhead gantry. Its longitudinal flight stability is provided by controlled shift of a cargo train which is suspended on a traveling overhead gantry beam which replaces a conventional keel structure. Note that no floor structure. Note that on the right end the loading/unloading technique through a trap door.

The longitudinal flight stability is safeguarded by the fact that the empty weight of the aircraft is compensated by the aerostatic lift, while the low center of gravity of the payload relative to the aerodynamic center provides the necessary pendulum effect.

The flight stability in case of a lateral gust is due to a couple of forces (gust impact vs. inertial force) which generates a stabilizing moment of yaw similar to the effect of a vertical stabilizer fin, which turns the craft into the direction of the gust. Note that the gust impacts the aerodynamic shape of the discus while the center of mass



is eccentric.

This plan view shows the generation of a stabilizing moment about the vertical axis.

Summary of Advantages

- Basically straightforward structure
- No need for aerodynamic fins and control surfaces
- Control exclusively by c.g. and thrust control
- Moderate linear dimensions for a cargo airship
- No mooring mast required – instead circumferential earth anchors
- Convenient containerized cargo loading/unloading
- Potential accommodation of bulky cargo
- STOL capability
- Alleviation for take-off by additional filling with gaseous hydrogen as fuel
- Stall-free configuration allows extreme angles of attack
- Adaptable for electric propulsion – fuel cells, generators, photovoltaic

Operation Scenarios with respect to Application, Economy and Ecology

For a rough calculation of the performance data, subsequent model data of a full-scale lenticular cargo airship are being used:

Diameter:	100 m
Volume:	200.000 m^3
Lifting gas hydrogen:	100.000 m^3
Filling degree:	50 %
Flight Ceiling	5.700 m
Useful Load	100.000 kg

For additional aerostatic lift for ground load alleviation, additional hydrogen will be inflated that will be used as fuel gas:

Filling Degree 95 %

190.000 kg alleviation at Take-Off Airspeed

100 km/h near ground

In the following compilation the important Advantages Concerning with respect to the Infrastructure are identified and highlighted:

- Greater amount of smaller airfields are suitable for operation

- Closer distance to the customer (sender and receiver)
- Less pollution from on-ground delivering trucks
- Excess hydrogen can used as fuel when climbing to the specified flight ceiling
- No need for conventional LTA ground equipment (mast, mules etc.)

In view of the characteristic features of a lenticular hybrid cargo airship, the following requirements concerning the air fields are compulsory:

- Storage of standardized ballast containers
- Provision of specified ground anchors
- The landing strip must allow STOL for semi-buoyant cargo airships

The ground facilities shall also provide additional features for cargo hybrids operating with hydrogen and low-carbonic fuels:

- Availability of gaseous hydrogen for routine operation (e.g. pipeline, gasometer etc.)
- Filling station for liquefied natural gas/methane

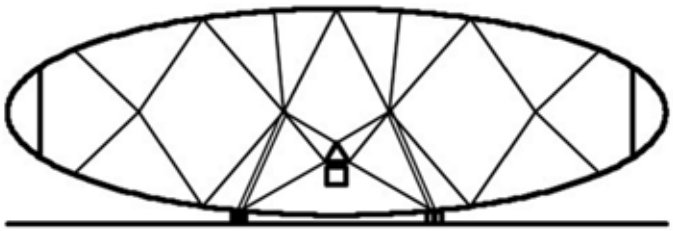
Analysis of the Transportation Chain

For the analysis of a characteristic transportation chain, subsequent Block Time Model reflects the realistic stages in this process:
Sender – Truck Loading – Road Time – Airport Cargo Processing – Flight Time –
Airport Cargo Processing – Warehouse – Truck Loading – Road Time – Receiver

Assumptions:

Mean distance Customer-to-Airport for Cargo Jets: 150 km, and for Cargo Airships: 75 km
Mean over-ground speed for Jets: 650 km/h, and for Airships: 100 km/h
Assumed Ranges of Air Flight: 1500 km (medium range) and 6000 km (trans-atlantic)

The estimated individual block times are systematically listed in the table (bottom of page) for a Freight Jet and Lenticular Hybrid Airship for both flight ranges:



Lessons learned:

Higher airspeed of a jet freighter does not represent a substantial advantage with respect to the block-time from Sender-to-Receiver due to the many delays in the transportation chain.

Ecological Aspects:

The fuel required for a 1500 km medium range transport requires merely 20,000 m^3 additional hydrogen gas as a "clean" non-carbonic fuel and delivers a maximum payload of 100 tons. A 6000 km trans-atlantic range transport requires initially 20,000 m^3 additional hydrogen gas plus 22.4 tons of liquefied methane for the flight at 5400 m altitude and delivers up to 77,6 tons of payload.

Economic Aspects:

Hybrid cargo airships are capable to serve substantially larger geographic territories at both ends at potentially minor freight rates.

Technical Potentials:

The lenticular airship invites the use of electric propulsion as well as the potentials of fuel cells and the potentials of photovoltaic systems. Intensive basic research, especially in high-level systems engineering, is highly recommended. Ω

	Jet	Airship	Jet	Airship
Range [km]	1500	1500	6000	6000
Block Time [hr]				
Truck Loading	2	2	2	2
Road Time	3	1,5	3	1,5
Airport Cargo	2	2	4	4
Flight Time	2,3	15	9,2	48,2 *)
Airport Cargo	2	2	4	4
Warehouse	6	3	12	12
Truck Loading	2	2	2	2
Road Time	3	1,5	3	1,5
Sum [hours]	22,3	29	39,2	75,2

*) 129 km/h airspeed at 5,5 km flight ceiling

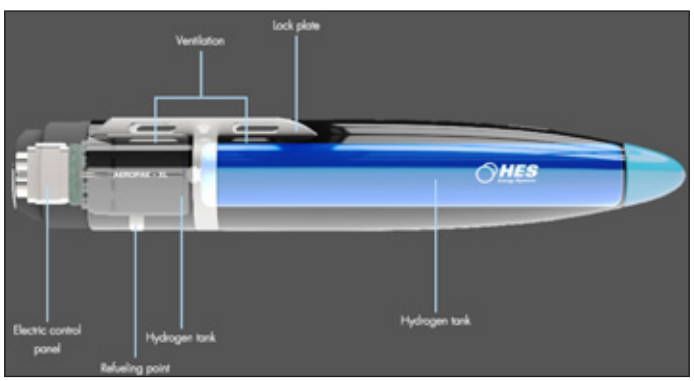
SHORT LINES

Oil and gas helicopter operator Bristow Group is set to purchase utility helicopter operator Columbia Helicopters for $560 million

Bristow Group CEO Jonathan Baliff said the deal would further diversify the company's business, which is heavily dependent on the oil and gas business. The company also signed agreements with Hybrid Air Freighters, the firm marketing Lockheed Martin's LMH-1 Hybrid Airship, to operate the airships serving remote mining and oil and gas communities. Ω

Singapore's HES Unveils Plans for Regional Hydrogen-Electric Passenger Aircraft

HES is joining forces with a variety of partners to pioneer a new form of aerial mobility: quiet and zero carbon, personalized, on-demand, decentralized and economically inclusive of rural communities. Designed as a zero-emissions aircraft, Element One merges HES' ultra-light hydrogen fuel cell technologies with a distributed electric aircraft propulsion design. With virtually no change to its current drone-scale systems, HES' distributed system allows for modularity and increased safety through multiple system redundancies.



Element One is designed to fly 4 passengers for 500 km to 5000 km depending on whether hydrogen is stored in gaseous or liquid form. This performance is several orders of magnitude better than any battery-electric aircraft attempt so far, opening new aerial routes between smaller towns and rural areas using an existing and dense network of small-scale airports and aerodromes.The promise of hydrogen-electric power could shape the future of aviation. "It's now possible to break past the endurance limits of battery-electric flight using HES' ultra-light hydrogen energy storage in a distributed propulsion arrangement," says Taras Wankewycz, founder of HES. "Element One's design paves the way for renewable hydrogen as a long-range fuel for electric aviation." Ω

Planned hybrid airship will combine aspects of planes, blimps and helicopters

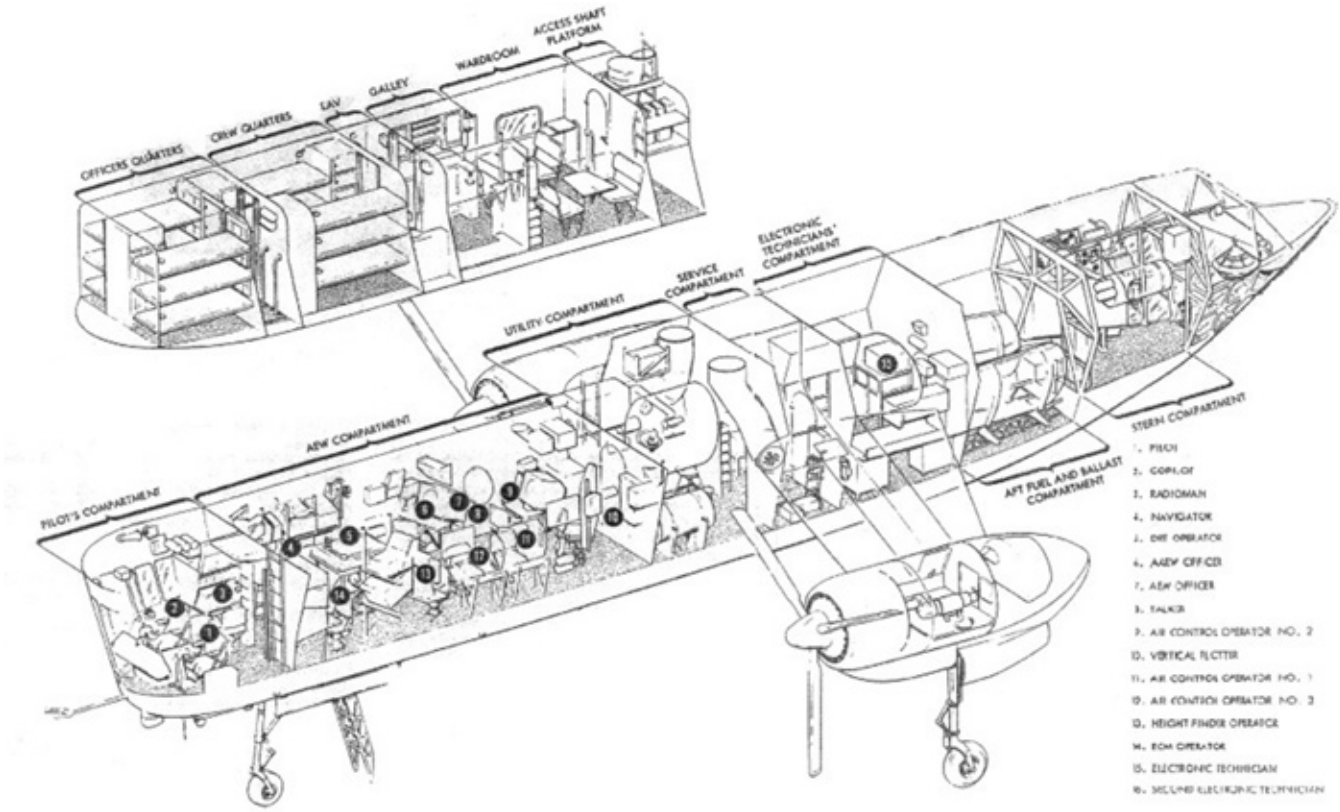
It was just last year that we heard about the Plimp, a sort of plane/blimp/helicopter hybrid drone manufactured by Egan Airships. As was hinted at then, the Seattle-based company has now officially announced that it's working on a passenger-carrying variant known as the Model J.

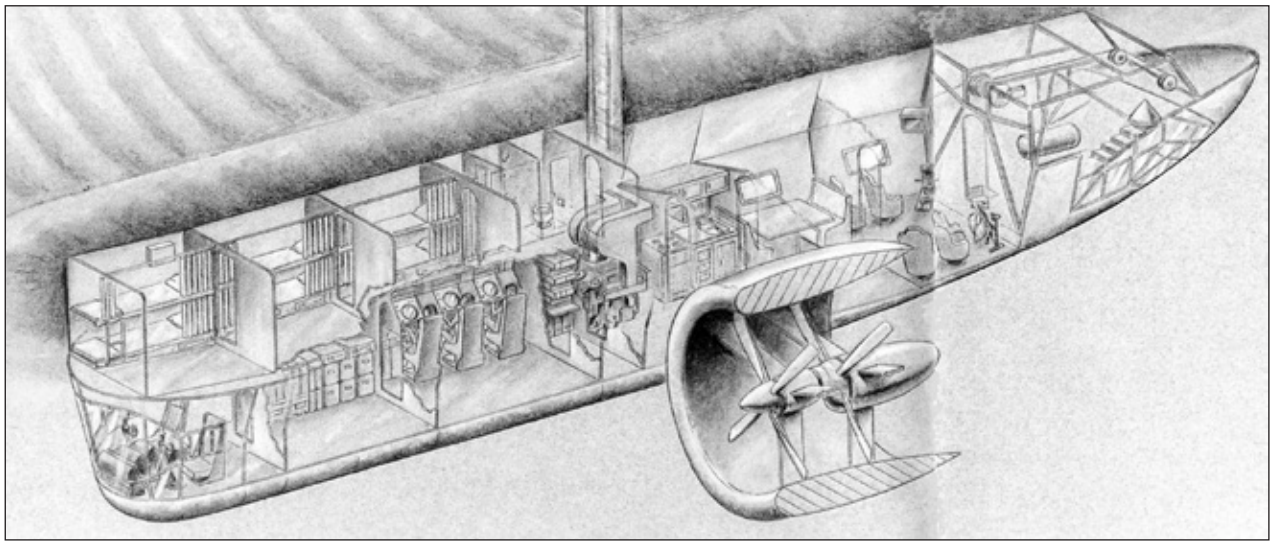
Plimp is basically a VTOL (vertical take-off and landing) blimp with two wings. Each wing in turn equipped with an electric motor/propeller. When it's taking off, landing or hovering in one place, the wings rotate so that the props are facing straight up – this lets it move vertically. Once it's ready to head for its destination, though, the wings rotate so that the props face forward, allowing for fast and efficient fixed-wing flight. Thanks to the buoyancy provided by its helium-filled envelope and the lift provided by its wings, it will reportedly glide gently down to the ground at a speed of 9 mph (14 km/h) if its motors give out.

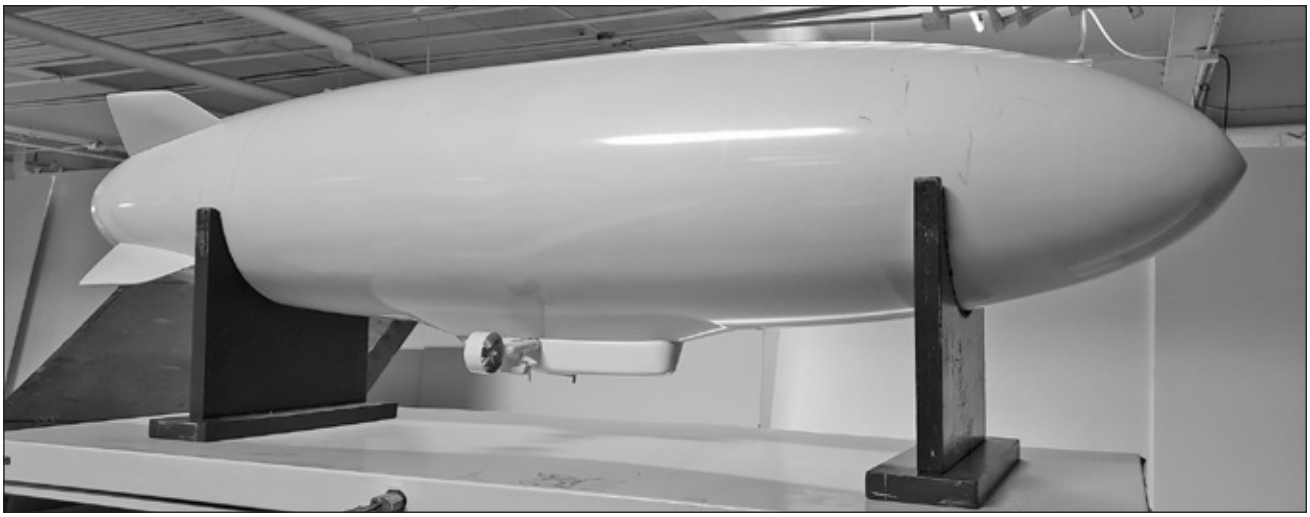
Plans call for the Model J to have all of those same features, but it'll be bigger. More precisely, it will measure 169 feet long (51.5 m), have a 61-ft wingspan (18.5 m) and sit 54 ft tall (16.5 m). Its gross weight will be 9,500 lb (4,309 kg) although the envelope will be lifting 5,564 lb of that (2,524 kg), reducing its ground weight to 3,936 lb (1,785 kg). Capable of carrying ten people (eight passengers plus crew) or 2,000 lb of cargo (907 kg), it will use electric power for its vertical take-offs and landings, with a hybrid gas/electric system taking over for fixed-wing flight. That system should provide a range of 267 miles (430 km) at a speed of 86 mph (138 km/h), or 320 miles (515 km) at 63 mph (101 km/h) – those figures are for a fully-laden aircraft. Short sprints at 93 mph (150 km/h) will also be possible.

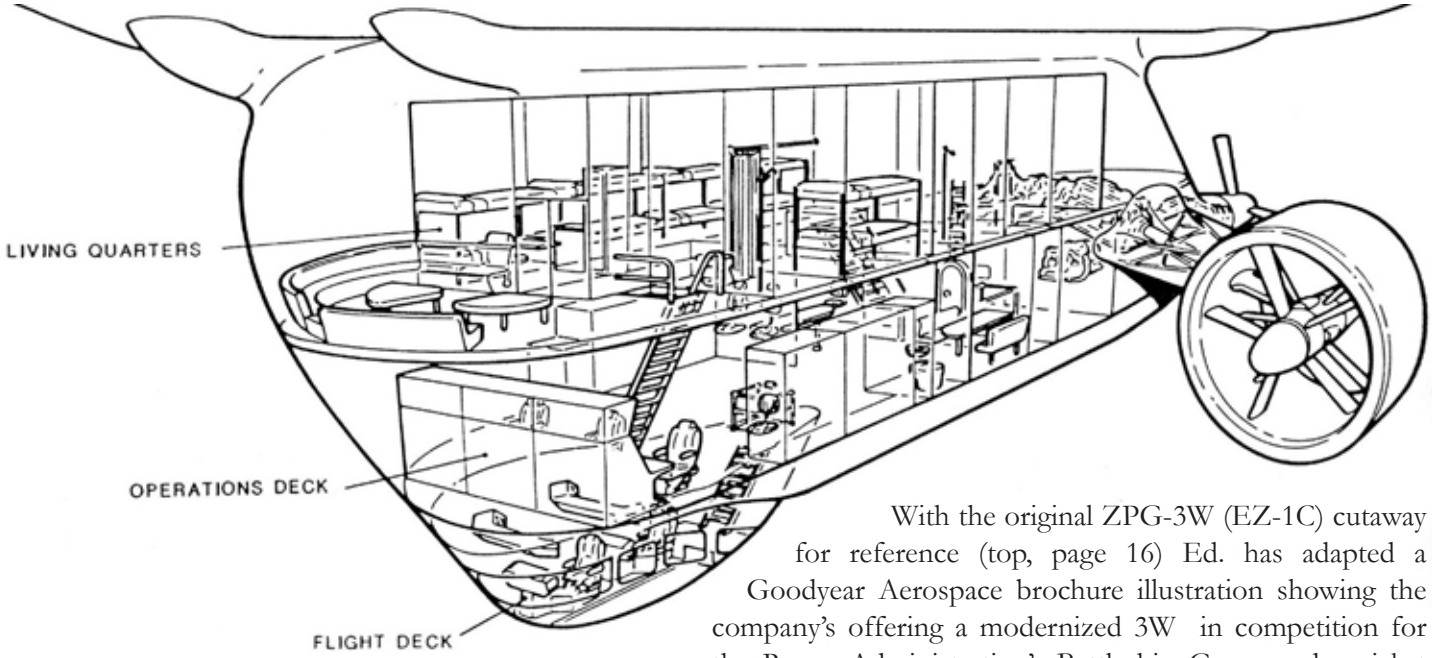
As an added bonus, unlike regular blimps that have to land at airfields where a ground crew secures them to a mast, the VTOL-capable Model J will conceivably be able to set down just about anywhere there's room. And because it's somewhat heavier than air, it will be less likely than a traditional blimp to drift away once it's on the ground.

Not unlike the case with a Kickstarter project, the funds will be used to finance production and development. Delivery is expected to take place in about four years. Ω


ACCESS SHAFT PLATFORM
WARDROOM
GALLEY
LAV
CREW QUARTERS
OFFICERS QUARTERS
ELECTRONIC TECHNICIANS' COMPARTMENT
SERVICE COMPARTMENT
UTILITY COMPARTMENT
AEW COMPARTMENT
PILOT'S COMPARTMENT
STERN COMPARTMENT
AFT FUEL AND BALLAST COMPARTMENT
1. PILOT
2. COPILOT
3. RADIOMAN
4. NAVIGATOR
5. DIR OPERATOR
6. AEW OFFICER
7. AEW OFFICER
8. TALKER
9. AIR CONTROL OPERATOR NO. 2
10. VERTICAL PLOTTER
11. AIR CONTROL OPERATOR NO. 1
12. AIR CONTROL OPERATOR NO. 3
13. HEIGHT FINDER OPERATOR
14. ECM OPERATOR
15. ELECTRONIC TECHNICIAN
16. SECOND ELECTRONIC TECHNICIAN







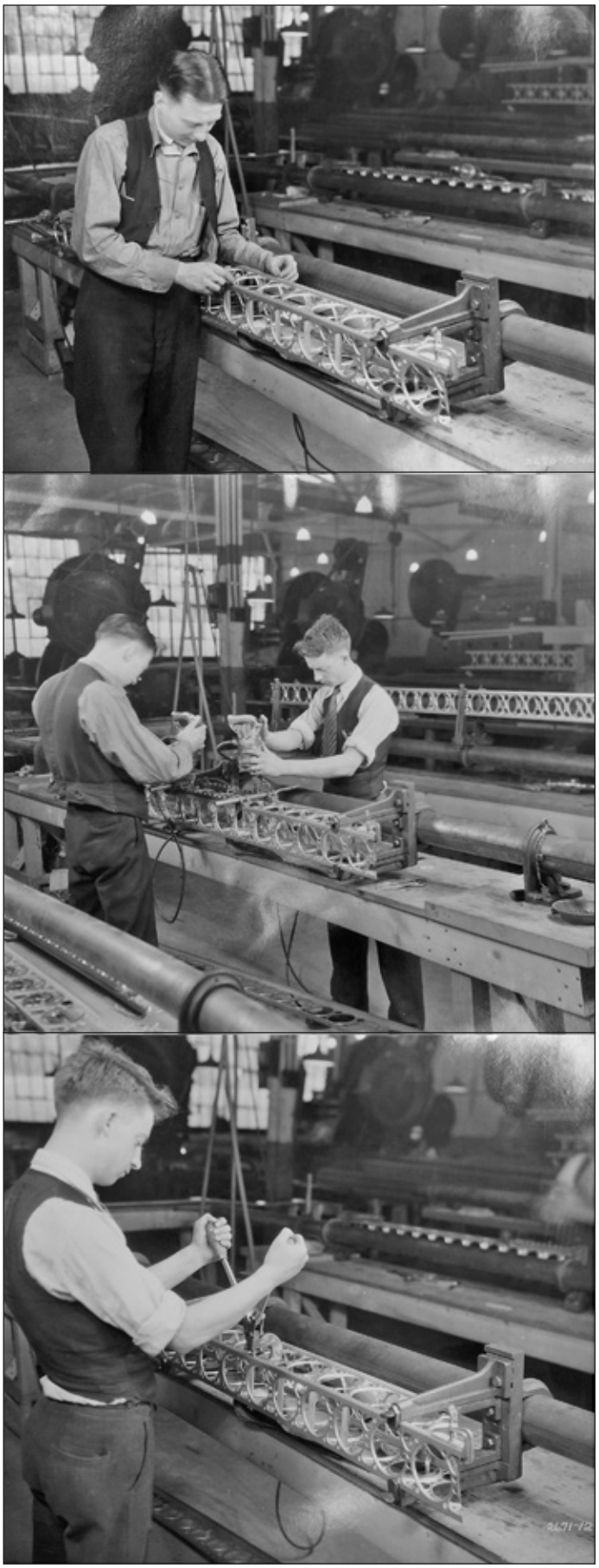
With the original ZPG-3W (EZ-1C) cutaway for reference (top, page 16) Ed. has adapted a Goodyear Aerospace brochure illustration showing the company's offering a modernized 3W in competition for the Regan Administration's Battleship Group radar picket Airship competition, which included a model now in the LTAS collection (bottom, page 16). Modern Aero-diesel propulsion, updated electronics… note the crew's rec room… tube television (no doubt with VHS VCR) and stationary exercise bike.

Elizabeth City hangar houses nearly complete Sentinel 1000 (above left), and mockup of YEZ-2A gondola (above).

The Government instead chose the Airship Industries' proposal to become the YEZ-2A. The drawing, this page above, and photos of the full sized mockup (run in a magazine) illustrate the AI (later Westinghouse Airships) approach to the design problem. The newly-minted NAA (inc. 1984) offered experienced suggestions, as seen in early issues of NOON BALLOON, with the response, if any, not noted in these pages.

CDR Charles Mills wrote, "With 26 internal and 114 external cables, the M-ship's three-section 117 foot long car, weighing only 14,4514 pounds, placed an extremely light load on the suspension system. Because of the long length of the car, the internal catenary loads were almost at 90°, and the articulation of the car minimized the possibility of wrinkles in the envelope. This feature was highly desired by the operators in any follow-on airship, because of the ease of maintenance and excellent load distribution….[but] ZPG-2 was a maze of compromises… The pilots and operators wanted a long articulated one, like the M, with the engines located far aft, giving the ship a very low cockpit noise, and comfortable sleeping quarters far removed from the engines. However, Bureau of Aeronautics personnel were enchanted by the two-deck design submitted by Douglas Aircraft, with the lower deck for the pilot compartment and working areas, and an upper deck for sleeping, cooking and eating areas."
To our knowledge the YEZ-2A mockup disappeared in the Weeksville Hangar #1 fire, along with the demonstrator airship "Sentinel 1000."

Perhaps some future effort will listen to experience.



State of the rigid airship art in Akron, 90 years ago: Shearing Dural sheet to width; rolling the edge crimp; stamping out the lightening holes; adding angles to make a box frame; drilling holes, and finally, squeezing rivets… about one meter complete, 10+ miles to go, per ship! Ω

Wind Blows Blimp Away

Deflated Airship Lands in Lakehurst Woods; 2 Aboard Safe

Staff Correspondent.

LAKEHURST — A Navy ZPG2 blimp was punctured and set aloft this morning when a sudden shift of wind capsized its mooring mast during a routine undocking at 4:30 a.m.

The airship sailed more than a quarter mile before coming to rest in a deflated condition in a wooded area off the Naval Air Station property.

Two men aboard the ship were uninjured. They were Lt. (j.g.) S. R. McNabb of Point o' Woods Drive, Toms River, and ADR3 David G. Moller of 20 Brown St., Lakehurst.

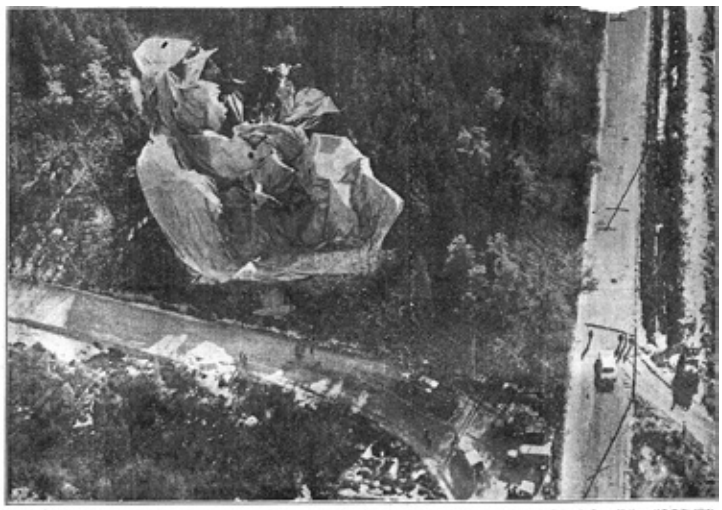
A Navy spokesman said the airship was being readied for a routine patrol flight. The wind knocked the mast down and pulled the blimp in a half circle before it broke free and sailed away. The mast punctured the nose of the blimp as it fell.

Preliminary examination of the airship showed the frame received minor damage. The spokesman said the replacement of envelopes is routine during blimp overhauls and the airship is expected to be ready for patrol duty in a short time.

(Airview from NEWS plane by George Mattson; Al DeBello, pilot)

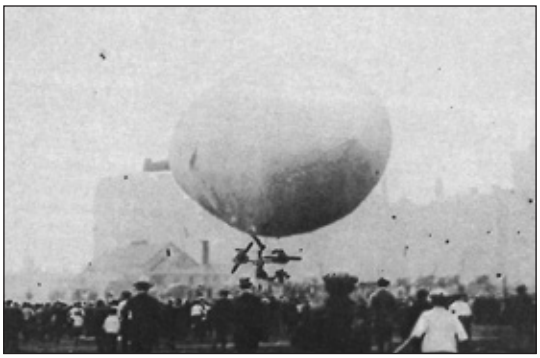
Blimp Crashes at Lakehurst. Blimp from Naval Station at Lakehurst, N. J., is spread over nearby treetops. Two men were aboard when airship was torn loose from its moorings by sudden wind shift. It sailed 500 yards before deflating and falling. Crew escaped injury. —*Story on page 5*

Member Stan McNabb sent these clippings and some background information about the accident seen here. Stan was ordered out of bed at home (over and past the duty crew) to crew the ZPG-2 when conditions were clearly unsafe. Stan does not want to name the senior officer (never an NAA member) who gave the order, until it can be verified he has passed away. At press time, we were not able to make that determination. Clearly this ordering past the prudent cross-hangar winds smacks of the senior effort at the time to get rid of anything that did not fit on, a or need, a flattop aircraft carrier. Ω



(Airview from NEWS plane by George Mattson; Al DeBello, pilot)

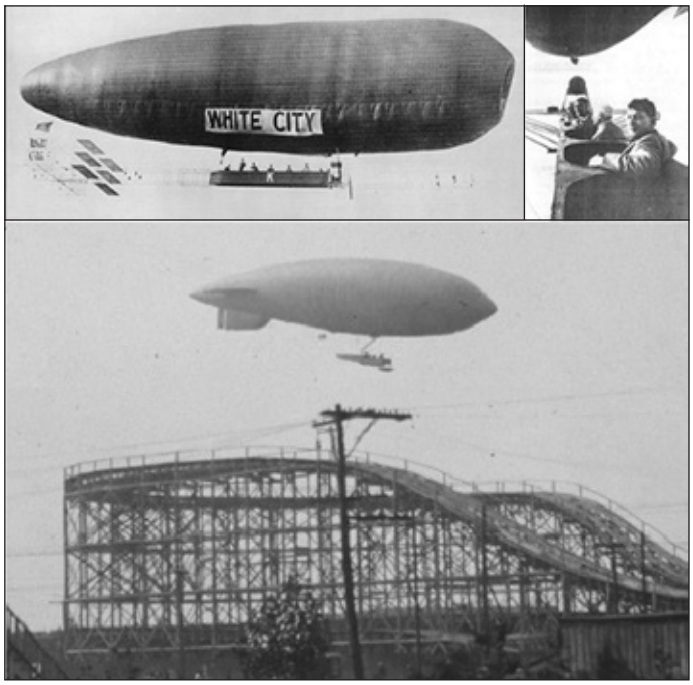
WIND-BLITZED BLIMP. A Navy blimp rests ingloriously in a pine tree stand at Lakehurst, N. J., after the wind picked it up and carried it 700 yards. Two sailors in the gondola, sole occupants, escaped by leaping 40 feet as craft hit trees. Crewmen had towed blimp out of hangar preparatory to routine flight at 4:30 A. M. when gust of wind tore it loose from its mooring mast. Navy said the blimp could be repaired but set up a board of investigation to determine the accident's cause.



The Wingfoot Air Express of 1919

By Lou Young

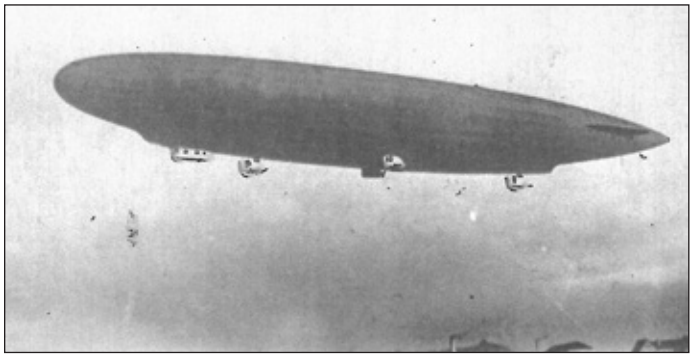
In 1916, Goodyear purchased 720 acres of land southwest of Akron to serve as a flying field and manufacturing facility for the aeronautics division. Airship production originated in March 1917 when the United States Navy ordered nine B type dirigibles from Goodyear and eight from other manufacturers. However, since the hangar at Wingfoot Lake was not ready, the B-1 airship was erected at White City, an amusement park near Chicago, which was once the home of the 1893 Chicago World Fair. Its wooden hangar, originally built for balloons, was the only suitable building at the time, once a channel was cut in the floor to accommodate the car. The shed had also been home to the Knabenshue airship which flew passengers (and at least one motion picture camera*) over Chicago rooftops before the Great War.



Top of page: Young collection. The photos above, top: Happier days before the Great War, flying passengers with Roy Knabenshue. Below, first wartime delivery, as B-1 departed White City on 29 May 1917. The shed is off-camera to the left of the 'coster. (Ed.'s Collection)

* https://youtu.be/SxCFCoI2pjk

Just weeks before B-1's record flight, on April 6, 1917, the United States declared war on Germany. Shortly thereafter, Goodyear assigned three members of the Goodyear aeronautics team to the United States Army Signal Corp, all holding the rank of Captain. The three team members included: Walter Keith, an experienced chemist/metallurgist; Herman Kraft, who had several years of experience in automotive and aircraft design; and Bill Young, who was the manager of airplane accessories and airships in the efficiency and planning department. The team was sent to England and France to study primarily the production and maintenance of blimps and observation balloons, reporting to legendary Colonel William "Billy" Mitchell.

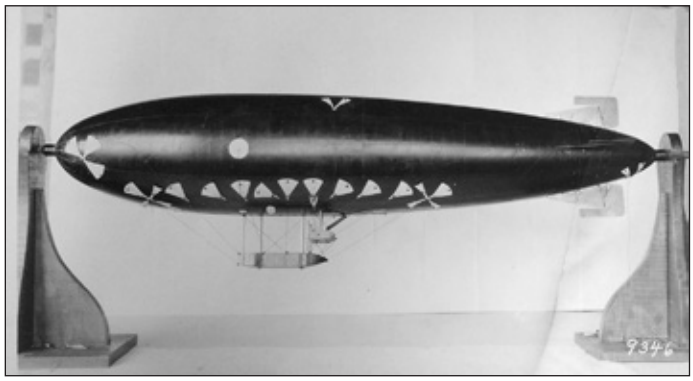


The author's scrapbook contains several photos of Americans with French and US military officers, as well as this shot of a large semi-rigid airship seen in Europe.

The trio returned to the United States in 1918 following the Armistice, Goodyear promoting them all. Bill Young returned to the planning department as the assistant department manager with supervision over fifty to sixty production engineers and schedule clerks, reporting to P.W. Litchfield. Litchfield recruited Young directly out of college on the recommendation of Glenn Curtiss. Young developed a passion for aviation while in college and earned his "Airplane Pilot's Award" at the Glenn Curtiss Flying School during his junior year, where he impressed Curtiss with his enthusiasm and leadership qualities.

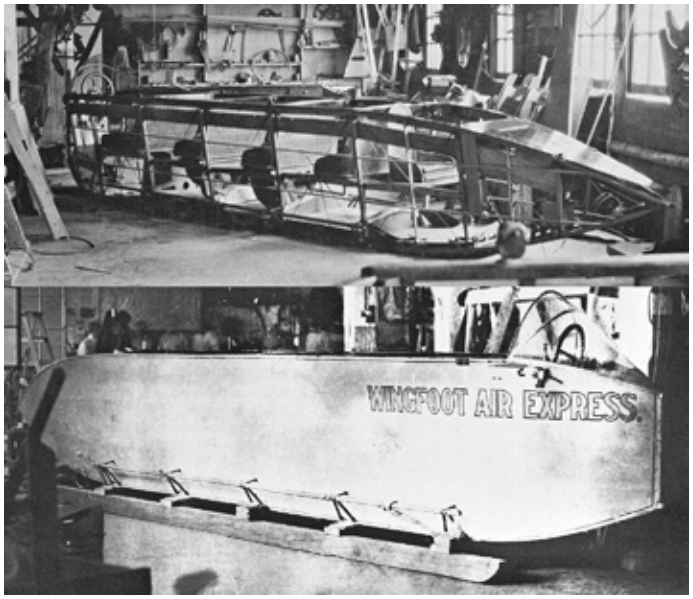
Litchfield likewise recognized Bill's potential. Bill writes: "One day Mr. Litchfield called me into his office and told me that he thought the weakness in our aviation division was lack of a sales program and suggested that I try for a job in the general office. Within only a few days, I was transferred to the general office as assistant to Willard Sieberling, manager of aeronautical sales, reporting to E.R. Preston, who was manager of a sales division which among several, included government sales." In this new capacity, one of Young's responsibilities was being the project manager and overseeing the assembling of Goodyear blimps at various locations.

At this "Return To Normalcy" time, there was much speculation about passenger and mail transport between cities. E.R. Preston was a strong proponent for the development of commercial air travel, utilizing both rigid and non-rigid airships. He believed that American technology was more than capable of improving the best designs in the world and adapt them to American production methods. He thought that the commercial market was merely "waiting for lethargic America to wake up." A Goodyear catalog stated, "We are not confronted with the problem of dismantling an "Airship Factory" which was built up purely as a War emergency. Rather we are confronted with the problem of increasing the facilities of that factory so that we can construct the mammoth airships the commercial future will require." Commercial airship travel needed to be vigorously promoted to the general public to make that happen. Thus any public relations opportunity to promote commercial airships to the public was welcomed and seized upon. In Germany, Zeppelin was using parts from uncompleted dirigibles to build new passenger airships and had resumed service with their LZ-120, the *Bodensee*. No reason Goodyear could not follow suit and capitalize on their wartime experience.



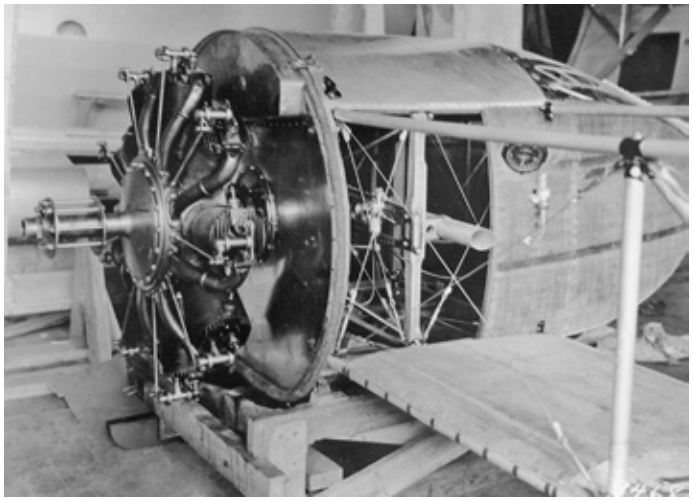
Scale model shows the available F-type envelope, built by Goodyear for use with the B-, and enlarged for E- and F-type airships, as adapted for use to carry passengers in a unique boat-like car. (Photo: E. Brothers)

No doubt inspired by earlier passenger blimps, Goodyear's team, already building the U.S. Army's first airship cars, quickly designed constructed an elongated boat-like car in the workshops adjoining the Magdore, Ohio, hangar, which had been laid down in 1917 and enlarged the next year. The design's ambitious passenger capacity was made possible by the enlarged "F" type envelope ("FB" for the USN's E-1, and "FC" for the USN's F-1 airship) designated "FD," since their 95,000 ft^3 of hydrogen capacity designed to lift full gasoline and bomb loads for extended at-sea missions, proved late in the Great War. As project manager, Bill Young was responsible for the assembly of the *Wingfoot Air Express*.



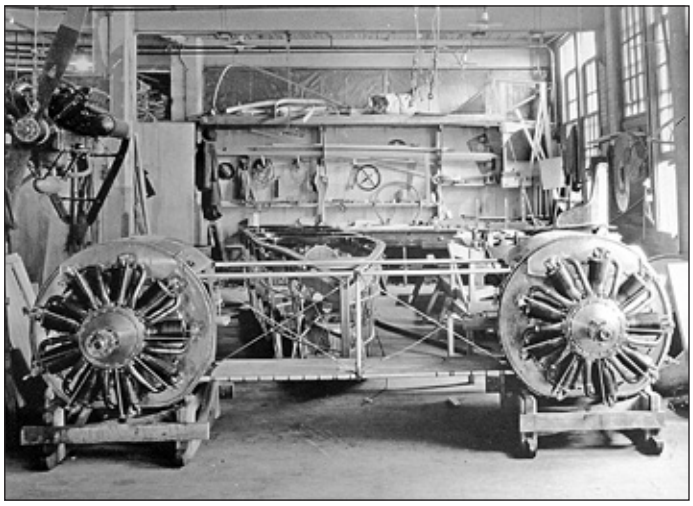
Side-by-side comfortable seats were to accommodate up to eight passengers plus two crew. (The Goodyear Airships)

In addition to the blimp assembly, the crew was responsible for the installation of two new air-cooled, 110 HP Gnome Le Rhone rotary engines which were designed and manufactured in France. It was a new application for the engines, prior to which had never powered an airship. The Le Rhones represented a substantial power-to-weight ratio advantage.



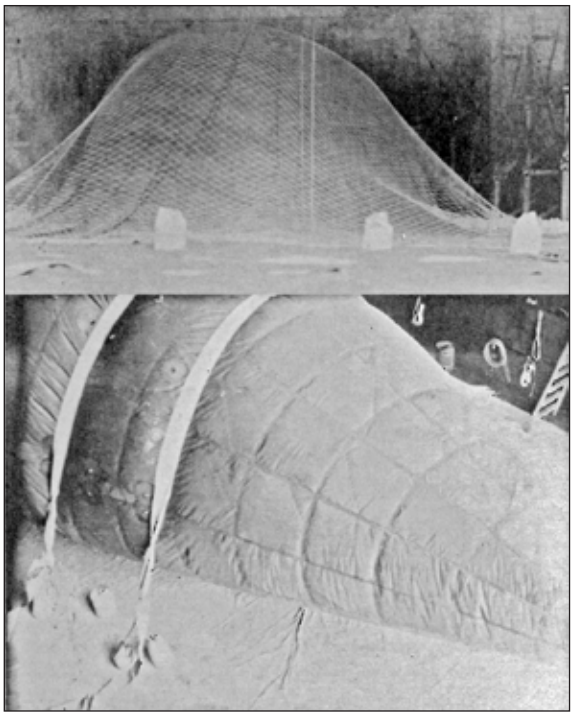
A rotary engine's crankshaft is bolted to the frame; the entire engine: cylinders, block and all - spins with the propeller. Gasoline/air mixture is fed through the hollow crankshaft and up to a valve atop each piston. (These two engine photos: E. Brothers)

Bill remembered, "The engines were mounted aft of the control car, rather than mounted on the control car, as was the usual design. Presumably, this provided extra safety to the passengers as well as reducing any vibration to the control car."

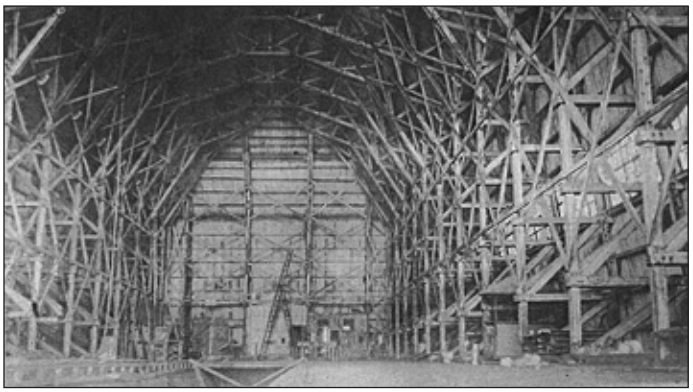


(Above) The unique mounting of the twin Le Rhone engines would feature its own suspension with no attachment to the car. The mechanic, facing aft, could reach both motors. Also in the photo at upper left, a conventional engine awaits installation in an US Army non-rigid.

An excellent opportunity presented itself when arrangements were made for the Wingfoot Air Express, then considered a Goodyear commercial venture, to make a promotional series of flights in Chicago during the third week of July, 1919. (The ship's name was inspired by the legendary tire delivery truck service of 1916.) Mr. Preston wanted local dignitaries to ride the blimp and many respected members of the business community and local politicians were clamoring to get included on the passenger list. However, at that time, the Wingfoot Lake facilities were not actually available to the company to erect what was Goodyear's first private airship. According to one Goodyear spokesman:

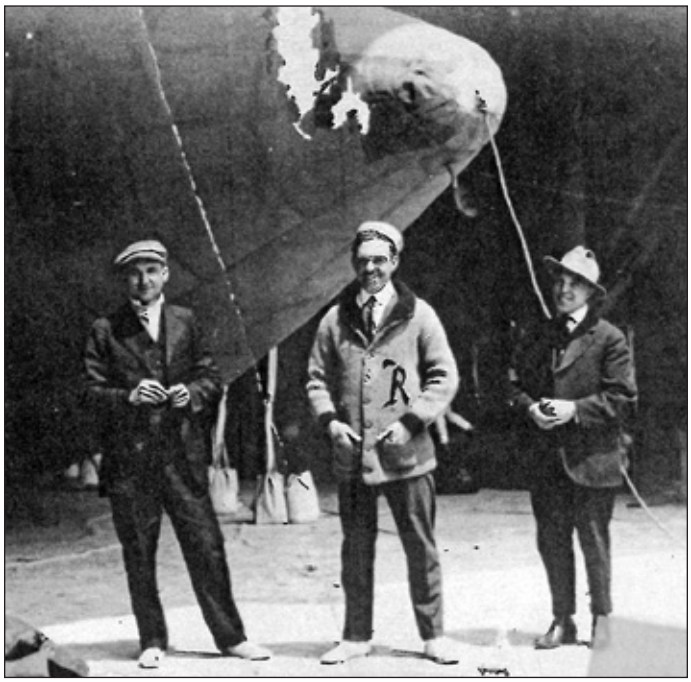


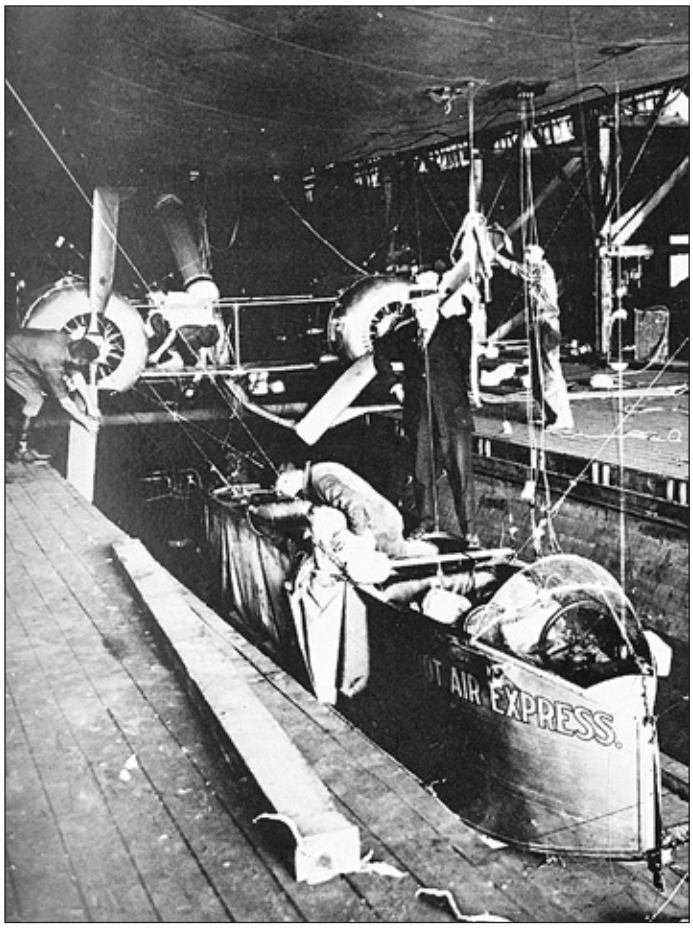
"Our hangars in Akron are still in the hands of the Army and to make the scheduled Chicago flights we decided to use the hangars at White City, which are the best available in the mid-west for our use." The designated assembly site, the White City Amusement Park, was located in the Woodlawn neighborhood on Chicago's south side, seven miles from downtown. (The timber shed is visible in the opening seconds of that 1914 film, but H_2 generator is not seen in any photos yet published.)



The former balloon shed (above), the only suitable building in the country, had been impressed into service in 1917 owing to its free space being large enough to erect the 77,000 ft^3 envelope of the B-1. The floor had a trench cut to accommodate the Curtiss-built B-ship car.

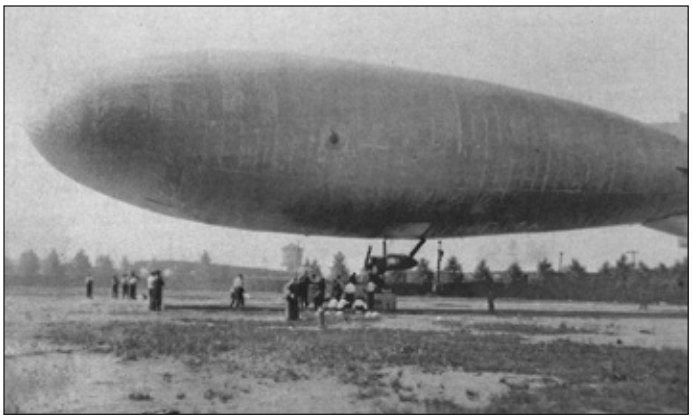
(Below) These unidentified men were photographed during the "FD" envelope inflation in the spring of 1919, using the tried and true "one diamond at a time" sand bag-weighted net technique. (Both photos, Young collection.)





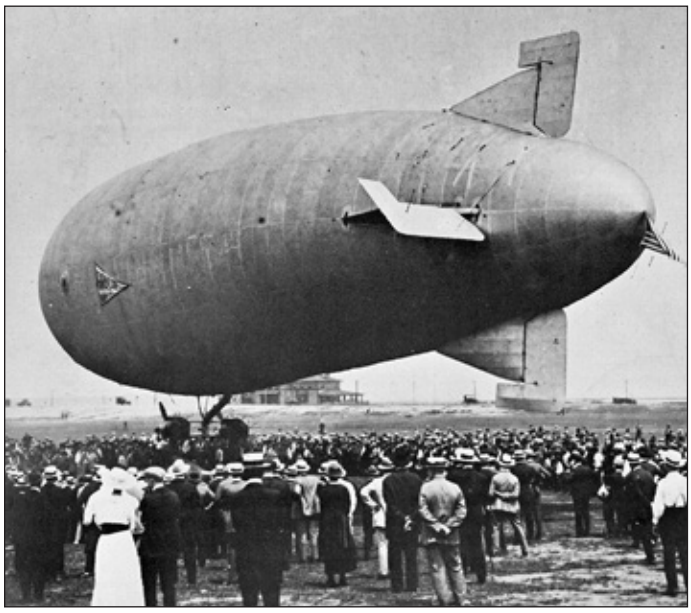
The *Wingfoot Air Express* car was delivered to Chicago and lowered into the trench made for the B-ship erection. The Le Rhone engine frame was also suspended from the envelope's "finger" patches in June, 1919. (The Goodyear Airships)

Aboard were Jack Boettner, the pilot, Carl Weaver and Harry Wacker, the two mechanics. An Army Air Service Colonel, Joseph C. Morrow, was also a passenger on the day's initial flight as an observer. The weather was warm and clear, with the airship performing to expectations. Jack Boettner is standing in the airship's car; also visible are Carl Weaver and Harry Wacker. (J. Shock)



Emerging from the shed, the *Wingfoot Air Express* was outwardly similar to the late production B-class airships, which were 186 feet long and 50 feet in diameter. (Young Collection)

The record does not show the exact date of the rollout or how many test flights were made, but papers on file at the University of Akron suggest all were not happy with the ship's construction. Photos in the author's collection show the envelope had not yet been decorated with the rather small (by later standards) Goodyear logo, resembling a pendant. This was installed and the airship was considered ready for service use. Ω



Now decorated as a Goodyear venture, *Wingfoot Air Express* is seen at Grant Park. Operations drew a huge crowd. As can be seen, control surfaces and fixed stabilizers are identical to the later production B-type Navy ships.

MEDIA WATCH

Floating Giants: The Barry Prentice Story
Documentary Feature Film by Kevin Svenkeson
Reviewed by R. G. Van Treuren

In his initial press release, Canadian filmmaker Kevin Svenkeson states, "We made a Documentary Feature Film – "Floating Giants: The Barry Prentice Story" about the University professor and his pursuit of airships as a solution to the worsening transportation crisis in the north brought on by climate change." Even in this age of revolutionary changes in media production and distribution, this may very well be the first LTA-oriented title made to reach the public bypassing the notoriously difficult theatre cartels - and even DVD boxing.

More on that later. As the title implies, the film is a biopic, but NOON BALLOON readers know anything about Barry is basically a story of pursuit of LTA solutions for the Canadian North. The film introduces Barry at his University of Manitoba, where he is Professor of Transportation Economics. The LZ-129 "disaster" comes up early and is dealt with quickly, as are the other usual misconceptions - that airships are VFR, still wind and fair weather flying billboards.

The viewer will become more fully aware of his or her ignorance of Canada's challenges in dealing with the changing environment. Seventy percent of Canada not only has no roads, there is no realistic hope of building permanent roads in the north. Rising temperatures have shortened the life of the expensive winter ice roads, as we have been told. However, we certainly didn't know roads have occasionally been shut down by an unexpected warm day or two inside the previously safe, solid ice season.

Dr. Prentice has hosted conferences to propose airships to carry cargo to and from the far north, and the film details the highs and lows of his efforts. Not unlike Washington, Ottawa reacts to powerful lobbyists before listening to experts and visionaries. So it comes as no surprise neither Government has anything like consistent, or even token, support for the study of possible buoyant solutions.

Not waiting for Government, Barry gathered a team and with business partner Dan George, moved and adapted a hangar, then constructed a small pressure airship for study. Government then took notice: the bureaucrats told them step one for an operator's certificate would be for the pilot to be a qualified hot air balloon (that's right, not a gas balloon) pilot (!) Overcoming that challenge, their efforts to modify the hangar's door were caught by a strong storm that wrecked the hangar and their airship.

Such as setback would have crippled lesser men, but the film shows Barry picking up the pieces. His team has signed an agreement with Airships do Brazil (who also lost a hangar and a prototype in a storm). The film ends on a positive note, that Barry's efforts have greatly increased public awareness of possible buoyant solutions to many of the most pressing problems.

If your computer has an HDMI output, or you have a smart TV, you can watch the film on a large screen, since all HD content is electronically rigged to prevent second-generation copying, even if purchased for storage on your computer. The film can be download-rented for unlimited 48 hour viewing at https://www.amazon.com/Floating-Giants-Barry-Prentice-Story/dp/B07JYSBVH4/ref=sr_1_807?s=instant-video&rps=1&ie=UTF8&qid=1543686768&sr=1-807&refinements=p_85%3A2470955011%2Cp_n_date%3A2693527011 Ω

"Winter Roads in the North Threatened: Climate Change" by Rémi Authier also discusses the ice road situation. "For thousands of Canadians, each winter brings a glimmer of hope that melts a little more over time. The simplest but also the most expensive solution would be to turn the thousands of kilometers of winter roads into permanent roads. According to Larry Halayko, it would take between $2 and $3 million per kilometer to build such roads, for a total bill of about $ 6.5 billion for that province alone."

"Professor Barry Prentice proposes an entirely different approach: the use of airships…They can move in the fog, they do not need a long runway and they could be powered by a hydrogen engine that does not produce pollution." The original Radio-Canada report now an illustrated story at:
https://ici.radio-canada.ca/nouvelle/1128745/routes-hiver-chemins-changements-climatiques-glace-premieres-nations Ω

LIGHTER THAN AIR
TRANSPORT AND CARRIER SYSTEMS

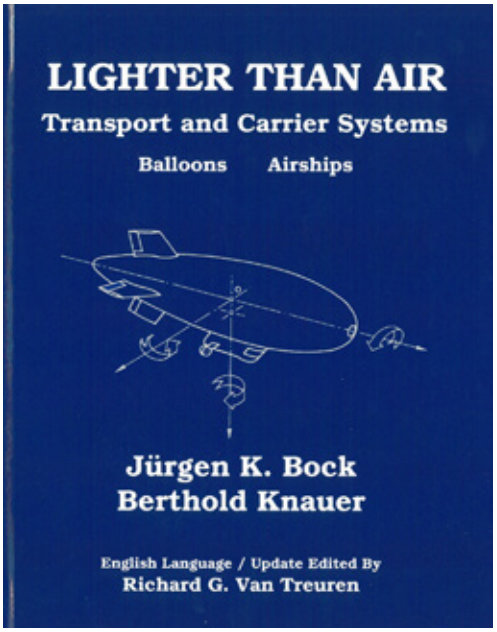
By Jurgen K. Bock & Berthold Knauer
English Language / Update Edited By R G. Van Treuren
Reviewed by C. P. Hall II

As the title implies, this is a tome encyclopedic in nature and scope. It is just over four hundred 8 ½ X 11 inch pages with many photos, illustrations, diagrams and tables. If there is a specific topic which a reader wishes to research, he need only consult the Table of Contents - which is twelve pages long!

The volume is quite detailed regarding LTA craft used for transport. It covers unpowered lift-assisting balloons, the three classic powered types, Non-rigid, semi-rigid, and rigid; historic types, types in current service and some unique ideas and proposals as yet unfunded. LTA phenomenon are discussed and formulas provided to work out the effects of these.

The subject matter is covered in great detail and will likely be found useful if a bit dry to the individual curious about the potential of lighter than air aviation. The potential buyer should realize that this is not a history of either all, or any given type of, lighter-than-air craft. It is a discussion of the many technical aspects of both previously flown and proposed aircraft. If, for example, you wish to learn more about fuel in gaseous form as used in Graf Zeppelin, that topic is discussed, as are comments about other similarly fueled craft and the topic in general. If you are interested in Lady Hay-Drummond Hay's role in Graf Zeppelin's 1929 flight around the world, then you will be disappointed. The book only occasionally mentions an historic episode. Technological highlights are noted; however, it is in no sense a comprehensive history of any specific aircraft.

There is included a healthy dose of advocacy regarding the physical and perceived practical advantages of hydrogen as a lifting gas as compared to helium. Hydrogen is described as also having potential for its fuel value and that, if water recovery is desired, consuming hydrogen will be more advantageous both as to volume recovered, the purity of the water, and the maintenance of the equipment so employed. While the current legal restrictions are acknowledged, the arguments are made as to the safety of hydrogen in gas cells made of 21st Century materials, successfully maintained in a pure or nearly pure state. It will be interesting to see how this advocacy is received by 21st Century readers?



This book is a reference work that should be in every modern library oriented towards STEM topics. It should be made available to every 'popular' author who feels that 100 years after the hay-day of LTA might be a profitable moment to publish a new 'history' of this branch of aviation. The serious student of this genre will find content of interest almost no matter how well read he may be on the topic. The publisher's description states, "One of the reasons no American University offers a course in LTA technology is the lack of a text book in the English language." Furthermore "…LIGHTER THAN AIR TRANSPORT AND CARRIER SYSTEMS is a complete encyclopedia of all things LTA – past, present and future."

It is also observed that, as recently as November 2018, <u>used</u> copies of the out of print original, German language version were listed at Amazon.com for $220.00. This new English language, hardcover edition is $50.00 + $15 S & H per copy from Atlantis Productions, PO Box 700, Edgewater FL 32132. The book will be simultaneously printed in the USA and in the European Union. Ω

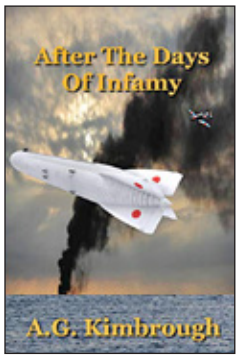
CP Hall e-mailed: "Dealing with Alastair Reid's latest translation, I came across a reference to a film made in Europe, 6 to 10 years ago, a biography of sorts of Lady Drummond Hay, Hearst newspaper chain reporter and frequent Graf Zeppelin passenger, entitled "Farewell". Apparently largely fictional it reports that tail fin fabric failure of Graf Zeppelin happened on the round-the-world flight and ship made water-landing on Pacific Ocean to make repairs before reaching America!? Have anyone ever heard of such a motion picture?"

Giles Camplin responded, with this link:
www.bbc.co.uk/programmes/b00qpjpr Ω

January 2019's APOA PILOT devotes nine colorful pages to Goodyear's new Zep NTs. Author T. B. Haines visited WFL (shortly before the NAA Reunion visit there) to witness all three NTs in one location. Ω

The October 2018 Aerospace America features an article by AIAA LTA TC member Charles Lambert entitled "The Power of Aerostats." He describes various technical challenges overcome and details his company's (SkySentry LLC) new small product, "TEA," or Tactically Expedient Aerostat. The same issue in its history section "Looking Back" notes the 75th anniversary of the Navy day rollout of Goodyear's first "M" ship.

The December issue "Year in Review" features the annual LTA TC Comm report by Alan Farnham, highlighted by the report of Chinese investment in "Sky Whales" and even another rigid airship build effort. Ω



After The Days Of Infamy
by A.C. Kimbrough

Press Release:

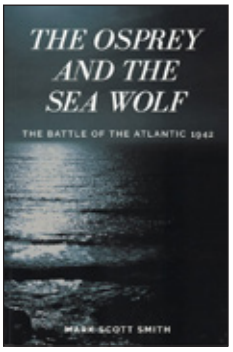
"This book departs from reality with the 1932 discovery of helium on the island of Hokido. A secret agreement between Japan and Germany results in a technology exchange that enables Japan to develop a fleet of huge airship aircraft carriers." The author e-mailed, "I am a Naval History buff and the author/publisher of the Greatest Generation Novel BB-39, and several hard SF Books." Available at: https://www.amazon.com/dp/B07JLVPGXD. NOON BALLOON will attempt to review this novel. Ω

90th Year Noted as World's Longest Standing FAI Records

On November 1, 1928, Dr Hugo Eckener, the most successful airship commander in history, landed the LZ-127 Graf Zeppelin airship in Friedrichshafen, Germany after a 71-hour flight. The 6384.50km flight, which set world records for both duration and distance flown in an airship, began in Lakehurst, New Jersey, USA on October 29 of the same year. Ratified by Fédération Aéronautique Internationale (FAI), the two records set by Eckener's transatlantic flight still stand today. They are the longest standing FAI records. Ω

The Osprey and the Sea Wolf – The Battle of the Atlantic 1942
by Mark Scott Smith, from Rolling Wave Books
Reviewed by Alvaro Bellon

This book is a history-inspired work of fiction. It is based mainly on events that occurred in or near 1942 as they related to the hunt for German submarines of the eastern coast of the United States.



he plot follows Lieutenant Ramón Morales, an American B-25 pilot of Mexican descent and other members of the units he was assigned to. On the German, side it follows Kapitänleutnant Rainer Hartmann, a type IX U-Boat captain and some of the members of his crew.

The story flows well, making for an easy read. Each chapter begins with a quote from a newspaper article, speech or statement made around the time in which that chapter takes place. Chapters following the American pilot are from U.S. sources while the quotes prefacing chapters following the German captain are from German sources. The book explores military events, the personal lives of the main characters, as well as events in the lives of people who were close to them.

Chapters 10 and 11 address U.S. Navy blimps and their use in anti-submarine warfare. They refer to a blimp with experimental radar and magnetic anomaly detection systems which were being tested in submarine detection. In chapter 11 the blimp engages a submarine. Although this action disrupts the submarine's attack on an American freighter, the blimp is shot down and its crew is lost at sea. In this case, the author used the actual engagement of the U.S. Navy's K-74 blimp with a submarine in July of 1943 off the southern tip of Florida as a basis for an attack by a Navy blimp on an experimental mission on a German submarine off the coast just south of Jacksonville in March of 1942.

Overall, the book is interesting. The author has done an excellent job of weaving together life on the submarines before, during and between attacks with the personal lives of the officers, their families and friends. Similarly, he has brought together the lives of the American pilot and his crew with their families, romantic relationships and even a brush with acquaintances that were involved in espionage and secret support of Germany. The only "drawback" is that there was not more LTA activity in the book. Ω

Their First Lesson on the Blimp

Balloon girls are taught their jobs on models. It has been found that miniatures appeal to women, help them take in stodgy facts.

Perhaps the closest NOON BALLOON will ever get to a cheesecake photo, harkening back to a more naive time quite unlike today, when such language would be grounds for a lawsuit.

← Contrast the wording here with the caption on page 7's photo…. Also, pity the poor commander who today would assign these sweet innocents to handle dangerous hydrogen-filled balloons when great burly men run in terror at the thought! ☺

BLACK BLIMP

Frank J. Colbert, 94, passed 30 OCT 18. He graduated from Youngsville (Pa.) High School in 1942 and soon after enlisted in the Army in World War II. Frank then enlisted in the Navy, entering ASW during his tour of duty at the NAS, Lakehurst, NJ, aboard U.S. Navy blimps. Retired as a Master Chief Petty Officer in 1964, he became an engineering technician at the Philadelphia Naval Shipyard. Frank is predeceased by his wife of 61 years, Jean Marie (Funaro) Colbert, and survived by his 5 children. Ω

Wilbur L. Sohn, 92, passed 5 DEC 18. He enlisted in the USN in 1943; assigned to the USS Hornet, Sohn participated in ten Pacific WWII battles. Recalled to active duty during Korea he served in LTA. Finishing his service in the Air Force, he retired in 1974 and had a career in real estate. Wilbur is survived by his wife of 64+ years, Barbara, two sons, grand- and great-grandchildren. Ω

READY ROOM

Aviation Innovations Conference: Cargo Airships
March 14 - 15, 2019, Westin Toronto Airport,, Ontario

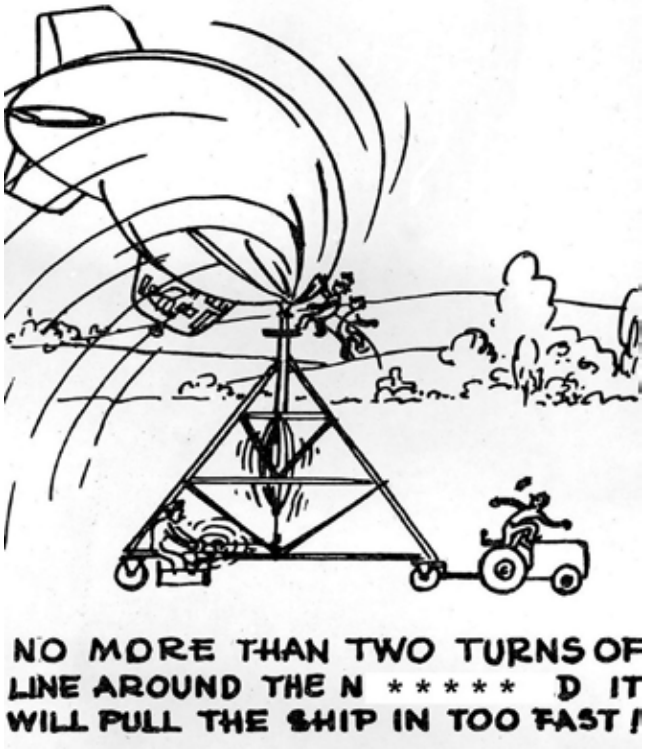
AIAA Aviation Forum, 17–21 June 2019
Hilton Anatole, Dallas, Texas

LIGHTER SIDE

How is it that we put man on the moon before we figured out it would be a good idea to put wheels on luggage? ☺

Husband and wife had a tiff. Wife called up her mom and said, "He fought with me again, I am coming to live with you." Mom said, "No darling, he must pay for his mistake. I am coming to live with you." ☺

If Jimmy cracks corn and no one cares,
why is there a stupid song about him? ☺



Happy Holidays from your NOON BALLOON team! These days, Santa has to read his charts and NOTAMs! (Below) Goodyear again participates in the annual USMC Toys for Tots drive (photo from Goodyear/Akron)

ZPG-2 ~ 1958, see inside front cover.