THE NOON BALLOON

The Official Publication of THE NAVAL AIRSHIP ASSOCIATION, INC.

No. 110 Summer 2016

GOODYEAR'S SECOND NT "BLIMP" DEBUT

Jim McGuire Photo

On April 8, 2016, Goodyear's newest New Technology "Blimp" was unveiled to the press at Wingfoot Lake, near Mogador, Ohio. Note the tail-wheel stabilizing bar assembly attached to the pickup truck to assist the airship in and out of the hangar.

Jerry Hissem, Pilot in Charge, unveils the new airship's name, *Wingfoot Two*.

The yet to be named new Goodyear "blimp" is framed by the Wingfoot Lake hangar doors, on it's roll out date march 5, 2016.

Zeppelin's Chief Pilot Fritz Gunner tests the control of the new airship as the crew prepares for the first flight on March 5, 2016. On this date the airship is flying under German registration with no name. Several test flights would be made and then the airship would be turned over to Goodyear and the US registration would be applied and the name debuted.

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ISSUE #110 SUMMER 2016

Never look down on anyone unless you are helping them up. ☺

On the Cover: Goodyear's second NT "Blimp" makes its initial flight "Cover Story." Photo by Jim McGuire.

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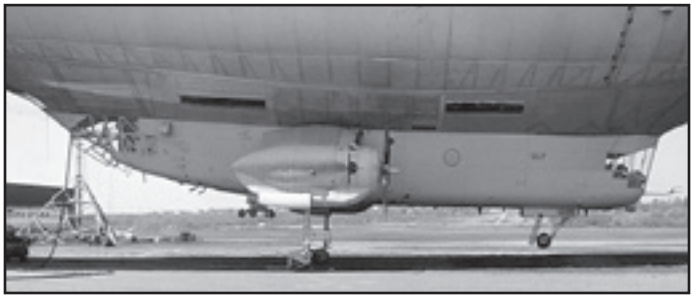

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EDITORIAL

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Another Reunion is complete as we try to sift through the files for the best photos for use recalling the event. Photos can't convey the greatness to see old friends and meet new ones, but sad to see our ranks thinning from the many causes, Father Time being the chief culprit. Our Museum visits were hosted by knowledgeable and talented docents, and included a fascinating tour of the National Flight Academy. (Piped in sub-woofer sounds on planes landing on the "roof" helped complete the shipboard environment simulation that began by crossing the quarterdeck and ascending the ladders.)

Locally, we had our little kit plane in our screen room for final testing of everything before hanging the motor, when the sound of engines caused my friend and neighbor to sing out, "There's your blimp, Richard!" It being Daytona race week, I thought it odd that our Florida Goodyear-Zep would be swinging this far south while doing raceway coverage. As I got out from under the fuselage, there was the white envelope emblazoned with "U.S. Navy" flying right over the dome! (I'm sure the pilots were just following the vector airway, rather than consciously giving us a thrill, though Past Pres. Ross Wood said it reminded him of how ZW-1's CO Charlie Mills had standing instructions with all PAC's that when departing Lakehurst for our station 200 miles east, they would always fly over ADM. Rosendahl's home on Barnegat Bay at 800-1000 ft.)

Speaking of Ross, I have to apologize for getting mixed up about ZPG-2 photos taken during refueling. Last issue's cover photo actually came from Ross, as he explains, "The ZPG-2 was 200 miles out from the N.J. coast when a huge cold front came through with winds in excess of 60 kts, so it was sent to Kingsley [AFB Bermuda] where we had an emergency mast. We had a motorized cart with us and a 500 lb. neoprene fuel bag, winched up for an intermediate refueling as the winds were still too high. We landed the ZPG-2 some hours later, probably the next morning, with winds around 15 kts, making a perfect landing even after so many days in the air."

MZ-3A proved to be quite the inspiration, since our team went on to hang the Twister's engine. Just after the Sun N' Fun airshow, our British visitors helped us through tethering "AbbaCaDebra" to a stout tree as your NAA Secretary-Treasurer climbed aboard. After four and a half years of challenges of building, the little UL 260i sure made sweet music, her first startup (photo, top).

I'd like to think my late father, a self-taught pilot and all-around airframe/engine mechanic, would be proud. During my WWII airship research, I'd made contact with the Civil Air Patrol's historian, and to my surprise he'd told me if I could provide proof Dad had served in the CAP during WWII, he'd be eligible for a special award recently passed by Congress. Amid other materials, I sent this photo of Dad, an "old man" of 30 years in 1942, with a 100-lb. depth bomb ready to be attached to their Fairchild 24. Thanks to officers of the CAP Florida Wing, Debbie and I found ourselves guests at the 75th anniversary/Florida Wing conference in nearby Orlando. We were happily surprised when our Florida Congressman appeared on-screen and awarded Dad the CAP Medal (now at) youtube.com/watch?v=RGerC_kOw08&feature=youtu.be. The entire assembly of more than 250 people gave him a standing ovation, quite a moving experience. Surely Dad would have been humbled. Later, we supplied a good photo of the airplane dubbed "Ubangi" to possibly act as a guide for the NMAF's Fair-24 restoration into CAP livery.

While we should all tell anyone with CAP ties to apply, the experience was somewhat bittersweet for me. In spite of NAA's best efforts to move mountains, officialdom refuses to reopen the K-14 case or look into the possibility K-72 successfully having used a homing torpedo against a U-boat off Norfolk on 18 APR 45. Likewise, at Reunion no one had any new ideas how to translate the German LTA textbook that I think is the key to persevering lessons learned in LTA. But we're not giving up on either effort.

– Richard G. Van Treuren

View From The Top: PRESIDENT'S MESSAGE

Well, the Reunion of 2016 is behind us and I think we did very well and aside from a few banquet glitches, everyone had a fine time. We have already had a preliminary meeting on the next reunion and sent out a broadcast email to all members with email addresses as well as reminders in this issue. As I write this we have received quite a few responses and hope to receive many more. It's your organization. Help us provide an informative, interesting, and relaxing visit to a location that is relevant to all our members. I am sure there are numerous photos in this issue and many more will be posted on the website. Special thanks to Mort Eckhouse for all his assistance in preparing for this event and introducing me to a number of people at the museum who greatly helped in getting museum details organized for us. The week started with Lorraine Madden and Janne Wissel efficiently and pleasantly greeting and registering members to our 2016 Reunion. On Tuesday morning, our tour guide and new member Steve Kozlovski met us at the main entrance to the National Museum of Naval Aviation and had a trolley waiting to transport us to the front of the viewing stands down by the runways for front row seats to the Blue Angels practice show; breathtaking and spectacular as always in spite of a low ceiling and "Low" show. After the show, he drove us back to the museum for a personal tour after a short lunch break. His guided tour was well presented, informative, very impressive and accurate. I might add that the LTA area in the museum has been improved since we were there five years ago with more informative graphics.

On Wednesday morning we divided into two groups for a personal, guided tour of the new National Flight Academy, adjacent to the Museum. The NFA is an educational experience for students in grades 7 through 12 to promote their interest in STEM (science, technology, engineering, mathematics) education. It is a live-in experience that does everything possible, short of a dip in the ocean, to create an aircraft carrier experience for the students. The interior lights switch to red for visual acclimation, the sounds of engines running, walls vibrating, bells, whistles, catapult shots and aircraft recovery all contribute to a total sea going atmosphere. Students learn navigation, flight planning, communication techniques, and, finally, fly simulated flights they plot. It's a six-day, overnight program. After the NFA tour, there was time for a second Blue Angel practice (High) show today, additional time exploring the fantastic new exhibits in the new hangar since our last visit or just wandering around seeing the new exhibits.

Thursday morning was back to business and we had a very good turnout for the General Business Meeting. The Secretary/Treasurer will have a detailed report enclosed, but a few comments. Ross Wood presented the results of the nominating committee's search for a slate of names to be proposed for election to lead your organization until the next reunion. It was accepted by the Executive Council and recommended to be presented to the meeting. They nominated the current President and Secretary/Treasurer for reelection and for West Coast Member-at-Large, Bill Wissel as vice-president. The meeting attendees voted unanimously to accept this slate. We look forward to Bill's more active role in our organization. Current vice-president Anthony Atwood has graciously stepped aside due to his extreme workload at the Miami Military Museum, but will remain a member of the Executive Council and assume more responsibility for our educational outreach programs as we develop these. We also discussed our growing concern about dwindling membership and asked for any suggestions on how to turn this trend around. A number of other veteran organizations face the same challenges as we do and we continue to have discussions with them as to joint reunions and activities, while not losing our individual identities and missions. We also discussed how we could broaden our appeal to and attract more LTA enthusiasts. On a couple of different occasions it has been suggested that we consider altering our name to National Airship Association since Naval appeared too restrictive to other military or commercial LTA interests. Our core values and reason for being are firmly embedded in Navy LTA service, but we need to attract LTA enthusiasts in general if we are to survive. The entire recruitment issue needs to be addressed quickly and very seriously. I am sure the Secretary/Treasurer will post the minutes of the meeting.

We capped off the week with our banquet Thursday evening. Outgoing VP, Anthony Atwood, delivered a presentation on the Miami Military Museum that he is actively leading. He presented the story behind NAS Richmond, its WW II LTA activities, the tragic hurricane and fire, and its rebirth as a future museum celebrating the rich heritage of South Florida. The rehabilitation of the former administration building is progressing nicely under Anthony's leadership and possibly the NAA can consider an upcoming reunion being hosted there.

It occurred to me last year that we, as an organization, have never formally recognized Presidents for their time, effort, and leadership in steering our group. As a small token of our appreciation, I presented certificates (developed and printed by David Smith's company) to Herman Spahr and Ross Wood, the only former NAA presidents in Reunion attendance. Certificates will be sent to George Allen, John Fahey, and Margaret (for Norm) Mayer soon. We need help in getting current addresses for Robert Ashford and Lou Prost, and surviving members of the families of H. Eppes, W. Moore, F. Kleinberg, and H. Biedebach. Please help us get the certificates delivered or at least started.

Lastly, my idea for an LTA Hall of Fame got postponed from lack of commitment. It is not dead and I am actively pursuing help in getting started again. I believe in this project and will do everything necessary to make it a reality. More to come. Thank you for your continued support of the Naval Airship Association and hope to see you at the next reunion; date and location to be announced soon, thanks for your input.

– Fred Morin, President

TREASURER'S STRONGBOX

General Meeting of the Naval Airship Association, Inc.

President Fred Morin called the Meeting to order at 10:08 on 5 May 2016. The Meeting was held at the Hampton Inn, 2 Via de Luna Dr, Pensacola Beach, FL.

Those officers in attendance were President Morin, Vice President Anthony Atwood, Secretary/Treasurer Deborah Van Treuren and Vice President Nominee, Bill Wissel. Thirty-two members were also in attendance. The Pledge of Allegiance was led by President Morin followed by an Invocation by Dr. Anthony Atwood.

Debbie presented the Treasurer's Report showing assets of $26,735.00 + Small Stores Inventory and the Reunion Account. Mark Lutz moved to accept the Treasurer's Report. The motion was seconded and approved. Debbie presented the Minutes of the last General Meeting, held in Newport, RI, in May of 2014. Ross Wood made the motion to accept the Minutes, Seconded and approved.

Margaret Mayer informs us via telephone, that The Smithsonian has accepted Norman's airship collection. President Morin reports that the NAA is in good shape, but membership numbers are declining. He challenged the Membership for ideas about how to increase our numbers. He suggested starting kids' imaginations at an early age. General member, Ileana Wood, suggested submitting LTA articles to magazines outside of the LTA community.

Mark Lutz reported on our Historical Committee and invited anyone wishing to contact him to please do. President Fred discussed an NAA Repository for the collections of the NAA and making them available to interested parties. He also mentioned a name change to the *National* Airship Association, Inc, to reflect the changing times and focus on LTA outside of the Navy and including Army LTA. At this time there is some exploration of working with other airship organizations like Martin Mariners and the LTAS (Lighter-Than-Air-Society). Anthony commented and reinforced that the next major LTA technology could come from commercial interests or outside the military. Anthony is a 30-year Navy Veteran and supports the idea of reaching outside the military. William Zidbeck joined the NMNA in 1966 and asked for time at the end of the meeting. David Smith suggested that we include an insert in the Noon Balloon for Small Stores and that we keep our name until we sell our logo-wear inventories. No consensus was reached. Richard Van Treuren recognized Janet Estes for getting her father, Don Venton, memoirs into print. The proceeds from book sales are being donated to the NAA.

Ross Wood thanked the members of the Nominating Committee for their help in selection of a new candidate to the officer slate: Fred Morin, retained as President; Bill Wissel, Vice President; Deborah Van Treuren, retained as Secretary-Treasurer. A motion was made by Ross to accept the nominees, motion was seconded by Anthony and accepted by the members present. Thanks go to Dr. Anthony Atwood for his role in promoting LTA throughout the country.

President Morin reported on *Fly-By's* article, "Legacy of Service", recognizing Mort Eckhouse. Mort was lauded for 27 years of volunteer service at NMNA. Mort was instrumental in setting up tours of the museum, along with other volunteer duties. Kudos to Mort for a fine job. Well done!

Capt. William Zidbeck gave his LTA history and talked a little about his role in the Navy and his many duty stations and how the Naval Airship Association is an Association of Naval Airshipmen. He was in favor of keeping our name the same.

Richard Van Treuren expounded on the lack of an English language textbook for LTA. He has been working with several correspondents who are helping to translate the only textbook out there from German to English. It is interesting to note that several chapters in the text were translated from English to German and now we are having to retranslate those chapters from German to English! Richard also asked for members' stories on how things worked and how the technology was utilized.

He put out a call for action to stir memories so that technological information could be codified and added to the text.

President Morin adjourned the meeting at 1055.

Minutes respectfully submitted by

– **Debbie Van Treuren, NAA Secretary-Treasurer**

PIGEON COTE

Patricia L. McKay, daughter of the late Joseph V. Dymkowski (see Black Blimp) sent along his photo and wrote out the notice. Then she renewed membership in the NAA. We're very grateful to Patricia for her support and are sorry for her loss. **Ω**

Member Marc Frattasio e-mailed, "CAPT Edward Rodgers (rt) passed away at the age of 98 in Cocoa Beach, Florida, on February 18, 2016. CAPT Rogers (photo right), a naval aviator who graduated from the Naval Academy in 1940, served as the last commanding officer of the Naval Air Development Unit, which was headquartered at NAS South Weymouth, Massachusetts, was one of the last commands to operate blimps before the Navy abolished the LTA program in 1962. **Ω**

New member Jim Houmard e-mailed Dave Smith, "You spoke at the 8 Mar 2016 luncheon of our Helium Heads group here in Akron, OH. You inspired me to join the NAA. The Noon Balloon is an excellent publication! Many thanks for giving me the Winter 2015 edition. The art is beautiful and the articles comprehensive. As you know, our group is primarily comprised of Goodyear Aerospace (GAC) retirees. I am one of several who are LTAS members. I joined GAC in 1958 immediately out of Purdue with an MS in Civil Engineering. Dale Topping (When Giants Roamed the Sky) hired me as a stress analyst of inflated structures. This began a very interesting 40-year career involving all sorts of inflatables. Of course blimps, aerostats, and balloons are the most familiar. I also worked on the inflatable airplane, GAC proprietary Ballutes (hybrid balloon & parachute), the parachutes for the first soft landings on Mars in 1976 (Project Viking), and others. I look forward to the benefits of the NAA and reading more Noon Balloons. **Ω**

Fred Kroll shared the sad news of Frank Hudner's passing (see Black Blimp). He also enclosed some photos of Hudner from his WWII days (above). **Ω**

Chuck Lyons e-mailed Fred Morin, "I am a retried community newspaper editor writing an article for Aviation History magazine about the crash of K-14 in July, 1944, which has been speculated as being caused by a U-Boat. Earl Brechlin sent me a lot of information about the crash and also mentioned your name as someone who has studied the crash at depth. The crash does seem to have been caused by a U-boat attack, but why the great secrecy? I can understand the fear of causing panic but that was 70 years ago. Why were the survivors never cleared to talk about what happened? Can you explain that? I can't. Thanks." Fred responded, "Be more than happy to help in any way. You certainly hit the nail on the head about time. My only thought is that the incident was buried to spare embarrassment to the Navy and government and that it got lost over time in the bureaucracy. The fact that no U-boat could be placed at the scene is a great mystery and is the one "fact" the Navy history people point to as justifying their finding. All in all, their excuses do not hold water and can be refuted relatively easily. It would be to their credit to give out a few Purple Hearts and close the matter. There is a small group of us who will never let it go." **Ω**

Member Per Lindstrand e-mailed, "The last Naval airship - ZPG-3W - had a tunnel from the gondola to the top to service the height-finding radar, I also believe that this tunnel was the only escape from the gondola when the airship crashed in the Atlantic. How did this tunnel maintain its shape without collapsing, what was it made of?" Ross Wood responded, "Regarding the vertical tunnel from the upper deck of the main car to the height-finder platform on the top of the ship - I

have climbed that tunnel multiple times in both the ZPG-2W & 3W. Upfront, I have to say that the last place you would want to be, in an emergency situation, is inside that tunnel. As the ship collapses, so will the tunnel tube. The tunnel access is from the upper deck of the main car, just aft of the galley. The tube is airtight regarding the pressure maintained in the envelope. Inside the tube were rungs attached at several points to the wall of the tube. As you began to climb, the pressure was not so great as to preventing you from pushing the toe of your shoe, against the fabric to get a toe hold on each rung. The envelope height was 85 ft. and I would guess that the rungs were a foot apart. The climb was not uncomfortable, as there was a good flow of outside air coming from the top of the tube, through a ram air duct on the radome. About a third of the way up, were plexiglass windows to look at the center, and forward and aft ballonets. There was a lighting system for that, but since I usually wasn't going up to do that, I don't recall how that was wired up. For folks who were acrophobic, the tunnel wasn't a problem, because it was fairly dark and you couldn't see down. You could see the light at the top of the tunnel. Just keep climbing. The fabric of the tunnel was the same thin, multi-layer fabric as the airship itself. Very tough. I don't ever recall a tunnel developing a leak. The ZPG-3W pilots' handbook has a pretty good illustration on pages 26-27.

Re: the photo, from the galley showing the ladder [below], that is LCDR Bob Keiser & his family. Bob was one of my favorite people at ZW-1 and a great pilot! **Ω**

CP Hall e-mailed a compliment to our printer, "I received #108 while my computer was down over last two days. My compliments to your printer! There photos are the clearest, sharpest ever. I have probably seen the photo of *Macon* with two fighters (page 28) dozens of times, often larger, but never as well done as here. It is delightful to see the product coming forth from the Goodyear archives, both in *Buoyant Flight* and now in TNB. For future reference: while I risk excommunication from the Helium-heads by contradicting then Commander Rosendahl, I would point out that the *Macon* never scouted using five airplanes. Theoretically, on 12 FEB 35, it could have landed six airplanes on board: one in each of four internal hangar corners, one on the trapeze, and one on the "perch" and main frame 102.5 (but not "externally along the keel"). As Rear Admiral Miller points out, "if you have a dead plane on the trapeze, you could not do anything with the other four.

Amendment to "Editor's caption": In late 1925, long after tearing free from the Pulham mooring mast, R33 was repaired. It undertook a flight to confirm theoretical stress data. It then undertook a trial to confirm the notion of hooking on an airplane. This was undertaken utilizing a DeHavilland monoplane. First attempts failed, however, both receiving gear and the aircraft were modified and successful recoveries were made. The object demonstrated, the experiments ended. In 1926 it was decided that dropping two Gloster Grebe Bi-plane fighters could be accomplished for show, on the cheap, for the Imperial Conference. This was done more than once demonstrating ??? no attempt was made to recover Grebes in the air. I have seen still photos of the 1925 monoplane attached to R33 but never moving pictures (Ex: Robin Higham - "The British Rigid Airships"). As the 1926 bi-plane effort was a publicity stunt, both stills and moving pictures are still available, one of the former is on TNB page 23 of issue #108.

Last year I was asked to review several papers about the British Airship Program. I believe it was Peter Davison's paper, "The R.101 story: a review based upon primary source material and first hand accounts" available through the Journal of Aeronautical History Paper No. 2015/02 that reported that one facet of the argument regarding airship development between the Royal Navy and the Royal Air Force was: The RN wanted an airship to be useful as a scout; while the RAF wanted it to be an airplane carrier.

It is a fascinating non-issue when one considers how the *Akron* and *Macon* were developed in the USA as an aircraft carrying naval scout!? "R.33 was stored at Cardington in 1921. It was refitted for full-scale test program in 1924-25. It flew to Pulham in APR 1925 clearing the Cardington hangar so that hangar could

be enlarged prior to building R.101. At Pulham it was moored to the old mooring mast when storm came in on 14 APR 25. After two days of bad weather, it tore loose the morning of 16 APR 25, drifted to Europe, returned to Pulham the afternoon of 17 APR 25 and was housed next to R.36 in shed #2. Unbudgeted money would need to be spent to repair R.33 or refit R.36. Both were examined and it was decided to practically build a new bow for R.33. On the evening of 5 OCT 25, R.33 flew the single flight constituting the aerodynamic trial to gather data regarding aerodynamic stress needed to create a basis (confirm the basis) for stress calculations for R.101. Two DH-53 monoplanes were said to have been allocated to the flying-off project back in February, however, the first test flight actually took place on 15 OCT 25. R.33 lifted off with one DH-53 attached to the apparatus. The plane was successfully released in flight but, while attempting recovery, the plane's propeller hit the trapeze and the plane and pilot glided back to earth. On 28 OCT 25 R.33 again lifted off with DH-53 attached to a modified, elongated trapeze. The DH-53 was released and successfully recovered one time with great difficulty, the R.33 suffering minor structural damage. After damage was repaired and DH-53 had new engine installed, doubling the horse-power, a third trial was undertaken 4 DEC 25. Several successful releases and recoveries were accomplished and the experiment was declared a success.

The beginning of 1926 was a period of extreme governmental financial austerity. R.36 flying was officially abandoned. R.33 was said to cost £3300 per month to keep inflated but only £300 per month to store. Only £300 was budgeted. It was said to be stored but inquiries had been made about dropping planes from R.33 at the 1926 Hendon Air Pageant back in 1925. Now an Imperial Conference was on the horizon in 1926, the Air Ministry wished to promote the airship program at this conference, and the Cardington shed was empty. An axiom of the sales profession is, "You can't sell from an empty wagon." It was observed that for £1000 R.33 could be modified to drop two Gloster Grebe biplane fighters from the ship in flight. On 5 OCT 26, R.33 left the Pulham shed modified to carry two Grebes. The Imperial Conference officially opened 19 OCT 26. R.33 flew from Pulham to Cardington on 21 OCT 26. It lifted off with Grebes attached. They flew off en route. R.33 was damaged while landing at Cardington and was housed in the hangar for repairs.17 Nov 26 delegates visited Cardington. Adverse winds kept R.33 in the hangar that morning. It was brought out and moored to the new mooring tower, with Grebes attached, that afternoon. No plane drop was attempted as the cloud cover was so low that nothing could be seen if Grebes were dropped from a safe altitude. R.33 would be returned to the Cardington hangar. On 23 NOV 26 R.33 was brought forth and moored with two Grebes attached and two parachutists onboard. With news reel and press on hand, R.33 left the tower, ascended to cruising altitude, both parachutists jumped successfully, both planes were released, one suffered engine failure and ended up in a ditch. R.33 returned to Pulham, was hangared, deflated, and stored but never flown again. It was scrapped in 1928. Interesting to note: Neville Shute Norway worked on DH-53 when he worked at DeHavilland's in 1923. Comments are interesting but unrelated in "Slide Rule." **Ω**

Al Robbins has been trying to make something readable out of our long-sought copies of the Durand Committee Reports, Vols. 1-3 which he now finally have thanks to our friends at the Air Force Academy Library, "Particularly delighted at progress in unearthing the DURAND reports. It's a shame that no one responsible for the last round of Army, Air Force, or Navy contracts appeared to have any knowledge of them.

The rigid - semirigid - nonrigid argument might have been resolved when I was young if anyone had followed up on the committee's recommendations. (The very first LTA squadron was "invented" in 1942.)

Any copyright should have expired years ago. Would it be possible to get a co-venture with the university and/or the National Academy of Science? Should be sufficient info for several Doctoral theses - particularly regarding laboratory instrumentation of the period. Who knows, even the AIAA might be interested.

At best we have a Scotch verdict: Large rigid airships appear to have been a viable design, if designed and built by highly qualified teams; operated by experienced flight and ground crews; and restricted to operations in clement weather. (Two examples.) Unfortunately, we were never given the opportunity to operate or to demonstrate large non-rigid or semi-rigid designs. Officially prohibited in the case of the ZPG-3Ws.

Hopefully, we'll clarify some of the assumptions and engineering simplifications which were adopted by the various authors. Various attachments spell out the capabilities and limitations of the state-of-the-art in the late 1920s. However, they carefully avoid any

consideration of political or other critical factors. It would be interesting to determine if any researcher had ever attempted to verify the minimum turning circle of any large airship - when neutrally buoyant - at various altitudes - e.g. 1,000; 5,000; 10,000 and 15,000 feet elevation.

Heavier-than-air aircraft have a fairly sedate weight/balance scheme. However, an airship is an immersed machine; its weight depends on a number of variables, most not under the control of the operator. Early airship operators survived by avoiding severe weather events, and because their slow-moving ships responded slowly to external forcing functions.

The files are huge. I haven't figured out how to turn them into a real PowerPoint - It won't permit me to add comments or to alter the existing images. I've scrubbed Volume 1 and the letters - plus the initial figure from Vol 2. N.B. The committee carefully avoided questioning prior actions, motives, and policies of the Navy Department (they didn't even suggest that it might be a good idea for the Navy to establish a Safety Center - a post WW II innovation- and try to learn something from accidents) or of other U.S or foreign governments. Notice the dates, even these initial two reports were prepared (and submitted) long after the initial tasking assignment had expired.

The figure (last page of the attachment) highlights another of the major deficiencies of the study, the woefully inadequate community of short-lived and carefully operated large rigid-airships.

The Allies (primarily through the Treaty of Versailles) intended to destroy the German economy, not just its airship program(s). While distributing the spoils of war, the Allies also gutted what little remained of the prewar Zeppelin corporation(s), and commercial developments. They succeeded in destroying most documentation, manufacturing, hangar and hydrogen facilities, and corporate memory of the Schutte-Lanz corporation. Consequently, virtually all large post-war rigids looked similar, with Germanic innovations that sprung from the Zeppelin design team.

I've never been able to determine who, if anyone, in the Navy actually read or analyzed any of the reports. Possibly SECNAV, or his immediate staff read Volume 1. Most of Volume 2 consists of numerous attachments, with emphasis on calculus and extrapolation from models and unproven theories. (As one of my old program managers observed - experts frequently exceed the executive's Level of Disinterest.)

Despite frequent efforts to breathe new life into the aerostatics Phoenix, the committee's strong recommendations have never been acted on - or even referenced except in passing. At the most charitable, the National Academy of Science gave large airships a Scotch Verdict - Unproven." After looking the reports over the Durand Committee reports 1-3 for the first time, Al e-mailed, "Sorry, Volume 2 is a mess: many pages of graphs, various segments filled with Greek symbols, equations, superscripts, and subscripts. Geometric and advanced calculus equations. (The interesting elements are the numerous assumptions, theories, and virtual catalog of things that they didn't know and hadn't/couldn't measure. All painful admissions for engineers.)

The single illustration, trying to establish a relationship between the limited number of rigid airships built near and after the end of World War I is most telling. They were aware of the EKMAN Spiral, but the largest cross-section of the atmosphere that had been examined was small, even compared to the two smallest post-war ships. Schutte-Lanz only received a single paragraph. (Never knew that the "Tin-ship" operated with a higher internal pressure than any of our non-rigid. Wonder if they expected a higher pressure on the full-sized ZMC.)

Would any of our members have the capability of getting clean copies of the figures and equations from the Appendices and Supplements? I've confirmed the text, but the rest consists of pages of garbage and gibberish.

The letter of transmittal and the basic report are attached. Since it is in single columns, I've moved the footnotes to the appropriate location in the text. I've also emphasized (highlighted text) a number of their key observations and concerns. It is important to recognize that these scientists and engineers developed these studies before the introduction of most of the sensors available today, before the development of digital engineering, let alone digital computers, with almost total dependence on very low frequency, pneumatic sensors and recording systems. (Electric propulsors, an emerging technology) would resolve virtually all of their thrust and turbulence problems.) It's a shame that none of the rigids, particularly the smaller *Nordstern*, or any of the Schutte-Lanz post-war designs ever accumulated operational experience to provide anything better than a Scotch Verdict regarding rigid airships." **Ω**

Member Hy Blythe identified a man on page 19 of the winter issue, #108. The gentleman in the back, facing towards camera, dark hair, is Rusty Young, PW Litchfield's right hand man and future president of Goodyear. (Blythe's father was VP at Goodyear before Young.) **Ω**

Member Bill Althoff e-mailed, "The William F. Althoff Oral History Library (e-list attached) is now at the National Air and Space Museum -- my donation. Donors are sought to help fund the process of digitizing the entire library before making it available to scholars, and on-line. The contact is Phil Edwards, Smithsonian Libraries, NASM (EdwardsP2@si.edu) I ask that fellow NAA members help spread the word." **Ω**

Harper Poling attached some photos to an e-mail to Fred Morin, writing, "Attached are pictures I took at NAS Glenview when K- 33 arrived from Lakehurst in the 1950s. I took these pictures and helped dock the Airship." **Ω**

SHORE ESTABLISHMENTS - NEAM

At the New England Air Museum, we have two pieces of fabric which have been represented to us as K-ship envelope material. One is a large piece about a meter square, which someone had cut up and crudely stitched to make some kind of equipment cover many years ago, probably at Goodyear. The fabric is silver (aluminum) on one side and black on the other side. The silver side shows a bias like H-H or B-B in the article. The black side is a basket weave like R-R. I took a small sample of the fabric to try to count the number of plies. The material is .036 inches thick (.91 millimeter). We cannot detect a paraffin coating on the inside surface, but we are not chemists. There are definitely at least two plies in the fabric, but I can't say for sure if there are three plies. I think there are three, after an amateur inspection with a microscope, but I haven't been able to cleanly separate the H-H and B-B yet.

We have a second sample only a few inches across, which was donated to the museum by the family of a WWII LTA vet. It supposedly came from the ill-fated K-64 which was lost in a collision with the K-7 off New Jersey in October 1943, with the loss of eight crew.

Here again there is a clearly-defined basket weave on the inside surface, and a bias on the outside. We are not sure of the significance of the colors of the material. There appears to be a white paint over the silver color on one side. The brown color on the other side - is that what 70-year-old paraffin looks like? This fabric may have been exposed to sea water or other discoloring agents. This sample feels about the same thickness as our other sample.

I think our large sample of silver blimp fabric at the New England Air Museum may be from an M-ship rather than a K-ship. After scraping and cutting the edges of a small sample of the fabric, I could see that it contained TWO layers of basket-weave cloth, one straight and one

on the bias. The basket-weave was five threads by five threads, as listed under the Goodyear fabric specification 666 for R-R cloth. Then there appeared to be a single layer of very fine cloth above the basket-weave, and below the aluminum paint.

Admittedly this is an amateur opinion, but this combination pretty well matches the fabric spec Q13A31, listed in the M-ship Descriptive Specs, and doesn't match any of the K-ship specs. Additionally, that M-ship fabric is nominally 23 ounces per square yard, while the K-ship fabric is 20 ounces. A measurement of our fabric sample taken on a kitchen scale showed 5.5 pounds, and the area of the sample was 3 square yards (71 inches by 63 inches with cutouts), or about 29 ounces per square yard. Allowing for seam overlap, tape over the seams, paraffin, glue and stitching, of about 10% or so, our sample is still heavier than either spec, but it is closer to the M-ship spec.

I would not attempt any destructive test of the small fabric sample from K-64, donated by the LTA veteran's family.

At any rate, I think the external appearance of K-ship and M-ship fabric would be about the same, and the thickness of K-ship fabric would be close to the .036 inch thickness we measured on the M-ship fabric.

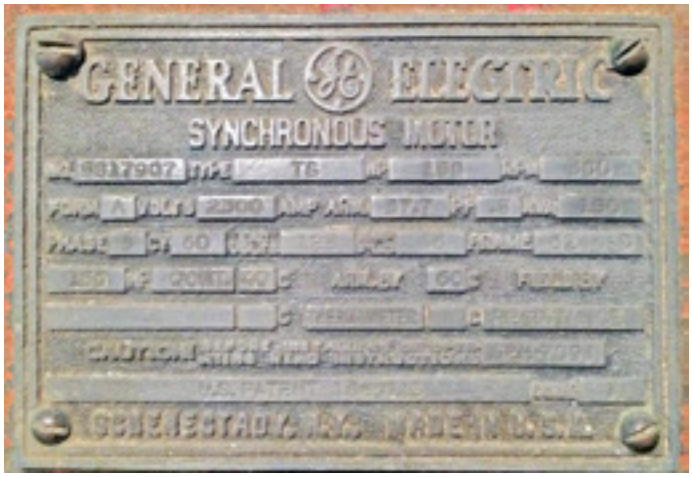
– George Diemer

LAKEHURST

We did not receive a NASL report by press time. However, the MZ-3A shown above at Jacksonville, Florida, was repaired following its rather hasty disassembly for storage last year. The Navy's only airship was re-inflated and flown to Florida were it operated from Goodyear's Pampano Beach hangar for a time. It was said to be under a six-month contract with Skyship Services testing equipment, probably something to do with the large antenna-like structure seen topside. On June 16, 2016, the airship returned to Lakehurst and once again deflated and stored upon completion of its Florida mission. Perhaps we'll be honored with a full report in time for our Fall issue. **Ω**

TILLAMOOK

With discussion suggesting the key to "buoyancy control" is somehow compressing helium, Ed. asked Christian Gurling to photograph the Tillamook helium plant's rather imposing compressors. He e-mailed, "I'm not sure of their exact size, but I snapped some of the entire room, for you to get some perspective, and one of the GE pneumatic motor data plate. When I pulled the cover off of one of the compressors I noticed that lots of extremely black oil is still down in there!" **Ω**



MOFFETT FIELD

MFHS Pres. Herb Parsons e-mailed photos of a ladder they'd been asked to i.d. since it appeared to be made from ZRS-type girders and material. Ed. told Herb that Eric Brothers had found a photo that shows a very similar ladder aboard *MACON* near one of her many gasoline tanks. **Ω**

AKRON

Alavaro Bellon Photo

On April 8, Goodyear invited media and select Akron community organizations to see the second N107 in the hangar at Wingfoot Lake. During this event Goodyear announced the new airship would be christened as *Wingfoot Two* at an event in the near future. Once the airship completes testing and receives its FAA certifications it will fly sporting the N2A registration. At the event the company also had the new day/night sign on display. 37,152 LEDs, each no larger than a thumbnail, are assembled into a panel 23.3ft. x 39ft. The individual red-blue-green LEDs, which can reproduce 16.8 million colors, are arranged eight in a row on custom-made, waterproofed 1" x 11" circuit boards. These boards, aligned horizontally, are then connected in a lattice that replicates HDTV's 16:9 format. The entire flexible panel, weighing 399 lbs., is then attached to the airship's envelope using bungee cords. It is designed for optimal viewing when the airship is flying at 1,500 feet.

– Alavaro Bellon Ω

Eric Brothers Photo

COVER STORY

Goodyear's newest airship holds first flight (excerpt)
By Jim Mackinnon, Akron Beacon-Journal

Goodyear's second NT, or New Technology, airship – not yet named – took its first flight at the company's Wingfoot Lake blimp base in Suffield Township.

Goodyear blimps have long been familiar sights for Akron area residents. But the Akron tire maker has not had an operable airship in the area since late September. Goodyear's first NT semi-rigid airship, called *Wingfoot One*, left last fall for its permanent base in Pompano Beach, Florida, making room for the under-construction NT2 in the Portage County hangar. Goodyear's last true blimp, the *Spirit of Innovation*, is based in California. "It's like an eternity since *Wingfoot One* left," said Brian Corbin, a Lake Township resident. "We had perfect weather for it today."

The crew pulled the new airship out of the hangar about 8:30 a.m. and began putting it through a number of tests that included running the engines, checking instruments and tweaking software. The airship underwent what is called the "swing the compass" procedure, in which the aircraft pivots in a circle while attached to its mast truck as the crew adjusts an internal magnetic compass. But when a piece of electronic equipment failed, the airship was trucked back into the hangar so the part could be replaced. Following a lunch break, the large airship, some 50 feet longer than the previous generation Goodyear blimp, was hauled out again. At about 1:20 p.m., the airship detached from the mast truck. On board were pilots, engineers and mechanics.

The main pilot swiveled the side vector engines up and the airship rose, helicopter-like, and then glided forward as onlookers cheered and waved. Once the new airship is certified, Goodyear expects to put it into regular service no later than May or June. Construction on a third NT airship is expected to start later this year in the Wingfoot Lake hangar, with its first flight in 2017. **Ω**

Move over Goodyear blimp, the Zeppelin NT is coming to Carson (excerpt) By Sandy Mazza, Daily Breeze

Longer, faster, quieter and able to maneuver like a helicopter, Goodyear's newest generation blimp — actually a dirigible — has finished construction in Ohio and awaits deployment to its permanent home in Carson. The 246-foot-long ship, named *Wingfoot Two*, is the second in a fleet of three flashy airships the company is slowly phasing in to replace its 1920s-designed iconic branded blimps. The so-called Zeppelin NT is 53 feet longer than the old-school blimp, can max out at 73 mph compared with 50 mph and is 37 percent quieter. It moves as dexterously as a helicopter, taking off and landing vertically.

All of the improvements amount to a more luxurious experience for those in the dirigible's gondola, which can accommodate two pilots and 12 passengers compared with six passengers and a pilot in the old blimps. The newest Zeppelin NT, which sports a polyurethane-polyester shell, will stay parked in a hangar until it begins flights from Goodyear Tire and Rubber Co.'s Akron, Ohio, base this summer, and it will stick around there until the third ship in the series is built. Then, in late 2017, *Wingfoot Two* will motor west to Carson, home of a Goodyear blimp since the 1960s. Carson's base will be upgraded in the meantime to accommodate the bigger, heavier ship and its equipment. **Ω**

Hybrids Roundup (also see back cover)

Airlander Crowdfunding Reaches £500,000 Target in Less Than Half a Day Having announced the launch of a £500,000 crowdfunding on 29 March the Airlander Team announced this target was reached within 10 hours. Some 600 people invested £500,000 in less than 10 hours to help get the world's largest aircraft - dubbed the "flying bum" - off the ground. On 5 May Hybrid Air Vehicles concluded a record-breaking £2.1million crowdfunding which was then combine with a UK Government grant and an EU Horizon 2020 grant. This Crowdfunding equity raise values the company at £55 million after the fundraising has closed, a significant increase already since it's valuation of £36 million at the last crowdfund.

HAV now have a workforce of 120 developing this exciting technology. Hybrid Air Vehicles existing shareholders include PLC Chairmen, Business Angels and Professional Investors. The company currently has around 1,000 shareholders who collectively have invested over £17.5 million of equity and debt in the company since its formation in 2007. HAV has benefited from over £60 million of investment in the aircraft from the US Government and approximately £7 million of EU and UK Government grants.

The "world's biggest" aircraft was unveiled and floated for the first time on 26 March since it was fully assembled in the UK. The Airlander 10, which is 302ft (92m) long, was floated inside the UK's biggest aircraft hangar in Cardington, Bedfordshire, at a launch event. It will carry out 200 hours of test flights later this year. The aircraft, which was developed for the US government for surveillance, can stay airborne for five days at a time. The British aerospace company which designed it bought the rights when the US Army ran out of money to develop it further. Hybrid Air Vehicles (HAV) claims it could be used for a variety of functions such as surveillance, communications, delivering aid and, in the future, even passenger travel.

"It's very pleasant to fly. From the flight deck you have a lovely view," said chief test pilot David Burns [above, on the flight deck]. "For the people on board and the people down below it's going to look quite a sight. "You're talking about 300 feet long. There's nothing that size at the moment." The £25m Airlander 10 is being built at Cardington Sheds in Bedfordshire and will undertake additional ground testing before it renewed flight.

His Royal Highness The Duke of Kent officially named the "world's largest aircraft" in the historic Cardington Hangar 1 on the morning of April 12th.

His visit included taking a "flight" in the Flight Trainer with Chief Test Pilot David Burns (above) and spending time on the flight deck and cabin of the aircraft. The Duke of Kent is an aviation enthusiast and pilot. His Royal Highness was Vice Chairman of the Overseas Trade Board and later British Trade International (now known as UK Trade and Investment) from 1976 to 2001. Following his many years in the role, The Duke still retains an interest in British business at home and overseas. A number of the organizations with which The Duke is affiliated reflect his personal interest in technology and industry, engineering and innovation, including the Royal Institution, the Royal Academy of Engineering and the Royal Society.

A select group of honored guests (above) attended the ceremony, including the Lord Lieutenant of Bedfordshire, Helen Nellis and The High Sherriff, Charles Whitbread. A Guard of Honor from Shortstown Primary School, Cotton End Primary School and Shortstown Air Cadets greeted The Duke on arrival. Twelve members of Airlander Club (the aircraft's supporters' club) attended and met His Royal Highness.

The name revealed to the world for the first time was "The Martha Gwyn," after Hybrid Air Vehicles' Chairman and largest shareholder Philip Gwyn's wife. This was a complete surprise for Martha, who attended with her husband and Company Chairman, Philip Gwyn. Martha was both shocked and delighted by this honor. She has had a strong interest in aviation for many years, and has flown across the United States of America in a light aircraft when she was younger. She is an American citizen and part of the Rockefeller family. This marries the registration of the Airlander G-PHRG (Philip Gwyn's initials) with the name of this aircraft nicely.

The airship is to become a familiar sight over the central English countryside as it aims to complete 200 hours of test flights before demonstrations to would-be customers. Professor Chris Atkin, who became president of the Royal Aeronautical Society in May, said he could imagine the aircraft "competing with cruise ships over really interesting environments." The firm is hoping to build 12 Airlanders a year by 2018, some as passenger aircraft that will carry up to 48 people at a time. "The view is quite extraordinary. It's a very relaxed experience. It will be a very quiet and stable vehicle to travel in," he said. The remainder of 2016 will see an extensive Flight Test Program consisting of 200 hours of test flights over a number of months, then a series of trials and demonstrations with prospective customers. **Ω**

P-791 prototype shown to the press (LA Times)

Lockheed Martin Readies LMH-1 Hybrid Airship Assembly (excerpt) by Guy Norris, Aviation Week

Lockheed Martin's two-decade-long dream of developing a commercial hybrid airship is about to take off, literally, with initial parts for a prototype arriving over the next two months and first flight targeted for mid-2017. The 280-ft.-long LMH-1 is expected to enter service in 2018 and is a big move for the company in more ways than one. If successful, the vehicle represents the first generation of a planned series of progressively larger hybrid airships that will culminate in the mid-2020s with 500-ton transports capable of competing with oceangoing vessels. The venture also represents Lockheed's first significant foray into civil aviation since the 1980s, when it refocused on the defense and space markets following disappointing sales of the technically excellent but commercially flawed L-1011 TriStar airliner.

It is also a commercial first for Lockheed Martin's Skunk Works, the company's secretive advanced development group that deals largely with classified U.S. defense programs. "This is virgin territory largely for the Skunk Works," says Craig Johnston, business development manager. However, with increasing pressures on defense budgets, the Skunk Works more and more finds its expertise forming the phalanx of Lockheed Martin's strategic push to expand into nonmilitary markets such as energy management and distribution, as well as commercial air transport. The company applied for FAA certification in early 2012, receiving an approved new certification basis in 2015. The FAA's proposed certification criteria are based on existing Transport Airship Requirements developed by Germany and the Netherlands (for the defunct CargoLifter airship) combined with Part 29 airworthiness standards for transport-category rotorcraft, in addition to elements from Parts 23, 25 and 27.

Working through Hybrid Enterprises, its Atlanta-based wholly owned reseller and aftermarket provider, Lockheed Martin is in the final stages of securing orders and letters of intent for about 12 LMH-1s from the mining and oil and gas exploration industries. Capable of carrying 47,000 lbs. of payload and up to 19 passengers over ranges up to 1,400 nm at a cruise speed of 60 kt., the vehicle offers lower cargo transport costs to remote areas that road and current air alternatives cannot match. "We talked to the oil and gas and mining companies and asked if we did this would they use it, and the answer was an absolute 'yes,'" says Grant Cool, Hybrid Enterprises chief operating officer.

HYBRID ENTERPRISES

Lockheed Martin welcomes the market stimulus from HAV, the U.K.-based developer of the competing Airlander 10, expected to make an appearance at this year's Farnborough International Airshow in the U.K. "We have plenty of market space; there are no issues," says Johnston. "We know for sure there is an initial market for 12, but ultimately there will be many hundreds over the next decade, and they will be spread all over the world," adds Cool. They are priced at $40 million per unit, and Lockheed plans to build up quickly to an assembly rate of one per month. "I'd like to say we are in the red zone," says Johnston, using an American football metaphor to describe how close the program is to a touchdown or full-scale go-ahead. The real decision related to the start is turning on the supply chain. Program manager Bob Boyd (below, with P-791) adds that "the construction cycle is unbelievably short: Once all the parts are put together in one place the assembly time is about five weeks, though we only have one spot, for one at a time." Later development of the much larger follow-on variants will likely require assembly of a dedicated production site.

P-791 cockpit (LA Times)

Unlike a conventional airship that relies on lighter-than-air gas for 100% aerostatic lift, the LMH-1 derives 80% of its lift from the buoyancy of helium gas and 20% from the aerodynamic lift generated by the shape of the tri-lobed vehicle and the thrust of its four propeller engines. The airship envelope has 1,285,000-cu.-ft. displacement compared to 120,000 cu. ft. in the P791 and is 78 ft. tall and 148 ft. wide. The four thrust-vectoring thrusters will be powered by unspecified 300-hp V6 diesel engines driving three-blade, 9-ft.-dia. propellers. Lockheed, which has yet to finalize the engine selection, says the likely choice is "certified aviation engine derived from the automotive industry." (Below, LA Times photo)

Thrust-vectoring and motion-of-control surfaces on the four tails of the LMH-1 are handled through a vehicle management system using electronic fly-by-wire (FBW) controls. "The full axis FBW system controls four tails, the four thrusters, the throttles and the pitch of the blades. In addition, each of the propulsors gimbals, so it is a complex flight control system [FCS] and algorithm controlling up to 16 different things," says Kent Trenkle, LMH-1 systems engineering integration, test and certification lead. For takeoff and landing, the FCS is derived from the algorithm developed for the F-35B short-takeoff-and-vertical-landing version of the Joint Strike Fighter. Below 20 kt., inputs from the control inceptor in the two-person flight deck will operate in vertical mode. Above 25 kt., these convert to up-and-away flying mode. Between the two airspeeds is a blended zone for the transition to landing from forward flight, or vice versa. A trigger on the sidestick controller initiates a braking maneuver, which is instigated by deflection of the vertical tails followed by reverse pitch on the propellers as speed drops below 15 kt.

An air cushion landing system (ACLS) based on the P791 system will be used for landing and ground operations on all surface types, including water. Unlike the P791's four-pad ACLS, the LMH-1 system will incorporate two main pads aft and a smaller, forward-mounted ACLS pad. The vehicle is designed to land aircraft-like on the two main pads first and then on the "nose leg" positioned pad, located beneath the forward end of the 150-ft.-long passenger- and cargo-carrying gondola. Situated beneath the central lobe, the gondola is 10 ft. wide and 10 ft. tall. The cargo is carried in a 60-ft.-long section aft that opens up for loading and unloading at truck-bed height. For longer loads, the cargo bay doors can remain open in flight. Normal operating altitude will be 10,000 ft., though provision will be made for supplementary oxygen for crew when transitioning over mountains and ferrying at higher altitudes. **Ω**

(LA Times excerpt) On a recent visit to Lockheed Martin's Skunk Works where the LMH-1 will be built, journalists were given the rare opportunity to clamber inside the central and side lobes of the P-791 demonstrator on which the new hybrid airship will be based. Inflated with air, rather than helium, the dark interior could be viewed using flashlights. In a helium-filled interior this view would be obstructed by ballonets, which are air-inflated bags used to adjust the lift. One of the sidelobes has a septum diaphragm on the left segregating the center lobe from its neighbor. The wall incorporates an access hole which, in the event of a major leak, can be plugged with a balloon to seal in the gas. The patches are doublers made of multi-layered Vectran weave and mark attachment areas for control surfaces, the ACLS pads and propulsors. **Ω**

Chief engineer John Morehead, left, and program manager Dr. Bob Boyd tour the air-filled interior of the [P-791] airship's inflatable envelope. (LA Times)

A concept that's finally taking off: U of M's Prentice pumped by sale of hybrid airships

By: Martin Cash, Winnipeg Free Press

It's a $480-million vindication of something NAA member Dr. Barry Prentice has been saying for 15 years. Lockheed Martin recently closed a sale of 12 hybrid airships to Britain's Straightline Aviation, a deal Straightline CEO Mike Kendrick said "represents a revolution in remote cargo delivery."

That sounds exactly like what the University of Manitoba's Prentice has been saying for years. The British company that bought the 91.4-metre-long, 20-tonne dirigibles says it has customers in the resource industry lined up. All the talk around the world is they will be used to move cargo to remote locales. The concept of using hybrid airships to carry heavy cargo to remote locations with insufficient transportation infrastructure likely did originate at the U of M. Prentice, for one, is convinced of it. He knows many of the Lockheed Martin executives and many others involved in the airship business. "I am very proud of the fact that when people look it up, they will find that the first references were from the Transport Institute at the University of Manitoba," Prentice said. "We were the first to start making the idea known and holding conferences. The only reason Lockheed Martin is looking at the oilsands region and the British company (who bought the airships) is looking at Canada is because we identified it as a market." It is a validation of sorts for Prentice... In time, Prentice believes airships will be moving freight all around the world. **Ω**

Can 'Superblimp' Unlock Riches Of Africa?

CNN (exp)

After 20 years of development, Lockheed Martin and Hybrid Enterprises are poised to unleash a revolutionary new design that could unlock resources worth billions of dollars across the African continent. At the recent African Mining Indaba event in Cape Town, the Airship was presented as a vital asset for mining companies across the continent. Given the downturn in commodities prices across the continent, and the inaccessibility of key sites – Sundance's Mbalam-Nabeba project straddles the border of Cameroon and the Republic of Congo and required the building of a 510-kilometer rail line - the Airship could offer relief and opportunity to the beleaguered industry. Robert S. Stewart, head of mining firm Interop AG, has researched the ship's potential impact on projects across the continent, including the largest -- Rio Tinto's putative $20 billion iron ore plant in Simandou, Guinea. "The airship could save the project $7 billion by staging it in a completely different way," he says.

Airships could facilitate mining projects such as the Simandou iron ore plant in Guinea. Stewart believes the new design could bypass many of the most expensive and time-consuming aspects of mining. "When you build a project in a remote area, you always have to start with a road, a railway line, and a power line before you build the smelter," says Stewart. "With an airship you can fly straight in, without even an airport, just an area the size of two or three football fields." The vast majority of "low-hanging fruit" have been extracted already, according to Stewart, who estimates that over 90% of existing mineral resources in Africa - including vast gold and diamond deposits - are in "hidden, remote locations." Mining consultant Stan Sudol, publisher of respected industry website republicofmining.com, agrees the ship could be a game changer, that will allow commodities to be fast-tracked to market. **Ω**

REUNION 2016

"Have I got a float plane rescue story for you!" Past Pres. Herm Spahr (back to camera) tells BGen Duane Theissen, USMC (Ret), President and CEO of the Naval Aviation Museum Foundation. Looking on is NAA Pres. Fred Morin and (far right) History Comm. Chair Mark Lutz. Herm promised to polish up his astonishing tale of launching off the cruiser USS *Vincennes* to rescue some lost Army officers in 1945, and Ed. plans to format his story for FOUNDATION magazine.

In the Ready Room, Janet Estes listens to Lynwood May's tumultuous experiences in the ZS2G-1s. Janet had just signed Lyn's copy of her Dad's book, "LTA: A Navy Blimp Pilot in WWII & The Crash of the K-34." Janet and her husband Jim have kindly donated the proceeds of all books sold through Small Stores to the NAA Treasury.

In fact, Herm brought along a good portion of his family. Above, looking over our beautifully restored ZP3K-47 are Jessica, Paula, Arlene, Philip and Herm Spahr.

Alavaro Bellon and Catherine Hajcak catch up on the scuttlebutt at the National Flight Academy's scuttlebutt. Not only is the building elaborately decorated to resemble the interior of an aircraft carrier, our tour was complete with sub-woofer-supplied sound of planes landing on the "roof" and announcements from the "1MC."

The Consolidated N2Y trainer used to train the Hook-on pilots for the *Akron* & *Macon* on display at NMNA.

Robert Nelson uses his iPad to show his K-ship home movies to John Mitchell. Robert also had made copies on a DVD which he donated to the publisher for copying and possible inclusion in future collections. John told Ed. of his experiences in the 4K/5K testing program and hopefully John will write them up for TNB.

Florida's weather was near perfect for the entire week. Leon Moore wowed the ladies by riding his Harley across Arkansas, Louisiana, Mississippi, and Alabama to the Reunion. Photo by Mark Lutz.

Owing to low clouds the first day, the Blue Angels performed their "low" show which did not include some of the fancy maneuvers which would have been obscured. Clouds were more cooperative the second day and attendees got the full airshow experience. Ross Wood did a terrific job of capturing these blisteringly fast beauties.

Reunion attendees relax in the Blue Angels atrium while NMNA guide Steve Kozlovski relates details about the display of the Blue Angels aircraft curated by the Pensacola Museum.

Many of the museums LTA artifacts are suspended from the overhead including the K-modified ZP3K car and nose battons and fin from the ZPG-2 *Snowbird* airship, which the museum has parts on display.

NASA 20-20-20
Airship Challenge

The 20-20-20 Airship Challenge is a two-tiered challenge that provides opportunities to evaluate a wide range of innovative methods to launch an airship into the stratosphere, maintain altitude, and station-keep for a defined period of time. This challenge would seek to engage the aerospace industry, educational institutions, and amateurs to provide solutions. The challenge would award seed money to the first 10 Teams to present and pass an airship scalability review (~$20K per team). The Challenge would award prizes for successful demonstration of a stratospheric airship that would be required to accomplish the following tasks:

- Reach a minimum altitude of 20 km.
- Maintain the altitude for 20 hours (200 hours for Tier 2 competition).
- Remain within a 20 km diameter station area (and navigate between two designated points for Tier 2).
- Successfully return the 20 kg payload (200 kg for Tier 2 competition) and payload data.
- Show airship scalability for longer duration flights with larger payloads through a scalability review.

Ed. rec'd the following e-mail:

"A little over a year ago you responded to a request for information (RFI) expressing interest in participating in the proposed Airships 20-20-20 Challenge. Over the past year we have continued to work on the development of the challenge with NASA and have developed a follow-up RFI incorporating feedback from the first RFI, focusing on the Competition Technical Requirements and Rules.

The RFI is posted here: http://go.usa.gov/c7FPh You can submit comments in any format you like. In addition to responding to the technical aspects of the RFI, please comment on the proposed prize amount and structure. If you agree with the technical aspects of the RFI, an endorsement of the rules document acknowledging your continued interest in the challenge would be appreciated." **– Ernesto Diaz, JPL**

History Chair Mark Lutz's research revealed the man behind the challenge: "He's Jason Rhodes, PhD Physics, who works for the NASA Jet Propulsion Lab. His website is: https://science.jpl.nasa.gov/people/JRhodes/ When Dr. Rhodes and other scientists learned about Stratospheric airships, they immediately wanted to get one to carry their instruments to do science. But, what is available is too expensive for them (Hi Sentinel 80) and they are concerned that, with qualified Engineers leaving the LTA field due to the military cancelling airship projects the last few years, they will be left without the airship they want. They hope the 20-20-20 Airship Challenge will give then the path to that Airship. NASA reserves the non-exclusive right to buy the winning 20-20-20 Competition design, if they like it well enough. They're really hoping they get something worth buying!

I was a bit taken-a-back by the following rules:

Rule 2.C Each team has to have a $1 million liability insurance policy

Rule 2.F Every month each team must report to NASA the total amount spent that month.

Rule 6.C The Airship has to have FAA approval per FAA Order 8130.34

The Requirements document has a link you find inside this site: http://go.usa.gov/c7FPh

The New York Times article "AIRSHIPS REVISITED," fleshes out some of the things scientists would do with a relatively low cost Stratospheric Airship, if they could get their hands on one. Here are the parts I found interesting.

"Really, there are two very broad scientific applications of stratospheric airships," said Jason Rhodes, an astrophysicist at NASA's Jet Propulsion Laboratory and a co-author of the study. "You can look up and do astronomy, or you can look down and do earth science."

For years, climate scientists have used low-altitude blimps — and their lighter-than-air cousins, weather balloons — to sample atmospheric gases and have a bird's-eye view of local ecosystems. But high-endurance, high-altitude airships would allow scientists to study phenomena like the carbon cycle over extended periods at varying altitudes, and sample some of the less-understood greenhouses gases that contribute to climate change. Meteorologists could fly stratospheric airships over hurricanes and tropical storms, tracking extreme weather in real time. Geologists told Dr. Miller's team that they would use such airships to explore layers of volcanic plumes.

The only problem, the team found, is that stratospheric airships are expensive and complicated to test. Many qualified engineers had fled the lighter-than-air market after their projects were scrapped for lack of funds. To revitalize the airship market, the Keck study suggested that an institution offer a prize to the first civilian team to build a better stratospheric airship.

In April, Dr. Rhodes took the Keck study's suggestion to his NASA colleagues. Keck studies carry substantial weight with NASA: A recent Keck paper suggested that the United States lasso an asteroid, a highly unconventional plan that NASA hopes to execute in 2018.

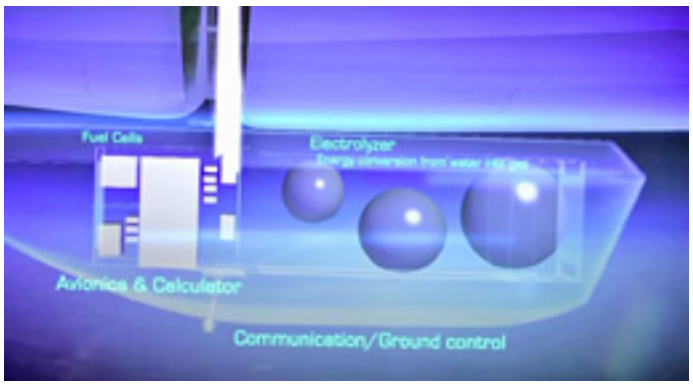
Dr. Rhodes proposed that NASA fund a Centennial Challenge to bring engineers back into the airship market. Centennial Challenges offer millions of dollars in prize money to civilian teams that build innovative technologies for NASA missions. Over the next few months, Dr. Rhodes will research and refine the rules of the challenge, and explore how to push the limits of airships' payload and endurance. If NASA accepts the terms of the challenge, the race for a science-worthy stratospheric airship will begin shortly after."

Mark continued, "Could Naval Airship Association have a role? Perhaps the NASA Centennial Challenge Office would like an NAA member as one of the judges, or NAA member(s) for team advisors / resource-persons." Ω

Stratobus is a concept for an autonomous stratospheric platform, midway between a satellite and a drone. The project was selected by the French Ministry of Industry and Digital Technology within the scope of the New Industrial France program, and is being carried out with a group of partners, including Airstar Aerospace and CEA-Liten. Thales Alenia Space is the industrial prime contractor. The project is part of the creation of an airship company by the Pégase competitiveness cluster, in charge of launching a dirigible industry in France.

StratoBus is a new concept for an autonomous airship, operating at an altitude of about 20 kilometers. This is in the lower reaches of the stratosphere, but well above air traffic and jet streams. Covers a wide range of potential applications, including border and maritime surveillance, boosting GSM network capacity for public events and GPS augmentation over areas of dense traffic. The platform itself is a high-altitude airship measuring 70 to 100 meters long and 20 to 30 meters in diameter.

StratoBus will be able to carry payloads up to 250 kg. It will feature a number of technological innovations, in particular to make sure it captures the sun's rays in all seasons: a power generation system (coupling the solar panels to a solar power amplification system patented by Thales), an ultra-light reversible fuel cell for energy storage. The StratoBus platform will require continuous significant energy input to offset the wind: two electric motors will automatically adjust their output power depending on wind speed (up to 90 km/h).



Stratobus has an envelope made of flexible materials, non-rigid on purpose, slightly over-pressurized, to reduce weight. In fact, it comprises three envelopes with specific functions: two of them to contain the lifting gas, and the third made of a very strong carbon fiber fabric. This technology, confirmed by Air Liquide, guarantees the security of the stratospheric platform, in relation to the risk of inflammable hydrogen. Ω

SHORT LINES

JLENS Can't Stay Afloat The House Armed Services Committee has issued a massive cut to the Army's Joint Land Attack Cruise Missile Defense Elevated Netted Sensor system (JLENS) program to only $2.5 million. With the Army initially requesting a budget of $45 million for Fiscal Year 2017, the slashing could put a stop to the troubled program often referred to as "Runaway Blimp." Political enthusiasm for JLENS has been waning significantly since the Raytheon-made tethered aerostat broke free from its mooring in Maryland, and floated into Pennsylvania, only to be shot down by state troopers. Rep. Jackie Speier stated "This isn't the first time we've tried to kill this 'zombie program' — let's hope it stays dead this time." Ω

BLIMP CITED IN RAYTHEON FUNDING DENIAL

A runaway military surveillance blimp that knocked out power for thousands when it dragged its severed tether across Maryland and Pennsylvania last year is still causing problems months later for its manufacturer, Waltham-based defense contractor Raytheon. Citing the embarrassing episode and other problems, lawmakers dealt Raytheon a blow this month by denying the latest funding request for the $3 billion program — leaving the system of unmanned blimps floating in limbo. Raytheon serves as prime contractor for the program, and some of the radar equipment on the aerostats is manufactured in Massachusetts. A spokeswoman for Raytheon said the corporation believes the program should continue.

Army To Develop Laser Weapon By 2023 Popular Science (2/29, Atherton) reports that deputy assistant secretary of the Army for Research and Technology, Mary J. Miller, told the House Armed Services Committee's Subcommittee on Emerging Threats and Capabilities that the Army plans to develop a laser weapon by 2023. She said the laser program will supplement "Indirect Fire Protection Capability," in an effort to find a cheaper alternative to interceptor missiles. Popular Science says the Marines want "to test an anti-drone laser on a truck" this year, the "U.S. Navy already tested a laser weapon on a ship deployed to the Persian Gulf," and the "Air Force wants to try lasers on planes by 2022." Meanwhile, "the Army demonstrated weak lasers on a truck in 2013, and now, they want a program of record on the books by 2023 to make a working laser weapon." Ω

NASA Aiming To Revive Supersonic X-Planes In continuing coverage, Wired (2/17) reports that NASA plans to reintroduce its "X-plane" aviation program, "with an eye toward making the future of commercial flight quieter, more efficient, and much, much faster." The article notes that in "a budget request published this month, NASA … announced plans to revive the experimental program that started after World War II and created some of history's most remarkable aircraft," which includes the X-1, the first supersonic jet, as well as many other innovative aircraft. The article explains that NASA aims "to develop the technologies needed to cut the fuel consumption of commercial airplanes in half, reduce emissions by 75 percent, promote the use of renewable energy, and reduce noise levels around airports." **Ω**

Drone Uses Neutron Beam To Detect Explosives Digital Trends (4/25) reports researchers at the University of Wisconsin at Madison's Fusion Technology Institute developed technology to detect explosives by having a drone shoot out a small stream of neutrons to look for signatures of explosive material or other objects. National Nuclear Security Administration chief Col. John W. Weidner said, "In a very practical manner, I think this can be a tremendous tool," adding, "From what I've read, its applications are only limited by the imagination of the user." **Ω**

Oil Industry Woes Spurring Blimp Revival In continuing coverage, Bloomberg News (3/30) reports that Lockheed Martin has landed an order to deliver as many as 12 airships to UK-based Straightline Aviation (SLA) as decreased oil revenues have prompted cost-conscious fossil fuel companies "to consider aircraft able to carry workers and cargo to remote locations without the need for hefty investment in runways and roads." In an interview, SLA Chief Executive Officer Mike Kendrick remarked, "Building huge infrastructure might have been acceptable when oil was at $90 a barrel, but nowadays they need to make economies like the rest of the planet."

The Globe and Mail (CAN) (3/31) notes that for a long time blimps have been touted as a potential "workhorse in Canada's North and the oilsands, where huge pieces of heavy equipment often need to be

transported to places with no all-weather roads." Kendrick explained that people "are waiting for this because they need the economies that it brings and are also happy that the carbon footprint is reduced." Meanwhile, SLA's Mark Dorey similarly remarked on the capability of the aircraft, noting that "You don't have to build ice roads or bridges or wait for the environmentalists to give you permission. You can simply land on the ice." Ω

Solid-State Hydrogen Reservoir Powers UAV Flight 11th February 2016 The Scottish Association for Marine Science (SAMS) has carried out the first UAV test flight (above) using a new solid-state hydrogen power system with the potential to outperform lithium-ion batteries. It marries Cella's hydrogen-powered gas generator with a fuel cell supplied and integrated by Arcola. Ω

New JHU-Developed UAV Capable Of Residing Underwater For Months Before Surfacing Digital Trends (3/18) reported that following months of "analysis and experimentation," a team of scientists with the Applied Physics Lab at Johns Hopkins University (JHU) unveiled the Corrosion Resistant Aerial Covert Unmanned Nautical System (CRACUNS), a sea-to-air UAV, which has "the ability to reside for months underwater without deteriorating or decaying," and is then able, when prompted by a signal, to "rise to the water's surface and begin flight, capable of undertaking a variety of missions." In a press release, Jason Stipes, CRACUNS project manager, explained the motivation behind the project, saying, "In response to evolving sponsor challenges, we were inspired to develop a vehicle that could operate both underwater and in the air." Ω

The new Minnesota Vikings Football Stadium in Minneapolis is called the US Bank Stadium. Meanwhile, Wells Fargo Bank has just built two 17-story

towers across the street with 56 x 56 foot illuminated "Wells Fargo" signs on their roofs. The Vikings have gone to court because the Wells Fargo bank signs will be visible in the overall Blimp View of their US Bank Stadium. US District Court Judge Donovan Frank has denied the Vikings request for a preliminary injunction, writing that the idea the Vikings will suffer harm is speculative. (Submitted by Mark Lutz in Minneapolis.) Ω

NT Zeppelin for research purposes Greifswald, Germany (dpa) - Marine researchers are preparing to use a Zeppelin off the coast of northern Germany to collect data on whirlpools, according to the Helmholtz research centre. In June, an airship fitted with high-resolution cameras is to track smaller and more unstable whirlpools as it flies over the Baltic Sea, north-east of Germany. The research team aims to use the data to analyze the influence of whirlpools on ocean circulation and on the food chain, head of the Institute for Coastal Research at the Helmholtz research centre, Burkard Baschek, said. "Just like the cogs in a clock, whirlpools in the sea are all interlinked," Baschek said. The airship is due to be launched from the island of Usedom on June 18. Ω

Ed. notes member Juergen Bock proposed this idea 25 years ago but was shouted down in favor of airplanes and helicopters.

NASA's Green Innovations Could Save Airlines $250 Billion In continuing coverage, the Washington Post

(1/7, Harvey) reports that green technologies developed as part of NASA's Environmentally Responsible Aviation (ERA) project could save the nation's airlines more than $250 billion dollars over a 25-year period, the agency said. ERA Project Manager Fay Collier said one of the developed technologies is close to becoming commercialized, adding that the agency is hopeful that all ERA technologies will be commercialized by 2025. The Post adds that the project's conclusion "comes at a timely point, as there's been a surge of recent interest in and research on the carbon footprint of aircraft." Collier said the overall goal of the project was to find solutions to improve "noise, pollution and carbon output all at the same time." **Ω**

Former NASA Astronaut Named Chief Pilot of Space Balloon Company World View SPACE (2/23) reports that Arizona-based space balloon company World View Enterprises announced that it has appointed former NASA astronaut Ron Garan as its chief pilot. With the appointment, Garan, whose role "will focus on the piloting of individual flights," joins former NASA astronaut Mark Kelly, who "already serves as World View's director of flight crew operations, overseeing missions in a big-picture sense." The article explains that World View will send its paying customers passengers to an altitude of 100,000 feet in a pressurized capsule underneath a giant balloon, "allowing them to see the curvature of the Earth against the blackness of space during a gentle ride that will last five to six hours from liftoff to touchdown." **Ω**

NASA Progressing On Development of Hybrid Aircraft Engine RT (1/7) reports that at the ongoing AIAA SciTech 2016 forum, NASA is highlighting "the current state of its propulsion research." The article specifies that at the Glenn Research Center in Cleveland, Ohio, agency scientists and engineers "are looking at electrical systems that could either replace or complement the current turbine engines, turning electricity into thrust," while adding that doing so "is not going to be simple." Jim Heidmann, manager for the Advanced Air Transport Technology project at NASA, explained that switching toward "alternative systems requires creating new aircraft designs as well as propulsion systems." Amy Jankovsky, sub-project lead engineer, added, "Part of our research is developing the lightweight machinery and electrical systems that will be required to make these systems possible." Meanwhile, Cheryl Bowman, project technical lead, remarked, "Our work is laying a foundation for planes that will require less fossil fuel in the future." **Ω**

Historic Lansdowne Home for Sale by Owner: Ohio landmark is birthplace of Zachary Lansdowne, commander of ill-fated Navy airship USS *Shenandoah* The house was built in 1851 and has had three owners including the present one. The property is listed on the National Register of Historic Places and located in Darke County, approx. 45 minute drive from Dayton, Ohio. **Ω**

Outdated Fuel Tanks in Civilian Helicopters Pose Potential Dangers The NTSB estimates that 85 percent of helicopters built since 1994 don't have crash-resistant tanks, saying a tank that leaks on impact could lead to fatal consequences. The one hundred seventy helicopter fuel leak-fire accidents since 1994, killing 78 persons, have been linked to the outdated fuel tanks in civilian helicopters not required to have newer tank designs. **Ω**

FAA Has Started Work On Crash-Resistant Fuel System Standard Rotor & Wing Magazine (10/2) reports that in a September 28 letter, FAA Administrator Michael Huerta informed NTSB Chairman Christopher Hart that the agency "has started work to apply crash-resistant fuel system standards to all helicopters" to address findings that only 14% of helicopters meet 1994 standards Hart had tasked the agency's Aviation Rulemaking Advisory Committee with expanding the standards in a recommendation resulting from the investigation of an Air Evac Lifeteam Bell Helicopter 206L1+ crash "in which the pilot survived but a flight nurse and paramedic died of injuries that included burns from a post-crash fire." John DeLisi, NTSB head of Aviation Safety, will brief the Rotorcraft Certification Summit on that crash investigation on October 27. **Ω**

Swiss Company Develops Blimp-Like, Crowd-Friendly UAV Reuters (3/16, Stock) reports that Switzerland-based company Aerotain has developed an agile, helium-operated UAV, dubbed Skye, which can fly safely near crowds of people, and allow companies to publicly engage with their audiences in new and innovative ways. Highlighting Skye's aerial dexterity despite its 10-foot diameter, Daniel Meier, co-founder of Aerotain, explained that there is "a computer on board which knows exactly how it's orientated in the world, and then it gives commands to the motors to actually align it to where you want it to be." While noting that regular UAVs may fall on top of people if they malfunction, Meier stressed that this could not occur with Skye "because helium is providing the buoyancy, so if ever something goes wrong it becomes a huge balloon and people could play with it." **Ω**

Blimp Makes Emergency Landing, Deflates Off I-95 in Fishtown (NBC) A blimp with two men on board made an emergency landing Friday in a construction site near Philadelphia. No injuries were reported. The FAA and NTSB were notified, according to police, and nearby I-95 had to be closed for a time as crews worked to secure the area. **Ω** *Ed. note: This was a hot-air airship which apparently was overcome by winds.*

Small UAV Coalition Hires First Lobbyist The Hill (9/29, Trujillo) reports that the Small UAV Coalition, "which is pressing for relaxed regulations for the use of commercial drones, hired its first outside lobbyist this week," bringing on Robert Epplin, who recently started his own lobbying firm. The Small UAV Coalition, "which includes 20 members is headed by Michael Drobac. **Ω**

Pilots Flying To Cuba Now Permitted To Stay Overnight Bloomberg News (2/1, Black) reports that U.S. pilots can now stay in Cuba with their aircraft after the U.S. government amended an "odd, expensive obstacle" on January 27, 2016, to allow flight crews to stay as long as the aircraft. **Ω**

Inspector General Finds Problems With DEA's Drug-Fighting Plane Fox News (3/30) reports that "the federal government dropped $86 million on an advanced Drug Enforcement Administration (DEA) plane that was meant for counter-narcotics missions in Afghanistan – yet remains 'inoperable' and 'resting on jacks' to this day, according to a scathing watchdog report released Wednesday." The review by the Justice Department's Inspector General (IG) "said the plane was purchased seven years ago to support anti-drug efforts in the Afghanistan war zone, where opium poppy cultivation has long been rampant." The "so-called Global Discovery program to modify the ATR 42-500 aircraft with advanced surveillance capabilities was supposed to be completed in December 2012," but "the program has been plagued by missteps, has missed a string of deadlines, has ballooned in cost from an original estimate of $22 million, and remains incomplete and grounded in Delaware." **Ω**

Boeing Patents New Design For Cargo Container Plane Boeing has patented a cargo container plane that, "instead of slotting cargo containers into a round tube," would "line them up longwise in a neat row, then lower its aerodynamic body on top." Boeing expects the plane would be "operating at altitudes less than 18,000 feet, so that the cargo doesn't need to be pressurized. Boeing envisions such a plane as an alternative to the slow but cost-efficient shipment of low-priority bulk cargo on boats, trains, and trucks, and the light loads of fast but expensive cargo aircraft shipments." **Ω**

Tethered European UAV Lands On Moving Platform Without GPS Flightglobal (8/18, Stevenson) reports that a European Commission-Safemobil study, led by the Andalusian Foundation for Aerospace Development's Centre for Advanced Aerospace Technologies (FADA-CATEC) and the University of Seville in Spain, successfully demonstrated the ability of a tethered unmanned helicopter to land on a moving platform in a range of conditions without using GPS. The test took place in June at the Air Traffic Laboratory for Advanced Unmanned Systems (Atlas) experimental flight center in Villacarrillo, Spain. The study shows how "unmanned systems could be used in disaster recovery or search and rescue operations where it is unsafe to deploy manned aircraft." The story includes a nearly five-minute video of the successful test. **Ω**

Boeing Halves Production Rate Of Iconic 747 Jumbo Jet The Wall Street Journal (1/21, Ostrower, Subscription Publication) reports that on Thursday, Boeing declared that it plans to cut the production rate of its 747-8 cargo aircraft to just six units per year, signifying a continued decline of the iconic jumbo jet amid a slumping global air freight market. Due to the minimized production rates, set to take effect in September, the Seattle-based manufacturer will report an after-tax charge of $569 million when it discloses its fourth-quarter earnings next Wednesday. The article notes that while the 747, Boeing's largest jetliner, has been in production since the 1960s, modern aircraft customers prefer buying smaller, more fuel efficient jets geared toward passenger travel. **Ω**

3D-Printed Ceramics Could Support Next-Generation Spacecraft SPACE (1/5) reported that researchers at HRL Laboratories in Malibu, California, have "invented a resin formulation that can be 3-D printed into parts of virtually any shape and size," adding that the printed material "can withstand ultrahigh temperatures in excess of 1,700 degrees Celsius (3,092 Fahrenheit) and is 10 times stronger than similar materials," which could potentially facilitate hypersonic flight. Tobias Schaedler, senior scientist at HRL, said that if traveling at "about 10 times speed of sound within the atmosphere, then any vehicle will heat up tremendously because of air friction," explaining that if people want to create hypersonic craft, "you need ceramics for the whole shell of the vehicle." **Ω**

Aeros Granted Utility Patent For Aeroscraft Cargo Airship's Aerostructure Aeroscraft Corp (Aeros) announced the USPTO has granted Aeros U.S. patent number 9,266,597) for an important sub-system covering the multi-functional 'Aerostructure for Rigid Body Airship,' or 'Aeroshell,' which defines the outer shape of the lighter-than-air (LTA) vehicle, while serving structural and operational functions as a unique internal truss system. **Ω**

NASA Deploys Near-Space Probing Balloon From New Zealand Reuters (5/17) reports that NASA successfully deployed an 18.8 million cubic foot super pressure balloon from the South Island Wanaka Airport in New Zealand to conduct near-space scientific research. According to the article, the massive balloon is expected to circumnavigate the Earth along the mid-latitudes of the southern hemisphere once every one to three weeks. The article explains that long-duration balloon flights facilitate cheap access to near-space for scientific and technological investigations. **Ω**

An advertisement reads thusly: "With WD's new 8TB helium platform, you'll find the HDD storage that's right for you. A helium-sealed drive reduces internal resistance for improved performance, optimized power consumption, and greater capacity." **Ω**

A fascinating new ad for Grey Goose features a part-CGI, part set-built fantasy airship that embarks a group of adventurers on an incredible trip with a surprise ending: https://youtu.be/JpxE0MGJRSM **Ω**

At Press time the U.K.'s Airship Association was reading its AGM, after which eminent balloonist Don Cameron was to include news of his latest new low cost two-seater hot-air airship, the D-77. **Ω**

A Potted History Of Airships

By Barbara Cockburn, Aviation Week Archives

From the dawn of aviation, through to the modern day, the airship has undergone sporadic revivals. A pattern emerges that the airship's sustainability comes down to economics. Airships have been developed since the 1800s but Aviation Week began publishing 100 years ago, so it is worth noting that a revival was taking place as far back as November 1916 when we reported that the U.S. was to start work on a lighter-than-air-vehicle, another name known for airships.

A journalist predicted in the February 1, 1917, issue of Aviation Week, that great progress would be made in developments of lighter-than-air craft in the U.S., and similar predictions for Europe were foretold. All types of lighter-than-air aircraft would be designed and built by one company, the Connecticut Aircraft Co. Its qualification? It recently received an order from the Signal Corp for an observation balloon. It had a capacity of 30,000 cubic feet of hydrogen. The main gas bag was built of double textured rubberized cotton, cemented and sewn together.

In 1925, the Goodyear *Pilgrim* performed its first flight at Akron, Ohio. It was 110 ft. long, 45 ft. high, powered by 80 hp. Lawrance radial engine. It could transport two passengers plus a pilot and motor mechanic. It was known then as the world's smallest airship, and first commercial lighter-than-air craft [temporarily] inflated with helium. It was intended for pleasure cruising, but a demonstration ship would be built for certain tests and experimental work.

P.W. Litchfield, vice president of Goodyear said the future of these ships might bring mooring masts at country clubs, and on private estates and even airship regattas in the same way the motor boat and yachting clubs now have similar events. In 1927, Goodyear printed a booklet about the evolution of airships. The lighter-than-air vehicles take many forms, airships, balloon designs, non-rigid airships, semi-rigid airships, rigid airships, commercial and military uses of airships.

The British State airship R101 was completed in 1929. It took four years. The first 18 months were dedicated to "pure research work in wind tunnels" and the last two years on actual construction. The writer described its construction: "The main longitudinal girders are triangular in section with booms, of high tensile steel strip drawn into tube form with duralumin webs and forged duralumin end fittings all attached to pin joints… which helps to improve the accuracy of the stress analysis."

At the time of this report [the later doomed] R101 had not yet made first flight, but the writer said that when it does take to the air it will be the first airship which does not rely on gasoline.

In May 1936 the *Hindenburg* flew on its first scheduled commercial flight across the north Atlantic. A sketch within the article is captioned: "A glimpse into the future. These sketches (showing passengers enjoying the view from the airship) are made from a study by Goodyear-Zeppelin Corp. and its accommodations compare favorably with those found on luxury steamships of today." The writer said: "I believe the airship is destined to be successful in the transoceanic field because its inherent qualifications permit it to carry large payloads economically over large distances." Sadly, however, The *Hindenburg* burst into flames in 1937, bringing into question the future of airships.

In July 1959, the first of four Goodyear airborne early warning airships were delivered. "The ZPG-3Ws were the largest non-rigid airships ever built, at 1.5 million cu. ft. helium volume, they were produced by Goodyear under a $48 million Navy contract. It has a large antennae carrying capability, has long endurance, easy station-keeping over a fixed geographical position, and lower noise and vibration." The airship power plants are two Wright R-1820-88 engines rated, 1525 hp. Maximum fitted with Curtiss Electric propellers.

In 1984 the US Navy wanted an airship capable of performing coast guard missions which would fly with turboprop engines in 1989. From 1987 the US Navy funded the project. Then discontinued its support due to budget cuts. However, the Navy followed the program with much interest according to a Westinghouse official. Airship Industries partnered with British firm Westinghouse to produce a design to meet the Navy's needs. It would provide real-time data on the location, movement and identification of air surface and subsurface targets. The Sentinel 1000 had its first flight June 26, 1991.

In 2008, Aviation Week reported on airship manufacturer Worldwide Aeros' "new class of aircraft," much like an airship [but] with gas buoyancy, aerodynamic lift, and thrust vectoring for better performance and operability than traditional airships." The ML866 is a 210 ft. long vehicle aimed at the business aviation market. It is a buoyancy-assisted aircraft with adjustable static heaviness. Its key technology is the dynamic buoyancy management system. "Static heaviness is the ratio of buoyancy to gravity; it is increased to land, and decreased for takeoff."

The control of static heaviness works by compressing, storing, then decompressing helium within the envelope to adjust the vehicle's buoyancy.

In 2010 Aviation Week featured a new generation of airships capable of persistent surveillance. "Airships are survivors," having been around since the dawn of aviation, but questions whether "an unmanned airship can last beyond today's war?" Northrop Grumman believes so, and that it has a role to play in border security and disaster relief as a communications and surveillance platform."

"Airships are not for everything," said a company executive, "but there are opportunities they are suited for. It comes down to economics." Northrop Grumman's long endurance multi-intelligence vehicle (LEMV) would be able to provide surveillance for 21 days from 20,000 ft. It would work with Hybrid Air Vehicles (HAV) – companies which preceded HAV developed the Skyship 500 and 600 and the Sentinel 1000, which never materialized. The LEMV, "an aircraft the size of an A380 with rotating engines" flew for 90 mins. on its first flight on August 8, 2012, "a remarkable achievement to go from concept to first flight in 25 months." Hybrid Air Vehicles, a U.K. airship developer launched the "return-to-flight" program for its Airlander 10 vehicle back in 2015 and has now begun flight tests. The Bedfordshire-based company is rebuilding the 302-ft.-long HAV304/ Airlander 10 after acquiring it from the U.S. Army following cancelation of the Northrop Grumman-led Long-Endurance Multi-intelligence Vehicle (LEMV) program. The craft is awaiting its Permit to Fly from the U.K. Civil Aviation Authority and the European Aviation Safety Agency. A first flight date has yet to be set. **Ω**

Ed. suggests readers save those irate letters, the AV WEEK *author given this assignment was obviously on a deadline, with her browser skipping over some details, like WWII... So you can check the archives yourself for free:*

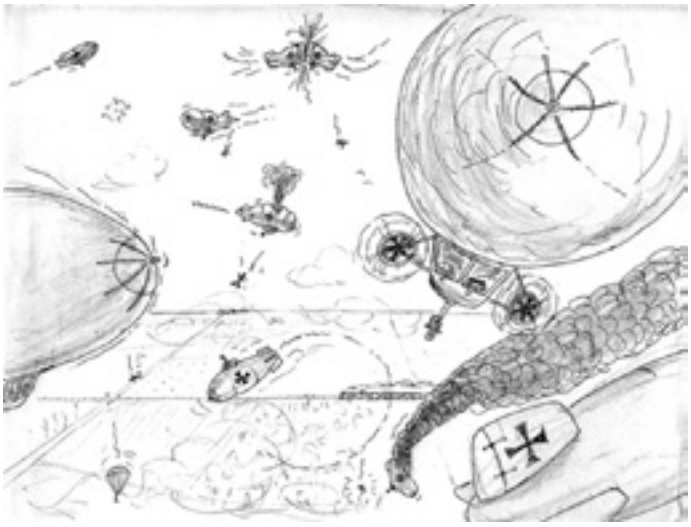
http://archive.aviationweek.com/

Happily our own history chair Mark Lutz just found some tidbits on one of the early Goodyear ships in completely different on-line archives...

"The first dirigible fishing expedition was carried out on July 7, 1920, by a party from Los Angeles who flew to Portuguese Harbor.

The 35-mile Pony Blimp flight was accomplished in 50 minutes, part of it flying in fog with the aid of a compass. Schools of fish were easily spotted from 40 feet up. Enough barracuda and mackerel were caught to necessitate the dumping of considerable ballast. Buckets of water, easily emptied for take-off, are being used as temporary ballast. A Pony Blimp is 95 feet long, hydrogen filled envelope volume 35,000 cu ft."

From the October, 1921 issue of "American Forestry:" "During the 1920 fire season, a test of the Pony Blimp was made over the Angeles National Forest in California with excellent results. The dirigible demonstrated the practicability of the machine for patrol and fire-fighting work. "Fires in mountainous areas of the National Forests. are difficult to access due to lack of trails and roads... the use of blimps would materially alter such conditions. "Buoyancy is secured with hydrogen gas; 20,000 cubic feet per month being required for continuous operation. This gas is available in steel containers, holding 191 cubic feet, in all large cities." **Ω**



"There We Were…at 50 Feet……."
By Luther E. Franklin

Recently, I sent a note about a blimp flight that involved an encounter with B-47s to Boeing's web site for stories that involved their aircraft. Briefly, it described a flight I was on as a student pilot at Glynco, GA, circa 1954. We were flying North up the coast in fog and suddenly burst out right over the active runway of an Air Force B-47 field, with one having to swerve to miss us. A voice from their tower, "Navy Blimp…. Would you puulleazze get off our duty runway?" Our instructor for the flight was in a cold sweat until we got home, but thankfully, no report had been called in against him.

Sending that note brought back several other memories from my period as a blimp pilot at Glynco then Elizabeth City, NC (ZP-4), and finally in NADEVU at South Weymouth, MA. The first was again as a trainee. As we were approaching Brunswick on our return to Glynco, I calculated our ETA but the instructor added 10 minutes when he called it in. I asked him, "Why?" He answered, "Jesus Factor," and he was right. I remember using that "Jesus Factor" several times when calculating ETA's at ZP-4 at the Naval Air Facility at Weeksville, NC.

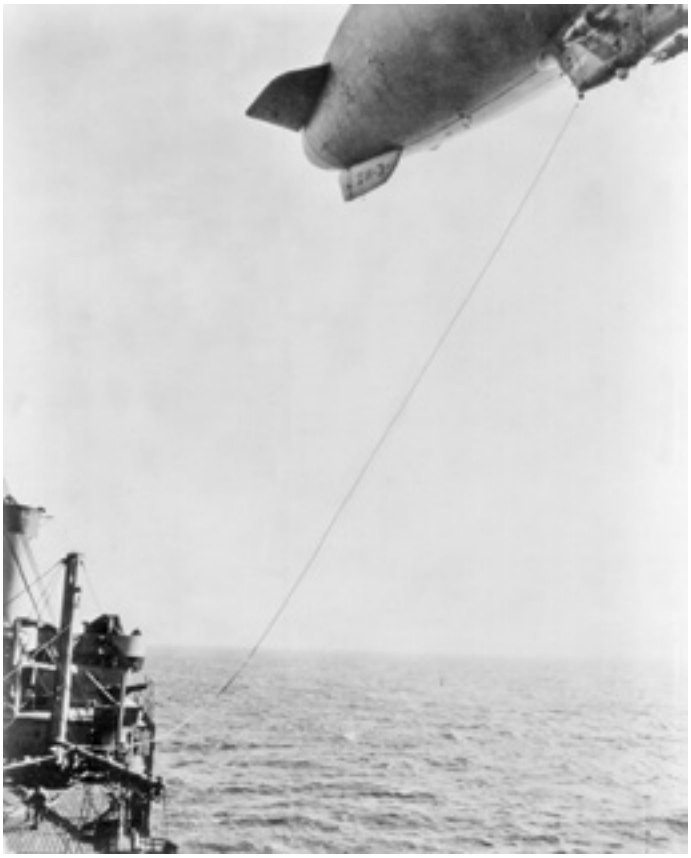
My training class missed out on the normal first flight at Glynco, *i.e.* a free balloon flight. They were cancelled just before it was our turn. A great story at that time (perhaps scuttlebutt) was that on one flight, a student dumped a whole sack of sand ballast when the instructor ordered him to dump some sand. Only handfuls were supposed to be scattered to restore upward buoyancy. The sack landed near some skeet shooters with the result that the occupants of the second balloon that went over had to duck down in the basket while the balloon became a clay pigeon.

At ZP-4, I was assigned to crew 405 as junior member (LTJG). We became known as "Colorful 405" due to several happenstances. The most notable was during an ASW exercise with a submarine. Our co-pilot button for dropping sonobuoys wasn't too reliable, so whenever the crewmember manning the magnetic detection gear yelled, "Mark on Top!" Our Rigger, who doubled as our chef, simply tossed a sonobouy over the side. Shortly before lunchtime, the Rigger started up the stove to fry chicken. Suddenly the intercom blasted, "Mark on Top!" and the chicken went out the window. Well, we at least had an apple and a couple of slices of bread.

Another was our mistake that resulted in a bulletin stating that thereafter pilots would wear our standard baseball caps or none at all during flight. We had marched out to our Blimp wearing Mickey Mouse hats and singing the Mousketeer song. Another bulletin near that time specified that Blimps would be thereafter referred to as Airships or Blimps, period. That wasn't due just to us. I assume that all former Navy Airship pilots have heard the terms "Sh__ Bags" or "Far__ Sacs," etc., many times, but not often during landing approach.

On an Armed Forces Day publicity flight, three blimps put red Rit dye in one water ballast tank and blue in the other…..imagine the site when over the base (I forget which base) one blimp swung upward and left, one upward and right, the center one straight ahead and up…..all streaming red and blue!

The most exciting time that I recall was our turn at in-flight refueling from a tanker. Wow! I was at the back, command pilot and co-pilot up front. A pilot from a different crew was down on board the tanker with "paddles" as those used for carrier landings. First, we were to fly over with a bag to be lowered and filled with aviation gas, then winched up and pumped into a tank. Just as it is normal for people to raise their voices when trying to speak to someone who doesn't speak English, the intercom exchanges became rather loud, and urgent. Trying to keep the blimp steady over the tanker was nearly impossible. We did get some fuel that way, but during one of the attempts the full bag passed right over the tanker's stack. It could have been a hell of a bull's-eye if it had dropped or spilled. Once, much later, that bag did twist right off while we were trying to pick up water for ballast. We were "light" so the landing party had a more difficult job helping us in.



After the bag came the hose, we were supposed to winch a fueling hose up and connect it. I don't remember whether we succeeded but I do remember that the hose broke away from us, at least once. We weren't on speaking terms during the flight back to base.

Meanwhile the ZP-4 pilot who had been assigned to the Tanker ("Buzz" Sawyer, an outstanding LTA and HTA pilot) was told to take over as Duty Officer of the Deck. The story is that a call came up from the engine room about a problem with one of the engines….to which our Duty Officer replied, "Feather it!" The ship's Captain appeared on the Bridge rather quickly.

Among other rather dangerous episodes that added to our "colorful" label, the ZS2G-1 (Inverted "Y" three tail fins) had manual propeller pitch "throttles." For takeoffs, rpm would be revved up at flat pitch then the two pitch levers *carefully* eased up together into forward pitch. Those levers were a real nuisance. The prop rpms would often begin to swing wildly….both at takeoff and landing…in the latter instances our flight engineer had to rush up, kneel and take over rpm control with the backup electrical switches.

One of our seasoned crews at ZP-4 was involved in testing the Navy's whale-shaped sonar. Procedure was to lower it carefully into the water and hover or progress slowly. Again, it was one of my early flights at ZP-4. I was navigating when "Mayday" came over the radio. Our command pilot instantly altered course toward the call. Unfortunately, the Mayday position was a longitude degree off (If I had been on the distressed airship, I would have been so flustered that I would have likely given our "Mayday" as the Pacific ocean). Anyway, it took us almost an hour to get to them and when we did, they were airborne again with one engine stopped (bent propeller tips) and the other slowly heading them home. We escorted them back to Weeksville and they landed without incident. Their winch cable had apparently jammed, pulling the ship down onto the water. Two crewmembers abandoned ship (without orders – but remember if during a mishap a fire starts, quick abandoning is really important, because that neoprene two-ply cotton bag, and aluminum/magnesium gondola burn rapidly, almost explosively). But, they had also taken the seven-man life raft, leaving only the three men to do the job. It took the Coastguard (also based next door to our base at Weeksville) several flights and into late afternoon to find the two sailors. They were suffering from exposure, and that was deemed enough punishment. Everyone else had made it O.K.

Of course, cross-wind gusts sometimes made takeoffs more challenging. In one of my early flights in a ZP4K, we were suddenly blown to the left toward one of our zeppelin sheds. My emergency duty was to hang onto the two water ballast dump cables. As we slid sideways with water dumping furiously we began to rise, flushing a startled fireman (who was lying down on his vehicle) right off onto the ground. Thank God we kept going up and cleared the Shed!

After ZP-4 was decommissioned, I was transferred to NADEVUE at South Weymouth, MA. NADEVUE flew missions for MIT projects, and had quite a variety of aircraft, including Lockheed P2Vs, Super Constellations, one or two SNBs, a Douglas Skyray and two airships. Ground handling of the airships involved use of two motorized heavy "mules" with its four wheels turning together. During one landing, a cable broke loose from a mule and smacked a hole in the side of the bag. It was quickly plugged with an umbrella patch, and we soon flew it down to Lakehurst for repair. Would you believe when we returned and landed back at Weymouth, it happened again, and another crew had to take the ship back to Lakehurst.

The most interesting event for me at NADEVU was when I was suddenly told to appear for a flight

at the wee hours, I was regularly used as navigator on Super Connie flights, but was told nothing about the flight before or after. Next day, the newspapers stated that Khrushchev complained that a US aircraft had shadowed his flight out of the USA. Well, it was never acknowledged that I know of, but our radar sleuths were certainly busy during that flight.

O.K., a final anecdote, assuming that at age 87, and that all of my former colorful, older pals have flown West, and I'm safe *re:* statute of limitations. In one of our flights shortly before decommissioning of ZP-2 and ZP-4, we decided to enjoy our flight, both in outwitting our squadron Operations Officer (who had decided to go with us) and have some pleasant companionship. So, we secreted an ice chest of beer aboard. That crew wasn't only colorful…they were shrewd. The chest moved all through the ship so that everyone had a beer, except the Ops Officer who never had a clue.

Most of my memories of ZP-4 and the rest of my time on active and reserve duty were great. The instructors and chiefs, fellow officers and crew were really great fellows. All the people involved served the USA admirably, period. The only time that I (and most of us in ZP-4) were really upset was when one of our airship's single wheel fell off as the single landing gear first touched the pavement, and went rolling down the runway, invisible to crew and tower. I was there on the ground at the time, running yelling (fruitlessly) trying to get the tower's attention. The wheelless blimp's landing gear dug into the asphalt, tipping the bag over to the left so that the prop cut it open. Sadly, the convened "Speedy Board" concluded that the accident was due to pilot error. It was not. We assumed that the decision was an attempt to hold back the threat of the Navy downsizing of the LTA programs, which began soon after that. **Ω**

U. S. Naval Air Station (LTA) Weeksville

Compiled by Stephen D. Chalker

In 1941, only one lighter-than-air station existed, Lakehurst, NJ, and with the approach of war in Europe the United States began to take a serious look at its defensive capabilities. High on the list was anti-submarine patrolling of the coast and harbors. At this time the best vehicle to do this was the blimp. In the age before helicopters, the blimp had the capability to hover, slow flight for extended periods, and carry the sensors and armament to protect shipping off the coast.

On July 3, 1941, the Congress passed a bill to authorize construction of facilities to house and support [up to] 48 airships. Previous to this a survey was done to select the best locations for these bases. Weeksville, North Carolina, was selected because of its proximity to the large Navy presence in Norfolk. Because it was midway down the east coast of the United States, blimps operating from there could cover the Hampton Roads and Cape Hatteras areas.

On August 6, 1941, construction was started on what was to become Weeksville Naval Air Station (LTA). The original contract called for the construction of a steel hangar, helium storage and service, barracks for 228 men and 50 officers, power plant, landing mat, and a mobile mooring mast. Then in July of 1942 an additional contract was awarded to construct a second all wood hangar and additional housing and facilities to support the increase in base size.

Weeksville N.A.S. was commissioned on April 1, 1942, with operations starting on June 8, making Weeksville the first LTA facility in operation on the east coast since the facility at Lakehurst, New Jersey, was the only LTA base. Airship squadron ZP-14 was established on June 1, 1942, starting operations from the Coast Guard base until June 8th when it moved down the road to its new home.

At its completion, Weeksville covered 822 acres, had 10 miles of railroad tracks, hangar space for 12 Navy "K" ships, housing for 700 enlisted men and 150 officers, and cost over six million dollars. The second hangar was completed on July 15, 1943, and was the first wooden hangar built of the 17 on order.

To testify to the effectiveness of the blimps, before they started operations at Weeksville, one merchant ship every other day was lost to submarines off the North Carolina coast. After the start of operations this dropped to one every two and one half months. During World War II operations continued escorting ships and performing search and rescue missions. In this period several airships were lost, all to operational accidents, but none to enemy action. June 10, 1944, ZP-14 was transferred to North Africa and replaced by ZP-24. ZP-14 thereby made the first trans-Atlantic flights by blimps.

After World War II the blimps left and the prime mission of Weeksville turned to heavier-than-air craft and motor vehicle storage with a peak of 700 planes and 2,200 vehicles. Then in 1947 squadron ZP-1 was transferred from California to Weeksville, starting its second LTA era. This was the beginning of the most exciting period of Navy LTA history with advances in technology, new ideas, new missions, new larger and more capable airships. and the desire to take LTA to the limits. Weeksville played a large part in all of this with its pilots and blimps testing and refining day and night carrier landings, ship to airship inflight refueling, and the formation of anti-submarine hunter killer groups. In the mid fifties Weeksville was at its zenith. with two blimp squadrons (ZP-1 and ZP-4), fleet Airship Wing One (FASW-1), and an anti-submarine helicopter squadron (HS-3) calling it home. Inventory records show 10 blimps and 12 helicopters based there. During this period, although they normally patrolled for submarines, occasionally they were called upon to patrol over land looking for moonshine stills. (One vet recalled they preferred looking for submarines, they didn't shoot at you!)

Throughout this period buildings were added to accommodate additional personnel, existing facilities upgraded, and equipment added to support the growth in operations. Because of its proximity to Norfolk there was a constant flow of temporary assignments of airships and aircraft to participate in fleet exercises off the North, Carolina coast, making Weeksville a very busy place.

Then on May 31, 1957, the Daily Advance headlines read, "Blimp Squadrons Are Ordered Decommissioned." By June 30th it was all over. After 15 years and 3 months, Weeksville Naval Air Station, the last purely lighter-than-air facility, closed its gates.

The two hangars stood for years as landmarks to navigation on the river and prompted water travelers to ask, "what are those two huge buildings?" The steel hangar (Airdock #1) was owned by Bruce Cabinets (IXL) from 1971 to 1996 and used for the manufacture of kitchen and bathroom cabinets. From 1971 to 1995 the wooden hangar (Airdock #2) was used for lighter-than-air activities as the manufacturing facility of TCOM, L.P., producer of tethered aerostats and Westinghouse Airships, Inc. would-be manufacturer of blimps. In addition the facility was and is used as a maintenance base for most of the blimps flying in the United States today.

In the early hours of August 3, 1995, disaster struck Airdock #2. An unseen spark from a welders torch started a fire in the doors at the east end of the hangar. Despite the efforts of the local fire departments, by daybreak all that remained of the largest wooden building in the state were smoldering ruins and the concrete door columns.

On April 2, 1996, it was announced that TCOM, L.P. had purchased Airdock #I from Bruce Cabinets, who would be moved in by the end of August 1996. By the end of 1996 the first major step in restoring the facility was accomplished, the removal of the suspended ceiling over the hangar floor.

In 1997 two major accomplishments were achieved. First the opening of the hangar doors on the north end of the building used the original drive system on May 21, 1997. Then on June 23, 1997, came the first docking of an airship there (since June of 1957) when the Fuji Skyship was brought into the hangar.

Today out of over 100 buildings, less than one dozen remain; the rest have been torn down or moved to other locations. **Ω**

Goodyear-Built M-Ship Gets Its Nazi Submarine Off Atlantic Coast By Hugh Allen

Lieutenant Ollie Hess gave the signal to the ground-handling officer and out they started. The M-ship headed for one side of the building, and as we reached the door, the ground crew men, on the double, whipped the ship around into the wind, and moved it across to the landing circle for a weigh-off. Then the mast was cut loose.

Ollie gave her the gun, raced the big ship across the field, then up elevator and they were off. There was a sharp cross-hangar wind blowing and I can remember when no ships would take off under those conditions, but with wartime emergencies the Navy blimp pilots had learned to get out and to work in all weather.

The submarine, on its way in to Cape May for formal surrender, was picked up well out at sea. Navy officers went aboard from a destroyer. In a few minutes the Nazi flag was hauled down and the Stars and Stripes went up. Navy camera men were aboard both the M-ship, and a K-ship which followed the M-ship, so pictures could be taken of both ships.

The previous day the Sub had already surrendered and was on its way into port, it is true, but to any Goodyear-ite, it was interesting to see how smartly the Navy men handle the big ships built for them in Akron. Lieutenant Commander Frank Petrie, Public Relations Officer, who had held a similar post with Goodyear before the war, was aboard with three press members. Lieutenant Ollie Hess was at the controls, being called one of the best pilots at Lakehurst. Hess, one of the pilots trained at Wingfoot Lake before the war, was a former Ohio Wesleyan football star. He married Claire Hess of Goodyear Merchandise Control, Plant 1. **Ω**

Dennis Hasselback, great nephew of Lt. Ollie Hess, Senior Pilot of the M-ship sent out to escort one of the surrendered U-boats in to Cape May, sent History Chair Mark Lutz some information from the Goodyear Company Newsletter, "WINGFOOT CLAN," (Aircraft Edition: America First in the Air, Vol 5 30 May 1945) and Mark formatted it for TNB. **Ω**

Caribbean Dreams By Juergen Bock

In the beginning of the 1980s, CDR Charles A. Mills was approached by a Taiwanese millionaire, who owns a hotel chain on the Antilles, to furnish the drawings of a modern *Hindenburg*. The requirements, as I remember, were a daily shuttle from Puerto Rico to Tobago with 120 passengers and 25 tons of cargo at a speed of 180 knots (plus). The procedures were simple: "you get the plans, and we have plenty of cheap labor in Taiwan."

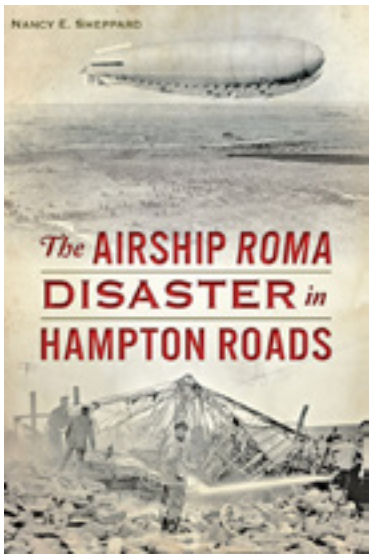
After the first shock we started to think: 180 knots are 333 km/h; a conventional zeppelin like the legendary *Bodensee* makes happily 111 km/h and accommodates 40 passengers. In other words, three units would do the job. The passengers would stay overnight in said millionaire's hotels and the fleet could move the cargo at nighttime. The accommodation of 25/3=8.3 tons of cargo, however, caused some headache, but increasing the fleet to five units resulted in following tentative proposal which could be varied at will and relevant requirements: Daytime: 25 passengers deluxe plus 1.5 tons of cargo = 125 passengers plus 7.5 tons/day. Nighttime: 4 tons of cargo = 20 tons per night/ship; total 27.5 tons/fleet/day.

An estimate of construction costs resulted in a reasonable sum, considering the learning effect due to the serial production and the redundancy gained, but… "Why don't you get the plans for the "*Hindenburg*", there is plenty of cheap labor in Taiwan." Afterthought: I still don't understand why Charlie didn't sign that contract! **Ω**

MEDIA WATCH

'The Story of Airlander' Seeks Crowdfunding Dean Arnett e-mailed, "It's the story of a group of men who have sacrificed their personal lives for a dream that may or may not work, but was worth it just in case it did. It's an incredible story the whole world is waiting to hear, although sadly engineering is rarely celebrated in the wider media. I decided I would release the full 'behind the scenes' story on DVD for the real enthusiasts, so you can 'share' the journey of this amazing aircraft. Special edition DVDs, Blu-Rays, posters, executive producer credits and other 'perks' can be pre-bought at the crowd-funding website now, to fund the editing, archive, music and mastering of this series." www.indiegogo.com/at/airlander **Ω**

The AIRSHIP ROMA DISASTER in HAMPTON ROADS
By Nancy E. Sheppard
Reviewed by C. P. Hall II



For most of us the story of the semi-rigid airship *Roma* is a tiny footnote of early army aviation history. Those of us with an interest in aviation history know that *Roma* was an unusual craft, purchased in Italy, flown by the U.S. Army Air Service rather briefly before it crashed and burned killing the majority of those on board. This event is often remembered as a factor in getting the government to go to the expense of specifying helium as the lifting gas for military dirigibles of all types.

The *Roma*'s story is a brief one and Nancy Sheppard's book is proportional to the story. The book is a paperback, 6" x 9" with 185 numbered pages. There are included a large number of B & W photographs both of the ship itself and the people involved. The tale begins in Italy after the First World War with Italy trying to find a post-war use for this vessel and the air-minded branch of the United States Army interested in looking at the latest types of aircraft in Europe. Mrs. Sheppard notes the Italian belief that the *Roma* could have been flown to the United States. It is an interesting speculation; however, the ship was disassembled, crated up and shipped via the U. S. Navy collier, *Mars,* and eventually arrived at Langley Field at Hampton Roads, Virginia. Mrs. Sheppard offers a good deal of detail about the personnel involved as well as the flying history of the *Roma*. A greater-than-one-might-expect volume of research went into the preparation of the book and it is well footnoted. The informed student of aviation history, the person familiar with the story of the Northrop YB-49 Flying Wing, will note the brief appearances of then Major Joseph McNarney. You must search him out as he appears twice, however, rates no index mention?

Although the flight history is well detailed, I am compelled to offer the criticism that there is a failure of analysis of the details of the ship itself. I feel as though I learned more about the *Roma* from examining the photos than I did from the text. There are three diminutive fins without elevators or rudders. Steering in both the horizontal and vertical planes was apparently accomplished using what is described as a "box kite rudder assembly" attached to the keel near the stern. Engines were not housed in gondolas but were exposed in the open air on frame assemblies extended from the keel. There are no drawings of the ship. There is no statistical table though some details are to be found in the text. The claim is offered that, powered by six replacement Liberty Engines, *Roma* achieved 75-mph air speed on its final flight which I would have to question. Finally, I question Mrs. Sheppard's grasp of the dangers of hydrogen, her use of the term "ballonet," and note that she seems unaware of a brief but serious economic recession; one result of which were drastic squeezes in government spending during this story's time frame. Congress did decline to fund a *Roma* replacement then; however, shortly after, in better times, it would fund an Army semi-rigid designated RS-1 purchased from Goodyear. She does correctly observe that the Army attempted to man the *Roma* with an exceptional crew. The list of those lost is filled with multiple commissioned officers and senior NCOs totally out of proportion to a typical military organization.

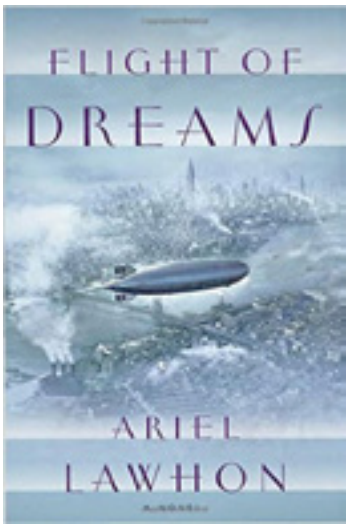
I commend the book for your consideration for two reasons: it is an easy read (one weekend for me) and an informative one. The publisher is The History Press, Charleston, S.C., www.historypress.net and the cover price is $21.99. The ISBN 978-1-46711-920-7 and the Library of Congress Control Number is 2015953420. Ω

Member Paul Adams continues an incredible job creating the new internet-based magazine Cardington Chronicles. January 2015 is posted at http://joom.ag/TwOp and the April 2016 issue is http://www.joomag.com/magazine/cardington-chronicles/0922359001462973350?short Ω

John Mellberg called attention to a new stereo viewer similar to the old-timey original Zeppelin Stereo Viewer, available at Barnes & Noble for under $10.00. It's possible to remount images and create a 3D effect. John wrote, "You can have your own set of 15 durable images of the building of the *Hindenburg* in stereo. Very impressive!

With the original Zeppelin 3-D Stereo Viewer all but impossible to find today, this is an inexpensive way to have something historic and truly unique." **Ω**

FLIGHT OF DREAMS
(book) By Ariel Lawhon
Reviewed by C. P. Hall II



In one corner of a large cabinet I have a small section of a shelf dedicated to airship fiction. Several titles date back to the 1920s, some are older, a few are more recent. Not included are the likes of "THE HINDENBURG" by Michael Mooney even though it might qualify and the movie surely does! Airship fiction is rare; I have reviewed but two examples of novels. Here are offered thoughts on two recent examples; my #3 & #4.

Both of these novels are loosely based upon actual events in aviation history. The climactic event in each case being the crash of the largest, commercial rigid airship in existence: the R.101 in "The Airshipmen;" the *Hindenburg* in "Flight of Dreams." In both novels, actual historical characters interact with fictional characters to advance the fictional plot line leading to the smashing conclusion. In both novels, though the airships and the principle characters are British and German respectively; each includes a key central, pivotal, character who is an American. "The Airshipmen," reviewed last issue, covers a time frame from the crash of R.38 (1921) to the crash of R.101 (1930); "Flight of Dreams" covers but three days of time, the duration of the *Hindenburg*'s final flight.

"The Airshipmen" is the more airship-oriented story and, for the sharp-eyed reader contains the most technical errors. In 10 years, Dennington goes much farther afield with flash-backs to the First World War, a visit to Depression Era Washington, D.C., and an encounter with the Ku Klux Klan in addition to airship building and flying. The knowledgeable reader will recognize familiar anecdotes, recycled from other sources, the use of which some may find questionable. However, for that knowledgeable reader, this character study of "The Secretary of State for Air – Brigadier-General the Right Honorable Lord Thomson of Cardington, PC, CBE, DSO" more than compensates for other shortcomings. This is neither Nevil Shute's version, Sir Peter G. Masefield's version, nor Sir Basil Liddell-Hart's obituary of Lord Thomson and, though fictional, conveys a tone that rings close to believable.

"Flight of Dreams" offers the *Hindenburg*'s last flight as a backdrop for the interaction of the author's characters, both real and imagined. There is little to criticize technically as there is little technical about *Hindenburg* to criticize. At one point there is a line about a Nazi luxury hotel and it might as well have been. Am I to criticize airship officers being provided with Lugar pistols when a Walther would have been more discreet, or checking the cylinder of the stolen Lugar to be sure that it's loaded when a Luger has no cylinder? I enjoyed the interaction between characters both real and fictional with the backdrop of threatened sabotage to hydrogen-filled *Hindenburg* being the true back drop which has a contemporary analogy in the 21st Century.

Perhaps I am showing my age but I feel obligated to observe that both novels contain a level of sexual content that has become de rigueur in modern fiction. Faithfully transferred to the American movie screen, both would likely receive an "R" rating. In "Flight of Dreams" though the *Hindenburg*'s "luxury" passenger sleeping compartments may have been quite compact (and the crew's quarters even more so) there was a remarkable amount of action on a three-day flight. I mention this only to suggest that adults buying either novel as a gift for a youngster may wish to read it themselves to ascertain its suitability for the recipient.

READY ROOM

DGLR Workshop XV Aircraft LTA:
"Hydrogen in Airships
Chances, Challenges & Concepts"
University of Applied Sciences
Bremen Flughafenallee 10, 28199
Bremen June 10 & 11, 2016

60th Coupe Aéronautique Gordon Bennett FAI World Gas Balloon Championship
Gladbeck, Germany
September 15 - 24, 2016

45th Albuquerque International Balloon Fiesta October 1-9, 2016 in New Mexico

NEXT NAA REUNION:

We are seeking the membership's opinions on two important issues:
1) should we remain on a 2-year cycle or switch to yearly reunions?
2) Should we consider for the site of the next reunion: a) Akron/Goodyear, b) Seattle/Museum of Flight, c) Sunnyvale/Moffett, d) Tustin, e) Other _____
Please contact any NAA officer with your choices/preferences, either by e-mail or telephone. **Ω**

BLACK BLIMP

Frank J. Hudner passed 7 FEB 16. Frank served in East Coast LTA and is thought to be one of the last surviving pilots from ZP-14's WWII deployment in the Med. Frank became an IRS Special Agent post-WWII. Frank is survived by his wife Betty of 69 years, a son and several grand and great-grand children. Ω

Herman Van Dyk Soerewyn, 91, passed on 31 MAR 16. Long known to NAA members and other LTA enthusiasts from his extensive work in airship history, Herman was fascinated by airships ever since watching Zeppelins fly over his Dutch village. An engineer holding many patents, Herman researched obscure LTA history, translating odd dialects and recreating three-view plans of airships old and new. Herman is survived by his wife Connie of 64 years. Ω

Del M. Gates, 95, passed 29 APR 16. Born and raised in Akron, Gates enlisted in USN LTA in 1942 and was assigned Lakehurst. He worked BuWeps ASW including the Mk 46 torpedo. Postwar, Gates flew with Goodyear in California where he met his wife Barbara of 48 years. Del is survived by daughters, grand and great-grandchildren. Ω

Domenic Fucile passed 12 MAY 16. Domenic was onboard the first blimp to briefly touch down on South Weymouth on the day it was commissioned and may have been the last person in the Boston area who flew blimps out of NAS South Weymouth. Ω

Joe Konkel passed 4 NOV 15. Ω

John (Jack) Walter Vaughn, 94, passed away 25 MAR 16 at Stuart, FL. Vaughn was aboard the last K-ship to leave Brazil in 1945. After his Navy career Vaughn became a teacher. Ω

Joseph V. Dymkowski, 93, passed 22 JAN 15. He served as an officer in LTA in WWII, flying blimps from Santa Ana, California. Following the war Joe earned an engineering degree from USC, then worked for McDonnel Douglas for 38 years. Joe is survived by children and a granddaughter. Ω

Charles V. "Vince" O'Brien, 84, passed 2 MAY 15. Vince joined the Navy after high school and progressed from Seaman recruit to Naval Flight Officer. Lt. O'Brien served in Korea and Vietnam. Vince is survived by his wife of 24 years, Judy, and grandchildren. Ω

LIGHTER SIDE

Howard Hughes was told he needed two "L" ships to properly advertize Jane Russell's "The Outlaw." ☺

The upper starboard fin was affixed using a crane and two cherry pickers. All new is the Multi-use Cabin, replacing the original cargo module designed for electronics. Lower right, one of the four 350 hp, 4 litre V8 direct injection, turbocharged diesel engines to be hoisted up onto the stern of the hull. It was attached to five carbon composite battens. Re-assembly of the former US Army LEMV into the Airlander 10 was said to be complete on May 5th.

LEMV, once nicknamed "Mary" after a character in "Total Recall," later as Airlander 10 and then nicknamed "The Flying Bun" after a show business personality, the former RZ-4A is now officially "The Martha Gwyn," by Royal Proclamation. Approval for first flight has been obtained.