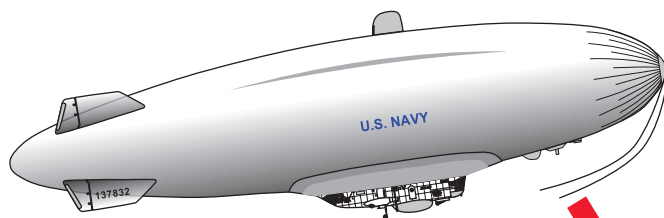
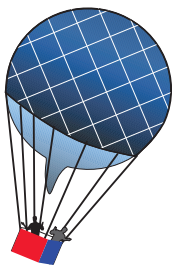
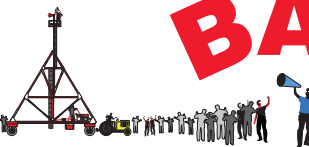


THE

NOON



BALLOON



The Official Newsletter of THE NAVAL AIRSHIP ASSOCIATION, INC.

No. 95

Fall 2012



LEMV Rollout & First Flight

Photos: MAV 6 model 1400 airship during construction. A man close to the work told TNB, “We were six months behind schedule, single-digit percentages over budget – neither of which LEMV or any USG program of the last 10 years is even within shouting distance of (a year+ behind schedule and 25-100% over budget in many cases). If our patrons hadn’t retired and such, the “issues” wouldn’t have even been on the radar, but without them, any excuse to kill us is good enough...”



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ISSUE #95

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*This is the 25th issue produced by the "new" team.
On the cover: LEMV makes its first flight: Tuesday, 7
AUG 2012, just after 6:30 pm.*



THE NOON BALLOON

Newsletter of the NAA

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All material contained in this newsletter represents the views of its authors and does not necessarily represent the official position of the Naval Airship Association, Inc., nor its officers or members.

EDITORIAL

R.G. Van Treuren, Box 700, Edgewater, FL 32132-0700, rgvant@juno.com

The fire and ice, feast-then-famine world of LTA began this quarter as it has in recent decades – a program nearing completion had its plug pulled on the eve of flight when a key supporter retired. On the flip side, I believe the LEMV, the largest flying object since the ZPG-3W of fifty years ago, taking to the sky, was much more than just a company's payday milestone. Five decades from now LEMV might be recorded as being the "tipping point" that awakened 21st-century LTA from its last extended hibernation. Undeniably, Murphy is always lurking about, and a fast-track program featuring revolution vs. evolution will afford Old Murphy an above average number of opportunities for mischief. Yet in spite of the hopeful civilian customer passing on its first option, and doomsayers continuing to insist there is no future after affordable helium, dare we say major LTA has finally awakened from its fitful sleep? Of course we wish the Northrop-Grumman team all the best as they integrate avionics and begin their test and refinement regime. However, Providence forbid, LEMV misses its combat or political goals, we can still be cautiously optimistic that with so many airships in various stages of development and construction, LTA really is coming back.

During Debbie and mine's recent 30th anniversary cruise-tour of Northern Europe, we were literally in Belgium on Tuesday. (That's because we had to be in England on Wednesday the 20th of June for the Airship Association

Nearing their 100th birthday, these structures are what's left of some mighty Zeppelin hangars erected during the War To End All Wars. First in the line now houses the fish market, with its powerful aromas. The others specialized in meat & poultry, textiles, baked goods, and – in the one athwart the first four – a bit of everything Latvian. We thought you'd enjoy some snapshots of the visit.

While NOON BALLOON is always my top priority, I am having to cut back a bit on time spent pursuing answers and requests from non-members. I figure it this way – if a person claims to be an airship nut and wants certain photos, plans or information without becoming an NAA member... then they can search the net. One Canadian who claimed to be building a replica of the RS-1 said he'd join, and asked for materials we'd fought for in time and treasure. Still waiting for his membership, let alone reimbursement for sending what he asked for. No matter, we continue to plug away at bringing 'ZRS' the movie to the big screen, with the longest lead time item having to build the airship's defensive fighter plane. (BuAer design #124 will be portrayed by our Silence Aircraft "Twister"). As an aid to this end, we were determined to camp for the whole week of Oshkosh's Air Venture. I got my money's worth, attending about two airplane homebuilding seminars a day.



Symposium, see pg. 26) We finally crossed off a "bucket list" item by visiting the Central Market in Riga, Latvia.



Publisher David Smith (left) and member Eric Brothers are seen with hopefully-member-to-be Abbey Manalli, whose "Altered History" booth featured some clever and interesting LTA-oriented stickers, buttons and shirts. Abbey, along with Goodyear's *Spirit of Akron* airship, were the LTA highlights of AirVenture.

- R. G. Van Treuren

View From The Top: PRESIDENT'S MESSAGE

It seems like I just finished my 1st message as the newly elected president and I have another one due now. The first couple of months have been busy and a lot has been accomplished. As briefly reported in the previous Noon Balloon, I have asked member Bill Wissell to join our Executive Council as Member-at-Large, West Coast and he has accepted. Bill brings a wealth of LTA knowledge and firsthand experience at helping to save Hangar 1 at Moffett Field in CA. He has been a long time member of the NAA and contributor to our efforts. Bill will be a great asset as we move forward.



The NAA website has been of interest to me for quite a while as anyone who read my Membership Update articles in previous Noon Balloons knows. In this age of technology, the website is our public face and a great asset in attracting new members. People will automatically look to an organization's website first for information. I have had a goal to greatly increase the historic content of our site and make it not only accessible, but also easy to navigate. We have a wealth of LTA experience in our membership and we should highlight that. We need to get more members on video or audio tape as well as on paper to capture their experiences no matter how trivial they may think they are. Just look at the last issues of The Noon Balloon to see how someone's recollections have brought others forward. To this end, I have appointed a committee of David Smith (chairman), Al Robbins, Richard Van Treuren, Don Kaiser (history webmaster), and Bo Watwood (website art administrator) to start work on a new history section to encompass all the Navy LTA history we have accumulated and to publish it on the website so that it is available for research, study, or just reading for the enjoyment of our members. This is a huge undertaking, but I think it is a worthwhile project. There is no deadline for completion until the group has a chance to study the issue and make a recommendation. The goal is to make the NAA website THE source for Navy LTA. If anyone would like to help in any way, please contact me or any committee member, we will need help.

By the time you read this we will have had our Executive Council meeting. We have a lot of items to discuss and one is my vision for the NAA in 2012 and beyond. In a message after the meeting I will go into some detail on that plan. In general, I will talk about the website, as noted above; some minor changes to the by-laws to bring them into alignment with current practice and to clarify a few issues; a collections policy for photos, papers, and artifacts that are donated to the NAA; the next, and future, reunion plans; and, finally, my version of what outgoing president George Allen called Future II in 1995. This is the foundation of a plan that will take the NAA through the next 5 years in which we expect to see major changes in our membership demographics. We need to appeal to a totally different LTA market as we grow. As I write this, the Air Force has stopped work on a promising LTA program and the Army is the only service flying a manned airship. Strategic partnerships should be explored with other LTA organizations, in the US and internationally to broaden our exposure to these new markets; all the while never losing our identity nor sight of our primary responsibility to US Navy Airship veterans and enthusiasts.

Al Robbins and Herm Spahr end their emails with, "Upship!" I'm going to close this with:

Vientos Favorables y Puertos Seguros.

- Fred Morin, President

TREASURER'S STRONGBOX



As this summer comes to an end, it means we are approaching that time of the year for renewing our memberships. Be on the lookout for the renewal application arriving sometime in the late fall by first class mail from Bloomington, Illinois. All renewals are due by 01 January, 2013.

For those of you that utilize our NAA website, you have the ability to monitor, change and pay your dues. Just log onto: www.naval-airships.org website. On the upper right hand side of the screen, enter your e-mail address and password, then click on view profile. You can safely pay your dues by PayPal which is directly linked to the NAA bank account here in Port St. Lucie, Florida, and to me.

WELCOME ABOARD NEW MEMBERS!

Bob Cook, Levittown, PA
Mike F. Sheridan, Miami, OK
Alvaro Memdoza, Miami, FL
Peter J. Urban, Hatboro, PA
Virginia A. Fitz, Lebanon, NH
Jeffery Matthews, Twentynine Palms, CA
Luther Franklin, Issaquah, WA

DONATION

Warren E. Savant

PIGEON COTE

Some e-mail discussion resulted in History Chair Al Robbins revising his 1959 LTA Register:

LUNDELL	George Warren	LT	453079
MATTHEW	Warren Body	LT	466576
ROWLAND	David Arthur	LT	437076
SCHOU	Aage James	LT	391070
BROOKS, III	Eugene Robert	LTJG	395828
CROSBY, Jr.	Richard Dudley	LTJG	480012
TURNER	Lyman O.	LTJG	407564
DZIENGIELEWSKI			
	Eugene Leonar	ENS	586404
HARRIS	Neil Allan	ENS	586409
KROCHMAL	John Jacob	ENS	585735
MORRIS	Donald Monte	ENS	586434
PATTERSON	Charles William	ENS	586417
RITCHIE	Lee Robert	ENS	585988

The others are listed, but none with an assigned class number, as follows:

ALLEN	LT	1310	NAS Lakehurst
BROCK	LCDR	1310	NATC PAXRIV
CARLSON	LCDR	1315	BAR AKRON
DEWEY	CDR	1310	ARLANG SCOL
DIAMOND	CDR	1315	AIRSHIPTRAGRU
ETHERINGTON	LT	1315	BARLANT
EVANS	LCDR	1315	Whidbey Island
HAMILTON	LT	1315	NABATRACOM
HARTMAN	LT	1315	NAS Pensacola
HILL	LT	1310	AIRSHIPTRAGRU
KRYSPIN	LCDR	1315	AIRSHIPTRAGRU
LOY	LCDR	1317	NARTU NASL
MABE	LT	1310	Preflight school
PROULX	LCDR	1315	AIRSHIPTRAGRU
RUST, Jr.	LCDR	1317	NARTU NASL
SAPP	LT	1310	NPGS
SMITH	LT	1310	NAS Lakehurst
STEPHANY, Jr.	LT	1315	AIRSHIPTRAGRU
WHEELER	LT	1315	VQ-2

Al reports, "The 1959 roster lists LCDRAage E. Schou, 1310, assigned to NADU; too close to be a coincidence. So now I only have to clear up three hundred more unknowns from the '59 Roster. Here's hoping putting the list in the NOON BALLOON might elicit some correspondence regarding assignments, and even get some of the other Glynco trainees to step forward." Ω

- Peter F. Brouwer, Secretary/Treasurer

Mark Lutz e-mailed some questions after reading statements released about the M-1400:

1) How does it get to 20,000 feet when the K-ship was (under optimal conditions) just able to get to 10,000 feet? Answer: The fully inflated ballonets occupy ~50% of the gas bag as opposed to ~25% in a K-ship. This also explains why this ZPG-2W-sized airship doesn't have more payload - it has less sea-level helium than the 2W.

2) Climb and descent max rate is an astonishing 3,000 feet per minute due to very powerful ballonet blowers. (Max climb and descent rates are one of the areas where LTA shines compared to HTA - HTA can do well there only if given huge amounts of power. I think the K-ship was very impressive in its 2,000 ft/min climb rate compared to WW2 HTA).

3) It is supposed to be the first truly VTOL airship - 6 propellers, 5,000 lbs thrust.

4) MAV6 points out their autonomous control system is more complex than for an HTA vehicle. (HTA such as the Predator doesn't have ballonets to keep adjusting.)

It would be really stupid to have the M1400 90% complete, allotted money for its 2012 construction still unused, and not use that money to complete it and test fly it. There have been so many military airship proposals and half-hearted build attempts in the last 10 years - some say up to \$1 billion has been spent - we need to fly this one and see what today's military airships can and cannot do, rather than working on theoretical untested ideas. This will put some reality under future military airship thinking.

Can M1400 really operate reliably at 20,000 feet, or will it be like the WW2 K-ships and be seriously pressure-height limited in realistic conditions? What is its realistic endurance? Estimates for that are all over the map - anything from 3 days to 21 days. If it easily does 21 days, airship proposals will get a more serious effort. Does autonomous airship flight actually work? There's much less political risk in having it shot down or fail if it is unmanned. Finally, it would be really stupid not to put in at least the sensing systems mounted in the predator UAV and see if the results are better in the airship I'm thinking due to airship ability to stay in place rather than having to circle. I suspect, for example,

the image recognition software will be more successful looking for changes in a steady image, than in looking for changes in an image which is constantly moving because the vehicle is constantly moving. Changes would include someone planting an IED while wearing camouflage. From what I can make out here and there on the web, image recognition software, looking for changes such as someone planting an IED, has a lot of trouble - it's not nearly as successful as its creators like to claim, using actual images from Predator-mounted cameras and other sensors. Of course it may well be the airship vibrates less than the Predator too, and that this is important for image sensing. **Ω**

*Several messages cc'ed: from members concerning the earliest production K-ships revealed some unpublished history: **John Fahey** e-mailed, "I am familiar with a lot of the K-5's history as well as the K-2 through K-8. Our class which had over 80 students in it flew the K-2 through the K-8 in the fall of 1943. During that time I had 7 flights in the K-5, a total of 35.9 hours, on October 6, 11, November 5, 15, 28, and December 1, 2. My final check flight for graduation was in the K-5 with check pilot Southward. I had a flight with my cousin who was an instructor in July 1943. All these flights were of course at NAS Lakehurst.*

In June 1942 K-5 was based at Weeksville, North Carolina and is famous for being the first aircraft to arrive at the scene of the merchant ships' sinkings off Virginia Beach. The K-5 dropped depth charges, but U-boat 705 which had mined the area had departed 20 hours earlier. This was a memorable date in Naval Airship history because on the date following the first sinkings by mines, the United States Congress appropriated funds for 200 new Navy airships. On a local TV program here I included the segment showing the K-5 dropping its depth charges at this scene. Most of K-5 flights were made as a training airship at Lakehurst. Many hundreds of our WW II airship aviators learned to fly at Lakehurst in the K-5. After squadron duty on the east coast in 1942, the K-5 was a training airship and never returned to fleet duty. As I mentioned, I had 7 training flights in it. My first cousin, Howard Fahey, an instructor had many, many, more.

You wrote that the K-5 was back from (California?) in 1944 and assigned as a training airship. I can assure you

that the K-5 never left the East coast and in 1943 was flying every day in the training command... The crash at Lakehurst of the K-5 on May 16, 1944, was one of the saddest ones for us who had been students of Jordan Kilpatrick. He was the most liked by all the students. If you want to keep the history accurate, don't place the K-5 on the West Coast."

Al Robbins thanked John and e-mailed, "Jim Shock's book doesn't say that K-5 had been shipped to the West Coast. It was back at Lakehurst, assigned as a training ship in 1944. While practicing touch and go's on 16 May 1944, it struck Hangar 1 and deflated on Hangars 2 and 3. Only W. A. Austin, MM3c, survived. Casualties identified as:

LT Jordan W. Kipatrick
LTJG Frank B. Keller
LTJG William C. Dunn
LTJG John W. Hulm
LTJG Cain Smith
SiC-V6 R.G. Wheaton
R.A. Luther AMRC2c
P.C. Bailey AMM2c
L.W. Hajduk ART1c

I only saw one K-ship, it was in Hangar 1 while I was helping install the experimental APS-70 in the SNOWBIRD in 1956. Supposedly it was some sort of Project Bird and they wouldn't let us go near it.

Jim Shock's K-1 info: Slightly different dimensions. But the important difference, the car was fabricated at Lakehurst and mated with a Goodyear envelope, and Army TC-type control surfaces. First flight 3 October 31. Lots of innovations: First internally suspended military control car; Galley and bunks for relief crew; Ground handling wheel; and powered by neutrally buoyant fuel gas. Outfitted with an Army Skycar for a short period. Sadly the fuel gas contaminated the Helium so that it couldn't be recycled. Modified at Akron, after an accident at Cape May; returned to Lakehurst in August 1935 (larger engines, longer outrigger and other minor mods to the car). Outfitted with a new envelope at Akron in 1937. Jim doesn't tell whether the fuel gas system was replaced during either of the Akron overhauls. Last flight Sept 1940, Stricken 31 Oct 1941. The K-2 was designed as the first patrol airship since the D-Ship in 1919. Patrol, primarily relying on clean windows and the Mark-1 eyeball. Unfortunately, the

Navy had forgotten all the lessons learned from airship battles with U-boats during World War I. We didn't even have ASDIC.

I've never seen a list of sensors or weapons installations for any of the pre-war K-ships. Nelson Grills told me that he "obtained" the obsolete army bomb racks which they installed at Lakehurst. (I think this was while he was a Contracting Officer at BuAer, before he wangled his transfer into the LTA program.)

If any of you have any good sea stories, or other "True Facts", about flight testing the various sensors Radio Direction Finders, Radars, Magnetic Anomaly Detectors, Sniffers, etc. please let us know." Ω

Bob Freudenberg told us of his Dad's passing, (see "Black Blimp") writing, "I thought some of my Dad's colleagues from his LTA days might want to know that he passed away last week (May 25). He was stationed at Lakehurst from 1957 to 1966 and was a ZPG-3W crew member in 1960. He was not on the blimp the day it crashed. I'm not exactly sure why, as he lost some close friends that day, and didn't like to talk about it. From some isolated comments and bits of info, I think that he might have been back at base working on their primary blimp when their back-up crashed with most of his fellow crew members.



I've also attached a circa 1977 picture (above) taken when Dad received an award when working for NAVAIR Engineering. He worked for NAVAIR at Lakehurst and then Philadelphia for many years after retiring from active duty military." Ω



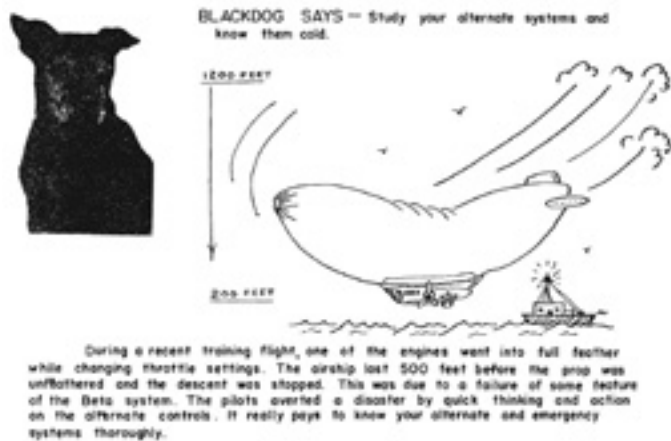
Paul Adams located this one (above) of a series of released photos from the days of the "Flying Wind Tunnel." The print's stamped backside is also revealing (above, right). Anyone have a shot of the *Albacore* hull shape models under test? Ω



Bill Walker sent along the image from Houma, LA, below, in hopes anyone might be able to i.d. former shipmates. Please let someone know if you recognize anyone in this print. Ω



Michael Hanneld scanned and sent along an entire set of “Blackdog Safety Sense” sheets which he believes originated at Glynco perhaps with ZP-2. We shall insert them as time and space permit. Ω



Herm Spahr forwarded a group of photos that had sent by CAPT “Bucky” Newsom to **Ray Bacci** of LTA Class 2-44, taken August 1943 at Moffett:



Top: Flight Section 2 – A – 11: Newsom; Igo; Turkington; Acosta



On display at the Reunion Ready Room: ZR-1



Top: Fairby and Turkington. Below: Thompson, Igo, Fadesby, Stewart, Walbaum, Turkington, Acosta, Bacci, Fairley; Spring and Ripenback.





Betty Brouwer e-mailed this photo, "The couples are George & Dottie Allen, Joan and Jerry Bess of St. Louis, Mo., and Betty & Pete Brouwer. Joan & Jerry were in St. Augustine and picked up George and Dottie to meet us at the Cracker Barrel in Daytona on July 25." A second photo of the airship vets in the restaurant's porch chairs could have had the caption, "A Rockin' Good Time!" Ω

We received word that Patricia Evelyn Gilbert Shock passed on June 13th 2012. Pat was the devoted wife of airship historian James Shock from 1951 to his passing last year. Jim had devoted his US Navy Airships book to Pat, "for her patience and understanding." Sadly ironic that neither lived to see the new US Army airship fly, since Jim had devoted so much of his effort to chronicle "US Army Airships 1908-1942." Doubtless he's smiling on the ship from high above. Ω

Member **Alvaro Mendoza** (almen63@yahoo.com) wrote Tres., "I will appreciate if you can start a request to all the members of the NAA, to see if we can obtain information from members that served during WWII in the US Navy base in Soledad, Colombia, near Barranquilla. It would be a great news in my hometown!" Ω



History Chair **Al Robbins** has corresponded with antique dealers, located in northern Georgia. They happen to be members of the same church as the elderly woman that inherited her uncle's box of records. "We met with the Combes and they gave us a lot more information and pictures of Walter--some of when he was young and a number of various photos at different ages. He apparently emigrated from Austria or Germany when he was approximately 30. He married in Albany, New York, to Elizabeth Heinzelmann. He had one child Elsie who is deceased. I am sending you a few photos of two additional propellers prototypes for an airship. They are made of metal--maybe you could figure them out. We talked Sunday about sending you the Kamp leather manual and decided we would send you a copy in its entirety which I will ship tomorrow so you should have it by Friday. They once again are fascinated by the work you did in looking up his patents and were thankful we gave them a copy." Al explained, "Charlie had only gotten involved with their treasure trove a few days before he called Herm, and Herm called me. None of them had any previous involvement with airships, and we're just starting to ferret out how much the niece remembers about her uncle. According to Kamp's first patent, he was already a U.S. citizen. I'd never known that he was an immigrant, that his original name was Van Knapp, or that he was the primary engineer and designer in the MacMechen and Kamp company.

Their M&K "Zeppelin Killer" was a highly secret Royal Navy contract started early in World War I and abruptly terminated. Even the British don't have much information on it. Hopefully, the book may shed some light on what MacMechan and Kamp did after the war. This is the first photo (left) I've seen of Mr. KAMP/VanKnapp, unfortunately it's undated. The curious propellers are obviously test models. Maybe there's something in his book about them also. Notice the various assembly processes he's employed. Casting and welding were still fairly primitive technologies in the 20's, but I'd hate to trust a prop with a blade held on by a single small screw. Ω



SHORE ESTABLISHMENTS – LAKEHURST

The military is looking into airships for research, surveillance, intelligence, ... By Edward Colimore, Phil. Inquirer Staff Writer (Excerpt).

While aloft, the manned 178-foot-long Navy blimp emblazoned with red, white, and blue rudder stripes, has drawn wide-eyed stares from onlookers across Philadelphia's suburbs and along the Jersey Shore over the last several months. The MZ-3A's testing at Joint Base McGuire-Dix-Lakehurst is part of the U.S. military's renewed interest in airships, known for their ability to stay airborne for long periods and land without runways. "Over the past decade, as drones have gained favor in identifying and sometimes engaging enemy forces, an 'old-new' concept has also reappeared - the observation dirigible," said *[NAA member]* Guillaume de Syon, an aviation historian, author, and professor at Albright College in Reading.

The MZ-3A was *[re]*commissioned by the Navy in October. Its throwback markings and colors celebrated the centennial of Navy aviation. The sight of the Navy ship "brings back fond memories of the blimps" of that time, said Carl Jablonski, president of the Navy Lakehurst Historical Society, a nonprofit organization dedicated to promoting the joint base and preserving its history. The Navy has owned the MZ-3A since 2006 and used it as an advanced flying laboratory to evaluate intelligence, surveillance, and reconnaissance sensors as well as lighter-than-air technologies. It was used to monitor the Deepwater Horizon oil spill in the Gulf of Mexico in 2010, and onboard observers found its low speed particularly well-suited for the mission. A pilot and nine passengers can fly in the helium-filled craft, which can stay airborne more than 12 hours and cruise at 45 knots at up to 9,500 feet. It will be moved to Florida in the fall to avoid the harsh winter weather and return in the spring for annual maintenance, said Marcia Hart, a Navy spokeswoman at Naval Air Station Patuxent River, Md., site of the Naval Air Warfare Center Aircraft Division, which manages the Navy Airship Program. Blimps have found some niche service since World War II, usually for reconnaissance and artillery ranging, de Syon said.

But after the decommissionings in the 1960s, they were "good for Sunday game rituals and some nice ads," he said. "But now the old formula is back and improved." Ω

NEAM

(Internet) The restoration of the only surviving example of a World War II Goodyear blimp control car is nearing completion, some 20 years after it started, at the New England Air Museum. The extensive restoration of the blimp control car, one of about 80 aircraft on display at the museum, is an example of the painstaking work carried out by dozens of volunteers who restore aircraft of historical significance. "The work that's going into it is unbelievable," says museum director Michael Speciale. "It's a mostly unrecognized aircraft of World War II."



Unrecognizable or not, the Goodyear blimp played a critical role in the war. Prior to its introduction, there were many German submarines off the United States coast, sinking one American ship after another. "The blimps," Speciale said, "were great at sighting submarines... The blimp car we're restoring is the most magnificent restoration I've ever seen."

Led by a part-time coordinator, virtually all the restoration work is done by highly-skilled volunteers such as retired engineers and machinists, who know how to weld, rivet and paint. Russell Magnuson, a retired machine designer and mechanical engineer at New Britain Machine, has been volunteering at the museum since 1990. He said he wasn't working as a tour guide for long before he was tapped to head the volunteers as crew chief, working on the blimp control car restoration, in 1993. "I think I was out that day, and they picked me (as crew chief)," Magnuson joked. "I'm 83; I've gone through maybe four or five crews (since the work started) as some of the volunteers have passed away." As knowledgeable as he is about World War II history, Magnuson is nothing short of an expert on

the Goodyear blimp control car he has restored with complete dedication. “We’ve put in over 30,000 man hours on it,” he said. “They stripped everything out of the control car except for the pilot seats,” Magnuson said. “Goodyear used it for less than a year, and then they put it in storage.” The car remained in storage in Ohio until 1989. It was shipped to the museum in 1989 and started deteriorating until work began in earnest to bring it back to its heyday, in 1993. “We don’t just restore items to make them look good,” Speciale said. “They should be accurate. We actually restore them on the inside as well.” The crew began with removing about six coats of peeling exterior paint. The car’s 42 exterior windows, made of Plexiglass, were all replaced. Magnuson then took on the interior floor. The floor was made of balsa wood, and it was badly deteriorated. “They used it because it was light; they wanted to save all the weight they could,” he said. “I took the floor apart, and it was just like pulp. I was afraid we were going to fall through the floor.” The wood was replaced with exterior three-quarter-inch plywood. While not true to the original, Magnuson said, it was the best option for the 6-by-42-foot floor, which may have visitors walking over it some day. After finishing the straightforward restoration work, Magnuson and his crew started looking into the more detailed parts of the project. “I contacted Goodyear to see if I could get any engineering material or blueprints so we could rebuild everything that was missing, but they said they got rid of it after the war,” Magnuson said. “So we had no documentation whatsoever.” What the crew was able to access was maintenance materials for the aircraft, including some sketches and detailed photographs.

“Being an engineer, I re-engineered every item in that blimp,” he said. “I made detailed drawings at home of all the parts, and my crew would fabricate the parts in the machine shop at the museum.” The volunteers recreated the entire galley in the control car, complete with coffee percolator. There’s also a navigator’s table, where the navigator sat and plotted the courses. “We rebuilt the radio operator’s table with all of the equipment, which we found on eBay,” Magnuson said. “One of the volunteers is a ham radio operator, and

he knew people from all over the world who collect antique radios. Through his efforts, we got most of the original type of radio equipment.” There’s also an aluminum sink, a faucet and a water tank where the crew would have washed their hands. There’s also a toilet, all “made from scratch,” Magnuson said. The crew recreated signal flares and replica cartridges, which the crew would have used to signal a merchant ship, as well as a machine gun turret, which took Magnuson a year to build. One unique aspect of the control car is the replica pigeon cage. Each of the blimps had a small cage containing six pigeons. The birds were tagged with messages and released, and would fly back to the base with the messages.

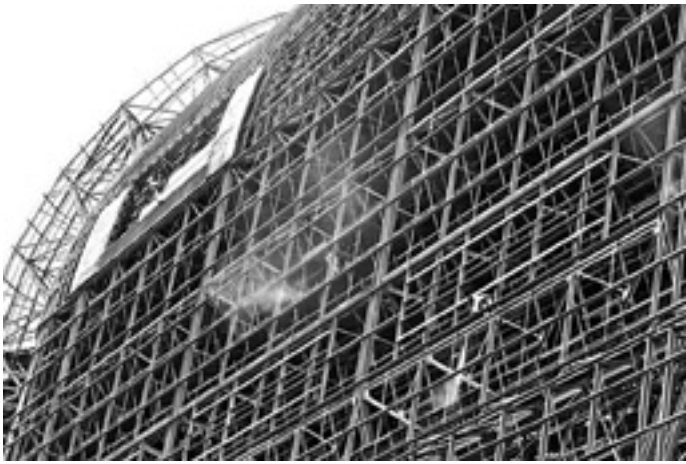
As the project nears completion two decades after it started, Magnuson said he’s proud to have worked on such an important piece of history. “They did a very important job, and we lost so many crews (before they were used),” he said. The restoration work on the control car has been done while it is on display, so visitors can catch a glimpse of the progress being made. Other aircraft currently undergoing restoration work at the air museum include a S-59, the first jet-powered Sikorsky helicopter, dating to the 1950s and a Douglas A-26 Invader World War II bomber, which was involved in the D-Day invasion. Ω

Santa Ana/Tustin



This internet photo shows some familiar names on Tustin street signs. Site continues to be used in film and TV commercial production. Ω

MOFFETT FIELD



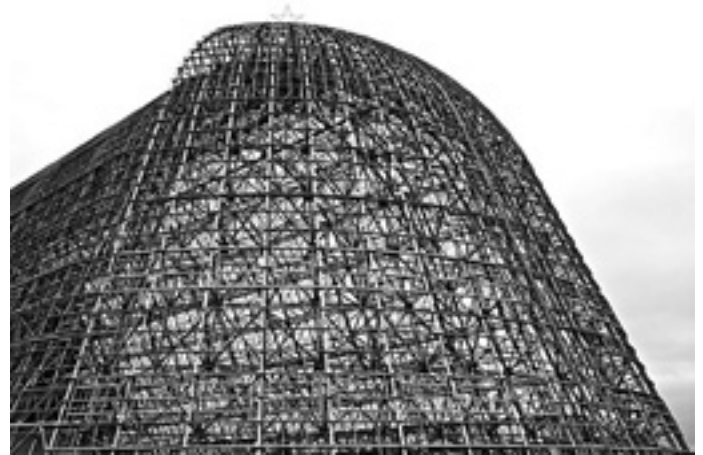
NASA wants GSA to dispose of Hangar One, Moffett airfield by Daniel Debolt

Derailing restoration plans for Hangar One and causing anxiety over Moffett Field's future, the head of NASA wants to assign the General Services Administration to determine the fate of Moffett Field. NASA administrator Charles Bolden says Hangar One and the runways at Moffett Field are "excess to the agency" and therefore should undergo a review by the General Services Administration, according to an April 6 letter to Congresswoman Anna Eshoo. The GSA may decide to give the property to another government agency, such as the Federal Aviation Administration or nearby cities. Eshoo says that the local community has confirmed its support for existing plans for the airfield and Hangar One several times in recent years and is therefore "disheartened by the news and skeptical about the practicality of such a review," she said in a letter on Wednesday to the Moffett Field Restoration Advisory Board. "The local community has been working with NASA Ames, Navy, regulators, and other stakeholders for more than 15 years, a sometimes contentious but ultimately constructive process that has resulted in a clear understanding among all of the parties," writes RAB member Steve Williams on his blog. "But NASA headquarters wants to start that process over with yet another bureaucratic federal administration, the General Services Administration."

Because there is no "mission" for Hangar One, Bolden says it cannot be leased in the long term to the founders of Google, who through their private plane operator H211 LC have offered to restore the iconic structure, priced by NASA at over \$45 million.

In his last letter to Eshoo, which is also signed by GSA acting administrator Daniel Tangherlini, Bolden does not use the word "excess" to describe Moffett, possibly indicating that he will be leaving that to the GSA to determine during the review. A final determination could take years, Berry said.

If NASA does give up Moffett, Siegel said the city of Mountain View could be given half the airfield, including Hangar One. The Federal Aviation Administration could have first dibs, however, though Siegel says another airport at Moffett would be a hard sell when San Jose airport is at only 65 percent capacity. "We are definitely in line to possibly get half of that airfield," Siegel said. "That property out there would actually become Mountain View. That is something we need to prepare for." Ω



Bill Wissel reports, Hangar One here at Moffett is completely naked, now. All of the siding is off. There was nothing formerly announced, but everything said implied that the G.S.A. will be resolving Hangar One. An exterior coating is being applied, it has a 12 year expected life. The RAB board questioned what the long term maintenance plan is, the Navy people really didn't seem to have plan. The Navy said they will clean the cement pad, do final cleaning and remove the scaffolding. They expect to be done by November 2012, and have a final completion report sometime in winter/spring of 2013. He also said that they would change the bulbs in the Christmas star before they leave. There are people very actively campaigning for the museum concept and for re-skinning. Nobody has given up, but so far, there is no money in hand. The Google offer still stands. But it will evidently have to go through the G.S.A. process . . . which is said to be very lengthy. Ω

COVER STORY

(‘Aviation Week’ 8/8, Warwick “Ares” blog)
“The US Air Force may have cancelled its persistent surveillance airship, but the US Army has kept the faith, and today (August 7) Northrop Grumman’s Long Endurance Multi-Intelligence Vehicle (LEMV) made its delayed first flight” although no images of the flight have yet been released. It “is designed to operate unmanned at 20,000 ft for 21 days; providing up to 16 kw of electrical power for a 2,500 lb payload of several different sensors. Hybrid Air Vehicles of the UK is the subcontractor responsible for the airship itself.” According to an Army statement, the flight “was to perform a safe launch and recovery with a secondary objective to verify the flight control system operation. Additional first flight objectives included airworthiness testing and demonstration, and system level performance verification. All objectives were met during the first flight.”

When Northrop signed the \$154 million contract for the LEMV in June 2010, first flight was scheduled for 12-13 months into the 18-month development program. The airship is planned to deploy to Afghanistan after the completion of testing, which would now put it into early 2013.

The airship is designed to operate unmanned at 20,000 ft for 21 days; providing up to 16 kw of electrical power for a 2,500 lb payload of several different sensors. Hybrid Air Vehicles of the UK is the subcontractor responsible for the airship itself.

The LEMV is optionally manned and flew with a crew for this first flight. “Additional manned flights will resume following a planned and very detailed inspection of the vehicle,” says the Army.

The Air Force canceled its Blue Devil 2 persistent surveillance airship in May, 18 months after contract award, issuing prime contractor MAV6 with a stop-work order owing to poor performance. The non-rigid airship had been inflated and was undergoing integration in Elizabeth City, but had yet to fly.”

NOON BALLOON was told the press was not invited, but some 200 select guests were on hand for the liftoff of the 302-ft long, 1.35 mil cu ft hybrid. Pilot was Dave Burns and Jim Dexter was co-pilot. Some teething problems were experienced, as with any prototype’s first flight. There have been no official photos released at press time, however TNB has obtained some images of mooring out tests and of course some are on the internet. (It became NBC-National-News worthy when someone posted a brief YouTube video of LEMV aloft.) Not only the largest airship to fly in 50 years, it is also only the second hybrid airship to carry a flight crew. Ω





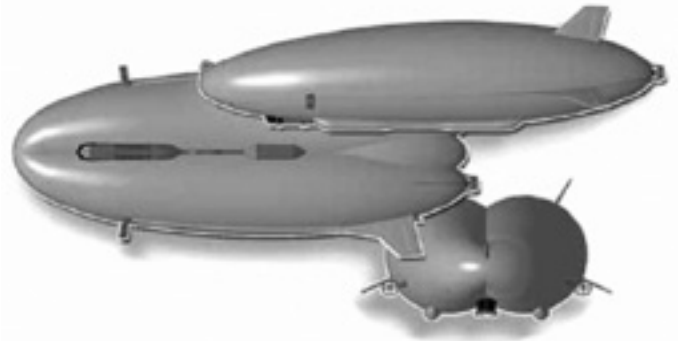
(LEMV excerpts from the Internet including D. Axe)

The spy blimp's inaugural sortie had been pushed back several times; turns out, combining a giant airship with satellite-based remote controls and the latest high-tech sensors is more difficult than Northrop thought it would be. When the Army cut the LEMV \$500-million development check back in 2010, the ground combat branch expected the propeller-driven, helium-filled airship would begin airborne trials in early 2011 and deploy just a few months later. Northrop and the Army repeatedly pushed back the initial launch, without ever explaining exactly why. The first flight had been slated for early June, but unspecified problems forced another two-month delay. The silence over the schedule slippage, and the Army eagerness to forgive development snafus, rankled at least one of Northrop competitors. Other aerospace companies were less crafty and less lucky in their attempts to pump some life into the long-defunct military airship market.

Back in 2006, Lockheed Martin came close to scoring a potentially multi-billion-dollar contract to develop the Walrus cargo airship. But at the last minute the military balked and zeroed out funding. A defiant Lockheed continued refining its airship designs using its own funds and, in March 2011, finally sold its first modern lighter-than-air vehicle to a Canadian cargo company but likely for a fraction what the military model would have cost. In late June Danger Room visited Mav6's cavernous, World War II-vintage airship hangar in North Carolina. There a Mav6 executive lamented the waste of \$350,000 worth of helium, which was set to begin leaking from the Blue Devil 2 and cannot be recaptured. The executive said his company was treated unfairly compared to a certain, unnamed large aerospace firm (*cough cough*) that seemed to get greater leeway from its Pentagon overseers. The executive called the Air Force a "hostile government customer."

The politics surrounding LEMV may be a bit shady, but the airship technology is impressive all the same. More than 300 feet from tip to tail, the airship goal is to hover for three entire weeks at a time in surveillance mode in addition to its prowess at hauling cargo. And the LEMV burns a tenth as much fuel as a traditional, heavier-than-air airplane for the same task. It can carry video cameras, radars, electronic eavesdroppers and radio datalinks for transmitting information to analysts on the ground.

Moreover, the LEMV is designed to be "optionally manned, meaning it can carry a flight crew or be steered by ground-based operators, like a drone. For Tuesday flight, the airship had a crew aboard, but in combat an armada of 18 LEMVs could be controlled by as few as a dozen forward-deployed people, Northrop claims.



Lockheed and Mav6 have every right to be displeased. But for Northrop and the Army and for taxpayers who could end up paying a little less for high-tech air power LEMV first sortie is a triumph. "Additional manned flights will resume following a planned and very detailed inspection of the vehicle, Cummings said. Here to hoping LEMV stays aloft and on schedule. Ω





(Above) In Kabul, Afghanistan, daily life unfolded under the watchful gaze of an aerial surveillance balloon tethered at a military base.

Excerpts from the 12 MAY 12 *New York Times* article
By Graham Bowley

KABUL, Afghanistan — The traders crouched beneath the walls of an old fort, hunkered down with the sheep and goats as they talked, eyes nervously flitting up from time to time at the blimp that has become their constant overseer.

“It is there every day except the days when it is windy and rainy,” said Suleman, 45, who goes by only one name. “It watches us day and night,” said another trader, Mir Akbar, 18, his eyes following the balloon as its nose swiveled with the wind from east to west. “I notice it all the time,” said Rahmat Shah, 28, a secondhand car seller, who was standing slightly aside from the other men. “I know there is a camera in it.” The dirigible, a white 117-foot-long surveillance balloon called an aerostat by the military, and scores more like it at almost every military base in the country, have become constant features of the skies over Kabul and Kandahar, and anywhere else American troops are concentrated or interested in. Shimmering more than 1,500 feet up in the daytime haze, or each visible as a single light blinking at night, the balloons, with infrared and color video cameras, are central players in the American military’s shift toward using technology for surveillance and intelligence. In recent years, they have become part of a widening network of devices — drones, camera towers at military bases and a newer network of street-level closed-circuit cameras monitoring Kabul’s roads — that have allowed American and Afghan commanders to keep more eyes on more places where Americans are fighting. The dirigibles are now such a common feature

in daily Afghan life that some people here shrug and say they hardly notice them. Other parts of the network have become lasting parts of the urban landscape as well, particularly in Kabul, where long-necked closed-circuit cameras overlook locations susceptible to attacks, like the Supreme Court building, traffic circles and main highways past the military camps.

But other Afghans describe a growing sense of oppression, the feeling that even as the Americans are starting to pack up to leave, the foreigners’ eyes will always be on them. It is often expressed in typically Afghan fashion, as a grumbled undercurrent of quips and brooding pronouncements: “It is an American kite,” or “Afghans and Americans are up there.” (They are not; there is no one in the balloons.) “It shows us that, sure, the Americans are still here,” and, “It is not effective because there are still these suicide attacks and car bombs.” For others, the cameras are an outrageous intrusion into private lives, putting women and children on display for foreigners whom they see as immoral. “We cannot sleep on our rooftops anymore,” said Mohammadullah, who goes by one name, a resident of Asadabad, the capital of Kunar Province, where families regularly sleep on their roofs during the summer’s sweltering heat, and who was voicing a common concern. “Whenever our female family members walk in the yard during the day, or whenever we want to say ‘hi’ to our wife when we sleep on rooftops, we feel someone is watching us.” First used in Iraq in 2004, the helium balloons were introduced to Afghanistan in 2007, and the military has been shipping them here ever since. American commanders love them, for giving them a perpetual full-color view of important thoroughfares and helping to catch insurgents planting roadside bombs. They cost less than the multimillion-dollar drones that get headlines. “It has been a game changer,” said Ray Gutierrez, who trains the civilian crews, all Americans, who operate the cameras, and the military units who use them. One recent afternoon, he stood in the small control room beneath the old fort where two men with joysticks scanned close-up views of the hillsides several miles away, practically as if they could reach out and touch them. “It lets us see the battlefield as we have never been able to see it before.” For the Taliban, the blimps have become things to fear. In Kandahar Province — where there are at least eight in

the city of Kandahar alone and more in the districts — residents say the insurgents call them “frogs” because their big eyes are ever watchful, or “shameless” because there is nothing they will not peer into. (The residents in Helmand have their own name for them: “milk fish” because of their fins and milky color.) The insurgents avoid the areas under the balloons and have taken to disguising themselves as farmers to avoid detection — and a deadly follow-up airstrike, residents say. In the Zhare district of Kandahar Province, a focus of the Obama administration’s troop increase in 2010, at least one aerostat can be seen from almost every village. While bigger ones float over cities like Kabul, smaller balloons, about 75 feet, tend to be used in outlying areas. Beyond just seeing the Taliban, the aerostats deter them, too, making ambushes rarer along routes in their view, the Americans say. “We can’t be fighting for these roads every day,” said Col. Brian Mennes, the commander of Fourth Brigade Combat Team of the 82nd Airborne Division, which is responsible for Zhare and neighboring Maiwand district. The street cameras in Kabul have had a similarly positive effect, officials say. Inside the police headquarters in downtown Kabul one recent morning, Gen. Mohammad Ayoub Salangi, the chief of police, was flicking through images of the city piped onto a screen beside his desk. General Salangi said the cameras played an important role in handling the riots in February when the burning of Korans by American military personnel touched off angry protests. The police were praised for swiftly bringing the crowds under control, especially in the east of Kabul, and keeping violence to a minimum. “Seventy percent of that was down to the cameras,” he said. “We were watching, and the cameras helped us to find out where we had to have antiriot units.” It was also the cameras, he said, that spied a car packed with explosives in the ground floor of a building that was under construction, from which heavily armed insurgents were attacking the American Embassy and NATO headquarters in September. “What I did, I told my strike force to stand by and we sent our emergency team in to defuse it,” he said. Though the balloons may not stay after the last American combat troops are gone — that is still being negotiated — they will have an even more important role amid the withdrawal of military forces, as planners hope the technology will help a dwindling force stay effective.

And the military is building a bigger, 300-foot, untethered airship with more powerful surveillance capabilities intended for use here. In the meantime, the Americans have mounted a publicity campaign devised to reassure Afghans that the cameras are not spying on women or children, and cannot peer through walls. But while some resent the intrusion, still others complain that the main problem is the cameras are not doing enough.

Sayed Agha, a resident of Asadabad, said he was in court recently where three Afghan fuel contractors were on trial for unloading American fuel tankers to private vendors in the local market. When the contractors denied the allegations, the Americans showed video images captured from a balloon. “It was really bright and clear, as if someone followed them and filmed them while they were selling the fuel in the market,” he said. “But it raises one question, that how come they could see the fuel contractors selling fuel in the market but not the armed opposition?” The program is clearly not infallible, nor is it invulnerable. From time to time, Afghanistan’s summer winds and storms snap the balloons’ tethers. And then there is the target practice. Often when crews bring the balloons down, for maintenance or to protect them from storms, says Eddy Hogan, who manages the aerostats, they find bullet holes all over, attesting to the balloons’ role as an object of resentment. The balloons’ size, and the fact that helium is not explosive, means they can stay aloft even with lots of small holes in them. “You can tell when, you bring it down and see hundreds of bullet holes in it, that they don’t like it,” he said. But, he added, “It takes hundreds and hundreds of rounds to bring them down.” Ω



NAA Member **Peter Cuneo**, President, Balloon Federation of America Gas Division, reported in his newsletter: "Our local (ABQ) Matheson Tri-Gas rep's best guess is that this [helium] shortage will persist at least thru 2013. He feels that there is sufficient raw helium available, but it is not being refined fast enough to fill the demand. Helium refineries in Wyoming and Otis, Kansas, are currently not fully functional. Of the four grades of helium (Ultra High Purity [UHP], tech,

research, & balloon) balloon gas is in the shortest supply. An ABQ Journal article (3/15/12) says Senator Bingaman (NM), Chair of the Senate Energy & Natural Resources Committee, has introduced a bill to fix a law that caused a "fire sale" on federal helium reserves that is distorting the market." Ω

Below, a graphic prepared for the general public.

Helium shortage could spell trouble

The U.S. stockpile of the rare and nonrenewable gas is dwindling. Some are blaming a 1996 order by Congress to sell off reserves at prices lower than market rate, a policy enacted to repay debt incurred since 1925 by the government in creating the Federal Helium Reserve.

Helium crucial to industry, research, medicine, defense

Coolant in liquid form or in a superconductor, in machines such as ...

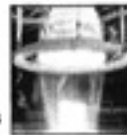


← MRI scanners



← Particle accelerators

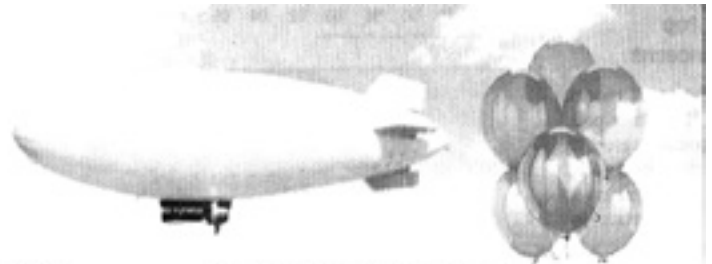
Purges gas in rocket engine systems



Used in some arc welding processes



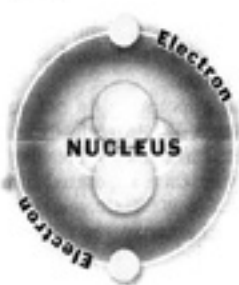
Creates stable breathing mixtures in diving equipment



Helium is used for more than blimps and balloons.

What is helium?

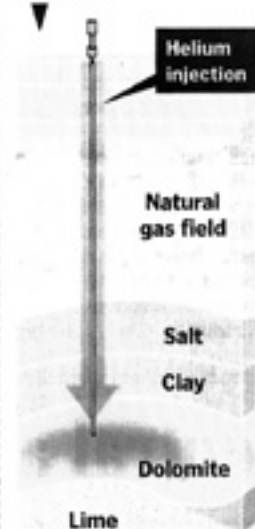
Helium is an element with two electrons orbiting a two-proton nucleus including one or two neutrons, most commonly in a gaseous state



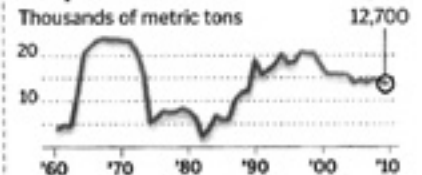
In space, helium is created from the stellar fusion of hydrogen; on Earth it is a byproduct of radioactive decay and is found trapped underground along with natural gas

Natural gas fields under U.S. central plains contain helium

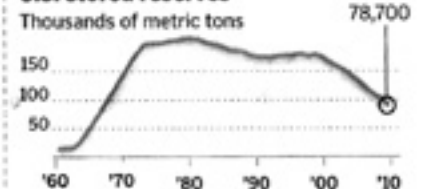
Helium is extracted from natural gas deposits and injected into a subsurface formation called the Bush Dome, where layers of rock contain it



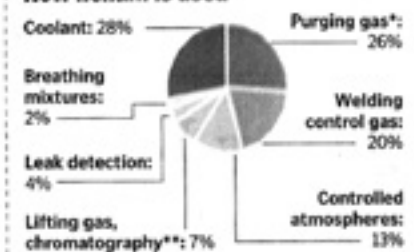
U.S. production



U.S. stored reserves



How helium is used



*Clear storage tanks of other gases or fuels

**Gas chromatography is an analytical method of separating chemical components from a solution

SOURCES: U.S. Geological Survey; Kansas Geological Survey; National Academy of Sciences; Bureau of Land Management; American Blimp Corp.; NASA; McClatchy-Tribune Photo Service

McCLATCHY-TRIBUNE

2012 REUNION REVISIT



NAA members survey the only remaining ZPG-3W



Starboard outside and inside showing one of the most important rooms in a long-duration airship.



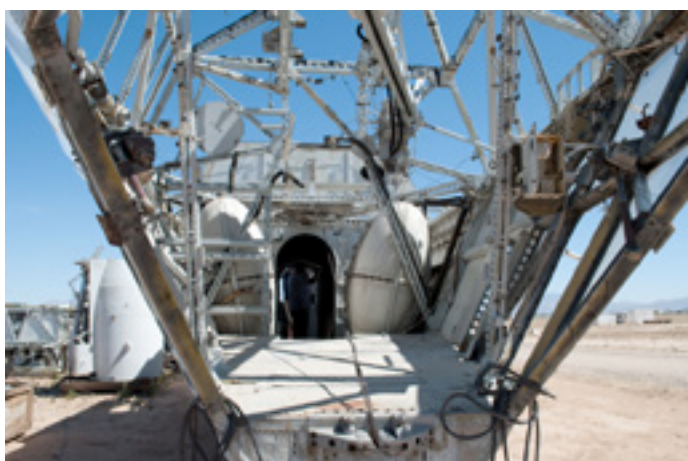
John Kumke spotted what was left of an electrical load center, seeming to match this historic Navy photo from the National Archives.



%, in this panoramic image, looks like a debris field.



Bob Forand showed his daughter Donna (Small Stores volunteer) what postwar guys, including past president Herm Spahr, sitting in as Commander got to fly in.



The winch and other aft equipment have been unmounted, but some appear to be in boxes alongside.



Back at the hotel, members take in presentation on US Navy Officers who flew on the Hindenburg.

Photos provided by John Kumke, Donna Forand, Ross Wood and Herm Spahr. Two Ed. photos, panoramic at top, stitched by Eric Brothers. US Navy/NARA photo supplied by David Smith

TECHNICAL COMMITTEE

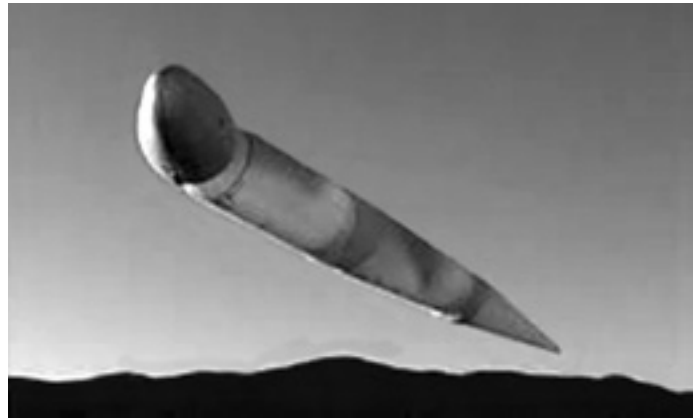
Recent reports from the MAV6 LLC company now identify their airship as the host aircraft in the Blue Devil 2 program and called the M1400. (See inside front cover). The contracting agency, the Air Force, has stopped further work on its development, and ordered deflation of the airship's envelope and "crating" the entire structure. No funding in 2013 has been listed in the Air Force budget.



The LEMV airship (above) developed by Northrop Grumman was ready for its first flight at the time of this writing. It was taken out of its hangar at Joint Base McGuire-Dix-Lakehurst, in New Jersey in July for ground tests. Following first flight and a few test flights, it will be flown to the Melbourne, Florida airport where Northrop Grumman has leased eight acres for six months to test the airship and install its payload of surveillance and communication gear. Further plans include developing an unmanned flight control system and making a delivery flight to Afghanistan where it would be tested under front line conditions.

The Lightship Group, a division of the American Blimp Corp. continues to offer its existing fleet of nonrigid airships to advertise customers' products and services. An A-60 Plus model named *Spirit of Safety* was leased to The Goodyear Tire & Rubber Corp. to promote road safety in Europe. It also will carry a television crew to broadcast Olympic Games in London.

The MZ-3A Navy nonrigid airship had been scheduled for deflation and storage following its flight operation in 2011. However, instead it will continue in flight condition and be used for various government experiments during 2012 and possibly longer. It is maintained at Joint Base McGuire-Dix-Lakehurst and flown by a contract civil crew. During the winter, research flights will be over Florida.



The World Surveillance Group has successfully completed tethered flights with payload by Argus One, the segmented nonrigid developed by the company. The tests were conducted by the D.O.D at a Dept. of Energy test site in Nevada. Further tests will be continued in Easton, MD. The company claims the unmanned Argus One is capable of flights to 10,000 and 20,000 ft. while carrying a 33 lb. of surveillance payload. It uses a system of ballonets within each module for flight control by microcontrollers. The wormlike envelope allows for easy storage and transport to remote locations.

Airship Ventures and FLIR Systems have a partnership to utilize infrared technology aboard the *Eureka*, Airship Ventures' Zeppelin airship. Special equipment, such as FLIRs 230-HD will be mounted on the Zeppelin car. It will be used for various search missions over both sea and land. One flight involved a search for fragments of a recent meteorite impact in northern California. The *Eureka* is also equipped with radar to augment its navigation capabilities. One of Zeppelin's NT-07 airships is involved in EU's project PEGASOS, a scientific study of climate change across Europe.

A French group, VOLINS flew their V901C nonrigid in July to test a unique arrangement of control surface locations. The stabilizers and movable surfaces are mounted below the aft end of the envelope in line with the propeller.

The Russian Innovation Industrial Service Company has developed a small experimental airship with a lenticular shaped envelope. It will be used to test a number of components and systems that would be used in a larger operational version. The DP-27 demonstration model has a volume of 522 cu.m. in its helium envelope.

Arrangements have been completed for the erection of the three NT-07 Zeppelin airships ordered by the Goodyear Tire Company. Erection of each one will take place at Goodyear's Wingfoot Lake in Ohio beginning early in 2013. A 5-day audit was conducted by representatives from Zeppelin and Luftfahrt-Bundesamt, the German certifying agency, to satisfy that the Ohio facility was adequate and that material, inventory and quality control were adequate. A number of Goodyear employees will be trained by Zeppelin personnel (below, pilot) and will work with them in the U.S. Each of the NT-07 airships will be equipped with a new cockpit display system, reinforcements of the inner structure and use a special mast system for on-site operations.



Further rich fields of helium have been identified in northeast Arizona but the future shortage of the gas in the U.S. and world-wide has prompted the Bureau of Land Management to raise the price of federal crude helium. It will cost \$84 per thousand cu. ft. for civil use in Fiscal Year 2013 and \$67.75 for federal purposes.

The Digital & Imaging Service recently flew their surveillance aerostat above the proposed site for the tallest building west of the Mississippi to explore the likely views from key floors of the planned Transbay Terminal in San Francisco. The balloon-borne panorama camera system reached 950 ft. It photographed floor-specific views for use by the architect and the design team planning.



Norman Mayer - Chairman

SHORT LINES



Andrea Deyling, First American Female Zeppelin Pilot, Takes to the Skies

Andrea Deyling (above, rt) joins the Airship Ventures' passenger airship pilot roster, becoming America's first female Zeppelin pilot. A licensed LTA pilot, Deyling has been training on the Zeppelin *Eureka* since November 2011 and officially earned her Zeppelin qualification in May 2012. In climbing into the left seat of the world's largest passenger airship, Deyling becomes the 22nd pilot qualified to fly the Zeppelin NT, joining a select group of airship aviators whose total number is fewer than the number of astronauts on the planet.

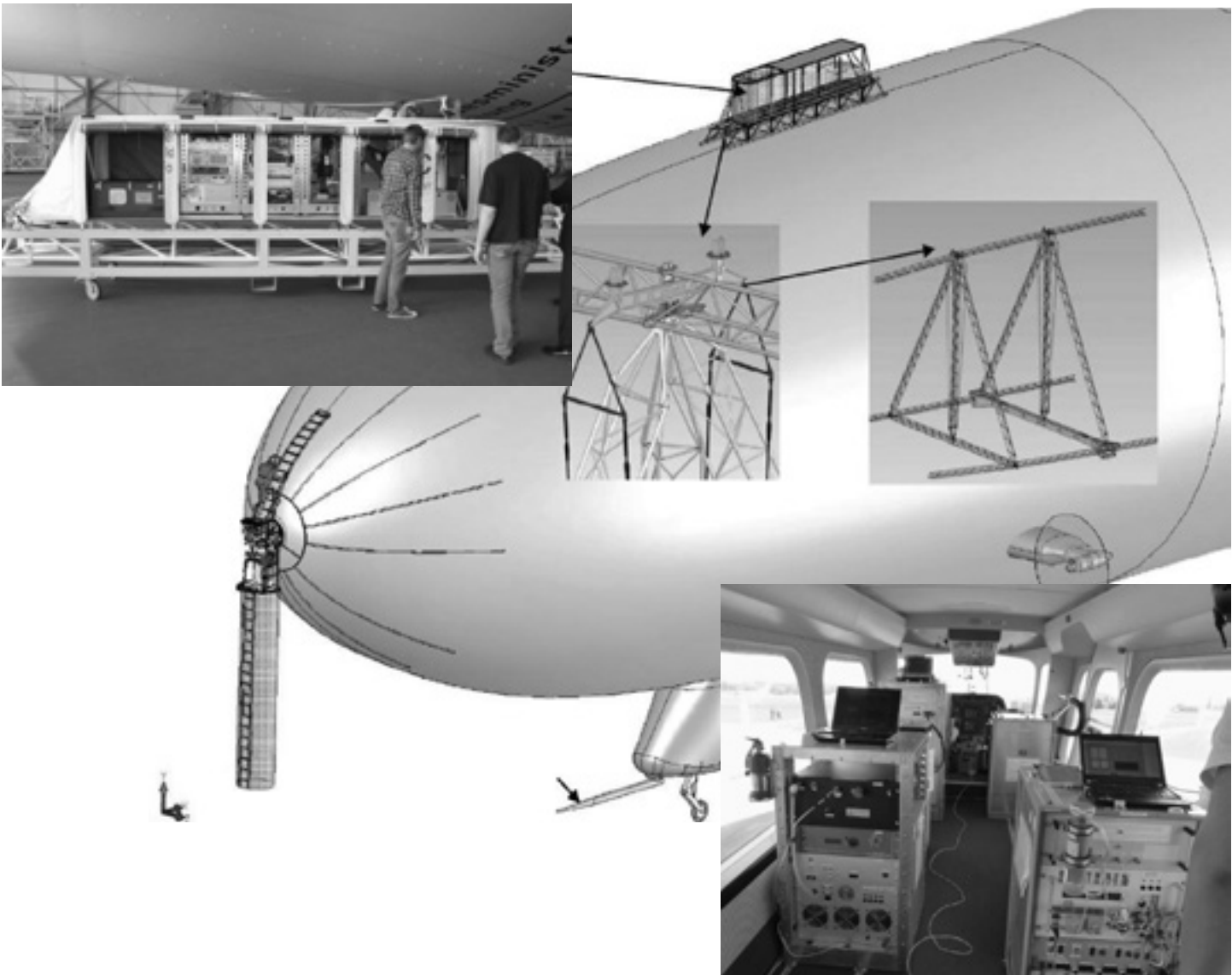
There is only one other female pilot in this elite group, Katharine Board, who had previously piloted *Eureka* and now pilots a Zeppelin NT in Germany.

"More than just the fact that she is someone who's broken barriers and become a first in her field, Andrea's an excellent pilot who will be a tremendous asset to our ability to execute special missions and passenger operations," commented Airship Ventures CEO Brian Hall. "She stands out among her peers as one of the fastest to complete the Zeppelin training and is the first of *Eureka's* pilots to complete her training already signed off to provide initial instruction to trainee pilots. We're thrilled to have her talents round out Airship Ventures' first-ever all-American pilot roster." Ω



Details of the Zep NT PEGASOS configuration shown to the AA Convention audience by Mr. Thomas Brant, CEO, Deutsche Zeppelin-Reederei GmbH. The cabin was equipped with a lift allowing a standard 19-inch wide instrumentation rack to be hoisted into

the car. The avionics racks install on the existing seat rails. Extra generating capacity was added. Note the re-installation of the pitot extension first seen back in the Zep NT's early days.





Dr. Peter Jenniskens takes a closer look at the image from the AVS Cineflex HiDEF camera mounted on the nose of the Airship. © NASA / Eric James

(Excerpts from reports on NASA use of Zep NT)

The excitement stems from the arrival of meteorite fragments which rained down in the pasture at Sutter's Mill in California. It was the same region where the first nugget of gold was found that sparked the Gold Rush in 1848. When the Gold Rush began, people headed to California seeking their fortune. Now, with this meteorite hunt, people once again have flocked to the area to search for scientific treasures. And a humble horse pasture is ground zero.

What scientists call the Sutter's Mill Meteorite landed at 7:51 am on Sunday, April 22, outside of Lotus, California, in a horse pasture located in the Sierra Nevada Mountains owned by the de Haas family. "It sounded like a sonic boom but longer," said Alan Ehrigott, who lives in the Sutter Mill area. "It seemed to last 45 seconds. It stopped me in my tracks." Merv de Haas, who owns the land where the meteorite was found, donated the fragment to NASA. "If I could contribute to science in some small way, then that would be great," said de Haas. "I'm looking forward to the results."

"The de Haas family has welcomed NASA's involvement with open arms," said NASA Lunar Science Institute (NLSI) director Yvonne Pendleton. "I want to express my personal gratitude to them. They should be commended for their contribution to scientific discovery." Scientists say it is a rare type

of meteor and they have few samples of this kind of material. Meteorites are interesting to scientists from an astrobiology perspective, as they contain molecules related to how the building blocks for life on Earth may have been delivered from outer space. Scientists believe that this meteor could hold the answers to the origin of life on Earth and the universe. By studying the meteor, scientists also will learn more about the early solar system and the formation of our planets. "This is among the most chemically primitive meteorites," NLSI deputy director Greg Schmidt said. "It's like asking 'how did life on Earth begin?' and then having a fossil fall right in your back yard. This is exciting stuff — who knows what's inside? The Sutter's Mill Meteorite could be the most profound sample collected in over 40 years." People who work at NASA had an opportunity to participate in the meteor hunt. Peter Jenniskens, a meteor astronomer with the SETI Institute working in collaboration with NLSI, led the search. For Jenniskens, finding the meteorite is equivalent to winning the lottery.

Because the discovery is a rare carbonaceous chondrite that decomposes quickly in damp weather, the science team hopes to cover a large amount of terrain to identify possible candidate pieces for recovery before they decompose. As Jenniskens finds the meteorites, he notes their exact location to better understand the meteor's fall to Earth. "I am grateful this meteorite was found quickly," Jenniskens said. "We need to recover as much material as possible from the damp environment before weather affects the rocks too badly." Since there was such a large piece of land to search in a short amount of time, Airship Ventures' Zeppelin airship was called in to help conduct the search. The airship provides an ideal search vehicle, due to its ability to fly slowly and methodically over an area with a group of trained observers aboard to relay possible candidate coordinates to a ground team for investigation. The airship also carries a high definition gyro-stabilized camera, often used to help photograph sporting events. In addition to the camera mounted on the airship, observers in the ship used binoculars and cameras to help spot burn patches and potential impact sites. "I suspect this is the first time in history that anyone has searched for meteorites with an airship," Schmidt said. So far, the fragment donated by the de Haas family was one of the largest meteorites recovered, but the search for even bigger samples will continue over the next few months. Scientists will be studying these meteorite samples for many years to come. Ω

Zeppelin NT as Maritime Patrol Airship

(excerpt, AA Con. Paper from A.V. Special Missions)



For a typical maritime patrol mission, the airship can be equipped with:

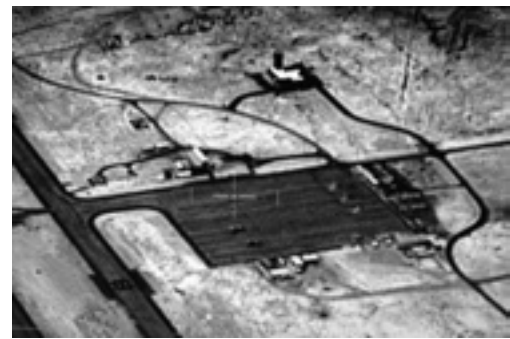
2x FLIR STAR SAFIRE Thermal Cameras, Day Camera,
Laser Rangefinders, GPS pointing capable
Digital Video Recorders 25 kW Marine Radar
Command and Control Radios (marine band, air band,
police and fire) Emergency Equipment NightSun
Aerial Spotlight PA system Crew of 6 (Two Pilots)
10 hours of fuel + 2 hour reserve



LIDAR (aft) & FLIR Sensor mounts on *Eureka*.
Below: Boat at night without motor or lights.



Contacted mission track – 50 mile diameter radar range.
Below: Moonless night image of airfield.



Blackhawk

384,000 gal/year
7.3M lbs of CO₂

Zeppelin NT

36,864 gal/year
707K lbs of CO₂

= Zep NT 9.6% of the fuel and CO₂ of a Blackhawk

Other proposed sensors:

Magnetometer
Acoustic (engine detection)
Hyper spectral Imaging
3D LADAR (laser radar)
Gas (pollution) sensors
Radiation Sensors
Microwave and satellite
communications / telemetry

Other proposed missions:

Search and Rescue
Port Security / Maritime
Situational Awareness
Cargo Ship Inspection offshore
(remote sensing)
Marine Traffic Control
Flying Command Post
Environmental Disasters / Monitoring
Search for semi--submersibles
Search for Ultralight aircraft (radar + IR + acoustic)
Search for tunnels (ground penetrating radar) Ω



Google Gets Around Pesky FAA Regs For Glass Demo – (Internet)

For its pretty awesome skydiving demonstration of Google Glass at the I/O Conference in San Francisco, Google convinced the FAA to ... bend ... its rules governing some airship operations in the Class B airspace over the city. The online site Tecca reported that Google went to the FAA's San Jose branch office, and convinced them to waive the rules for the demo, allowing the doors of the airship to be opened so that the skydivers could do what they do.

A group of skydivers exited an airship over the city wearing the Google Glass devices. The result was a pretty spectacular view of the city transmitted live from the skydivers in the air to the conference-goers in the convention center. It was reportedly fairly easy to get a waiver to operate the airship in the "Class B" airspace which encompasses just about all of the city. Obviously, the doors needed to be opened for the jumpers to exit the aircraft. We suppose that being one of the world's largest companies didn't hurt. Ω



Brian Hall of AV commented:

"We have an FAA approved Airship Flight Manual Supplement governing the opening of door and conducting of jumps for up to 4 jumpers. There is a jumpmaster that (among other responsibilities) manages the door, and wears a chute (but doesn't jump). We did multiple rehearsal days ahead of the event... We do indeed have interest in offering jumps as a commercial product. Now that we have worked through the insurance and FAA side, we are most of the way there. We feel that if we can get permission to use a DZ co-located at a field we are operating from (ie, 0 transit time), that we can do it at an attractive price (would still be about double the price of a fixed wing jump, but then it would also be the only place in the world you could jump from an airship!) The stunt jumpers, all with 10s of thousands of jumps, described

the experience as one of a kind and "zen like" (because you are jumping from a floating platform). Because they were using wing suits, we did the jumps from 3500-4000 feet. Wings suits from a non-moving platform require about 500 feet of vertical drop to start doing their thing. When we do standard parachute jumps, we have been doing them from 2200-2500." Ω

Telescope Goes Missing On Its Way To Columbia Scientific Balloon Facility

The Minneapolis (MN) *Star Tribune* (5/31, Ross) reports, "A high-tech piece of research equipment has dropped off the map somewhere between the University of Minnesota and its Texas destination." A truck carrying a telescope to the "NASA-run" Columbia Scientific Balloon Facility never arrived at the center. Capt. Steve Perry of the Hutchins Police Department said, "The trailer was dropped off in Dallas at a hotel" but no other information was known. The article notes the University of Minnesota owns the telescope that was due to be calibrated before heading to Antarctica "where it is to fly later this year, by balloon, more than 100,000 feet in the air." An investigation into the telescope's whereabouts is now underway. (Next day) Missing Trailer Found. The WFAA-TV Dallas, TX (5/31, Diaz, Stoler) website reports the telescope that "was missing for days was found Wednesday evening." According to the report, the trailer was found in Dallas and "all of the equipment should be inside, because a protective seal in the back of trailer remains intact." Ω

At the Kiwanis Convention in New Orleans last June, the Kiwanis International Foundation Connelly Award was posthumously awarded to Mike Nerandzic of Australia. Mike was lost to gasoline fire in his Lightship last year. He was honored for saving his passengers in the accident. His widow accepted the award. Mike was shown in a photo from his earlier days flying in Australia. Ω



2nd Qtr. AIAA LTA TC Teleconference Minutes

Thursday, May 31st 2012 at 12pm EDT.

Phonecon attendance: Chairman, Dr. Brandon Buerge; Mike Caddy, Bob Boyd, John Krausman, Trenton White, Roy Gibbens, Geoff Bland, Mark Beyer, Curt Westergard, Dr. Rajkumar Pant, Erik Runge, Alan Farnham, Brian Hall, Barry Prentice, Ron Hochstetler, and Richard Van Treuren.

Industry news:

- Blue Devil going to storage unless Senate intervenes.
- LEMV struggling to make first flight on the (revised) schedule.
- Alaska airship conference being rescheduled.
- Widespread helium supply issues being experienced, particularly acute on the West coast.
- Barry Prentice made a well-received presentation of airships for cargo to the Canadian Parliament.

New Business:

- Call for papers published. Date of LTA conference is March not August 2013. Geoff Bland invited submissions relevant to tethered systems session of the AIAA Unmanned Unlimited conference in LA August 2013.
- Short [LTA] course planning is underway.
- Regulatory progress delayed until there is sufficient political will for the FAA to engage airship regulation.
- There is basically nothing the TC can do to influence the ongoing helium shortage. Brian Hall attributed the acute shortage to maintenance outages at two major helium processing plants. John Crausman reported seeing 3X or 4X increase in prices since 2008, so this [price] appears to be a longterm problem added to the acute shortage.
- A lively debate on the use of hydrogen as a lifting gas ensued. Major consensus formed on needing more information in order to demonstrate that hydrogen is (or isn't) a lifting gas option. Dr. Pant agreed to provide an estimate for a "helium vs. hydrogen" balloon test demonstration which he has the equipment to conduct. Other resources include the scientific ballooning community which has considerable operational history with hydrogen.
- Norman Mayer will be asked to do the annual report for the AIAA Journal.
- Nominated member Kevin Sequeira will be voted on at the next meeting.

There being no more business to bring before the committee, we adjourned shortly after 1 pm EDT. **Ω**

9th International Airship Assoc. Convention

Ashford, England, 20 June to 23 June 2012

(Framework of this report was provided in the abstract summary compiled by Professor Gabriel Alexander Khoury, Chairman of the Papers' Committee and Vice Chairman of The Airship Association, UK. Ed attended, added notes.)

Following a meet-and-greet reception as delegates arrived on the 20th, the next morning AA President Dr. Bernd Sträter opened the papers' session with a warm welcome. AA Chairman Peter Ward added his greetings and presented a quick history and recent developments about the AA.

The first session category was "Current Projects and Technology." First up was Damien Frost of the University of Toronto's Solar Blimp Design Team. The students had constructed a model featuring solar cells and custom control avionics.



Next up was Bastien Lefrançois of France with an update on Project Sol'R, (above) a student effort with the goal of building a one-man solar-powered airship capable of crossing the English Channel. (Rumors persist that a solar airship project is utilizing the still-viable if ancient concrete hangar in northern France.)

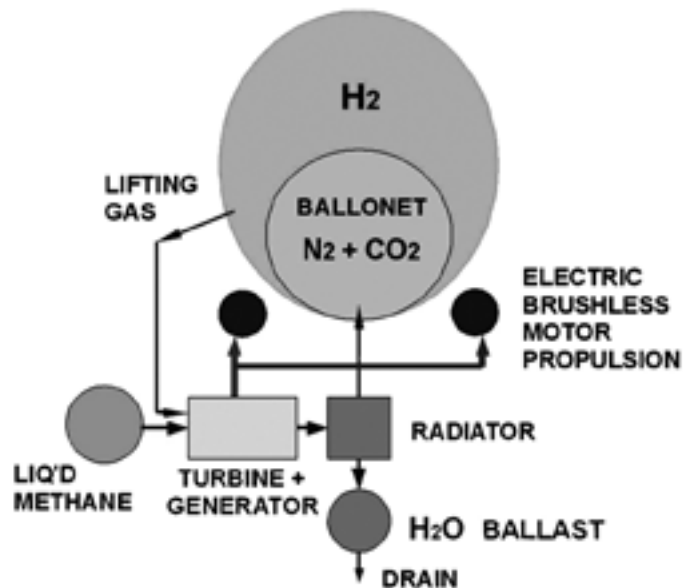
Another Frenchman, Philippe Tixier, then presented his study, "The Dirisolar airship project: A break in the design of airships." The work noted LTA's major challenges: 1. Necessity of a ground crew; 2. Investment cost per seat (noting the Zep NT is most expensive at about a million euros per seat); 3. Necessity of ground infrastructures; 4. Complexity of manoeuvrability; and 5. Weather. Dirisolar sought to design an airship that either eliminated these problems or at least limited them to acceptable levels.

Following a break, Andreas Burkart of Germany presented “An Airship as Platform for Remote Sensing of Plant Phenology.” His PhD study seeks to use new non-invasive advanced sensing methods based on airships to screen plants for agricultural research not otherwise possible to perform.



Next up was the first female presenter, from Italy, Ms. Valentina Solera, with “Italy Concept design of a cruise airship.” (above) She was accompanied by Alessandro Lucci, who presented their calculations on the proposed airship’s parameters driving its 70,000 cbm design. They had produced a short video that offered thought-provoking images of proposed luxury airship cruising.

A Russian, Michael Talesnikov, then gave “The Lastest Development of Hybrid Airship Technology.” Mr. Talesnikov, of Ross Aerosystems, showed how his company’s design hopes to solve logistical challenges across the vast untapped wealth of European Russia and Siberia. Their “Atlant” cargo airship design uses “phlegmatized” hydrogen to control static condition.



NAA member Juergen K. Bock of Germany presented “Outlook on Future Airship Technology for a Mass Transportation System.” Mr. Bock pointed out the hybrids’ pros and cons in overall design philosophy (above). Mr. Bock has submitted a version of his paper formatted for NOON BALLOON, and we should have that for issue 96.)

After lunch, Mr. Thomas Brandt, CEO of both “Zeppelin Luftschifftechnik GmbH & Co KG” and the operator company “Deutsche Zeppelin Reederei” presented a business case using experience from the ZEP NT 07. While there had been a plan to develop a stretch version, the company instead has spent resources to enhance the NT 07 into the NT-07-101. The new configuration will not only have a modern instrumentation and display avionics, but real performance is enhanced. Greater payload, range and operational life has been achieved.

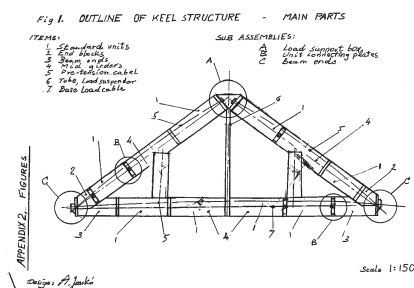


Mr. Brant also detailed the currently running PEGASOS campaign (above, and also see page 22). PEGASOS is an acronym for Pan-European Gas-AeroSOls-climate interaction Study. For the third time since 2007 the scientist and physicists of the Forschungszentrum Jülich will use the airship as a flying laboratory, this time at a European level. Up to 710 kg of scientific equipment will be installed inside the gondola and 415 kg on the platform on top of the airship. The payload carried by the airship will weigh 1400 kg, including an additional 8 KVA power supply to cope with the high demand for electrical power made by the equipment. The PEGASOS mission will take the airship to the Netherlands and northern Italy between May and July 2012 and to Finland between April and June 2013, making it the longest scientific mission yet for the Zeppelin LZ N07 airship. Discussion ensued explaining that, similar to ZEP NT 07 #01’s African mission, the PEGASOS science cannot be realistically accomplished by any other platform at even many times the price.

Next came Canadian Geoff Frost, who explored the 1863 invention of Solomon Andrews. Asking if the basic physics of the concept allowed the claims to be true, Geoff concluded Andrew's "Aereon" ("Age of Air") could indeed have worked according to some published reports. He discussed not only the Aeron III but also Slocum gliders as inspiration for possible motor-less airships. He concluded by exploring how proactive buoyancy control could be applied to modern airships.

Airship Ventures' newest special mission's engineer, Johannes Eissing, brought the group up to date on their ZEP NT *Eureka's* recent maritime patrol missions. Equipment carried and tested included infrared and low-light camera, lasers, Raymarine 424 HD Radar, as well as LADAR (laser radar). One successful test located a boat at sea, with no lights and its motor shut down, in the dead of night. A test for the border patrol operated various sensors in what might have been a typical patrol for a K-ship operating from Santa Ana in WWII.

The first British presenter was Dr. Giles Camplin, editor of DIRIGIBLE, with "A hybrid solution to ground handling." This paper examines the way in which the hybridization of ideas has influenced airship evolution in the past and how extension of the process into the future offers at least one possible solution to most ground handling problems. Dr. Camplin returned the following day to present "Patents: a huge store of useful information," co-written with Dr Edwin Mowforth. That paper suggested that by the study of what was proven not to work in the past it is possible to obtain a much clearer picture of the complexity and enduring nature of some of the challenges that will have to be overcome by those who seek to develop airships in the future.



"Prestressed beams and struts of light material" was presented by Ambrus Jankó of CEng MIMechE. Basic calculations were carried out on an expanded material with a recognizable compressive strength, therefore suitable for prestressing, using known methods, to increase its bending strength.

Mr. Janko was followed by Robert Knotts of BA MBA M Phil Engineering, who detailed "Graphene for Airships." Knotts examined how graphene, a material used in the common pencil, offers potential solutions in overcoming many difficulties in airship construction. Graphene is viewed by many as a "Wonder Material" 200 times stronger than steel. With some 3000 research projects ongoing with graphene, it could revolutionize airship design. Electronic and solar power generating capabilities associated with graphene in potential airship operations were highlighted. Mr. Knotts returned the following day with "A need to integrate maintenance and support in airship design." He discussed the cost of acquisition represents the tip of the iceberg with costs that include areas such as operating, maintenance, training and spares hidden beneath its tip. He presented an approach that moves away from the traditional method of costing maintenance and support activities after a design is formalized to designing to satisfy maintenance and support cost targets from the initial concept stage.



Both of Mr. Knotts' presentations were illustrated largely with his own artwork, including clever and colorful cartoons.

NAA member Adrian Peña Cervantes co-authored and presented "Overview of Agri-business and Forestry Market for small unmanned airships in Latin America" which lamented many concepts have been proposed for UAS (Unmanned Aerial Systems), but very few projects have reached production. The paper's authors have conducted small unmanned airship R&D programs in Mexico and Ecuador. The paper offers a study of the Agri-business and forestry Latin-American market for small unmanned airships operations and promising applications in the region.

Final presentation of the first day was made by AIAA LTATC member Ron Hochstetler, who summarized the “Cargo Airships for Northern Operations” workshop August 24 – 25, 2011.



Friday morning opened with Gordon Taylor, who updated the eager attendees on the Hybrid Air Vehicles Ltd. Program Status. Mr. Taylor, of HAV, Bedfordshire, was not at liberty to show photos of the complete LEMV on the verge of rollout that month. However he explained Canada’s DAI, which had signed and made their first payment in September 2011, will be the first civil customer, with production of the first ship scheduled to begin at the end of this year. They offered a 20-ton capacity model, but the customer selected the 50-ton capacity (HAV 366) design. A 200 ton model may eventually be built. The HAV 366, some 380 feet in length, will lift off in about four of own lengths, at a gentle 40 knots, and carry its load to about 10,000 feet. The payload module will offer various options including a winch mode for carrying up to 20 tons externally. A video illustrating the movement of the thrust vectoring planes was followed by a recording of the first autonomous lift off and round trip of the scale model. A very slick video prepared by Northrop-Grumman thrilled the audience with awe-inspiring graphics of LEMV’s employment in theatre.

Next up was Yasmina Bestaoui, Associate Professor, Laboratoire IBISC, Université d’Evry, France. The only other female presenter, Ms. Bestaoui’s paper was entitled “Lighter than Air Robot Planning under Uncertain Wind.” Flight planning that is robust to changing flight conditions, disturbances and vehicle uncertainties would be an improvement over current flight technology. The solution employs the approach of Markov Decision

Process, a mathematical framework for modeling sequential decision problems under uncertainty. She returned later in the morning to present “Lighter than Air Robot 3D Trajectory Design.” The object was to model an unmanned airship with sufficient autonomy with no direct human control to include determining the set of waypoints (flight planning) and the flight path and able to perform a specific task.

Right: Past AIRSHIP Editor Arnold Nayler readies regatta pylons from sponsor Linde in this Christine Camplin photo. AA Chairman Peter Ward reminded the audience that, far from wasting this irreplaceable resource, “balloon gas” allows helium suppliers to profit from recycled and other low-grade helium unsalable in markets demanding high purity.



Dan N. Baciou, of Linde AG, Linde Gas Division, Pullach, Germany, presented “Helium: The recent helium shortages and a medium to long term outlook of the Supply and Demand.” This was a view of the recent helium shortage and discussed its causes and estimated duration. Also discussed will be the outlook of the American BLM system as a pivotal source of helium to the world and the industry efforts to minimize the impact of the BLM depletion by replacing it with new, non-US sources. The presentation will conclude with a medium and long term forecast of the helium supply and demand.

Tapan Shah presented “CFD Investigations of Some Airship Envelope Shapes” which he co-wrote with Satish Shenoy and Rajkumar S. Pant. Mr. Chakraborty is a Junior Undergraduate Student in the Department of Aeronautical and Automobile Engineering, Manipal Institute of Technology, in Manipal, Karnataka, India. This paper dealt with the CFD simulation of three airship envelope shapes (viz., GNVR, SAC and NPL) under some specified operating conditions, with an aim

to estimate the aerodynamic coefficients (Lift, Drag and Moment coefficients). The PRL shape was found to be most efficient from aerodynamic considerations, but GNV shape had the least surface area. The SAC shape had the highest drag coefficient at all angles of attack investigated. Mr. Shah returned later with “Conceptual Sizing and Design of a Lenticular Aerostat,” also co-authored. He described a methodology for conceptual design and sizing of aerostat with optimum oblate spheroid (Lenticular) envelope shape of given volume that can carry a given amount of payload with least blowby. Drag Coefficient (CD) for spherical and four lenticular shaped envelopes of different fineness ratios F (i.e., ratio of major and minor axes) was obtained at various Reynolds numbers. An interpolation scheme was used to obtain CD of these lenticular envelopes for any intermediate Reynolds number. A comparative analysis of the operational effectiveness of the three lenticular and spherical aerostats was carried out, which revealed that lenticular aerostats have substantially smaller envelope volume and lesser blowby. It was seen, however, that beyond a particular value of F the benefits of lenticularity start diminishing.

After lunch, a panel discussion outlined how cash prizes had speeded the development of the aeroplane. Martin Hill, Nigel Hills and Dr. Giles Camplin made a case that the AA would like to incentivizing innovation by increasing the reward for the current competition for a model that can demonstrate cargo delivery - picking up an egg and delivering to a different location.

Then Akshay A. Kanoria, a student at Indian Institute of Space Science and Technology, Trivandrum, India, presented “Design and Analysis of a Low Cost Unmanned Airship for Flood Relief” from a team that had written it. The paper discusses the design of an unmanned, low cost, dual-gas, multi-chamber airship that can carry a relief payload of 2 tonnes to flood affected areas per trip. The inside chamber of the airship contains Hydrogen whereas the outside chambers contain Helium. A scaled prototype of this airship has been built and flight tested. Operational cost analysis of using airships as a mode of relief and aid distribution is also carried out.

T. Martin Blaiklock followed with “Airship Financing: What are the Issues?” The finance package should be an integral component of the planning process. The paper described the nature of project financing, the issues facing investors and lenders to airship projects, and the criteria used by financiers to evaluate their support. Recommendations are then made as to what steps should be taken in seeking such funding.



NAA member Adrian Peña Cervantes and his colleague Jaime Navarro presented the “First aerial advertising airship flight in Latin America: Mexico City 1907.” During the XIX century there was some interest in the lighter than air ships and some exploits became notorious, particularly that related to Mr. Ernesto Pugibet, owner of a tobacco industrial empire at that time, who involved in the promotion of his products, hit upon the idea of using airships as an advertisement and promotional means. The paper described in detail the technology, the key people and professionals involved in the first aerial advertising airship flight in Latin America. The second part of the presentation covered current LTA ops in Mexico.

NAA member **Francisco A. González Redondo**, of the Universidad Complutense de Madrid, Spain, presented “On the mooring mast: history and controversy.” After several years studying in depth the problem of mooring airships in the open, on 2 February 1911 the Spanish Engineer Leonardo Torres Quevedo got accepted his patent in Belgium for “Moyens de campement pour ballons dirigeables.” In short, Torres Quevedo’s patent established the main characteristics of what since that day until present times is known as the “Mooring Mast,” the structural device designed to allow the docking of an airship at open air. Mr. Redondo also showed a host of other LTA patents by Quevedo.

Peter Ward, Chairman of the AA, closed the convention's paper sessions with a promise to return in two years for the 10th AA Convention. Next morning, the Model Airship Regatta got underway in the sports hall at the Towers School, Kennington, Nr Ashford, Kent. (Participants, below)



The aim of the regatta was to encourage young engineers to explore the practicalities of cargo acquisition in flight, demonstrating station-keeping capabilities, control and the ability to acquire and carry a payload. The competition comprised two elements: a time trial around a 20-meter Figure 8 course, and a cargo-lifting competition.



This motor/servo-actuator/prop mount with pivot was created in a CAD program, then given three dimensions at the press of "print." Imagine the possibilities in rapid prototyping in today's LTA.

There were five entries for the time trial, and the actual time was recorded in a handicapping system which took account of various aerodynamic, and powerplant factors to produce a corrected time.



Winners: 1st prize (£200) "F119" flown by Erich Fink, in a corrected time of 55 seconds.
2nd prize (£150) "ADELE" flown by Lars Paasche, in 1 minute and 35 seconds.
3rd prize (£100) "IMKE" flown by Martin Sobel in 2 minutes and 33 seconds.

The cargo loading was done manually; two contestants dropped the egg during the final circuit. The judges awarded a £100 prize to the "KIRCHENSCHIFF" flown by Clemens Mayer, which managed to complete the cargo-laden course inside the allotted 15 minutes with a corrected time of 14 minutes and 18 seconds. The group demonstrated some inspiring concepts.



More than 30 spectators, including representatives from 8 different countries, turned up to watch. The success of the event this year confirms the Association's belief that the Model Airship Regatta has the potential to become a prestigious prize that will attract problem-solving young engineers. AA's video of the event is on the web at http://www.youtube.com/watch?v=G8-6qSx3_JU. Organizers are currently soliciting funds for larger prizes to attract more participants for a possible event next year and at the next conference.

(left) Lars Paasche from Berlin displays their team creation, IMIKE, which features stern propulsion. Long proven on *Albacore*-hulled submarines, a Goodyear drawing in James Shock's book shows the concept was ready for the hardware stage on a 5K (ZS2G-1) towards the end of the US Navy's first decades of LTA. (Another proposal, to add stern propulsion to the ZPG-3W, was model-tested in a wind tunnel.) Note the brilliantly simple twin-actuator design which allows the motor to articulate through surprisingly large degrees of freedom. The arrangement is not unlike the Space Shuttle Main Engine's actuation. Ω

Explorers find downed German U-Boat off Massachusetts nearly 70 years after it sank (AP)



This April 16, 1944, photo provided by the U.S. Navy, posted on a U.S. Coast Guard web site, shows crewmen of German submarine U-550 abandoning ship in the Atlantic Ocean. (AP/US Navy)

Divers have discovered a World War II-era German submarine nearly 70 years after it sank under withering U.S. attack in waters off Nantucket. The U-550 was found by a privately funded group organized by New Jersey lawyer Joe Mazraani. It was the second trip in two years to the site by the team, some of whom had been searching for the lost U-boat for two decades. Using side-scan sonar, the seven-man team located the wreck listing to its side in deep water about 70 miles south of Nantucket. Sonar operator Garry Kozak said he spotted the 252-foot submarine during the second of an exhausting two days of searching. On April 16, 1944, the U-550 torpedoed the gasoline tanker *SS Pan-Pennsylvania*, which had lagged behind its protective convoy as it set out with 140,000 barrels of gasoline for

Great Britain. The U-boat slipped under the doomed tanker to hide. But one of the tanker's three escorts, the *USS Joyce*, saw it on sonar and severely damaged it by dropping depth charges. The Germans, forced to surface, manned their deck guns while another escort vessel, the *USS Gandy*, returned fire and rammed the U-boat. The third escort, the *USS Peterson*, then hit the U-boat with two more depth charges. The crew abandoned the submarine, but not before setting off explosions to scuttle it. The submarine hadn't been seen again until July 2012.

The U-550 is one of several World War II-era German U-boats that have been discovered off the U.S. coast, but it's the only one that went down in that area, Mazraani said. He said it's been tough to find largely because military positioning of the battle was imprecise, and searchers had only a general idea where the submarine was when it sank. Kozak noted that the site is far offshore and has only limited windows of good weather. **Ω**

HISTORY COMMITTEE

Robert Smith sent this photo of "GAC 1 Lakehurst NJ Airship Squadron 12 1943" and writes, "I believe the man on the left was the exec of the squadron. The pilot of record for CAC One was CDR Kendell, Squadron Commander. My log book shows he only flew with us once and that was a short flight. Chief Malak was the Squadron Chief." **Ω**



E-mail between chairman **Al Robbins** and webmaster **Don Kaiser** discussed West Coast LTA Ops and what log entry “MEW” might have stood for: Al wrote, “According to Rosendahl’s book COMFAIRSHIPSPAC and Fleet Airship Wing Three (a joint command) was commissioned on 15 July 1943. CDR Scott E. Peck was relieved by CDR Alexander MacIntyre on 15 October, who was relieved by CAPT T.G.W. Settle on 23 Sept, relieved in turn by CAPT Howard N. Coulter on 25 February 1944, who commanded the wing for the rest of the war. In the 1944 register, Peck (at sea), MacIntyre (Staff 10th Fleet), Settle (at sea), and Coulter (at COMFAIRSHIPSPAC). Don’t know if FAIRSHIPSPAC had a patch. ZP-31, ZP-32 and ZP-33 were operational squadrons under the command of COMFAIRSHIPSPAC. I’ve never heard of MEW. It might have been part of ZP-32 or of the Fleet Airships Pacific Tactical Unit, which was formed in March 1944. If this is a letterhead, I’d guess that MEW is part of ZP-32. There were 44 Officer pilots assigned to ZP-32 according to the 1944 Register (Rechs’ List): 4 LCDRs 11 LTs 14 LTJGs and 15 Ensigns. The registers didn’t include Warrant Officer or Enlisted Pilots. Claude Makin was in ZP-31 at that time; Walt Ashe was at Lakehurst. They might be able to tell you what model radars the West Coast K-ships were using in 1944. You might also post a request for info on our website, and your websites. Somebody out there may have been involved with MEW.

Regarding your earlier question: A radar detects anything which reflects its radiated energy back to it. The strength of the return depends on the operating frequency, the energy striking the “target” and the dimensions, orientation, and reflectivity of the “target”. They commonly referred to much of it as noise (sea-return, or land-return). Some frequencies will detect birds, clouds, rain, etc. It’s classified by its intended application: Weather, Search, Height-finding, Fire-control, etc. The angular resolution depends on transmitter frequency, signal strength and antenna characteristics. I could pick up a small aircraft with the APS-70 at three times the distance that I could with the APS-20, but couldn’t tell if a target was a single large aircraft or a loose formation of small ones. A surfaced submarine would present a continuous return and could be tracked like any other boat. The snorkel on a submerged sub might be detected by the APS-20 particularly if the sea was relatively calm, but not by the long-wavelength (low frequency) APS-70. In 1954,

I detected a snorkeling sub (P2V5 with APS-20B radar flying out of Jacksonville) at nearly 40 miles. I was able to plot the course and speed of this classic Snorkel response. I supplied course updates to our pilot until we lost contact in “the black hole.” The APS-20 receiver is shut down for the first few microseconds after pulsed signal is transmitted, roughly the first two miles. This shows up as a hole in the center of the PPI (Plot Position Indicator) display. You close on target based on dead reckoning and faith. The pilot told me to step up to the cockpit and look at my “snorkel”.... It was a pod of nearly a dozen dolphins, their skin shining in the sun as they leaped along on their way to somewhere.” *Ed. added that this emblem, possibly a patch as well, appeared on a K-ship in a West coast photo supplied by either the late Simon Beattie or his shipmate Mike Szot. We no longer have the image. Don answered, “I can’t help*

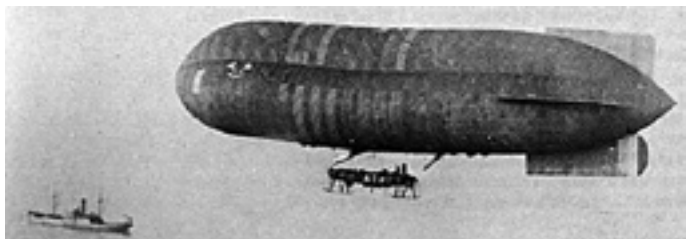


but think MEW stood for microwave early warning radar but I’m having trouble trying determine how the ZP-32 blimps may have fit into that technology, in a practical sense. The only thing I can come up with is that they were used as objects for radar detection. In that regard, many of the entries in the ZP-33 squadron log mention collaborating with the Radar Lab. at the Puget Sound Navy Yard or assisting with radar calibration with many different ships including the USS *Alabama*. Perhaps these ships were calibrating microwave early warning (MEW) radar systems(?) Some entries even mention Xray5 or Xray6 apparently on the airships themselves in conjunction with mine detection. Perhaps they were experimenting with x-rays too(?)” *Ed. asks: Can West Coast vets help with this mystery? Ω*

“We’ve received several E-mails from Klinker crew members as a result of a short item in TNB #94. We’ll be putting together a summary article for the Winter issue covering Navy LTA’s last hurrah: the two research birds and the men that manned them. Anyone with more photographs (particularly of the crewmembers), anecdotes, and “true facts” about the final months of the “Flying Wind-tunnel” and “Klinker”, please contact Al Robbins at simplicate@comcast.net.” **Alastair Reid** sent along a posting recalling the World War One tragedy in which a French airship mistook a British sub for Bosch and sank it, with the loss of all hands. This unfortunate

incident was kept under wraps for the duration of the war, but is recorded in **Robert Feuillooy's** book 'Les Dirigeables de la Marine Francaise'.

On 12 March 1918, the French Coastal class airship C4 (recently purchased from England and re-designated the AT-0) spotted the British D-3 under the command of a Canadian Navy officer, Lt William Maitland-Dougall.



The crew of the submarine recognised the airship type as friendly, and thinking it was British, sent up the four rocket signal of the day. The French airship commander, Adjutant Gobert, was not aware of the British signal of the day (since they used light signals) and thought it was an attack. The AT-0 closed the submarine, opening fire with its machine gun, and dropped six bombs on the sub, which began to crash dive. The crippled submarine was seen to attempt to resurface some three minutes later. Four of the thirty men on board escaped from the partially buoyant craft before the submarine sank once more, this time disappearing without trace.

The AT-0 flew over the survivors at 600 feet and stopped engines. When they recognized the voices as English, they dropped lifebelts and attempted to land and pick them up. But the Coastal had lost envelope

pressure and the attempt was abandoned. The AT-0 was unable to attract help until the evening mist was forming, and night was falling. The four men were never found. Ω



“**Torp Toleno** sent along copies of the obit of LCDR Klinker, whose passing we’d noted in TNB 89, promoting Ed. to note the similarity in that name and the Project “Clinker” we know so little about owing to classification and vet’s unwillingness to come forward with info that has long since been declassified. Al Robbins e-mailed, “No records of Klinker having qualified as an airship pilot; might have been an Observer, NFO, or maintenance officer. I’ve never heard of any Navy project named after an individual. Klinker isn’t listed in any of my current dictionaries, but I vaguely remember it as an old railroad term for a glowing ember. Attempts to use primitive IR systems to detect underwater objects had been going on for years; I think under several different code names (Magic Lantern?), primarily to continue qualifying for Research funds... Today we have superior IR Detectors that work well at ambient temperatures.” Ω *(Below, key for WWII flights.)*

CHARACTER OF FLIGHT	
A. Training and Instruction (Students)	L. Navigation. Flights required for training personnel in aerial navigation.
B-2 Combat Mission Resulting in Engagement with Enemy	M. Transportation of personnel
C. Training and Instruction (Qualified Pilots). Flights required for familiarizing pilots with operation of aircraft, power plants, instruments or equipment, or for training in cata- pults or carrier landings.	N. Ferrying of aircraft
D. All flying performed by reserve personnel not on extended active duty.	O. Utility. Towing targets, chasing torpedoes, etc.
E. Familiarization and Practice.	P. Photography and mapping
F. Gunnery	Q. Aerological
G. Bombing	R. Tests of aircraft, engines, radio, etc.
H. Torpedo	S. Experimental
I. Observation	T. Administration
J. Scouting. Flights required for scouting, search, recon- naissance, convoy or coastal patrol, or in training for such purpose.	U. Extended flight training
K. Tactical	V. Instrument flying
	W. Emergency or relief work
	X. Electronics training
	Y. Night flying
	Z. Special. Flights not falling within any of the above classes, but which are required by the exigencies of the occasion.

MEDIA WATCH

NAA Reunion made the local base newspaper!



The June 30 edition of the Wall Street Journal, page 2, under the general heading U.S. News, is “Army Preps Spy Blimp” by Nathan Hodge. The Northrop Grumman LEMV is getting close to its first test flight. It is now expected to cruise above 20,000 ft. which is beyond the range of small arms and rocket propelled grenades. One doubts that Nathan ever served in the military!? It is supposed to cruise for 21 days. It requires constant forward motion to maintain altitude. It may, or may not, be manned?

– C P Hall Ω



The Three Amigos? (From left) Dr. Giles Camplin with the AHT's DIRIGIBLE, Ed. with our TNB and Paul Adams with AA's AIRSHIP, all uncomfortably dressed up for the AA Banquet.

“Monsters of the Purple Twilight” is the title of a book by Ernest Dudley published in 1960 focused on the Zeppelins of WW1. “Monsters of the Purple Twilight” is also an article by George E. Wright which can be found in the latest edition of the magazine AIR CLASSICS, vol. 48, nbr. 7, (display until 8/31/2012). Although the cover blurb declares, “Germany’s massive all-wooden airships of the Great War” the essay is, for the most part, limited to the ship S.L. 2. There are a few photos of S.L. I, and one of S.L. 22 along with other miscellaneous photos, none original.

Little detail about structure, a photo caption is the comparison between #1 & #2, it is not worth the purchase price in my humble opinion. While searching to confirm details for this letter, I noticed that the photo of painting opposite page 208 in the Dudley book. The caption reads, “War artist’s impression of a Zeppelin over the Thames destroyed by gunfire. The crew bailing out by parachute is imaginative but incorrect.” (photo Ullstein) The painting is obviously supposed to be R.38, the ZR - 2 marking is clearly visible. It is interesting to note that *[in the painting]* the ship has caught fire prior to breaking in twain, however, three parachutes are consistent with reports from witnesses.

Alastair Reid e-mailed, “In the run up to production of the very expensive full colour two volume Skyship chronicle (I am close to completing), I have just published my translation of Ludwig Durr’s book “25 Jahre Zeppelin Luftschiffbau,” through Lulu publishing.com in order to see how the self publishing process works, and whether there were any unforeseen hazards/glitches. The paperback is now openly available for all to purchase from the Lulu publishing site, under the title: “25 Years of Zeppelin airship construction” and the author is listed as Dr. Ludwig Durr.” Ω

Alastair has kindly granted TNB permission to reprint short selections from the book when applicable.

POPULAR SCIENCE July issue gave Igor Pasternak’s “Aeroscraft” press releases some space, running a photo of the framework that has been completed at old Santa Ana for some time. Likewise July AIR & SPACE ran a “parasite aircraft” article with token R-33 and ZRS/F9C-2 mention, stating 5 Sparrowhawks went down with MACON. Ω

BLACK BLIMP

William John Freudenberg, 83, passed 25 May 2012. He joined the Navy right out of high school where he served in Aviation for 22 years. His final LTA assignment was with ZW-1 as a ZPG-3W crewman. Upon leaving the Navy he worked for NAVAIR Engineering in Lakehurst and Philadelphia. His hobbies consisted of spending time with his very large family. William is survived by his wife Betty, daughters Donna and Dorothy, sons Robert, John, James, George, Edward and Michael; 21 grandchildren, and 6 great-grandchildren. Ω



John C. Yaney, 63, a longtime member of the NAA, died from complications of surgery on July 4, 2012. John was a native of Whitman, MA, UMASS-Amherst graduate, MIT Masters graduate and a senior principal engineer for an engineering firm specializing in transportation projects. He was not an airship, nor Navy veteran. He did possess an encyclopedic memory of US Navy aviation facts and figures, from aircraft bureau nos. to runway directions and lengths. His passion was NAS So. Weymouth. He devoted many years to prevent its BRAC closure attempts and has been instrumental in the establishment of a museum to highlight NZW. He had just published a comprehensive history of the Naval Air Development Unit, NADU. The flight of the airship Snow Bird was a cornerstone of NADU's extensive work with airships. Ω



When life is over, it's not important who you were... it is whether or not you made a difference in someone's life! Ω

READY ROOM



2nd Cargo Airships for Northern Operations Workshop
By University of Alaska Fairbanks
University of Alaska, Anchorage, August 22-24, 2012

Sessions scheduled include: "NASA's Support for Airships in Alaska," "Risk Factors and Critical Design Elements for Large Airships," "A Tool for Airship Weather Modeling," "NASA Ames Modeling and Simulation Tools for Airship Designs and Operations," "Airship Ventures Deployment to Anchorage in 2013," "The First Helium Airship Designed and Built in Canada," "Aeros Corporation "Aeroscraft" Deployment Plan," "Hybrid Air Vehicles AIRLANDER," "Hybrid Airships: A Transportation Revolution," "Varialift Airships "ARH 50," "Ohio Airships "Dynalifter," "Augur "ATLANT," "Facilitating Airship Operations in Alaska," "Integrating Maintenance and Support into Airship Designs," "Commercial Heavy Lift Air Transport in Alaska," "A Business Case for a Commercial Cargo Airship Industry," "Potential for Heavy Lift Airships in Support of Mining Operations," "Financing Cargo Airship Development and Operations," "Funding Airship Development and Deployment," "Financing for Deployment of Airships in Alaska," "Initiatives to Facilitate Cargo Airship Deployments in the Arctic." Ω

LIGHTER SIDE OF LTA



The central market in Riga, Latvia, is built from remains of WWI Zeppelin hangars. Four are in a line and a fifth is perpendicular. One still has its upper catwalk and dolly! (Ed. photos.)

