The Flightline

Volume 54, Issue 1 Newsletter of the Propstoppers RC Club, AMA 1042, January 2024

Inside This Issue

President's Message

Gentlemen,

The status of our club is strong and growing. The slate of new members over the last few years has energized all of us. The variety of aircraft flown on a regular basis has broadened. Yesterday afternoon, Saturday JANUARY 28th, I counted 13 different members flying from the time I arrived around 1 PM till I left just before 4PM. There were probably a few guys out in the morning that I did not see.

Our Freeze Fly was a huge success with 20 – 21 members attending and flying. The camaraderie and helpfulness between the members is in epidemic proportions.

We continue to make improvements to both fields. We have been told that the builder trying to purchase CA Field has given up because he was unable to get any suitable percolation tests on our portion of the property. We continue to remove brush and have been discussing other improvements.

At Elwyn the runway widening, and road roller has made significant improvement.

Eight to ten members continually use Brookhaven Gym on Tuesday mornings at 10 AM after a 9 AM breakfast at Tom Jones. We have one more evening indoor date on Saturday March 2nd. Unfortunately, this month's date was a bust. We now have Harry's cell number and contact will be made prior to the March 2 schedule to make sure all is in good order. Thanks to Pete for organizing this

.

Take advantage of the decent winter weather we have been having and get out there and 'Keep'em flying"

Mike

Fields at Elwyn and CA are now fully open for members and guests, 8 AM to sunset every day all year round. (CA-electric only, Elwyn - Sunday mornings from 8AM to Noon electric only.

We respectfully ask all members to stay in compliance with all Health Department recommendations. The fully vaccinated are no longer required to wear a mask at the field.

Please respect those who are continuing to wear masks or who are not vaccinated, by maintaining social distancing.

LOA with Philadelphia International:
Please comply with the following rules to stay in compliance with our FAA Agreement:

- Maximum altitude 400 feet
- In case of Fly-Away call 215-492-4123 immediately. This is a direct line to the TRACON Office at Philadelphia International Airport.

Tuesday morning breakfast at the Tom Jones Diner starts at 9:00am Indoor flying at the Brookhaven Community Center gym follows at 10:00.

Members and guests must complete a waiver of liability form to fly at Brookhaven Gym.

Propstoppers RC Club of Delaware County, Pennsylvania.

Club Officers

President:
Mike Black

Vice President:
Pedro Navarro

Secretary:
Michael Black

Treasurer:
Pete Oetinger

Membership Chairman:
Ryan Schurman

Safety Officers:
Eric Hofberg
Ryan Schurman

Newsletter Editor:
Larry Woodward

FacebookEditor:
Ryan Schurman

Webmaster:
Michael Black

Propstoppers Web Site;
www.propstoppers.org

Contact: Propstoppers@gmail.com

Indoor Flying at the Brookhaven Gym

The Brookhaven Community Gym is open to members Tuesdays at 10:00-11:00.

Indoor pilots must sign a waiver of liability form.

Minutes of the Propstoppers Model Airplane Club

General Membership Meeting Minutes from November 18, 2023

Call to order: 11:08am at CA Field. 20 active members, including all members of the board, were present.

Treasurer's Report: Pete Oetinger

a. ~$5,000 in bank
b. Dues begin coming in.
c. $90 check / $93 PayPal before 12/31. After 12/31 $93/$103 respectively.

Membership: Ryan reported membership currently at 60 members.

Website: Mike,

a. Website will be updated to show FRIA approval status for both of our fields.
b. Can use Emblem provided.

Newsletter: No report.

Safety: No issues reported.

New Business:

1. Elwyn Field Improvements and Expansion – field was rolled and cut back to original width and lengthened by 6-8'. Widened by ~20'. Paul cut the new area of the field and 4 paths into the meadow for recovery of any equipment.
2. Hats – new guys want them, buy and sell at cost.
3. Meeting and possible picnic CA
4. Freeze Fly 1/1/2023 – coffee and donuts, 10am start with a dozen or so interested.
5. Drexel – club needs support on 12/2 at 10am.
6. Elections – no new nominations for any officers. Motion was passed to re-elect current board members for another year.

Adjourned: 11:33am

Show and Tell:

Jeff Frazer – brought LiPo storage box.

Michael Black – E-Flite Commander mPd 1.4m BNF Basic with AS3X and SAFE Select

Editor's Notes:

By Larry Woodward

Our fall weather could not have been more cooperative with many warm and windless days. January has not been so generous, including the cancellation of one of our two indoor evening sessions scheduled for this winter. But, we won't give up easily. As Mike demonstrated in his opening message, we are bigger and stronger than we have been in years with new membership and copious enthusiasm. We will persevere, indoors and out.

In the last issue there was an effort to juxtapose articles from the early and from the latest years of aviation in order to illustrate fundamental concepts. This issue is less carefully crafted but, hopefully, no less enjoyable. Most of the advanced aircraft profiled are "state of the art "in one sense or another.

One article that I enjoyed particularly, though, is at the end of the newsletter, "Pathfinder 1 – world's largest aircraft…." We may have thought that lighter-than-air aircraft (LTA) were long ago dismissed as impractical dinosaurs, notwithstanding the Goodyear blimp used for aerial photography and advertising space at large public events. The rubber blimp extended the life of LTA's for a few decades after the demise of dirigibles.

As a young boy growing up along the shoreline south of Boston I would regularly see blimps, used for submarine spotting along the coast, coming and going from the nearby South Weymouth Naval Air Station. They seemed to me to be about the most uncontrollable and clumsy devices ever conceived. Unpredictable and subject to violent movements in the lightest of winds it was hard to see why they tried. I recall when one of the houses in my neighborhood had its chimney knocked over by a blimp blown off course at very low altitude while on landing approach.

Indoor flying at Brookhaven gym.

As aircraft they seemed designed to fail. Light in weight and huge in size they were exponential drag machines. Even if you could give them enough power to reach useful speed, the resulting surface drag and weight grew even faster. The necessary volume to surface ratio needed to make them light countered any possible development of an airfoil or other rudimentary aerodynamics.

So, what is wrong with TechCrunch that they are sinking a small fortune into the first dirigible since the 1930's? The answer is technology. Just as we saw with several aircraft last month, the availability of stronger and lighter structural materials, like carbon fiber, and the use of highly efficient electric motors and batteries has sent many designers back to some earlier ideas. The hope is for these modern day dirigibles to be highly efficient, and "green," transportation. With rigid structures and smaller more numerous motors functioning as control thrusters as well as propulsion they should be more controllable at low speeds where drag would be minimal. Like a flying coal barge, they will lumber along very slowly, but at a very low energy consumption rate.

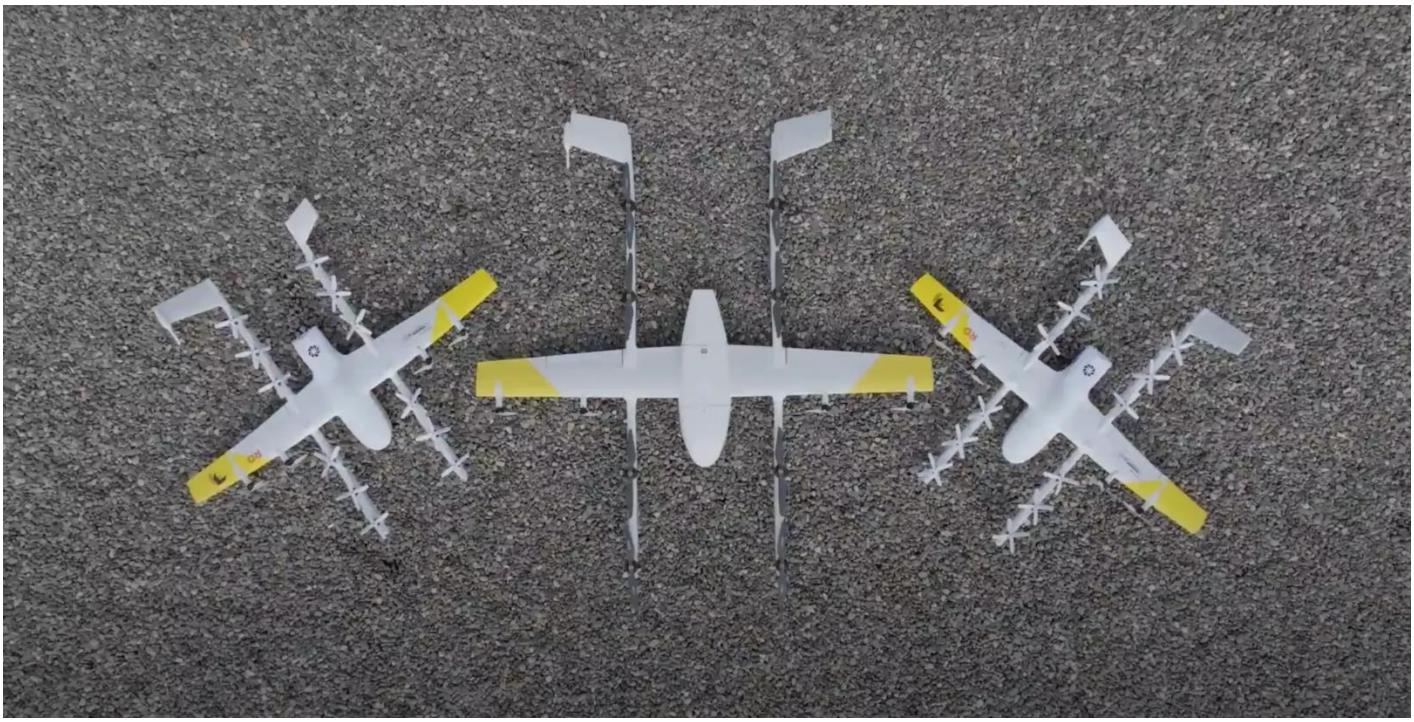
Finally, don't forget to check out the Endnotes and Links section at the end of the newsletter. Very often will receive video links or other references that are not set up for an article, but are otherwise entertaining or helpful. This issue, in the end, has quite a lot to offer..

January 1, 2024 Elwyn Field "FreezeFly"

Alphabet's Wing supersizes delivery drones to tow big order

Submitted by Dave Harding

Wing, the drone-powered delivery company operated by Alphabet, intends to introduce a larger craft capable of towing heavier packages to customers.



The news comes on the heels of Walmart's decision to expand its drone deliveries in the Dallas-Fort Worth area, so it's no wonder Wing is working to upgrade its stock; the outfit is one of the two firms facilitating Walmart's drone delivery effort, alongside Zipline.

Walmart said last week that a quarter of the items in its larger Supercenter stores don't meet the current size and weight requirements for delivery by drone. That's not all that surprising — Wing's current drones can only handle packages weighing up to a modest 2.5 pounds.
Wing's larger drones, however, will handle "up to 5 pounds in a standard cardboard box," the company told TechCrunch. They await approval from the U.S. Federal Aviation Administration.

Notably, Amazon's delivery drones also have a five-pound weight cap. The online shopping giant aims to expand its drone-delivery effort into the U.K. and Italy in 2024.

Meanwhile, Wing said it aims to bring its own supersized craft to market within the next year.

“It’s always been our vision to implement a multi-modal drone delivery model,” Wing CEO Adam Woodworth said in a statement. “We are currently focused on launching the new plane and our Aircraft Library design philosophy enables us to test and build new drones based on customer and partner need,” Woodworth added. To the CEO’s point, he’s talked about expanding Wing’s fleet before.

When Wing drones arrive at their destination, they don’t land; instead, they lower solitary packages down on a wire before setting them onto the ground. So far, Wing claims it has completed 350,000 deliveries in three continents. In the U.S., the company says it has more than 1,000 crafts registered.

DARPA Moves Forward on X-65 Technology Demonstrator

In third phase of CRANE program, Aurora Flight Sciences will build X-plane with no moving control surfaces

Submitted by Dave Harding

OUTREACH@DARPA.MIL
1/3/2024

DARPA has selected Aurora Flight Sciences to build a full-scale X-plane to demonstrate the viability of using active flow control (AFC) actuators for primary flight control. The award is Phase 3 of the Control of Revolutionary Aircraft with Novel Effectors (CRANE) program.

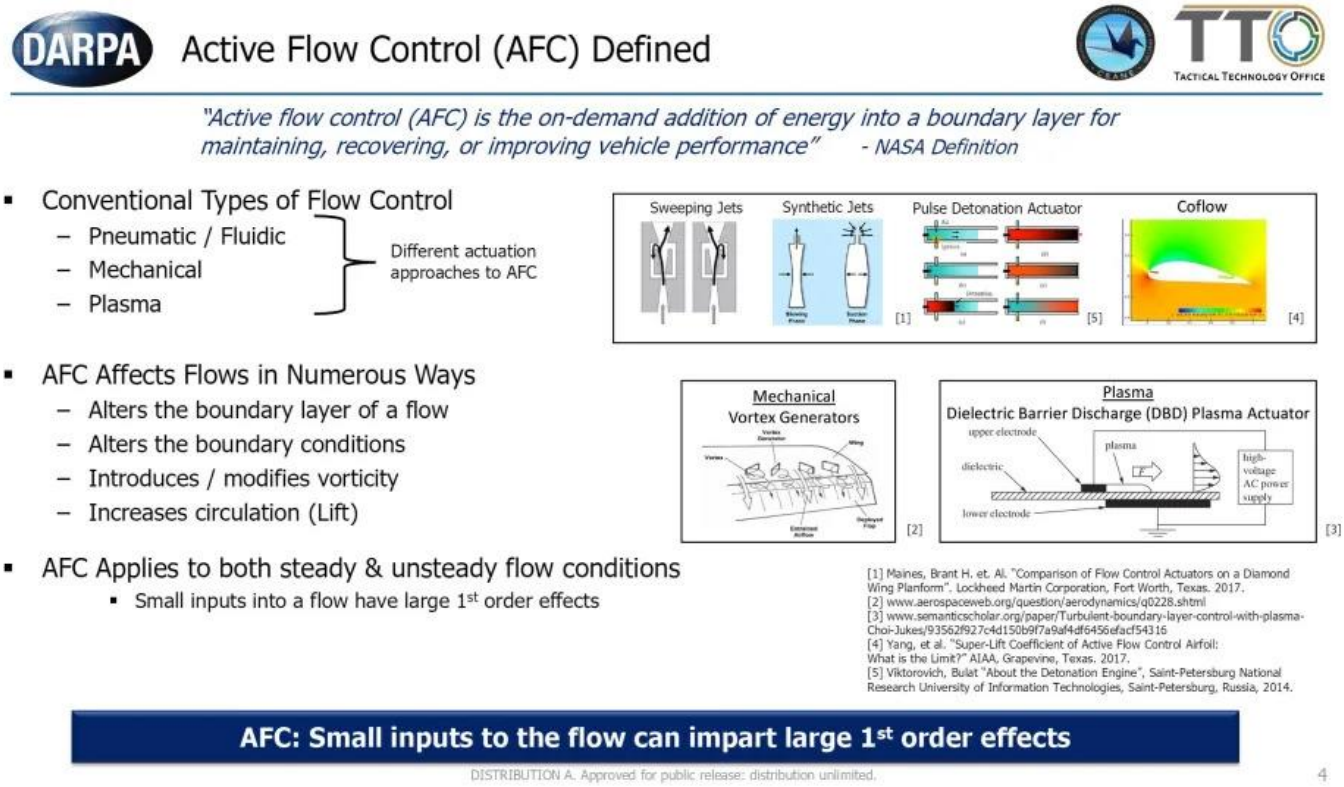
In December 1903, the Wright brothers flew the world's first fully controllable aircraft, which used wing warping to successfully achieve flight. Virtually every aircraft since then has used a system of movable, external control surfaces for flight control.

The X-65 breaks this century-old design paradigm for flight control by using jets of air from a pressurized source to shape the flow of air over the aircraft surface, with AFC effectors on several surfaces to control the plane's roll, pitch, and yaw. Eliminating external moving parts is expected to reduce weight and complexity and to improve performance.

“The X-65 is a technology demonstrator, and it’s distinctive, diamond-like wing shape is designed to help us maximize what we can learn about AFC in full-scale, real-world tests,” said Dr. Richard Wlezien, DARPA’s program manager for CRANE.

The X-65 will be built with two sets of control actuators – traditional flaps and rudders as well as AFC effectors embedded across all the lifting surfaces. This will both minimize risk and maximize the program’s insight into control effectiveness. The plane’s performance with traditional control surfaces will serve as a baseline; successive tests will selectively lock down moving surfaces, using AFC effectors instead.

“The X-65 conventional surfaces are like training wheels to help us understand how AFC can be used in place of traditional flaps and rudders,” said Wlezien. “We’ll have sensors in place to monitor how the AFC effectors’ performance compares with traditional control mechanisms, and these data will help us better understand how AFC could revolutionize both military and commercial craft in the future.”



The 7,000+ pound, unmanned X-65 will have a 30-foot wingspan and be capable of speeds up to Mach 0.7. Its weight, size, and speed – similar to a military trainer aircraft – make the flight-test results immediately relevant to real world aircraft design.

“We’re building the X-65 as a modular platform – wing sections and the AFC effectors can easily be swapped out – to allow it to live on as a test asset for DARPA and other agencies long after CRANE concludes,” said Wlezien.

Aurora Flight Sciences has already started fabricating the X-plane; the X-65 is scheduled to be rolled out in early 2025 with the first flight planned for summer of the same year.

Bally Bomber,

the Amazing Homebuilt B-17G Flying Fortress Replica That Flies

Submitted by Dave Harding

Published: 10 Sep 2021, 04:14 UTC • By:

Elena Gorgan 

You often hear about how you can achieve wonders with patience and skill, and determination to apply yourself to a task and stick with it. That's what this is, besides being a very inspiring and awesome story.

Jack Bally, an aviation enthusiast and Vietnam vet, and carpenter by trade, is the designer and builder of what is probably the most impressive homebuilt B-17 replica you're ever likely to see. They call it the Bally Bomber, and it's a perfect fit for autoevolution's American Month, the virtual party celebrating American ingenuity, dedication, and sheer level of awesome.

The Bally Bomber was completed in 2016 and officially introduced at the Experimental Aircraft Association's 2018 AirVenture airshow in Oshkosh, Wisconsin (hat tip to Jalopnik). It's a very convincing and well-executed 1:3 scale replica of a B-17G Flying Fortress warplane. B-17 is widely considered, throughout its many iterations, the most accomplished and impressive aerial weapon built in the United States.

As noted above, Jack Bally was a carpenter by trade, but his true love was aircraft. He was a regular with EAA for his impressive builds, most of which were one-engined kits. For what he said would be his last build, he decided to go for something “different.”

Photo: Facebook / EAA

The idea came to him as many great ideas do: at the bottom of several pints of beer, he would recall laughing. He said he would build a replica plane that would have more than two engines, and he and his friends laughed about it. But the decision stuck with Jack and it would prove the incentive behind an 18-year project that became both incredibly challenging and a lot of fun.

Initially, Jack wanted to build a B-24 Liberator plane replica, but it proved impossible to scale down. He changed his focus to the B-17 and used a 1:9 scale B-17 R/C plane to draw his initial design, which was made a scale larger. Then, for the next 18 years, he kept working and touching up his creation, until it was completed and ready for its maiden flight in 2016.

Jack called it the Bally Bomber and he named friend and associate Richard Kosi as pilot. When the duo brought the replica to Oshkosh two years later, where it went on display and on a demonstration flight, Kosi had some 52 hours of flight on it, and he called it the greatest achievement of his career. Indeed, the Bally Bomber doesn’t just look good, but is actually fully functional.

It's powered by four Hirth F-30 two-stroke four-cylinder air-cooled boxer engines, factory rated at 80 hp each but limited to 60 hp, delivering a combined output of 240 hp. At one point, Jack had them running at 45 hp. The plane is a single-seat that, as Jack intended it, handles much like a Cessna. It has a wingspan of 34 feet and 7 inches (1,054 cm), and is 25 feet long (762 cm). Kosi calls the Bally Bomber underpowered, but it still cruises at 110 knots.

Photo: Facebook / EAA

The fuselage is aluminum riveted, entirely built by hand. There's a retractable landing gear and most of the distinctive elements on the real-life Flying Fortress are present. The most startling difference is due to considerations of space: the cockpit is larger than it should have been, to allow for a grown man to sit inside and pilot the thing.

In the 2018 EAA video below, Jack says that, even though he put some 40,000 hours in the project and despite the many challenges faced, he has no idea where time flew because he had fun. The emotion in his voice as he says this is perhaps an even more beautiful thing than the

plane, and that's saying something. If you can ever talk about a project of love without falling into cliché, this is one such time.

Jack Bally passed away in the summer of 2020. His Bally Bomber lives on, although it has already changed hands (the second video below shows the new owner flying it at Oshkosh 2021). It continues to tell the story of one's man dream, and the kind of determination and skill he put into making it real.

Click the photo below for video:

NASA, Lockheed Martin Unveil Finished X-59

Submitted by Dave Harding

Published:January 13, 2024Updated:January 14, 2024

Lockheed Martin Photography By Garry Tice 1011 Lockheed Way, Palmdale, Ca. 93599 Event: X-59 - Glamour Shoot Day Date: 12/12/2023 Additional Info:

On Friday, NASA and Lockheed Martin displayed the X-59 QueSST (Quiet SuperSonic Technology), the agency's latest X aircraft designed to break the sound barrier without generating a sonic boom. The aircraft was shown off at a ceremony hosted by Lockheed Martin Skunk Works at its Palmdale, California, research facility.

According to NASA, the X-59 QueSST is integral to its Low Boom Flight Demonstration project, which gathers data for informing regulations on potential commercial supersonic flight over land. The initiative comes five decades after the FAA banned such flights due to the disruptive noise caused by sonic booms.

NASA says the aircraft is expected to fly at 1.4 times the speed of sound, or 925 mph. Because of its shape and technological innovations (the aircraft is 99.7 feet long and 29.5 feet wide), NASA expects quiet supersonic flight to be possible. "In just a few short years we've gone from an ambitious concept to reality. NASA's X-59 will help change the way we travel, bringing us closer together in much less time," said NASA Deputy Administrator Pam Melroy in a press release. NASA says the X-59 QueSST is set to make its first flight later this year.

Nuclear stealth bomber, the B-21 Raider, takes first test flight

Submitted by Dave Harding

By Tara Copp, AP
Nov 10, 2023

The initial B-21 Raider stealth bomber is expected to have its first flight at some point in 2023, the Air Force and Northrop Grumman said. But in a Wednesday discussion, Air Force Secretary Frank Kendall said the expected date of the bomber's first flight had slipped a few months. (U.S. Air Force)

The B-21 Raider took its first test flight on Friday, moving the futuristic warplane closer to becoming the nation's next nuclear weapons stealth bomber.
The Raider flew in Palmdale, California, where it has been under testing and development by Northrop Grumman.

The Air Force is planning to build 100 of the warplanes, which have a flying wing shape much like their predecessor the B-2 Spirit but will incorporate advanced materials, propulsion and stealth technology to make them more survivable in a future conflict. The plane is planned to be produced in variants with and without pilots.
"The B-21 Raider is in flight testing," Air Force spokeswoman Ann Stefanek said.

Such testing is a critical step in the campaign to provide “survivable, long-range, penetrating strike capabilities to deter aggression and strategic attacks against the United States, allies, and partners,” Stefanek said.

The Air Force's first B-21 Raider is shown at Plant 42 in Palmdale, California, where Northrop Grumman is building the service's new stealth bomber fleet. (Air Force)

The B-21 Raider is the first new American bomber aircraft in more than 30 years, and almost every aspect of the program is classified. Both Northrop Grumman and the Air Force have tried to protect the program’s details to prevent China from gaining access to the weapon’s technology and building a similar version, as it has with other U.S. advanced weapons systems like the F-35 joint strike fighter.

The B-21 is part of the Pentagon’s efforts to modernize all three legs of its nuclear triad, which includes silo-launched nuclear ballistic missiles and submarine-launched warheads, as it invests in new weapons to meet China’s rapid military modernization.
Northrop Grumman Corp. is based in Falls Church, Virginia.

Pathfinder 1: world's largest aircraft unveiled in California

Submitted by Dave Harding

Story by Chas Newkey-Burden, The Week UK • 2mo

The world's largest aircraft was unveiled in Silicon Valley yesterday, promising a new era in greener flight.

The airship "floated silently" from its "WW2-era hangar" at Nasa's Moffett Field near San Jose at "walking pace", reported TechCrunch. It was steered by ropes held by dozens of engineers, technicians and ground crew.

Powered by 12 electric motors and capable of up to 75mph, Pathfinder 1 is 124.5 meters (408ft) in length – longer than three Boeing 737s. "There's a new airship in town," said Morning Brew, after the launch, which is backed by Google co-founder and "dirigible fanatic" Sergey Brin.

It's the largest aircraft since the "gargantuan Hindenburg" airship of the 1930s, said TechCrunch. Although "similar in appearance to that ill-fated airship", Pathfinder 1 was "mostly built from the ground up using new materials and technologies", it added.

And "don't let the Hindenberg put you off the idea", said 2Oceans Vibe, because Pathfinder 1 will use "only non-flammable helium", as opposed to "explosive hydrogen", which was used by the

German Hindenburg, which burst into flames and crashed to earth, with the loss of 36 lives, in May 1937.

It took 10 years, fraught with "blood, sweat, and tears", to create Pathfinder 1, which its creator, LTA Research, hopes will "kickstart a new era in climate-friendly air travel", and "accelerate the humanitarian work" of Brin, said TechCrunch.

LTA (which stands for 'lighter than air') plans to make even bigger airships that could eventually carry 200 tons of cargo each – approximately 10 times as much as a Boeing 737. The company also hopes to use the airships for relief missions in disaster zones.
Before all that, a series of "increasingly ambitious flight tests lie ahead", said TechCrunch. Initially, these tests will take place "just a few feet off the ground". Some "simple maneuvers around Moffett Field" will then be followed by "a series of flights out and over the Bay".

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A Moment in Flight:

Flight Video by Pedro Navarro

Pedro has taken up yet another aviation category, helicopters! After many years he has finally succumbed to the lure of rotors humming overhead. Check out this first Heli video with music by Pavorotti

Editor

Click below to see this issue's Moment in Flight.

The Firefox C129 and Pavorotti

Endnotes and Links

Autonomous toy glider sets another record.
In another epic James May's Toy Stories Special, James get to the heart of the nation's childhood love affair with the model plane and sets out to achieve what seems an impossible dream: The first cross channel flight ever achieved by an engineless, homemade supersized toy. If it survives the perilous 22 mile journey, James's glider, built from over 1000 pieces, will smash the British distance record.
Can This 1000 Piece Model Plane Fly 22 Miles!? | Toy Stories Special (youtube.com)

A little observation on railroad gauges and engineering progress.

"The US standard railroad gauge (distance between the rails) is 4 feet, 8.5 inches. That's an exceedingly odd number. Why was that gauge used? Well, because that's the way they built them in England, and English engineers designed the first US railroads.

Why did the English build them like that? Because the first rail lines were built by the same people who built the wagon tramways, and that's the gauge they used. So, why did 'they' use that gauge then?

Because the people who built the tramways used the same jigs and tools that they had used for building wagons, which used that same wheel spacing. Why did the wagons have that particular odd wheel spacing?

Well, if they tried to use any other spacing, the wagon wheels would break more often on some of the old, long distance roads in England . You see, that's the spacing of the wheel ruts. So who built those old rutted roads?

Imperial Rome built the first long distance roads in Europe (including England) for their legions. Those roads have been used ever since. And what about the ruts in the roads? Roman war chariots formed the initial ruts, which everyone else had to match or run the risk of destroying their wagon wheels. Since the chariots were made for Imperial Rome , they were all alike in the matter of wheel spacing.

Therefore the United States standard railroad gauge of 4 feet,8.5 inches is derived from the original specifications for an Imperial Roman war chariot. Bureaucracies live forever.

So the next time you are handed a specification/procedure/process and wonder 'What horse's ass came up with this?', you may be exactly right. Imperial Roman army chariots were made just wide enough to accommodate the rear ends of two war horses. (Two horses' asses.) Now, the twist to the story:

When you see a Space Shuttle sitting on its launch pad, there are two big booster rockets attached to the sides of the main fuel tank. These are solid rocket boosters, or SRBs. The SRBs are made by Thiokol at their factory in Utah .

The engineers who designed the SRBs would have preferred to make them a bit fatter, but the SRBs had to be shipped by train from the factory to the launch site. The railroad line from the factory happens to run through a tunnel in the mountains, and the SRBs had to fit through that tunnel. The tunnel is slightly wider than the railroad track, and the railroad track, as you now know, is about as wide as two horses' behinds. So, a major Space Shuttle design feature, of what is arguably the world's most advanced transportation system, was determined over two thousand years ago by the width of a horse's ass. And you thought being a horse's ass wasn't important? Ancient horse's asses control almost everything." Author unknown.

World's largest rubber powered model airplane

https://www.youtube.com/watch?v=jgwkA-hLvf4

Best STOL Wing Design Ever?!?

High Lift wings, all you ever want to know about leading edge slats, open flaps and multi-wing potential.

https://www.youtube.com/watch?v=Rc7PcmAl7Ag

Virgin Galactic Unity soars to suborbital space with its 1st commercial passengers

<https://www.youtube.com/watch?v=QodWlG2gK5E>

Pickles by Brian Crane