



The Flying Wire



July 2026

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Chapter 124 Experimental Aircraft Association

Next Chapter Meeting: Wednesday, July 1

Dinner – 6:15 pm \$15

General Meeting – 7:00 pm

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Program: July 1 Meeting

Builders' Reports and Foreflight Updates!

Summer is finally here! We may still be waiting on the hot weather, but the activity is heating up here at 124 and good flying abounds!

July's Chapter meeting has a lot going on.



Chapter members **Marlon Young** and **Bob Leach** will be giving builders' reports on their respective RV aircraft builds. Marlon's been putting in a lot of time on his project and making massive progress. Rumor has it that Bob will even be flying in with his freshly finished and newly painted aircraft for all to check out! It's a beauty!

In addition, **Campbell Potter** will give a presentation on some of the finer points and advanced features and aspects of **Foreflight**. A lot has changed since Foreflight debuted in 2007 and became the premier pilot's cockpit tool. With Oshkosh coming up, Campbell will demonstrate what's new and exciting in the program, using some real world examples of a trip to Wisconsin and AirVenture! Suffice to say, it's not your father's Foreflight anymore!



It should be a great night! We look forward to seeing you there!

Dinner Menu: Hamburgers and Hot Dogs with lots of fixings. Baked Beans and Coleslaw or Carrot Salad. Ice cream and cookies for dessert. **\$15**



News and Updates

Bob Leach's New Plane Revealed!

As we mentioned last month, EAA Chapter 124 member **Bob Leach** completed his RV-14 after four years of construction. On Saturday, June 20, the aircraft was displayed in Bob's hangar at Healdsburg Airport. N707OL features a striking three-color finish with black flake, gray and red trim. Its Garmin instrument panel and tan leather interior give it the refined feel of a luxury automobile. We're hoping he will also be able to fly it to our Chapter meeting on July 1!

Congratulations to Bob and his wife Carol who led the open house reveal of the airplane!



Chapter Clean-Up Day

This past June 6th, 124 finally had its long awaited Chapter clean-up day. Volunteers came out and donated their time and equipment and gave the facility a long needed scrapping out, clean up and scrub down!

The main hangar was thoroughly gone over, along with the bathrooms and the Chapter meeting room. The shade hangars and outer grounds also got the once over. Two full dump trailers were filled to the brim with the accumulated trash and debris from years of neglect and build up. It was all hauled off site and disposed of!



Special thanks to volunteers **Paul Hollingworth, Jeremiah James, Brayden Hall, Davy Khoury, Ross Wilcox, Sam James, Mike Tovani** and **Dominic Cerniglio** who all managed to have fun amidst the chaos and clouds of dust. **Larry Rengstorf** even made a special guest star appearance! A good time was had by all, and plans were made for a subsequent Chapter clean-up day coming up next quarter!

Elsewhere...

2025 Ray Scholar recipient **Sam James** and 2026 Ray Scholar recipient **Brayden Hall** go over some flight planning exercises and take a study break while at lunch at Carr's Drive-In in Forestville. They're looking pretty wiped out after a long day of work at the Chapter clean-up day! But not too tired to get in a little study time!



Meanwhile...

Campbell Potter does a victory lap off taxiway Golf after solving a tough problem and fixing the Chapter's John Deere riding lawnmower with **Jeremiah James**, **Dominic Cerniglio** and **Conner Magee**.



Back at the Ranch...

Chapter 124 Member **Bill Conklin** was the guest chef for this past June's meeting, serving his world famous Paella and Texas sheet cake! Bill was kind enough to step in a take over the kitchen duties while Sam and Andy were away on a well-deserved vacation. He did a fantastic job, and everyone loved the food. Thanks Bill!! We appreciate it!



If you'd like to provide a Chapter meal, or even part of a meal, please contact **Dom Cerniglio** (310-628-9008 or dcerniglio@mac.com). We'd really love to get more people involved, not least to make it easier on Sam and Andy! Menu ideas, logistics - we'll give you all the help you need!

Exciting News for Our Younger Members!

Recently, Chapter 124 has seen an excellent increase in young people attending the meetings and joining the Chapter. We're keen to encourage this, as bringing new blood into aviation is very important and a way we continue the Chapter into the future.

We love to have younger members at all our meetings and events and hope they keep on coming! But we do recognize that younger people may also have different needs and interests from some of our older pilot members! So, in addition to everything we already do at 124, we want to start up something more geared toward getting younger people into aviation.

There's no fixed plan yet as to exactly what this new program will look like – in fact, we very much want to get some of our new young members to help define and drive it. We'll be talking more about this at our August Chapter meeting, but if you are a young person with ideas that you can't wait that long to share, please reach out to board member **Paul Hollingworth** (408-802-9242 or paul@bayareagyro.com) – he'd love to hear from you!

In the meantime, we'll be starting up special meetings for interested young people (members and non-members) that will run in addition to our regular Chapter meetings. **The first meeting will take place at EAA124 at 7pm on Wednesday July 15th.**

If you're a young person interested in getting into aviation, please join us on July 15 to find out more about this exciting new venture.



Young Eagles Update

Sadly, our Young Eagles event scheduled for June 27 had to be cancelled. We hope to find another date to replace this event, in addition to the two events already scheduled for August 29 and September 26.

Newsletter Content Needed!

Got any good stories? Fun pictures to share? Send your aviation-themed content to our newsletter editor **Jenny Hollingworth** at jennyhollingworth14@gmail.com

The Rocket Equation

By Andy Werback

We all know that $F = M * A$. Force equals Mass multiplied by Acceleration. Typically, Force is expressed in Newtons (N) or pounds force (lb_f), mass in kilograms (kg) or pounds mass (lb_m), and Acceleration in meters/sec/sec or feet/sec/sec (m/s^2 or ft/sec^2). Does that make sense yet? Grab your old physics textbook. Hopefully it does make sense, but the main thing is that the units line up on both sides of the equation.

Acceleration due to force is an interesting thing. Distance per unit time per unit time. But there is another case: acceleration due to gravity - about 32 feet per second per second, at least on the earth's surface, based on the mass of the earth and the distance from that mass. If you drop an object in the gravitational field, such as an apple from a tree, it will accelerate towards the center of the gravitational force. But here on the surface of the earth, we also have acceleration due to the rotation of the earth - we travel at slightly over 1,000 miles per hour on the surface of a planet with a roughly 7,920 mile diameter (3,860 mile radius). And that causes a centripetal acceleration of $.034 m/sec^2$ ($.11 ft/sec^2$) at the equator (V^2/R) to keep us going in a circle.

If we're going at a constant speed, meters per second or feet per second, then there is no acceleration. Then $F = M * A = 0$, because A is zero. But since we're moving, we accumulate distance as $D = R * T$ - Distance = Rate * Time.

All good stuff.

But what if conditions are changing? When we accelerate on the runway, we're looking for rotate or lift-off speed, and how much power we have offsets how much weight we have. More power or less weight gives us faster acceleration. Faster acceleration is less runway needed. Having an underpowered airplane means making sure you have enough runway length for takeoff and obstacle clearance. In our case, $F = M * A$ is a good first approximation, but it is only approximate, as other factors like tire rolling resistance, parasitic and induced drag come into play. As the airplane goes faster, these all increase, causing acceleration to decrease. You are also using up some fuel, making the aircraft lighter. Interesting, but probably not going to change your plans by much.

Well, let's not get carried away by the details. According to Einstein, it's all Relative anyway.

But, what about a rocket? Here, things are changing rapidly. Particularly the mass of the rocket as it burns fuel. How fast will the rocket be going when it (literally) exhausts its fuel? What if the rocket is oriented horizontally (constant gravity) or vertically (gravity decreasing as it gains altitude)? Lots of variables. Computing all of this was lots of fun in the days before computers. And back in the day, the young ladies that did the Apollo calculations were referred to as "human computers" as they ran the numbers on mechanical calculators. Now, any iPhone [™] or laptop can run software to compute the answers through integration and a bit of calculus (Issac Newton would be proud!).

Several notable scientists worked on the rocket concept. In particular, Konstantin Tsiolkovsky (1857 - 1935) is credited with the development of the Rocket Equation. He was quite a guy, in the same astronautical pioneering era as Hermann Oberth and Robert Goddard (see the Wiki article listed below). This equation, published in 1903, gives the change in velocity of a vehicle due to the ratio of the change in mass and the specific impulse (change in momentum due to the mass of fuel used over unit time).

Yes, it gets complicated fast. Just for fun:

$$\Delta v = v_e \ln \frac{m_0}{m_f} = I_{sp} g_0 \ln \frac{m_0}{m_f},$$

So, briefly Delta V (Change in Velocity) is based on the exhaust velocity (v_e) times the specific impulse ($I_{sp}g_0$) times standard gravity times the natural log of the ratio of the initial mass and the final mass. All good, right? But basically, the more powerful the fuel (higher exhaust velocity for a given weight of fuel) and the more fuel and less structure and payload, the more the velocity change, and the faster you go. And that's just the beginning.

Getting to the moon was not simple. Maybe you had just enough propellant to get you to escape velocity. But with just enough velocity, it would be a long trip to the moon, with lots of supplies and oxygen required to sustain life. A higher velocity would take more fuel, but it would reduce the amount of payload (supplies and oxygen), so there is an optimum balance somewhere in the design.

Early on, the first concept for an expedition to the moon envisioned a single huge rocket, tons of equipment and supplies, and a whole scientific crew spending a few weeks exploring near the landing site. That would have been interesting – what if some little thing had gone wrong?



Illustration by Chesley Bonestell, Conquest of Space (Bonestell, Ley), 1949

The above design was pretty futuristic. A very efficient method of propulsion was apparently anticipated, as this was a single-stage design, returning the whole assembly back to earth.

But then reality stepped in and things got *really* big:

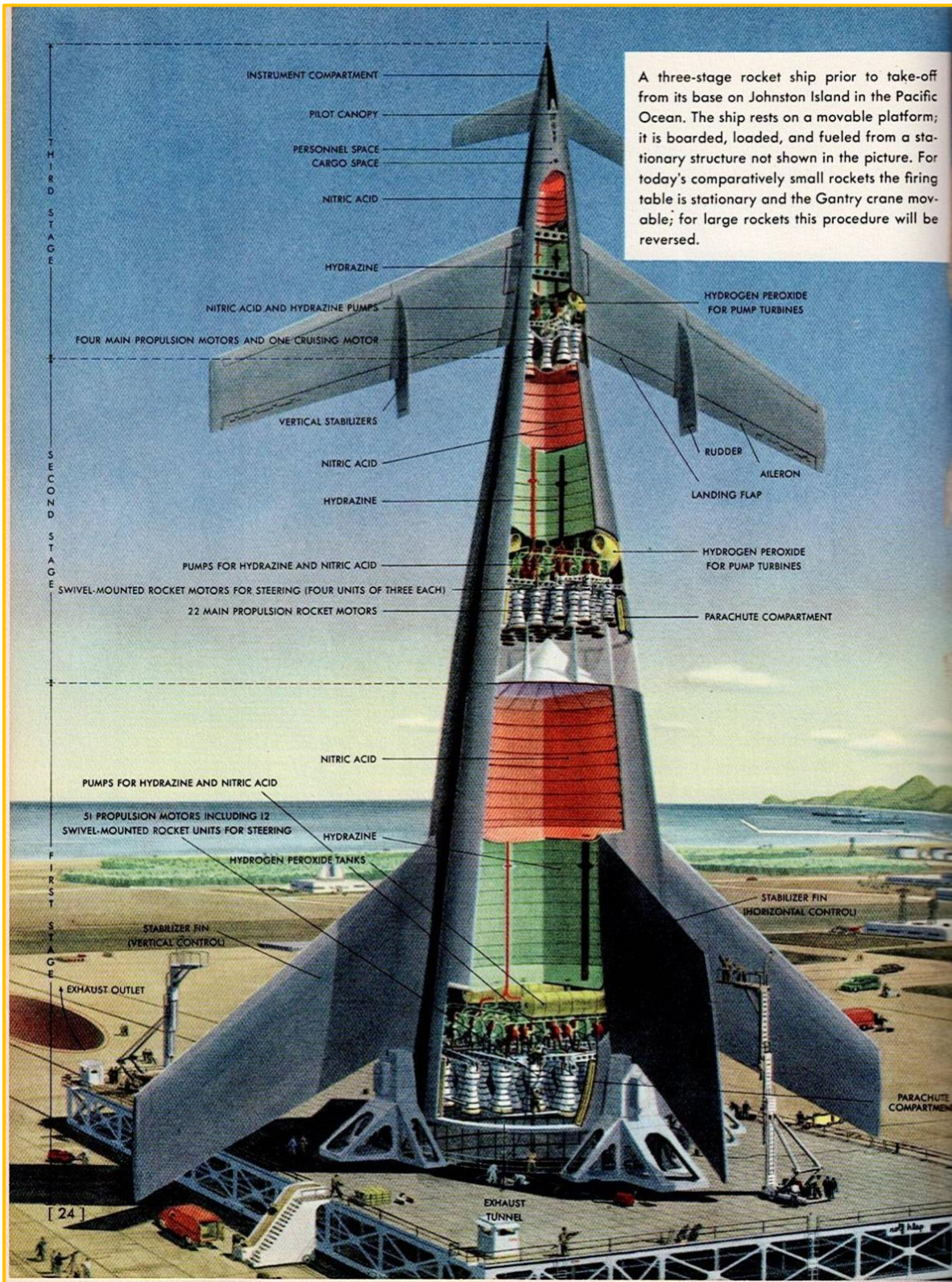
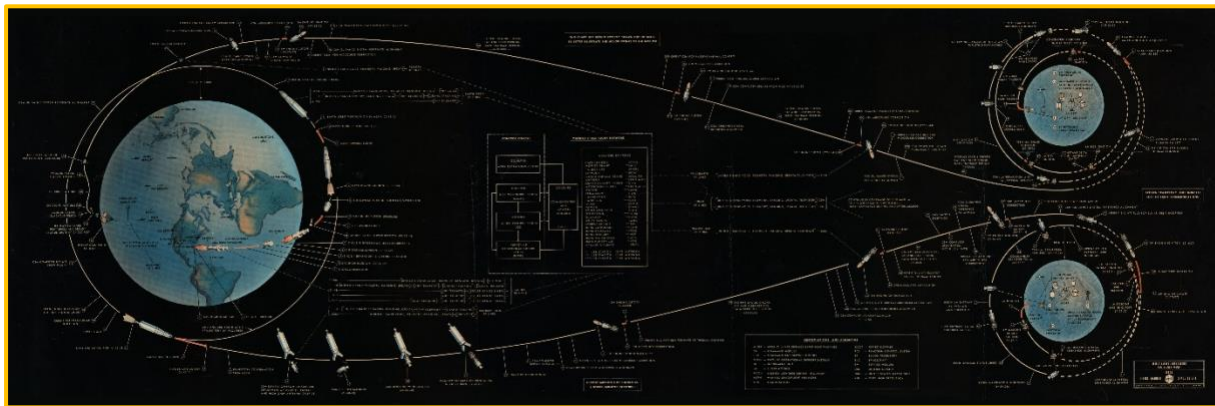


Illustration by Chesley Bonestell, *Across the Space Frontier*, edited by Cornelius Ryan, 1952

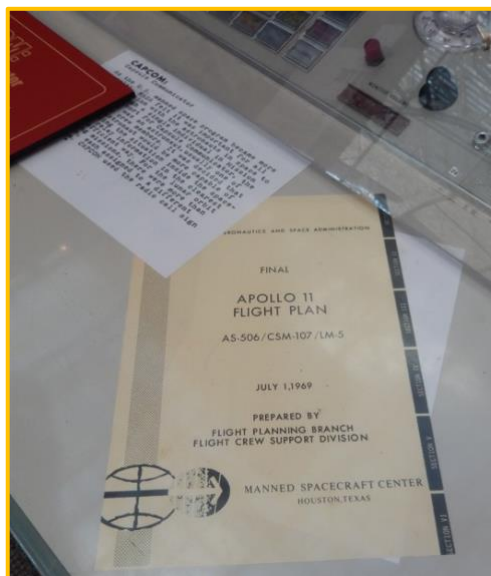
Fortunately, when Werner Von Braun and his team took a second look at the Rocket Equation and the basic limitations of getting to the moon, they figured out that a multi-stage rocket and a lunar orbit rendezvous (LOR) was the only way to go. A bare minimum amount of weight delivered to the moon and even less that had to rocket off the moon back to the lunar orbit rendezvous. This approach was finalized in 1962 – just 7½ years before the first landing on the moon.

Today we have the 3-stage rocket – the first stage gets things going and burns huge quantities of fuel. When the second stage takes over, it has a much smaller structural and fuel weight and is much more effective for accelerating the remaining payload. And with the two-component lunar lander, even less weight finally gets to the moon with less still blasting off back to lunar orbit. In the case of the Apollo program and the Saturn V rocket system (363' tall!), the mass at takeoff was about 6.2 to 6.5 million pounds. Of that, 36,000 pounds made it to the surface of the moon (0.58% of the initial weight), and the 10,000 lb ascent stage was only 0.16% of the initial weight - and over half of that was fuel!



Apollo 11 Flight Plan illustration, 1967 (NASA)

A few years ago, I visited the Museum of Flight in Seattle. They have an excellent display of Apollo 11 artifacts – Mission Control, Apollo Command Module, Lunar Rover (Apollo 15, 16, 17) and the Destiny space science laboratory module of the International Space Station.



Apollo 11 Flight Plan cover (photo by author)

And that's how we got to the moon.

Resources:

- [Konstantin Tsiolkovsky – Wikipedia](#)
- [Tsiolkovsky Rocket Equation – Wikipedia](#)
- [SPRING Propulsion: The Rocket Equation](#)
- [Apollo 11 Flight Plan - NASA](#)
- [Apollo Flight Diagram - NASA](#)
- *The Conquest of Space*, by Willy Ley, Illustrations by Chesley Bonestell, 1949
- *Across the Space Frontier*, by Joseph Kaplan, Werner von Braun, Heinz Haber, Willy Ley, Oscar Schachter, Fred Whipple. Edited by Corneilus Ryan* with illustrations by Chesley Bonestell, 1952
- *Conquest of the Moon*, Werner von Braun, Fred Whipple, Willy Ley, edited by Corneilus Ryan* with illustrations by Chesley Bonestell, Fred Freeman, Rolf Klep, 1953

*Interesting note: Cornelus Ryan is the same person who wrote the epic book *The Longest Day*, about the June 6 1944 invasion of Normandy, France.



EAA Chapter 124 General Meeting Minutes

June 3, 2026

There was no Board meeting this month.

The president called the meeting to order following the meal, and thanked Bill Conklin for creating another memorable paella feast!

He then asked any new attendees to share their reasons for coming. Several were happy to introduce themselves to the group.

The president then asked **Brayden Hall**, the recipient of the Ray Scholarship, to share his experience performing his first solo flight! As if that event isn't memorable enough, his first solo was made more memorable because he was sent on a go-round, due to an incoming medical transport flight! He handled it with confidence and is thankful to have a story to tell.

Speaker: Rick Beach

Rick Beach is the former Safety Chair for COPA (Cirrus Owners and Pilots Association) and the current Safety Officer for Scanlon Aviation in Novato, the local Cirrus Training and maintenance facility here in the North Bay. He generously shared his wealth of knowledge on all things Cirrus as an experienced Cirrus Aircraft pilot and avid fan. So much so that he's on to yet another Cirrus which he proudly showed off at the meeting.

Last year, Rick bought his 3rd Cirrus Aircraft! A brand new 2025 Cirrus SR20 G7. In April he made the trip to bring home from the Cirrus facility in Knoxville, Tennessee. Cirrus has been the best-selling aircraft for decades, and there's a reason why! Rick shared what it's like to buy a new airplane from one of the premier aircraft manufacturers making airplanes today, and the journey to pick it up from the factory and fly it on a cross-country adventure back home to California. The delivery experience, the transition training, and how much things have changed since his first Cirrus purchase way back in 2001!

Chapter Business

Chapter 124 Contact Information

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Young Eagles:	Jenny Hollingworth	(650) 483-5203
Chapter Roster:	Mike Tovani	(707) 321-2740

EAA Chapter 124
5550 Windsor Road
Windsor, CA 95492

Chapter meetings are held on the first Wednesday of each month at 7:00 pm. FOOD (\$10) AND SOCIALIZING (free) from 6:15 to 7:00 pm. **EVERYONE IS WELCOME!**

Directions: The site is located on the west side of Sonoma County Airport. Take the Shiloh Road exit from Highway 101 in northern Santa Rosa. Turn left at the stop light (west) and continue to a "T" intersection. Turn left again and follow the road to the EAA sign on the left.

How to Submit an Article to the Newsletter

Members are invited to submit articles of interest. You will be notified whether or not an article will appear in the current issue.

Email your article to: jennyhollingworth14@gmail.com

Deadline for newsletter submissions is the 20th of each month. Articles submitted will be included in the newsletter at the discretion of the editor. All articles are copyrighted. To reproduce any article, please contact the editor.

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