



Spirit of Flight

Experimental Aircraft Association

Chapter 14: San Diego, CA

January 2022



Craig Cornfield preps his Midget Mustang for painting in Hangar 3. Photo by Gene Hubbard. 12/18

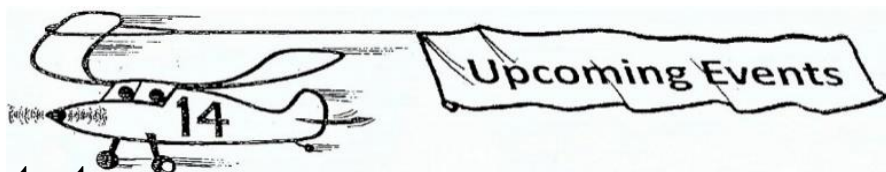


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**Chapter re-opening delayed due to
COVID 19 resurgence**

Chapter Briefing

EAA Chapter 14 Members



Chapter Activities: Information provided by Chapter members.

Week ending Dec 4: Mark Albert spent some time looking over Jimmy Kennedy's Nieuport project – Jimmy was relieved that his hard work is paying off. Nigel Worrall made his usual Tuesday visits to the chapter prior to getting some flying in at First Flight. As always, he provided much valuable input to Ryan on wiring matters. Jonathan Robbins flew to Roswell, New Mexico and back; he reported being very pleased with the Meyers performance – 185 kts going, 150 kts back. Don Ramm noted he had purchased an RV-12 after seeing Gert Lundren's beautiful one. He attended a two-day Light Sport Repairman Inspection Course through Rainbow Aviation and got to tour Van's Aircraft Factory. The effort enabled him to be able to do maintenance and annual inspection on his plane even though he wasn't the builder. He is now working with the local FSDO to get his LSRI-A certificate. Gene Hubbard and Lista Duren are finally back from Michigan – lots still to do back there on the family home, and lots to do here.

Week ending Dec 11: EAA 14 enjoyed a Holiday Party on Saturday at Hangar 1. The hangar had been decorated by Ryan's daughter and son-in-law. And we enjoyed great weather on the day. A good crowd enjoyed a lunch of chicken, ham, stuffing, mashed potatoes and gravy, carrots, broccoli, cheeses, ambrosia salad, lots and lots of excellent cookies and dessert. Many thanks to Trinidad and Sharon Lopez for hosting this and for the guests who pitched in and helped prep food and serve. Directors were recognized for their continued work in keeping the Chapter going during a difficult time. Special recognition was given to Ryan Flores for being a Ray Scholar. And a very special event: Kerry Powell, our Program Director, Web Master, and Safety Officer sang a number of holiday favorites to get everyone



Kerry Powell and Alan Sparkes collaborate on a Christmas carol at the Holiday Party. 12/11



Duane Shockey's Cessna 170 at the Chapter. 12/18

in the mood. He brought by his own sound system complete with pre-recorded orchestra backup. He had just finished with a morning performance out at Grossmont Center and so swung by to help out the party. We sure benefited from his very professional performance. Francisco Munoz stopped by with his daughter. She used to be a Young Eagle, and she got the aviation bug. Francisco shared that she had just completed her first solo.

Week ending Dec 18: There is no better way to start our General Meeting day than with a hot breakfast of blueberry pancakes, sausage, waffles, and eggs cooked to order. We really appreciate all the hard work of our breakfast volunteers, headed by the indefatigable Kevin Roche. We had heavy rain on Tuesday, but Ryan and Gary List braved the weather and worked on their planes. We miss seeing member Gert Lundgren who is visiting Sweden – hope to see him out flying his RV-12 soon.

Week ending Dec 25: Winter weather visited San Diego, and along with periods of clear, bright days, we enjoyed cold weather and some rain. While we didn't have many visitors, our regular crew consisting of Craig Cornford, Jimmy Kennedy, Jim MacKinnon, Trevor Pearson, and Ryan were present. Chris Constantinides, Jonathan Robbins and Ryan, all took the opportunity to fly during the periods of good weather.

Week ending Jan 1: Repeat of last week, with the addition that Gene Hubbard was able to visit the Chapter and he and Ryan took a flight in the Katana. Joe Russo was making repairs to the roof of his hangar – Ryan started cutting some of the weeds that have sprung up from all the rain. It was clear, cold, beautiful weather and wonderful blue skies – no better way to start the new year!

General Meeting: President Trinidad Lopez opened the meeting and welcomed Chapter members and guests. He mentioned that we hope to be fully operational as a chapter again beginning in January, but it all depends on San Diego City health requirements. As of now, we intend to resume Young Eagle flights for those who are fully vaccinated and wear masks. Program Chairman Kerry Powell introduced our speaker for the month: Mike Jesch. See a short overview of his presentation, Modern Aerodynamics, later in the newsletter. To watch the entire presentation, copy the following link to our website and then in the left-hand side menu, click on Past Meetings and Educational Videos: <https://chapters.eaa.org/eaal4>. Thanks to our Program Director and Webmaster Kerry Powell for making this possible.

Breaking News—Chapter Re-Opening Delayed

Due to the recent resurgence of COVID-19, especially the Omicron variant, the EAA-14 Board of directors has voted to

“Delay fully reopening the Chapter, especially Young Eagles flights, at least until February and monitor the situation until we feel it is prudent to reopen.”

This decision affects the Young Eagles rally previously scheduled for January 8, 2022 as well as the General Meeting previously scheduled for January 15, 2022.

Andy Schwartz, Brown Field Airport Manager and Jorge Rubio, Deputy Director, Airport Management, our speakers for the January meeting were willing to reschedule an in-person meeting for February, pending any further health restrictions.



Kerry Powell, EAA-14 Program Director

February 19: Andy Schwartz, Brown Field Airport Manager and Jorge Rubio, Deputy Director, Airport Management talk about plans for Brown Field

President's Message

Hello Everyone,

The recent and rapid increase of the Omicron variant of COVID-19 cases in San Diego has meant that we need to postpone our plans to reopen EAA Chapter 14 in January. All Chapter events

including our General Meeting and the Young Eagles flights have been cancelled. Our planned presentation by City of San Diego Deputy Director of Airports, Jorge Rubio, has been postponed. The situation will be monitored and the Chapter will not reopen until the situation improves and the Board of Directors determines it is prudent to reopen.

Although many of us are anxious and looking forward to returning to our normal schedule of Chapter events, in this case we will just have to wait a little longer. The health and safety of our Chapter members and guests must be our highest priority.

On a lighter note, our 2021 Ray Aviation scholar, Kaitlyn Werner, is scheduled to take her check ride on January 27th, weather permitting. We wish her the best of luck. We had hoped to have the opportunity to meet with her and congratulate her in person at this month's Young Eagles event; however, that will have to wait for a later time.

I would like to wish all the members of EAA Chapter 14, our friends, and everyone at Brown field a happy, healthy, and prosperous 2022.

Clear skies,

Trinidad Lopez

EAA-14 Holiday Party

December 11, 2021



Everyone enjoys good food and good company.



Trinidad Lopez, Lista Duren, and Sharon Lopez work behind the counter to make it all happen.



Richard West observes and coaches a chess game.

Museum Visit: California Science Center

Gene Hubbard

A couple of days before Christmas, Lista and I drove to Los Angeles to meet up with family, and we wound up spending the day at the California Science Center located next to the Coliseum. It was a rainy day, so we didn't spend any time looking at the A-12 trainer on display near the parking lot. The A-12 "Titanium Goose" was a single-seat predecessor to the better-known SR-71 and was reputed to be a bit faster and able to fly a bit higher. Only 13 A-12s were built, including this one trainer distinguishable by a second bubble canopy behind the main cockpit.



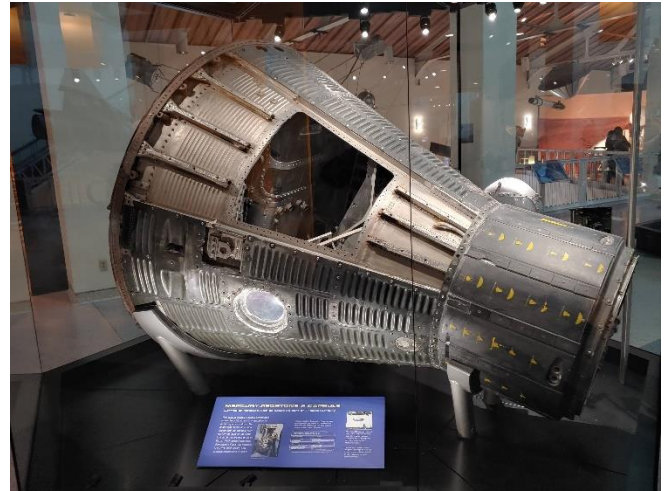
Lockheed A-23 Trainer. CIA photo of aircraft in service—it was raining too hard to take a picture of the exhibit at the Science Center and I couldn't find a public domain image of the Science Center display.

Northrop Grumman must have sponsored the Center's entry hall—the first exhibits I saw were the sole surviving F-20 Tigershark and a T-38 Talon in USAF colors hanging from the ceiling. The F-20 was a privately funded effort by Northrop Grumman to build an inexpensive but capable fighter based on the F-5, which in turn developed from the T-38. While over a thousand T-38 and some two thousand F-5s were built for many air forces, only three F-20s were built and none found operational service.



Northrop F-20 in the Science Center atrium. Of three aircraft built, two crashed due to Gravity-induced Loss of Consciousness (G-LOC) during demonstration or during practice for demonstrations.

The Science Center is a huge facility and we didn't even try to see all of the exhibits in an afternoon. Instead, we gravitated first to the space exploration exhibits, then to the Space Shuttle Endeavor exhibit. The museum has the Mercury space capsule on display that was used to take "Ham," the chimpanzee on his suborbital flight on January 31, 1961, three months before Alan Shepard's flight. His task during the flight was to pull levers in response to flashing lights, something that he accomplished about 50 times during the flight.



Mercury MR-2 used for the first-ever spaceflight for a chimpanzee. Except for the astronaut's couch, this spacecraft is essentially identical to the ones flown by Alan Shepard and Gus Grissom on sub-orbital flights in 1961.

The flight actually didn't go that well: The liquid oxygen (LOX) propellant in the Redstone booster ran out early, triggering activation of the launch escape system and propelling the capsule to overshoot the planned landing area by about 130 miles. In addition, the spacecraft suffered a loss of cabin pressure a bit over two minutes into the flight. Fortunately, Ham's biopack pressure held and he continued pulling levers, unaware of the problem. To top all of this off, on splashdown, the heatshield tore off and punctured the capsule, causing it to take on about 800 pounds of seawater before recovery. Problems with this flight caused Wernher von Braun to add another test flight, Mercury-Redstone BD (for Booster Development) before considering the system ready for Alan Shepherd's flight in May 1961

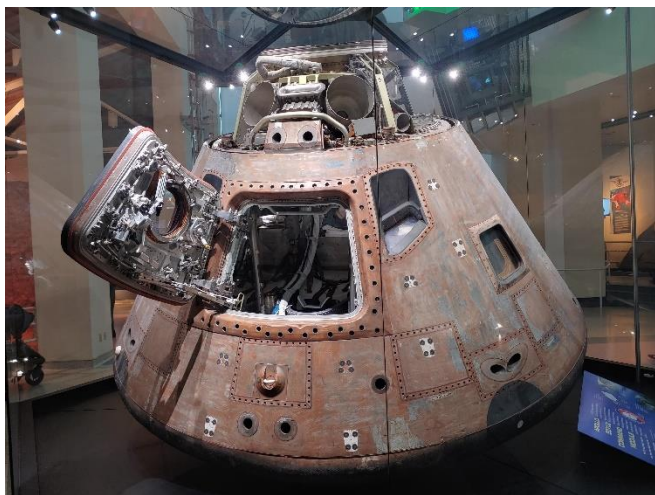
Along with Ham's spacecraft, the Science Center also has the capsules used for Gemini XI and Apollo-Soyuz. Gemini XI, flying Pete Conrad and Dick Gordon, both of whom



Gemini XI interior. The next-to-last Gemini flight, this mission tested rendezvous, orbital boost, and EVA operations needed to reach the moon on the Apollo program. This mission still holds the record for maximum apogee of a crewed flight in earth orbit.

eventually walked on the moon, docked with an Agena target vehicle in September 1966 and used the Agena's engines to raise their apogee to 853 miles, a record which stood until Apollo 8 went to the moon in 1968.

The Apollo capsule on display participated in the first cooperative international space mission, the Apollo-Soyuz Test Program (ASTP) when an Apollo spacecraft carrying Tom Stafford, Vance Brand and Deke Slayton successfully docked with a Soviet Soyuz spacecraft carrying Alexei Leonov and Valeri Kubasov in 1975. This mission set the stage for later international flights including the Shuttle-Mir missions and the International Space Station (ISS).



Apollo ASTP capsule, one of 19 Apollo Command-Service Modules (CSM) launched. At a launch weight of 32,558 pounds, the ASTP spacecraft was the lightest Apollo capsule ever launched. All Apollo spacecraft launched by the Saturn IB carried less than half the full fuel load for the Service Module due to launch weight restrictions of the booster.

We then made our way to the Space Shuttle Endeavour (named after the ship James Cook used in his voyage of discovery in 1768) exhibit housed in its own building



Space Shuttle Endeavour, the fifth operational shuttle. The airframe started out as a structural spare in 1982 and authorized for full assembly in 1987 following the Challenger disaster.

nearby. Endeavour was the fifth operational Space Shuttle built, with construction starting in 1987 after the Challenger accident. When I was researching this article, I discovered that Endeavour was constructed using spare parts left over after constructing the first four Shuttles: Colombia, Atlantis, Discovery, and Challenger.

In conclusion, if you're in the Los Angeles area, the California Science Center is worth a visit. They have quite a few interesting and unique displays, including the Space Shuttle Endeavour. As with many museums, it seems to take going back to Wikipedia after the visit to really understand the significance of the exhibits. The descriptions in the exhibit halls seem to be geared to hordes of schoolkids with no time and no real interest. Every one of these artifacts has an interesting and unique history.



Adversary F-5 on the ramp at the terminal building. Photo by Jim MacKinnon 12/19



Mike Jesch

Modern Aerodynamics

Short Summary by Donna Ryan

The following information is based on the program talk given by Mike Jesch

If you weren't present at the December EAA chapter 14's monthly meeting, you missed an excellent presentation.

Mike Jesch, who has spoken

several times at the Chapter, spoke on Modern Aerodynamics. His presentation, consisting of an informative commentary and over 100 slides, covered a broad variety of topics relating to aircraft aerodynamics. The following summary covers just a few of the highlights of his talk. To see the entire presentation, copy the following link to our website and then in the left-hand side menu, click on Past Meetings and Educational Videos: <https://chapters.eaa.org/eaal4>. The talk should be uploaded soon.

As part of the discussion, Mike covered the following six aspects of modern aerodynamics:

- Fundamentals
- Lift/Thrust/Drag/Gravity
- Flight Controls – Primary and Secondary
- Turning dynamics
- Left Turning Tendencies
- Stability

While he does not claim to be an engineer, Mike has done extensive research on the subject, because he is a curious pilot. He started the talk showing some pictures of some rather unique aircraft that tried various designs, layouts, position of wings and wheels, etc. Illustrations on this page show two of these unique designs.



McDonnell XF-85 "Goblin." This "parasite" fighter was intended to be carried in the bomb bay of a B-35 or B-36 to protect against enemy interceptors. Two aircraft flew a total of seven flights totaling 2 hours and 19 minutes before the program was canceled.



Lockheed XFV-1. This tailsitter was intended for basing on conventional ships for convoy protection. The XFV-1 made a total of 32 flights in 1954-1955 before the program was canceled. Chapter 14 member Skeets Coleman tested a direct competitor, the Convair XFY, at Brown Field in 1954.

The following information is taken from slides that he shared with the group. It includes only a small portion of the information covered in the talk.

Four Forces of Flight: Lift, Drag, Thrust, and Gravity

Lift

- A mechanical aerodynamic force produced by the motion of the airplane through the air
- Directly opposes the weight of the airplane
- Acts through the center of pressure and perpendicular to the flow direction
- The aircraft must be in contact with the air.

Drag

- A mechanical aerodynamic force produced by the motion of the airplane through the air
- Directly opposes the forward movement of the airplane
- Acts through the center of pressure and parallel to the flow direction
- The aircraft must be in contact with the air.

Thrust

- The force which moves an aircraft through the air
- Opposes the drag of the aircraft.
- A mechanical force, a vector, consisting of both magnitude and direction.

Weight

- Force generated by the gravitational attraction of the Earth
- A field force; source of the force does not have to be in contact with the aircraft

Primary Flight Controls: He next discussed the primary flight controls: aileron, elevator, rudder, and power. Here are some of the highlights of this section of the talk.

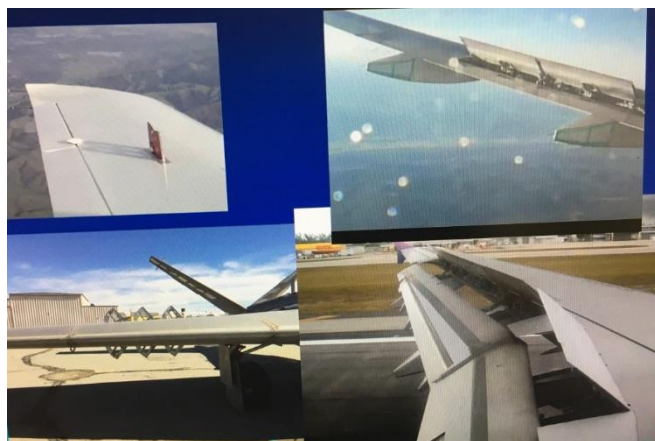
Flight Control Forces

- Pilot feels the air load from a deflected control surface.
- In general, the larger the deflection, the more force the pilot feels.
- If the pilot lets go, the control tends to return to its original position.
- However, if the pilot has to hold pressure to be stable, then the trim is set incorrectly.
- Generally the larger or faster the airplane, the more force the pilot should feel.

Secondary Flight Controls were the next item for discussion. He covered the following: Trailing edge devices, leading edge devices, spoilers, trim systems, and canards. He spent quite a lot of time on this topic and included a number of pictures to demonstrate each item.

Trailing edge flaps: Mike noted that they change the camber of the airfoil, making it more effective at lower airspeeds. Also, for a given angle of attack, they increase both lift and induced drag, and allow compromise between high-speed cruise wing and low speed landing.

Leading edge devices: They direct airflow to the upper wind and delay airflow separation at higher angle of attacks. First, he discussed slots which are a fixed opening at the leading edge of the airfoil. They increase Lift, due to delayed airflow separation to a higher AoA. Slats perform basically the same purpose but are deployable when needed. Cuffs are a permanent, fixed extension to the chord at the leading edge which increase wing area and camber and improve stall characteristics and low speed aileron control. He also touched on spoilers and speed brakes. Mike shared a variety of pictures during the discussion to illustrate his points. Here are some pictures of spoilers:



Spoilers on wings take various forms. All of them increase drag and decrease lift.

Turning Dynamics: After a short discussion on trim tabs, he reviewed another important topic: turning dynamics. He mentioned that he really saw how important a good understanding of this was when he was teaching his

daughter to fly – turning the aircraft is not the same as turning a car. He pointed out the following:

- Use the ailerons and rudder to establish the angle of bank.
- Use the elevator to increase the total lift, which will increase the horizontal component of lift.
- Use ailerons and rudder to level the wings.
- Rising wing has more lift and more drag.
- Rising wing wants to move aft as it rises (adverse yaw).
- At shallow bank angles, dihedral effect tends to make the plane want to roll out.
- At steep banks, the outboard wing is going enough faster, creating more lift so that the plane will tend to roll in steeper.
- At mid banks, these effects are balanced and the plane will maintain bank angle.

He provided several resources to get a really good understanding of turning. One was a YouTube video:



<https://www.youtube.com/watch?v=nWbk3jn0GK4&t=3s>

Mike also discussed the P-factor, slipstream, torque, gyroscopic effect, left turning mitigations, stability (static, dynamic, positive, and negative), and some miscellaneous tricks (vortex generators, stall strips, stall fences, winglets, dihedral), providing visual examples of each.

Finally, he provided a list of references to help with this and other aviation topics:

- Pilot Handbook of Aeronautical Knowledge
- Airplane Flying Handbook
- Aeronautical Information Manual
- Federal Aviation Regulations
- Aerodynamics for Naval Aviators
- NASA.gov
- BoldMethod.com
- Gizmodo
- Rich Stowell

Reference List from Mike Jesch.

This was a great presentation for any pilot or student of aviation and we very much appreciate Mike's sharing this information. Be sure you watch the entire presentation on our Chapter website.

New Members

Donna Ryan

Welcome to **Irlanda Munoz**, our new member. The information below comes from her membership application. Some people just include the essentials; others expand a bit on their experience, and we always appreciate that.



Irlanda is the daughter of member Francisco Javier Munoz. She was previously one of our Young Eagle participants. She now is a college student and has just completed her first solo! She is interested in aviation, and communication studies and says she can help out the Chapter with social media and communications. Being a Spanish speaker is a big asset as well.

Look for her at the next meeting, introduce yourself and get to know her better. We very much appreciate her support.

Seen at SDM

Photos by Jim MacKinnon



An F-18 climbs out. 12/9



Chris Constantinides about to touch down in his Arrow. 12/19



Mexican Lear Jet at the terminal building. 12/19

Renew Your Membership Today!

By: Donna Ryan



Last month we kicked off our membership renewal period for 2022 and we appreciate those of you who have already renewed. Obviously our goal is to have you all renew. But why should you?

Most of us make donations to organizations that are important to us, whether we receive any direct benefit or not. Many of us attend a religious organization of some sort, and drop some dollars in the collection plate. Many of us donate to alumni organizations, to fraternal organizations or lodges, or to environmental or humanitarian organizations. We don't make these donations because we "get our money's worth" in services, but because these organizations are important to us, because we think they do good work and deserve our support to keep on doing it.

We hope that Chapter 14 is important to you. Clearly, many of you do "get your money's worth" by coming down to the Chapter, enjoying breakfast or lunch with other airplane enthusiasts, listening to the programs, using the library or computers, getting help with a project. Undoubtedly you would want to be a part of the organization that provides that. But even if you can't come down to the Chapter as often as you would like, we hope that you back its mission to offer information and guidance to general aviation participants who build and/or fly aircraft for recreation. We also hope that you value its commitment to ensure the future of aviation by providing flights through our Young Eagles program.

Your continuing support is vital to us. Please take just a few minutes to renew your membership. Use the Membership form included in this newsletter and then mail it back to us, along with your payment, to EAA Chapter 14, 1409 Continental Street, San Diego, CA 92154-5707. You can also drop the form and your payment off at the Chapter. Just put your packet in the membership slot of the Membership lock box next to the lunch counter in Hangar 1 or in the lock box outside of the door to Hangar 1. If you want to pay by PayPal, follow the steps below:

1. Access your personal PayPal account.
2. In the upper menu, select Tools, then at the dropdown menu, click Send Money.
3. Enter email address: Eaach14@gmail.com
4. Enter payment amount: \$25.00 (\$5 for Young Eagles)
5. At the Add a note option, enter "2022 membership for [your name]"
6. Send the payment.

We look forward to continuing having you with us once again in 2022.

EAA Chapter 14 Membership Application/Renewal

Please Print Legibly

Current Member				
Name		E-mail		EAA National # /Exp Date
Emergency Contacts (Name and Phone)				
Please check the box if there have been no other changes in your details since your last renewal. Otherwise, please update the applicable fields below. <input type="checkbox"/>				
New Member/Updates for Current Member				
Name (Mr., Mrs., Ms.) <i>Please Print</i>			Name to Use on Badge	
Street Address			E-mail	
City	State	Zip	Spouse/Partner Name	
Home Phone		Cell Phone		Work Phone
Year of Birth	EAA National #/Exp Date	Occupation		Retired – Yes/No
Emergency Contacts (Name and Phone)				
FAA Ratings – Licenses Held		A/C Project		Aircraft Owned/Home Field
Special Skills You Can Contribute to the Chapter				
Special Interests				
Payment Information				
New Member: \$25 <i>without</i> badge (\$13 after July 1) \$35 <i>with</i> badge (\$23 after July 1) Renewal: \$25 (due January 1 st) Youth (under 18): \$5 Payment Enclosed: \$_____			Make checks payable to EAA Chapter 14 Please mail this form with payment to: EAA Chapter 14 1409 Continental Street San Diego, CA 92154-5707	

January 2022

Facebook

<http://www.facebook.com/pages/EAA-Chapter-14-San-Diego-CA/134162329986593>

Chapter Website

<http://www.eaa14.org>

EAA Chapter 14 Memberships

Applications are available at our Brown Field hangars and on our website.

General Chapter Information

Donna Ryan (Chapter Secretary) (858) 273-4051. Leave voicemail or text eaa14contact@gmail.com

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Stu Strebig	(619) 346-9788	trail2texas@yahoo.com

EAA Chapter 14 (with answering machine) (619) 661-6520

Chapter Events

Open House at the Brown Field hangars:
every Saturday from
10:00 am to 2:00 pm.

Pancake Breakfast:
7:30-9:30 am, third
Saturday of each month

General Meeting: 10:00
am, third Saturday of each
month

Hangar Phone:
619-661-6520

Experimental Aircraft Association
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