



**April 14 Chapter Officers / Directors**

President/Director	Neal Koellish	
Vice President/Director	Paul Kendrick	
Secretary/Treasurer/Dir	Vince Rubatzky	
Director	Oscar Bayer	
Director	David Chivens	
Director	Kurt Colvin	
Director	Jearl Strickland	
Director	Jim Buenrostro	
Technical Advisor	Will Harris	
Flight Advisor	Gerrit Vanderziel	
Newsletter Editor	Vince Rubatzky	
Librarian	Allen Skogsberg	
Refreshments	Paul Kendrick	
Web Master	John Scarry	
Young Eagle Coordinator	Liz Dinan	

***April Program***

**EAA Chapter 170 meeting June 17, 2018**

Weather permitting, Santa Maria Chapter member Vance Breese will be here with the *Predator* to talk about the history and present day gyroplanes, and the perils of flight instruction in a gyroplane; and much more.

***Upcoming Events***

**June 17, 2018**

Chapter 170 meeting at **NOON**  
Hanger 49 - West side of San Luis Obispo Airport  
**Directors/Business meeting at 11:30 am**  
June 23 FFAST Safety Meeting  
Santa Maria Museum of Flight  
“What’s Happening at SMX and the Central Coast

EAA 2018 AirVenture Oshkosh July 23 - July 29  
2018 Reno Air Races Sept. 12-16

***From the Left Seat***

*Neal Koellish – President*  
[eaa170@yahoo.com](mailto:eaa170@yahoo.com)

**Greetings**

In lieu of April's meeting, Paul Kendrick organized a wildly successful Young Eagles event. I don't have the numbers handy, but having worked on the ground crew, it seemed like it must have been about a 1000. Anyway, thanks to Paul for pulling this together, thanks to all who helped on the ground and a special thanks to all the pilots who donated not only their time but significant operating costs as well. This would not have been possible without you.

Next up, our very own Vance Breese is going to talk us about things with wings that go round in circles but aren't helicopters. It's a facet of aviation that I must admit I know little about, but Vance is a dedicated devotee, and I understand, does a pretty good presentation. Also, while doing a little research on him, I discovered that there is a lot more to this guy than he lets on, so I hope you'll join me on May 20th to hear his presentation.

Regards, Neal

## *Chapter Directors/Business meeting May 20, 2018*

At the start of the Chapter business meeting we thanked Paul Kendrick for making his hanger available. In attendance were: Neal Koellish, Liz Dinan, Oscar Bayer, John Scarry, vince Rubatzky Jim Buenrostro, Joe Dezso, Tom Del Re and first time guest, Harvey Brion. Not quite a quorum, but enough for some discussion.

Chapter Treasury balance is \$2,498.07; no dues payments were received this month. A \$20 payment was made to the CA Franchise Tax Dept. The annual IRS 990-EZ and California Franchise Tax reports were filed. The time for the annual tax reports will be included in the Chapter calendar. John Scarry provided coffee, vince Rubatzky donuts, both in abundance considering the low turnout. Austin Dito's slightly late arrival filled out the crowd.

The April YE event was reviewed and the Chapter reported to EAA YE headquarters that 59 youngsters were flown. The contributions of pilots and all Chapter participants in the event are appreciated. Our YE paperwork handling procedure could be improved and suggestions were proposed. Jim Buenrostro mentioned his impressions and participation at a recent Chapter 465 YE event. Chapter 465 maintains a file of the registration information from previous YE participants, and Chapter 465 YE participants receive Charter 465 membership, the Chapter newsletter, and other perks. Those 465 Young Eagles and their parents are invited to an annual pancake breakfast meeting where Chapter members review the opportunities and benefits of the YE program and the EAA in order to encourage a continuing interest about aviation.

Chapter 170 has not retained YE information from past YE events and probably does not have an adequate volunteer base to carry out a similar activity as Chapter 465 does. However, this topic may be a future agenda item.

The Chapter web page address will be placed on the newsletter's first page and hopefully will continue to attract new and interested individuals. A final conclusion regarding meeting refreshments is still in the air. Finding someone to prepare hot dogs, etc. is difficult. Another obstacle is the time of the meeting. Refreshment prior to the meeting are too early, and post meeting refreshments are viewed as too late. Thus it is likely we will stick with coffee and cookies or donuts. A brief discussion about an end of year group meal was inconclusive.

The frequently repeated discussion about the Chapter meeting date and time had the same result. Still missing is information about who and how to identify building projects and individuals. Other than being mentioned there was no progress about Chapter fly-outs or shared Chapter meetings. Although recognizing that June 17th is Father's Day, the Chapter will continue meeting on the third Sunday of the month at noon, with an emphasis on a NOON start. For many fathers, isn't an afternoon at the airport is a treat? The Chapter does have a June program commitment. However, suggestions and contacts for future meetings are welcome. The business meeting closed with the arrival of Predator and program speaker Vance Breese.

## *Chapter Program May 20, 2018*

The weather was favorable for Santa Maria Chapter member Vance Breese and he flew in with the *Predator* to talk about the history of gyroplanes, present day gyroplanes and the perils of flight instruction in a gyroplane.

Chapter President Neal introduced Vance Breese, gyrocopter CFI, frequent Chapter 170



participant, and recognized overall great guy.

Neil's introduction alluded to Vance's very interesting background, and to several notable experiences. We were fortunate to hear about his Isle of Man motorcycle race and several other interesting and exciting stories before allowing him to get into his scheduled program. Vance tells great stories and tells them very well.

Vance, a professional motorcycle racer was seriously injured participating at a motorcycle land speed record attempt when he lost control of his motorcycle at about 300 mph and his high speed parachute failed to open. He was badly damaged, but did recovery and overcame several physical obstacles and dealing with the FFA regarding his medical and CFI certification. He "retired" from racing when advised by doctors to find another hobby. Refusing to be inactive Vance turned to flying and ever since has been a happy camper.

Vance began his talk with an early history of the autogyro with the mention of Juan de la Cierva, a Spanish civil engineer, early pilot and aeronautical engineer, who some regard as the inventor of the autogyro and its further development. Many consider de la Cierva's work on rotor dynamics and control contributed to the development of the modern helicopter.

During 1912-13, de la Cierva built a biplane and also a monoplane. As was common for that era, both crashed. In 1919 de la Cierva produced a large three engine bomber/passenger airplane for the Spanish government which also crashed during testing.

The testing of De la Ciera's autogyro design relied on the rotor being drawn or pushed through the air by a propeller with the result that the rotor would generated sufficient lift to sustain level flight, and climb and descent with a limited risk of stall. Before this was achieved, he experienced several failures wen attempting take-offs mostly associated with the unbalanced rolling movement, due to asymmetry of lift between the advancing and retreating blades.

This major difficulty was resolved by introducing the concept of the flapping hinge. The idea of the flapping hinge possibly came to de la Ciera while watching the hinged blades of the stage windmill in the production of the opera, "Don Quixote of La Mancha." He used hinges in his rotor designs that allowed the rotor blades to rise and fall depending on what direction they were moving. Blades moving forward with the aircraft rose because of the higher lift. Blades traveling in the opposite direction would fall because of lower lift. The combination of the rising and failing action, known as flapping, and the increase and decrease this had on the angle of attack served to balance the lifts created on each side of the aircraft. The hinged blades also eliminated the gyroscopic effect caused by the rigid blades. In 1923 de la Cierva developed the articulated rotor which resulted in the first successful flight of his model C-4 as a stable rotary-wing aircraft.

Early autogyro designs did not have effective horizontal stabilizers and had high centered trust lines. Poor self-training, combined with loss of control resulted in many accidents, and created

an image of the gyroplane being a killer. Better designs and training eventually reversed both the results and the image of autogyro flying.

After de la Cierva's introduction and production of gyroplanes, others entered the market. The Pitcairn PA-1 model was first flown in 1927. Igor Sikorsky's first successful flight of the VS-3 helicopter occurred in 1939. Although interest about gyrocopters continued, the helicopter soon eclipsed the importance of gyroplanes.

Vance also mentioned the influence of Russian inventor Igor Bensen, who thought that gyroplanes could be home built and that learning to fly them would be easy because they were a relatively safe aircraft. His first gyrocopter was flown in 1954, and his company, Bensen Aircraft, developed and successfully sold gyrogliders and autogyros. His model B-8 was in production until 1987.

A major problem with autogyros is starting rotor rotation before takeoff. Several methods other than the coiled rope system (remember pull starting a lawnmower) were made to take rotor speed to what was required. The most effective practice is using a direct drive from the engine to the rotor that allows the rotor to be accelerated up to speed. The system is then declutched before performing the take-off run.

Vance did not tell us much about the *Predator*; his well-used aircraft. He and *Predator* go to many air shows for static display of the gyrocopter or as a performer with a well appreciated aerial program. That is a subject good enough for another program. Vance did not say much how he got the *Predator* or what he has done with it. That also is another interesting story that perhaps Vance will share with us at a future time.



Predator



Q and A Vance with Joe Dezso

Following his speaker presentation, Vance had our small group gather around the *Predator* while he pointed out and spoke about its various parts and components. He did respond to the many questions as well as sharing a couple of interesting and somewhat humorous stories about his CFI interaction with students.

All Chapter meeting attendees thank Vance and are grateful for his time and efforts. We wish him many happy hours with *Predator* and his students.

## *Agricultural Airplanes*

Agricultural aircraft are built or converted for agricultural use usually for application of materials such as pesticides, fertilizer or seed. Aerial applications are a significant component in many agricultural production practices. Farmers value the use of aircraft because they can cover so much area, so quickly, without disturbing the soil or the growing crops.

Aerial application is used for many different purposes. Airplanes and helicopters are used to seed rice and wheat, defoliate cotton prior to harvest, fight forest and grassland fires, protect forests, feed fish, melt snow and control mosquitoes. All of this is in addition to the usual function of applying herbicides, insecticides and fertilizer to fruit, vegetable, grain and other agricultural crops.

The first agriculture aircraft was not an airplane, but a hot air balloon with mobile tethers that was used to spread seed over a flooded field in 1906. In the United States aerial applications (crop dusting) with insecticides began in the 1920s. The first widely used agricultural aircraft were converted war-surplus biplanes, such as the De Havilland Tiger Moth and the Stearman.

In 1921, the U.S. Agriculture Dept. and the Army Signal Corps joined forces to develop modern crop dusting. In that year a modified Curtiss JN4 Jenny spread insecticide onto a field in Ohio. In 1923, Huff-Daland Dusters, Inc.—the forerunner of Delta Airlines—did the first commercial dusting of crops with its own specially built aircraft.

The planes used for aerial application in the early days were surplus war planes. Most familiar were World War II trainers; namely the open-cockpit Stearman biplane. Stearman's were plentiful and inexpensive, and gave many the opportunity to get into the business.

Most common agricultural aircraft are fixed-wing, but helicopters are also used. Generally agricultural aircraft have piston or turboprop engines although a known exception is the Polish PZL M-15 Belphegor which has a jet engine. With the broader interest and usage of aerial applications, purpose-built agricultural fixed-wing aircraft became common in the 1940s. By the 1950s, the aerial application industry began to develop planes made especially for aerial application. Most have spraying systems attached to the trailing edges of the wings, and pumps are usually driven by wind turbines or electrically. In the case of helicopters, tanks are placed on or outside the body of the aircraft, while a spray rig, extending outward to the sides, is attached well below the main rotor blades

In the US and Europe, agricultural aircraft are typically small, simple, and rugged. Purpose-built agricultural airplanes have strengthened cockpits to protect the pilot if an accident occurs. Where farms are larger, bigger and more powerful aircraft have been used. Today, the newest and biggest planes carry as much as 800 gallons in the hopper, are operated by powerful engines, and GPS helps pilots achieve accurate applications.

Pilots fly just above the treated crops to reduce drift of applied materials. Aerial application is a demanding occupation for a pilot. Fields are often surrounded by obstacles such as trees, telephone lines and farm buildings. Flying an agricultural plane takes special skills, as these planes fly at very low altitudes and must be maneuvered around obstacles while attempting to keep applied chemicals or seeds confined to the fields. The pilot must have better-than-average concentration and faster-than-average eye recognition and coordination.

Aerial applicators must hold an FAA Part 137 certificate to operate an aerial application business. Pilots must have a commercial pilot's license as well as a letter of competency to work as an ag pilot. Even though the low-level flying and quick turns may appear risky, these pilots are highly trained professionals.



**Dromader M-18**



**Grumman Ag Cat**



**Air Tractor 802**



**Piper PA-25 Pawnee**



**PZL M-15 Belphegor**

*Wing Walking*



The first recorded occurrence of wing-walking on a powered airplane was in 1911. The event was to demonstrate the stability of a specific model biplane when having a lateral shift of weight (being the wing walker) several feet from the aircraft's center of gravity.

Probably the first wing walker to execute these daring maneuvers was Ormer Locklear. A story about him is that during his pilot training he would climb out of the cockpit when in flight onto the wings to make in-flight adjustments or correcting a mechanical problem.

As early as 1918, Locklear parlayed his talent into entertaining crowds at airshows with his daredevil wing-walking feats. Wing walking attracted many audiences and the practice was taken up by other performers. It was during the 1920s and 1930 that 'Flying Circuses' and 'Barnstorming' shows were popular. A number of 'Flying Circus' occasions often featured a variety of stunt performers that included wing walking. Several aviation notables who delved into wing walking included: Charles Lindbergh, Bessie Coleman and E.B. Jeppesen.

Besides maneuvers on airplane wings the wing walkers were performing airplane to airplane transfers. Wing walking and the exchange between aircraft in flight were instrumental in air to air refueling that enabled long distance and duration flights. One example was about a plane to plane transfer with a wing walker carrying a fuel tank strapped to his back. Other situations used a hose with the aid of a wing walker to achieve aerial refueling. The repertoire of some wing walkers included performing handstands, various acrobatics, and walking on inverted airplanes as well as air to car, boat or train transfers. Some staged free-falls with last-minute parachute openings.

The 1938 Air Commerce Act required wing walkers to wear a parachute and restricted low altitude performances. This tendered to slow interest in the activity and most of the flying circus enterprises closed down. Wing walkers work with a safety harness and cable. Generally there are no height or weight restrictions, but a reasonable level of agility is required. In the mid-1970's stunt performers still had some restrictions. For example they had to be attached to the upper wing center section and had to be seated during takeoffs and landings.

The Breitling Wing Walkers operate in the United Kingdom and estimated that they have been viewed annual by about six million spectators. They perform a breathtaking sequence of acrobatic manoeuvres and handstands while strapped to the top wings of Boeing Stearman biplanes. The Breitling team and pilots of other air show performances fly through a rehearsed energetic routine of aerobatics and close formation flybys as the wing walkers wave at the crowd. These maneuvers include loops rolls, stall turns and even inverted flight. During these maneuvers wing walkers will experience speeds up to 150 mph and gravitational forces as much as 4g's.

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## *EAA Chapter 170 San Luis Obispo, CA*

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Apparently there is a difference between wing walking and wing riding. Wing walking involves leaving the cockpit and climbing about on the aircraft. Wing riding is being strapped into a fixture on the wing prior to takeoff and remaining there throughout the flight. Several firms provide wing walking experiences and also training for individual wishing to learn this activity. It's questionable if there is a long waiting list for employees.

On November 1981, 19 skydivers set a unofficial wing walking record by standing on the left wing of a Junkers Ju-52 aircraft while in flight. Do you know if that record has been broken?



**Tennis anyone ?**

### *Chapter 170 Current Roster*

This is the 2018 Chapter roster to date. It identifies active members and others that have indicated an interest in Chapter activities. If your name is not listed it is because the Chapter Secretary hasn't sufficient information to contact you. Assuming you are interested in participating in this Chapter, this omission is correctable if you will send your name, e-mail address, phone number and mailing address to the Chapter Secretary.

BARONE, BILL  
BAYER, OSCAR  
BORDON, CHUCK  
BOVA, JOHN  
BRANIN, BARRY  
BREESE, VANCE  
BUENROSTRO, JIM  
BUFO, DAVE  
CABRIALES, CID  
CHIVENS, DAVE  
COLVIN, KURT  
COONEY, SHERYL  
DEL RE, TOM  
DEZSO, JOSEPH  
DINAN, LIZ  
DITO, AUSTIN  
DOLEZEL, TODD

DUBUN, MICHAEL  
DU SAIR, BOB  
EICHLER, JOHN  
FISHER, KURT  
FRENTZEL, HERMAN  
HALL, MORGAN  
HARRIS, WILL  
JONES, RANDY  
KEITHLEY, FORREST  
KENDRICK, PAUL  
KOELLISH, NEAL  
KRAGEL, BOB  
KRASSENSKY, DYLAN  
MARKS, ROBIN  
MC CAUL, BEN  
MORET, ROM  
PETERSON, MIKE

RADFORD, DARRELL  
RUBATZKY, VINCENT  
SALVINI, JOHN  
SCARRY, JOHN  
SKOGSBERG, ALLEN  
SPARKS, GARY  
STANLEY, TOM  
STRICKLAND, JEARL  
VANDERZIEL, GERRIT  
VERDIN, ADAM  
WARNER, DEAN  
WENZEL, MARK  
WEIK, KURT  
WILLIAMS, TIM  
YATES, KYLE

**Join us**

## *Benefits of Chapter Membership*

EAA Chapter 170 membership is a guarantee that you will meet, interact and experience an exchange of interesting aviation knowledge with people who will share their enjoyment with yours. Membership will broaden your experience and knowledge base from many and new contacts.

P.S.

Annual dues for Chapter 170 membership are long pass due, but are still being collected. Members can make payment at the May 20<sup>th</sup> Chapter meeting or can send \$20 by check to Chapter Treasurer Vince Rubatzky at 931 Cyclamen Ct. San Luis Obispo, CA 93401.

## *Benefits of National EAA membership*

If not already a member of the National EAA Organization, all Chapter members are encouraged to consider joining the National Organization. The benefits of that membership are many. Here are a few:

#1 EAA is your advocacy for the support of general aviation.

#2 Members monthly receive *SPORT AVIATION* magazine (no aviation magazine compares)

#3,4,5,6,etc. provide webinars, building advice, hints and support and many other perks. Go to the EAA home page and check it out.

## *Contact the Newsletter Editor*

Members having suggestions for the newsletter or wishing to submit an article for inclusion in the newsletter should contact the Newsletter Editor. Topics about or distantly related to aviation qualify. Thoughts about how to jazz-up the newsletter are welcome. Avoid shyness – it limits you.

Not too late. If you received a request for information to update the Chapters membership roster and have not responded please reconsider. Let's avoid losing contact.

## *Nice to Know*

Jolie also announced that the Oceano AWOS is now up and running in test mode. The radio frequency is 118.375, phone number is (805) 489-1305. The Friends of Oceano Airport has been working towards getting an AWOS at the airport since 2009.

Oceano Fly-In Movie Night <http://friends of oceanoairport.com>  
Central Coast Airfest in Santa Maria <http://centralcoastairfest.com/>

### **99er Fly-out Schedule**

*June 17 New Cuyama*

*July 14-14 Napa*

*August 19 Santa Maria or Camarillo*

Fly often, well and safely.