

# The **W**ingman

EAA Chapter 495 - Roseburg, Oregon

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## 495 Celebrates Freedom Flight for 2020



New Year's Day marked the 14th annual Freedom Flight. For the first year the event was sponsored by EAA Chapter 495. Members and friends of the Chapter took to the skies over Roseburg for a day of flying and celebrating our freedom to fly.

We began by gathering at Elmer's Restaurant in Roseburg for breakfast and hangar flying before heading to the airport and strapping ourselves and our friends into our airplanes. The weather cleared long enough for some short flights. While some ventured out for longer flights a few just stayed in the pattern over KRBG. Some pilots had to demonstrate their crosswind skills as stiff winds started kicking up.

Paul Schafer dedicated the event to Lynne Reinhart of Oakland, a former member of EAA Chapter 495 and one time treasurer. Lynn passed away from cancer on Oct. 30 at age 60. She had been a member of the Roseburg Wings and Wheels committee, serving as treasurer for that organization.

She was a pilot, a friend, an A&P at the airport and one of our members. Lynn, a veteran of the U.S. Air Force owned and, when her health would permit, flew a Cessna 150. More photos on page 3/4.

## Youth Education program gears up to begin soon

The Youth Education Committee is getting off to a slow but deliberate start. Much of the chapter owned equipment has been moved from the hanger, graciously loaned to us by Dave Olsen at the north end, to our new home. Paul Schafer is talking with EAA in Oshkosh about insurance and we are beginning to develop curriculum. Depending on weather and our readiness, we are hoping to get started sometime in March.

The program will not be associated with any one school and students will be invited from the local area as long as they can arrange transportation to the meetings. Space will be limited and we will be taking applications in the near future. The committee will review the applications and select candidates we feel will have the best chance succeeding in the program. Youngsters who already have an interest in aviation, such as someone who is active in building and flying model airplanes, will most likely be successful.

The program will be based on the STEM (science, technology, engineering, and math) model and students will learn hands on skills from tool use and care, material preparation, cutting, forming, and assembly. So far the first project we are looking at is a tool box, which will give students experience in skills such as measuring and cutting metal, bending, drilling and riveting.

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Editor's note: I have asked several chapter members to contribute articles for the Wingman. Following is a contribution by Dennis Rose, owner of a Cory Mark 4. Dennis can be seen flying over the Umpqua Valley prompting observations from the uninitiated of, "That Airplane is flying backwards." Next month Dennis will show us how he upgraded his steam gauge panel to a glass panel. Thanks, Dennis. JM



## A Short History of Winglets By Dennis Rose

Winglets began showing up on commercial and military aircraft in the late 1970s, as a result of fuel-saving efforts after fuel prices soared. Now, they can be seen on most modern aircraft ranging from gliders, homebuilts and general aviation aircraft to commercial and military jets.

Did you know that the first use of winglets was actually on homebuilts, years before they started showing up on spam aircraft?

Winglets are vertical extensions of wingtips that improve an aircraft's fuel efficiency and cruising range. Designed as small airfoils, winglets reduce the aerodynamic drag associated with vortices that develop at the wingtips as the airplane moves through the air. By reducing wingtip drag, fuel consumption goes down and range is extended.

The concept of winglets originated with a British aerodynamicist in the late 1800s, but the idea remained on the drawing board until rekindled in the early 1970s by Dr. Richard Whitcomb at the NASA Research Center when aviation fuel prices started spiraling upward. He published a paper in 1976 showing the benefit of winglets. He later went on to develop a winglet for use on a Boeing KC-135 that showed an increase in cruise range by 6.5%. In 1988, the Boeing 747-400 was the first commercial jetliner produced with winglets. ([www.nasa.gov/centers/Dryden/about/Organizations/Technology/Facts/TF-2004-15-DFRC.html](http://www.nasa.gov/centers/Dryden/about/Organizations/Technology/Facts/TF-2004-15-DFRC.html))

But back to homebuilts. In the early 1970s, a recent graduate of Cal Poly-San Luis Obispo began building and flying some of his designs. He incorporated Dr. Whitcomb's pre-published work into his designs. His first flown design to fully incorporate the Whitcomb winglet was the VariEze in 1974, and his name is Burt Rutan. This same airfoil design is used in the LongEze and Cozy series of planes and produced the most efficient flying machines of the time. It is stated that the Rutan winglets generate lift equal to an addition three feet of wing length without the corresponding drag.

So, homebuilders, take pride that you continue to take part in leading-edge technology--many times, years ahead of industry application. And if you want to see some winglets up close, check out my Cozy.

## ADS-B Mandate now in Effect...How does it effect you?

This information was taken from the FAA Website and needless to say, it is only an overview of the highlights. You should do more research for your individual situation if you are in doubt.

You must be equipped with ADS-B Out to fly in [most controlled airspace](#). Federal Regulations [14 CFR 91.225](#) and [14 CFR 91.227](#) contain the details.

If you fly in this airspace you must be equipped with ADS-B

Class	All
Class B	Generally, from surface to 10,000 feet mean sea level (MSL) including the airspace from portions of
Class C	Generally, from surface up to 4,000 feet MSL including the airspace above the horizontal boundary up
Class E	Above 10,000 feet MSL over the 48 states and DC, excluding airspace at and below 2,500 feet AGL
Mode	Airspace within a 30 NM radius of any airport listed in Appendix D, Section 1 of Part 91 (e.g. SEA, CLE,

Any airspace that requires the use of a Transponder also requires aircraft to be equipped with a [Version 2 ADS-B Out system](#). This can be either a 1090ES (DO-260B) ADS-B system or a UAT (DO-282B) ADS-B system.

*ADS-B P.4*





Thanks to Rhonda Sprague, Bonnie Rose, and Paul Schaffer for their photos of Freedom Flight #14. Fly safe!

ADS-B:

### Interactive ADS-B Airspace Map

[Download the Equip ADS-B Google Earth map](#) (KMZ) to look at the location of ADS-B rule airspace at your home base and where you fly. Pan and zoom to different locations and turn on the various capabilities the map includes:

3-dimensional depictions of rule airspace and airports

Overlays of ADS-B surveillance coverage — airspace where ATC can see aircraft transmitting ADS-B Out information at altitudes of 500', 1,500', 3,000', 5,000' and 10,000' AGL

Need help? Watch the [Google Earth Demo video](#) and [take a look at the instructions](#) (PDF) for how to download and view the Equip ADS-B Google Earth map.



**Youth:** We will also be talking about how an airplane flies, the forces on an airplane in flight, and what the control surfaces do, just to name a few. There is really no end to what can be offered in such a program and we will be looking for volunteers to step in and share their expertise. In addition we will be looking for Young Eagle pilots to, with their parent's permission, take the students for a Young Eagle flight. Following that their paperwork will be submitted and they will qualify for all the perks EAA offers to Young Eagles.

We will be recruiting students between the ages of 10 and 17. They will be divided into two groups, ages 10 to 13 and 14 to 17. All students will have the same basic opportunities with the older group being assigned more difficult tasks.

Regarding contents of this newsletter: While every effort is made to present accurate information no claim is made and no liability is assumed, expressed or implied as to the technical accuracy or safety of the material presented. The viewpoints expressed are those of the author/s and are not necessarily those of EAA Chapter 495 or the Experimental Aircraft Association Inc., Oshkosh, Wisconsin.