



"To promote, encourage, and facilitate in a harmonious and inclusive manner all recreational aviation activities with an emphasis on education, safety and fellowship."

Upcoming Programs

Gary Arms, Program Chairman

Tuesday, December 5: Annual Christmas Party.

Swaid Wins!



Georgia's Swaid Rahn was crowned winner of the silver class at the Air Race 1 World Cup in Thailand.

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EAA Chapter 1514 usually meets the first Tuesday of every month at 6:30 PM at Lovezzola's Pizza, (328 US Highway 80, Pooler. 912-748-6414) or at an offsite location as dictated by that month's program.

Details of this month's programming can be found online at www.eaa1514.org or at [Upcoming Programs](#) in this publication.

**The deadline for the January 2018 newsletter is:
Close of Business, NDecember 22, 2017.**

Upcoming Events

The **Allendale County Airport** will be hosting a Christmas Fly-In on December 9th from 11:00am – 2:00pm. They will be serving a lunch and having a gift exchange.



Allendale County Airport Reindeer Roundup (Fly In)

Come join us for our Reindeer Roundup and
Holly Jolly Gift Exchange

December 9th from 11:00am – 2:00pm

We will be serving Santa Soup (chili) and Elf Treats (sweets)

Bring a wrapped \$10.00 gift for the Holly Jolly Gift Exchange. If you haven't heard of this, we draw numbers and the first person chooses a gift, then the second person chooses a gift. The second person can keep their gift or trade it for the first person's gift. This keeps going until all gifts are given out and everyone has something.

Holly Jolly exchange will start at 12:30

Tuesday, December 14th, at 6pm, at Sheltair - Design Group meeting: We'll have sandwiches and then begin work on a new Formula One racing plane.

[Greenville Fly in December 16.](#)

The EAA Chapter 1514 Design Group normally meets on the 2nd and 4th Tuesdays of the month, at 6 PM at Sheltair, but that often gets changed around to accommodate holidays and conflicts. We have sandwiches and then begin work. Our new project is a Formula One racing plane.

Design Group Minutes – November 28, 2017

In Attendance:

Doug McKissack

Mary Martin

Esteban Villa

Will White

Objectives: 1. Size the horizontal and vertical tail. 2. Refine layout. 3. Refine W & B.

Very tentatively we agreed on a C_{vt} of .03 and a C_{ht} of .5.

These coefficients resulted in a vertical tail size of 4.83 square ft. (Arm 9.83') and a horizontal tail size of 9.72 square ft. (arm 9.33'). The aircraft length is currently 16.5'. These are virtually place-holders for more accurate numbers. We need to measure a Cassutt in order to have more confidence. My attempts to measure a Cassutt drawing didn't give me "normal" numbers. We'll also have to rediscover and run the pitch stability protocols.

We reshaped the vertical tail after looking at pictures of Nemesis. Also, we'll increase the rudder size (% of vertical tail) after looking at the Nemesis and Cassutt pictures.

Small progress was made on layout. Basically, we need a more accurate weight and balance before we can progress. We agreed that we want an elliptical lift shape which isn't too difficult to achieve with a composite wing.

The wing taper ratio and sweep are waiting on fuselage layout to determine where the trailing edge of the wing will join the fuselage. We do NOT want the fuselage to taper before the trailing edge of the wing. Basically, we

need a detailed fuselage profile, and then we'll fit the wing to it.

Minor progress has been made on the weight and balance.

Doug had some concern that 70 lbs. was optimistic for the fuselage (including instruments, controls, seat, fuel tank, and canopy). More detail is needed. We also need more details on the landing gear and brakes. The firewall forward aspect does have considerable detail. Next, we need to arrange the aft seat bulkhead so there is about 48" of pilot leg room and then proceed with the fuselage layout. The center of gravity target of 91.75 is an error. Our convention is to place the zero-datum line 100 inches ahead of the wing quarter-chord. In other words, our final cg location target should be fs 100 NOT 91.75. I'll make that change.

Resources: Anything from Mike Arnold, Fred Moreno, Univ. of Illinois Airfoil Database, NASA studies on NLF O-414 airfoil, NASA Contractor Report 3405.

Objectives for the next meeting are practically the same:

Refine weight and balance, refine layout, begin to think about structure (using pultruded carbon rods). Also, I'll try to present the rudiments of a cooling and exhaust scheme.

We'll next meet on December 12th. Hopefully Ryan and Matthew will be with us. See you then. Willard