

Hot Air



Message from the President

January 2014

I hope everyone is having an enjoyable Holiday Season and taking advantage of the truly wonderful weather we have had for the last few weeks. The only bummer about the Santa Ana's is that the associated high pressure usually kills any onshore breeze. This results in the air going downhill which means gliders at Del Cerro are a no-go unless you love to hike.

We had a good turnout at the December meeting. The free raffle is always a draw and Jerry's efforts were greatly appreciated. We had a lot of great stuff available and everyone went home with something.

We are really fortunate that the current group of volunteers running your club agreed to continue performing in their roles for another year. I am always a little baffled that so few members want to volunteer and support the club we all seem to enjoy so much. Performing the officer's jobs keep our flying sites open and available to us. Without the sites we don't have a club. The sites are the reason we all join the club. Why wouldn't you want to help preserve our ability to fly RC?

We will not have a meeting in January, due to the first Wednesday falling on January 1st. Our next meeting will be in February at which we will host our annual "swap meet", in lieu of the usual raffle. Dig out you neglected RC goodies and modeling stuff and bring it to the February meeting.

However, we will hold both Fun Fly's in January. The Del Cerro Fun Fly will be held **Saturday, January 4th**. Cross your fingers and hope the weather breaks so we get a nice onshore breeze. The Entradero Fun Fly will be held **Saturday, January 18th**. Charge up the batteries and we will see you at the field.

The AMA Expo is coming up. The dates for the Expo are January 10th thru the 12th. It's always cool to see what is new and trending in the hobby at the Expo.

You can find all the details at: <http://amaexpo.com>

If you have any news, articles, announcements you would like to get out to the membership, don't hesitate to get the info to one of your club officers and we will get it into the newsletter or to the membership. It is always great when we see what everyone is up to in the hobby.

See you at one of the flying sites or at the meeting in February. Remember, no meeting in January.

-Jeff

Next Meeting

**Wednesday,
February 5th
7:30 pm**

**La Romeria Park
19501 Inglewood Ave**

Upcoming Fun-Flys

**Del Cerro January 4th
Entradero January 18th**



Report from the Treasurer

PSF Treasurer's Report

Month ending 11/30/13

by: Mike Lewis, treasurer@peninsulasilentflyers.com

For the month ending 11/30, we expensed \$500 into the raffle fund to cover our year end raffle extravaganza. Once Jerry reports his raffle expenses, the raffle fund should balance closer to \$0, meaning that total assets will dip to approximately \$2,300. We typically finish the year this low as a result of the year end raffle costs as well as awaiting membership dues coming in January, so the club is expected to close out the year in stable financial condition.

Happy holidays, see you in February for the swap meet!

-Mike Lewis, Treasurer

Building Notes - Art Hobby Odyssey 2.7M Sailplane (Part II)

(This is the final part of an article submitted by club member Steve Kratz. - Ed)

Servo Installation

Now that I was past the wing assembly and finishing challenge, I could begin contemplating what electronics and wing servo linkages to use in this crate. Should I use a conventional servo installation and linkages, RDS, LDS or something completely different? It seems a shame to mar these beautiful wooden wings with external linkages and bulging servo covers etc. In addition, I wanted to build this model as light as practical to keep the wing loading to a minimum. I decided to turn to RC Groups and checkout their DLG forum to see what the real experts were doing to achieve super lightweight 1.5M gliders in the sub 10 oz. range. These DLG guys are nuts when it comes to the lightest of the light and will go to any lengths to save a couple of grams.

After exhaustive research online, I found some truly innovative and slightly insane ideas on saving weight in a glider with wing servos. Such as rigging carbon control rods from the flaps into the fuse and driving them with servos in the nose. This

theoretically would reduce the amount of nose lead required to achieve the proper CG. Nice! Maybe I could build my full house Odyssey at a RTF weight that would rival the RES version. I also briefly considered using flexible polyethylene tubing and piano wire to drive the flaps and ailerons with servos in the fuse but couldn't figure out how to overcome the friction and servo centering issues that would undoubtedly accompany that arrangement. Still it's exciting to investigate new ideas and RC Groups is the best source for the latest and greatest "how-to" stuff.

I finally decided to install the wing servos with a combination of conventional linkages for the bottom-hinged flaps with top mounted control horns and RDS for the top-hinged ailerons. This would allow for a lightweight and relatively clean wing surface. For those not familiar with RDS, it's a rotary drive set up that uses a bent drive rod attached in-line to the servo's output shaft. In other words, no servo control arm. The bend in the drive rod fits into a "pocket" or slot installed in the control surface and rotates to move the aileron up



Building Notes - Art Hobby Odyssey 2.7M Sailplane (Part II) - Cont.

and down. Very little slop and no external parts to disrupt air flow. With such a high aspect ratio wing, I was concerned about creating turbulence and losing lift near the wing tips.

I eyeballed the locations for the servo bays and cut into the wing skins with the flap servo bays oriented perpendicular to the hinge line and the RDS servos for the ailerons at 45 degrees to accommodate the RDS linkage. After mocking-up both servo configurations in one wing, I confirmed that they would work as intended. In fact the RDS install was less "fiddly" compared to the convention flap set up, which was surprising to me.



RDS aileron servo installation



The "guts" of the RDS system

I kept thinking I must have missed something since it was so easy. But no, it's just that easy to install. The only downside to RDS that I can see is that to remove the drive rod for servicing, I would have to remove the aileron first.

Before installing the servos I reinforced the wing skins in the servo bays by epoxying a fiber glass sheet and some plywood servo mounts into each. The wing skins on this type of wing are very delicate and without some added strength they

would definitely break under the servo loads.



Conventional flap servo installation



Plenty of brakes with these flaps!

Now is the part of the build that I always find frustrating. That's when you have the plane mostly built but still have a bunch of little finishing touches to get it airborne and, of course, a lot of little bits to add that you don't have on hand. So off to the hobby shop to pick up clevises, hinge tape, wire extensions etc. It only took about half a dozen trips! The helpful sales person initially asked me if I needed anything else and I confidently responded "No, I'm good" only to sheepishly return the next day to pick up one more thing that I forgot. After the first few repetitions of this routine he finally stop asking and just ended our visits with "See ya tomorrow".

After mocking-up the mostly completed plane with all the components and setting the CG as recommended, it looks like the RTF weight will be about 34 to 35 oz. While this is slightly higher than my targeted weight and resulted in a wing loading in the low 8 oz. per sq. ft. range, for a glider with a 106" wing span it should be able to float and thermal well. I hope.



Building Notes - Art Hobby Odyssey 2.7M Sailplane (Part II) - Cont.



Looks like a big DLG glider

Programming

After setting the CG as specified in the AH instructions, I set about programming all my usual flight modes. With the Airtronics SD 10G transmitter I can program everything I need specifically for each flight mode. In other words I set up normal, thermal, launch, speed and landing modes which include multiple dual rates, exponential, trim, flap settings and mixes to suit the different flying tasks and airspeeds the plane will see during each mode.

Normal Mode

- Airfoil in section
- 3 rates from high to low
- Aileron differential @ 1.5 to 1
- Flaperons

Thermal Mode

- Variable camber
- 3 rates from high to moderate
- Aileron differential @ 2 to 1
- Flaperons
- 2 Aileron / rudder mixes

Speed Mode

- Reflex + 2 mm
- 3 rates from moderate to low
- No aileron differential
- Flaperons

Launch Mode (for winch launching)

- Max camber ~ 30 degrees
- 3 rates from moderate to low
- Aileron differential @ 2 to 1

Landing Mode

- Camber
- Crow
- High rates
- No aileron differential

The SD 10G has tremendous programming capability and even though the above might seem like overkill for sport flying, this radio allows you to select any of the flight modes with a simple flip of a switch. By copying an existing program for a similar model to a new model, you can minimize programming time and simply tune the existing program rather than creating a new one from scratch.

Once you get familiar with the SD 10G architecture programming mixes (i.e. elevator to flap) in flight is easy and eliminates the need to land each time you want to adjust something. However, the Odyssey can easily be set up and flown with any standard radio as well. Now I'm really anxious to get this thing flying and see how it performs. The maiden flight should be interesting.

First Flights

Point Fermin

Like I've said before, when I get a plane "mostly finished" I start getting impatient and am prone to rushing the last details to get it into the air. With the longer than usual build time the Odyssey was no exception. As I was tuning the CG and installing the RX, wire harness etc., I happened to check out the Point Fermin weather website, www.mxsocial.com and noticed that the conditions were perfect for maidenizing a large thermal glider, with the wind out of the southwest @ 10 MPH.

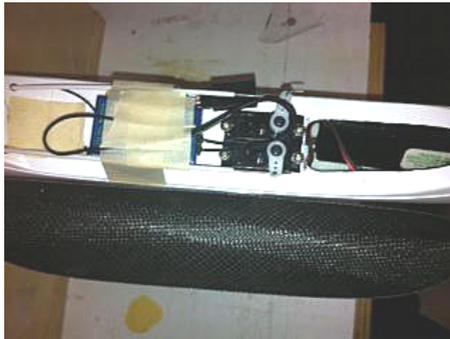
Point Fermin is one of the safest sites for first flights with its steady winds, reliable lift and a wide open landing area. The only downside is that if something goes irretrievably wrong during your flight, your plane will likely end up in the ocean. This is still better than the prospect of an uncontrolled decent into a populated area.

In a rare moment of spontaneity, I decided that today



Building Notes - Art Hobby Odyssey 2.7M Sailplane (Part II) - Cont.

was going to be the maiden flight so the race was on for me to wrap up the Odyssey and get to Fermin before the sun set and/or the wind died. I figured I had about an hour and a half window of opportunity, so I pulled out the masking tape and started taping antennas, receiver and canopy in place. I still hadn't finished the programming but decided I could make whatever mixing adjustments were required in flight. Finally it looks like I've got a flyable model and charged batteries so just have to throw everything into the vehicle and head off to Fermin!



In a hurry? Grab the masking tape!

Regular updates on MX social show that the perfect flying conditions are holding steady as I make the 7-mile drive to San Pedro. Once on site, I quickly unload the taped-up Odyssey, assemble the wing tips and check that everything works. I open the mixing menu, run through an abbreviated pre-flight checklist and then ask myself the question, "Am I really going to take several months' worth of sweat and toil not to mention a few hundred bucks worth of model and pitch it off a cliff?" Absolutely!

Juggling the plane in one hand and transmitter in the other, I awkwardly climb the retaining wall separating the park and the cliff edge. I fumble the Odyssey attempting to launch it when a sudden gust rips the plane from my hand propelling it upward at an alarming rate. I paw the transmitter desperately to get my right thumb on a gimbal and have some control over where the plane goes next. Fortunately, the plane stays pointed directly out to sea and displays inherent stability as it soars up and over the Pacific Ocean. Somehow I've avoided catastrophe and a quick look around reveals that there are no witnesses to my cliff side bumbling. Whew!

I take a couple of deep breaths and begin sorting out how to fly this thing. A couple of minor trim adjustments and it's straight and level. I cycle through all of the flight modes adjusting the separate trim settings as necessary and then hit the flaps to tune the elevator compensations. With flaps down the plane hovers in the 8 to 10 mph breeze which suggests that the landing speed with full crew will be very slow indeed.

I pull some altitude and start a shallow dive to check the handling at speed and am rewarded with a sensitive elevator despite its small size. The ailerons with flaperons mixed in are likewise very effective and I make a mental note to add in some expo and turn down the rates. Andre at Art Hobby was right when he said the Odyssey has a versatile airfoil. It floats well with some camber yet is slippery when the airfoil is in section or slightly reflexed. A couple of high speed flybys result in a pleasing whistling sound reminiscent of a molded sailplane. Nice!

Now it's time to get the Odyssey back on the ground, so I "park" the plane in the lift about 50 ft. above the cliff, trim it to hover like a Peregrine falcon and begin the Point Fermin landing procedure. Over the first wall, walk through the park, check for traffic, cross the street, over the second wall checking on the Odyssey from time to time. It's still in position but is hovering at about 100 ft. now. With the light Poplar covered wings and the glare of the setting sun it's difficult to maintain a visual on the plane. I make another mental note to add some contrast stripes to the bottom of the wing before the next flight.

Once up the trail to the top of Friendship Bell ridge, I fly the Odyssey downwind and into the lift on the front side of the ridge. From here it's a short downwind leg, turn into the wind, hit the flaps and hover to a gentle touch down.

Several additional flights with full ballast revealed that this plane at 46 oz. has a substantially higher gliding speed with virtually no increase in the sink rate. Aerobatics and penetration in the 15 to 18 mph wind were impressive.



Building Notes - Art Hobby Odyssey 2.7M Sailplane (Part II) - Cont.



Ballast bar mount & opening in fuselage with 5 X 2.5oz. slugs



Ballast bar

Del Cerro

Next up was flying the new rig at Del Cerro for the acid test in light slope and thermals. After getting skunked with virtually no lift on the first attempt, I returned the following Saturday to find John and Phil already there and proposing that today was the day for a DC maiden flight with conditions about normal i.e. light slope lift and thermals.

I assembled the wing panels and did a quick systems check, then launched the un-ballasted Odyssey out over the valley. The plane immediately began climbing and within 20 seconds was up to an impressive 150 to 200 feet. This plane really likes to fly! I was pleased with the glide speed and sink rate on the Odyssey which allowed it to travel quickly between lift zones without losing much altitude. With some rudder mixed to the ailerons, it also exhibited precise handling while thermaling, much like a molded plane. I was starting to enjoy

myself and found that this model was as efficient as I had hoped with very forgiving flying characteristics. Stalls were gentle with a quick recovery and landing the Odyssey in Del Cerros' confined landing area was straightforward using the large flaps.



Odyssey with flaps deployed. I got creative with the decals :-)



106" span, high-aspect-ratio wing and SD 7080 airfoil

After a couple more flights I got a little overconfident with the planes' ability to fly in light conditions and soon found myself between light cycles with the Odyssey way down at the base of the hill and a steady stream of encouragement from the DC regulars to avoid landing out. I was working the weak lift in the valley below but maintaining the status quo was the best I could do. With some

**Building Notes - Art Hobby Odyssey 2.7M Sailplane (Part II) - Cont.**

spotting and guidance from Tom, I starting making some progress back up the face of the hill. Finally the big glider found a decent thermal and I circled my way back up to the top of the hill. Not wanting to push my luck too far with a new plane, I asked for and got the all-clear for a landing, circled over the fence line and set the Odyssey down at jogging speed. I officially love how this plane flies!

Conclusions

It's hard to evaluate a plane's flying characteristics after only a few flights, but it's clear the Odyssey, while not technically a floater, will be a good thermal tool and with some ballast will penetrate very well. If you want to see some videos of the Odyssey flying at its absolute limits, including aero towing, aerobatics, sloping and dynamic soaring,

check out "Speedster Den's" collection on YouTube. Great stuff!

As far as the kit building experience is concerned, the Art Hobby line of kits is a great way to get your feet wet and decide if kit building is really your thing. I enjoyed learning some new building techniques that will be useful in future projects, but the revelation for me was the RDS servo system which was easy to install, slop free and worked so well, I will definitely be using it in my future sailplane builds.

See you at Del Cerro!

- Steve Kratz

Website News

Don't forget to check out our website from time to time. I recently posted a link to a YouTube video demonstrating aero-towing at Entradero. You will also find a photo gallery documenting a 1/6-scale Duesenberg Roadster - truly amazing craftsmanship!

- Editor

**Club Officers and Volunteers
(again) for 2014**

- President: Jeff Chambers
310-370-0771
- Vice President: Jerry Lake
310-370-6697
- Treasurer: Mike Lewis
310-987-8178
- Secretary: John Spielman
310-378-0951
- Newsletter: Chris Newton
310-347-6806

Don't forget - no club meeting in January. See you in February.

Happy New Year!