Message from the President

August 2013

There were issues with the gate locks earlier this month at Entradero Park. Some of our members reported that the combinations appeared to have been changed on the main park gates. This turned out not to be the case. I had contacted the baseball leaders and they assured me that the combinations had not changed. I investigated and found that they worked. Members continued to report not being able to get the North and South gate locks open. Jerry Lake lubricated the North gate lock and it now appears to be working.

Next Meeting

Wednesday,
August 7th
7:30 pm

La Romeria Park
19501 Inglewood Ave

I had mentioned to the baseball leaders that I was willing to replace the locks. They requested that I not replace the locks and that they would take care of them if needed. I complied. However, if future issues with the locks occur, let me know and I will replace the defective lock.

One of our member's wanted to contact the City and complain. Let me explain why this is not the proper approach. The baseball fields are leased from the City at a buck a year. The City performs no infrastructure work on the fields. All fence, bleacher, field work is done by the two baseball programs at Entradero. The City used to provide water for watering the fields but they now charge for water and it costs thousands of dollars a year. Our ability to use the large field for flying is with an agreement with the lease holder for the large field. Our use is on a non-interference basis with all baseball programs at the Park. Calling the City will either result in the City calling one of the baseball groups or the wrong kind of lock being put on the gates by City workers.

Therefore, we need to work with the baseball programs regarding any field access or use issues. The City is out of the loop but aware of our being there and we have insurance that covers not only baseball activities but the City through the AMA. The last time there was an issue with the locks disappearing and the City got involved a keyed set of locks was put on the main park gates and no one could get in until I went down and cut the chains and put a combination lock on. Although the City uses the combination locks, they are provided by baseball and, in the past, our club.

Upcoming Fun-Flys

Del Cerro	**August 10th**
Entradero	**August 24th**

Once again, if there is an issue with the locks, contact me or one of the club officers. The best lubricant to use on a sticky combination lock is Tri-Flow. WD-40 turns to gum over time.

Regular baseball activities are over for the summer, including the summer baseball camp. I can hear the cheers from our members. Please remember that there are club baseball teams that practice on the field and occasional games and tournaments held on the fields through the fall and winter months. No flying can take place

while these activities are taking place. I usually do not have advanced notice of these activities, since schedules are not posted. However, I will let you know if I get wind of them ahead of time.

Below, you'll find information regarding a special TRW event at the Western Museum of Flight. TRW is now part of Northrop Grumman. Our club has had a lot of TRW employees as members over the years. The company has an interesting history in a wide range of aerospace activities. It will be interesting to see what the Museum shows.

See you at the meeting or at one of our flying sites.

- Jeff

Western Museum of Flight

August 10, Saturday

2 – 5 PM

TRW TRW TRW

All Former TRW EMPLOYEES (past and present) and spouses are welcome

Refreshments Served

Acquaintances Renewed

Reminiscences Welcome

TRW – A Legacy of Technology

The contributions of the TRW aerospace pioneers and the legion of professionals who built the company they founded, cannot be fully enumerated. To celebrate the achievements of this great company, there will be a reception at the Western Museum of Flight on August 10th from 2:00 – 5:00 PM.

If you have additional questions or would kindly RSVP, please email Dale Hoffman at dmhoffman@earthlink.net or call the Museum by Aug 1st.

3315 Airport Dr.
Torrance, CA 90505
(310) 326-9544
www.wmof.com

Free Parking Available in the Robinson Helicopter Lot. Shuttles provided. Museum Lot for Handicapped Parking only.

The Ultimate Del Cerro Setup — Part II - The Build

The quest for the best Del Cerro glider design continues with a quick review of the design concept we developed in Part 1:

1) Light weight
2) Ballast capability
3) Durable
4) Impact compliance

We decided on a combination foam and built up flying wing with a ballast compartment to satisfy the requirements for flying in light slope lift, thermals and breezy conditions. Since every successful project needs some targets to shoot for, I've pegged the following design objectives to help us meet our goal of a versatile glider that can do it all at Del Cerro:

1) Ready to fly (RTF) weight of 10 to 11 oz.
2) Wing surface area of 450 to 500 sq. in.
3) Un-ballasted wing loading of approx. 4 oz. per sq. ft.
4) Ballasted wing loading of 7 to 8 oz per sq/ft.
5) Total RTF cost less than $150.

Now let's see the list of stuff we'll need to build the project plane:

1) Standard 48" foam combat wing
2) Approximately 12" X 24"X 1/16th lightweight balsawood
3) Carbon TOW for reinforcement
4) 2 micro servos
5) 1 two channel receiver
6) 1 220 Mah battery
7) 2 Control horns with quick connects
8) 24"X 24" X 3/32nd lightweight foam sheeting for wing tips and elevons
9) 48"X 3/16" square basswood leading edge for elevons
10) Thin piano wire for control rods.
11) MicroKote covering.
12) 3M packing tape

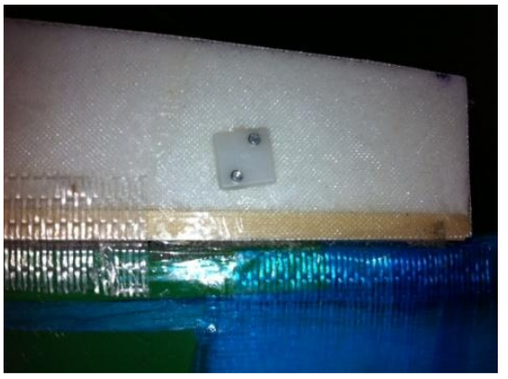
The total cost should be about $100.00, if you have to buy a new wing, receiver and have enough extra CA, covering, balsa, tape etc. lying around to complete the build. If you had to buy all the materials new, you'd spend approximately $150 and have lots of left overs to use for other projects or repairs. Since I already had a retired combat wing and a spare receiver, the cost for this project was around $20. So. let's start building!

1) This old Zagi has seen a lot of combat and if foam could speak it would tell a harrowing tale of swarms of combat wings knocking each other out of the sky over Bluff Cove, countless kills and sadly just as many collisions with the ground, trees and fellow pilots. After such a colorful combat career I think this venerable old battle axe will enjoy spending its twilight years floating peacefully over Del Cerro hunting down the next thermal rather than bashing its way into the recycling bin. Okay, so now we have to carve off some weight and replace foam with a CF reinforced balsa structure. What are the logical parts to remove? Anything that doesn't provide impact protection.

2) Using an old serrated steak knife, we remove as much of the foam structure as we can. The foam leading edge and center section remain but everything else disappears. The existing CF spars are left in place.

3) Next we replace the rear sections of the wing with balsa ribs and trailing edges. Carbon fiber tow is CA'd to the bottom of the trailing edge to improve structural strength. I notched the foam section to accept the balsa ribs and attached them using ZAP. I angled the ribs near the wing tips up a couple of degrees to add a little washout and minimize tip stalling.

4) Add some tape to the leading edge and a few strategic places then MicroKote covering is applied in translucent blue with a bit of yellow to provide some contrast. Might even add some contrast stripes to the bottom if I have trouble seeing this thing in the air.



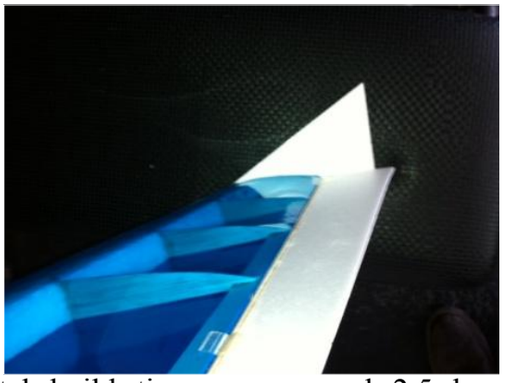
5) Elevons are cut from thin foam sheet, CA'd to a basswood leading edge and reinforced with fiberglass top and bottom near the root. Light but sturdy enough to survive most landings. The completed elevons are then attached with tape to the T.E. of the wing.

6) Fitting the servos, receiver, battery and 2.4 antennas is simple and it all fits. The beauty of working with foam is if you need a little more space, just break out the knife and starting cutting. I wish it was this easy with some of the molded sailplanes I've built!

7) Attach the control linkage to servos and elevons.

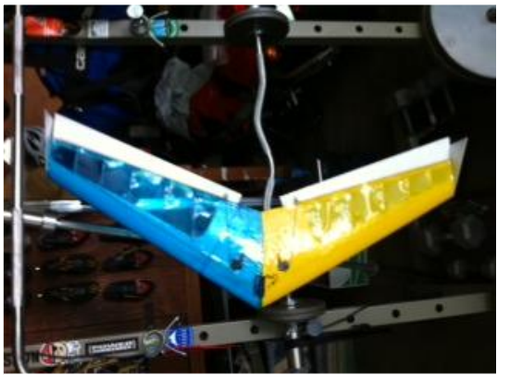
8) Glue on the foam wing tips, check the CG and it looks like we're ready to maiden this thing.

Weighing everything on a scale shows a little over 10 oz. AUW. It looks like we'll make our weight goal.



Total build time was around 2.5 hours and produced a 10.7 oz. flying wing with a jaw dropping 3.5 oz. per sq. ft. wing loading. This glider should be able to climb like a helium balloon in the lightest lift.

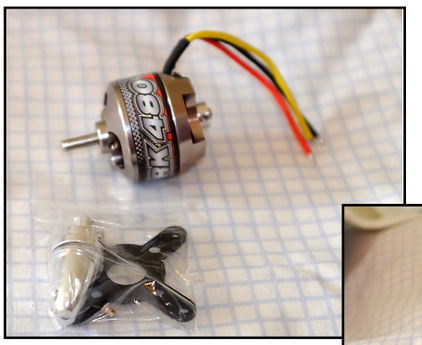
We'll use the first few flights to nail down the CG and then add the ballast compartment for windier conditions. The logic here is that if we're adding substantial ballast weight we need to ensure that the CG is perfect because once we located the ballast position at the CG, it will be very difficult to change it without major surgery.



I can't wait to get this thing in the air!

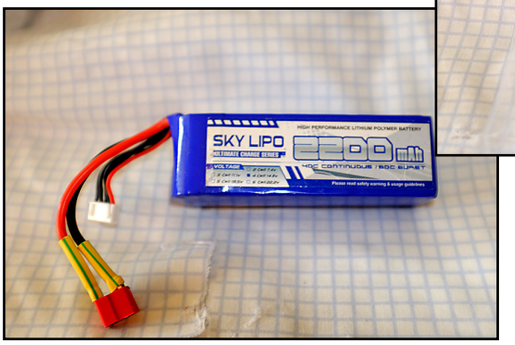
Next Month: Part 3 "The Maiden Flight of the DC Special!"

Monthly Raffle!



Once again, we will hold a raffle at the August club meeting.

Come on out and win something cool!



Amazing WW II Aircraft Facts

This is not taught in our middle and high schools or in college, so it might be a good idea to pass this on to all the people on your email list; so that the memory of these men and women will not be lost, forgotten, ignored, or changed sometime in the future.

These are very moving statistics:

On average 6600 American service men died per *month*, during WW II (about 220 a day). People who were not around during WW II have no understanding of the magnitude. This gives some insight.

276,000 aircraft manufactured in the US .
43,000 planes lost overseas, including 23,000 in combat. 14,000 lost in the continental U.S.

The staggering cost of aircraft in 1945 dollars:

B-17	$204,370
P-40	$44,892
B-24	$215,516
P-47	$85,578
B-25	$142,194
P-51	$51,572
B-26	$192,426
C-47	$88,574
B-29	$605,360
PT-17	$15,052
P-38	$97,147
AT-6	$22,952

From Germany 's invasion of Poland Sept. 1, 1939 until Japan 's surrender on Sept. 2, 1945 = 2,433 days. America lost an average of 170 planes a day.

A B-17 carried 2,500 gallons of high octane fuel and carried a crew of 10 airmen.

9.7 billion gallons of gasoline consumed.
108 million hours flown.
460 thousand million rounds of aircraft ammo fired overseas.
7.9 million bombs dropped overseas.
2.3 million combat flights.
299,230 aircraft used.
808,471 aircraft engines used.
799,972 propellers.

The US lost 14,903 pilots, aircrew and support personnel plus 13,873 airplanes inside the continental United States . There were 52,651 aircraft accidents (6,039 involving fatalities) in 45 months. Average 1,170 aircraft accidents per month - nearly 40 a day!

It gets worse.....

Almost 1,000 planes disappeared en-route from the US to foreign climes, but 43,581 aircraft were lost overseas including 22,948 on combat missions (18,418 in Europe) and 20,633 due to non-combat causes overseas.

In a single 376 plane raid in August 1943, 60 B-17s were shot down. That was a 16 percent loss rate which meant 600 empty bunks in England . In 1942-43, it was statistically impossible for bomber crews to complete the intended 25-mission tour in Europe .

Pacific theatre losses were far less (4,530 in combat) owing to smaller forces committed. The B-29 mission against Tokyo on May 25, 1945, cost 26 Superfortresses, 5.6 percent of the 464 dispatched from the Marianas .

On average, 6,600 American servicemen died per month during WWII, about 220 a day. Over 40,000 airmen were killed in combat and another 18,000 wounded. Some 12,000 missing men were declared dead, including those "liberated" by the Soviets but never returned. More than 41,000 were captured. Half of the

5,400 held by the Japanese died in captivity, compared with one-tenth in German hands. Total combat casualties were 121,867.

The US forces peak strength was in 1944 with 2,372,000 personnel, nearly twice the previous year's figure.

Losses were huge, but so were production totals. From 1941 through 1945, American industry delivered more than 276,000 military aircraft. That was not only for US Army, Navy and Marine Corps, but also for allies as diverse as Britain, Australia , China and Russia.

Our enemies took massive losses, as well. Through much of 1944, the Luftwaffe lost 25% of its aircrews and 40 planes per month.

Experience Level

Uncle Sam sent many men to war with minimum training. Some fighter pilots entered combat in 1942 with less than 1 hour in their assigned aircraft. The 357th Fighter Group (The Yoxford Boys) went to England in late 1943 having trained on P-39s, then flew Mustangs. They never saw a Mustang until the first combat mission.

With the arrival of new aircraft, many units transitioned in combat. The attitude was, "They all have a stick and a throttle. Go fly `em." When the famed 4th Fighter Group converted from P-47s to P-51s in Feb 44, there was no time to stand down for an orderly transition. The Group commander, Col. Donald Blakeslee, said, "You can learn to fly 51s on the way to the target".

A future P-47 ace said, "I was sent to England to die." Many bomber crews were still learning their trade. Of Jimmy Doolittle's 15 pilots on the April 1942 Tokyo raid, only five had won their wings before 1941. All but one of the 16 co-pilots were less than a year out of flight school.

In WW II, safety took a back seat to combat. The AAF's worst accident rate was recorded by the A-36 Invader version of the P-51 - a staggering 274 accidents per 100,000 flying hours. Next worst were the P-39 at 245, the P-40 at 188, and the P-38 at 139. All were Allison powered.

Bomber wrecks were fewer but more expensive. The B-17 and B-24 averaged 30 and 35 accidents per 100,000
flight hours respectively - a horrific figure considering that from 1980 to 2000 the Air Force's major mishap rate was less than 2.

The B-29 was even worse at 40 per 100,000 hours; the world's most sophisticated, most capable and most expensive bomber was too urgently needed to be able to stand down for mere safety reasons. (By comparison, when a $2.1 billion B-2 crashed in 2008, the Air Force declared a two-month "safety pause").

The B-29 was no better for maintenance. Although the R3350 was known as a complicated, troublesome power-plant, only half the mechanics had previous experience with it.

Navigators

Perhaps the greatest success story concerned Navigators. The Army graduated some 50,000 during WW2.
Many had never flown out of sight of land before leaving "Uncle Sugar" for a war zone. Yet they found their way across oceans and continents without getting lost or running out of fuel - a tribute to the AAF's training.

At its height in mid-1944, the USAAF had 2.6 million people and nearly 80,000 aircraft of all

types. Today, the US Air Force employs 327,000 active personnel (plus 170,000 civilians) with 5,500+ manned and perhaps 200 unmanned aircraft. That's about 12% of the manpower and 7% of the airplanes of the WW2 peak.

In Summary...

Another war like that of 1939-45 is doubtful, as fighters and bombers have given way to helicopters and remotely-controlled drones. But within our living memory, men left the earth in 1,000-plane formations and fought major battles five miles high, leaving a legacy that remains timeless.

Club Officers and Volunteers for 2013

• 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

Most-Produced WW II Combat Aircraft

Grumman TBM Avenger 9,837

North American B-25 Mitchell 9,984

Hawker Hurricane 14,533

Russian Ilyushin IL-2 Sturmovik 36,183

Yakolev Yak-1, -3, -7 31,000

Messerschmitt Bf-109 30,480

More images of mass-produced WW II aircraft can be found on the club website.