EL TORBELLINO

NEWSLETTER OF SAN DIEGO ORBITEERS FREE FLIGHT CLUB

JULY 2020

Prez's Corner – Mark Chomyn

Another month has passed and we've seen our country begin to re-open, only to find that certain areas of the country experienced an increase in incidence of COVID-19 cases. Now we're hearing rumblings about the possibility of a new round of shut downs. Never thought that we would be experiencing such an unsettling and confusing world-wide condition. All the more reason to lean on our hobby and our families to get us through this. Better times are coming.

We held a fun fly on June 14 as our last outdoor flying activity before our customary "dark period" in July/August. Hopefully come September we'll get some better news on the COVID situation and the condition of Taibi Field. Thanks to a joint effort by the Perris Free Flight Alliance, the grass in the "infield section of the flying site was mowed below a foot high. Our thanks to Bernie Crowe and Lance Powers of the SCAMPS and the Alliance for their efforts on field maintenance. And, if you've been to the field lately you may have noticed that several of the mulch piles along the edges of the infield have been plowed in and are lower in height. Though reduced in height, the soft condition of the plowed in mounds still makes walking a bit tricky so you need to watch your step. It is anticipated that more of this plowing may be done in the future but the schedule for that depends on Jason's (the farmer/lessee) ability to provide the time and machinery to do so. We will provide updates in that regard if, and as. they occur. We've got our fingers crossed.

As an interesting aside to the field work, there was some drama involved in the recent mowing of the infield. The weed control operator for the work was involved in an accident that almost totally destroyed the equipment used for mowing. This accident. along with some illegal debris dumping at the field requiring removal prior to mowing, caused a delay in the mowing but it was eventually accomplished. If you want more information and pictures about this check out the June issue of the SCAMPS Gas Lines newsletter.

As I reported last month, I've been enjoying the articles on "Building a Free Flight Model" in AMA's Model Aviation magazine. However, the third and last installment by Bob Benjamin in the July MA was a little disappointing. If this series of articles was aimed at tutoring the beginner, there was some information lacking. In particular there was no discussion of the location of the CG and its importance in balancing the model. In addition to balancing, there was no discussion of the need for test gliding and the adjustment of flying surfaces to aid in achieving a smooth glide prior to power flying. Likewise, there was no mention of thrust adjustments. I was looking forward to a discussion of trimming since I built an Ajax myself (that never flew well) which now sits gathering dust in the garage. I was hoping that the article might provide some information on how Bob Benjamin got his to fly reliably.

Add to all this, the wet covering method shown is likely beyond the ability of the novice builder. In fact, I wouldn't be inclined to want to try it myself. All-in-all though. if the articles were meant to at least introduce the sport of free flight to the public at large it was a very good overview. I hope that the articles do catch the interest of those not currently involved in, but inclined to want to try, model aviation. And, who knows, it may even make some current R/C or control line fliers want to revisit the beginnings of model aviation and try free flight.

Until next month, keep building. I can't wait to see some of the new planes that will hit the field in September. Above all, please follow the appropriate COVID precautionary measures and may you and your families stay healthy.

Mark

"Crashes provide much of the excitement and fireworks at a gas model meet".
Popular Science Monthly, December 1935

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THE FINE PRINT THE FINE PRINT

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Compound interest for a plugger is hitting one ball into the woods and coming out with nine.

Forming a Plastic Canopy Without a Vacuum Forming Machine
By Mike Jester

During the shelter in place era I built a 2X Walt Mooney Embraer Ipanema crop duster that needed a canopy. My vacuum forming machine was 550 miles away. So, I had to come up with a different way to form the canopy. I had been warned by Bob Hodes, who built the same model airplane shown below, that it was difficult to build a frame for the window panels. He resorted to building a window frame on a jig. I briefly toyed with the idea of cutting a sheet of clear acetate to a precise outline and folding it. After five tries I actually got a pretty good paper pattern. But I came to the conclusion that the finished product would likely be very ugly. I ending up fabricating a clear plastic canopy using a simple technique I learned about from a YouTube video.

2X Walt Mooney Embraer Ipanema by Bob Hodes

I first laminated a stack of 1/8-sheet balsa wood squares with Titebond glue for later cutting and sanding into a mold plug.


Mold Plug Made from Laminated Balsa Wood Sheet

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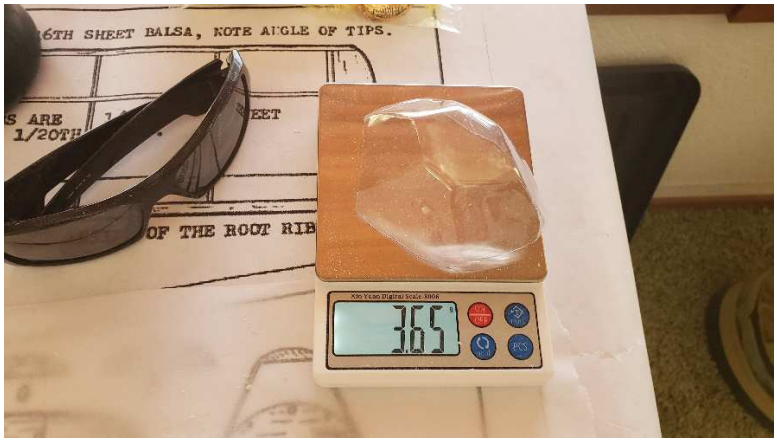
I glued a wooden dowel into the bottom of the plug for supporting it on a wooden base. I then placed a piece of clear plastic packaging over the mold plug. It was vacuum formed clear plastic packaging that was about .005-inches to .007 inches thick. Wearing gloves, I had my wife apply heat with a hot air heat gun. As the plastic softens it shrinks and you can pull it down tight around the mold plug. I first used a portion of a vegetable tray, but the plastic turned cloudy white if it got over-heated. I then switched to a different plastic. It was a vacuum formed shell used to house a trickle charger that I recently purchased. This plastic did not turn white. It takes patience to slowly heat the plastic in a given area and pull it down tight. You need to wrap the hot plastic around the bottom edge of the plug so it won't pull away when it cools.

Heat Forming a Plastic Canopy Over a Balsa Wood Mold Plug

After trimming with scissors to fit the fuselage, my molded canopy looked good enough.



Molded Canopy After Trimming

I spray painted its roof with flat black Design Master floral spray paint. The canopy was finished with narrow strips of black matte chart tape to simulate the window frame. This is the same kind of tape that I used to outline the ailerons and the control surfaces on the stab and fin.

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2X Walt Mooney Embraer Ipanema by Mike Jester

From The Workbench - J.Merrill

I finally finished this up tonight, after way too many years of it being half-done and shoved in a box in the garage.

A friend/co-worker of mine asked what I was doing while furloughed from work. I told her that I was enjoying more time building model airplanes, to which she inquired if I ever built a Spitfire? She's from England originally, and the Spitfire was one of her favorite aircraft. I've always liked it too, lots of graceful curves and lines (which I learned aren't the easiest to cover with tissue). So I pulled this old dusty bare-bones sled out of the garage and decided to finish it up.

I showed her a picture of this at work today, and she was almost giddy, and couldn't believe I finished it in a pink color. I told her that pink was an authentic RAF color used during WWII on low-level photo reconnaissance Spitfires, as it blended in perfectly if they flew just below the clouds. The pilots still hated it, but allegedly it did work

.

This was built from one of the nine Guillow's "500" series of kits, all are Walnut scale, with roughly a 16 1/2" wingspan. The plane ended up costing me an extra 61 cents, as it has 6 dimes and 1 penny glued inside the nose. I wanted to balance it without having to use a lump (fistful) of clay, so the coins were my next best option.

She's pretty heavy, so I sure don't expect any spectacular record-setting flights, but it was fun to build and even more fun getting an education about the variety of photo recon Spitfires.

One tid-bit of worthless trivia that I thought was interesting is that I had believed that the photo planes always had their guns removed. Come to find out this was true for the more common high altitude recon planes, which were usually a solid blue color. However, flying at much lower level the pilots of the pink planes felt much more vulnerable, so they kept their eight .303" machine guns in the wings. They also kept the roundels off of the bottom of the wings, only had them on the top of both wings.

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J.Merrill Workbench from previous page

Being back to work, that's probably all I'm going to get finished this month. I hope you stay safe, and stay healthy.

In the meantime, what's on your workbench?

From The Workbench – D.Scigliano

Here is my latest build, another old Guillows kit. Also I believe my dues are up next month, I will send payment. I wish I could make it out to the field, but it seems I am always at work on the weekends, am I able to fly during the week at the Perris field?

This is the Guillows P-51 Mustang 400 series with 27 inch wing span, older die cut kit. I built this kit because I entered an online Guillows Facebook contest to see who could get one of these large birds to fly using all the kit parts; this included the designed landing gear.

I know these kits are now laser cut and the wood quality is much better, but I still prefer hand cut or die cut parts to lazy cut kits.....Ok I must admit I enjoy the ease of lazy cut models... Any way the wood is a little heavy. I spent one night popping out the parts and truing them to the parts shown on the plans, that is one good thing about Guillows kits the parts are on the plans.

For the construction I used good ole Testors wood cement and Elmers Glue-All taking my time to make sure everything was nice and straight. Once again I built per the plans with no modifications or any changes to make lighter, adding the functioning landing gear added 20 grams.

After she was built is was time to cover using the kit supplied light weight silkspan, I say light weight but it is actually heavier than tissue when it is all said and done. The good thing about silkspan is how easy it is to use and cover wet around compound curves. I attached the silkspan with thinned Elmers glue and once tight I applied 3 coats of thinned Sig Lite.

Before gluing on the plastic nose I had to balance the model with 10grams of supplied clay. Once she was all put together and balanced the weight was 90 grams minus the

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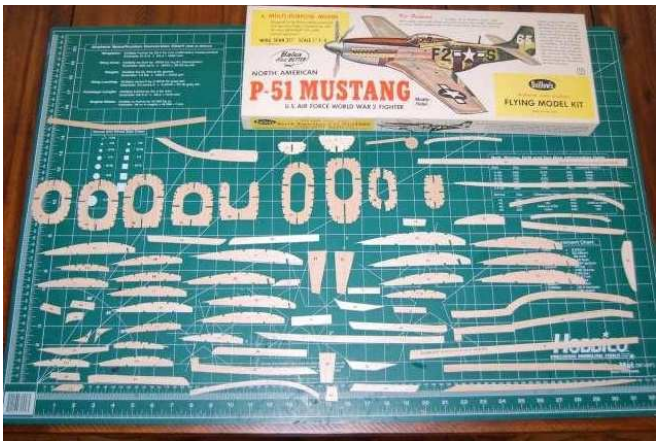
rubber. I decided not paint because of the extra weight and I wanted the over engineered structure to show through during flight. I did use the old kit decals and they went on ok for their age with some areas breaking apart.

Since I am still working, I really did not have time to fly in a large field for the contest so I flew the Mustang at my local park. The park is not very big so I went with the stock kit rubber and supplied prop set up. I used good ole FAI soap/glycerin lube and was able to get 350 turns in the rubber which is plenty for the small field. All said and done she flew great with no trimming, I was surprised and I really think with more room and better rubber she will fly great. Also this little battery operated winder is great for trimming flights or small fields where you do not need to stretch the rubber, also don' have to set up a stooge.



Electric Winder →

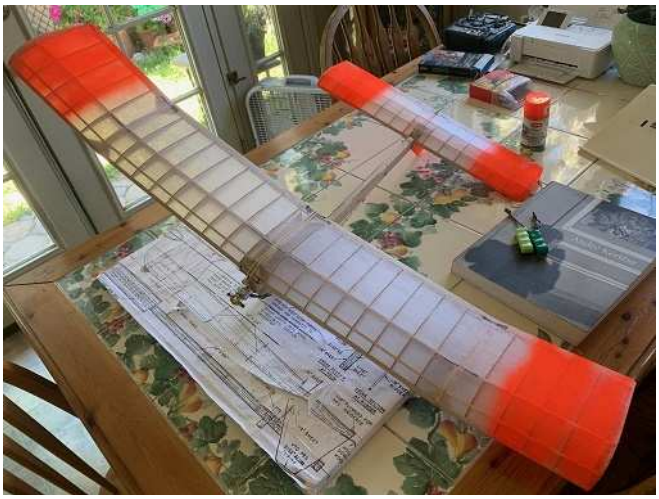
From The Workbench - J.Swain

The Red/White E36 Clint Brooks Apache E36 model was built about 2+ years ago but I never flew it until about 2 weeks ago. Everything was stone-dead flat as I was concerned any washout/wash-in would make the power phase too twitchy for the high speed ascent. This idea worked well.

Being comfortable with the standard pylon E36 I was unsure what to expect thus the delay. What I did was substitute a micro rc 4ch receiver to actuate the DT and instantly control the power amount and time limit. This plan worked perfectly and the only adjustment the model needed was about a 1/16" shim under the stab TE. The model was flying normally and catching thermals after only 5 test flights. That's a record for me!

Apache2 E36

The white/orange Starduster was a short kit I bought a few years ago and was completed around the end of May 2020. This build went rather fast for me due to the Covid shutdown. The model is stock with exception of an additional top spar at the high point as i had come to understand the model is under strength relative to today's higher powered brushless motors. This model also used the rc micro receiver for safe trimming and flies quite well (actually all models, plastic bags, and tumble weeds fly well at Perris...). I used PolySpan and dope covering and that has worked well for strength and puncture resistance. The only short coming was me in my layout of the electrical components- not as clean as was my next build the Starduster 350- this model has about a 1/2" fuse width and is solid up front so all the bits and pieces had to hang outside. Bottom line it fly's just fine and a successful effort by Sal Taibi to design a foolproof plane for modelers like me ;)



Starduster 35

The skeleton picture is a building complete but uncovered Starduster 350 from a original Taibi kit. I was able to plan the electrical parts a bit better using softer balsa 3/32" doublers on the front of the fuse to keep more of the components out of the wind stream. This will be covered again in PolySpan and should be flying in the next week or so.

I have been using the rc micro 4ch transmitter/receiver idea based on the suggestion of Jim Jennings trimming instructions while building my three 'e36 Mutt' and it has been a golden nugget of help for trimming and saving my models from destruction during the tricky initial trimming phase. The receiver is almost exactly the same size as the standalone e36 timer so it has been easy to substitute after the model is safely trimmed.

StardusterX →

INSIDE BUSINESS AVIATION
WILLIAM GARVEY

Winning Underperformer

Perseverance, prescience and **pluck** prevail

ITS PROMISE OF BEING THE "lowest, slowest" jet was unorthodox. Its reliance on a single engine and single pilot seemed dubious. And the fact that its manufacturer had never produced an aircraft with retractable gear, let alone a pressurized one with turbofan power, made the whole enterprise a reach. Finally, the project's launch year—2006—could hardly have been worse, with the Great Recession about to choke the roaring economy to a whimper.

Fast-forward 14 years, and Cirrus Aircraft has proved to be as prescient as it was persistent since its SF50 Vision Jet—the world's first "personal jet"—has become as popular as it is unique. And that singularity very much includes pricing: Its $2.85 million sticker (typically equipped, type rating included) is roughly $1.5 million less than the least expensive light jet, and even well below most pressurized, single-engine turboprops.

CIRRUS AIRCRAFT

The journey to this happy place was not without setbacks. Foremost among those was the aforementioned recession that essentially slowed aircraft development to a crawl and ultimately resulted in the company changing hands.

In 2011, a subsidiary of the Aviation Industry Corp. of China (Avic) offered $210 million for the Duluth, Minnesota, manufacturer. Cirrus' then-Bahrainian owners readily accepted the deal, and Avic soon announced plans to revitalize the jet project.

Although there had been excitement in the early 2000s about the very light jet segment coming of age, the promise of the Sport Jet, ProJet, AdamJet, Safire Jet, D-Jet, PiperJet, among others, essentially went *poof*! The Eclipse 500 did earn its certification and entered into production, but after a series of financial reversals, by 2018, it was done.

Meanwhile, the Chinese invested heavily in the Vision Jet's development and flight testing. In October 2016, the aircraft was awarded a Federal Aviation Regulation Part 23 Type Certificate. Cirrus delivered its first customer jet two months later. Since then, it has delivered another 200 and expects to produce 80 this year, essentially matching 2019 output despite being slowed by the coronavirus pandemic. By unit count, the SF50 is the most popular private jet in production today. And there are another 400 of them in the orderbook.

What's the appeal? Price, obviously, but the draw goes well beyond that. When Cirrus began the project, its target buyers were owners of its popular SR series of single-engine piston aircraft. Accordingly, its designers took cues from those aircraft to ease the transition. So, like its piston siblings, the SF50 has composite construction, sidestick controls, excellent visibility and a five-screen Garmin avionics flight deck. Although similar to a Beechcraft Baron in length and wingspan, the SF50's 5.1-ft.-wide, 4-ft.-high, air-conditioned, flat-floor, USB-ported, LED-lit cabin can comfortably accommodate five passengers.

The aircraft is propelled by a Williams International FJ33-5 turbofan rated at 1,846 lb. of thrust and fitted with a full authority digital engine control. It provides a top cruise speed of just over 300 KTAS (345 mph). With seats full, the aircraft can fly 461 nm, with reserves, and can cover 1,171 nm with maximum fuel.

One of the manufacturer's signature moves from the outset was to equip its aircraft with an emergency parachute. And the SF50 is no exception; the Cirrus Aircraft Parachute System comes standard. None has been activated on an SF50.

Another Cirrus trait is to regularly make product improvements. So just 15 months after SF50 production began, the company introduced the G2 Vision Jet. This second-generation version has increased cruise altitude by 3,000 ft., to 31,000 ft., provides a quieter cabin, more powerful avionics, a radio altimeter and an autothrottle. The digital equipage is key to another new feature: "Safe Return," the autonomous landing system created by Garmin that in an emergency anyone onboard can activate with the push of a button. That system is expected to be certified in the aircraft later this year.

As intended, a significant majority of SF50 buyers are moving up from Cirrus piston models. But among the owners of the 200 SF50s already on the market are several charter operators as well as businesses. Hoping to increase its share, Cirrus has launched "Smart Lift," a website tutorial intended to educate and encourage business aviation flight departments to supplement their fleets with a Vision Jet as a low-cost, responsive regional people mover.

In an Operators Survey published in the January 2020 issue of *Business & Commercial Aviation*, owners gave the aircraft high marks for its comfort, excellent visibility, reliability, handling ease, advanced avionics, safety features and Cirrus product support.

Turns out that low, slow, inexpensive and reliable make for a winning combination.

William Garvey is Editor-in-Chief of Business & Commercial Aviation

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WHAT'S HAPPENING - JULY 2020