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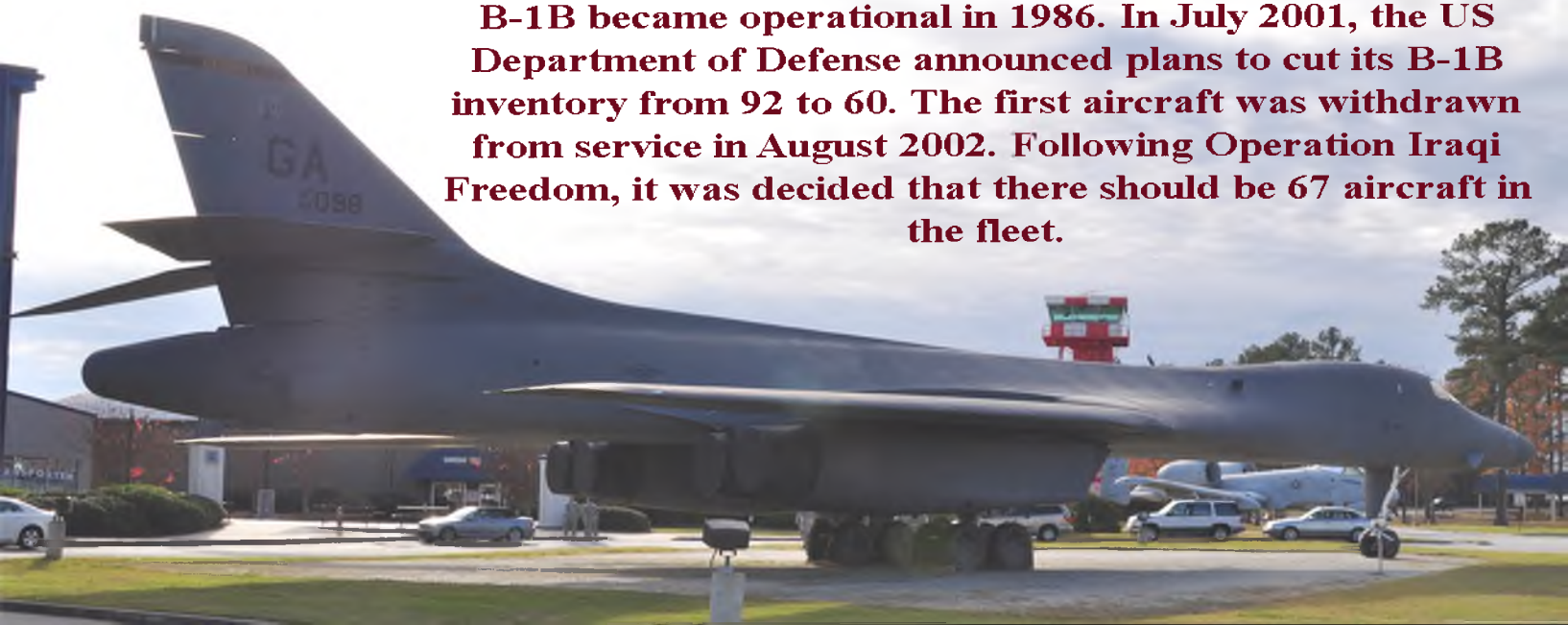
Nose Art from USAF B1B Lancer "Rebel"

RCReport Online

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The B-1B Lancer was developed by Rockwell International, now Boeing Defense And Space Group, and is the US Air Force long-range strategic bomber. The B-1B has the largest internal payload of any current bomber. The B-1B became operational in 1986. In July 2001, the US Department of Defense announced plans to cut its B-1B inventory from 92 to 60. The first aircraft was withdrawn from service in August 2002. Following Operation Iraqi Freedom, it was decided that there should be 67 aircraft in the fleet.



Bird On A Wire

by Terry Dunn

Over the past several months, I have written frequently about two of my current favorite RC activities: Aero-Towing and Aerial Photography (AP). I recently found a way to combine these two things and the results were great. It was a gorgeous early-November day at the flying field and I planned to put in many aero-tow flights with my usual partner, Lee Ray. As I prepped my Multiplex Easy Glider for flight, I looked at that big hunk of foam that made up the canopy and remembered that I had also brought along my Flip Mino HD video camera. The light bulb went on. I grabbed a knife and became lost in a cloud of whirling foam bits and an occasional drop of blood, accompanied with the obligatory profanities. (Editor's note: *Careful there Terry, let's keep our G rating!*) After a few minutes, I had a hole carved into the Easy Glider canopy that tightly held the Flip camera. I also relocated the receiver battery so that weight of the camera wouldn't affect the CG.

About half of the camera was still hanging out in the breeze, but I wasn't too worried about the aerodynamic drag on the airplane. I usually end up putting it in a spin to get back on the ground anyway. We made two aero-tow flights that day with the camera rolling. Later that afternoon, we watched the raw footage on my computer. Lee and I were both really impressed with the video we captured. When under tow, the camera consistently showed the tow plane in the top of the frame (Photo 1). This footage really showed just how dynamic things are during an aero-tow. Our first tow looked exceptionally smooth from the ground but the video reveals a lot of relative movement. The second tow was more hurried and sloppy. The video from that tow looked downright violent at times!



Photo 1: This snapshot taken from a video shows an RC aero-tow as seen by the glider

After release from the tow plane, the Easy Glider assumes a more nose-down attitude that dips the horizon out of the camera's field of view. I usually like to keep the horizon in the frame since it provides a nice reference point for altitude and distance in the resulting video. In this case, I'm glad that the camera was pointed too low. I captured nice shots of the club flightline and the neighboring rocket modelers that share our field. Quite accidentally, I also captured the tow plane as it flew underneath me and then landed.

My first aero-tow/AP outing convinced me that I'd like to try it some more. So, I later beefed up the camera mounting system in the Easy Glider. I enlarged the cut-out in the canopy until it passed clean through the bottom. I then flush mounted a scrap of 1/32" lite-ply on the bottom side of the canopy. A 1/4-20 nylon bolt is passed

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though a slot in the lite-ply and threads in to the tripod mount on the bottom of the Flip (photo 2). The slot for the bolt has enough play to allow a few degrees of adjustment of the camera angle before locking it in place. Once the camera is installed on the canopy, I latch the canopy in place on the fuselage.



Photo 2: The stock foam canopy of the Multiplex Easy Glider was carved out to accept my Flip Mino HD camera. Not the lite-ply brace and a ¼-20 nylon bolt on the bottom.

More Easy Glider Modifications

On those days that I want to fly the Easy Glider without the camera, I don't really want to use a canopy with an empty, gaping hole in the top. I'm not a vain guy, but a camera mount without a camera looks like a wallet without money...and who wants one of those? (*Editor's note: Certainly not me!*) Around the same time, my friend Keith Sparks asked me to try out an aftermarket canopy for the Easy Glider that he had developed. Is that serendipity or what? Keith reminds me of that old BASF slogan "We don't make a lot of the products you buy. We make a lot of the products you buy better." Yes, Keith has designed many noteworthy models; but he also produces a lot of vacuformed plastic accessories that he sells through his web site (<http://www.parkflyerplastics.com>). He recently began selling detailed cockpit kits for many

popular models. These kits are a unique way to set your cookie cutter ARF apart from the herd. As I write this, the Easy Glider is his latest cockpit set.

Whether you're adding a cockpit kit, a dummy engine, or scale smart bombs, Keith's products are not turn-key items. It is up to you to assemble and paint the parts to create the finished product. Nothing is particularly hard to do and Keith provides thorough instructions on the web site. If you have a history with plastic models, the methods will feel very familiar. In the case of the Easy Glider cockpit, I was assembling the prototype and thus had to press forward without benefit of Keith's instructions; but, it was no big deal. The stock Easy Glider canopy serves as the foundation for this kit. Since my original canopy had been converted to a camera mount, I purchased a new canopy from Multiplex. Yikes...that's a \$10 hunk of foam.

Keith's kit features a clear canopy that comes molded to the correct shape, but must be trimmed. The first order of business is to place the foam canopy in the clear plastic canopy and trace the edge with a Sharpie marker (Photo 3). This will give you a rough cut line for the plastic. Next, I drew a line around the perimeter of the foam canopy; offset about ½" from the edge.



Photo 3: To use the Park Flyer Plastics canopy upgrade kit for the Easy Glider, you first have to trace the outline of the stock canopy on the clear plastic.

This was my cut line for removing the now-unwanted foam. I figured the easiest way to cut the foam would be with my band saw, but it was still tricky trying to get an even cut. The canopy doesn't have a single straight line on it, so there was really no reference to ensure that the canopy was square to the blade. To make this easier, I tack-glued two 90" plywood scraps to the bottom of the canopy (Photo 4). I simply popped them off after the cut was complete. Before tossing the removed foam in the trash, I cut a sliver that would later serve as my faux instrument panel.



Photo 4: To prepare the stock canopy for cutting, I tack-glued scraps of lite ply to keep it square to the blade of my band saw. I cut along the blue line and used the bottom section as the foundation for the upgrade kit.

At this point, I had a clear canopy and a rather flimsy foam frame, but no cockpit details. I planned to use the head from one of Keith's pilot figure kits (part number 1005-23). When it was all said and done, I thought that the head alone looked a little silly (Photo 5), so I went back and added the torso. To get the torso to fit under the canopy, I had to remove more of the cockpit floor. A sharp X-Acto blade made easy work of this.

Once I was happy with the layout, I slathered everything in paint. I took a hole punch to some scrap white plastic to create a few instruments. When the paint dried, I glued the clear canopy to the foam base with canopy glue.



Photo 5: Drafter's tape holds the canopy in place while the glue dries. I didn't like the look of having only a pilot's head, so I removed the canopy and added a torso.

As I mentioned before, the foam base was pretty flexible once the bulk of the foam had been removed. So I set it in place in the fuselage when I glued on the canopy. This ensured that 😊 everything would fit when the glue dried.

The canopy isn't the only part that Keith sent me to evaluate. He also sent a plastic belly pan. I guess he noticed the scrapes on my Easy Glider from a few careless landings on the asphalt. This part was really easy to install. I just trimmed around the edge and made sure it fit the contours of the fuselage, which it did. Although, I did have to do a little extra trimming to accommodate the home-brew tow release installed in the nose of my plane (Photo 6). The



Photo 6: Drafter's tape holds the canopy in place while the glue dries. I didn't like the look of having only a pilot's head, so I removed the canopy and added a torso.



Photo 7: Although it's very simple, the canopy kit really dresses up the otherwise foam finish of the Easy Glider and gives it a bit of personality.

belly pan could be glued, but I taped mine into place. The way I see it, this is a sacrificial part that I'll replace once it gets beat up. Tape is the easiest way to keep it in place and it doesn't look too bad.

The belly pan doesn't really do anything to enhance the looks of the Easy Glider, but the canopy sure does! It is very sparse on details, yet it still looks so much better than the painted foam dome that was there before (Photo 7). Better yet, my Easy Glider looks a little different from all the others out there...and that's really my point for this month. A few simple things like adding a pilot figure or maybe a false floor to hide radio gear can do a lot to dress up a model or just individualize an ARF. Sure, I put in a big plug for Park Flyer Plastics, but that's appropriate since

Keith's products represent the customizing spirit that I'm trying to foster. With gliders and electrics, the rules for adding details are very relaxed since you don't have to worry about fuel-proofing or vibration. So don't be afraid to add a personal cosmetic touch to your fleet.

Next month I plan to discuss the advantages of adding reduction gears to electric motors. Also, I'm trying to complete another of Keith's upgrade kits that is very unique and imaginative. Until then...Happy New Year!

Terry Dunn
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Smiley Face Contest #1 2010!

We are bringing back the smiley face contest. Throughout this issue we have placed five or more Smiley Face Figures like the one shown here (☺), but as before this page doesn't count. Write us and tell us where at least five are, and you'll be eligible for a random drawing in which the winner gets to choose from the three engine shown above. Two more winners will receive one year subscriptions or renewals to RCReport Online. Winners will be selected by a random drawing from all the correct entries received, no later than February 1st 2010. No entries will be accepted after this date. Entries must be sent via US mail or E-mail only, and reference the correct contest number in subject line or address. Hobbico employees, RCReport Online employees, columnist and advertisers are ineligible for prizes. No Purchase Required. Valid in USA and Canada only.

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MANEUVER OF THE MONTH: HUMPTY BUMP

This month I am covering a maneuver we don't see very much in sport flying, the humpty bump. It is normally a pattern maneuver used for turn around and placement. I have no idea where the name came from, but it's sort of catchy. The humpty bump is a maneuver used to turn around at the end of a pass down the flight line like you would use a stall turn. You can also use it sideways to move yourself in or out.

DESCRIPTION OF THE HUMPTY BUMP:

The humpty bump is a turnaround maneuver where you pull vertical, do a half roll, push down elevator to do half of an outside loop, ending up going straight down. You then use up elevator to recover into level flight at the same altitude as you entered. The maneuver can be changed in numerous ways by varying the roll amount and whether the half loop is outside or inside. To change your flying line in or out, you perform a quarter roll, instead of a half roll. Now your half loop moves the plane in or out, depending on the loop direction.

KEYS TO DOING THE HUMPTY BUMP:

You need enough power to pull up to vertical and do a half roll with a little speed left over to control a half outside loop push over.

DOING THE HUMPTY BUMP

STANDARD SET-UP:

1. Full power
2. Parallel to the runway,
3. One mistake high
4. Upwind approach



Take a look at the drawing in the R/C Report Maneuver Card to familiarize yourself with the maneuver.

Step 1: Fly past yourself, parallel to the runway at a comfortable distance out. Remember this is a turnaround maneuver so fly down toward the end of your field.

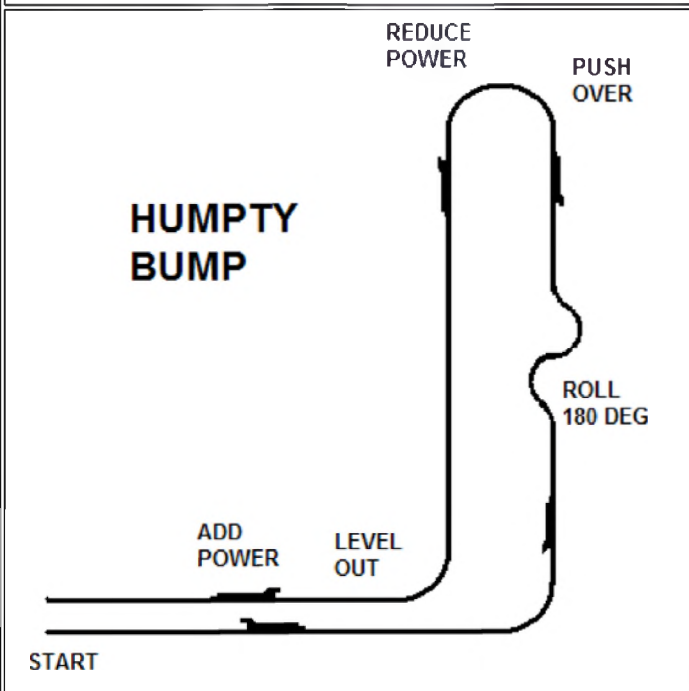
Step 2: Do an easy loop-type pull up to vertical. Don't yank on the stick to square the corner off. You want to keep your speed up for doing the half roll.

Step 3: Once you are vertical, do a half roll so you are looking at the bottom of the plane.

Step 4: Gently, use down elevator to push over until you are going straight down. Throttle back as you push over, being careful not to get

power, the half outside loop will want to be tight. Fly it over trying to make the radius of turn the same as your pull up.

Step 5: Descend down to your entry altitude, level off and add power back.



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pusher engine installation. Gabe modified the kit making very minor modifications. He says to use a small JetJoe turbine.

(<http://www.jetjoe.com/main.php>)

It has retracts and the required brakes. Gabe also added working rudders and a speed brake. I have seen it fly several times and it's a really good flying plane. It's also a dirt cheap way to get into turbines, if anything associated with jets can be considered cheap.

FEATURE OF THE MONTH:

Step right up ladies and gentleman! You're about to witness an amazing aerial device: the airplane with the upside down wing. Will it take off or will the wing lift downward, keeping the airplane on the ground? Will it flip over the first time the pilot loses concentration?

Move in closer, now, so I don't have to speak too loudly. This stupendous craft has been designed with recently declassified and formerly highly secret government technology and engineering. You've seen jets with their wings like this, haven't you? Of course you have! This plane uses the very same design.

Now while we get the ship ready to fly, my associate, Ed, will tell you how this design came about and how it was classified by the US government until recently. Take it away, Ed!!



Photo 1: Gabe Brown's turbine powered Enforcer.

Gabe Brown's turbine powered Enforcer. This is not a turbine kit or ARF. It's a regular Balsa USA Enforcer kit which normally has a



Photo 2: Patches front view, showing the anhedral.

the outside half loop too tight. Most planes, unless you have a ton of power, will slow down a bunch in the vertical climb and half roll. You want to sort of float the plane over the top of the half outside, letting the engine increase the plane's speed. Ideally, you would like the radius of the half outside loop to be the same as the radius as your pull up to vertical.

Step 5: Descend down to your entry altitude, use back stick to level off, then add power back in.

You can see the humpty bump isn't a really hard maneuver, especially if your plane has adequate power. What I have described is the basic humpty bump, but there are numerous variations. You can do the roll on the entry leg as I have shown here or you can do a roll on the exit leg or you can do both. If you do rolls in both legs, you end up inverted at the end, which is a nice variation. The rolls can also be point rolls.



RC REPORT MAGAZINE	
TEACH YOURSELF AEROBATICS CARD	HUMPTY BUMP By Ed Moorman
DESCRIPTION OF THE HUMPTY BUMP: The humpty bump is a turn around maneuver where you pull vertical, do a half roll, push down elevator to do half of an outside loop, ending up going straight down. You then use up elevator to recover into level flight at the same altitude as you entered.	
KEYS TO DOING THE HUMPTY BUMP: You need enough power to pull and do a half roll with a little speed left over to control a half outside loop push over.	
AIRPLANE SET-UP FOR DOING THE HUMPTY BUMP: Use a normal control set-up. You shouldn't need anything special to do a humpty bump.	
STANDARD SET-UP: 1. Full power, 2. Parallel to the runway, 3. One mistake high.	
DIRECTION: The humpty bump should be started flying up wind.	
Step 1: Fly past yourself a comfortable distance out. Remember this is a turn around maneuver so fly down toward the end of your field.	
Step 2: Do a loop type pull up. Don't yank, you want to keep your speed up.	
Step 3: Once you are vertical, do a half-roll so you are looking at the bottom of the plane. ☺	
Step 4: Gently, use down elevator to push over until you are going straight down. Throttle back as you push over, being careful not to get too tight. Since your plane will be slow unless you have a 3D plane with a lot of vertical	

The humpty bump can also be used to position your plane closer in or further out. If, instead of a half roll, you do a quarter roll toward yourself on entry so the top of the plane is toward the flight line, the push over will put you closer in. You'll need to also do a quarter roll on exit. If you quarter roll the opposite direction so the bottom of the plane is toward the flight line, you will move yourself further out. Try it. It's a different way instead of just turning and flying in or out.

Yes, well, here's the story. You might remember several columns back; I talked about doing outside square loops with a World Models Sky Raider Mach I. The Mach I has a semi-symmetrical airfoil and is sold as a high wing trainer, but it is a wolf in sheep's clothing. The airfoil isn't very "semi"; if you know what I mean. It's very nearly symmetrical, sort of like the wing on a 4x40. If you put a ball bearing .46-.55 in the Mach I, it flies like a Stick. It does aerobatics, including the outside stuff, very well. That particular Mach I belonged to one of our "company pilots," the well known Ugo Ferrari. It was powered by a Mecoa .46, picked up for \$20 at a swap meet. As I said, it flew really well, but looked like a trash can plane.

To cut this story short, they crashed the Mach I again and decided it was too messed up to fix. The fuselage went into the trash and the wing went on the top shelf. It stayed there until I was over at Mr. Ferrari's production facility about a month ago on a bad weather day and he asked if I needed anything. I told him that I didn't. He looked around and said, "You need a wing." I told him again that I didn't need anything. He kept on. Finally, he talked me into taking the Mach I wing, but not before I told him I was going to use his radial arm saw to chop it up.

The Mach I wing was too long for the secret, "Stick-type" experimental plane I was going to get our chief of production, Flaps Laffert, to construct. It has to be cut down. The rib spacing is 5 1/2", so two strokes with the Craftsman saw and the wing was 11" shorter, but still had over 500 squares; plenty enough, I figured. Next came the anhedral cuts. Ferrari looked pained as I made two saw passes across the top side of the wing. These cuts weren't all the way through the wing. I left the bottom sheeting and covering intact. "Got any aileron stock," I asked? He did, but it was fairly thin. I wedged one piece in the gap on

top of the wing and gave the resulting anhedral a look with a calibrated eyeball. It wasn't enough, so I wedged in a second piece. "Excellent," I thought; very scientifically done. I thanked him and headed home with my new experimental wing.

After some convincing, Laffert agreed to break into his busy schedule and construct a fuselage. I copied the dimensions of my Ultra Stick 40 (Why mess with success?) and gave it to him. The next day he was drawing out plans. Laffert always works from plans. I went home to gather up the hardware.

I had a good running SK 50 engine, a JR 770 PCM 7-channel receiver and a mixed bag of servos available. These went into the box for Laffert. I found one of my favorite DuBro fiberglass and nylon landing gear. It went into the box. I gathered up some horns and clevises and assorted other little stuff. Laffert said he had some axles and wheels and a tail wheel bracket. He also had a stab and elevator from some plane; he couldn't recall what, but it looked about the right size, so we were good to go.

The next Saturday, I went over to Laffert's early to pick him up to go to a local float fly. The Mach Stick fuselage was sitting on his bench covered in yellow Monokote. The engine was mounted and the gear was attached. The wing had the aileron stock that set the anhedral glued in place. He had peeled back the stock covering and covered the center section with fiberglass and 30-minute epoxy, then ironed the covering back in place.

Saturday and Sunday afternoons are football days, so nothing got done. During the next week, however, Laffert finished up the plane, which he dubbed "Patches" because of all the patching and recovering he had to do to it.



Photo 3: Patches' tail. Note pull-pull rudder servo. There is another servo underneath for the tail wheel steering.

I had Friday off, so we set up the radio. Sticks are pretty standard and the JR9303 is easy to program. I did use three mixes. First, I set up the trainer button to be a throttle cutoff button. The second mix was my knife edge mix with rudder as the master channel and elevator as the slave channel. I set in a quarter inch or so of down elevator with full rudder. I'll adjust this depending on how the plane flies. My third mix is my landing spoiler mix. This is where both ailerons move upward at idle about a half inch. This stops the plane from floating and makes for easier landings, especially in wind and cross winds. I use throttle as the master channel and flaps as the slave channel. The wing type must be set to FLAPERON and I am using dual aileron servos.

When I was finished, I took it home to charge up. Laffert mentioned that he hadn't checked the CG. We forgot to check the last two planes he had built, but they turned out Okay. Since this was mostly a scratch built plane, I figured we ought to see if the CG was in the ball park. I quickly bolted the wing on, reached underneath, found the main spar and lifted. Patches hung nearly

level without a prop. That was close enough for me. It's a Stick, it has to fly.

Since the engine hadn't been run for over a year, I figured I'd better check it out. I looked for a prop and couldn't find the 12-5 that I needed. In case you have forgotten, SK engines are tuned for lower rpm torque rather than high speed running. A 12-5 is the best prop for the 50. I had an 11-7 APC which would keep the R's down around 10,000, so I used it.

Good thing I decided to make a test run because it was just about frozen up. I finally got it loosened up and running. Naturally, both needles needed adjusting; they were both lean. In my opinion, the reason for an engine that has been sitting for an extended period of time running lean is old oil dried up inside the carb. In this case, the low end on the SK, which used to be about perfect, was so lean that it wouldn't stay running after a good prime. I cranked both needles open a full turn and started again. This time it kept running with the battery attached. I advanced the throttle to full and set the main needle to a rich 2-cycle. Then I idled down and slowly adjusted the low end until it would hold idle for a minute and snap to full throttle. By the way, these were all hand starts. I rarely use a starter on 2-strokes.



Photo 4: Patches front end, showing the SK 50 engine and the DuBro nylon & glass gear.

This brings me to the lesson of the month: if you really want to look like you know what you're doing, check your plane out, including test running the engine, before you go to the field.

The next Saturday was test flight day. Pictures first, then fly, I always say. When you fly a lot of experimental or odd ball planes, you want a photo of a whole plane and not splinters and torn covering. We speak from experience on this.



Photo 5: Patches side view. More clear tape patching a hole out near the right wing tip.

The engine hand cranked easily and I was off. Needless to say, I didn't take it easy on Patches. It was an inexpensive plane and engine with old radio equipment. I tried about everything. It flies about like my other Sticks. The roll rate is slower due to the small, trainer-sized ailerons. Inside and outside maneuvers were good. Inside and outside squares and square 8's were also good. Snaps and spins were good, but it wouldn't go flat. Patches

would hold knife edge with only a touch of roll, showing the anhedral is correct. With the mix on, it did pull to the gear somewhat, indicating I had too much down elevator mixed in. With the mix off, it pulled to the top of the plane, as I expected. A couple of adjustments and it'll be dialed in for great knife edge.

I shot several touch and goes and landing without spoilers was excellent. With spoilers, the ailerons lost effectiveness and I had to use rudder for steering. Spoilers don't seem to work very well with narrow ailerons. Live and learn.

Now then, why don't you try an anhedral plane for yourself. If you have an old trailer hanging in the garage, this will be a good winter project. It's especially easy if you have wings that rubber band on.

Take you old trainer wing and remove the aileron servo. We don't want to saw into it. Saw down through the center of the wing where you glued it together. Don't cut through the bottom sheeting. Just saw deep enough so you can flatten the wing out on the table.

Get some aileron stick or balsa wood and taper it into a wedge-shaped piece. Stuff this down into the saw crack and check to see how much anhedral you get. You need 3 degrees on each side or 6 degrees total with one wing panel on the table.

Mark your balsa wedge to the shape of the top of the wing and trim it down. Glue it in with 30-minute epoxy and let it cure.

Check out the videos at

www.rcreport.net/videos

Peel the covering back on each side about 3 inches. **Do this on top and bottom.** Again use 30-minute epoxy to glue a 5 inch wide strip of heavyweight fiberglass cloth over the joint. You can use a heat gun to soften the epoxy and make it flow easier. After the epoxy cures, iron the covering back in place and cover the balsa that shows with trim or colored tape.

Install the aileron servo back into the wing. Hook up the ailerons and you are good to go.

If you have a bolt-on wing, you'll probably have to use a rat tailed file to widen the holes for the mounting pegs and adjust the bolt holes in the wing slightly. You'll also have to bevel the wing saddle for the new downward angle of the wing. I normally take a knife and whack the saddle down, then coat it with epoxy. It's covered when the wing is on anyway.

All right, son, don't be nervous. This design has been engineered by the best minds using formerly secret government technology. Give her the needle, boy, head up into the wild blue and enjoy yourself.

PS. Drop me a line at and send pictures. Don't you forget, now!

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Southern Dawn Patrol 2009



**WWI theme event by Chipola R/C Aviators
Hodges Hobbies' Flying Field
Andersonville, Georgia
December 4-5 . 2009**

Photo 1: Submitted by Dale Cavin, Event Director (CD)

In mid 2008, John Olson and I from Florida, and Mike Celeskey from Mobile, Alabama decided that a fly-in for WW I R/C aircraft was needed in the southeast. After quite a bit of discussion, it was decided to locate the event at Hodges Hobbies Field near Andersonville, GA. This field is a great location for WW I R/C models with acres of closely clipped grass, covered areas for storage, and Mac's great hobby shop right on site. The time of the year was set for early December to avoid conflicts with other events and hopefully attract the northern WW I modelers for one last fling of the season. High temperature averages, for that time of year, are in the low 60's. The 2008 event, although cooler than average, was a reasonable success!

Based on early correspondence, 2009 was going to be a well attended event. Unfortunately, Mother Nature, and the weather forecasters did their best to ruin that. Depending on when you checked, the forecast was all over the map. However, there were 37 brave souls who

registered for the event; from as far away as New York, Ohio, Indiana and Illinois. They brought with them approximately 60 aircraft, ranging from park flyer size to a 1/2 scale Fokker D VI.

The weather Friday, again, turned out cooler than average, and overcast; but the wind was almost non-existent. With the exception of a short break, for a demo flight, the flight line was busy all day.



Photo 2: Charlie Davis, (GA) on right with his 1/3 scale Sopwith Triplane built by modifying a Balsa USA Pup kit

A big treat for those in attendance was seeing two models fly that are powered by replica WW I style rotary engines. This is the style of engine where the cylinders spin with the propeller. Mac Hodges made a demonstration flight of Robert Cooper's GIGANTIC with a Bentley style rotary, and Ray Williams flew his Morane Saulnier L Parasol with a LeRhône style rotary. I had previously seen both of these engines run on the ground, but never in flight. Robert told me later that they had waited 15 years to get the Bentley in the air. 😊

Friday evening, several of us went to a local restaurant for dinner. Keeping with the WW I era theme, after the meal, we showed the old classic WW I aviation film, *Dawn Patrol*.

As of late Friday, the forecast for Saturday was not looking good at all: rain, cold and wind. Several of those in attendance decided to call it a weekend and headed home. Fortunately, those

who stayed found that Saturday morning's weather was not nearly as bad as expected. The rain had passed during the night and the wind, while significantly higher than Friday, was manageable. I started the flying at about 7:30 AM with my Balsa USA Fokker D VIII and my little SPAD XIII park flyer.

We announced that we would hold the awards ceremony and final drawings about noon, so by noon Saturday, everyone had pretty much decided they had all the fun (and cold) they wanted and started packing up. There were about 150 flights logged during a day and a half of official flying hours, and many more outside that time. Each time a flight was made, the pilot had a ticket entered for a special drawing. This created some friendly rivalries to see who could log the most flights. Some pilots logged well over 10 flights.





Photo 3: Randy Williams (FL) pushing his 1/3 scale Balsa USA Morane Saulnier A I



Photo 4: Nice line up of 1/3 scale German aircraft with Paul Westrich's (OH) 1/2 scale Fokker D VI from blown up Glenn Torrance plans.



Photo 5: Business office of Barry Vogel's Fokker D VI



Photo 6: Ken's 1/4 scale Nieuport 11. This model is 30 years old. It had a mishap due to engine failure, but Ken says he will repair it.



Photo 7: Saturday's pilots lined up behind Paul Westrich's 1/2 scale Fokker D VI



Photo 8: The ladies hard at work. Left: Darise Smith, right: Rose Cavin

Thanks to our sponsors, we were able to provide very nice prizes and awards. Also, we were able to draw every registered pilot's name in the pilot's drawings with each receiving a nice item. There were two special drawings for especially nice prizes. One as noted above was drawn from pilots registered. Each got one entry when they registered and another entry each time they flew. The prize was a WW I kit of choice provided by Balsa USA. The other special drawing was for a beautiful 32" XOAR Propeller clock provided by Bob's Hobby Center – Orlando, Distributors for XOAR Propellers. This was awarded based on a drawing from pilots flying models using a XOAR Propeller.

<u>Committee's Choice</u>	<u>Pilot</u>	<u>Plane</u>	<u>Sponsor</u>
<u>Entente Forces Aircraft</u> -----	Steve Thomas	N-17 1/3	Horizon Hobby
<u>Central Powers Aircraft</u> -----	Paul Westrich	Fok D VI 1/2	RCScalebuilder.com
<u>"Creative" Flight</u> -----	Goetz Vogelsang	Sop. Pup 1/3	Murray Denney
<u>Realistic Flight</u> -----	Randy Smith	Fok Dr I 1/3	Murray Denney
<u>Farthest Traveled</u> -----	New York Ray Williams	--	Steve Anderson Art
<u>"Every Time you Fly" Drawing</u> ----	Aaron Flowers	-----	Balsa USA
<u>XOAR Propeller Prize Drawing</u> ----	Chris Wieland	-----	Bob's Hobby Center/ XOAR

Sponsors: Hodges Hobbies, RC Report Online, Dynamic Balsa, Warbird Colors, Williams Brothers Model Products.

Pilot's Choice -Best Overall Rich Feroldi DH-2 1/3 Glenn Torrance Models

We also held a raffle for a \$300 shopping spree at Hodges Hobbies. Needless to say, this was popular. I understand the winner spent it before he left the field on Saturday.

All in all, even though we know there were several who planned to attend, who were spooked off by the weather, the actual weather turned out pretty nice and there was a great bunch of WW I modelers who had a couple of days of fantastic flying and telling stories. Photos provided by: Dale Cavin, Rose Cavin, Peyre Pringle and Keith Smith.

Based on feedback from several who attended this year, we have already reserved Hodges Hobbies Field for Dec 3-4, 2010 for next year's Southern Dawn Patrol. Mark your calendars.

Dale Cavin, Event Director
[*dcavin@earthlink.net*](mailto:dcavin@earthlink.net)
[*Website*](#)

poop from the dog house



Dec 10, 2009: Lexus weighs 92 oz., Mickey 54 oz.

When did my workshop become “The Dog House”? About a year after we moved to Madison, where I had to build a whole new workshop, ol’ Tiger’s arthritis got so bad it became very uncomfortable for him to crawl in and out of his igloo-style domicile. It was so much easier to simply walk in and out of the workshop, the whole building quickly became his new dog house. I didn’t mind a bit, as he usually lay nearby wherever I was working inside anyway. So when I added a folding arm to the door that held it 1/4 open so Tiger could come and go at will, Mina and I laughingly began calling the building “Madison’s Biggest Doghouse”. Well, the name stuck. And now, since I’m no longer the editor, this column can no longer be called “*From the Editor*”. Mina jokingly suggested this title, but jokingly or not, it seems appropriate since I don’t have the necessary expertise to qualify for any *real* modeling subject. Besides, “poop” is what I disseminate best anyway, and with two new puppies often in my work shop, there’s a lot of that around now!

AXLE FLAT SPOTS FOR WHEEL COLLARS

As long as I can remember, we've been told to grind flat spots on non-threaded axles wherever wheel collar setscrews will be tightened. It's good advice, too... if done correctly. And we're usually told that the flat spot will help the setscrew "bite" better and tighten more securely. Well, I bought into this "myth" (*myth: a widely held but false belief*) for a long time before I actually sat down one day and thought it out. Why, I wondered, would a setscrew tighten more securely on a flat spot than a rounded surface? Does the flat spot provide more surface contact area for the setscrew? Possibly, but a truly flat spot would require precise machining that we simply cannot accomplish with a file or a hand grinder. And unless that flat spot is precisely aligned with the end of the setscrew, the contact surface area will be little if any better than the axle's rounded surface. In **Illustration 1** I've tried to show the relative contact areas between a machine-shop-perfect flat spot surface on the left, and the angled and/or rough flat spot surface that we produce with hand tools, on the right. Plus, if you'll closely examine a handful of wheel collars, note how few have the setscrew hole perfectly centered and aimed at the exact center of the axle. Now how are we supposed to align a flat spot with an angled screw? Oh give it up! Besides, even if we *could* accomplish a precisely aligned flat spot, what's the point? Ever seen a setscrew (or any common hardware screw, for that matter) with a perfectly flat end that's also precisely perpendicular to its sides. Oh give it up!

The fact is, the contact surface area of the screw's *threads* in the wheel collar is far greater, and it's the friction in *this* contact area that's important in keeping the screw

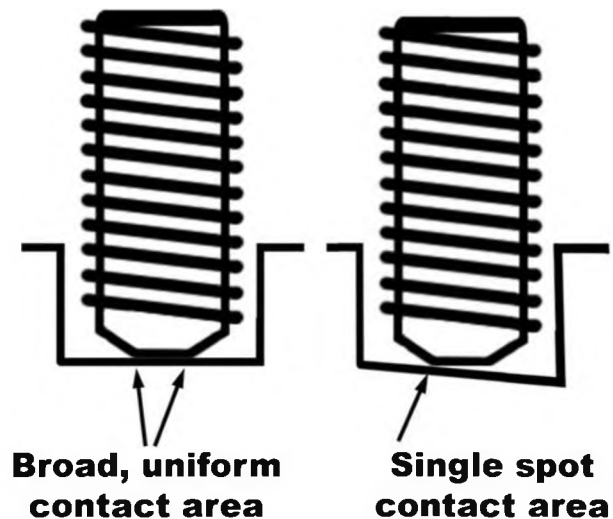


ILLUSTRATION 1

tight. This also explains why a little thread locker here goes a long way toward keeping that screw tight.

But wait... there's more. In time, and accelerated by vibration, the two contact surfaces where the setscrew touches the axle will settle, wear, and loosen, which reduces the pressure that creates the friction that keeps the screw tight. This occurs regardless of how much surface area is at the contact point, which explains why a wheel collar that has been nice and tight for a long time suddenly loosens. Actually, it didn't happen suddenly at all. It was only "suddenly" that we noticed it. Regular inspections of fasteners pay big dividends. We either find and correct loose hardware before it becomes a problem, or we satisfy ourselves that we have no loose hardware. Either way, we win. Check those fasteners regularly!

So, grinding flat spots is just a big waste of time, right? *NO!* There really *is* a good reason for those notches, even if it's not to increase the setscrew's "bite". And now I'm going to show you how to test this and see it for yourself. You see, grinding those little flat spot notches creates "capture pockets" for wheel collars, where even if the setscrew

(and thus the wheel collar) loosens, it remains “captured” in place, awaiting discovery and correction during your next fastener inspection.

Step 1: Tighten a wheel collar securely onto a smooth axle (one without threads or flat spots). Assuming that you’ve used the appropriate size wheel collar for the axle, you’ll find it very difficult to remove until the setscrew is loosened.

Step 2: Now loosen the wheel collar setscrew just 1/4 turn to simulate the “set” and wear that occurs naturally over time. You’ll then find it much easier to slide the wheel collar off the smooth axle. Bye-bye wheel!

Step 3: Now grind or file a flat-spot about 3/32" deep on the axle where the wheel collar setscrew will tighten. You can grind the spot as deep as half the axle’s diameter if you like, but 3/32" is deep enough. This flat spot, however, must NOT be at the very end of the axle. A proper capture-pocket must have a step or “wall” at each end (see **Illustration 2**).

Step 4: With the wheel collar properly aligned to place the setscrew over the flat spot, tighten the screw securely. Then try to slide it off by hand. Once again, the tightened screw makes it very difficult to remove the wheel collar.

Step 5: Now loosen the setscrew 1/4 turn, or even 1/2 turn. Note that the wheel collar is now slightly loose and wobbly, so go ahead and try to pull it off the axle. Can’t do it, can you? You can’t because the setscrew now extends beyond the surface of the axle, and down into the “capture pocket”. Even though the setscrew (and thus the wheel collar) is loose, it still remains captured on the axle. And *this*, folks, is the real reason we should grind those flat spots (capture-pockets) in those smooth axles. It also explains why we don’t want the flat spot at the

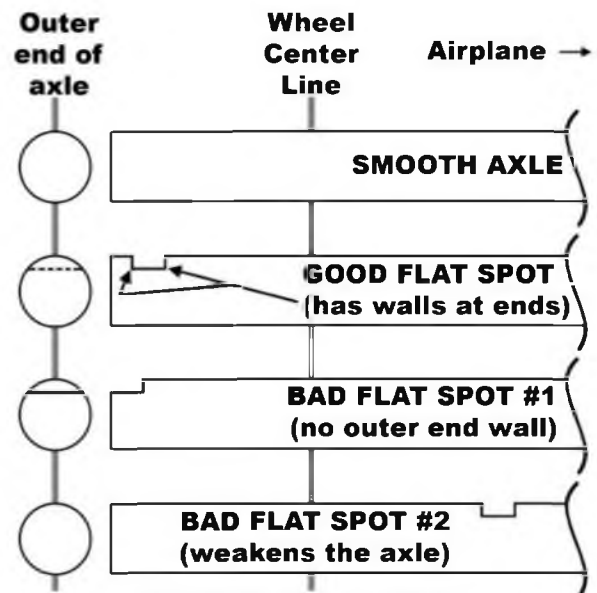


ILLUSTRATION 2

very end of an axle where there’s no “wall” at the outer end (see **Illustration 2**). Without that outer “wall” forming the capture-pocket, a slightly loose wheel collar will easily slide right off. Bye-bye wheel!

Also, regardless of what a new kit’s instructions suggest, *never grind flat spots at the inner, load carrying area of the axle!* If necessary, use washers or spacers on the axle to position the wheel as desired, or use a tightened wheel collar. But *never* grind a weak spot into a load-bearing portion of the axle! (See **Illustration 2**.)

Did you know that a smooth, 1/8" axle is stronger than a notched 5/32" or even a 3/16" axle? That notch creates a concentrated weak spot. Whereas the load is spread out evenly along a smooth axle, any significant cuts in that surface creates a weak spot where the stresses will be concentrated. The outer end of an axle bears no significant load, so you can cut your flat spot as deep as 1/2 the axle’s diameter if you like. But don’t go grinding anywhere on the load bearing areas. Builders of racing engines go to great lengths to smooth and polish surfaces on

items like crankshafts, camshafts, connecting rods, and more, just to eliminate even fine *scratches* that create weak spots.

Now, about those wheel collar setscrews. Look at **Photo 1**. Which combination do you want securing the wheels on *your* airplane? On the left we have a wheel collar with a tiny setscrew tightened with a 1/16" (4/64") Allen wrench. These size setscrews and Allen wrenches very often have stripped splines which cannot be securely tightened. On the right, however, we have an identical wheel collar, but now with a 4-40 screw which is tightened with a 50% larger 3/32" (6/64") wrench. Some wheel collars will accept an even larger 6-32 screw using a 7/64" wrench. Granted, with some wheels the wheel collars are inset into the wheel hub, so the tiny setscrews are necessary. When there's room, however, the larger screws and wrenches allow more secure tightening.

But wait... there's more! When tightening a wheel collar setscrew onto an axle with a notch (aka, flat spot), the screw will often thread so deeply into the wheel collar, it will leave exposed threads above it... exposed and *unused* threads. Now think about that a minute. Which setscrew can be tightened more securely, one using 1/2 to 3/4 of the threads in the wheel collar, or one that uses *all* of the threads? Hmm. Those longer 4-40 and 6-32 cap head screws are looking better all the time, aren't they?

But come on now, let's be honest with ourselves, and face the facts here. Grinding flat spots in axles, and swapping out tiny hardware for stronger pieces requires time and effort. And if you don't already have the hardware on hand, there's even a little expense involved. So is all this really necess-

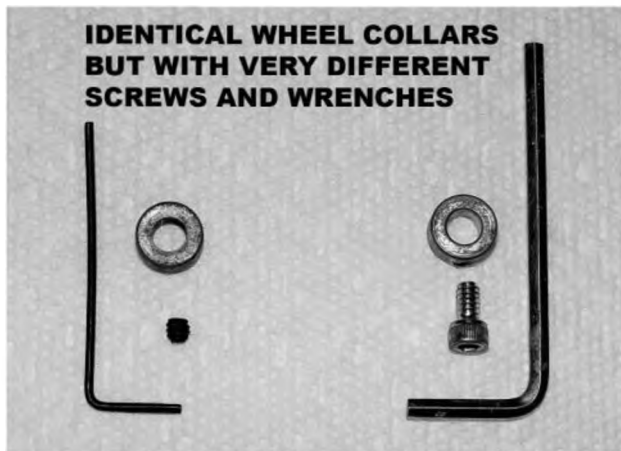


Photo 1

ary? Frankly, no! Not all models *need* this much care and effort. In fact, I don't recommend going to all this trouble at all unless the model in question is one you intend to keep a while and fly more than once.

EMAIL

Barry B. from Virginia wrote to ask why so many ARF kit instructions don't match the kit's parts and pieces very well. I know just what he means, too. I've seen instructions so poor you could improve them by simply throwing them away!

Well, Barry, there may be as many different answers to that as there are ARF kits, but the great majority of such problems are due to two possibilities.

1. Some manufacturers may consider a new kit so similar to one of their earlier models, they bring up the old instructions on their computer, and attempt to edit them to fit the new model. This is a proven time saver when compared to writing all new instructions from scratch, but it requires *very* careful editing. Since the two models *are* so similar, noticing and editing every little difference is difficult to accomplish. I've seen this problem time and time again, and the only cure is better editing. Sadly, however, paying a skilled editor is not always in the project's budget.

2. All too often, the production kits that come from the factory (usually in China, now) don't match the prototype(s) used by the seller to write that kit's instructions. Here's what usually happens: Acme Models designs a new Piper Cub, and after contracting with Wong Mfg. to produce the kits, they send Wong the model's plans and specs. The factory then produces and delivers a few prototypes for Acme's inspection. Acme may or may not suggest a few changes, but once they accept the prototype, they order a lot of kits. While Wong is producing the approved final versions, Acme is busy using the prototypes to produce their ads and assembly instructions.

Ah, but then the production kits arrive, in which Acme finds numerous *unauthorized* changes, usually made by the factory to cut costs, but sometimes to make the kit easier for the buyer to assemble. Either way, however, the changes often cause the kits to differ a great deal from Acme's carefully prepared instructions (text and photos).

I know of one case where the model was designed to accept glow or electric power. The factory, however, found it easier to produce the kits without the removable hatch for the battery compartment! The retaining mechanisms (pins, sockets, and magnets) were all there, but the hatch was made integral (non-removable) with the fuselage! Let's just say that the seller was somewhat less than pleased.

You and I may be upset by instructions that don't match the kit well, but I doubt that our level of frustration comes even close to that of the seller when this kind of thing happens.

George R., of Arkansas, wrote, saying *"I've heard modelers talk about 'servo matching boxes', but I have no idea what*

they're talking about. What are they, what do they do, and where can you get them?"

George, I know of two, and their functions, sizes, and half-ounce weights are almost identical (see **Photo 2** on the next page). Futaba offers their "MSA-10" (Multi-Servo Adjuster), and JR sells their "Match-box". Both items will handle up to four regular three-wire servos on one channel, with independent servo adjustments for neutral positions, end points, and servo direction. Both also offer a battery power option that allows using the receiver battery or a separate battery to power these servos. These boxes can be used instead of a regular or a reversing Y-harness (with no temperature shift, either!), and they help with matching the travel parameters of different *brands* of servos. They work with digital and analog servos, and with any frequency receivers.

One popular use is when using more than one servo to drive the ailerons. The boxes allow matching the servo outputs precisely, to avoid linkage binding or jamming, and to provide matched performance from each aileron. They cannot make up for mismatched servo torque or speed, but they do provide a way to get identical neutral points and total travel, even from non-identical servos.

One of my favorite uses comes when using two servos on the same channel to control the rudder and steerable nose or tail wheel. Instead of making painstaking "trial and error" mechanical adjustments to get both servos perfectly centered and with the desired servo direction and travel, use one of the servo controllers to establish each servo's setup independently.

Although I've never used one this way, I hear that another popular use is on the throttles of twin-engine models. The independent servo controls allow using the adjustable center-points to establish identical



Photo 2

mid-range RPM, and then use the independent end point adjustments to match each engine's peak RPM and idle speed!

As I hope you can see in **Photo 2**, both devices have a ten-position dial and two tiny push-buttons. Futaba puts them on the upper face, while JR places them on one end. Both also have connection points for each of the 1-4 servos, and one for the optional battery's switch harness.

The two boxes function in very much the same way, but here's how the Futaba MSA-10 works. Set the dial to "0" during normal use, when no adjustments are being made. This disables the two micro-switches. Setting the dial to "9" while turning on the power *and* holding both buttons depressed allows erasing all the settings.

Dial positions 1-4 are where we adjust the neutral points and independent direction end points for servo outputs 1-4. With the transmitter control stick (and trim tab) centered, simply press the increase or decrease button(s) to adjust that servo's neutral point. To adjust either end point, move the corresponding transmitter control stick to its

limit, and hold it there while pressing the increase or decrease button to adjust that servo's end point, in that direction. Repeat as necessary for the other direction, and then for the other servo(s).

Dial positions 5-8 allow us to reverse each servo's direction of rotation. With the corresponding transmitter control stick and trim tab centered, simply press either button to change that servo's direction of rotation. Then to adjust the servo's total travel (both directions at the same time), move the corresponding transmitter control stick fully in one direction, and use the DEC or INC buttons as necessary to set the desired total travel.

Very Important! After making all the adjustments and settings we want, we have to tell the MSA-10 to *save* these settings. To do so we simply turn the dial back to "0" *before* switching off the power.

Warning! Once you begin using Futaba MSA-10's or JR Matchboxes, you'll quickly find it hard to get along without them!

-Gordon Banks
gbanks@knology.net



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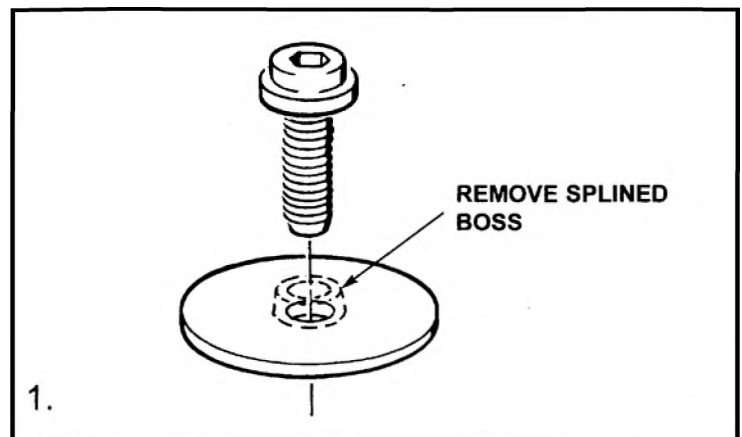
The plane I'm holding at the right is my re-designed and scratch-built electric-powered version of the Spirit of St. Louis Quarter Midget featured in a 1972 issue of RC Modeler. My version weighs only 25 ounces, some 15 ounces less than the .15 glow-powered original. It flies great!

Quarter Midgets and other fifteen-size planes were very popular in the 1970's and, with some modifications, can make great subjects for EP conversion.

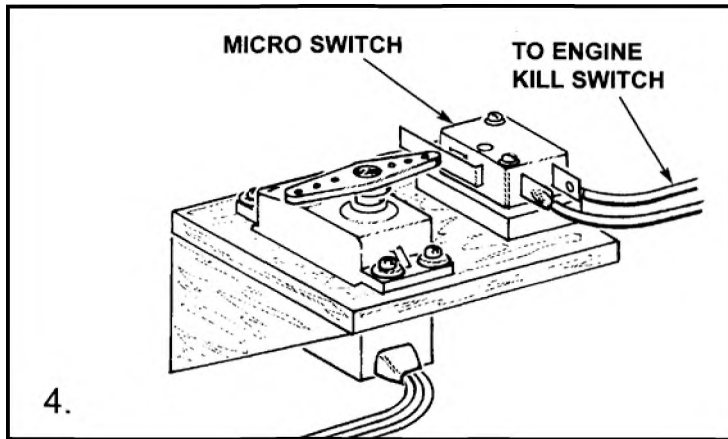
1. **Washers for Wing Hold-Downs:** From Edwin Hawk, of Smithville, OH. There are two sizes of Futuba, or other brands, round servo wheels that can make ideal nylon washers.



Carefully grind off the splined center boss, drill a $\frac{1}{4}$ ", or other desired size hole, and you have a strong, light weight washer. That's better than leaving them laying in a drawer and never using them. Also, a small rubber o-ring on the bottom side will hold the bolt and washer in place so they are not lost.



in the fuselage, on a small bracket, adjacent to a servo. The servo arm should be adjusted to fully and the micro switch should ground the magneto. The servo is plugged into the receiver on an unused channel, that's controlled by a lever switch on the transmitter. Most micro switches are "Off" until pushed. A continuity meter or light bulb in circuit with a battery will tell you which way is "On". Then, when the plane is flying, should you lose carburetor linkage for some reason; the motor can be grounded in flight as well as on the ground. Motors can be killed on the ground by a toggle switch, but this addition provides a duplicate safety feature.



This month's Here's How is somewhat shorter than usual because our readers aren't sending in enough ideas to sustain the seven to ten we like to present each month. This column is dependent upon ideas submitted by our readers. Send them in, guys!

Walt Wilson!



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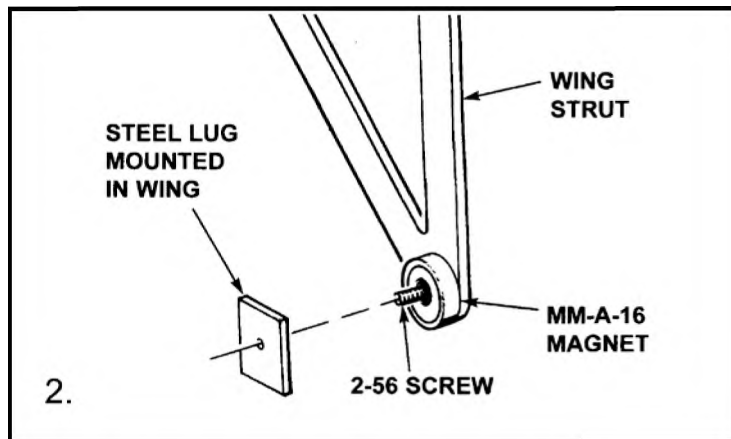
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2. **Wing Strut Attachment:** Richard H. Kelly, of San Tan Valley, AZ, likes to fly biplanes, but hates the time and work it takes to assemble them at the field; especially those bolts in the "N" struts. He has come up with the following quick attachment method for his "Lazy Ace" biplane. Attach the top of the strut to the upper wing with nylon hinges. The strut is then attached to the bottom wing with a magnet and a steel bracket. A 2-56 screw extends through the strut, magnet, and bracket. The magnet has a recessed, beveled hole that allows a 2/56 nut to hold the magnet to the strut and not project thru the face of the magnet.

Upon arrival at the field, Richard attaches the wings then swings the struts down and feeds the 2/56 screws through holes in the brackets. The magnets hold the struts in place and the screws provide the sheer strength.



In about 100 flights, the only time it came apart was when he crashed. That's when you want it to come apart easily, isn't it? The magnets used are

available from K J Magnetics at:

<http://www.kjmagnetics.com/proddetail.asp?prod=MM-A-16>

3. **Dryer Sheet Uses:** From Pat Keebey, of St. Peters, MO. "Bounce", and most other similar dryer sheets can have a number of uses other than in the dryer. Pat often puts a new sheet around each ankle to keep vermin away when going to the field. It repels mosquitoes if you tie a new sheet of Bounce through a belt loop or stick it in a shirt pocket when outdoors during mosquito season. Used Bounce sheets will clean the dust off those planes that have been stored in your basement for an extended period of time or wipe up sawdust from drilling or sanding. A used sheet of Bounce will collect sanding dust like a tack cloth when preparing a surface for painting. Bounce also has deodorizing qualities for cars, workshops, clothes, shoes, and a lot of other things that might develop unpleasant odors.

4. **Ignition Kill Switch:** Here's another one from Edwin Hawk, of Smithville, OH. On gasoline motors, such as "Zenoah" for example, the magneto is grounded to prime or kill the engine, using a wire that runs off the magneto and through a toggle switch to a ground. Edwin also runs a lead from both sides of the toggle switch to a small micro switch (Radio Shack sub min-lever switch part # 275-0016) that he mounts

Hello, again, fellow scale modelers! It is now the New Year, and I wish you all the best in 2010! Now I have to keep reminding myself to write 2010 on everything. I always go through this at the first of the year. Then when I get used to it; someone goes and changes the date. I know, I'm rambling; but it is cold up here in the frozen North and it can affect a guy... Okay?



Photo 1: Showing attachment points for the center float. Notice use of fiberglass skin for main pylon.

I hope everyone received everything they wished for from Santa, and you all had a great holiday season. You all have now probably started your new projects; and have been stocking up on glue, sandpaper, and all the parts to finish your projects. Speaking of projects, as promised; I am returning to Robert Ball's building of the Japanese A6M2-N Rufe, WWII fighter on floats this month. Remember from the November issue that Robert had to highly modify the plans from

Ziroli Zero due to the fact that the Ziroli plans are for the later A6M5 and not the A6M2. He also had to design the centerline and wing tip floats and their associated pylons from scratch. He also had to modify the tail (rudder) and build a new cowl for the earlier version of the Zero.

Robert had to design the mounts for the center line float and its supports (center pylon and two rear V supports) as seen in Photo #1, and the wing tip float system at the same time.

After drawing his plans, he then built the attachment points into the bottom of the wing at the center section and outboard wing tip locations based on his drawings as seen in Photo #2.

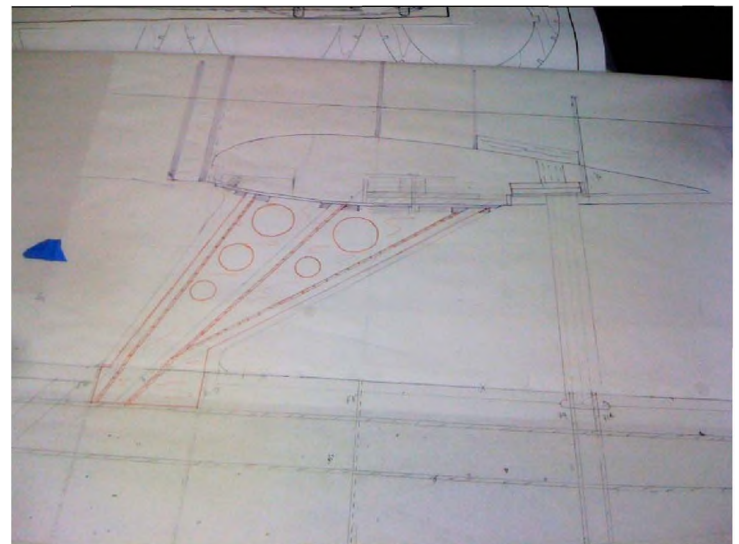


Photo 2: shows Robert's drawing of float mounting arrangements in wing and center float and the internal crutch for the pylon

Next he started construction of both the center pylon and the center float. He first tried using foam as the main component of the center float. He felt it would not be strong enough and decided on one that is totally built up, with a center box beam with formers and stringers to

give it shape. Photo #3 is a photograph of the centerline float's box beam. It is constructed with light ply. He wanted the loads on the float to be carried throughout the entire length of the float. Photo #4 is of the box beam while Robert was adding the formers to give the float its shape.



Photo 3: This is the main box beam Robert designed to support all the weight of the center line float. It runs the entire length of the float.

Note the use of a laser to make sure of the vertical alignment. Photo #5 is of the Ryobi laser unit that he bought at a local hardware store. This can display both a vertical and horizontal line at the same time. I will be showing his use of this tool throughout the build. Robert said he only paid around \$50.00 for the unit. The box beam was screwed to the fuselage jig to hold it square after the formers were in place while he planked the upper surfaces. Photo #6 shows the stringers being added and the rudder servo in place just aft of the center pylon mounting point. Robert notched the formers and placed the stringers after the formers were glued in place on the box beam.

This allowed him to visualize the line each stringer would take on the formers. Photo #7 shows the mount for the rear V struts and the plastic tube for the rudder pushrod for steering. Notice the use of a balsa and ply sandwich in the



Photo 4: This photo depicts the center float box beam with formers installed, using builder's laser to align each former vertically.



Photo 5: Robert purchased this Ryobi laser unit at a local hardware store for around \$50.00. It projects both vertical and horizontal lines to be used in the alignment of various parts of the aircraft.



Photo 6: This photo shows Robert installing the stringers to the formers of the center line float of his Rufe. Notice the installed servo to control the water rudder.

mount area to give it maximum strength with the least amount of added weight. Remember that Robert is building the pylon, V struts and the float at the same time, along with the bottom of the wing where the float system mounts to the underside of the wing. You can now start to see that this is a very challenging project both in regards to design and building of this aircraft. Notice in photo #7 also the left V strut. Robert made these from carbon fiber tubes glued together with epoxy and micro-balloons. They were then covered with flight skin, purchased from Frank Tiano Enterprises. Just click on the below link and click on G 10 sheets.

<http://www.franktiano.com/scaleproductFrameset.htm>

Robert used the .015" sheets. Photo #8 is of the finished strut with the upper attachments molded to the top of the strut to facilitate attachment to the bottom of the wing. Robert used Gorilla glue to attach the glass sheets to the tubes to take advantage of its expanding properties to fill in the gaps and make the strut stronger. He also used the glass sheets to sheet the main center pylon.



Photo 7: Robert designed the rear V strut mounting point on the center float to be both strong and light. He used a sandwich of balsa and ply. The strut is made of two carbon fiber rods.

After making sure the pylon and V struts were in alignment, he then started to plank the top of the float as seen in Photo #9 using 1/8" balsa strips approximately 1/2" wide. He used waterproof wood glue (Remember this is going into water and it would be a real bad thing for it to delaminate while trying to take off or land.); and lots of pins, as you can see, to secure the planks in place while the glue dried. The planks were made from sheets of balsa. There are a lot of ways to do this. One is taping the sheet to a cutting board, and using a cork backed ruler (keeps it from moving while cutting) as a straight edge to cut each strip with an exacto type knife. Another is the use of a commercial or home made balsa stripper. This has an Exacto blade that is mounted sticking up in a board with an adjustable fence. The Balsa sheet is then pushed through the stripper to make each plank. I have a small electric razor table saw I purchased at Harbor Freight that can be used for this purpose, along with being a great miter saw for balsa sticks.

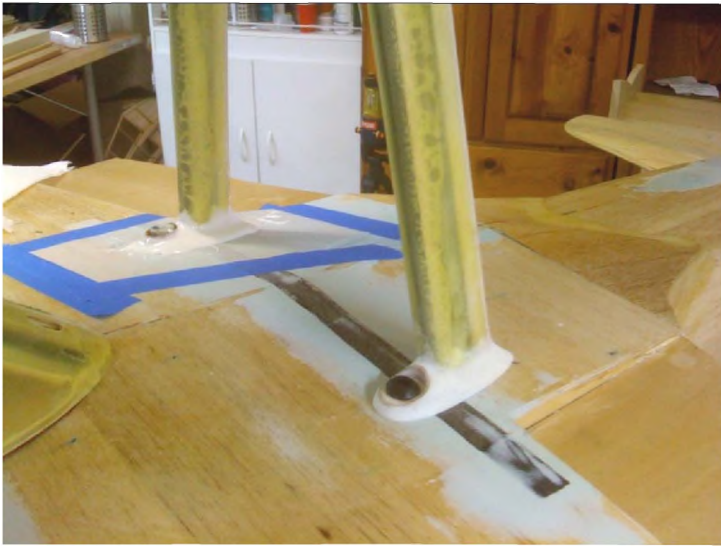


Photo 8: Look at finished V strut with mount attachment point at wing juncture. Notice far strut mount still needing shaping.

Then using a long sanding block, also available commercially, or a straight, proper length 1"X 2" board, with sand paper attached; sand both the edges straight to limit the amount of filler needed between the plank joints. Also, sand a bevel on the edges, so that the individual planks overlap each other giving a larger gluing surface rather than just butt gluing them together.

Now some of you are asking, why go to all that trouble, why not just sheet it like doing a wing? Sheeting a wing is relatively simple compared to trying to put a surface on something with compound curves like the float. Planking makes it a lot easier to make the wood conform to the curves. Also, soaking the wood in an ammonia/water mix will make the wood more pliable and easier to bend. It also keeps the sheeting from scalloping between the formers as well.

I will continue next month on how he constructed the center pylon, and the fabrication of the wing mounts and the outer wing tip floats.

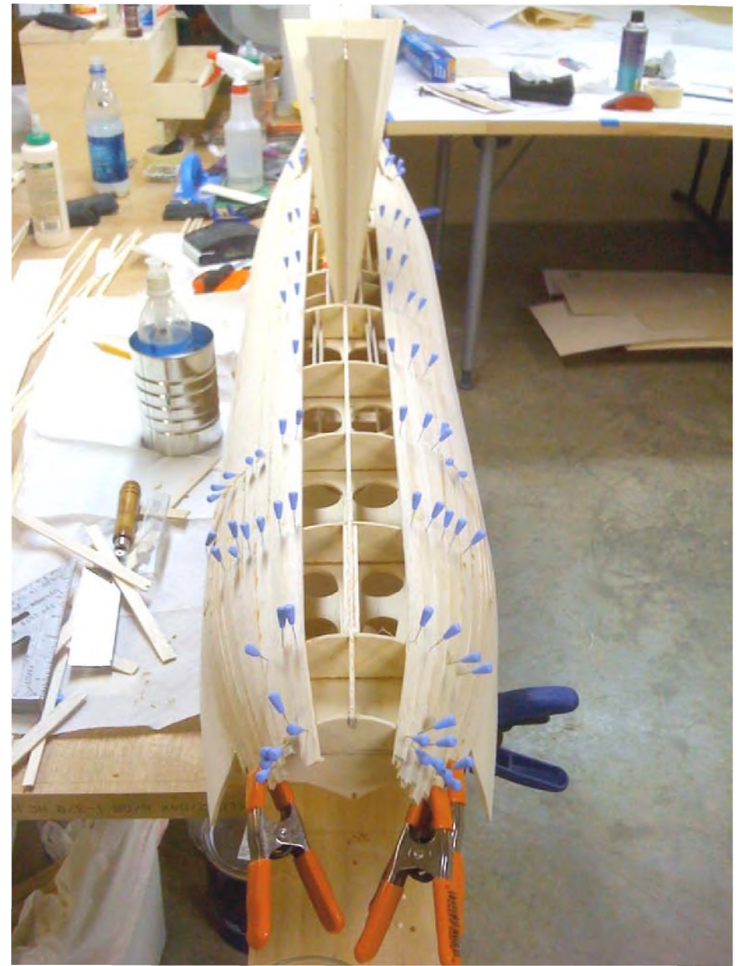


Photo 9: The attachment of planking to the top surface of the main float using waterproof wood glue and lots of pins. Note push pins which are very easy on the fingers while installing them

Speaking of Rufes...as an RC Report Online reader and Scale guy, Mr. Peter Nickel of Santa Barbara, CA, writes that after reading my article of Roberts Rufe build; he sent me photos of his large scale Rufe. Peter's Rufe is also built from Ziroli plans. He, too, lengthens the wingspan from 91" to 98 1/2". His plane came out at 38 lbs. His plane is powered by a 3W 75cc engine using a 22X11, 3 blade prop, a Spectrum radio system and uses Hitec metal geared servos are on all the primary flight surfaces. He says the plane takes off at around 2/3rds power and is very stable in flight. He used Warbird Colors paints to paint the model. He highly recommends their paint.



Photo 10: Peter Nickel's beautiful Rufe setting in the water after returning from a mission. Notice three bladed prop and aluminum spinner.

One difference with Peters Rufe, is that all of his floats are made of fiberglass. Peter has a friend that had purchased a fiberglass model airplane fabrication business, so he made some plugs for the main and wing tip floats, and then made molds, then the fiber glassed parts. He modified the Zir©li cowl the best he could from the A6M5 to the A6M2. Peter said he was building it to sport scale and that exact scale was not his goal. Photo #10 shows Peters plane setting in the water after a flight. Photo #11 shows Peter's beautiful A6M2-N Rufe doing a low fly-by over the lake. As you can see, the camouflage really works. By the way, don't you just hate people who live near such beautiful places? The photos were taken at Lake Cachuma. Peter tells me it's very hard to see when it gets down below the tree line head on. He first got interested in the Rufe approximately ten years ago. He purchased a Top Flight Zero kit at a club auction. He then saw some plans in a magazine to convert the Zero to the Rufe. He has been hooked ever since. Now you might notice in photo 11 that the canopy is not the same as in photo 10.



Photo 11: Peter's plane during its maiden flight.

This is because Peter wanted to see the model fly first before going to all the trouble of doing a scale cockpit first. So, after the first flight was in the books, he realized he had a winner and went on to install a complete cockpit and the actual scale canopy that you see in photo 10. Peter has been building models for 17 years or more, and has been a member of the Santa Barbara Radio Controlled Modelers club for as many years. He has even acquired a set of foam wing cores to create a land or carrier based version of the Zero so that he can get more flights on the model at his local flying field. Peter tells me after seeing Robert's plane, and then getting in touch with him; he too is going to make a sliding canopy for his Rufe. Peter's is a practicing Anesthesiologist. Thanks again Peter for taking the time to share your model with us Scale Guys here at RC Report Online. Again, if any of you have a project you would like to share with all of us scale guys, please forward the information about your project to my e-mail below.

Until next month.....

Fair winds and blue skies my Scale friends,

Gary Webb

gcwent@woh.rr.com

The Oily Hand

by Brian Winch

BOUQUETS:

Before we get into the model stuff, I would like to mention one of our advertising supporters, J&R Hobby Hardware. The man behind the scenes here is Ron Blake and he has to be one of the last of the good gentlemen (few of us left) in business. He has a really great load of top quality hobby hardware items at prices that no one should grumble about. I have had a few parcels of goods from Ron and his service is top notch, as is his business dealings. Spend a bit of time browsing his catalogue for many items, some of which are hard to come by or not available elsewhere. I have found that every item I purchased has been exactly as described and of a quality that pleases me totally. Good on you Ron, your goods and services are spot on even for good old Oz money.

POTPOURRI

Here are few snippets from Oz to get the ball rolling for the New Year and give you a brief insight into my local modeling scene plus - a hidden message. Well...not really hidden, but a jog to get some readers out of their complacent attitude of normal practices, mind numbing sameness and the consideration that all model aircraft come from ARF fairyland. On a similar note, I am saddened to be aware that a lot of young people have a very limited general knowledge of the world around them. They may be smart at playing electronic games, TV and video switching and excellent TV etc. remote control operation qualities, but good old fashioned simple knowledge...well...that's another kettle of fish. Admittedly, there are quite a lot of extremely bright young people with incredible computer skills; but the all encompassing comments about 'Johnny or Mary' being tremendously clever with



a computer often does not ring the correct bell. I was reminded of this just this week when a couple of local young people came to 'look at my animals'. I don't have much in the way of animals these days, but I do have quite a fair collection of birds, fish and other aquatic critters. It is not always open day at the WINCH ZOO; but young (well behaved) people who are known to me can, under certain circumstances, bring a friend or two for a wander around my 'North Paddock'. We have 3 large domestic building blocks north of the house. One of the aviaries is actually a chicken run for my 'chooks' (chooks = fowls - chickens) that provide the Oily Hand kitchen with large, fresh eggs every day. The eggs had not been collected at the time and one innocent little person asked why I had eggs on the dead grass (it is straw) in the chicken yard. When I said that the chickens had laid the eggs I knew I was in trouble. "Eggs come from the supermarket", was the positive remark from the all-knowing little person. "When you get back home, you ask your Mum or Dad about chickens and eggs," I said. This is a big problem area here if you start talking anything with any sexual or breeding connotations - definitely not discussed with other people's children.

Okay, just a passing snippet but it leads into the next issue, and here we are in my model building

workshop. Only very special visitors allowed here - known well and with an interest in model building. Any 'first visit' young person is sworn to secrecy - well - not actually sworn but warned of dire consequences if they discuss what they have seen with other people other than their parents. The large image of me in my (previous) police uniform helps to get the point across here. Anyway, this promising young lad was with his father who had a model problem for which he sought my assistance. The problem required a visit to my model shed which is rather well stacked with models, bits, tools and loads of balsa, ply and timber strips, for example. The young person's eyes were like saucers as he looked around. "Wow", he exclaimed, "You sure have a lot of good stuff in here." His attention was drawn to the wood supply. "Why do you have all the pieces of wood in here?" he asked. I told him I used the wood for building model aircraft and the odd boat at times. "But models come already built in a box and you only glue a few bits together." How sad! When they left his father had a flea in his ear to make sure he sat that young fellow down that night, in the secrecy of his own room, and have a ☺Dad to Son talk about the true facts of where model aircraft come from.

One last example was a young fellow visiting with his Mum, and she was extolling his virtues as a computer genius - spends most of his leisure hours on his computer and such. When the young fellow was told that I had a couple of good computers in my office, his Mum asked if he could see them, assuring me that he would be able to show me all about them. Well, my computers are generally off limits to anybody. Nobody gets to use them, but I really don't mind if they want to look. Hey, what's to see; they are just normal computers? Anyway, I led the young fellow upstairs, and his first mistake was to ask why I had so many books in the bookcases on the way (and on the desks, chairs, floor etc.

where you tend to have a few handy books stored). I showed him my main computer that is linked to the outside world and told him that I was in the process of fitting a 2 terabit extra hard drive, and considering upgrading to Windows 7 operating system. This stymied the young genius and his only comment was, "Where are the joysticks?" His Mum later told me, in answer to my query, that the genius was not doing so well with the computers at his school as they used old fashioned equipment and her little genius told her he could not understand 'the old stuff'. She, also, did not understand when I suggested she change his name to Mario.

Okay, the underlying lesson here is, don't forget the basics and be aware that you CAN DIY - Do it Yourself. The other subtle nudge is in relation to the dreaded habit that afflicts many modelers in that they must fiddle with something. Maybe they have grown out of THAT sort of fiddling, but they have shifted their habits to needle valves. Reiterated so many times by so many magazine and newsletter columnists, senior or knowing modelers - the mixture needle does not need constant attention. If the engine ran okay last flight, why twist the blasted needle for the next flight? Possibly, a close contender for the crown of 'Reasons for Crashing'... The engine is started, needle fiddled, model held nose pointing upward (big mistake), takeoff, and....the engine quits just as the model is climbing out. Maybe the model gets away okay and flies a circuit or two THEN the engine quits due to a lean tune and the buildup of excess heat causing pre-ignition or, worse, a component failure in the engine. Over several years, I have spoken to many modelers who I had observed flying the same model for a long time. Generally these modelers had a stable of aircraft, on occasions they included scale models for competitions; and every so often, they offered good models for sale. The main reason for the sale was lack of 'hangar space' in their workshop and they had a new project under way.

The reason for the lack of space was due to not wrecking models. They flew some models for a number of years. During my interview, generally when I was photographing their model, I asked what they did to keep a model flying for so long without it being 're-kitted'. The two most common answers were correct charging and monitoring of batteries and engine reliability. Asking for elucidation on these the further information was to charge the batteries as required by the manufacturer - preferably slower, overnight charging and always charge them the night before you go flying. According to how much you fly the model, discard the battery pack as soon as the checked capacity (by cycling) drops to 80%; just inexpensive insurance. As to the engines, use clean fuel, keep the fuel containers near full (no gap for moist air), filter the fuel at least twice, drain the tank and engine at the end of the flying day, change the glow plug as soon as the shine goes from the element and, most importantly, tune the engine to a rich mix on a hot, dry day and leave the needle alone after that. One very successful pattern flier did not even have access to the needle when the cowl was fitted. He spent some time initially tuning the engine when the model and engine was new and never changed the mixture after that.

SOME EXAMPLES

In the first photo (**PHOTO 1**) is a Sig. 4 Star 120 owned and flown by Noel Priestley. Noel read the review of this model in our magazine when Dick Pettit wrote it some time back. Noel said he was so impressed by the review that he ordered one the next day, and within a couple of days of receiving the kit; he had it ready for its first flight. Here's an interesting point about the engine: Noel is a close friend of mine, and some years back I had the pleasure of helping get the correct assistance and information for reliable modeling. He started in 1994 by purchasing an O.S. 120 four stroke, but he said that he had hardly any



Photo 1: Coming in for another perfect three point landing.

idea of what he was doing. The shop owner started the engine (using synthetic oil fuel) to show him what to do, and Noel promptly went home and put the engine in a drawer after having filled it with after run oil. He said that the entire business was a gray cloud, and he was not sure where he was headed. Incidentally, Noel has a vast background flying a variety of full size aircraft, including a combat heli in the Vietnam War when he was attached to an American combat unit. Okay, after having a fair amount of trouble getting help with modeling and flying, he saw my name in a magazine, contacted me and the rest is history. I got him set up on the engine side and another mate gave him excellent flying tuition. All ancient history now, as Noel has a few thousand hours on the sticks.

When he got his 4 Star, he resurrected the 1994 model O.S. 120 to power it. From the drawer, it fired up after two only spins of the prop and now has the attention of various modelers at the field. When he takes the model to fly; generally at least weekly, he fills the fuel tank, checks his radio, and gives the engine a brief hit with the starter. It fires up immediately every time, and doesn't stop until he hits the stop switch on his radio when the model is back in the pits. Often asked how he achieves such reliability every flight he replies, "I use an OS engine, good fuel, and as Brian (Winch) instructed; I never touch the needle

valve; simple as that.” Noel has a large Stick (Ugly Stick) on floats that he flies at our float fly venue twice per month, and the engine in that is the same. In this model, he has an OS 110 Alpha and he follows the same procedure with it. Fill the tank, check the radio (range and controls), generally one blip with the starter and the model is skimming across the water then angling up into the sky. No dead sticks, no running problems, no re-tuning of the engine; just a good rich setting for all times.

Another successful modeler is Graeme Hunter of Ceduna (on the edge of the desert heading west). Graeme is an outstanding builder and flyer, capable of flying both modes, one after the other; with no hiccups or hesitations. Apart from his own excellent hangar of models, he builds quite a few very large models for several other discerning modelers. So keen is one customer, he drives across (from Sydney on the east coast) to Ceduna and leaves his model kit, engines and radio (plus his model trailer) with Graeme. Graeme builds and flight tests the model then brings the trailer and model back to Sydney when he visits for a big, annual float fly event. So, you say, he drives across. Big deal, huh?



Photo 2:

Sure is when you consider it is a full three day drive from Sydney to Ceduna! Apart from being meticulous with his model building, radio

installation and battery management, Graeme is also of the W.W.N.F.N. school of engine operation. What is that, you may well ask. Okay, Working Well - No Fix Needed (Similar to, “If it ain’t broke, don’t fix it”). As Graeme says, if the engine is running reliably and powers the model as you want it; why fiddle with it? You would certainly need to have full confidence in the engines in a model as Graeme’s latest - a 13.6 pounds Aerocommander with two Saito 56 engines running sweetly. He said this model has been coming for a long time (Other model work gets in the way.), so after all the time and work; he wants it around for some good flying for quite a long time. (See **PHOTOS 2 & 3**)



Photo 3: One of the really good looking aircraft.

“I am told the Wagner’s music is NOT as bad as it sounds!”

Mark Twain

At the recent Wagga Wagga Military Scale competition, I saw quite a few models I recognized from scale events of quite a few years back; models flown consistently at scale comp's and rallies, plus a bit of general sport flying to prepare for events or just for the enjoyment of it. In **PHOTO 4**, the Tiger has a lot of flying time and still without a scratch. Due to the scale effect and the rigging, the pilot does a lot of pre-preparation to make sure nothing comes loose and the engine is kept very reliable so that there are no sudden, nasty, surprises.



Photo 4: A view like this when you are flying the model makes your day.



Photo 5: No scale detail missing, and lots of parasitic drag. At this angle, a motor cut would be fatal to the model.

I have seen this great model flying many times over the years. It flies superbly and sounds great due to the lovely song of the engines. Another non-fiddler, the model has never had an engine cut which has been a big factor in its long and successful flying life. **(PHOTO 5)**

Robert Zyp is the modeller behind this outstanding scale model. Entirely scratch-built, excellent flying capabilities and outstanding scale detail. **(PHOTO 6)**



Photo 6: Robert was telling me that forming that plywood fuselage sure tested his patience. For me, building that scale engine would be rather trying.

Another old stager, this Texan in **PHOTO 7**, just keeps flying and flying. The large Moki engine just keeps roaring and blasting until it settles down to a reliable tickover for a copy book landing every time. The mechanic for this model is a mate of mine, a professional (full size) high performance engine mechanic and a great believer in the 'don't touch if it don't need it' philosophy. Towards the end of the first day the wind came up quite strong and many models had to be tied down quickly to prevent damage. There were still a couple of fliers for round two, but all but one elected to cancel rather than risk their models in the high wind. Robert Zyp said he would fly, against the advice of many onlookers, as he reasoned that the wind might be even worse the next day. He is a great flyer with many hours to



Photo 7: This model has the owner/pilot on the winners' podium quite regularly.

his record, but even I thought he might be tempting fate a little as the wind was building up quite blustery. He moved the model to take off across field into the wind, his caller notified the judges that he was taking off and the engine roared as the model bucked and clawed to gain altitude. After a lot of serious stick stirring, the model was above the gusty ground effect wind and flying well into the routine. Coming in for a landing, Robert indicated to his offsider where he would put the model down, as it would have to be immediately restrained. The engine was almost on full song as he headed for a landing, the wheels touched, he cut the engine and several willing hands held the model as a great cheer rose up from the spectators. Later on I was talking to Robert and we discussed the flight. He said he had good confidence that he could get the model up; he knew it would stay in one piece and fly once it was off the ground. As to the engine, and my question, he said he never had a concern about it. It was so reliable; never stopped on him and he never fiddled with it. It was set to run reliably some time back and he leaves it at that. (See **PHOTO 8**)

Well, that is a little bit of the Oz modeling scene and some good advice from modelers who **DON'T** carry a trash bag in their flight kit. Analyze your flying success or lack of same, and



Photo 8: The wind was blowing the mortgage off the farm (and the dog off the chain), but Robert was determined, and confident enough, to fly his second round.

if needed; consider the advice from some modelers who, constantly, take their models back home in the same condition as they were when they bought them to the field.

HAVE YOU EATEN ALL THE HAM AND TURKEY, YET?

Well, the Yule festive season is over for another few months (They seem to come up rather rapidly to me.), but not everybody is over the excitement of the visit by Santa Crows and his reindeer powered sonic sky scooter. The 'stupid one' (weirdo laboratory assistant) got all fuzzed up when he saw the Santa scene at the local shopping emporium. Here was this rather oversized gent with a sack full of good gear ready to blast around the sky in a sled pulled by reindeer as he made his nocturnal deliveries. It was the 'blasting around the sky' bit that got him. That evening, on the 'telly' he saw this Santa Crows movie. It showed the sled taking off from the North Pole, climbing high into the atmosphere then blipping at the speed of reindeers (very fast) towards the populated countries for the big gift delivery schedule. In the lard brain's mind, ever trying to fly in various ways, this sled and animal power were a new challenge. He had a sled from



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way back when he used it to slide down grass hills (Not a great deal of snow in this area; actually...none - just heat). The reindeers were a bit scarce on the ground, as it were, seeing as how we don't have snow and, also, reindeers do not live in Oz. We have a few feral Rusa and white tail deer in the National Park near my place, but these are off limits; besides being very wild and bad tempered. One creature we do have, not too far from here, is the wombat. These are chunky, lumpy critters with a bad attitude, a nasty habit of digging very large holes in any earth form that stands above the normal landscape (small hillocks and the like); and they are incredibly strong. Actually, they are commonly known as the 'bulldozers of the bush',

due to their strength, digging and general earth moving capabilities. How in the world jughead came up with the idea that they could fly is way beyond me. Maybe the 'magic' of Christmas (or the brandy custard) got to him, as after all, reindeers are not known to have great aerial skills either. Well, he rounded up eight large, ill tempered and growling wombats and hitched them to his grass sled which was attached to a large spike in the ground to act as a steady brake. Eventually the wombats were tethered and Jell-O brain climbed into the sled, waved to the curious onlookers, shouted something like "on wombat - on wombat - on wombat" eight times (He did not have names for them.) and released the tether to the spike in the ground. Well, those wombats

snuffled, jumbled, snorted and roared as they tried to sort out what they were doing and where they were going. Suddenly those eight wombat brains unified as one, and the lot took off and did just what wombats are best at; bulldozing through the bush. Now, wombats are low down critters both in nature and physical dimension, so they went, mainly, under the bush roughage, Noodle brain was battered and whacked by branches, bumped off rocks, banged against trees; but no way in the world could he rein in those determined wombats. Not only that, it was now apparent, even to him, that they were never going to get off the ground and fly. The happy pack were heading for a low rise in the ground that had a shallow cliff face in which, horror of horrors, there was a huge wombat burrow. Squeezing, grunting, pushing and shoving, in they went - all of them. The fool was yelling and screaming as he banged his head constantly on the tree roots and rocks that stood proud as the wombat burrow ceiling, but his yells became fainter after a while; as he was dragged deeper and deeper. You could still hear the yelling as a Doppler effect as the tunnel twisted and turned inside the hill, but even this got fainter as the travel deepened. Wombats will dig for many miles, and if pursued, they block the hole with their rear ends and there is little if any chance anything will get past that muscled plug. I hope stupid is okay eating roots and old leaves, as I think he will be 'down the hole' for a long time. While I am having a bit of peace, I am going downstairs to my underground workshop where I will enjoy the remainder of my Christmas pudding and prepare the next article which will be the continuation of

petrol carby topics, so I guess it is now time for.....

.....APRILWUN -DOT ROT - DOT CON
In this section we are exploring the weird world of strange people and the odd things they say or write. These are 'signs of the times', I have noted over a long time on many travels that have been written and installed by 'people in authority' to guide us, warn us or... simply confuse us.



Covering engine topics and working with metal for models. Send your comments or questions to: oilyhand@bigpond.net.au or write to Brian Winch, 33 Hillview Pde, Lurnea NSW 2170, Australia. *International Response Coupon (Post Office) required if you want a written reply*

Tails from the Other Side

By Isabelle

Classified Ad: This has to be one of the best singles ads ever printed. It is reported to have been listed in the Atlanta Journal.

SINGLE BLACK FEMALE

Seeks male companionship, ethnicity is unimportant. I'm a very good girl who LOVES to play. I love long walks in the woods, riding in your pickup truck, hunting, camping and fishing trips, cozy winter nights lying by the fire. Candlelight dinners will have me eating out of your hand. I'll be at the front door when you get home from work; wearing only what nature gave me. Call (404) 875-6420 and ask for Daisy, I'll be waiting....



Over 15,000 men found themselves talking to the Atlanta Humane Society!!

Now that you have had a chance to “get your funny on”, I can tell you a little bit about RC Report Online’s newest columnist – ME!

My name is Isabelle Coberly and I am a 7 ½ year old Lab Mix, currently residing in the great state of Alabama, county of Madison, city of Huntsville, with a couple of other Coberlys that you may have heard of before. Sparky is my dad and my mom is that voice you hear on the other end of the phone when you call the office! Shout out to Mom and Dad! LUV YA! So beyond my obvious “connections”, you’re probably wondering how I managed to reach the

pages of RC Report Online... Well, I’ll tell you! As 2009 was ending, I decided that I would take great pleasure in helping Mom with her list of New Year’s resolutions. It went something like this:

1. Help Isabelle with her column for RC Report Online.
2. Make it through volleyball season without screaming uncontrollably during matches. *(I would love to share this story with you all, but I would certainly get myself into trouble if I did. Isabelle)*
3. Have a little more patience all across the board.
4. Visit one haunted attraction each week in October.
5. Buy Isabelle something special each week and allow her to sleep wherever she would like and eat Frosty Paws every day.

I added that last one, of course. I don’t really need all that. I am a pretty low maintenance kind of girl. Regular belly rubs, random car rides, and a cookie; and I am set.

Backing up into 2009 for just a minute... I hope that Santa Paws brought you everything that you wanted for Christmas. More importantly, I hope that you took some time to celebrate the true meaning of Christmas: the birth of Jesus.

I am very excited about this opportunity to write for all of you. My dad, grandpa and great aunt are or were all published authors, so I thought it was about time I tried my paw at this game. I don’t fly, of course; and I don’t get much time at the local flying field, Rocket City

Radio Controllers, anymore. At least not since the twins showed up at our house five and half years ago. Twins, you ask? In a nutshell, I was a carefree girl who enjoyed an occasional apple (see photo 1) until Mom walked through the front door with these red, squirmy little bundles under each arm. Suddenly, I had responsibilities! I'll tell you more about the twins and the cats next month.



Photo 1: Me enjoying a snack. Just make sure that you break the skin for me by taking the first bite. Then, I will take care of the rest. Seeds are nasty, so take it away before I get that far.

Moving on... By now, you are probably wondering what my column is going to be about each month, huh? You already know that I don't fly or spend much time at the field, but I do spend the day with Mom at the office; so I am quite knowledgeable about RC current events. For example, did any of you make it down last month to Andersonville, Georgia, for Southern Dawn Patrol? I missed it this year, myself. Dad crashed a pattern plane at that field a couple of years ago, though. It was his first 2 meter pattern

plane. All that's left of it hangs in our family room. (Photo 2) *RIP*, Silhouette II. ☹ Dale Cavin has promised us a write-up and some pictures from the event! Look for it! Also, Tail Dragger's RC Club in Cartersville, Georgia, hosted the 4th Annual Georgia War Bird Invasion back in ☺ctober. Boy that was a busy weekend! Frank Tiano Promotions held their Monster Planes event that weekend, too! Dad went down to Lake Wales, Florida for that and had the opportunity to meet Frank and all the other folks. By the by, Mom lived in Lake Wales back in the 70's. She suggested that Dad visit Spook Hill which is a really neat attraction (or so I have been told). If you are ever in the area; check it out! He didn't though; too busy with the RC stuff. Some people just have a one track mind.



Photo 2: All that's left of Dad's plane that died. That's the tip top of our Christmas tree, too!

Well, the past is the past; but I do have some events that you need to mark on your calendars for the first part of 2010! On January 16, 2010, the Kansas City Radio Controllers Association will host the 2010 Swap –N– Shop, in, where else, Kansas City, Missouri. See the flyer in this issue for more details. Don't miss the Licking County (*No pun here, "Licking" is the name of the county!*) Radio Control Club's 25th Annual Swap Shop and Auction in Columbus, Ohio, on February 6, 2010.

Continue travelling in March for the Southeastern Model Show held in Perry, Georgia. Look for my dad and say hello! I might convince him to let me come along. I'll be the cutie in the burgundy harness!

Besides being up-to-date on current events, I also listen in on most phone conversations when you all call the office! Mom sometimes reads her email out loud, too. What do you all call or email about? The most common issue is lost or forgotten login information. Easy fix! Another shout out! This time to Donn Noble, from Arkansas, who called in last month for that very thing. His computer had been on the blink and his information was lost. It's those PDF downloads that take a minute or two, sometimes longer, if you are missing some installs or updates! I may, from time to time, share some of the more humorous conversations that I am privy to, so...

I almost forgot! Since I am such a social girl and very generous to boot; I'd like to share with you all the second purpose of my column. This is Mom's favorite part, by the way! Next month, we will name RCReport Online first ever "Pet of the Month"
No, not that kind of pet, either.



(Tsk, tsk for even thinking that...)

This kind:



Photo 3: The "Scotchis Maximus"

How do you enter?

Just submit a picture of your pet or pets, including their name, approximate age and a brief description, with or without one of your planes for a chance to win a toy from my "Toy Box"!

All types of pets are eligible: with fins, fur, feathers, scales, farm animals, etc. Just so you know; Mom loves cows! And you know what? I'm just a little spoiled, so I have some great toys to share! Toys are selected randomly and may be anything from a toy for your pet or a toy for you! Each month a pet will be selected from all entries received by the 15th of the current month. Entries received this month will have the chance to be selected as RC Report Online February 2010 Pet of the Month. If you have more than one pet, you can enter multiple pets each month. If your pet is not selected as "Pet of the Month", you can always try again the following month. You can email your picture (preferred method) or you can mail it by regular mail. Only photos received with a self-addressed stamped envelope will be returned. Someone has not set-up my email account (hint, hint), so for now; you can send emails to Mom at juliac@rcreport.net. Please put "Pet of the Month" in the subject line and make sure that you receive a confirmation email verifying that I received your entry. Even computers make mistakes and I would not want your pet to miss out just because of a computer error. I would certainly appreciate other correspondence as well, such as funny or heartwarming stories about your pets or anything else you would like to share. Birthday shout outs are welcome, too!

One last thing, just like Here's How by Walt Wilson, this column will depend on input from all of you. So send in your pictures to me and your ideas to Walt!

*Well, until next month,
Isabelle*



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Bring your Indoor Aircraft and Fly with Us

See back for map

Oh, Boy! Another year has passed us by, and not without some exciting happenings around here. Lots of new projects have been announced and hopefully some may even find their way onto the pages of the website. It's been a good year for most of us. I have already made up my list of New Year's resolutions, hopefully trying to stick to them as long as I can.

This month, I'll show you a line of beautiful large scale pilot figures. I'll describe how to rig brace wires on biplanes (or any planes, for that matter) and I'll give you some introductory information on a long awaited spread spectrum upgrade from a major radio manufacturer.

Let's take a look, eh?

PRETTY NICE PILOTS

I was finishing up my latest kit project and needed a pilot figure; one that didn't have the same look on his face as all the others. I had heard about Premier Pilots from several other modelers, but this was the first time I has actually seen their products. From their online web site, "...Finally, a highly detailed and light weight Scale Pilot figure, loaded with the right accessories is ready for your masterpiece and scale competition..." I contacted them and found out that they could put together exactly what I needed; a scale pilot that was dresses to resemble a 1920's airmail pilot, complete with a real leather flight jacket and helmet.

Photo 1 shows the pilot figure that was made for me and I have to say that the quality of everything ordered was absolutely perfect. The leather jacket has working pockets and a real zipper. The goggles have real glazing and the uniform he is wearing matched what a 1920's pilot would have worn while flying the mail route. There was also a real 4 point harness that could be made to hold the pilot in the seat and released when necessary.



Photo 1: 25% pilot figure from Premier Pilots, ready for that first flight of the day

These pilots are available in 25% scale and include fabric shirts: in either red, white or blue, tan pants with a brown belt and brown shoes, a white cap, sunglasses, headset, parachute bag with harness, and a wristwatch. The complete figure that can be posed in a number of ways costs \$119.00 plus shipping. Accessories like a real leather jacket and helmet (\$30.00), a full flight suit (\$22.00), or an English driving hat (\$8.00) can also be ordered. Along with the

civilian versions, WWII and Luftwaffe pilots are also available with appropriate dress.

“Each General Aviation pilot has a full body. At only 5.5 oz clothed, they are the lightest articulating pilots available. Each pilot body is made from 17 different moulds to enable lifelike poses in your aircraft. The shoulders are adjustable in width from 3-3/4” to 4-1/4”. The shoes and legs may be removed to fit in limited cockpits. The clothing has been sewn from actual cloth fabric.”

I measured my pilot and he scaled out to be 64” tall, rather short for a fellow that was supposed to look like Charles Lindberg. It also weighed a little more than 6.5 ounces, probably due to the heavier leather coat. I asked Premier Pilots why they were so short and they commented that many modelers also needed pilots that would work in 1/5 scale models and this size would work fine in those models.

Pilots are a rare kind of human. They leave the ordinary surface of the world, to purify their soul in the sky, and they come down to earth, only after receiving the communion of the infinite.

Jose Maria Velasco Ibarra

I made up a pilots seat from some scrap wood and leather and used the harness to keep “Lucky Lindy” secured in place. Photo 2 shows what he looks like in the cockpit of the model.



Photo 2: “Lucky Lindy” strapped in and ready to go

I then noticed that one of his lower legs had fallen off inside the cockpit due to a slight irregularity in the molding process. (*Editor’s Note: I hate when that happens to me, irregularities are for the birds!*) There are no floorboards on which to rest his legs and they just dangle there. Rather than try to glue the part in place, I just left both lower legs off since you cannot see that far down inside the cockpit anyway. Models with floorboards will provide all the leg support needed.

I hope my new mailman will be able to handle the big mail plane when it comes time to make the first flight. At least he will look really good when he gets there.

You can find more information from Premier Pilots at www.premierpilots.net . The ordering address is:

RD Enterprises

the “initial factory frequency set up”. I take this to mean that the factory chooses a set of initial frequencies and binds the receiver to the module. Once the system is configured, it uses these frequencies all the time. However in Smart Scan mode, the module actually finds the best frequency to use, remembers it and then sends the data to the receiver to set its frequency.

There is nothing mentioned about the module and receiver changing frequencies while in operation, but the name “Adaptive Frequency Hopping” leads me to believe that in scan mode, I believe the actual operating frequency can change when interference is detected.

The Optima 7 receiver, seen in Photo 3, has a pair of LEDs that indicate the mode in which it is running and the status of the received signal. There is a “Link” button that is pushed to bind the receiver to the transmitter, but it is quite small and a tiny screwdriver or other pointed instrument is needed to push it since it is recessed into the case.

The data port will be used once Hitec releases airborne data sensors that will pass information from the receiver to the transmitter while the system is in use. (*Editor’s Note: Other systems have promised similar “Downlink Capabilities” but I haven’t seen any as yet!*) The data port is behind a removable sticker on the front of the receiver, but I can see where it may lose its “stickiness” if removed and replaced multiple times. No data sensors are available at this time.

The “SPC” connector has a jumper plug installed. By default, when the plug is removed, the receiver can be powered by a dedicated battery

while the servos are powered by a second battery. This can minimize “brown-outs” caused by heavy drains on the system battery by high power digital servos. The receiver can also be powered by the main battery on electric models up to 35 volts. Keep in mind that most, if not all servos, cannot be used at this voltage, therefore a second servo battery must be used.

The Optima 7 can be programmed for either “Hold” mode or “Fail Safe” mode. In the Hold mode, after one second of Rx signal loss, the servos “go soft” at the position they were at when the signal was lost. This could mean that the throttle would stay at whatever position it was at. “Fail Safe” mode is a better choice since it moves each channel output to the position that the user programs into the receiver when signal is lost. This feature can set for every channel to a pre-determined “Fail Safe” position, not just the throttle. I recommend using Fail Safe all the time, even if you only pre-program the throttle channel.

Now for the neatest feature which called “Low Onboard Battery Warning”. If the receiver battery voltage drops below a pre-determined level, the receiver actually sends the transmitter module a signal which triggers a beeper on the module indicating the receiver battery voltage is low. It even knows if you are using a 4 cell or a 5 cell battery and adjusts the low voltage level accordingly.

I did a few simple tests to see how this works. Using a laboratory power supply and a calibrated volt meter, I set up the Optima 7 receiver on the

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NEW SPREAD SPECTRUM SYSTEM

"Hitec is proud to introduce our first 2.4GHz consisting of the Spectra 2.4, 2.4GHz transmitter module and Optima line of receivers. The Hitec 2.4GHz system is capable of converting most existing Hitec Module radios to 2.4GHz and utilizes the latest Adaptive Frequency Hopping Spread Spectrum technology. Other features of our system include Telemetry capabilities and our exclusive BODA (Boosted Omni-Directional Antenna) system. Providing the hobbyist with latest technology at an affordable price has always been Hitec's primary goal, a goal that we have now achieved in 2.4GHz technology."

Yes, it has been a long time coming, but I just received one of the new Hitec Optima Series Spread Spectrum receivers and transmitter modules that have been in development for quite a while. Personally I feel that Hitec basically wanted to "get it right the first time", rather than shove something out the door just to say they had a spread spectrum system that worked. In any event the Optima 7 receiver and the Spectra 2.4P module are in my workshop and they're ready to wire up and test out.

The package comes with printed instructions describing programming all the features and a handy color chart that shows what the colored LEDs indicate when various options are installed.

The Optima 7 receiver is quite compact, measuring 2.25" by 0.625" by 0.5". It has servo outputs on one end for 5 channels, while channel 6, a combination channel 7, and battery connector, a data connector and one labeled "SPC" is at the opposite end. The antenna, referred to as a "BODA" (Boosted Omnidirectional Antenna) has a 5.5" lead with the actual antenna at the end measuring 1.125". Photo 3 is rather light but the operational part of the antenna is at the very end of the large black part, which is actually the base for the antenna. There is even an antenna mounting bracket into which the end of the antenna base slips for mounting in an aircraft.



Photo 3: Hitec Optima 7 AFHSS 2.4 GHz Spread Spectrum receiver

The new Hitec system uses what they call AFHSS or "Adaptive Frequency Hopping Spread Spectrum" technology and since it is proprietary to Hitec, it is not compatible with any other spread spectrum technology available anywhere else. It can be configured in two modes of operation, Normal and Smart Scan mode. The receiver and module combo, when sent from the factory, is linked together on what they refer to as

bench and linked it to my Hitec Eclipse 7 with the Spectra 2.4 module, seen in Photo 4.



Photo 4: Hitec Spectra 2.4P transmitter module with attached antenna

The power supply was set to 6.2 volts, simulating a 5 cell battery and the system operated normally. I reduced the input voltage slowly and when it reached approximately 5.66 volts, the module started beeping, indicating low receiver battery voltage. As the supply was increased, the beeping stopped. This could indicate a high instantaneous drain of the battery caused by binding servos. When the supply was set to 5.2 volts, simulating a 4 cell battery and the system re-powered; the low voltage indication came on at approximately 4.53 volts and functioned exactly as the first time. Also, in both cases, the red and blue LEDs blinked rapidly at low voltage, but since the receiver would be hidden in most installations; you couldn't see them anyway.

The Spectra 2.4 module, seen in photo 5, plugs into the slot on the back of most Hitec module type transmitters, like the Eclipse 7, the Optic 6 and the new Aurora 9. My module has the

antenna mounted on its case since it is a part of what they call a “promotional package” containing both the module and a receiver. Separate modules are available but they have a separate antenna that can be attached to the mount that held the antiquated 72 MHZ antenna. Binding is done by pressing a recessed button and watching the LEDs. Yes. It is that simple. There is also a data output port on the module that can be connected to various displays or indicators, but none are currently available.

I will be installing the Optima 7 receiver in one of my test models in the near future and will report on its operation as soon as I get all the



Photo 5: Spectra module plugged into my Hitec Eclipse 7 transmitter

data. I did perform a range check using the “Power Down” feature in the back yard and found the servos were responsive even at 150 feet from the transmitter. This should provide plenty of range when set to full power.

Now for the bottom line: the price. I looked at several online hobby distributor web sites and found that you could get the module and an Optima 7 receiver for as low as \$110.00, but the module in that package had the antenna which has to be installed on the transmitter case. That is no big deal since everything else is exactly the same. However, for an even better deal, you could get a module and two Optima receivers for \$130.00, a fantastic price.

For more information and a look at the entire line of new Hitec radio products and accessories, you can contact them at:

Hitec RCD USA
12115 Paine St. Poway
CA 92064

Phone: (858) 748-6948

Fax: (858) 748-1767

<http://www.hitecrcd.com/>

Email: service@hitecrcd.com

And tell them I sent you!

WIRES, WIRES AND MORE WIRES

As many of you probably remember, I like biplanes. I really like biplanes! However, those wings usually cannot hold themselves together without the help of some sort of wire bracing and this is what I am going to describe to you right now.

This rigging is divided into two different classifications, landing wires and flying wires. Landing wires support the wing panels as the

plane is sitting on the ground, keeping the wingtips from touching the runway. Flying wires are used when the plane is flying, and keep the wing tips from touching each other. You can see how both types are necessary, and must be used in the vast majority of biplanes. It's up to the modeler to determine how to duplicate them on their scale planes and to make them functional where necessary.

The kit I am building presently does not have the flying and landing wires included in the kit, and the plans do not show how and where to add them. Since the plane will weigh more than 35 pounds and have more than a 10 foot wingspan, I felt that functional wires should be added. I will be using parts from both reputable R/C accessory distributors, along with other parts from one large general hardware distributor.

First of all, there must be some sort of metal fittings added to the framework; which must be able to hold the pull of all the wires, both in flight and on the ground. These are seen in photo 6 and are attached to plywood ribs inside the wing. Of course, these fittings have to be installed prior to covering unless you can figure out a way to mount them externally. The kit I am building has interplane struts included, and I just



Photo 6: Metal fittings in fuselage for installation of flying and landing wires



Photo 7: Wire thimbles and compression sleeves, used to attach braided wires

added the extra tabs on the same ribs using slightly longer bolts and safety nuts. I purchased several 72" lengths of 1/16" x 1/2" aluminum, from which I made all the fittings and tabs. The aluminum is easily bent and drilled with ordinary hand tools. While ordering these parts, I also ordered some 1/32" braided steel wire and some thimbles; which are U shaped parts through which the wires are routed to

remove the strain on the wire by the fitting. I also ordered a box of copper compression sleeves that will be crimped onto the wires to hold them in place. **(Photo 7)**

With the mounting plates and fittings are bolted into place, the completed wing and fuselage structure has to be bolted together prior to covering to build the rigging wires. Care must be taken to keep the wings from twisting while cutting and fitting the wires. My kit has very strong and adequately braced interplane struts that minimize any twisting. More aluminum brackets were cut and drilled to be bolted to the fuselage and upper wing at the center where the wires will terminate. My top wing is a 2 piece affair with the joint in the middle. I made a pair of aluminum plates that tie the wing panels and the top of the cabane struts together and provide



Photo 8: Wing center section joiner brackets to attach rigging wires

strength to both the center and outer parts of the wing, as seen in photo 8.

I used a thimble and a compression sleeve at one end of a wire and a rod end at the other. You must be sure to allow the wires to be removable from at least one wing panel to allow

complete disassembly. I designed my installation so that all the wires are permanently attached to the underside of the top wing with the disconnect point at the bottom wing.

The rod ends from DuBro use slotted screws that thread through the fitting, but I found that 4-40 socket head cap screws work a lot better. Be sure to buy a lot of these because they will find their way to the ground quite easily.

The rod ends have solder couplers that can be fastened using ordinary plumbing solder that has no lead. Instead there is a small amount of silver that has a lot more strength, and will hold the braided wire securely after cleaning and tinning. I estimated the length of all the wires, soldered one end to a threaded coupler and then installed the rod end with lock nut and the 4-40 bolt to the wing fitting. Be sure to allow at least half the threads for tightening the wires after assembly. (PHOTO 9)



Photo 9: Be sure to leave threads for tightening rigging wires

At the other end, I installed a thimble through the 1/8" holes drilled into the fitting, followed by the wire and a compression sleeve. Be sure to add

the sleeve before threading the wire through the thimble and fitting.

You then pull the wire tightly; making sure the thimble is not misaligned in the bracket hole. There is a special tool designed to squeeze the compression sleeve, but a pair of ordinary diagonal pliers can be used if compressed 3 or 4 times on each sleeve, as seen in photo 10. Before tightening any one of the wires, install them all and then tighten one at a time on each side to balance out the tension.

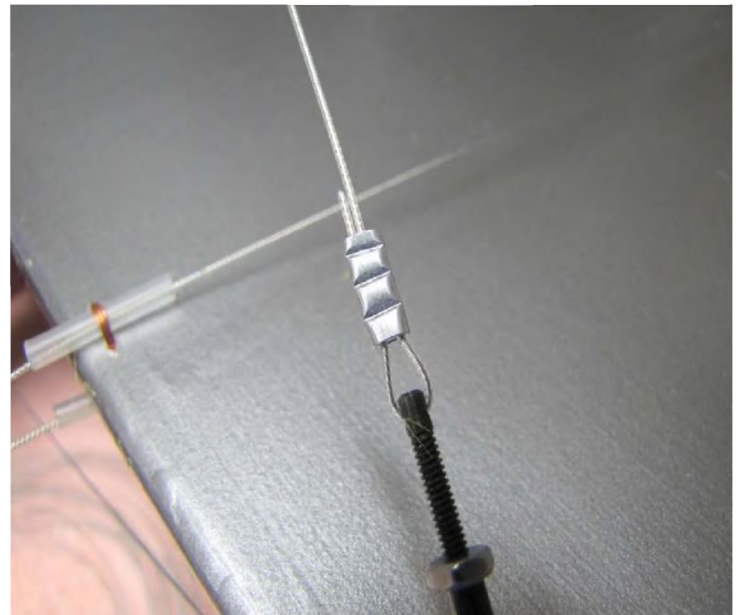


Photo 10: Crimped compression sleeve using diagonal pliers

You will also find that the wires will loosen over time and that's why you need to ☺leave some threads on the couplers to provide for such loosening.

Here are the part numbers for several of the parts I ordered:

McMaster-Carr (www.mcmaster.com)

3498T41-1/32" braided steel rope

3436T12-stainless wire rope thimble

3897T31-Copper oval compression sleeve

DuBro Products (www.dubro.com)

#302-Nickel plated 4-40 rod ends

#336-Nickel plated 4-40 rigging couplers'

Assembly of the flying and landing wires will depend on how the entire system was designed, so make sure to allow for some flexibility when planning your flying and landing wire system on your new biplane.

That's it for another month. Please send us some photos of those new projects, and I can also use videos since they are a lot easier to put online rather than in magazine pages.

See y'all at the field.

Dick Pettit

pettit@ti.com

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RCREPORT ONLINE READERS TEST REPORT

NITRO MODELS
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BY: STEVE SHIPLEY

F-6F Hellcat ARF TEST REPORT

Model: F-6F Hellcat
Airplane Type: Sport Scale
Manufacturer: China Model Products
Distributor: Nitro planes
P.O. Box 3382
Alhambra, CA 91803

Suggested Retail Price: \$249.00
Typical Street Price: \$139.00
Wing Span: Advertised: 70"
Measured: 70"
Wing Area:
Advertised: 824.6 sq. in.
Measured: 846.75sq. in.
Advertised Weight: 4500-4650grams

Airfoil: Semi-symmetrical
Wing Structure: Built-up
Wing Joiner Method: Aluminum tube
Fuselage Structure: Fiberglass
Fuselage Length: Advertised 53"
Measured 49.875"
Pushrod Type: Music wire
Pushrods Installed: No
Hinges Included: CA
Hinges Installed: Yes, but not glued
Radio Included: None
Recommended Controls: 6 (ail, el, rud, throt
flaps and gear)
Motor Included: None
Recommended Motor(s) 2cyc 91 – 4cyc 91-120
Motor Mount Installed No

Motor Mount: 2 piece Plastic
 Battery Included: None
 Landing Gear Installed: No
 Wheels Included: Yes
 Recommended Wheels: provided
 Assembly Instructions: Drawings only
 Hardware: Metric
 Items Needed To Complete: Radio, engine, retract servo(s), pilot figure,

 Covering Material: prepainted
 Estimated Assembly Time: 8 (in hours)
 Estimated Skills Required: Experienced
 Drilling Required: Yes; motor mounts, firewall

 Adhesives Required: Epoxy, thin and medium CA

 Assembly Tools Required: Rotary tool, drill, socket head drivers.

COMPLETED MODEL

Finished Weight 12lbs. (192 oz.)
 Wing Loading 32.65 oz./sq.ft.
 Motor Used: BCMA 26 gas
 Propeller(s) Used Master Airscrew 16x8
 Propshaft to Ground 8.75" (held level)

.....
 Radio Used Spektrum 7 channel
 Covering/Finishing Used
 Special Items None

CHEERS – Excellent overall construction, nice finish (but see jeers), great flight characteristics, ease of assembly, overall good value.

JEERS – Instructions are very basic, finish is easily marred (unless finished with a clear coat), tail wheel assembly is a bit awkward, included wheels wear quickly on a hard surface.

The F6-F Hellcat is the second Nitroplanes model I've built, their 71 inch Corsair being the first. I have to admit that the price of this airplane was the initial attraction. At \$139 (+\$25 shipping) I couldn't resist, especially considering the luck I had with the Corsair. Not counting the retracts, the Corsair is a very nice looking plane that performs beautifully in the air. Nitroplanes is getting a lot of bad press on some of the websites, and even warnings from some modelers not to buy from them due to the lack of support for their planes. All of those complaints are justified as the company simply does not understand customer or product support. So, if you decide to purchase one of these planes you need to be aware that you are on your own.

It came double boxed and arrived Fedex within 7calendar days from the date I ordered it.

For all the negative things being said about their customer support, you have to say that they are quick to get the kits to you. I've waited weeks for stuff I've ordered before from different companies, but they really do get it right to you.

Having said that, let's look at some of the high (and low) points of this kit. First of all, the instructions are nothing like we were used to when building some of the Sig or Great Planes kits. With them we got 30+ pages of detailed instructions and building hints that if followed faithfully resulted in a well built model. The instructions for the Hellcat are more in Chinese than English and offer very little more than diagrams that show an order of assembly. However, if you're an experienced builder, you should be able to handle this without too much difficulty. This is part of the frustration that a lot

of modelers are voicing in their complaints about Nitroplanes. They get to a point in the assembly where they need a little help and there's none to be had. As bad as these instructions are, they're better than the ones for the Corsair.

The finish on this plane is an attractive flat blue over gray paint scheme that recreates the original very nicely. Being a flat color and therefore somewhat rough it is very susceptible to smudges and fingerprints that require a good bit of elbow grease to get off. I decided early on that the first thing to do with a finish like this is to seal it before you ever begin construction. On the first plane like this I built, I sprayed the entire plane with a couple of coats of Top Flite flat clear. This worked well in adding additional fuel-proofing and virtually stopped the marks that really detracted from the overall appearance. For the Hellcat, I was going to do the same thing, but when I couldn't find pictures of the scheme included in the kit, I decided to go with a different paint scheme altogether. Minsi III of the Commemorative Air Force is a Hellcat that has a solid blue color. One color, all the same over the entire plane? Now that's a paint scheme that even I can duplicate. So, when you look at the pictures in this review and the pictures on the website, they're the same plane. I just got a little ambitious when I started to seal the paint.

The plane comes with a very complete set of hardware. A lot of builders I know throw all of this away and use the hardware of their choosing. This was probably a good idea on a lot of the early ARF kits, but the quality of that included in this particular kit is such that except for the control horns, I used all of it. All the

control surfaces come pre-slotted and pre-hinged except for the vertical stabilizer. For some reason this part was not cut. The rudder is slotted, so just line it up and cut your own. I found this part of the kit to be very accurate and if you opt not to clear coat, or do some other type of paint scheme prior to assembly, you could glue the control surfaces to the flying surfaces just as they come out of the box. The only difficulty I had with the control surfaces was with the rudder. The instructions show using a hobby knife to cut a hole at the base of the vertical stabilizer for the tail wheel steering wire to come through. If you're not in a hurry to fly the plane this season, then go ahead. Otherwise you need to use some sort of Dremel tool with a spiral blade or drill bit to get through the fiberglass. Once you've accomplished that, thread the tail wheel wire through the support and then through the hole you just cut. The hard part isn't over yet!! Now you have to bend the very hard music-type wire to fit into a hole in the rudder. The instructions show to measure up 10mm from the base and bend it 90° then cut it off 40mm from the bend. Be careful that the bend is in the same direction as the tail wheel otherwise the rudder and the tail wheel will be going in different directions. This could be very difficult to fix after the rudder is installed. I made the bend 90° to the vertical stabilizer and then holding the rudder in place, marked the point on the rudder where the wire would fit. Since the leading edge of the rudder is parallel to the trailing edge of the vertical stabilizer, the hole in the rudder must be drilled 90° to the leading edge in order for the control wire to line up properly. Again, you have to be careful in this process to avoid making a mistake

that will be difficult to correct. This would be easier if you had a little assistance, but being as I had none, I used a drill press with a vise and a level to make sure everything was lined up. Using this process, it all came out right the first time!! Must be some of Gordon's Alabama good luck rubbing off on me.

Flying:

Balancing any airplane fore and aft as well as left and right is a part of construction that cannot be slighted. The Hellcat is no exception. I have learned over the years that "close" is not acceptable in this step. So, I can tell you that if

My first flight was handled the way I generally do any maiden flight. I show up at the flying field and have a couple of my trusted colleagues go over the plane and check everything out. Once it passes their inspection, it's time to button everything up and go flying. With the BCMA 26 idling predictably, the Hellcat taxied well on the concrete runway. Once turned into the wind, I advanced the throttle and in just a few feet the tail was flying. Speed came up the plane continued to track well with just a touch of right rudder to keep it on the centerline. The plane broke ground after about 150 feet and required just a little down elevator trim and a click or two of right



you take care in this regard you shouldn't have any qualms about the first flight of this plane.

aileron to have it flying straight and level. After one pass around the pattern, I hit the retract switch and the landing gear disappeared into the

wing. On the first flight or two, I try to focus on becoming familiar with the plane's general flight characteristics. In my own situation, even though I look forward to the first flight of a new airplane, I am more apt to screw it in the ground because of making a nervous mistake. So, with the gear up and the plane tracking nicely I enjoyed a flight where I explored the speed envelope of the plane in straight and level flight. At full throttle, the plane is not extremely fast but looks very scale-like coming down the runway. Pulling up at the end of a high-speed pass, the plane runs out of airspeed after a couple hundred feet of vertical flight.

Slow-speed flight is a piece of art. Coming down the runway at half-throttle and watching the plane's silhouette against the horizon is what scale modeling is all about. The plane is solid and all controls are responsive at this speed. During the first flight and several subsequent flights, the plane developed a sudden and unplanned case of quiet. That's OK. It gave me chance to practice my dead-stick landings, and to practice standing up while my knees banged together in sequence with the shaking in my hands. A later inspection found that the gas I was using that day had been sitting around for quite a while and had gone bad. But, back to flying, when the engine quit, I was always at altitude and had only to turn back into the wind and land the plane. On the first attempt, I turned a little quick not realizing how much glide capacity this plane has and wound up landing several hundred feet down the runway. As it was going away from me the speed became increasingly difficult to ascertain and the plane

stalled a couple of feet above the ground. It dropped the right wing and hit the ground rather hard but only scraped the paint from the wing tip. After that experience, I knew that if I had to land it dead-stick again, there was no need to panic, just don't let it get too slow. Later power-on landings demonstrated the need to keep the flying speed up until just before touch-down and it will land on the mains and roll-out in a very scale-like manner.

Though obviously not an aerobatic model, the Hellcat is capable of all the scale maneuvers that its full size counterpart was famous for. Rolls, loops, stall-turns, Split-S's, Immelman's, are all accomplished with little correction.

There is a lot to like about this plane: It goes together easily, looks great and has superior flight characteristics, especially for a warbird. I also discovered that it flies well with a variety of engines. After the review flights, I pulled the BCMA 26 and installed an OS 91 four-stroke. Performance suffered with this engine, but with a Saito 120, there is plenty of power to fly the plane in a very scale-like manner. I can recommend the Nitroplanes Hellcat as a really good plane for the experienced modeler. There are only a couple of issues that cause a little concern, but if you take your time and think it through, you shouldn't have any insurmountable problems. The result is good flying airplane that you will be proud to take to the flying field.

Steve Shipley

RCReport Online reader

Two OLD Scale Guys

by Bill Hurt & Dick Watz

Dick:

Hello again from Geezer Gulch. Bill, how's the Waco Brotherhood going? My emails tell me it is doing fine and growing.

Bill:

Dick, the Brotherhood just keeps growing by leaps and bounds. Who would have guessed back in 2006 that there would be that many people who loved, or were interested in Waco airplanes? It's all good, since we have been able to provide the means to make the old Pica Waco available once again. Dan Hudson, who lives in Bartow, Florida, has been able to complete his first ever effort at building a Scale Model from plans, and his Waco YMF-5 is a thing of beauty.



Photo 1: Dan Hudson with his new Waco YMF-5 built from AMA plans.



Photo 2: Fuselage covered with Koverall and Nitrate Dope.

Dick:

In the past year or so, much has been learned about the center of balance on all the Waco's. Bill, do you want to weigh in on this one? Your research has helped many who have the famous Waco kits Pica produced (YMF5, 6th and 5th scale) in finding an improved center of balance because the center of gravity is the center of the earth. I say center of balance because we are not concerned about earth's gravity, but rather the balance of the airplane. Most Waco's appear to fly tail down because the center of balance is incorrect. The planes, that almost everyone has built, are tail heavy. Your explanation of this problem to me makes sense. So, why don't you explain it?

Bill:

Well, Dick, we kept on noticing that virtually every model of the Waco YMF/UMF in every scale size was a beast to land, and required so much down trim that rolling to inverted resulted in an immediate outside loop. The



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landings tended to create a ballooning effect that, more often than not, ended up with a damaged model. On making your final approach, the models wanted to drop a wing, and sometimes snap rolled, destroying the model. I started checking all the plans that I had (which were several) and the assembly manuals that I was able to get my hands on. The distances from the leading edge of the top wing that were given for the center of balance didn't look all that far off. Once you computed the mean aerodynamic chord of the two wings, and did the math, the problem virtually solved itself. Almost every kit and plan that has been offered since the first Dave Platt kit, later to become Pica called for the center of balance to be at what worked out to be 40% of the mean aerodynamic chord. No wonder the models were a beast to fly and land.

I had fallen heir to a set of the original factory Waco drawings, and after doing the gozentas; it worked out that the center of balance should have been set between 26% and 28.5% of the mean aerodynamic chord.

I contacted Mitch Epstein who has a beautiful version of the Waco in 33% scale. Mitch nearly totaled the model earlier this year at Top Gun, due to a dead stick landing and the subsequent bounce and ballooning of the model. He had the model rebuilt and ready for flight. I told him what I had discovered. He made the corrections, selecting 28% for his starting point and subsequently made a test flight. He reported back immediately that the model had become a pussycat to fly and land. Sadly, his fix required adding a couple of pounds of lead to the firewall, but he says that the additional weight caused no adverse issues at all.

We immediately made this information available to the Brotherhood, and hopefully everyone will take this information to heart, which should save a lot of models.

Dick Petitt reported on his test of the sixth scale Cox ARF that he had to dial in a lot of down elevator on his flights of the model as well.

The best method of setting the center of balance is to jack up the tail of the model until the datum line is level to the workbench. Then using a piece of string, tie a common nut to one end, and drape the string over the leading edge of the top wing, and then along the chord of the top wing, and over the trailing edge of the bottom wing. Tie another common nut to the string below the trailing edge of the bottom wing, and allow the two nuts to drop straight down. Measure the distance between the two nuts, and you have the measurement of the mean aerodynamic chord. Do the math to find the percentage that corresponds to the corrected center of balance. On the YMF, this works out to be just about at the center of the front cockpit. It is really that easy to correct the problem.

Dick:

Not a lot of activity in the emails this month, at least to the column; but lots of activity in the Waco Brotherhood. Say congratulations to your protégée on completion of his first scale plane. He picked a difficult subject, even for a long time builder and according to the pictures you sent me, did an outstanding job. I'm no Waco expert but that was a beautiful Waco the gentleman built. I'm sure his success was in no small part to your help. Thanks, Bill for furthering the scale cause in our hobby. We need more guys like you bringing along the new people and keeping the new guys interested. I did some initial drawings for a rudimentary sliding canopy; but they require some rework, which I will get to as soon as I can. Even though RA Watz & Son construction is no longer in business, my youngest son, Aaron, has picked up the ball; and I find myself working for him. Time has suddenly become at a premium. I'm 68 years old and thought I was retired. I think

you've been an influence on me, Bill in going back to work selling Toyotas. Aaron's first job is a complete kitchen make-over in Dublin, Ohio. I'll explain that some other time. As I may have mentioned, Eric asked me to do a plan for a Sopwith Camel. He has a friend with a Fokker DR1 Triplane and wanted to give him a run for his money this spring. Since no one kits a Camel in the size we wanted, I drew him a plan. It's complete now and ready to be proofed. I'll send pictures as soon as we get some completed. Work on my second YMF5 is started, along with finish work and covering on my practice plane. How's is your YMF5 coming?

Bill:

Well, we are finally in our new home, but the workshop is on hold pending the contractor being able to complete the work necessary to enable me to have a viable shop. The shop is in the dry, but I still have no interior walls, ceiling, electrical service, heat or air conditioning. Yeah, we need heat in Florida, too.

Dick:

Sorry I don't have any pictures this month, as I'm sure you know by now there's not much outside activity in Michigan this time of year. Boy, I know I'm going to be sorry for saying that. It seems one of the constantly recurring emails are questions about fiberglass, cloth and resin. I've written about this procedure for over five years, spoken to club meetings about it often and still it's the most asked information. In the next couple of months, I'll try and get the drawings for the canopy upgraded and then I'll do a complete column on fiber-glassing a Ziroli Corsair.

If you fellows need information and don't want to wait for an email, give me a call at 989-781-2692. I know a lot of you don't like emails, so I would be glad to talk with you on the phone and we can exchange information in real time. There is always snail mail. If you want to talk

about your latest about project, I would be glad to talk with you. If you want to talk with me about your latest ARF, get back with me after the thirty third of never. Oh no, Bill. Did I say that out loud? ☺h, well! *(Editor's Note: Careful there, Let' try not to kill off those folks that are just getting started now. I would rather have someone flying a sport scale ARF, than not flying at all!)* One subject, I'm afraid I can't help you with is electric. I'm sure I don't have the answers to everything, but electric is far outside my line of expertise. Like Bill says, "If I could get a long enough extension cord, I might give it a try." I'm not holding my breath. Want to comment on this one, Bill?

I've had a busy month and haven't gotten into the shop nearly enough, so I'm going to turn you over to Bill. Keep the greasy side down; and remember if it doesn't make a lot of noise, how do you know where in the hell it is? It's mighty cold here in Geezer Gulch north, so I think I'll put another log on the fire, and maybe start another column. I just flat ran out of time this month. Sorry about that, but I'm leaving you in good hands. I'll talk to you soon Bill. Your friend; the plane man.

Bill:

I understand that y'all don't do much except shovel snow in Michigan in the winter, but you could pack up and move down here. We still do allow carpetbagger Yankees to move to Florida you know, especially when they build and fly scale model airplanes.

I have received several emails asking about attaching Koverall to the frame of the airplane. I thought that everyone knew that when attaching fabric to wood that you used black magic to attach the two. *Just kidding.* There are several methods to adhere the cloth to the wood framework. Some people use Sig Stix-it and iron the cloth to the perimeter. I still do it the old

tried and true way. Once the framework of the model is sanded smooth and has been cleaned to perfection, and then cleaned a couple of more times, I'll use un-thinned Nitrate dope and give the framework three full coats, allowing the dope to dry for at least an hour between coats. Nitrate dope will wet the previous coats all the way to the wood. Then I sand the doped frame with 600 grit wet or dry sandpaper, and then clean it and vacuum it to remove all the dust. Then I make paper patterns for the pieces of cloth that I will need, leaving an inch or so of extra fabric so I will have enough to grip with my fingers in order to be able to pull the fabric around the various parts of the structure.

Then I pour some lacquer thinner, the cheap stuff that you can buy at Lowe's, Home Depot or Wally World, into an open container. Be very careful when using this stuff, since it is very aromatic, and is very flammable. Don't have an open flame around, and make sure to use adequate ventilation. Otherwise you can get high enough to go duck hunting with a garden rake. Have a good supply of new single edge razor blades on hand, since an X-acto #11 blade will become dull very quickly. I take the first piece of the Koverall, and place it on the structure, making sure that it is aligned correctly. I dip the tip of my index finger into the thinner, and quickly begin to rub the thinner through the fabric (Do a small spot at a time.), until the thinner had dried. This will activate the dope and cause the fabric to adhere to the doped framework. Work around the perimeter of the frame, until you have the entire panel stuck down. Then using one of the new single edge razor blades, trim off all the excess material, and then using a camel hair brush, paint the edges of the Koverall with the thinner, again using your index fingertip to rub down the edge of the material. Once you have the entire framework covered, dope the seams with pure Nitrate dope, again using your index fingertip to seal the edges.

Once that is completed, you can shrink the Koverall using an iron or carefully using a heat gun. Be extremely careful if you are using a heat gun, since the Koverall is very strong, and is able to crush a framed up model. That stuff will shrink 12% in both directions. We'll do the finishing steps another time.

I received another email asking about what type of weight I use when balancing a model. I don't use dead weight if it's possible to make use of, what I call useful weight. Useful weight is a heavier engine, or a larger flight battery. I hate to haul a chunk of lead around in one of my models. Golden age models especially lend themselves to using a heavier engine, since the nose moment is normally so short and the tail moment is so long. Think of balancing a model as having a fat kid on one end of a teeter totter and a skinny kid on the other end. You can make the thing balance by moving the heavy kid toward the fulcrum and leaving the lighter kid where he is. I have found that when building the Pica Waco, the perfect engine for balancing the model is a gasoline engine in the 20-26cc size. If you want to use something like the OS 160 twin, then consider using a flight battery that utilizes sub C cells. You gain both ways that way. You have a flight battery that will fly pretty much all day, and you have a balanced model with no big old melted chunk of wheel weights bolted to the firewall.

I was involved in another conversation the other day about what is "Scale". Some people believe that if the model looks something like the full size airplane that it's scale. That does not fly with me. As far as I'm concerned, the model needs to replicate the full scale plane as closely as possible, including the same wing form and airfoil as the full scale. I know that this takes most, if not all the available models today out of the picture, but it's either correct or it is not. When building, get a lot of detail photos of the full scale. For instance, take a look at the tail

group. Does the full scale airplane use steel tubing for the elevator and horizontal stabilizer? Why would you want to sand the wood to a knife edge? I inlay aluminum tubing of the appropriate size to replicate the leading and trailing edges of the surfaces. It adds virtually no weight, and the difference in the appearance of the surface has to be seen to be believed. Just minor things like that make all the difference in the world between a semi-scale model and a model that people just can't quit looking at.

Dick, that just about does it for me for another month. Y'all keep on shoveling all that snow (giggle). It's the middle of December here in the Sunshine State, and I just finished mowing the lawn again. I guess it's fair. You burn up a snow blower, and I go through lawn mowers with great regularity. I'd rather be mowing in shorts

and a tee shirt than be blowing snow while dressed up like the Michelin Man. Hope if you fall down while dressed like that, someone will come along and help you up, or you will end up like the kid in the Movie, "Christmas Story."

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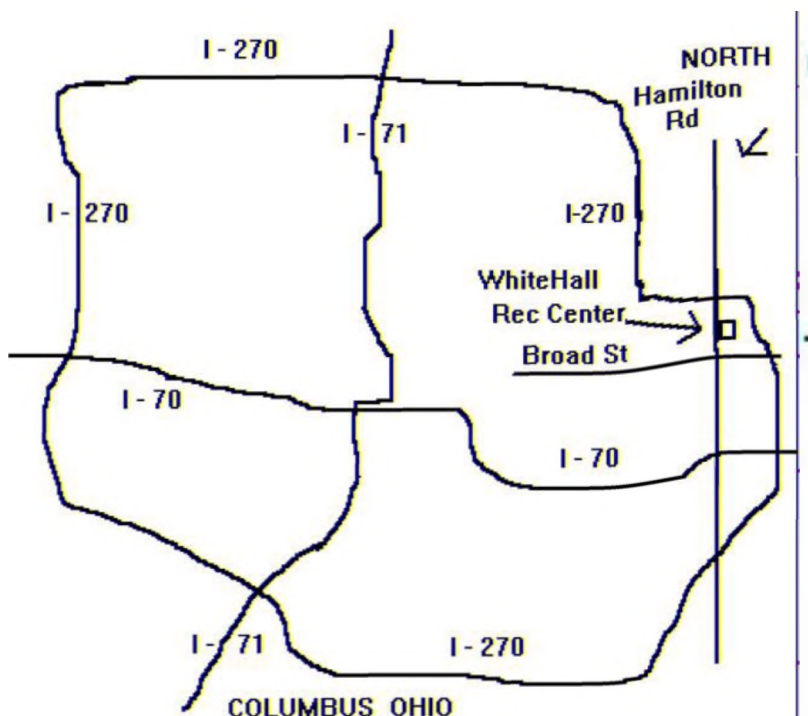
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Sparky's Revolt

By Tony Coberly

Well, the New Year has arrived and it's time to make and maintain our resolutions. Personally, I am resolving to be more informative and concise with my articles and maintain a cleaner and more organized shop! (More like the "Piece de Résistance" that Gordon works in!)

This month I am going to talk about a research trip for my next LARGE electric project. My research led me to the Museum of Aviation in Warner Robins, Ga. The Museum of Aviation is a United States Air Force Museum that covers many acres and has aircraft from WWI, WWII, the Korean War, Vietnam and present day bombers and fighters.



Photo 1: <http://www.museumofaviation.org/index.php>

The Museum of Aviation at Robins Air Force Base is a scale guy's dream for photo documentation. When you enter the door of the main hanger, the Eagle Building, on your right you have a very nice gift shop where you can get one of many documentation books on Air Force aircraft both new and old. A quick glance upward

and we find a yellow cub hanging from the ceiling.

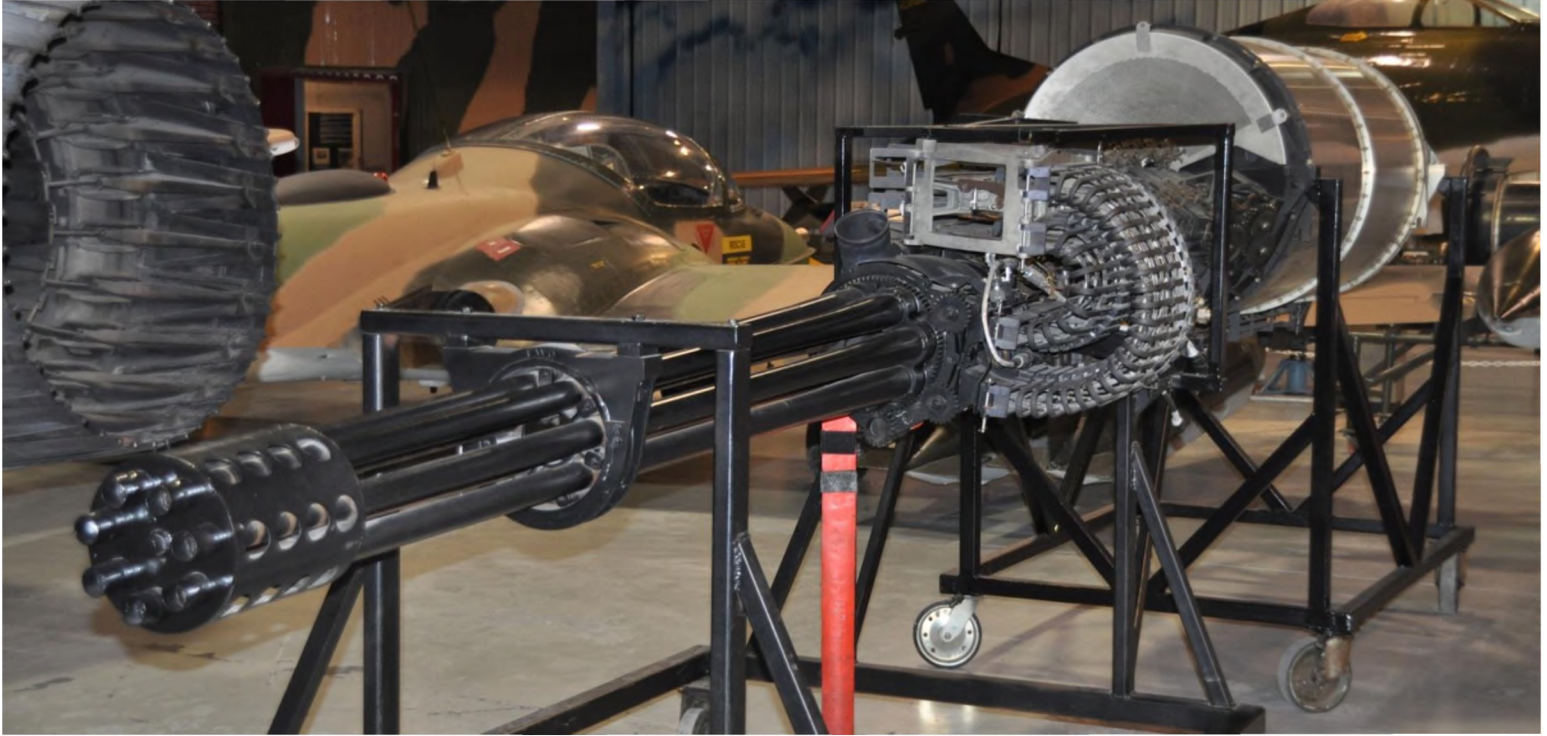


A left hand turn brings us into a beautiful WWII P-40 Warhawk sitting with a crewman working in the rear of the plane. This is probably my favorite WWII aircraft, but this is NOT the plane I am here to see.



Next we find a T-28 and a rare F-84E, a P-51 with the well known "Ferocious Franky" nose art!

I move into the next building on the right, called simply: “Hanger One”. Hanger one is “protected” by an A-10 Warthog that is outside. It is on loan from another museum up north. Hanger one primarily contains several cut-a-ways of various engines and turbines. Now you can see all the internal workings of these great machines that powered our military aircraft in the past 50 years. One very interesting item that you simply have to see for yourself is the GUA-8 “Avenger” 30mm gun. Now, I got a look at this gun outside in the A-10; but now we can see how big this gun really is!



Now this is what you call FIREPOWER!!

Now, I can go through every plane they had and show you literary hundreds of pictures, taken with my new Nikon D-90, but let's move forward a little to the reason I was there.

I am looking for something a little bigger that I have talked about. I found myself moving to the last building in the left rear of the facility. The plane I am looking for is going to be my most ambitious project yet. I am looking at the largest airplane kit I have ever built, with the most power full electric power system I have ever used. The plane I am looking for is on display on the floor and located in the rear of the Century of Flight building. Oddly enough, the aircraft it was

designed to replace is hanging from the ceiling above my next project. I am looking for the fastest plane ever built.

Mr. Kelly Johnson and his team at the “Skunk Works” designed this aircraft in the mid-sixties and first flew it on December 22, 1964. This plane was introduced in 1966 and flew until it was retired in 1998. This aircraft was never shot down by enemy fire due to its Mach 3+ speed. This plane broke its own world record on its last flight in 1998! Okay, I am sure you all have figured it out by now; it's the

Lockheed SR-71!



This is a sleek bird, with graceful lines and will be a showstopper, at least I hope so!

I am going to use a kit from Buzz at Sunset Models in Grayland, WA. (<http://www.sunset-models.com>) Buzz offers two kit options for his SR-71. He offers a short kit of plywood former and fiberglass parts. This kit is 107 inches long and has a 55.5 inch span. The kit is designed for up to a twin .91 ducted fan power system, or even a twin turbine option. I am going to use a twin EDF option, of course, once I decide what kit I want to use. Oh, I forgot to tell you my other option on a kit from Buzz. He also offers a complete fiberglass fuselage version of the SR-71! I will be talking with Buzz over the next several weeks, and I hope to make my decision by the end of January. I will keep everyone

apprised and cover this build for the next many, many months; so come back and see what I end up with.

Well I thank everyone for their support throughout this 2009 and I hope everyone will continue to support and recommend

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Tony Coberly

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