



SoAR571.com

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Where is my Printed Copy of the Newsletter?

This is the first official issue to be delivered via PDF format only. The last issue was intended to be a hardcopy, but after a problem getting it printed, a decision was made to make it available on the website by this same method. Not even considering the cost, there is much that goes into getting a issue created, printed and distributed that can be eliminated by having it available via internet only. Understanding what it took to produce a printed version will help you understand the decision that was made at the last meeting.

- Articles are submitted to, or written by, the newsletter editor
- The newsletter is laid out in a software program (like Microsoft Publisher)
- Editing for grammar and spelling is completed
- The newsletter is saved and printed to a color printer
- The issue is transmitted (FTP), or saved to a storage medium such as a Zip disk or CD)
- The printer makes any necessary adjustments and prints multiple black and white copies
- Issues are sorted and folded, usually by hand

to save money

- The copies are carried to a launch, or to another member .
- Copies are distributed to whomever attends the launch
- Remaining copies are delivered to the club secretary
- Mailing labels are created using a spreadsheet and label software
- Labels and stamps are placed on each issue
- The newsletters are carried to a Post Office



This is the first planned issue to be distributed by PDF file only

Creating the PDF file, that you are reading now, eliminates many of the steps. The file is simply transmitted (FTP) to the SoAR Webmaster for posting. You can read the contents online or print out a copy to read at your leisure. Thanks for your understanding in this matter. Remember, you to can be a contributor to the newsletter. Just go to the website, newsletter section, to submit articles and ideas.

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Special points of interest:

- Steve Bellio discusses a way to Upscale without being a math major (see page 3)
- Ron Stancil uses regular Estes Solar Igniters in the tiny Micro-Max motors. See how (Page 4)

Officers Elected for 2002



The annual election meeting was held in January. President Steve Bellio VP—Dan Hamilton and Treasurer Martie Hamilton chose not to run for another term. Dale Windsor was elected as President while Ron Stancil was

nominated and elected as Treasurer. Steve Bellio was -elected Vice President and Dave Amend was re-elected for another term as Secretary. Roy Green volunteered to continue as Communications officer and Doyle Tatum volunteered for Newsletter Editor.

The Flight of the Sweet V

Article by Ron Stancil

At the January launch, I had the opportunity to fly my newly built Sweet-Vee. This is a very nice Estes Rocket Glider. Unfortunately, it is currently out of production. But two other Rocket Gliders, the StratoBlaster, and the Astroblaster, are being re-issued as the Centurian, and Impulse Boost Gliders. Maybe the Sweet Vee will be reissued too. The surprising thing about this kit was the wing span. It's huge, about 5 feet. It's built for thermal soaring, so it's not very maneuverable. I built the launcher with the help of David Shontel, at his garage. See **Figure 1** The plans for the pad come in the kit. I made a modification that allows the pad to have adjustable elevation. The Radio is a three channel Hitec AM system the Focus 3, with two mini Servos (Hitec HS-81). This system has the advantage of electronic mixing. Mixing is required for the V-tail. The kit comes with a mechanical mixer, but I'd heard it could be unreliable, so the electronic mixing is a big advantage. The Radio Bay is designed to have the mechanical mixer, so I had to improvise servo rails (See **Figure 2**).

The wings are foam core, with a thin wood called Obeche as the outer skin. These skins are epoxied to the cores using thin finish epoxy, and set into "beds" and weighed down with books. This was only the second time I'd done this, so I think it turned out well.

I also substituted Goldberg control cables for the steel push-rods. I got some info from George Gassaway (the REAL glider king) that said the steel rods would corrode badly from the engine exhaust. The Goldberg cables are brass, so I hope they'll hold up better.

My first flight was a real sphincter tightening experience. Steve Bellio and I flew it at a field near Cumming. I choose the E11 for the first flight. The reload has the advantage of a longer, low thrust burn, and I omitted the ejection charge for obvious reasons. Steve handled the launch controller. As the motor lit and came up to pressure, the Vee came out of the launcher. It seemed that it was about prang, but I was able to gain control and

add a little "UP". The bird is fully controllable under boost. I climbed out, to about 200 ft. The bird glides well, but flying down wind is very squirrely.

The first launch in Bostwick was a repeat of my first flight. The second flight, I used an F12, and got a significantly higher boost, and longer flight time. This will be my preferred motor.

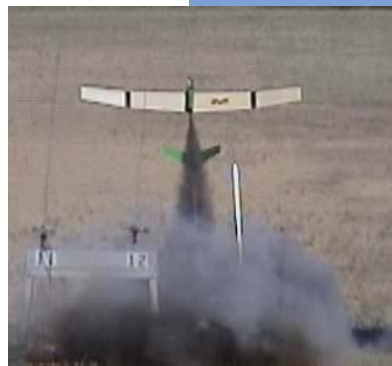
If you are interested in R/C Boost Glide, this is a great kit. I do strongly suggest a fair amount of Powered R/C experience. This will teach you not to over control the model, and, most importantly, not to panic if the plane gets in trouble. I nearly put it in the ground at Bostwick, but I recovered, because of this experience. I have the entire OOP fleet (StratoBlaster, Astroblaster) along with Aero-tech's Phoenix. This OOP is supposed to be fully aerobatic, and uses a unique 32MM reload casing, which is in the kit. This casing has a G12 as a reload. The G12 has a burn time of nearly 8 seconds. I'm really looking forward to completing my R/C RG fleet. I've really enjoyed the learning of new techniques for building and flying R/C Rocket Gliders. If you have any R/C aircraft experience, flying gliders is not difficult.



Figure 1



Figure 2



Upscaling Made Easy!

By Steve Bellio



If you're like me, you've thought a lot about taking some great, old Estes kit and upscaling it. And like me, that's all you've done because you didn't know where to start. Well, recently, I decided that the lack of knowledge on my part should not slow me down, so I proceeded in what I thought was the simplest manner possible. I have long admired an upscale Pegasus that an ex-SoAR member used to fly and always wanted to build one. One Sunday, when I was pawing through my kits in search of something different to build, I came across a Lawn-Dart Pegasus 1.2 kit that I had picked up at a Frog Pond launch early last summer. This is when the insanity set in. I decided to build the LawnDart kit, carefully observe how the rocket went together and then upscale it. My first course of action was to decide how big my upscale rocket would be. This required extensive scientific planning and research. Well, actually I looked in my stock of body tubes and found one that would work. Pretty scientific, huh? The LawnDart rocket was .976 inches in diameter. The body tube I picked out was a 54mm motor mount tube and was 2.14 inches in diameter. So, after grueling calculations and countless seconds of debate, I had my answer. I was going to do a 2.2 upscale of LawnDart's 1.2 upscale (Editors Note- $2.14/.976=2.2$).

Now, this is where mathematics were actually involved. I had to multiply numbers. Holy cow, was I in over my head? Nah! This stuff is easy. I took the length of the LawnDart rocket body tube and multiplied that number by 2.2. Viola, I had the length of my rocket. Next, I took my fins, which thankfully, were not yet glued to the LawnDart Pegasus body tube, and made fin templates. I then measured all of the fins and multiplied those measurements times 2.2 which provided me the fin dimensions for my upscale. I made a quick trip to Kinko's and enlarged my fin templates to the proper size. Man, this isn't so hard after all! I took my fin templates home and glued the paper to card stock to give my cut-out fin templates some rigidity. I then cut out the fin patterns and traced the patterns to some thin plywood. You can use any type of wood for the fins, but I wanted something strong, since the fins tend to break if they're made

from balsa wood. I then cut out the fins - actually, I went over to Doyle's house and watched him cut out the fins - much easier for me! We sanded them so they were even, then went out for pizza.

OK, lets review what I've done so far...

1. I decided on the rocket to upscale.
2. Determined how large the upscale rocket would be.
3. Did some simple math to determine the dimensions of the upscale.
4. Copied the fin templates using the enlarge feature of the copier to get the templates to the right size.
5. Cut out the fins.
6. Oh yes, I had to cut a few inches off of the body tube because it was too long. I'm not very scientific, but I do have my standards!

So now I have the key components of a rocket kit. I did need to order some centering rings, an ejection charge gas baffle and a bulkhead from Ross at Magnum Rockets. I already had a nose cone and Kaplow Clips for motor retention. The next step, was to figure out how to protect the huge fins from being broken every time the rocket landed. I decided on rear ejection, which for me, was another area where I lacked experience and expertise. That subject will be a topic for another story. A story where I tell you about the technique that I used

and that worked well for two flights, but ultimately ended up in the near destruction of the rocket. I am rebuilding the rocket, using a vastly superior rear ejection system designed by Jonathon Somers. In that next story, I will explain the two systems and do a quick comparison. So stay tuned...

Anyway, the rest of the project was exactly what you would expect. A lot of sanding, dry fitting and more sanding. Once the parts all fit, I used 30 minute epoxy for greater strength.

Of course, no amount of 30 minute epoxy will help your rocket survive a lawn dart, but that is part of the next story. So building an upscale rocket in this manner just isn't very difficult. A ruler, some common sense and a copying machine will do the job. Now get to work on the upscale. And have fun!



“I decided that the lack of knowledge on my part should not slow me down”



“A ruler, some common sense and a copying machine will do the job.”

Lighting Micro-Maxx Motors with Estes Igniters

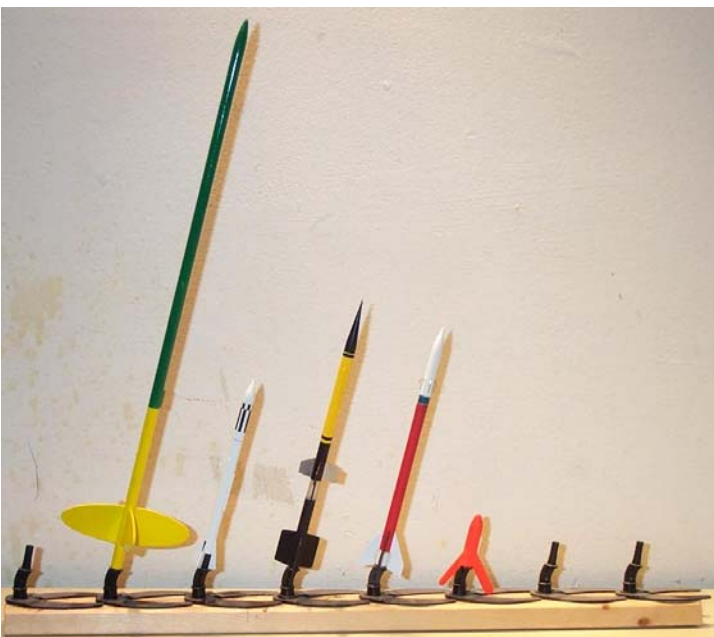
By Ron Stancil

Quest's line of Micro-Maxx™ rockets are a great concept. Rockets small enough to fly anywhere. The drawback is the line of available rockets, made of plastic, are too heavy, and in some cases, unstable. Aerospace Specialty Products has a line of Micro-Maxx™ kits that are very cool. Check these out: <http://www.asp-rocketry.com/micromaxximage2.html>. These kits are designed with standoffs on the launch lug to fit the pad perfectly, lining up with a Micro-Maxx™ igniter.

The main problem with lighting Micro-Maxx™ motors is the special igniter. You can only use it in the launcher, and if you have a few misfires, you run out of igniters. The solution is to modify the launcher to accept standard Estes igniters. See **Figure 1**. You can use Estes igniters that have too little pyrogen for normal motors. Estes can be stingy with the good stuff. Start by carefully chipping off the pyrogen on the outside of the small nichrome loop. This small loop is what gets white hot when the launch button is pressed. You can leave the pyrogen inside the loop, as this will assist in lighting the motor. Your goal is to make the small loop fit up inside the tiny Micro-Maxx™ motor nozzle. After you've scraped off the pyrogen, inspect the loop. You'll see which side the ni-chrome is welded to the lead wires. Gently bend the loop toward

this side 90 degrees to the leads. Your goal is to have a loop to fit as far as possible into the nozzle. See **Figure 2**. Once you have a modified igniter, you have to modify the launcher. Make an igniter pair by twisting two wires and soldering two micro-clips. The flat-jawed micro-clips are available at Radio Shack. Now, take the pad, and remove the bottom and the launch controller, as if you were getting ready to launch. Remove the inner plate by removing the four screws. Drill an appropriate size hole in the top of the pad (the side where you insert the Micro-Maxx™ igniter). Pass the free end of the clip wires thru from the top (See **Figure 3**). Strip the ends and solder them to the two contacts on top of the inner plate (See **Figure 4**). These contacts are what the Micro-Maxx™ igniters contact when inserted from the top. Re-assemble the pad. Now, you have a pad that can launch using the Micro-Maxx™ igniters, and the modified Estes igniters, expanding the possibilities of this neat system. I

have a nice fleet of Micro-Maxx™ style rockets. From Left Long John (my design), Corporal, Wac Corporal, Sandhawk, all from Aerospace Specialty Products, and a Micro Mosquito, also my design. I have flown the Long John, and the Wac Corporal from the modified pad. I got the idea from a photo in the January/February issue of Sport Rocketry. With this setup, you can get your rocket fix in the smallest of fields, like your backyard. Happy flying!



Ron Stancil is the club Treasurer. He has certified level 2 and is a two time winner of the clubs Gliding Brick Award.



Figure 1



Figure 2



Figure 3



Figure 4



The SoAR Spot is published bi-monthly and can be downloaded in PDF format for reading online or printing. Go to—<http://www.soar571.com>

For up to date club and hobby related material, such as the time and location of the next launch or meeting, keep checking the Website.

<http://www.soar571.com>



Right from the WebSite!

Flying Fields

Don't forget, we are always on the lookout for new fields in and around the Atlanta area. Smaller fields for model rockets or large fields for high power, it doesn't matter. If you know of a field, contact Steve Bellio (sjbellio@hotmail.com) first!

Membership Renewal

It is time to renew your membership in SoAR. You can renew your membership for 2002 at any time now. See an officer at the January or February launches. Renewal is still only \$20.00. A bargain at twice the price!

Changes in SoAR Email Lists

We have opened the SoARBUSINESS email list to all SoAR members. The new purpose of this list is to discuss all things rocketry, list rocket stuff you have for trade/sale/want/need, find rides to launches and events and just have a good time. SoAR members are also subscribed to the new SoARANNOUNCEMENTS email list. This list is where you'll get official announcements about SoAR from the Board of Directors. If you are a current SoAR member with email access and have not been getting occasional messages from either of these lists, contact Dave Amend or Ron Stancil to make sure we have your correct and current email address.

2002 LawnDart Workshops

Dale Windsor has decided to put together some class/workshops for 2002. These will be hands-on classes. All materials and instructions will be provided for a reasonable fee. Some classes will span two days. Classes will be at LawnDart HQ. And class size will be limited. All classes will require pre-payment for materials. Proposed classes are:

- Getting started in Mid-power (build a LOC/Precision kit with modifications, discuss reloads, recovery sys-

tems and finishing techniques)

- Getting started in High Power (leads to L1 cert., build L1 kit, RMS, etc.)

- High Power L2 (leads to L2 cert., build a L2 kit, fiberglass, electronics, etc.) 2 day class
- Fiberglassing techniques (fiberglass a body tube, learn about fillers, cloth, finishing)
- Resin casting (making molds, casting nose cones and small parts, discuss various casting resins and colorings, bring your own parts to cast if you want)

There will be a schedule and sign-up form on LawnDart's website.

