

Jackson Model Rocketry Club

JMRC NEWS

Volume 2, Issue 1

March 2008

INSIDE THIS ISSUE:

<i>March Launch Update</i>	1
<i>A Guest Responds</i>	2
<i>SLI Team Launch</i>	3
<i>TARC Team Launch</i>	3
<i>Rocket Powered Boost Gliders</i>	4
<i>Polecat Thumper</i>	5

2008 Launch Dates

- April 12 (Gumbert's)
- May 10 (MIS)
- June 21 (MIS)
- July 26 (MIS)
- August 25 (MIS)
- September 6th (MIS)
- October 11 (TBD)
- November 8 (Gumbert's)
- December 6 (Gumbert's)
- December 7 (Christmas party—Annual meeting)

NOTE: Launch dates are subject to change without notice. Call the "Launch hotline" at 517.262.0510 for the latest weather & field information.

MARCH LAUNCH UPDATE

Our most recent JMRC launch was held at Gumbert's field on Sunday, 3/9/08. The day started out cold and breezy, but the sun made it out by late morning, and things warmed up later in the day.

Ground conditions were very unforgiving, as the ground was frozen with very little snow cover to soften things. As the day progressed, the sun did create some soft spots (particularly in front of the trailer door!).

Education was the theme of the day in that we had two school-aged rocket teams at the launch. Boy scout troop 264 from Rockford was there to test launch their rocket that is competing in the Team America Rocket Challenge (TARC). The team launched their rocket 4 times on G77 power.

Millington High School had the members of its Student Launch Initiative (SLI) team present to launch their rocket. Their K600 powered rocket had a great boost to over a mile high! Both teams had good, productive days. See their separate articles for more information.

Most club members know Carl Wagner as the creator of those excellent "recycled" rockets, made from Sunny-D jugs, or drink bottles. See the cover of the March *Sport Rocketry* for an



picture of Carl with one of his creations.

Carl went after his L1 certification Sunday, but after a textbook flight on a CTI H153, and what seemed a very soft landing, his rocket came back with too much body damage to certify. While Art Upton's theory of a rouge deer stomping Carl's rocket as it lay on the ground isn't backed up by his video footage, it can't rule out gopher attack! It was a surprising result of what appeared to be an excellent flight, and Carl has plans to repair and try again!

The other notable "less-than-perfect" flight this day came from Bob Dickinson. Bob flew his Polecat 4" V2 rocket on a G77 motor that failed

BE SURE TO SIGN-IN

Beginning with our March launch, there are metal clipboards for all members and guests to sign-in when they arrive at our launch. The club needs to keep an accurate record of who is at our launches, in the event our NAR or Tripoli insurance is ever needed.

The member clipboard has all our members listed, as well as launch fees and membership information. Please be sure to sign in EVEN IF YOU ARE NOT FLYING THAT DAY!

You can also pre-pay your launch fees, and the amount remaining on your account will be displayed on the list.

The non-member clipboard gathers information from guests, and gives us a chance to follow-up and invite them to join the club.

Let's all try to remind each other over the coming months to sign-in. That way, everyone is sure to keep their flight fees and dues current, and the Club has the revenue it needs to continue and grow!

Also, remember that if you see someone looking around, welcome them to the launch, and ask if you can help them get the lay of the land.

MARCH LAUNCH (CONT.)

to separate the nosecone in flight. This was the same rocket Bob qualified for his L1 with last summer, and it's a credit to Bob's building skills that the rocket, that came in ballistic onto blacktop, was less than a total bucket recovery. Bob intends to repair and fly her again.

Guest Flyer Jim Watts put up his 22Lb Talon 4 rocket on a Aerotech J800. The dual-deploy system worked perfectly, and the rocket came back in great shape.

"Flashpan" Dan Griswold brought out his rocket "Cluster Buster" for two launches on 5-D and 4-C motors. For those who may not have seen Dan's method of launching this bird (a "Healthy" amount of BP ignited below the motors), it is a launch



to watch! Dan may not always get 100% ignition with this system, but it's always a sight to see!

Other notable flyers on Sunday were Guest Chuck Coltier, who with 6 launches on 5 rockets was the most productive flyer

of the day, and member Sam Kelly's flight of a modified Estes Fatboy flying a central F39 with 3 C6 motors in a cluster. With dual-deployment ability, the only thing missing from Sam's Fatboy is onboard video!

In all, it was a great day's flying, and thanks go to everyone who helped with setup, teardown, and keeping everything moving during the day.

Special thanks go to Bob Dickinson for providing Chili and Hotdogs for lunch on a cold day, our on-site vendors; Scott Miller, Jay Calvert, and Art Upton, and, as always, our tireless VP, Roger Sadowsky, for hauling the trailer to the site, and serving as LCO for most of the day.

A GUEST RESPONDS...

July 22, 2007 - It was a beautiful sunny day for a rocket launch and we were anxious with anticipation. We had never been to a launch before and didn't know what to expect. Scott and Jo-Anne (Miller) had invited me, my wife Donna and our two grandkids Kathy and Nicole, to the launch.



When we got there, they unloaded the Scout rockets that we had spent two nights decorating and making our own. As we arrived, we were introduced to so many warm and wonderful people, we could see

right away that they were all fascinated and still had an infatuation with rockets even though it was old hat to them. Once the rocket pads were set up, Jo-Anne said we could take our rockets over and set them up to be launched. Now, like I said, we had spent two nights putting together decorating and were a little dubious about launching them, as we didn't want to scratch these new and glorious works of art. But, after a little persuasion we put them on the launch pads and waited.

Now, when Jo-Anne told us that we were going to launch rockets, she never told us that just before they're launched they announce your name and the name of your rocket. So, what happened now, you bet, we were cheering for our rockets to go the farthest and the fastest. Unfortunately mine lost, but WOW what a great time we had watching them go. I especially liked my little crapper (the Porta Pot Shot), watching the little competitions that went on, and the bigger rockets HOLY MOLY!!

We would like to thank everyone involved with the Jackson Model Rocketry Club for their words of encouragement and for not



laughing too hard at the newbies from Canada. We had a marvelous time and hope to go to another launch, when we come to visit again.

Gerry Bergman (a.k.a. Fossil)



STUDENT LAUNCH INITIATIVE LAUNCH

I am a member of the Millington High School Student Launch Initiative Team. Student Launch Initiative (SLI) is a program sponsored by NASA where students from U.S. schools are given advice and support on how to construct and launch high powered rockets for the purposes of education.

Our team's goal for SLI was to reach a mile in the sky and collect an air sample to test the mercury levels in the atmosphere. Our rocket ended up reaching 5,379 feet and successfully collecting the required air sample, so we had a very successful launch with no significant damage to our rocket due to a successful parachute deployment.



We are the only team from Michigan to be accepted this year. Our team leaders are Robert Hasselbeck and Christine Pashby our adviser is Mr. Ratza (a Millington High School science teacher). Other team members are the safety officers Alex Kaiser and Tim Hasselbeck as well as Jill Schubring, Raymond Myers, and Jeremy Mayville.



Millington High School SLI team. From left, Robert Hasselbeck, Jill Schubring, Alex Kaiser, Jeremy Mayville, Tim Hasselbeck, and Christine Pashby. Unable to make the launch was Raymond Myers.



We thank you for the support and invaluable advice on how to prep our rocket and the correct launch procedures. We would like to thank everyone who assisted our team at Gumbert Field for a fantastic flight and an enjoyable day.

Written by Tim Hasselbeck

TEAM AMERICA ROCKET CHALLENGE

On March 9, 2008, the Boy Scout Troop 264 Team America Rocket Challenge (TARC) team drove down to Jackson to launch their rocket.

Our rocket had an extraordinary CATO with the first launch. The engine had flown up through the airframe and



knocked off the nose cone. Fortunately, the eggs weren't broken, so we packed up the rocket and shot it off again. It got closer to our destination this time.

With the great lunch service that we bought from some very nice club members, we were half-way done with our launch.

After lunch, we launched a few more times that came about 50 feet away from our projection. We packed up and headed for home, thanking all the nice people that made it possible to launch our rocket.

Thank you Jackson Model Rocketry Club for letting us come fly at your launch.
Written by Nathan Andrus.



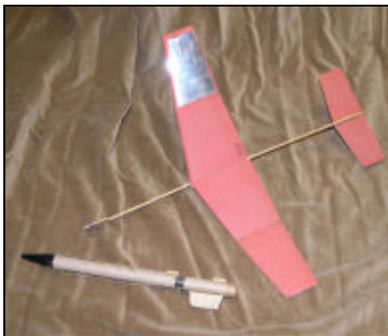
EDITOR'S NOTE:

The week after this launch, the team posted a successful launch that has placed them in the final competition in Washington DC this May, and is looking for funds to help pay for the trip. Anyone wishing to contribute to the Team's trip should contact Rob Dickinson

INTRODUCTION TO ROCKET POWERED BOOST GLIDERS

By: Evan "Buzz" Nau

By definition, a boost glider is a rocket that ascends upwards under power like a normal rocket, but returns in whole or part by glide recovery. Many of the first boost gliders were rear engine flying wing designs that ejected the motor to release the elevon control surface and or shift the center of gravity. The first commercial boost glider, the Estes Space Plane designed by John Schultz and Vern Estes was such a design. Centuri released two similar kits, the Aero-Bat and X-21 shortly afterwards. Semroc released their own versions of the Space Plane and X-21 with laser cut parts, but both are now out of production. You can still order the parts from Semroc and download the plans from Jimz or Ye Olde Rocket Plans websites. The plans for many other OOP (out of production) gliders are available at these two websites.



C BG is a front engine pop pod competition design for C impulse class

Rocket powered boost gliders can be as simple as a Styrofoam delta glider hanging off of a BT-60 size rocket to as complex as a slide / flop wing competition design. There have been many good and bad boost glider kits and plans available. Edmonds Aerospace makes many fine flying and easy to build gliders that perform well enough for NAR competition. Over the years Estes and Centuri produced many fun boost gliders and these came in several varieties. Parasite gliders where a small glider hitchhikes on a larger rocket like the Estes Orbital Transport and Centuri SST Shuttle. Front engine designs like



Orbital Transport is a piggy design from Estes.



Sky Dart is a rear engine pop pod design from Estes

the Estes Astron Falcon that ejected to motor case to shift the center of gravity and Centuri Swift and MPC Flat Cat that separated the power pod at ejection. Some designs eject an internal power pod that then activates, releases, or otherwise changes the rocket configuration into a glider. Examples of these are the Estes Sky Dart, Scissor Wing Transport, and the Centuri Space Shuttle which is two gliders in one rocket and has recently been released as new improved kit from Semroc.



Centuri Space Shuttle is a twin BG design from Centuri and recently released by Semroc

Boost gliders can be some of the most difficult rockets to fly properly, but by following a few simple guidelines you can avoid many of the problems and be rewarded with a great flying glider you will enjoy.

- Follow the plans. You may have a neat idea to change a design, but until you've built one and flown it successfully keep it stock.
- Build it straight. You can get away with a crooked fin on most rockets, but a wing, rudder, or stabilizer that is off in alignment could make the difference between a glider that trims easy to one that will never trim out and glide right. Patience and care in building will be rewarded.

- If the plans specify a glide center of gravity make sure your finished glider is in the range. This is the important starting point for a good glide. Failing to have the CG right may make it impossible to trim.
- Avoid odd-roc designs for your first boost glider. These can be extremely difficult to build and trim by experienced builders and downright frustrating to the novice.
- Build it light, build it strong. Do not use epoxy. Wood glue and Cyanocrylic are strong enough for nearly any design.

Trimming

Always... ALWAYS trim your glider by tossing it lightly INTO the wind. Avoid trimming when it is excessively windy or gusty. It's easier to nail Jello to a tree than to try and trim a glider in gusty winds. The glider should fly smoothly and land 10 feet or so away. Start by tossing it several times before making any changes. A bad glide from a hand toss may be a result of a bad toss and not the glider at all. A stall (nose pulls up and drops constantly) indicates you need nose weight or a little down elevator. A nose dive means you need some up elevator or you have an alignment problem. Try to resist the urge to add weight to the tail. If you can not adjust the elevator enough to stop the nose dive then there is probably another problem

with the glider. Check the CG again. If your glider turns slightly right or left then that is a good thing. A turn helps to keep the glider at or near the flying field. Without a turn your glider may follow the wind as far as it will take it. If your trim tosses are straight and you have a nice gentle glide then you can try adding a small amount of clay to one wing tip to create a turn. Once it is turning you will probably need to remove a small amount of nose weight. That's because in a turn the wings are not producing the same lift as they do in straight level flight. If you don't remove a small amount of nose weight the glider may go into an ever tightening diving turn that will result in a death spiral. Play with the wing tip / nose weight until you have a nice flat turn.

Highly Recommended Reading

Unsure of a design? Check if it falls within the parameters of Dr. Gregorek's Basic

Jackson Model Rocketry Club

JMRC News Editor:
Rob Dickinson
6237 Arroyo Vista
Rockford MI 49341

Phone: 616.874.8926
Fax: 616.874.8963
E-mail: rob@enrollpro.com



Blast off with Rocketry!

The Jackson Model Rocketry Club (JMRC) is a prefecture of the Tripoli Rocketry Association (Prefecture 96), and the National Association of Rocketry (Club 620). JMRC is a 501(c)3 tax-exempt organization, and donations to the club are federally tax-deductible.

Prefect—Scott Miller

Vice Prefect—Roger Sadowsky

Secretary—Rob Dickinson

Treasurer—Paul Tobias

JMRC holds launches monthly (weather permitting) year-round from two primary fields in the Jackson area. The club has launch equipment sufficient to launch any rocket from the smallest Estes model to large high power rockets, including hybrids. Waivers are 5,000 ft. AGL or 9,000 ft. AGL, depending on location. To find our next launch, or for more information on JMRC, see our website, www.jmrconline.org, or call Roger Sadowsky at 517.262.0510.

GLIDERS (CONT.)

Boost Glider in NARTS Technical Report TR-102, *Basic Design Rules for Boost and Rocket Gliders*. Another good reference is NARTS Technical Report TR-104 *Basic Glider Stability* and G.H. Stine's 7th Edition *Handbook of Model Rocketry*.

NARTS Technical Reports
<https://blastzone.com/nar/narts/store.asp?groupid=1080034938712>

Edmonds Aerospace
<http://members.aol.com/RobEdmonds/Edmonds.html>

JimZ Rocket Plans
<http://www.dars.org/jimz/rp00.htm>

POLECAT THUMPER JR.

I just got a Thumper Jr. from Jack G. over at *What's Up Hobbies* yesterday. I remember you asking what I thought of the Polecat Aerospace kits. I thought I'd let you know about this one.

The Nosecone is in a lot better shape on the outside that my 4" Nike Smoke was. I think there was only one little pock mark that I have to fill. The inside of the nose is MUCH more smooth than the Nike Smoke and the Skeeter that I have. Held up to the light, you can still see a few spots where the fiberglass could be thicker, but all in all, its better than any other one that I have had from Polecat

The body tube is the most different part that I noticed. The "fiberglassing" is not as nice. It's a different compound that they are using now. It's about half as thick and mine was done poorly. There will be a lot of filling/sanding to get mine close to

being well finished.

The fin slots are MUCH better if you ask me. There used to be the big gaps around the fins that you had to fill. Not anymore. The fins are a tight and solid fit. I was very pleased with the fit.

The fins and centering rings were in very good shape as they have always been. The only issue that I had was that they had left out the bulkhead for the nosecone. Fortunately I had a spare.

The hardware was all present. I did notice that Jack started putting the 1/2"x1 1/2" plate that goes with the U-bolts into the kits.

Hopefully this info is useful for you!

-Gabe Osborn