THE LEADING EDGE

The newsletter for the Northern Illinois Rocketry Association January / February 2007

2007 Officers elected

Officers (adults l to r)- Tom Pastrick- Safety Officer, Jim Basile- Vice-President, Bill Ipjian- President, and Rick Gaff- Secetary/Treasurer.

Get to know your officers

NIRA members voted for their new 2007 officers at the January meeting. President Bill Ipjian continues in his role as President since being elected in 2006. The remaining positions were filled by newcomers (see photo above).

We will occasionally provide biographies of some of your new officers. Bill Ipjian's biography appeared in the August 2006 issue of the Leading Edge.

Jim Basile

I am a mechanical engineer by profession. The company I work for designs nuclear and conventional power plants for the electric utilities. I am assigned to the systems design group which is responsible for the design of high energy (high pressure and high temperature) systems used in a power plant. Prior to working as a systems design engineer, I was a career Naval Officer. In the Navy I was an unrestricted line officer assigned to various warships. I made several major deployments overseas during the course of my career. It was a great opportunity that gave me a lot of responsibility and challenges. Life was never dull; but the days were always very long and there was never enough time for hobbies.

I became involved in this hobby through my son Jimmy who is always interested in doing things. A friend of mine at work belonged to NIRA and mentioned the public fly time that was

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President's corner

Bill Ipjian

Here we are in 2007- I hope you and your families had a great holiday season and are looking forward to the challenges of 2007. NIRA got off to a fast start on January 3 when John Hojek and I spent the $135 in rebate money that we earned in 2006. We purchased rocket kits that will be auctioned off for NIRA Bucks at NIRACON on February 17th. For more information on NIRACON visit our web page at WWW.NIRA-ROCKETRY.ORG.

At NIRA's first meeting of 2007, we elected three new officers who have volunteered to serve in 2007. Rick Gaff as Secretary/Treasurer, Tom Pastrick as Club Safety Officer, and Jim Basille as Vice President. I hope you will give them as much help and support as you have given me. We will be meeting soon to map out plans for 2007. Good luck to each of them.

Also, on January 5 we had three gentlemen leave their positions as NIRA officers. We all owe John Hojek, Marty Schrader, and Bob Kaplow a big THANK YOU for all the time and hard work they gave voluntarily to NIRA and NIRA'S members. Their efforts have increased the knowledge and fun of rocketry that we all enjoyed in 2006. THANK YOU JOHN, MARTY, AND BOB!

Also at the January 3 meeting, we set the club launch schedule for 2007. You can find the schedule on our web sight www.nira-rocketry.org. Included in that schedule, is a launch on January 21 for all the polar bears who put up the permit fee. I sure hope the weather co-operates.

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TARC News

Park Ridge & Oregon Teams

Tom Pastrick

The Park Ridge TARC #2 Team is continuing to build their NASA Student Launch Initiative(SLI) rocket. With two pretty full days of building, plus some *homework building*, the Team is now scheduled to visit the wind tunnel at the University of Wisconsin- Madison Campus.

They will be confirming the design stability, and more importantly, testing the wind disturbance related to their onboard science experiment. They will be looking at the differences in air speed measurement with pitot tubes at various distances from the rocket body, compared to a nose mounted pitot tube. The goal is to fly this rocket to one mile high and collect the data.

Sometime before they leave for NASA's Huntsville facility they will fly their rocket on a smaller motor as part of the testing. This is needed to actually verify the wind tunnel's predictions.

In late April, NASA will host them and the other SLI teams for four days, with a trip to Tennessee to actually fly the rocket to the one mile high altitude.

The Boy Scout TARC Team from Oregon, Illinois made their Qualification Flight at East Branch also. They have moved their organization sponsorship to Byron High School. They won 6th Place at the TARC Finals, and $3,000 for the Team members, and $1,000 for their Scout Troop. They also received an invitation to bid on one of NASA's Student Launch Initiatives. They are the first Team in Illinois to actually win any cash in the TARC Finals. Their actual progress with their SLI rocket is not yet known.

Mike Cinquino and 'AJ' Witzke preparing to mount their experiment into the nose cone.

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NIRA OFFICERS

Bill Ipjian
President

Jim Basile
Vice-President

Rick Gaff
Secretary/Treasurer

Tom Pastrick
Safety Officer

The Leading Edge is published bi-monthly for members of the Northern Illinois Rocketry Association (NIRA), NAR Section #117, and is dedicated to the idea that rocketry is fun!

President's corner- continued from page one

NIRA has several issues that we need to make decisions on early in 2007. 2006 Secretary/Treasurer Marty Schrader has pointed out that our treasury has been dwindling. The greatest expense has been printing costs. With newsletter editor Pat Butler planning on publishing six upgraded newsletters this year. (Thank you Pat. We are looking forward to these newsletters!), we need to find a solution to our printing costs. Electronic distribution seems like the ideal solution but we have some members who are unable or do not wish to receive their newsletters in this manner. So an additional fee might have to be added to the membership fee of these members if they wish to receive a paper copy of the newsletter thru the mail. This will be discussed at the February club meeting.

In the next couple of months, we must decide what to do about the NIRA Buck program, the 2007 Model of the year contest, membership dues for 2008, MRFF, and the NIRA Forum. We must also discuss high power launches, bi-laws, scout launches, other ways to raise funds, and other important club issues. We also need some volunteers to give presentations at our monthly meetings.

So I expect 2007 to be a busy year. Of course, I expect that we will continue to work towards our goal of having a FUN and SAFE year of building and flying model ROCKETS for all our members. I hope to see each of you soon at a NIRA event. Have a great 2007!

Bill Ipjian

Creating your own inexpensive rocket decals

Marc Mitchell gave a very interesting presentation on producing paper decals for rockets during our December meeting. Marc has been able to produce some really nice paper rocket decals using commonly available software and paper products.

Types of software

Marc suggests using programs such as Microsoft Word, Corel Draw, Microsoft Publisher, or Microsoft PowerPoint to draw the graphics themselves. There are also a lot of sources for graphics that are ready to go, and search engines such as Yahoo can be used to find appropriate images.

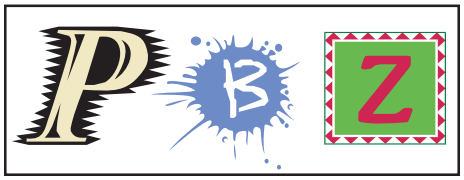
One difficulty in downloading graphics from the Internet is that many of the graphics do not have a transparent background. In fact, most images have a bounding rectangle around them. This creates a problem when this background is comprised of a color other than what you are using on your rocket. The typical workaround for this problem is to create a clipping path in a graphics program such as Photoshop. However, this is actually quite difficult to do and Marc has found out a way to create the same results using Microsoft PowerPoint. PowerPoint has a feature called "Set Transparent Color" that you can use to change the color of the bounding box to the same color as your background. This feature is accessible through the Picture toolbar.

You can also change the color of some of your graphics in PowerPoint by using the "Recolor Picture" tool, also available on the Picture toolbar. Note that this tool only works on certain types of graphics. Nonetheless, it allows the user to develop a color scheme so that all the graphics on a rocket have a similar look.

Lettering issues

Marc showed three good methods for creating lettering for rockets. The simplest is a basic text box which is nothing more than text that is printed inside of a colored box. This can be accomplished in many programs. While it is simple to do, it also results in a rather simplistic look too.

The second method is to use clip art letters. These are decorative letters that



Examples of clip art fonts.

for which the entire alphabet is typically available. The best source for these is from the Internet. Marc mentioned that one disadvantage is that it might be more difficult to cut around more intricate clip art lettering and it might be more difficult to line the clip art letters up.

Finally, Marc showed some examples using WordArt which is a small utility program that is accessible from many of the Microsoft Office products. WordArt

This background stripe makes it easier to cut out the lettering

provides a lot of flexibility but Marc cautioned that some of the auto resizing functions can actually get in the way of your design, and that you are usually better off by disabling the auto-resize feature.

"Stripes are your friend," according to Marc. He mentions that putting a horizontal or vertical stripe behind your lettering can make it much easier to cut it out. This is especially important if you are using script fonts that can otherwise be a little flimsy if they don't have a thicker stripe running through them. This becomes important when you want to eventually apply the decals to your rocket.

Again, Marc emphasized that the Internet is a great source for free unsual fonts. Simply type in "free fonts" into a search engine and you can literally find thousands of free useful fonts.

Media choices

There are three typical media choices for printing your decals. The first is blank decal paper available from hobby shops. This is ready to adhere and nearly invisible once applied. However, it is one of the most expensive choices.

The next choice is using self-adhesive paper such as bumper sticker paper. This makes a very sturdy decal, yet one that might be a little too thick. It's also harder to cut by hand.

Finally, Marc also suggested plain paper. Marc has had excellent luck with plain paper for his imaginative rocket designs. The main difficulty with plain paper is that you are 'on your own' when coming up with a good way to adhere the paper decal to the rocket. Details on this are provided later in this article.

Printing tips

You should print your preliminary designs on plain white paper using just the black and white option from your printer. This saves money until you are ready to print your final design in full color and at full resolution.

A big issue that you will typically encounter are color matching issues. This occurs when the printed output does not match what you saw on your

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(Decals- continued from page 3)
computer monitor. Graphic professionals use very expensive color matching software, but us mortals can simply make small adjustments until the output eventually is a pretty good match to what we are looking for. Be aware also that many printers have different quality modes. Be sure to use the highest quality mode for your final print outs and you might have better luck with color matching.

Cutting your decals

Now that you decal has been produced, how do you cut it out? Marc recommends using a softwood disposable cutting board- basically any square of wood that you can find. He has had better luck with soft wood boards because it allows the tip of the razor knife to be more controllable. Having plenty of fresh #11 blades ready is also a must. Marc also

likes to have more than one Exacto handle handy so that he can use different handles for different sharpness of blades. Having one handle for a sharp blade and another for duller blades allows you to use a blade for a longer period of time.

Applying your decals

Paper decals can be applied using glue that has been diluted with what Marc calls 'wet water.' This is nothing more than water that has been mixed with a wetting agent such as denatured alcohol. You can use a sheet of aluminum foil on your bench to keep things from getting wet. Use opposing tweezers to apply those decals that are too tiny for your fingers. Finally, Marc uses a paper towel to blot the decal until it is flat and excess glue is cleaned up.

NIRACON 3- February 17th

AGENDA

9:00 a.m.—9:30 a.m.	**Setup.**
9:45 a.m.	**Welcoming remarks by John Hojek.**
	Welcome – Bill Ipjian.
10:00 a.m.	**First presenter speaker to start.**
	•Mark "Bunny" Bundick President of the National Association of Rocketry.
	•Patrick Butler Vacu-forming.
	•Adam Elliott Competition for the Novice.
	•Ian Timberlake Rockets from "Trash".
Noon	**Break with light snacks, socializing, swap meet, club members' rockets on display.**
12:15 p.m.	**Auction.**
1:00 p.m.	**Afternoon sessions, and concurrently, the youth rocket build and make-it take-it. Rockets will be available for youth to build and assistance will be available for first timers.**
	•Ric Gaff- Building rockets and tubes from paper.
	•Marc Mitchell- Decals.
	•Bob Kaplow- to be determined.
	•Marty Schrader- Rear engine boost gliders .
	•Presentation of the awards for model of the year for youth and adult categories and final thoughts.
4:00 p.m.	**Clean up.**
4:45 p.m.	**We must leave the building.**

times and speakers are tentaive and may change

Please help bring in new members

Bill Ipjian

Fellow members, I hope you are as excited about NIRACON 3 as I am. John Hojek has been working very hard to provide an informative, interesting and fun convention. We hope you talk up the convention to friends, neighbors, relatives, and co-workers. The convention is totally FREE and there will be something of interest for people of all ages. If you bring them, I bet they will become interested in rocketry just like you, and we might gain some new NIRA members. You can be a big part of NIRACON 3 by just attending and bring some guests!

I also ask that you or your youth family members invite a young person to one of our monthly meetings. I am always looking for a new young face to present with a model to build for our YOUTH MODEL ROCKET CHALLENGE. Bring a young friend and maybe they will go home with a free model to build! Who knows. You might be the person who started a young person towards becoming a future rocket sciencist or astronaut. Thank you.

Rocket of the year winners

Marc Mitchell and his son Jon won Rocket of the year honors. Marc tells us about their winning entires-

"Jon's rocket is a FlisKits Alien 8 kit that Jon named the *Invader Zim* after

Jon Mitchell with his FlisKits Alien 8 kit.

one of his favorite cartoon shows. He chose this particular model because the Nartrek Cadet Mercury Level called for the successful build,launch and recovery

Marc Mitchell with his FliskIts Tres model (left) and a Rob Edmond's Deltie Airshow kit.

of a 24" rocket which Jon achieved with this model at the Nira East Branch club launch in September of last year.

My red and white rocket is a FlisKits *Tres* that had some minor modifications made and which I named *Trifecta* given its three motor cluster design. Its maiden flight was at the NIRA November launch and it had two great flights at the Polar Bear Launch in January.

The other model is the *Mitchell Family Flying Circus* which is a Rob Edmonds *Deltie Airshow* kit. I actually won this kit in the door prize/raffle at MRFF on Father's Day, 2006. Each glider is named and decal'ed for a family member: there's the *Jonny Bub*, *Katie Bug* and *Lady Renee*. The gliders have proven quite durable. The *Katie Bug* was lost at the September Nira launch at East Branch. It spent the entire month in the field but was then found at the October launch and returned and has since flown again without any real repair. At the October launch, the *Jonny Bub* landed in the south side of the lake. By the end of the launch after more than two hours in the water, the wind had blown it to the north side of the lake where we recovered it. It has since flown again without requiring any repairs."

Model of the month winners for January 2007

Jenna Butler won the youth category for January with her DinoRoc rocket which was a custom built rocket made mostly from popsickle sticks.

March Mitchell won the adult category with his Pyro Gyro model. Marc put considerable effort into building the wings, hinges, and operating components of his rocket.

(Basile- continued from page 1)

available through the club. Our first launch ended in a crash, which damaged the model to the point where it was not flight worthy. As I was packing up, Jimmy said, "Can't we fly anymore today?" A member heard him and approached us and asked if we had any more rockets. My answer was no, to which he responded with a "follow me". He brought us over to his van and gave us a ready built rocket and another kit. We met Rick Gaff and Bob Kaplow that day as well who walked us through the flight prep stages. Jimmy and I made several successful launches that day. The rest is history. We were hooked after that. I was never a big fan of joining clubs, until that day when we experienced the generosity of NIRA's members and their genuine desire to help a couple of green novices.

I was actually flattered when Bill and John approached me to run for vice president. I hope to carry out two things in my capacity as a NIRA officer: to increase membership in both the adult and youth groups and resolve the problems associated with gate guard duty (preferably through getting more people to volunteer).

I have a lot of hobbies/interests, but model rockets is something my son and I share. That makes this hobby very special. Lastly, my family and I are currently in the last stages of completing an international adoption. We hope to bring our new daughter home from Russia sometime early this year. Hopefully you will be seeing 4 year old Maria on the field with us very soon. I guess that means we will have an Astronaut and a Cosmonaut in the family!

Upcoming launch dates

Think Spring! Have fun flying rockets, meet new friends!

March 18, April 15, May 20, June 17, July 15, August 19, September 16, October 21, November 18

NARCON 2007

The National Association of Rocketry's National Convention

March 9 - 11, 2007
at The Kahler Grand Hotel, Rochester, Minnesota

NARCON is an annual convention held by the NAR for the purposes of educating those interested in all aspects of hobby rocketry. Events include keynote speakers, training seminars, workshops, rocket-building sessions, open discussion forums, and much more!

Covered topics include technical sessions on all levels of rocketry from beginner to advanced, competition, educational aspects, safety, design and more.

Seminars (subject to change)—

Expired Motor Testing Program Report—*Ted Cochran*
The Baikonur Internats Experience—*Trip Barber*
4th Grade Rocketry Program—*Ted Mahler*
NAR Jr High Power Certification—*Caleb Boe*
Risks of Storing AP vs Other Common Household Materials—*Steven Florig*
Using PowerPoint to Design Model Rockets—*Eric Van Domelen*
Model Rocket Construction Tips & Tricks—*Jim Flis*
Storing HPR Motors and the ATF—*John N. Hochheimer, PhD*
Safety Risks of Sport Rocketry—*Keith Florig*
Convincing Your Town to Allow Model Rocketry—*M. Fernandes*
History of NAR Competition—*Mark Bundick*
Safety Committee Briefing—*Ted Cochran*
Securing & Maintaining Rocketry Fields—*Troy Fernandes*
There Must Be 50 Ways to Fill Those Fins—*Buzz McDermott*
Tube-Finned Rockets—*Alan Estenson*

Workshops (subject to change)—

Model Rocketry in Schools—*Andy Heren*
HPR Electronics Bays—*Scott Goebel*

Early Registration Pricing on or before February 12, 2007
Youth (18 and younger)—$10.00 and Adult (19 and older)—$30.00

Late Registration Pricing after February 12, 2007
Youth (18 and younger)—$15.00 and Adult (19 and older)—$40.00

see http://www.narcon2007.org for more information

We'll occasionally feature plans from old model rocket publications. Thanks to the generosity of Rick Gaff, we have access to some of his stash of old NIRA publications. Better yet- won't you contribute any of those special designs that you've created yourself?

Think ahead to NARAM this summer. This is the Phobos rocket that was designed by Harland "The Obscure Rocketeer" Pell. It's an all-purpose model for 1/2A and A streamer and parachute duration contests.

Parts List-

- One BT-5 body tube
- One BNC-5W nose cone
- Braided nylon cord or Kevlar (glued to fin root)
- 1/16" plywood fins
- Music wire engine hook (glue into fin root)