



Informant

Volume 4, Number 1

1/28/2003

9 Pages



Alan Carroll's Green Rage takes off on an H128. Photo by Jonathan Sivier.

Highlights of 2003

Our normal schedule is as follows:

1st Tuesday: Membership meeting at Springer Cultural Center, 301 N. Randolph St., Champaign

3rd Tuesday: Business meeting at Garcia's Pizza in a Pan, 108 E. Green St., Champaign.

2nd Saturday: Rocket launch at Dodds Park

4th Saturday: Rocket launch at Rantoul Aviation Center. In December, January and February, the launch will be at Dodds Park instead.

In general we follow this formula, with some occasional exceptions for special events. Here are some highlights of the coming year.

Meeting Topics

We have scheduled topics for all of the monthly meetings this year. We are always looking for ideas for topics at future meetings. So let us know if there are any topics you would like to see covered.

January 7: Rocketry videos. Bring your favorite rocket-related tapes to view with the group.

February 4: Rocketry on the Web: Meet in the University High School computer lab.

March 4: Annual membership meeting and election of club officers. Meeting program: Show and tell. Bring your current projects to show off.

April 1: Beginning rocketry competition.

May 6: Rocketry nostalgia and tall tales. Bring artifacts and stories to share.

June 3: Rocket books.

July 1: GARLO follow-up.

August 5: Introduction to model rocketry for new members, and rocket building workshop.

September 2: Introduction to mid-power rocketry for new members, and rocket building workshop.

October 7: Annual Swap Meet. Bring your surplus rocket related equipment and supplies to buy, sell and trade with other members.

November 4: Rocket photography and video.

December 2: Aerodynamics, structures and trans-sonic rockets.

Special Events

May 17: Build & Fly Workshop at Champaign Park District Leonhard Center. 9 a.m. to noon.

June 28: GARLO 2003: Look Ma, No Fins! Special contests: non-traditional guidance and old-time model rockets.

August 9: Annual Nostalgia Launch: prizes for oldest rocket and/or motor flown.

September 13: Annual Night Launch.

2003 Dues

It's that time again; time to pay your CIA dues for another year. This money is used to publish the newsletter you are reading, pay for our NAR section dues and insurance, pay the costs of our contests and GARLO, for launch range equipment and to promote our club by printing fliers to place at the local hobby shops. The dues are the same as they have always been, \$10 for an individual member and \$2 for each additional family member. You can send a check made out to Central Illinois Aerospace to: CIA c/o Jonathan Sivier, 5 The Summit, Champaign, IL, 61820.

Also, if you are an NAR member, remember to list the CIA, NAR section 527, as your home section when you renew your NAR membership.

GARLO 2003

"Look Ma, no fins!"

The Great Annual Rocket Launch Of 2003 will be held on Saturday, June 28, 2003. The main theme will be rockets that use non-traditional methods of guidance, such as tube-finned rockets and cones. An additional theme will be old-time model rockets, 25 years old or older.

So dig out those old rockets from your closet and get them flying again. Or build a replica of a classic kit. Estes has recently re-released their Orbital Transport and you can find plans for many out of production rocket kits at this web site. <http://www.provide.net/~jimz/jimz.htm>



A shot of Heritage Park south of Bradley Ave taken by Greg Smith's RATV-1

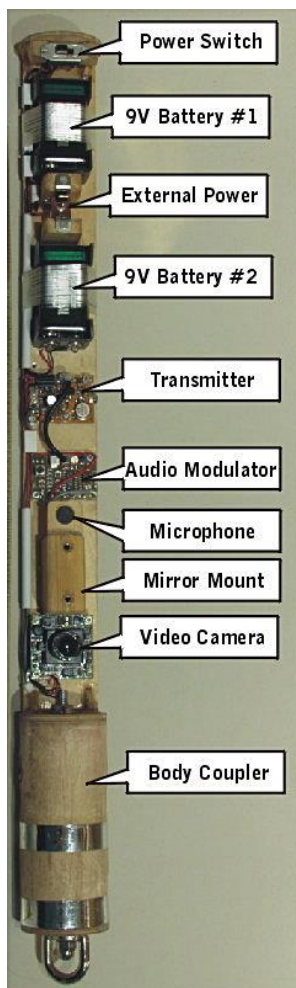
Destination: Hollywood

By Greg Smith, NAR 15881 / TRA 1974 / N9LHI

I started collecting the parts for a rocket carrying a live video camera and transmitter in the spring of 1995. Little did I know that it would take seven years to get it in the air, but I

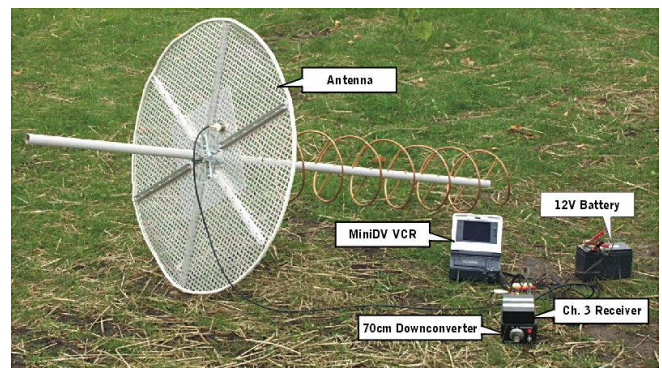
was finally able to launch the finished payload for the first time on August 24, 2002. The RATV-1 video rocket has now flown at four different CIA launches, and footage from two flights was featured in Parkland College Television's "Surrounded by Science" show in October.

The TV payload consists of a color television camera, microphone, audio and video transmitters, batteries and antenna inside a 46 mm (1.8") diameter fiberglass body tube. The transmitter operates on an Amateur Radio frequency at 434 megahertz, and produces both color video and audio with a power of 80



milliwatts. Its usable range is a few thousand feet while aloft, but much less when the rocket is on the ground. The camera "looks" out through a hole near the bottom of the payload section. I built an external mirror to mount in front of the lens, which produces a view toward the ground while the rocket is ascending. This gives spectacular images during the first phase of flight, but it can be removed for a sideways view that is better for capturing the scenery while the rocket descends under the parachute.

The carrier rocket uses the same 'glass tubing as the payload, with fiberglass fins and a 29 mm motor mount. At launch, the whole vehicle is almost exactly one meter (39 inches) long, and weighs very nearly one kilogram (35 ounces). The best flights so far have been with G80-7 and G64-7 motors, for altitudes around 1500 feet (450 m).



The ground equipment is a homemade helical antenna (basically, a 4' long coil of copper tubing with a round aluminum "reflector" screen at the back), a downconverter and receiver, and a MiniDV format digital videotape recorder.

I have flown the video rocket seven times so far. The first two tries, with a black-and-white camera and a less sensitive receiver, produced promising, but not really usable, results. After upgrading the camera and receiver, excellent video has been received during all the later flights. The rocket "chuffed," reached a very low altitude, and suffered a hard landing on the sixth flight, but there was only minor damage to the carrier rocket. The payload has held together and worked well every time - my best

experience yet flying complex electronics on a model rocket! From the four excellent recordings, I've enjoyed editing together the footage, playing with features like correcting the mirror images, inverting the upside-down pictures of the ground (when the mirror isn't attached), and producing slow-motion effects to make the action clearer. Ask me to see some of these at a future meeting!

The next step in the project will be to experiment with different ways of attaching the recovery system so I can get good videos of the ground during both the liftoff and descent phases of flight. The rocket can take a larger motor, so it will fly on an H128 (which should lift it to a bit over 2000') as soon as the weather allows. I'm also building a second, more powerful transmitter payload, with 1 watt of output, to fly in a 2.6" (66 mm) diameter rocket with up to 38 mm motors. I expect to launch it this spring. A little farther down the road, I want to build a really small version to fit in a BT-60 tube, with a single 9 V battery and perhaps an external antenna. My hope is to develop a video payload about the same size and weight as the old Estes Cineroc, which will be just as easy to fly on D and E motors. I'm sure you'll read more about it here!

Please get in touch if you have any questions or would like to try your hand at a similar project. You can reach me at 917 W. Columbia Ave., Champaign, IL 61821, (217) 352-9655, or best of all, through email at gd-smith@uiuc.edu.

Welcome New CIA Members

We would like to welcome some new folks who joined the CIA this past year. The new members for 2002 are, Nick Cassavaugh, Charles Mack, Jerry Palmer, Bruce Pirie, George Reyes and Bob Schifo. Take a moment at the next launch or meeting to welcome them aboard and get to know them.



Rick Kramer's UFO Alfredo taking off. Photo by Dan Cordes

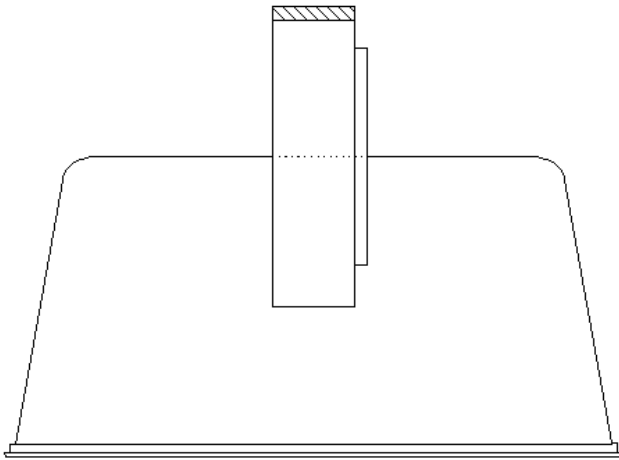
Food Container Rocketry

By Rick Kramer

If you have attended a CIA club launch in the last two or three years you have probably noticed my arsenal of pasta bowls, cool whip containers, picnic plates and bowls, cream cheese containers, and margarine containers flying through the air. Not only is this form of model rocketry inexpensive, but also a lot of fun and very rewarding when you hear the cheers from the spectators when they realize that a food container has just been launched 300 feet into the air on a C engine - straight up, a perfectly stable boost and gently floats back to earth and lands only a few feet from the launch pad.

When I began the search for the ultimate food container rocket, I started with a myriad of parts. The 1996 Blue Plate Special had 2 plates, a bowl, a motor tube, a launch lug, an engine hook and 2 centering rings. The 2002 Cool Whip UFO has only a motor tube, a launch lug, a motor block ($\frac{1}{4}$ inch cut from a used C-6-3.) and the Cool Whip container. If you center the motor tube in the body you will need the

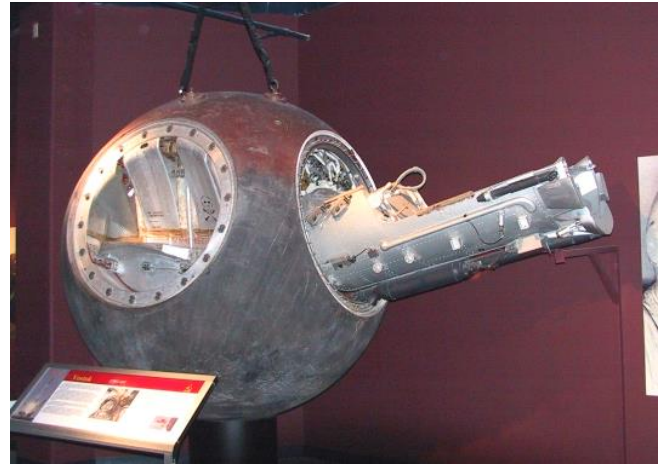
container lid to keep the rear of the motor tube in the vertical plane. However, if you center the bowl in the middle of the motor tube you can forget the lid and lose the excess weight. Getting back to the ultimate UFO, I have found the Cool Whip container and the Betty Crocker Bowl Appetite pasta bowls have ideal aerodynamic shapes for this type of rocketry.



A cut away view of a food container rocket. Drawing by Jeff Pleimling.

Let's make a food container UFO.

First glue a $\frac{1}{4}$ inch motor block into one end of a standard 70 mm length of BT-20. Next, glue a $\frac{1}{8}$ by 2 inch launch lug to the side of the motor tube making sure the lug is perfectly aligned. Find the exact center of the container body and using a set of dividers set to 9mm, scribe an 18mm diameter circle in the plastic. Use your favorite method to cut out the hole and enlarge it just enough so the motor tube fits snugly. Next cut or file a notch at the edge of the circle so the launch lug will pass through. Making sure you have the end of the motor tube with the block in it on top, center the container body at the middle of the engine tube, align it vertically, and tack it with a drop of CA. Once you are sure that the motor tube is perfectly vertical within the body, use hot melt glue gun fillets to permanently attach the motor tube both inside and outside the container body. That's all there is to it! They fly great on C6-0 and C6-3 motors.



A Vostok capsule on display at the Kansas Cosmosphere. Photo by Jonathan Sivier.

Kansas Cosmosphere

By Jonathan Sivier

Tucked away in Hutchinson, Kansas, well off of any beaten track, is the Kansas Cosmosphere and Space Center. If you happen to be traveling across Kansas in the future this is well worth the detour.

The facility that eventually became the Cosmosphere was started in 1962 as one of the first public planetariums in the United States. In 1966 it became part of the Hutchinson Community College and moved to its current location. In 1976 it was expanded to include a space museum. It now houses exhibits from all eras of space exploration, a planetarium and an IMAX theatre.

Some of the most interesting exhibits were the Russian Vostok and Voskhod capsules. Of course they also have Mercury, Gemini and Apollo capsules as well as a Lunar Lander. One exhibit that is potentially very interesting is the large window, which looks into the room where they are working on restoring another piece of space hardware for exhibit in the museum. Of course to take advantage of this you need to go at a time when they are working on something, but with luck you could see something very interesting.

If you want to find more information on the Cosmosphere, check their web site at

<http://www.cosmo.org/>



Winter Flying

The preceding pictures are of Jonathan Sivier's Big Daddy taking off and after landing on a snowy day in Dodds Park. We were able to hold a launch on December 28 after the Christmas Eve snowstorm. It wasn't too cold and the wind was reasonable so we were able to get in some end-of-the-year flying.

Goddard and Stumpy

By Mark Page

Goddard & Stumpy was inspired by the dumb things I saw, and dumb things I did at the launch site. In the early months of the High Power revolution I witnessed; a major brushfire, looping cluster rockets, explosions on the pad, and a ballistic impact 1 foot from a pitcher on a nearby baseball field. Since no one got hurt, it made for good stories. After the only launch site in southern California was closed (due to the aforementioned events) I added my name to the list of safety spoilsports. However, I also saw an opportunity to combine my rocketry experiences and cartooning interests, hopefully, in a more entertaining safety forum.

The basic format was to tell a story, and include a specific technical or safety lesson as well. Occasionally I had to stand on my head to match the two causes. I made the Goddard character a talking worm (with no explanation offered) and Stumpy was a composite of people I'd observed. The initial submittal to High Power Rocketry featured a Stumpy with some missing digits in addition to the band-aids and eye patch. This is why he was named Stumpy. My Brother John got nervous about the wisdom of this approach and we decided to stick with band-aids and keep all his digits ... you know ... for kids. We quickly submitted a revision, and G&S made the next issue of HPR. As with most High Power Magazine articles this was a freebie for the general good of the sport (flag flutters ... music builds ... jets fly over ... salute!).

Over the years I received 2 or 3 questions about the cartoon (no kidding only 2 or 3 in the years of publication and since. It's lonely out there in cartoon-land). The first was, who's drawing this cartoon? The byline has always read "By John Page's Brother." There are 2 reasons for this. First, brother John got me back into rocketry with the High Power movement. Second, in my real life I was published in the field of aircraft safety and didn't want the two worlds to collide. That covers one question.

After a few issues of the cartoon people wondered if Stumpy was a parody of Frank Kosdon. There may be a superficial resemblance but this is not the case, I didn't know of him at the time. Stumpy is half me, half "Firestarter", and half "Brad W" a California friend.

Firestarter is one of the original Lucerne guys. I actually don't recall his name but he appeared often in HPR in the early days. He had some goofy scars on his face from a homemade bazooka and on his feet from some other "event". He's the one who dropped the rocket beside the pitcher, started the huge brushfire at Mile-Square Park, and generally did it all wrong. His girlfriend was fairly sane and is probably why he is still with us.

Brad is a great guy who has had many "events", but always remains optimistic and cheerful. I really like that dimension of rocketeers and wanted it incorporated into Stumpy.

Oops, did I list 3 halves? Good thing I'm not an engineer. Well that covers 2 questions, and that's all I can remember.

My technique for creating the cartoon evolved over time. Initially, it was wide open and very difficult to get a story and lesson to click, and most challenging, to be humorous. The first 3 or so strips were stand-alone cartoons that were not part of a story. Later, I started a thread with Stumpaw, Stumpy's Grandpa. I found the material flowed much better with an episodic

storyline so I adopted that format. I wrote each panel one at a time with no notion where the subsequent panel would go. In other words no outline of any kind connected the strips. However, the process needed within each panel was very structured. First I selected the disaster, then the lesson, the set-up, and the humor. The artistic composition came last.

The single biggest constraint was word count. In time I found that 100 to 130 words was the maximum for my style using a full-page format. The word count gave me the text block dimensions. I would first layout the text blocks in a pattern conducive to the artwork, and then pencil the cartoon. Finally I inked everything and cut the dot pattern screens, which were adhesive-backed transparencies. I drew the panel oversized then had it reduced to improve resolution when printed.

Fifteen strips of G&S appeared in HPR magazine over about 3 years (I think). I intended to keep going. The guys were to meet up with Wernher Von Stumpp in a fantastic rocket complex. Ultimately, it was the isolation of the process that led me to stop. Drawings went in to the publisher, and nothing came out. I really had no idea if the strip was liked, hated, or worse, boring. I enjoyed making the cartoons immensely. They took about 32 hours per strip to complete (most of the time in editing and re-write). The large time investment also prevented me from continuing just for the fun of it.

Inspiration for the cartoon came from my pals in Mahomet and the CIA crowd. Specifically Jonathan Sivier, Bill Tigrak, Bill Murphy, and Dave Harris. My brothers John and Ward contributed heavily in brainstorming sessions, as did my wife Jenise and sons Kenneth and Christopher.

This first installment features the fully fingered Stumpy in an episode inspired by the California Firestarter.

Kids, don't try this at home!

Ask The Experts

This section is devoted to answering technical questions posed by CIA members. If you have a question you would like to have answered in a future edition of the Informant send them to the editor.

Question:

How do I choose the correct motor for my rocket?

Answer:

Choosing the correct motor on the field is a bit of an art. With experience you will get a feeling for how different sized motors and different length delays will perform with a given rocket.

Just because a motor fits in your rocket's motor tube does not necessarily mean that it is a suitable motor for flying in that rocket. If you are flying a kit use the motors recommended for use with that kit until you get a feel for how the different motors perform.

If the rocket you are flying is not a kit, or you have significantly modified it, then you will need to determine appropriate motors on your own. You can use the list of recommended motor for a similar rocket as a starting point. Remember that if your rocket is heavier or has more aerodynamic drag you will probably want to use a shorter delay and if it is lighter or has less drag you may need a longer delay. Also larger motors will require longer delays. A classic example of this is the list of recommended motors for the Alpha III, A8-3, B6-4 and C6-5. Remember that larger motors will send your rocket higher, so take the wind into account and consider how far you are willing to walk to recover your rocket.

Another way to determine an appropriate motor for your rocket is to use the maximum lift-off weights listed for Estes motors. These don't take into account the aerodynamics of your rocket, but they can give you ranges of appropriate delays for your rocket and help you eliminate some of the possibilities.

For best results you should use a simulation program to choose the correct motor and delay. However this isn't always possible on the field. Don't be hesitant to ask some of the more experienced fliers for recommendations. Take advantage of what they have learned in crashing their own rockets in the past so you don't have to crash yours in the future.

Other Clubs

Tripoli Central Illinois

The Tripoli Central Illinois folks launch from November to April at the Tuscola Airport on various Sundays. They have a 10,000' waiver. Newcomers are always welcome. They do require that people who fly motors larger than G be NAR or Tripoli members with insurance.

Contact: Don Reasor

Phone: 217-253-2586

Email: Don.Reasor@netcare-il.com

http://www.tripoli.org/launchad/TRA_Central_IL.html

NIRA

NIRA holds regular launches in the Chicago area

<http://www.NIRA-rocketry.org/>

Indiana

There are various clubs in Indiana who hold regular launches.

<http://www.indyrocks.org/>

St. Louis

The St. Louis Rocketry Association holds model and high power launches approximately monthly.

<http://www.stlouisrocketry.org/>

Local Vendors

Here are local places to get rocketry supplies.

Hobby Lobby: next to County Market near the corner of Mattis and I-72.

Leisure Time Pet & Hobby: 807 N. Mattis.

Rocket R&D: In Homer, 217-896-3041
<http://www.rocketrd.com/>

Slot and Wing Hobbies: Just north of I-74 on the east side of Prospect.

Tripoli Prefect: Gary Buck, 217-344-8803,
garyrd@cu-online.com

Member-At-Large: Robert Brunner, 217-351-5499, rbrunner@uiuc.edu

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Call For Submissions

If you have something to share with the other members we would love to hear from you. Possibilities for submission include: reports on launches or other events, technical articles, rocket plans, contest and flying tips and hints, reviews of models or motors, books software or other items of interest to rocketeers and photos taken at launches. If you have something in mind to submit for the next issue, in July of 2003, contact the editor.

CIA Officers

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