



Informant

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Chris Deem's Ice Cream Cone rocket at GARLO 2002.
Photo by Jonathan Sivier

GARLO 2002

By Jonathan Sivier

GARLO 2002 was held on Saturday, June 29. The theme this year was "Rockets of the Corn" featuring Odd-Rocs based on food and food containers.

Attendance this year was very good and we would like to thank everyone who helped make the event a success. A special thank you goes to Kenneth and Martha Sivier who hosted the cookout after the launch.



Ellen Rockett preps her rocket Munch at GARLO. Photo by Greg Smith

WCIA, the local CBS affiliate, sent a cameraman who spent a couple of hours at the

launch, which resulted in a very nice piece on the evening news.

We had several entries in the food odd-roc category. Some standouts were Chris Deem's Cornan the Agrarian a flying ear of corn and Jonathan Sivier's Spudnik, a flying potato. There were a total of 11 entries in this event. The winners were; 1st place, Chris Deem with Cornan the Agrarian, 2nd place, Jonathan Sivier with Spudnik, 3rd place, Chris Deem again with his Ice Cream Cone and in 4th place, Rick Kramer with his "I can't believe it's not butter".



Jonathan Sivier's LOC EZI lifts off on a RocketFlite H220 SilverStreak. Photo by Jonathan Sivier

The following prizes were awarded for outstanding rockets. 1st prize went to Robert Wright for his Flying Purple People Eater. In

2nd place was Ken Ferran with his red, white and blue Stargate SG-1. 3rd place went to Ben Evans for his Space Shuttle and 4th place was awarded to Jeff Deem for his Estes Interceptor.

These rockets got awards for the most impressive or interesting flights. 1st place Ken Ferran's Stargate SG-1 on a J170 hybrid motor. 2nd place Chris Deem's Phantom 4000 on an H210R Redline motor. 3rd place Ben Evans' Phantom 4000 on a G38J Blackjack motor. 4th place went to Mike Gardner's swing-wing Crusader.

As usual we awarded prizes for rockets that landed near a specified location on the field marked with a flag. Ethan Rockett got 1st place landing 24' 1" from the flag. Mike Crisman got 2nd with 33' 8". Kenton Visser got 3rd place with 37' 8" and Ben Evans took 4th place landing 45' from the flag.

One additional contest we tried was D Altimeter Altitude. In this event you could fly any rocket with any altimeter you like on any D motor and the winner was the person whose altimeter recorded the highest altitude. We only had one entry so Jonathan Sivier won by default, though he did have a very respectable flight of 1440 feet.

In addition we awarded some Prang ribbons for flights that didn't go quite according to plan. A 1st place Prang award was given to Jonathan Sivier for his LOC EZI, which failed to deploy its parachute, and crashed. A 1st place Prang was also awarded to Micah Sweeney when his F22 reload motor CATOed in his Aerotech Initiator. He broke a fin on his rocket as well as the flowerpot being used as a blast deflector on the launch pad. A 2nd place Prang was awarded to Lara Schriver when her Viking Loki lawn-darted near the spectators. A 3rd place Prang was awarded to an R2D2 model, which went unstable and ejected after hitting the ground.

Here are some additional highlights of the event.

Gary Buck and Ken Ferran flew 3 very large rockets at the end of the day. These flew very successfully and were big crowd pleasers.



Gary Buck gets some help retrieving his rocket at GARLO. Photo by Jonathan Sivier

Chris Deem flew a rocket on a cluster of 3 Estes E9's.

Jeff Deem flew some rockets that were over 30 years old and. These were his Estes Interceptor, Centuri Vulcan and Centuri Point.

Jonathan Sivier flew his LOC EZI on his last RocketFlite SilverStreak motor, an H220. It looked great going up, but the parachute failed to come out all the way and the front of the body tube was damaged. However with a little work it will fly again.

All in all it was a fine day for flying and we all had a good time. I hope everyone makes plans to attend next year.

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>



Robert Brunner helps some participants at the annual Build-and-Fly workshop. Photo by Jonathan Sivier

Highlights of the year so far

By Jonathan Sivier

After the launch we held on New Year's Day the weather was such that we were unable to hold a launch again until April 13. However that launch was a good one. Turnout was excellent with several AIAA student branch members flying boost gliders, which was very entertaining. We gained some new members and had quite a few spectators. Eight CIA members were there along with around a dozen AIAA members as well as another 3 or 4 fliers. Since then we have had better luck with the weather and most of our launches have taken place as scheduled.

During February and March we intended to hold an NAR contest entitled “The Rocketeer Who Went Out In The Cold”. This was the second year we have attempted to hold this contest and we have failed both times due to bad

weather. Hopefully we will have at least one acceptable day during this period next year and will finally be able to hold a winter contest.

In March we participated in the Science Night at Robeson Elementary School in Champaign. We handed out CIA schedules and fliers for the build and fly workshop in May. A number of other organizations were in attendance showing the kids various ways they could become involved in science outside of school.

In April we were invited to do a demonstration launch for Space Education Day at Garden Hills Elementary School in Champaign. Unfortunately the winds were around 30 m.p.h. that day so we were unable to fly our rockets for the kids. Instead we put on an informal show-and-tell presentation in the school's gym followed by a short question and answer period. The most common question seems to always be "How high will that rocket go?", closely followed by "Can I have that rocket?"

In May CIA members assisted at the Illinois State Science Fair, judging Aerospace and Astronomy projects. We will be doing so again next year. The Science Fair will be on Saturday, May 10, 2003 at the U of I Assembly Hall. If you would like to help with the judging contact Greg Smith at 217-352-9655, or by email at gd-smith@uiuc.edu

Also in May we held our annual Build-and-Fly workshop at the Champaign Park District. Once again it was too windy to fly that day so we provided the workshop participants with motors and invited them to attend any of our future launches.

The CIA meeting in June was hosted by Jonathan Sivier at the Aviation Research Lab's Flight Simulation Lab in the Beckman Institute. Those attending the meeting were able to fly the lab's newly upgraded flight simulator. Work is still being done in improving the system so perhaps we will have another meeting there at some future date.

We have successfully held two NAR contests so far this year. The Illinois Missile Crisis VI in June and the Insurrection V in August. We hope to hold a third contest, The Missiles of October, in the fall.

GARLO 2002 was held on June 29. The theme was "Rockets of the Corn" and the special events were Food and Food-container Odd Rocs and D Altimeter Altitude. We had a good turnout and a fine day of flying.

In July we once again assisted with the rocket building and flying at the Illinois Aerospace Institute. This is a week long camp for high school kids run by the U of I Aeronautical and Astronautical Engineering department. This year the kids built C boost gliders and D egg-lofters with altimeters.

In August we gave a presentation on model rocketry to the Civil Air Patrol group at Willard Airport. We did our usual slide show followed by a question and answer period.

Illinois Missile Crisis VI Results

By Chris Deem

We held our late spring (or early summer, depending on how you look at it) contest on June 8th at Dodd's Park in Champaign. Due to ongoing work on the south section of the park, we launched by the tree line along the east-west stream. This, as you will see, had a negative impact on some flights. Since, with the exception of the Drag Race, the contestants flew the events in no particular order, I will report the results in the event order listed on our sanction form.

The first event was A Parachute Duration. We had a total of five contestants for this event. Greg Smith, and Jonathan Sivier both said they were only interested in putting up one qualified flight, just to get flight points. However, both ended up putting up two flights with Jonathan trying to be a little more competitive by using a smaller, higher flying model for his second

flight. Greg was very consistent with his two flights, getting 21 and then 22 seconds for a total of 43 seconds, and fifth place. Jonathan got 28 seconds, and then 38 seconds with his smaller rocket (which I believe was an old Estes Starblazer from way back when) for a total of 66 seconds, and fourth place.

Robert Brunner took third place with a first flight of 105 seconds, which was the longest single flight in the event. He was using a small BT-5 sized model, and tried a bigger parachute for his second flight, which, unfortunately, didn't open, giving him a time of 27 seconds and a total of 132 seconds. Jeff Deem, who was using an Estes Ninja, and an eighteen-inch parachute, won second place. He got 73 seconds on his first flight, and 65 on his second, for a total of 138 seconds. I was using a scratch built model with a BT-5 to BT-20 transition, giving more room for the parachute. My first flight was 97 seconds, not as good as Robert's first flight, but close. For some strange reason, out of the all the rocket motors I brought, I only had one A3-4T. So, after bumming a motor off Robert (will direct contests for mini-motors), I was ready for my second flight. Having seen Robert encounter difficulties by using a bigger parachute on his second attempt, I, of course, decided to do the exact same thing. I had slightly better luck, in that my parachute opened, sort of. It became tangled up with the shock cord and wasn't fully open, but it flew for 48 seconds, giving me a total of 145 seconds, and first place.

The second event was D engine Egg loft Duration. We had four contestants for this event. However, we didn't perform up to our usual standards. We usually average about half good flights, and half lost rockets or broken eggs. This time, we only had two good flights out of seven attempts.

In round one, Robert Brunner had an excellent flight of 91 seconds. Unfortunately, his rocket drifted past the garden area, and apparently landed in the sludge pond at the water company. This resulted in a disqualification, and since that

was Robert's only egg-lofter, he was out of the event.

Greg Smith's first flight went straight up, ejected, and broke the shock cord. Another DQ, and Greg's 36 inch aluminized mylar parachute was torn. While Greg was waiting for the glue to dry on his shock cord mount, I made my first attempt. Using a clunky rocket on a D12, with a smaller parachute than either Robert's 30 inch, or Greg's 36 inch, I was hoping to keep it in the park. At 113 seconds, it appeared to land by the fence near the softball fields. I spent a lot of time searching, only to conclude that the rocket must have landed in the other pond on the water company property.

While I was thus engaged in a fruitless (and egg-less) search, my brother, Jeff Deem made his first attempt. The technical term is "failure to deploy", and a broken egg was the result. So, after round one we have: two lost egg-lofters, one egg-lofter being repaired, one broken egg, and one contestant out due to lack of a second egg-lofter.

Round two: I tried a smaller rocket, with a 16-inch parachute, barely adequate, and angled the launcher into the wind. I figured the rocket would drop fairly fast. I figured wrong. 115 seconds, and it looked like it landed in the garden area. It didn't. I got the same sludge pond Robert got on his flight, although I didn't know it at the time. As I was wandering through the weeds, or gardens if you prefer, Greg and Jeff made their second attempts. They both made conservative flights, and both worked fine and were recovered. Greg's flights totaled 62 seconds for second place and Jeff got 69 seconds giving him first place.

Our third event of the day was Streamer Spot Landing, although most of our six contestants flew this first. To determine the spot for spot landing, I flew my CIA Front (which is built to resemble the rocket on our club's logo) on a C11-3. It's landing spot was by the tree line, near where Robert Brunner had set up his stuff. Nobody tried to bounce their rocket off of

Robert, for which I am sure he is grateful. The strategy most, if not all, contestants used was to angle the launch rod so that their rocket would drift back to the spot landing flag.

Jeff Deem flew a very small, scratch built Arcas that drifted much further than he expected. In fact, it landed on the far side of the launchers. The NAR rules say not to measure any rockets that land more than 50 meters from the spot, and Jeff's rocket was definitely more than 50 meters away, so it wasn't measured. He got sixth place. Proving that I can't hit the same spot twice in a row, my rocket landed 15.7 meters away for fifth place. Greg Smith got fourth place with a distance of 14.95 meters. Nicholas Cassavaugh, a new club member, and first time competitor, was convinced by Robert to give it a try, and got third place with 10.33 meters. Thus making some more experienced flyers look like rank amateurs, and accruing much personal glory, and a spiffy ribbon. I'm sure offers of commercial endorsement will soon follow. Jonathan Sivier was initially disappointed with our crummy spot landing spot, but nailed second place with his nifty little Apogee micro V-2 and a distance of 9.88 meters. Robert Brunner got first place with a distance of 9.65 meters, which was only fair since we were trying to land rockets on his head.

Our final event was Drag Race. This is flown in heats of two rockets, with the winner being the one who gets the most points, one point for first motion, one point for lowest altitude, and one point for last to land. Since we had five people competing, which doesn't work too well with the heat system, we modified it a bit. We gave one lucky contestant a bye into the second round so it would work out right. I got the bye, because I'm such a wonderful, well loved person, but mostly because I was gone on one of my egg-lofter hunts when everybody else got tired of waiting for my return, and started without me. Of course, it helped that my brother Jeff assured everybody that I wouldn't return until I found my rocket, and if I didn't find it, I would never be seen again.

Anyway, Robert Brunner and Greg Smith tied for fourth place, I suggested they have a fly-off, but they declined. Jonathan Sivier came in third. This left the battle for first between my brother Jeff and myself. Jeff came in first, I got second. Jeff was helped by the fact that he used a bigger parachute than I had. By that time I was really tired of chasing rockets.

All in all, we combined to win a total of 577 contest points for the club. Nicholas Cassavaugh was sixth with 16 points. Jonathan Sivier was fifth with 46 points. Robert Brunner had 72 points for fourth place. Christopher Deem, contest director, and egg loft searcher, got third place with 86 points. Second place went to Greg Smith with 121 points. And lastly, my brother Jeff Deem is club champion with 236 points. I know he's club champion, because he tells me he is every time I talk to him. Everybody seemed to have a good time, and we hope more members will feel the urge to compete when we hold our next contest. If you have any questions, or suggestions about our contests, please feel free to contact me. And don't worry if you haven't competed before, a spur-of-the-moment entry can still do very well, just ask Nicholas.

Know Your Members

This is a new feature intended to make the CIA membership more familiar with their fellow members. In this section we will highlight some of the accomplishments and events in the lives of current members, as well as bring you up to date on the lives of some former members who we haven't seen in a while. We will start, as seems logical, with CIA founder and former president John Page.

In August of 1998 John moved to Columbus, Ohio, to take a job as the Technical Director of the Ohio State University's Jerome Schottenstein Center. There he oversaw the technical advance, set-up and teardown for all of the hundreds of events that have appeared there through July 1 of this year. Some of these

events included: The Rolling Stones, Andrea Bocelli, Luciano Pavoratti, Kiss, Tina Turner, Cher, Crosby, Stills, Nash and Young, The Eagles, Bruce Springsteen and the list goes on. In addition there were of course the Ohio State Basketball and Ice Hockey home games as well.

In January of this year he married Nancy Ray. They met at the Schottenstein Center (where she is the concierge) and they bought a home in Columbus in a quiet neighborhood near Bexley. They have two dogs and three cats and recently they have added 20 goldfish to their menagerie.

In July of this year John accepted the Position of Technical Warden of Diamond Mine Productions in Columbus. Diamond Mine is a Recording Studio and Television Soundstage operation. You can check out what it is all about by going to the link on John's homepage at www.johnpage.com. His e-mail is johnpage@johnpage.com. At Diamond Mine John does all of the Live Event stuff. They have several stages, roof structures, lighting and audio systems that he sets up.

He says he hasn't flown any rockets in awhile, but still has all of his stuff and plans on popping by a launch one of these days.

Painting with Krylon

By Chuck Mack

A few tips for painting with Krylon paint:

1. Use "Black Dot Hooded Outline" spray tips from www.dahub.com.au. These put Krylon on in a very fine fog-like spray - it's almost impossible to get a bad finish with these tips. Last time I ordered some they were 20 for \$10 and are from Australia.
2. When painting, first, mist on a very light flash coat and let dry until tacky. Then put on a heavy flood coat, making sure all surfaces are getting wet, even coverage.
3. Krylon can't handle humidity - I paint only on days when relative humidity is 35% or less.
- Humidity causes Krylon flood coats to blush very badly.
4. Final coat Krylon colors with Krylon Crystal Clear gloss for scuff protection and to brighten up colors. Tack cloth to eliminate dust specks.
5. Let Krylon dry several days between different color applications. The finish never gets real hard and the longer you wait the less likely you are to damage the finish - handle gingerly between applications to avoid hanger rash and dings. In your cradle, pad the rocket with soft cloths to avoid scuffing.
6. Use Scotch Fine Line Auto body tape for sharp line masking. It is available at auto body paint stores. The package I have is labeled "#DC part # 021200".
7. My painting jig is a broom handle clamped to a stepladder.
8. Check out www.shadowaero.com (Shadow Composites) web site for fillet material and primer. I use Superfil for fillets and Krylon White Sandable Primer on Quantum Tube and fiberglass airframes. I'm going to use their U.V. Smooth Prime to prime a few cardboard airframe rockets I'm in the process of building. I use large tongue depressors (about one inch wide), from Hobby Lobby, as a radius tool to form my fillets. Want to build a composite rocket? Their videotapes are very informative.
9. If you don't get a smooth finish. Wet sand with 320, then 600-grit production paper. Unless you cut very deeply and go through the color, Crystal Clear will bring the gloss finish back. If you have a small glitch, you can spot fill a color with a very fine brush and wet Krylon sprayed onto a piece of wax paper. Wet sand, and then topcoat with Crystal Clear. This works well to clean up a blurred masked line - but don't expect miracles - if you really screwed up, wet sand and repaint. Check out www.microbrush.com for brushes to cheat with - I get them from Al's Hobbies in Elmhurst, IL.

10. For professional quality graphics, check out www.vinylwrite.com. Super service, super products, and great prices. Apply your graphics before you use Crystal Clear.

I hope you find this helpful. Let me know if you have any questions.

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Ask The Experts

This section will be 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.

Here's a rule-of-thumb to help you choose the correct motor for your rocket. This is useful in the field when you aren't able to consult your favorite simulation program to determine the performance of your rocket with a given motor. This allows you to determine if a motor has enough thrust to accelerate your rocket off the launch pad safely.

Acceleration: This equation gives the acceleration rate (in g's) of your rocket. The first version has the thrust in newtons and the rocket's mass in kilograms. The thrust is divided by the mass and the result is then divided by 9.8, since a newton is 1 kg m/sec² and the acceleration due to gravity is 9.8 m/sec².

$$\text{Acceleration} = \text{Avg_Thrust} / \text{Rocket_Mass} / 9.8$$

The average thrust is the first number following the letter in the motor code. For example a C6-5 has an average thrust of 6 newtons.

In order to get the thrust in pounds divide by 4.45 newtons/lb. Then you can use the rocket's weight in pounds, if you find this more useful.

$$\text{Accel} = (\text{Avg_Thrust} / 4.45) / \text{Rocket_Weight}$$

As an example let's take a rocket with a mass of 1 kilogram (2.2 lbs) and a G80 motor. 80 divided by 1 and then divided by 9.8 equals 8.16. Using the other formula 80 is divided by 4.45 giving 17.98, which is then divided by 2.2 which gives 8.17. Either way your rocket is accelerating at a bit over 8 g's. Of course this doesn't take into account the initial thrust spike that most motors provide. However it does give you a conservative estimate of the acceleration your rocket will achieve. On a day with no wind you might be able to get away with values as low as three and still have a safe flight. However in general you want a value of 5 or greater to ensure that your rocket accelerates to a high enough speed for the fins to function to guide it as it leaves the launch rod.

If you have your own rules-of-thumb feel free to submit them for future editions of the Informant.

Danville Dare

Tripoli Central Illinois will be holding their annual high power rocket launch near Danville on October 26 and 27. For further information contact Don Reasor at 217-253-2586 or by email at Don.Reasor@netcare-il.com. Check for further details at their web page.

<http://www.angelfire.com/il3/danville/>

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.indyrockets.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.

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 January of 2003, contact the editor.

CIA Officers

Here is the contact information for the officers of the CIA.

President: Alan Carroll, 217-359-3221, amc@cisco.com

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