

Informant

Volume 9, Number 1

4/17/2010

10 Pages



Gary Buck prepares to fly a rocket at GARLO 2003.
Photo by Jonathan Sivier.

Gary Buck

The CIA lost an old friend in March 2009 with the death of Gary Buck. Gary had been involved in model and high power rocketry in this area for a very long time and was involved with some of the local model rocket clubs back

in the 1970's. He was active in the CIA as a member and an officer since the very beginning of the club in 1992.



Gary shows off a two stage rocket before flying it at a launch in 2004. Photo by Jonathan Sivier.

Gary became very involved in high power rocketry and was the local Prefect for the Tripoli

Rocketry Association and helped run the Tripoli Central Illinois club. He also purchased the Rocket R & D company and manufactured and sold a variety of high power rocket kits and parts.

Gary could always be counted on to fly some interesting and exciting rockets and motors at our launches. As Greg Smith has said, "Gary's rocket flights were either spectacular successes or equally spectacular failures, but always **spectacular** no matter what. Our launches won't be the same without him." In Gary's honor the best flight at GARLO each year will be given the Gary Buck Memorial Flight Award.



Chris Deem's Saturn 1B takes off. Photo by Greg Smith.

GARLO 2009

By Jonathan Sivier

The theme for GARLO 2009 was "Destination Moon", celebrating the 40th anniversary of the Apollo 11 moon landing. We didn't have a large number of models of Apollo era rockets flown, but we gave awards to those that were.

It was quite hot and humid, with temperatures in the 90's and a heat index over 100. The wind was light and mainly from the south, but shifted between southeast and southwest. So we set up in the middle of the south half of the field and hoped for the best.

Despite the heat and humidity we had a good number of fliers for the day and a lot of spectators. As usual the spectators came and went during the course of the day. However some expressed interest in flying their own rockets, so we may see some of them again at a future launch.



Mark Joseph's 38 Special lifts off with a green flame. Photo by Alan Carroll.

Once again Bill Saindon from Balsa Machining Service attended the launch. He brought with him his trailer of rocket motors, kits and parts. It is always great when his is able to make it down for a launch. Having a

vendor on site is very handy and we are always glad to see him at our launches.

There were two television crews filming the launch. WAND showed a short story on GARLO on their evening news and the crew from the Heartland Highways program on WEIU collected more footage to go in the segment about our club that aired on March 5, 2010.



Recovery of Ben Evan's Space Shuttle. Photo by Alan Carroll.

There were many memorable flights made during the course of the day. Here is the list of awards that were presented. As mentioned in the previous article the best flight of the day was awarded the Gary Buck Memorial Flight Award. The winner for 2009 was Chris Deem with a great flight of his 4" Bullpup.

Best Flight

1. Chris Deem's Bullpup 12D on an H242T. This flight received the Gary Buck Memorial Flight Award.
2. Greg Smith's DeeCee Thunder boost glider

3. Mark Joseph's 38 Special on an H250G
4. Brian Smith's Renegade on a B6-0/C6-5

Best Looking Rocket

1. Greg Smith's Cheetah
2. Tim Dixon's Maverick AGM-23B
3. Brian Smith's King Kraken
4. Tim Dixon's The Sword

Best Apollo Program Rocket

1. Chris Deem's Saturn IB, 1/200th scale
2. Will Carney's Little Joe II, 1/100th scale
3. Will Carney's Little Joe II, MicroMaxx
4. Will Carney's Saturn V, MicroMaxx

Closest Landing To Marker

1. Alan Carroll's Green Rage 2, 41' 1.5"
2. Scott Stromley's Delta 2.0, 42' 11"
3. Scott Stromley's Edmond's Tinee, 47' 9"
4. Jonathan Sivier's Magnum, 50' 6"

We gave out Prang awards for the following flights that didn't go as planned.

1st Place Prangs

- Matt Joseph - his Quest Tomahawk did a power prang
- Scott Stromley - his Dragonfly Monocopter pulled itself apart

2nd Place Prangs

- Tim Dixon - his Color of the Sun crayon rocket failed to deploy
- Jonathan Sivier - his Estes Magnum 2 stage rocket failed to stage and lawn darter
- Brian Smith - his Epic Disaster boost glider shed its wings on lift-off

3rd Place Prang

- Scott Stromley - his Estes Outlander was unstable and pranged

GARLO 2010

"The Year We Make Contact"

The Great Annual Rocket Launch Of 2010 will be held on Saturday, June 26, 2010. It will run from 10 a.m. to 4 p.m. at Dodds Park in

Champaign. This is our biggest annual event, a purely-for-fun rocket launch. We will be awarding ribbons and prizes for winners of an assortment of fun events.

We've decided to make this year's theme Science Fiction and Fantasy rockets to go with the movie "2010", the sequel to "2001: A Space Odyssey". The main event will be for the best model of any Science Fiction or Fantasy rocket. These can be from any science fiction movie, television show, book or any other similar source. Perhaps we will hold another Death Star Drag Race, as we did at GARLO 2001. In addition there will be a separate contest for the best flying saucer model or flight.

Then, of course, there will be the events we hold every year, Best of Show (Static), Best of Show (Flying) and Spot Landing (uncontrolled and controlled). We also have a large number of "Prang" ribbons as consolation prizes. It should be a great day of flying and we hope everyone will plan on being there.

High Power Level 2: Part 3

By Tim Dixon

Well, it was the spring of 2007 and the Level 2 flight date was fast approaching, then, low-and-behold, my daughter decided to move up her wedding date. The wedding (which I was paying for), was in Northern Arkansas the week before NSL '07!!!

When this change in schedule first occurred, it looked like my flight plans were in jeopardy. It took some good planning and negotiating, but I was able to immediately return from Arkansas, pack up my uncle's truck and head off to Muncie, Indiana for the launch. By the way, the wedding went well, the fly fishing was good, and I have a great son-in-law!

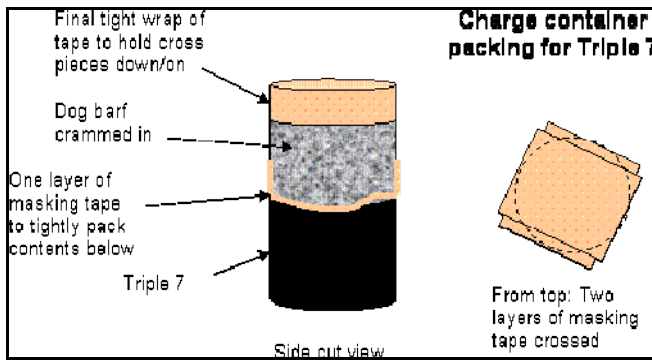
Now back to rocketry. I spent Friday prepping the rocket for launch. I wanted to be very careful in setting and installing the electronics. In addition, I was very careful to prep my ejection charges correctly. In Part 2 of

the article I had mentioned that I use Triple 7 "black powder equivalent" for my charges. In



Formal Affair on the pad at NSL 2007. Photo by Tim Dixon.

Texas (my former place of residence), and now in Indiana, most gun shops do not sell black powder. In addition, I prefer the quick, no hassle clean up and lack of smell you get with a black powder substitute. However, one thing I have learned is that in using such a product, containment of the charge is essential. You cannot pack and preload the stuff enough. My method for filling a charge container is illustrated below. It is important to note, that now I have even taken the prep a step further and use metal duct tape to seal and wrap the charge versus the masking tape as shown in the illustration (next page).



The method of packing the ejection charge container. Illustration by Tim Dixon.

I had finally finished prepping the rocket about 3pm on Friday. I headed out to the pad and loaded the rocket. I then turned on the electronics. First a short beep, then a long beep. No good. The Transolve P6K was telling me I had a bad e-match.

I then had to unload the rocket and take it back to my tent to re-prep that charge. It took about 30 minutes to take the rocket apart and reload the charge. Then I headed back to the flight line.

Since it was getting toward the end of the day, the flight line queue had gotten backed up quite a bit. I waited patiently and finally got out to a pad about 4:15pm. Once again I loaded the rocket, turned on the electronics and verified good e-match connections. I then loaded the igniter and checked continuity. By 4:30pm it looked like it was a “go.” Then I waited patiently for the LCO to sequence through the rockets. And man, did “Formal Affair” (named in honor of both my daughter's wedding, and my “formal” approach to designing and building this rocket) look good on the pad (see the picture at the beginning of the article).

Unfortunately, it was not meant to be. The igniter failed to light the J460T! At that point, after experiencing this second issue, I decided not to hurry and try to recycle the igniter in the last 15 to 20 minutes of the launch window, but to go ahead and take it off the pad and get out early the next day (Saturday's forecast was also for good weather).

Saturday I got up early and headed out to the launch site. I set up my tent in the same location beside Bob Kaplow, long time NAR member and known for the Kaplow-clip motor retention method. My rocket, being fully prepped, allowed me to get out and be the second rocket loaded on a pad. I was also at the right place at the right time and got a bit of press coverage from a local news crew that morning who taped the launch for local broadcast.

The flight went as planned with an apogee event at a modest 1600 feet. The blue and red Ultra X-form chute from Top Flight Recovery burst open. The rocket dropped at a swift pace. I heard a boom, and then another boom for the dual charge main event, but, alas, no chute! I could see the deployment bag fluttering and the pilot chute open, but why the delay!? Was there a tangle? Did I pack the deployment bag incorrectly? Dropping, dropping ... I thought my L2 was not going to happen, and then at about 200 feet, the main opened. With the descent rate, the chute only deployed about 75%, but upon recovery there was no damage to the rocket, and the two L3 NAR members awarded me my L2 certification!

After reviewing the flight events, doing more research, and questioning experienced flyers I decided to change the way I pack a chute in a deployment bag. Previously, I had wrapped the chute as I normally would when outside the bag and then threaded the shroud lines through the elastic bands on the outside of the bag. In addition, I did nothing to prep the shock cord as I felt the deployment bag was the only solution needed to provide a measured deployment event.

For the second launch of Formal Affair in the late summer of 2007, I prepped the main chute differently by just stuffing the chute in bunches from the tip to the shroud lines into the bag (no folding). Also, I fully prepped the shock cord by z-folding the cord five or six times and then rubber-banding it, leading to 7 or 8 of these folded sections which provides much more

tension in an effort to pull the main out of the bag upon deployment.

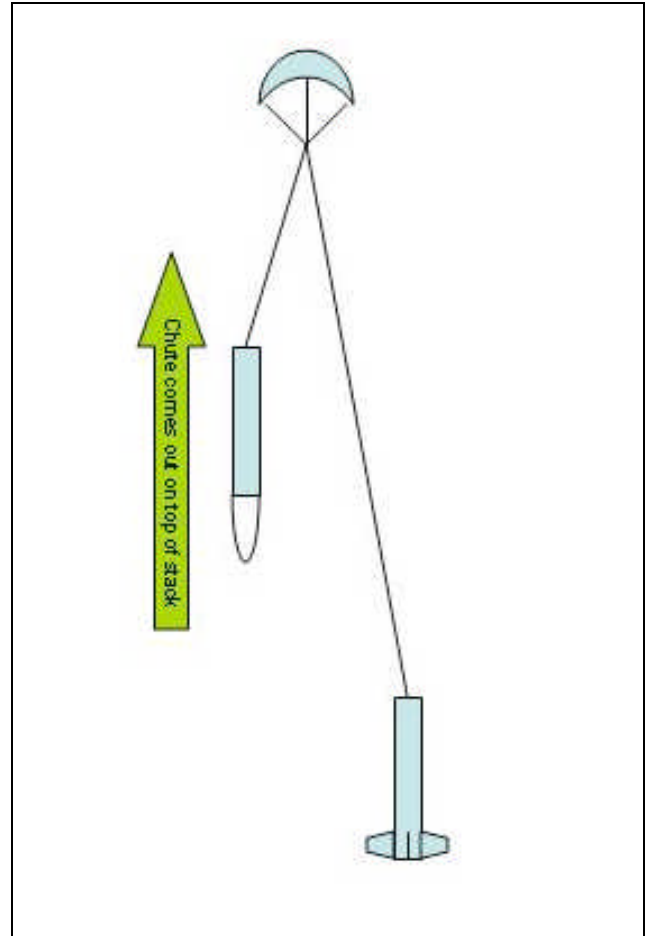
With this preparation method I achieved a successful main deployment. Unfortunately, I still noticed some hesitation in the bag being exposed and deployed out of the payload section, but I put these doubts behind me until the third launch at Midwest Power V in October of 2007.

At Midwest Power V, Formal Affair saw its third flight, this time on a J415W. The pre-flight preparation went smoothly and the ascent was beautiful, the apogee event perfect at 2700 feet, but then at 800 feet the two main charges went off and the deployment bag was still in the payload. At least the fairly large drogue chute provided some resistance as the rocket hit just past the flight line and I and two other CIA members winced at the sound of the landing.

Fortunately, as you can tell from the earlier build accounts, this rocket was built very strong and it survived the landing with nothing more than a paint chip on one fin.

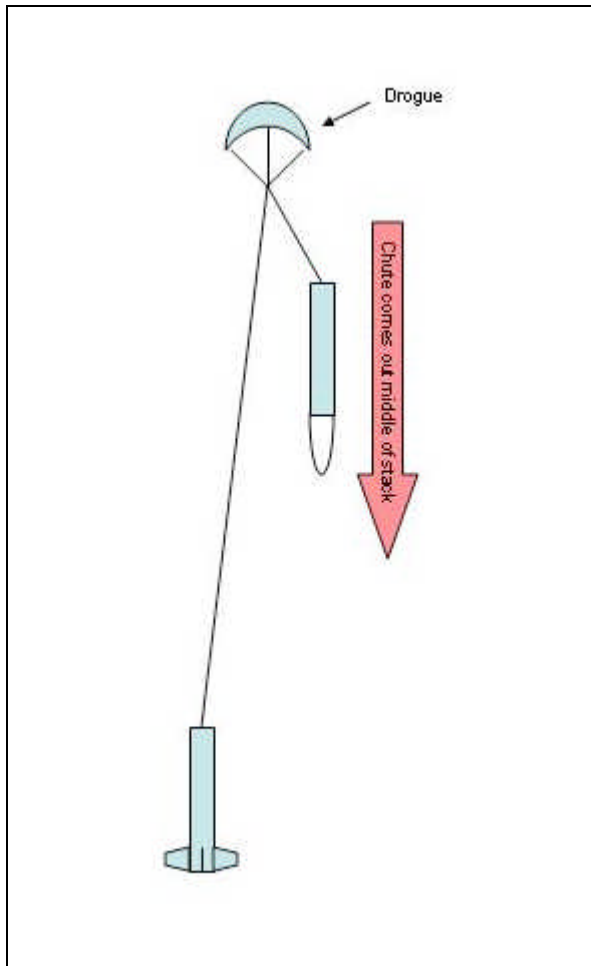
Now, though, it was fairly obvious that the rocket had a design flaw. Here (see picture below) is what I designed/envisioned, and had actually used on two other dual deploy designs as the stack-up during the main deployment event. I chose this method because I felt that the main deployment would not be hindered by any part of the rocket being in the path of the chute exiting the aft end of the payload bay (at the top in the picture).

Unfortunately, given the volume of the main with bag and the shock cord, the deployment charge effectively was packing that whole system down closer to the nose and hindering a clean recovery event. Live and learn. Just because this recovery design had worked on smaller rockets in the past, it is clear that you always need to think and re-think your design methodology and learn from other's experience.



The original deployment set-up. Illustration by Tim Dixon.

To that end, after researching and talking to other Level 3 flyers, I have since redesigned the main deployment separation for Formal Affair, moving to the more standard nosecone separation method (see picture below). The rework of the rocket was accomplished by moving the shear pin locations to the fore end of the payload bay, installing cut off joints in the nosecone shoulder, and conversely moving the 1/4-20 machine screws to the aft end of the payload bay to secure the avionics bay to the payload body tube during flight and deployment.



The modified deployment set-up. Illustration by Tim Dixon.

This modification was first tested on November 21st of this year at a launch in Lafayette Indiana. Formal Affair flew to 3900 feet on a K695R (first flight for my new ARTS2 altimeter as well ☺). It was a perfect flight, and more importantly the flight included a perfectly sequenced and trouble-free main deployment (see picture below). I'm now looking forward to flying this rocket, my L2 design, for many years to come. Hope to see you at a launch with Formal Affair over my shoulder soon!



Formal Affair recovering at the launch in Lafayette, IN on November 21, 2009. Photo by Tim Dixon.

Changes in CIA Online

This past year Prairienet shut down and we had to change the way we provide online access to CIA information. As a result we now have our own domain for the CIA web site **www.CIARocketry.org** and a Yahoo group email list **cia-rocketry@yahoogroups.com**. You can find out more and join the email list from the CIA homepage.

Goddard and Stumpy

By Mark Page

Episode ten is one of my favorites because the story and lesson connect strongly. The "T-chute" was something my brothers and I actually tested. It works great especially if the arm holes are narrowed a bit. When the T-chute inflates it looks like 300lbs of Stumpy in a Calvin Klein T-shirt. At the time this was written, Area 51 was just appearing in the popular press. I had never heard of it. I had called a Popular Science writer I knew and asked him for info on alien chasers. He mentioned Area 51, and this fit perfectly. Unknown to me at the time, I had watched engineers shuttle to and from Area 51 daily in unmarked 727's. My McDonnell-Douglas colleagues and I lunched in the Long Beach airport restaurant where we had a clear view of the boarding process at the "wrong end" of the airfield. Incidentally, it was during this period that we finalized the Blended-Wing-Body (BWB) concept at my day job. (On page 10)

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: Ken Ferran

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Email: kenferran@netzero.net

http://www.tripoli.org/launches/TRA_Central_IL.shtml

Fox Valley Rocketeers

Monthly launches and meetings. Northwest of Chicago.

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

Illinois Society of Amateur Rocketry

Monthly launches and meetings. Suburban Chicago area.

<http://www.isar-rocketry.com/>

Northern Illinois Rocketry Association

NIRA holds regular launches in the Chicago area

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

Prairie State Rocketry

Monthly launches near Aurora.

<http://www.psrocketry.com/>

Willow Hill Rocketry Group

An NAR section serving Peoria, IL and surrounding communities.

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

NAR of the Quad Cities

Tripoli Quad Cities

Model and High Power rocketry for Eastern Iowa and North Western Illinois.

<http://www.tripoliquadcities39.com/>

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 some local places to get rocketry supplies.

Hobby Lobby: 2102 N. Neil St. in Champaign near Market Place mall. Check the paper and their web site for occasional 40% coupons. <http://www.hobbylobby.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 submissions 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, hopefully in the late summer, contact the editor.

CIA Officers

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

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The CIA Informant is published by Central Illinois Aerospace.

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Goddard & Stumpy By John Page's Brother

