

Jack Takes Us Back!

Rocketry Flash Back

By Jack Komorowski

The picture you see here was taken in September of 1979, at the field we fly on at GCC. The parking lot is visible, and as you can see, there was no ballpark. There were few houses on the other side of Tanyard Road. The place where the pictured launch was held on the field was, approximately, where we launched in November of this year.

This was my attempt to win the NARs' Silver NARTREK award. The launch pad was a self-contained 9v relay at the pad that would receive a response from the hand held control box that was battery powered also. It was very advanced at the time, and you could get continuity checks and ignitor failure readings from it. An audible sound would issue forth for trouble, and a different tone for launch. It had plenty of power to launch anything available at that time, including the Enerjet composite engines. The company, now defunct, was Nova Research Associates. Pity too, because this platform could use the "C" rail, or you could mount a mini-tower on it. Versatile it was. It was later badly damaged in a move.

The rocket was an FSI Black Brandt II, flying on an FSI, BP, F100-6. It was a real kicker of an engine, and if memory serves me well, (which it sometimes does not, at the MOST inopportune times), it burned for 1.3 seconds. The Brandt was approx 2.5 inches in diameter and about 39 inches long. It was detailed to

include the riveting and the antenna from the "payload" section. The nose cone was all balsa, of very high quality, as were the fins.

Launch that day was typical fall, for the time of year, though we all remarked that the wind was very light. In the picture, I'm shown loading the Brandt for her maiden, and qualifying flight. At that time, you had to have someone, in the NAR, judge your rocket independently of you, though you did have some input. You had to make a qualifying flight and

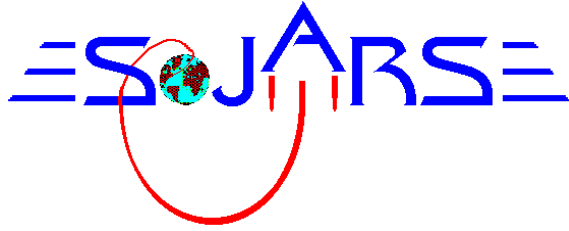


recover with minimal damage, or points could be taken off. At the countdown, the Brant lifted off the pad with a roar that sounds like two D12's. How the ground shook as we stood there shocked by such power. The kids totally spellbound by someone flying a kite on the other side of the field. The rocket reaching apogee. Me, running like some person on a mission, or someone chasing me, trying to catch that rocket as it came down on it's chute. And where the HELL did the wind come from?

The rocket was recovered intact, with some scraping to the paint, and some cosmetic dings on the nose cone. A great flight, good recovery, good points, and my paperwork to be on its way after the weekend.

On 9 October of 1979, I received my Silver level in NARTREK. It's a fun program, and cannot but help ALL rocketeers to achieve more with their hobby, and learning a great deal. I really urge everyone to check out this

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**President:
Art Treiman**

TheTreimans@home.com

**Vice-President:
Barry Berman**

therocketdoc@aol.com

**Treasurer:
John Coles**

oddroc@home.com

**Secretary:
Jeff Gage**

ggnpoppy@rcn.com

Director of Safety & Range Ops:

Jack Komorowski
rocketflyer@earthlink.net

**Altitude! Editor:
Joe Libby**

libbyja@home.com

**Print Editors:
Michael Drake**

drakester9@aol.com

**Web Master:
Paul DeCraene**

swfreak18@home.com

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SoJARS@rocketryonline.com

Please visit the frequently updated **SoJARS** website at <http://www.sojars.org> or call the **SoJARS Hotline: 856-424-5905**

Calendar of Events

SoJARS Meetings

Unless otherwise specified, all meetings take place at the Cherry Hill Public Library, 1100 North Kings Highway, Cherry Hill, NJ. (856) 667-0300. Directions are available on our web site. For 2001, all meetings will be held on the 4th Tuesday of the month, 7:00pm - 9:00pm, in Room A.

Tuesday, November 27.

Note: Nominate 2002 Officers; Vote Jan '02 meeting.

Tuesday, December 25 – hoping to reschedule.

SoJARS Launch Dates

Unless otherwise specified, our launch area is at the Gloucester County College. Directions are available on our web site.

Sunday, November 4, 12:00pm to 4pm.

Raindate: none.

Theme, Funtest, Vendor: TBA

Sunday, December 2, 12:00pm to 4pm.

Raindate: December 9.

* **Contest:** SoJARS & GSSS "Open Skies"

See below for details

Vendor: M&G Hobbies

January: Date, Theme, Funtest, Vendor: TBA

GSSS, NAR #439

Launches are usually held on the fourth Saturday of each month, 10am - 3pm: Nov 24, Dec 29, 2001.

Location: North Branch Park, near Somerville, NJ

GSSS Hotline: (908)-658-9417

Website: <http://www.robnee.com/gsss/>

MARS, TRA #105

Next Launch: TBA.

Location: Sod Farm, Allentown, NJ.

Website: <http://www.njtripoli.org/>

METRA, TRA #94

Next Launch: TBA.

Location: Rickey Farms, Vernon, NJ.

Web: <http://www.metrarocketclub.org/>

Garden State Tripoli, TRA #74

Next Launch: TBA.

Location: Cederville, NJ.

Website: <http://www.njtripoli.com/>

Calendar of Events

Continued

PARA, NAR #520

Next Launch: Dec 2 (raindate Dec 9), 11:00a - 4:00p.
Location: a farm 9 miles north of Doylestown, PA
Phone: You may call Chuck Arkens (215) 855-5599
or David Stoetzer (215) 412-4348 the night before or
the morning of the launch for verification.
Website: <http://users.erols.com/dstoetz/para/>

SPAAR, NAR # 503

Next Launch: Dec 9, 1:00p – 5:00p.
Location: Cocalico High School in Denver, PA
Website: <http://home.earthlink.net/~sbaar503/>

Deleware Tripoli, TRA #106

Next Launch: TBA.
Location: Harper Farm, Rhodesdale, DE
Website: <http://www.detripoli.org/>

Maryland Tripoli, TRA #68

Next Launch: TBA.
Location: Higgs Dairy Farm, Price, MD
Website: <http://www.mdtripoli.org/>

Altitude! Deadlines

Submissions for publication are accepted continuously by the editor. The Deadline for the January/February issue will be January 5.

Rocketry Flash Back

Continued from Front Cover

program offered by the NAR, as it is fun and you DO learn, without knowing it sometimes. Now, did I say good recovery?

I lied. I'm STILL recovering from a 1/2 mile run. The rocket landed over where they have motorcycle training, on the far end of THAT parking lot. I was a sprinter, not a distance runner. Oh the hair and bell bottoms? I see them being worn today as something "new and different." The Army shirt? Well, that was from my second hitch in the service. One US Air Force, the other, Army. Less hair, no bell bottoms, but still have that shirt. Oh, who IS that guy in the photo? Hi, I'm Jack Komorowski, your friendly "are you REALLY gonna try to fly that thing?" Range and Safety Director for SoJARS.

Join NAR, and join the NARTREK program. You won't be sorry. It will test you, and you'll have fun doing it. Oh, and the good thing about the

program? You can work at your own pace. I take them at their word too. What YEAR is it now? I still have the ORIGINAL Gold level paper work. One of these days...

President's Report

Well, here is another summer season past and a long winter building season arriving. But before we give up for the year (which we never actually do!) Steve Flynn, a member of GSSS, pulled a nice surprise out of his hat for us. There has always been a "simmering" interest in competition in our group, but never the critical mass necessary to get it going. We also had some bad luck and bad weather issues whenever we scheduled a contest. It has always been an area I've felt was important for us to have as a club.

Steve is a serious model rocket competition flyer who found himself stuck with some soon to be decertified Apogee micro motors and a hankering to fly. Well, he, Tom Mitchell (our club CD) and Joe Libby (I'm not sure how he fit into this, but he was a key player) have organized us a sanctioned meet for December. Why do I discuss this here? For one, I'm excited that we are starting a competition program here in SoJARS. Several of our members fly competition and others would if we give them the opportunity. And, finally, I feel it is important for folks to realize that "stuff" doesn't just happen in a club. Steve, Tom, and Joe worked hard to make this happen and they deserve credit... so here it is! Good effort, guys! Now we have to hope for equally good weather.

Art Treiman

Editorial

Wow! I didn't expect such a thick issue, especially since the last came out late. Once again, we have some great submissions for you.

The honors of Front Page Article go to our Range and Safety Director Jack Komorowski. He also presents us with an interesting scenario in his RSO Soapbox and educates us with a tidbit in the FYI section.

The big news is, of course, our upcoming contest to be held jointly with GSSS at our field in December (see following article). Apparently the Flynn's of GSSS have some Apogee motors they want to use before they are decertified for contest use. This will be our first real contest but, with some beginners luck and a home field advantage, who knows?!

In the Members Forum we have a couple from Adrian Liggins. First, a piece on Russian Stamps, complimenting his Russian Coins article from last issue. Next a report on the UK's National Space Centre, located his hometown. Adrian also contributed a nice FYI on making transitions.

Barry offers us a pair of touching stories. In the Members Forum, his trip to Florida and meeting with Mrs. Heinlein. In the FYI Section, an update on the Heinlein Blood Drive, serving as a nice follow-up on his Front Page article from July / August.

In light of the upcoming contest, Ed Romani, who had brought his competition models to the October meeting, gives a some tips.

Finally, we have a few words on the recent Leonid Meteor Shower from Barry, Art, me, and even Bob Zabriskie of GSSS.

By the way, please note that on the Calendar I have added SPAAR's info. If there are any other groups you think I should track just let me know.

Joe Libby

SoJARS / GSSS Contest

The South Jersey Area Rocketry Society in conjunction with the Garden State Spacemodeling Society is pleased to announce "Open Skies 2001," an NAR Open Meet to be held at the SoJARS launch field at Gloucester County College, December 2, 2001, with tentative rain date December 9, 2001. Contest Director is Steve Flynn (teri@eclipse.net). All flyers are welcome. In order to officially enter the contest events you must be a current NAR member (you can join the NAR at any time before the event). You do not, however, have to be a member of SoJARS or GSSS to compete.

Events:	WF
Streamer Spot Landing	4
1/2A B/G	17
A Streamer Duration	8
B Streamer Duration	9
B Helicopter Duration	21
Total WF	59

For further information contact Steve Flynn (teri@eclipse.net) or SoJARS Contest Director Tom Mitchell (themitchells24@home.com). Please note that start time is still to be determined (our regular start time is 11 am; we will try to get permission to start at 10). The regular SoJARS sport launch will also be taking place that day.

Art Treiman

Launch Reports

**14 October 2001
and
4 November 2001**

To be published in next issue.

Members' Forum

40th Anniversary Gagarin Stamps

By Adrian Liggins

The range of space-related stamps, from just about every country in the world, is truly overwhelming. How anyone keeps up to date with this proliferation of items is certainly beyond me. A stamp-collector I am not; however, I recently came across a particularly nice 2001 release from Russia and thought it might be of interest.



The design covers two 3-Rouble stamps. On the left, Gagarin is seen, pre-flight, in space suit and helmet with Sergei Korolev, the Soviet space program's chief designer; images of the launch-tower are in the background. On the other stamp, Gagarin is seen in military uniform, after the flight; his landed capsule is seen in the background. The trajectory of the Vostok vehicle, complete with booster separation and Gagarin's ejection from the capsule traverses across the two stamps.

What makes these stamps extra special is that, in addition to the regular pairs, these stamps were also released as a "miniature sheet" of three pairs (just 70,000 of these were made). Here, a pictorial border depicts Gagarin's parade of honor, plus the headlines from various newspapers around the globe.



Both the pairs and miniature sheets pop up on the ebay.com auction site quite regularly. As a guide, the miniature sheet should set you back less than \$2.00. For the avid collector, it should be noted that miniature sheets of other releases appear to be available from the Russian postal service, such as the 2000 Apollo-Soyuz issue shown here.



While not intended as an endorsement, the following dealer is known to carry these, and other space-related items. Please mention this article if you contact them.

Dealer: Neva Philatelic – tefim@sprint.ca

How I Spent My Summer Vacation

By Barry Berman

The evening following the Heinlein blood drive, my lovely wife Karen and I attended the Robert A. Heinlein Memorial Dinner which was held upstairs at “Old Original Bookbinders.” As a newcomer to the Philly area this seems incredibly redundant to me, but I am assured that all three things need to be said in order to distinguish this place from the “other” Old Bookbinders. Go figure!

The world convention votes for and awards “Hugo” awards each year for the best in science fiction. Sort of an “Academy Award” for SF. This year, the con also awarded “Retro-Hugo” awards, since for some reason, Hugos were not awarded in 1951. Mr. Heinlein won in all three of the categories in which he was nominated, including one for the movie “Destination Moon.” Those of you who have recently renewed your NAR membership should have received a publication containing an article about the movie and including plans for building a flying version of the Luna - the moon ship from the movie. The rest of us will get our copy when we renew.

Two of the three people that accepted in his place (he died in 1988) were present at the dinner, and brought the spaceship statuettes with them. I had my photo taken holding them. They sort of look like the Luna!

I also got to meet and speak with Frederik Pohl, Yoji Kondo, Gregory Benford, and Robert Silverberg - well known science fiction authors and Heinlein admirers. I mostly succeeded in not making a fool of myself. I say mostly because I was coerced (wasn’t too hard) into telling a little story to Mr. Pohl - a man who asked for help in getting to the blood drive because he “wasn’t as spry as [he] was when [he] was a lad of 75.”

Seems he had written a story in which a man is going to be stuck in a spaceship with his ladyfriend for an extended period of time. They can pack anything they want into this ship and it seems she likes asparagus. Mr. Pohl’s protagonist explains that people either do or do not excrete a substance into their urine after eating asparagus which makes it smell bad. Unfortunately the girlfriend is in the first group.

When I got to meet Mr. Pohl, I told him it was a pleasure to meet him and thanked him for coming to our blood drive earlier in the day. I then told him that despite attending both pharmacy and medical schools, I had learned about asparagus from him. I was rewarded with a big laugh and a bewildered wife (until I could explain it to her later on).

A few days later we drove down to Florida for our vacation. Knowing we were going to be nearby,

Mrs. Heinlein had invited us to join her for lunch, so one afternoon we drove up to visit her. After some months of internet and telephone correspondence, and many years of reading her husband's books - many of which contain characters who were based on his wife - it was truly a pleasure to be able to finally meet her.



Mrs. Heinlein was a Naval officer during WWII, assigned to the Philadelphia Navy Yard, where she met her husband who was working as a civilian engineer. He had been an Annapolis graduate (1929) who was medically discharged after contracting tuberculosis. After Pearl Harbor, he tried unsuccessfully to get his commission back but was refused due to his medical discharge status. An admiral friend asked him to do war-related work as an engineer, which he did, hiring some of the "names" of science fiction (including a young biochem grad student named Isaac Asimov) to work there as well. The Heinleins were married for 40 years until Robert's death in 1988 at age 81.

The first interesting thing that I noticed in the house was a small brass cannon mounted in a small wooden gun carriage, sitting on the brick fireplace. Those who have read his Hugo-award winning novel "The Moon Is A Harsh Mistress" may know that the working title of the book was "Brass Cannon." The book is actually about a revolution on the moon, and Heinlein explained the "joke" this way: After many years working at City Hall, polishing the brass cannon outside, a man decides to go into business for himself... so he buys his own brass cannon.

All seven of his Hugo awards were displayed on the mantle. Certificates and honors cover the walls. An entire bookcase is dedicated to Mr. Heinlein's books. My son owns an Earth globe, but he was impressed to find that Mr. Heinlein owned globes of Mars and the Moon, as well.

We had a nice visit and a pleasant lunch. Mr. William Patterson, the Chairman of the Heinlein Society, was also present. He had accepted one of

the retro-Hugos on Mrs. Heinlein's behalf and had delivered all three to her. As we chatted, he was scrambling to write down notes on a napkin, explaining that he is presently writing another Heinlein-related book to follow his recent "A Martian Named Smith," which is about Heinlein's "Stranger in a Strange Land."

Two days later, we were driving home. We usually listen to the CD player, but for some reason that morning we had the radio on. It was September 11th. We listened all the way home - 15 hours - stopping only for gas, drive-thru's, and bathrooms. We drove through Washington at 9:30 PM and could see the fire at the Pentagon burning in the distance. It was a chilling end to a vacation that we'll always remember for many reasons.

Earlier today I was online and chatted with Mrs. Heinlein. Knowing my interest in rocketry, she asked me if I had ever seen a "real" launch. When I replied that I hadn't, she reminded me that she and her husband had attended several including the launch of Apollo 11, for which Mr. Heinlein served as "color" commentator with Walter Cronkite. I mentioned that I had purchased CBS' video of the launch coverage hoping to see the segment with her husband (alas, he's not on it), and she told me that she has a video of that segment, but is not allowed to copy it. She said she'd have to show it to me the next time I visit!

I'm looking forward to it.

RSO's Soapbox

By Jack Komorowski

I recently had the opportunity to travel to a launch some distance away. It was a good time to fly, the weather superb, and the field quite BIG. Funny thing about the launch, the dealers had no real engines to sell. I mean, no H's, no I's, no reloads, zip, nada. Nothing except a few E's, D's and the econo pak F's, and some G 80's. Wow, what a shock. I think it's going to be a while before we see some of these engines come back. Let's hope AeroTech can bounce back from a 15 million-dollar+ burnout. This was their only plant. One vendor had the Cesaroni engines, and was doing a real business with them, but I believe they were a preorder, like the larger engines that were there. I think this will put a nice "spike" in the Cesaroni sales chart. It will probably be the only place where you'll be able to get HPR engines. From what I gather, the grains are not compatible with our casings. I'd like more info on that, however.

As is my nature, I did stints at the RSO table, and as LCO. I had fun. These were a good group of people, and there was some high humor going on at

the tables I manned. I'd gladly do it again. But you know, there was one incident that occurred that did not sit too well with me, and I had the backing of an out of state Prefect to confirm my decision.

In itself, the incident can cause problems for a Prefecture in TRA, or an NAR Chartered Section. It violates what we are taught. Safety first, second, and always. Before I go farther, I WOULD like some input from all who read this. "What would you do / have done?"

A gentleman had come up to the RSO / registration table, to fly his rocket. He was going to pay his fee, and I would gladly take it and issue a flight card, and appropriate tags, etc. I asked for ID, NAR or TRA, and the fellow did not seem to have either, and when I asked if he was certified to what level, I got a blank look. Hmmmm. I checked the rocket he wanted to fly, and lo and behold it was loaded with 3 G55's. Not in itself was this a problem, this would be cool to see fly. (It did; later on that). Since the fellow was NOT certified, I could not let him fly that rocket. I wasn't going to put my initial on that card, or an OK. I checked with a Prefect standing nearby, and he backed me up on it and went on to more detail. The person cannot certify L1 by clustering. The 3 G55's were in the high H, low I class, thus he was not allowed to fly as he was NOT certified at any level, and we were at a SANCTIONED launch. Everyone was cool and this gent brought up that if some one else flew the rocket in his name, would it be OK? I didn't think so, but did not know for sure. The visiting Prefect said that this was not a good idea, as if anything went wrong, the guy whose name on that launch card was in for a time of it, and so would the RSO. He's supposed to know better. I thought the matter settled, quite nicely, and the Prefect lending his voice, was a Pro. Well don't you know... I got bit in the butt later. Of course you gotta keep your trap shut, (right?), even if you had an end-run made against you.

Later that afternoon I was pulling LCO duty and having fun with all up there. You know the drill. Read the flight card, which pad, name, engine(s), etc. There were some really nice stuff out there, and my first encounter with M2000 Redline, or any Redline for that matter. I can tell you, they are HOT and have a spectacular long RED flame. They have a nice roar to them and can get your rocket up there in a hurry. Good stuff. Well, going about my business, the racks are loaded and I'm happily pushing the launch button after announcing the flight. Up comes the next card, and I read it off and state that there are 3G55's in this bird for so and so. I did a double take. There was the primary persons name there, but under it was the person's name who I had said that I could not let his rocket fly. I really didn't miss but a beat, and pushed

the launch button. A really beautiful, straight up flight and recovery, three nice exhaust flames belching out the rear. I just filed the card, and said what it really was, a real nice flight. But boy was my heart going.

Now, back to my question. What would you have done? Further, if this was in YOUR group, would you uphold your RSO and Prefect/President? What is your opinion? I'd like to hear from you out there. How about writing you opinion, and send it to Joe Libby, (sorry, Joe), for inclusion in our next newsletter? I want to know what YOU think. Thanx.

The UK's National Space Centre

Report by Adrian Liggins



Founded by the Romans, my home city of Leicester (pronounced "Lester") is a medium-sized English city situated about 90 miles north of London, in an area of the country known as "The Midlands". The city boasts the country's smallest cathedral and largest permanent outdoor market: in the past, it was famous for its shoe-making industry. More recently, the University of Leicester has been making a name for itself in the field of astronomy, as well as having one of Europe's largest space research departments, developing instruments for space vehicles: these facts somewhat lessen the surprise of finding the UK's National Space Centre here. The facility opened in June 2001.

From the outside, the most striking feature of the Centre is the Rocket Tower. Constructed from "pillows" of high-tech polymer, this 138ft high structure protects two launch vehicles and an elevator system (built to look like that on an actual launch-gantry). Tiny metal dots on the surface of the polymer reduce the incoming sunlight (to protect the artifacts), while heating elements, cunningly disguised as scale model satellites keep away the cold of winter. Most surprising of all is that the tower can be "un-zipped", allowing the launch vehicle exhibits to be exchanged.



The current residents are an American “Thor Able” and a British “Blue Streak” (a scrapped 1960s ICBM project that became the first stage of Europe’s “Europa” vehicle – the forerunner of Ariane). In a dramatic touch, the base of the tower houses a restaurant – directly under the rockets’ engines.



There’s plenty more hardware on display – much of it with a European flavor. The main entrance hall is dominated by a complete Soyuz orbital vehicle (only the second outside of Russia) and the “Into Space” hall presents various aspects of life in space,

such as a Russian EVA suit, a mock-up of an International Space Station module, and even a zero-g toilet! Helen Sharman, Britain’s own Cosmonaut, has donated many items from her flight to MIR. To put things into perspective, there’s a sit-in mock-up of a Mercury capsule, giving the visitor an idea of just how cramped this vehicle was. Up in the Rocket Tower, one floor displays various designs of rocket engines, while the top floor features full scale models of various satellites (including Sputnik) hanging from the ceiling; angled mirrors on the accompanying information boards allow easy observation of these models whilst reading.

It’s not just all hardware displays, though. An exhibition on weather satellites traces the history and use of these devices in global weather spotting and prediction: a sound stage allows the visitor to take the role of weather anchor (complete with teleprompter and digital green-screen projection) and then review the recording of their efforts. A section is also dedicated to an examination of communications satellites. The comprehensive “Planets” section highlights the history of ground-based and probe observations, plus the current state of knowledge on each of our orbiting neighbors, their moons and the sun. To keep up to date, the “Space Now” section provides a multi-media presentation of new developments in space exploration and commercial use, with behind-the-scenes glimpses into university, industry, research activities, as well as the Centre’s own “Space Science Research Unit”. During our visit, this section was highlighting the recently-discovered audio of the Apollo XI landing. Much of this information (which includes a comprehensive world-wide launch schedule) is also available on the Centre’s web site. (See below).

Pride of place in the middle of the facility is the “Space Theatre”, a domed planetarium-type affair, that uses state-of-the-art projection systems to present locally-made productions (which, apparently, have a world-wide distribution). The show during our visit was “BIG”, an exploration of the size of the universe (which should probably be subtitled “how to feel insignificant”).

To add further depth to the visitor’s experience, the “Space Connections Trail” throughout the Centre links many common objects to their original use in the space industry. For instance, did you know that the metalized film around your potato chips is actually satellite insulation material, or that the cordless drill was developed specifically for the Apollo landings?

For the rocketry/space enthusiast visiting the UK, I would certainly recommend the National Space Centre; however, expect to be there most of the day if

you want to take in everything. On the web, the Centre can be found at: www.spacecentre.co.uk.

Space Centre logo reproduced with kind permission.

FYI

Robert A. Heinlein Memorial Blood Drive, September 1, 2001

Report by Barry Berman

As I mentioned in a previous edition of *Altitude* (Vol 3 No 4, July / August 2001), I am a member of The Heinlein Society, a non-profit charitable organization dedicated to furthering the work and ideals of Robert A. Heinlein, science fiction's Grand Master. Until recently, I have served as the Chairman of the Blood Drive committee.

On September 1st, The Heinlein Society held our Robert A. Heinlein, Pay it Forward, Memorial Blood Drive at the Arch Street Methodist church, which is one block west of the convention center where this year's world science fiction convention - the Millennium Philcon - was held.

Thanks to those who went to our group's website (heinleinsociety.org) and signed up to participate, the Red Cross was expecting 30 people to show up and donate blood. Despite my insistence that this represented merely the tip of the iceberg, and that the majority of folks would find out about the blood drive upon arrival at the con, they were reluctant to commit themselves to any additional resources. That morning I arrived at the church at 8 AM to help get ready for our planned start time of 10 AM. There were already 5 people waiting to donate. By 9 AM there were 30 folks signed up and waiting. The Red Cross representative was beginning to get nervous, and by 10 AM her cell phone was out and she was calling whoever she could think of to get help. I refrained from reminding her that I had indeed told her so.

Frederik Pohl, Joe Haldeman, Gregory Benford, Robert Silverberg, Sarah Hoyt, and Yoji Kondo were all on hand to greet donors and hand out autographed copies of their books. In addition, donors received a copy of Mr. Heinlein's book "I Will Fear No Evil", signed with thanks by the author's widow, Mrs. Virginia Heinlein.

Sixty-seven people signed up to donate and some waited up to 90 minutes, however no one left before going through the process. Of the 67 volunteers, 55 usable units of blood were obtained and, as I was happy to later learn, this blood was eventually sent to

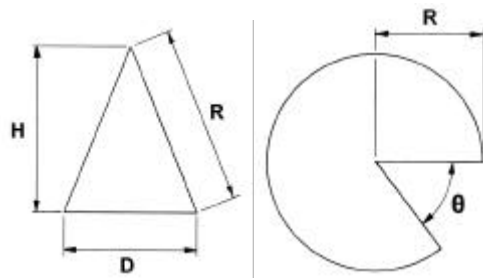
NYC to help the victims of the attack on the World Trade Center.

The next day my family and I left for Florida on vacation. This is literally another story, which will be found elsewhere in this issue.

Cut-Out Shapes for Body Tube Transitions

By: Adrian Liggins

Transitions provide a means of filling the gap between two body tubes of different dimensions. They may also be used to model complex pods or boosters off the main body tube. For modeling purposes, these sections are usually made up as a shroud, from a paper cut-out. A simple transition consists of a truncated cone (that is, a cone with the top lopped off); so, to understand how we can produce a suitable cut-out shape from a flat piece of paper, we should start off by looking at a cone.



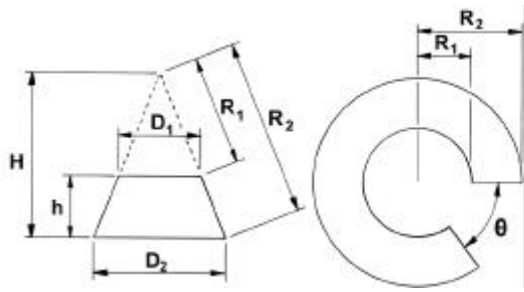
A cone of base diameter D and height H can be made from a circle of radius R , with a wedge of angle θ cut from it. R is also the distance from the tip of the cone to the edge of the base, and is given by:

$$R = \sqrt{H^2 + \frac{1}{4}D^2}$$

If you consider that the base of the cone has a circumference of πD and the circle has circumference $2\pi R$, then the section of circle-rim being cut out has a length of $(2\pi R - \pi D)$. The angle θ is then the ratio of this length to the circle's circumference, times 360° , which becomes:

$$\theta = 360 \times (1 - D/2R)$$

So, let's move on to transitions.



A transition has an upper diameter D_1 , a lower diameter D_2 and a height h . The first task is to find H , the height of the cone from which the transition has been taken. Now, anywhere along the cone, the ratio of the height from the tip, to the diameter, will be the same. So:

$$H/D_2 = (H-h)/D_1$$

which can be rearranged to give:

$$H = h/(1 - D_1/D_2)$$

Our cut-out will have an inner radius R_1 and an outer radius R_2 , given by the distances from the tip of the cone to the upper and lower edges of the transition, respectively. The equations for these distances are:

$$R_1 = \sqrt{((H - h)^2 + \frac{1}{4}D_1^2)}$$

$$R_2 = \sqrt{(H^2 + \frac{1}{4}D_2^2)}$$

As for the cone, the cut-out angle, θ , is given by:

$$\theta = 360 \times (1 - D_2/2R_2)$$

Before cutting out the shape, don't forget to add a tab, for gluing the two ends together.

Some Contest Tips

By Ed Romani

Here are some tips I've learned that relate to our upcoming contest:

Streamer Spot - Never did it

1/2A BG - Never did it, but I did build one based on Estes Dragonfly & NightHawk. Plans on Jim Z's website. <http://www.dars.org/jimz/estes.htm>

A & B SD - Never did it, but I did compete in 1/2A SD. Brought in models in at last meeting. Tip: Office Max sells rolls of tracing paper(yellow). About \$8. Will last a lifetime.

B Helicopter - Just built one last week. Bought kit from QCR (Ken Brown). \$10? Build this one first,

as it takes some time. Bruce gave me tips on trimming.

NO JOY

By Jack Komorowski

You've heard it many times before. A rocket is sitting on the pad, the count is called, the button is pushed, and the rocket still sits there. AHhh (choo?), so it goes, and the LCO calls out, "NO JOY" and goes to the next in line. What does he mean?

It is an expression used by pilots when answering a traffic call from an air traffic facility. Eg: "Air Force 797, traffic, your one o'clock, southwest bound, four miles, altitude unknown." The pilot will look to his one o'clock position, (the direction you are heading is always twelve o'clock) and if he sees the traffic (another aircraft) he will tell the controller something like: "Roger, have him in sight." Or: "Copy, we have him." If, however, he doesn't see him, more likely you will hear: "Roger, no joy." Or just: "No joy," meaning he will keep an eye out for it, but DOES NOT SEE the aircraft, and you can bet he will keep an eye out. Hence, when he calls "no joy," the pilot is NOT happy that he cannot see the other aircraft. NO JOY.

Leonid Meteor Shower

[Here's a copy of some email exchanges on this - JL]

Sunday, November 18th, 2001. The annual Leonid meteor shower. This year's version was expected to be so good, it should be more properly considered a meteor "storm."

A meteor shower is seen when the Earth, in its year-long journey around the sun, passes through the trail left by a comet, in this case comet Temple-Tuttle. This year's shower was exceptionally good since the Earth passed through an area in which three separate comet trails, from three separate orbits of Temple-Tuttle over hundreds of years, overlapped. The sand-grain sized particles make long brilliant trails as they burn-up entering into our atmosphere. The streaks are called "meteors" and any large pieces which manage to hit Earth are called "meteorites."

I got up at 0445 hours and woke Kate (8) and Zak (6). Mark (4) wouldn't get up and since Steffi is too young I left her alone. My wife, Karen had already warned me Saturday night to not bother her. I was surprised, but the kids were excited and got ready really quickly. Socks and shoes, and jackets over their PJs. We went out into the back yard to find the stars sharp on a crisp early morning.

I had seen a good meteor shower only one other time. While on a camping trip, on a surprisingly chilly North Carolina summer night in 1980, I sat out under blankets and watched a very memorable Perseid shower. We had gone to sleep on a warm, rainy night, but for some reason, I woke after midnight to find it had become cool and dry with clear skies. I learned later that the best time to watch is after midnight since that's when that part of the Earth is turned so as to enter the comet's trail "head on." Since then, living in cities, I found it impossible to see anything even though every year the news broadcasts always ran a story mentioning the Leonids or Persids, the two most famous meteor showers.

I quickly located my "old friend" Orion and turned "left" to find the constellation Leo. Expecting to see the meteors emanate only from the "head/mane" area near Regulus, I was surprised to see them over the entire half of the sky with Leo in the center. Of course they all pointed back that way. We must have seen one every few seconds or so, but to be fair we probably missed quite a few, too. We only stayed out for 15 - 20 minutes, and the attention span of kids being what it is we went back in and back to bed.

As much as I like to sleep in on Sundays, I'm glad I got up to see it, and especially glad I talked the kids into getting up, too. It's something we'll be able to talk about for some time.

-Barry Berman

At 4am I went over to my cousins & we watched the meteor shower with his sons. It was really cool. At times 3 or 4 in a row! Some really bright bursts with smoke trails that stayed visible for half a minute or more. At one point, close to 5am I think, we counted 30 in 6 minutes = 300/hour; like one every 5 seconds on average, though they actually came in small clusters mostly. I tried taking pictures, a whole roll worth actually - not the digital kind, but the old - fashioned film kind because I had to use my SLR with shutter open from 30 sec to 10 minutes. I made some great images of Orion, Leo, Gemini (with Jupiter) and Big Dipper, but no luck catching a meteor streak.

-Joe

I live in Bridgewater (between Somerville and Flemington) and I watched for two hours (2:45 - 4:45am). I counted 218 that I saw and 3 sporadic (not associated with the shower) and yes some had trails that lasted for minutes. Did you see the four bright fireballs? They were at least -4 mag. I have seen many showers and this one was GOOD.

-Bob Zabriskie, GSSS senior advisor. NAR 36036

Yeah... I hauled my but up too! I had tried to find Leo at bedtime but he wasn't there yet... It was neat seeing the difference in the constellations during different times on the same night! (I never did that before). Anyway... set alarm for @ 440, put out my longjohns, winter coat, yada yada, and earlier put one of the chaise lounges from my deck in the middle of my back yard. Small yard but no trees made for good viewing, although I never realized how much ambient light there is! I got outside about 445 and just layed there for 45 minutes watching. Several times there were bursts with one every second or so, and even a few simultaneous. The baby was kind enough to wake Stacy at 5 sharp so she came out for about five minutes (the busiest five minutes of the show, thought!). Anyway, it was definitely neat.

-Art

Meeting Minutes

25 September 2001

By Art Treiman

Present

A. Treiman, J. Coles, B. Ross, L. Paullin, R. Paullin, J. Garnier, J. Libby, J. Powell, B. Berman, S. Bastow, B. Jonas, S. Wilson, S. Wilson, D. Wright, E. Hall.

Talk by Darren Wright

Darren gave a fun and informative (as always!) presentation and demo of how motors are made. Darren has been seriously bitten by the HPR bug and everything it involves. He has expanded his horizons beyond using manufactured motors to making his own composite propellant. Darren reviewed the science behind the various motor formulations, as well as how variances in grain size and configuration effect motor performance. He also reviewed some of the basic mechanics of how he constructs his motors.

Business Meeting

1. Open: A. Treiman
2. Review and approve previous minutes.
3. Treasurers Report: J. Coles: John reviewed our account balance (updated based on 9/28 bank statement) is \$423.00
4. Future Launch Dates: October 14, rain date 10/28. November and December dates pending.
5. Launch and Failure debriefing: there was no launch in September.
6. Newsletter: Joe Libby: Joe reviewed the deadlines for the upcoming newsletter.

7. Web update: Our new webmaster, Paul DeCrane, is doing a fine job.
8. Design of the Month Contest: Was a tie between Lisa Paullin's V2 and Art Treiman's Stars & Stripes. Congrats!
9. Social Event Plans: Berman & Bastow: shelved till fall.
10. Kingsway School field status update: there is no update. The school denied our request. A good deal of time was spent discussing alternate fields in the area. There are no leads on a HPR field and a few fields potentially similar to GCC in size. As always, the reminder of "always be looking to make friends with a farmer" was mentioned.
11. Trailer update: Bob Jonas and Steve Bastow are working diligently (and on budget!) on the club trailer. Good work, guys.
12. Renewal: We will be soon accepting membership renewals. If you renew before 1/1 it is only \$10 for the year!
13. Adjourn.

23 October 2001

By Art Treiman

Present

S. Bastow, A. Liggins, B. Canino, R. Mozier, J. Powell, R. Paullin, L. Paullin, J. Libby, E. Romani, A. Treiman.

Talk

Ed Romani gave an excellent impromptu presentation on competition, streamer duration, and piston launching. For those that don't know, Ed joined the hobby this summer by trekking to NARAM! Since then he's done lots of competition. Importantly, he's done it successfully! Ed showed the "equipment" he used at a recent competition where he "almost" took second place (kind of like the one that got away!). Ed brought his homebrew (but very effective) floating head piston launcher, his streamer duration model with very thin G10 fins, and it's tracing paper (\$8 per roll at Staples... although I was unable to find the stuff) streamer. Nice talk Ed!

Business Meeting

1. Open: A. Treiman
2. Review and approve previous minutes.
3. Treasurers Report: J. Coles was absent.
4. Future Launch & Rain dates: 11/4 & 18, 12/2 & 9.
5. Launch and Failure debriefing: Great job by everyone keeping rockets away from Tanyard Road, despite the winds blowing that way. One thing noted was the big birds on the Estes E9's ALL weathercocked and crashed. It seems the low thrust

in these is a bad thing when flying larger rockets in breezy conditions (winds were only about 13 mph, but the rockets were very slow off the pad).

6. Newsletter: Joe Libby: Joe reviewed the deadlines for the upcoming newsletter.
7. Web update: nothing new.
8. Design of the Month Contest: No entries.
9. Social Event Plans: Berman & Bastow: shelved till spring (will this ever happen?).
10. Trailer update: Bob Jonas and Steve Bastow are working diligently (and on budget!) on the club trailer. Good work, guys.
11. Renewal: We will be soon accepting membership renewals. If you renew before 1/1 it is only \$10 for the year!
12. Mention was made of the explosion at the Aerotech motor plant. This will mean a shortage of composite motors for the next several months.
13. Update on field search: Only one of the sites discussed in September is a possible launch field. It is a field recently acquired by Moorestown as part of open lands act. It is smaller than GCC and more unplowed field. Its final status is not fully determined by Moorestown. We will stay on top of this.
14. Adjourn

Photo Finish

Here's a mini-collage from Anthony Bonacardi:

