SoJARS Altitude!

South Jersey Area Rocketry Society Official Newsletter — NAR Section #593

VOLUME 3, NUMBER 1 — = $1.00 = — JANUARY / FEBRUARY 2001

# Winter Puts SoJARS Launches On Ice!

## President's Corner

By Art Treiman

Well, here we are starting another new year. Our beautiful December schedule was a washout (or blowout, I guess). As a result, there is not much new to add. Our first expanded meeting was a success, although conducting business for three hours was definitely too long. In the future we'll keep the business to an hour, the lecture to an hour, and leave the rest to socialize. Speaking of socializing, I welcome everyone's input on ideas for a group social event later this winter. During a time when all but the craziest of us are in their basements building, an event where we can all just hang out will be nice.

Speaking of the new year, we'll try to continue with things as they have been. Hopefully a larger field will present itself. This "holy grail" will not be easy to find and will most likely come by a contact between a club member and a friend with access to a farm. I urge anyone with such a contact to explore it. Otherwise, we'll hopefully continue our slow but steady growth, try to maintain our current membership, and meet and launch monthly.

Pat Holding Russ Mozier's MM.40 Exocet Missles

## Editorial

By Joe Libby

It's beginning to look a lot like, well, too much like a white Christmas. I mean, Christmas day was beautiful with snow on the ground, a partial solar eclipse in the sky, a new baby boy under my tree, and lots of toys (even though most were for the little guy, he didn't realize you can do more with them than just try to eat them!) However, I have to admit that, in spite of all the Season's cheer, I was disappointed that we had to cancel our launches on December 17th and then again on December 31st. Oh well, I guess I should know by now that our hobby is very dependent on the weather. I'm looking forward to our January launch.

Our meeting in January should also be fun and exciting as we elect officers for the first time since our original meeting back in May of 1999. Those founding officers ran our club very well over the past more than year and a half, and we are all indebted to them. As an update to the November Meeting Minutes, here are the current nominations:

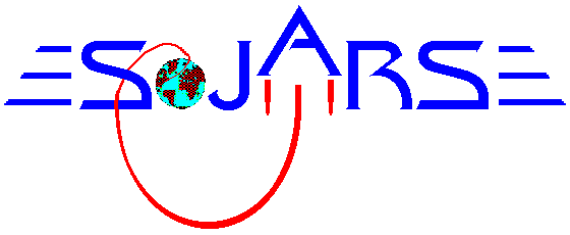
President: Art Treiman (incumbent)
Vice-Pres: Darren Wright vs. Barry Berman
RangeOps: J Komorowski
Secretary: Jeff Gage
Treasurer: John Coles (incumbent)

Speaking of meetings, Art tells me there will be no change in our current schedule at Library. So we will continue to meet the fourth Tuesday of the month unless otherwise noted (we'll have to see about 12/25/01!).

A usual I have to thank our contributors for this issue. Especially noteworthy are John Coles' and Bob Ross' excellent articles. It should be noted that both of them responded to my request for submissions in the week prior to going to press. For a while there it was looking like to this was going to be a pretty thin issue.

Tom Mitchell wrote up our first-ever contest. Art Treiman was kind enough to write up the November launch report. Russ Mozier submitted an informative piece on the real version of his November Model of the Month Award winning rockets, pictured above on this cover page.

Continued on Page 3




**President:**
**Art Treiman**
**TheTreimans@home.com**

**Vice-President:**
**Steven Childs**
**stephenjchilds@hotmail.com**

**Secretary/Treasurer:**
**John Coles**
**john.c.coles@lmco.com**

**Director of Safety and Range Operations:**
**Nancy Rowley**
**quiltrocket@home.com**

**Altitude! Editor:**
**Joe Libby**
**libbyja@home.com**

**Print Editors:**
**Tom Mitchell**
**tmitchell@citnet.com**
**Michael Drake**
**drakester9@aol.com**

**Public Relations & Web Master:**
**Patrick Flanagan**
**morden@nothinbut.net**



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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 the year 2001, all meetings will be held on the 4th Tuesday of each month from 7 till 9:00pm in Room A: 1/23, 2/27, 3/27, 4/24, 5/22, 6/26, 7/24, 8/28, 9/25, 10/23, 11/27, and 12/25/2001.

Tuesday, January 23. *Annual Officer Elections*
Presentations: Rocket Motors, by Bill Rowley.

## SoJARS Launch Dates

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

Sunday, January 21, 12:00pm to 4pm.
Raindate: January 28
Theme: 15th Anniversary of Challenger Disaster.
Funtest: None.
Vendor: M & G Hobbies, Delran, NJ, 856-461-3553

## GSSS, NAR #439

Launches are usually held on the third or fourth Saturday of each month, 10am - 3pm.
Location: North Branch Park, near Somerville, NJ
GSSS Hotline: (908)-658-9417
Website: http://www.robnee.com/gsss/

## PARA, NAR #520

Next Launches: Jan 7; Feb 4; March 11*; April 8*
10:00 AM - 3:00 PM but * = 11:00 AM - 4:00 PM.
Location: a farm 9 miles north of Doylestown, PA
Phone: You may call Chuck Arkens (215) 855-5599 or David Stoetzer (215) 699-0587 the night before or the morning of the launch for verification.
Website: http://users.erols.com/dstoetz/para/

## Garden State Tripoli, TRA #74

Next Launch: RATS X to be held Spring 2001.
Location: Cederville, NJ.
Website: http://www.njtripoli.com/

## Deleware Tripoli, TRA #106

Next Launch: January 6 & 7, 2001.
Location: Harper Farm, Rhodesdale, DE
Website: http://www.detripoli.org/

## Calendar of Events

Continued

### Maryland Tripoli, TRA #68

Next Launch: January ??
Location: Higgs Dairy Farm, Price, MD
Website: http://www.mdtripoli.org/

### METRA, TRA #94

Next Launch: TBA.
Location: Rickey Farms, Vernon, NJ.
Web: http://www.users.nac.net/jdcluster/Metra.html

### MARS, TRA #105

Next Launch: TBA.
Location: Sod Farm, Allentown, NJ.
Website: http://www.njtripoli.org/

### NARAM 2001

Next August NARAM will be relatively close, in Geneseo, NY! SoJARS members should be there!

## Altitude! Deadlines

Submissions for publication are accepted continuously by the editor. The Deadline for the March/April issue will be March 4.

## Launch Reports

### SoJARS First Contest
### November 12, 2000

By Tom Mitchell

The weather couldn't stop SoJARS from flying its first contest on November 12th. Six contestants made a total of 11 flights under the cloudy skies.

½A Boost Glider competition was up first. Each contestant made 2 flights, for the highest total score. The Red Baron shot down Tom Mitchell's scratch built, but poorly trimmed Archaeopteryx, resulting in a total time of 19 seconds. Art Treiman's Edmond's Deltie did better, scoring 27 seconds. But John Coles' Silverhawk bested them both with a single flight lasting 38 seconds! His total of 59 seconds let him to soar into first place.

The poor weather led to a lot of discussion about the Streamer Duration competition. It was felt the clouds would make tracking difficult, and, after a lot of deliberation, the contest was changed to use B engines.

Art Treiman improved on his glider's performance, when his streamer duration model seemed to hang from it's 7"x70" streamer. Unfortunately, the rocket had separated, and the flight was disqualified. Joe Libby was eager to fly. His rocket stayed in the air for 24 seconds, earning him 4th place. Jim Duffy came in third with a time of 30 seconds. Tom Mitchell hung in 2 seconds longer, for 32 seconds and 2nd place. However, when Bruce Canino brought out his tower launcher, I knew the rest of us were in trouble. And I wasn't disappointed. Bruce's rocket stayed in the air for a whopping 1 minute, 30 seconds!

Overall, John Coles showed that it's better to excel in the more difficult events; his excellent glider garnered him 170 points and first place, even through he didn't complete in the Streamer Duration event. Tom Mitchell's basic, stable flights earned second place overall, with 122 points. Art Treiman overcame his DQ and earned 102 points for third place.

½A Boost Glide

| | | |
|---|---|---|
| 1st | John Coles | 59 sec |
| 2nd | Art Treiman | 27 sec |
| 3rd | Tom Mitchell | 25 sec |

B Streamer Duration

| | | |
|---|---|---|
| 1st | Bruce Canino | 90 sec |
| 2nd | Tom Mitchell | 32 sec |
| 3rd | Jim Duffy | 30 sec |
| 4th | Joe Libby | 24 sec |
| 5th | Art Treiman | DQ |

Points

| | | |
|---|---|---|
| 1st | John Coles | 170 |
| 2nd | Tom Mitchell | 122 |
| 3rd | Art Treiman | 102 |
| 4th | Bruce Canino | 90 |
| 5th | Jim Duffy | 36 |
| 6th | Joe Libby | 18 |

## Editorial

Continued from Cover Page

Finally, special thanks goes to Tom and Mike Drake. The Drakester, as he is sometimes called, has saved us from becoming an all black and white publication. It happens that Tom lost his color printer access but my partner's husband, Drake, is a printer. He'd have to charge us to do the whole job, but offered to do just the covers in color for free! Muchas Gracias, Amigo! Tom will continue to do the rest of the printing in B&W (also gratis!) and I'll

coordinate getting the covers to Tom for final collating and stapling. We have been very fortunate to have had Tom doing the whole job, including color covers, for free for us for the past over a year and a half. Now we should again be thankful that Drake has offered to do what otherwise could be costly to our small club.

As always, the hard copy will be available at meetings and launches, and the pdf version will be emailed and posted on the website as soon as I finish editing - or when my wife says I've played with it enough, which ever comes first!

# Members' Forum

## Bob's Modeling Tips – 2001

By Bob Ross

At the last meeting in November, Art asked if I would write a column on my various modeling tips for the *Altitude*. I said "Sure", so here is numero uno:
**Attaching Vacuum Form and Small Plastic Parts**

As a brief background, I have been a model builder for most of my life. Growing up as an only child in "rural" Voorhees (how times have changed), I had to entertain myself a lot which led to countless hours spent constructing model trains, planes, boats, cars, and rockets. Even after numerous years (decades), I still get the same enjoyment from model building that I did as a kid. Over these years I have focused my interests on trains and now additionally on rockets and have refined the skills I first learned so long ago. Techniques and materials have changed significantly and I hope to use this column as forum for information exchange. Above all, if anyone has any tips of their own, please send them in so we can all learn from your experience.

Although this column will range from general construction to scale details, my overall goal is to help make models that will survive the stress of a launch, parachute deployment, and landing. What we spend so many hours building and painting goes through tremendous forces. Flights typically exceed 250+ mph, deployment is a literal explosion between the top and bottom of the rocket, and landings are no more than semi controlled crashes. The end of the e-mail we all recently received had a great saying by a Peter W. Clay (NAR 18619), "*if it dies it's biology, if it blows up it's chemistry, if it breaks it's physics*". This last statement is directly what I hope this column will help to reduce to an absolute minimum.

## Attaching Vacuum Form and Small Plastic Parts

Many of the Estes kits come with vacuum form and/or small molded plastic parts. Three available kits that come to mind are the Mercury Atlas, the Saturn V, and the recently re-released Honest John. The Atlas has both types of parts, the Saturn V has molded parts, and the Honest John has vacuum form only. Each model and its parts has a different set of problems and potential solutions. The Atlas side equipment pods, the Saturn V parts, and the Honest John spin nozzles will be covered in this column. The Honest John fins (which most modelers have extremely unkind names for) will be covered in the next column.

Vacuum form parts are great since they are extremely light-weight, but are difficult to mount depending on how they are cut out. If they are cut so there is a broad base, they can be directly attached with contact cement. The Atlas first stage stiffener wrap is a good example of this since it's wide, flat, and wraps around the entire body tube. However, if the parts have to be cut out and attached on their edges, there is virtually nothing substantial to put glue on to reliably bond the part to the rest of the rocket. You are also limited to what glues you can use since the vacuum form plastic is a very thin styrene and most solvent based glues will literally melt and distort the plastic.

Small plastic parts add a substantial amount of detail to models; however, they tend to break or fall off easily. This is due both to insufficient bonding area and to bonding different materials together (plastic and cardboard). CA glues and epoxies do not work well with plastic, which leaves contact cements and plastic cements. These latter two are OK for static models, but they need some mechanical assist for flying models.

Atlas Equipment Pods

The vacuum form pods (or any similar type part) can easily be attached to the rocket body using a balsa wood insert as a "filler". Cut and shape a 1/2 inch square piece of balsa wood strip to fit into each pod. The insert should run the length of the pod and be cut/sanded to allow the pod to fit firmly onto the rocket body. Keep the width of the insert about 1/16 of an inch from the edges of the pods. Glue the insert into each pod using a water based contact cement (Elmers makes one). If you use a solvent based contact cement or any other type of plastic cement, it will melt the thin styrene plastic and ruin the pod. Once dry, attach the pod to the rocket by gluing the balsa wood to the cardboard body. As normal, sand

off the body coating and use a good wood glue like Elmer's Carpenter's Glue. You now have strong glue joints between the pod, the insert, and the body tube.

As a side benefit, you can wrap the silver mylar covering on the body tube before mounting the side pods instead of after. This prevents a lot of tedious cutting around the pods and simply lets you cut out the mylar where the balsa wood insert gets glued. The pod's edges will now sit on top of the mylar, but the pod will be held firmly in place by the insert.

Saturn V Small Plastic Parts

To provide a mechanical assist for attaching virtually all of the small plastic parts try a "glued peg" method. This technique basically attaches plastic pegs to the parts and these pegs are then glued into holes drilled through the rocket. This method is straightforward if the inner part of the rocket where the pegs protrude is not the parachute cavity. If it is, additional care must be taken as covered later.

Drill holes into the underside of the plastic part as deep as they can go without breaking through the part's "good side". The diameter of the holes should be the same as the peg's and should be as large as the part will tolerate. Note that drilling deeper into the part is more important than the diameter. If the part has a tapered surface, it's better to go with a smaller diameter. Plastic rod material (Plastruct or Evergreen) can be bought at most hobby shops and comes either as standard styrene or as styrene covered wire. I prefer the latter since the wire provides additional strength. The extra weight of the wire is virtually nil since the pegs are very small when finished. Cut the rod material to a length equal to the depth of the hole plus about 1/4 inch. Use a strong liquid solvent (Plastruct Plastic Weld, Ambroid ProWeld, Tenax 7R) and glue the rod into the part and let dry. For any plastic part large enough, use at least two rods, one near each end. This not only provides extra holding strength, but also prevents the part from potential rotation.

Drill slightly larger holes into the rocket's body equal to the spacing of the pegs on the part. When the part/peg assembly is dry, put a thick plastic cement (Testor's tube type) onto the part, the pegs, and into the holes. Insert and hold the part to the rocket so that the glue on the inside of the rocket flows down the pegs toward the body (i.e., the pegs should face up). This makes a glue fillet against the rocket body interior which firmly locks the peg in place. If its possible to reach the peg inside the rocket (sometimes using long tweezers helps), additionally glue a styrene "washer" over the peg to further lock it into place. Use a 1/4" octagonal piece (square with the corners cut off) of about .050" styrene with a hole drilled into it the same diameter as the peg. Once this assembly has dried, you have a part glued not only to the body, but also to inserted pegs passing through and locked into the body.

If the peg protrudes into the parachute cavity, it should be cut off flush above the styrene "washer". As an extra precaution against the shock cord or parachute shroud lines getting caught, cover the washer with a "blob" of 5 minute epoxy. After it flows and hardens, there should be a smooth bubble over the peg and washer.

Honest John Spin Nozzles

Although the vacuum form spin nozzles could be attached with a balsa wood insert as described in the Atlas equipment pods, I used an adaptation of the small plastic parts "glued peg" method. This was done because I had punched out the two vent holes and wanted to keep the inside of the nozzles open.

Since the spin nozzles are so thin, you obviously can't drill holes for the pegs, nor can you directly glue the ends of the pegs. Any glue strong enough to firmly attach the pegs to the nozzle would deform its thin plastic. To get around this, glue at least .050" inch thick pieces of styrene to the inside three corners of each nozzle. Use Testor's Liquid Cement which is mild enough to not deform the nozzle's plastic. These "base" pieces should be at least 1/4" square to provide a large surface area for a good bond. The bases will act as a buffer between the vacuum form plastic and more strongly glued pegs. Cut pegs about 1/2" long from 1/8th inch diameter plastic rod material. Use non-wire based rod since the nozzles are angled and you will have to cut the ends of the rods so that the pegs stick perpendicular to the nozzle's base. Glue one rod to the middle of each of the three styrene "bases" with Testor's tube cement. Glue styrene washers (as described in the Saturn V small parts) over the rods and down onto the "bases" for extra strength. When dry, the combination of the nozzle, the base styrene, the rods, and the "washers" create a vacuum form part with three strong pegs. Measure the pegs on each nozzle assembly and drill matching holes into the missile body. Some hole "finessing" may be necessary to make sure the pegs fit through. It's a good idea to number the four nozzle assemblies so you can match them to the four sets of holes.

Before gluing the nozzles in place, you should paint the inside of the nozzles and the area they cover on the missile with flat black paint. Recall that the whole reason for doing all this work was because the vent holes are open. If you don't add the black paint, the white plastic body will be visible. Once done, glue the edges of the spin nozzle assembly onto the missile body using Testor's Liquid Cement. When dry, add Testor's tube cement to the ends of the pegs

where they pass through the inside of the missile and add additional styrene washers to lock the pegs in place.

That's about it for this issue. Not all may be this long. If you have any comments, questions, or suggestions, don't hesitate to contact me via e-mail (Bkkbrossnj@aol.com), at the meetings, or at the launches. Have fun building!!

## The MM.40 Exocet Anti-Ship Missile

Submitted by Russ Mozier
Abstracted from "Chock Full 'O Missiles Web Page"
http://home.netcom.com/~chadeast/missiles/missile.html Page created by: chadeast@ix.netcom.com

Fired from planes (AM.39), or surface vessels and ground vehicles (MM.38, MM.40), or even from submarines (SM.39), the Exocet is regarded as one of the deadliest anti-ship missiles in the world. The Exocet was made famous by its devastating impact in the Falklands War. During the opening days of this war, HMS Sheffield was attacked by the Argentinian Air Force on May 4th, 1982. The loss of the Sheffield was a surprising blow to the British navy, and let the world know that Exocet was indeed a formidable weapon. The Exocet has also been used in the Persian Gulf, including an attack against the U.S.S. Stark in 1987.

Guidance in the mid-course phase is inertial, followed by an active radar terminal phase. There is also a radar altimeter to control the sea-skimming trajectory, at around 10.0m until the terminal phase when, in calm sea conditions, the missile can descend to 3.0m or so. The solid propellant motor gives Exocet a range of about 50km, but when released from 10,000m (32,800ft) the range achieved was reported to be 70km. Although it is highly effective against smaller vessels, some doubt it would be able to penetrate the 16 inch armor of a battleship or larger vessel.

**Specifications:**
Manufacturer: Aerospatiale/Dassault (France)
Weight:
Missile: 1,444 lbs.
Warhead: 363 lbs.
Length: 15.5ft.
Diameter: 1.3ft.
Wingspan: 3.1ft.
Guidance: Inertial and active radar.
Propulsion: Solid propellant.
Performance:
Speed: Mach 0.8
Range: 50km +
Warhead: 363 lb HE shaped charge fragmentation.

## Space. A Great Book!

Book Review By Bob Ross

Trust me, I'm no literary genius or critic. I'm an electrical engineer by trade and when I read for pleasure, it's virtually 100% science fiction. If the book doesn't have space ships, laser beams, or aliens in it, I tend not to be interested.

On occasion; however, I do stray slightly and pick up other types of novels. Recently I read the book ***SPACE*** by James A. Michener. This book was on the New York bestseller list for 39 weeks and I can see why. It is a great book!

***SPACE*** is a novel about America's space program from its infancy. It starts with the German rocket scientists at Peenemunde and chronicles the way the US began its quest for stars. Mercury, Gemini, and Apollo are all covered, but not in a heavily technical sense. The book is more about the men and women behind the technology and how they struggled to create what we somewhat take for granted today. Michener has a very clever style of blending well researched fact with fictional characters. Von Braun, Lyndon Johnson, John Glenn, and other famous names are all part of the novel, but they are blended in with other fictional scientists, politicians, astronauts, and their families.

If you have a chance to read (although difficult these days) and have an interest in our space program, definitely pick up the book. It is a Fawcett Crest book published by Ballantine Books. Copyrighted in 1982, it has a Library of Congress number 82-40127 and an ISBN of 0-449-20379-4.

## RockSim Version 5.0

Software Review By John Coles

As a long-time RockSim user and one of the beta testers of version 4.0, I felt compelled to buy the upgrade to version 5.0 (as a 16MB download!) when it became available just before Christmas. I started "playing" with it immediately thereafter, and quickly came up with a list of bugs and other gripes, which I sent on to Apogee Components. I also thought I would write down some of my other thoughts and impressions to share with everyone else.

While the added features of version 5.0 are pretty cool, a number of the previous features have been broken during the upgrade process.

My bottom line is this: From a simulation point-of-view, the new features in version 5.0 aren't really worth the bother, unless you do a lot of clustering and air starts.

So if you already own RockSim version 4.0 and still want to upgrade, wait until version 5.1 or so. (After all, if you do a lot of clustering and air starts, you probably already know and use the work-arounds for version 4.0.)

If you don't already own RockSim and are considering the purchase, buy version 4.0 first, then upgrade to version 5.x once the bugs are worked out. One of the good things about Apogee's price structure is that while version 5.0 is $85 full price (can you say "Ouch!"?), and version 4.0 is $50 full price, the upgrade costs only the $35 difference between the two prices. So whichever path you take is a wash, financially speaking. (Although if you buy and use version 4.0 for a while before upgrading to version 5.x, you'll spread out the financial impact.)

The following is a list of some of the new features in version 5.0. The first six I've used fairly successfully. The seventh one (sub-assemblies) I plan on using soon, and the last two aren't of much use to me in the type of designing that I do. I would be willing to bet that someone like Darren Wright, who does clusters and air-starts regularly, though, would get a lot of use out these last two features.

1. If you install version 5.0 into a *new directory* and *copy* rocket designs over from your version 4.0 Design folder, version 4.0 remains available for use.
2. Fin tabs can be created easily to any depth – just TTW or all the way to the motor mount. There's even a button to let RockSim auto-calculate the tab depth to the mount for you.
3. A 3-D view can be generated of your rocket, then rotated about all three axes for viewing from any angle. There is also a zoom function as well. This 3-D view can then be saved a graphic image or as a VRML file for inclusion into documents or web pages.
4. Individual components can be custom-colored. This allows for easier visual differentiation between components in the 2-D and 3-D views. Components can also be made translucent (or even transparent!) in the 3-D view, allowing the internal components to be seen.
5. The position of components within the Designer screen can now be shifted up or down within an assembly. This may seem like a minor feature at first blush, but the first time you leave out the launch lug, or decide in retrospect to add another centering ring, you'll be thankful for the chance to group it in its logical (or most esthetically pleasing) location.
6. There is now a descent calculator with definable deployment event. You can have your recovery device deploy at engine ejection, apogee, a specific time after launch, or a specific time after apogee. RockSim then take the altitude at deployment, the sink rate and any wind set in the program and calculates how far your rocket drifts on recovery.
7. Groups of components can be saved as a sub-assembly. So if you have a fin can that you want to try on different rockets, or swappable motor mounts, etc., these can be saved as a separate entity and recalled into any design you like.
8. Engine cluster wizard. Version 4.0 limited engine clusters to six specific patterns, which all used the same size motor mount. If you wanted to mix engines of different diameters, you had to create engine files, which placed the performance of the engine you wanted into the diameter of the motor mount you had. Well, with version 5.0 this limitation is gone. Any combination of size, number, radial spacing, etc can be defined.
9. Air start capability. When engines are loaded into a simulation, a parameter can be set for their ignition delay. This essentially allows you to air start the engine in the simulation, or perhaps delay the ignition of a second-stage motor.

Next comes the list of bugs that I found in the few hours that I used the new version.

The simulations on imported designs (from version 4.0) do not deploy recovery devices when recalculated. Each individual run must have the engines reloaded and be launched again for version 5.0 to calculate the recovery device deployment. (This has been reported as having been corrected in version 5.01)

The following part types do not allow the saving of "Custom" parts to their respective databases by using the "Save to database" button:

Tube Coupler
Centering Ring
Bulkhead
Engine Block
Sleeve
Fin Set

The preceding have all been verified as no backup of the data file is created. All other component types appear to be okay. (Also corrected in version 5.01)

When selecting any of the following part types from their respective databases, the Material Type is not automatically brought in with it, and must be reset manually:

Bulkheads
Engine Blocks
Sleeves
Centering Rings

All other component types appear to be okay.

Centering rings have ID and OD adjustment locked out. This is a major PITA (Pain in the A@@), as it severely limits the fidelity of custom

centering rings. (Remember, you can print out parts templates.)

Centering rings can't be put into a transition, nor onto the inside tube within the transition (this makes Mars Lander-type shrouds difficult. I had to insert a body tube of .001 length to hold the centering rings, but because the inside tube didn't "belong" to this placeholder tube, the centering ring ID was fixed at 0.000 inches.) I think the version 4.0 centering ring logic is *much* better, even with the forced OD problem it has.

Engine overhang resets to 0.500 inches whenever "Simulation Preparation" screen is entered. It should be saved as part of the design info, a la version 4.0.

Double-clicking a database part, engine, color, etc doesn't automatically select it. The "Select" or "Okay" button has to be pressed. Minor PITA.

After customizing many database items, I now get an error message when opening some files: "There is already a material in the database with the same name. Duplicate material records are not allowed. Please select a new material name." I know the problem lies in the Material.csv database, but don't know which part is involved or how to resolve the problem.

All internal objects w/o "Finish" information from version 4.0 come up as "Polished" in version 5.0 (rings, engine blocks, etc.) - ignoring default Finish. IMHO they should default to "Unfinished", if anything. I know that technically it doesn't matter, since they're internal parts anyway.

I've since learned that version 5.0 was released with some known bugs in order to get it out prior to the end of the year, and that the CD that will be shipped out soon will contain version 5.01, with some of the bug fixes in place.

The full scoop on the features and known bugs of this version of the program are available from the Apogee Components web site, at:
http://www.apogeerockets.com/rocksim.asp

# Meeting Minutes

## 28 November 2000

By John Coles

Orders of Business:

October minutes were approved.

Treasury Report

The treasurer reported $248.00 in the cash box, and $375.00 in our new checking account, debt free. Upcoming expenses include club NAR and insurance renewal fees.

Now that the club account is open, any fees, dues, donations and such can be made by check payable to South Jersey Area Rocketry Society. Since it is a checking account, we can keep the majority of our funds in the account to pay our various fees and not need to carry around the entire treasury in a cash box.

Upcoming Launches

| Date | Theme |
|---|---|
| 17 Dec | NARAM prep |
| 31 Dec | Rocket into the New Millennium! |
| 21 Jan | NARAM prep |

Rain date is 28 January.

Since NARAM 43 will be held in Geneseo, NY next year (August 4-10, 2001), we've decided to hold funtests to practice the events being held at the nationals next year. Since it is a (relatively) local contest, with rumors of having a great field, an interest has been shown in getting together a road trip for the week.

We discussed the contests we might hold in upcoming months, with no consensus reached. The remaining duration events are ½A Flexi and D Helo. We could also start holding altitude events once we get our two tracking stations built. Peter Menard reported that the first was near completion. Tom Mitchell also broached the idea of holding a small NAR sanctioned meet sometime in the coming year.

Present

Art Treiman, John Coles, Steve Wilson, Steven Wilson, Pat Flanagan, Tom Mitchell, Bob Ross, Jeff Gage, Peter Menard, Russ Mozier, Bob Jonas, Darren Wright, Joe Libby, Ron Will, Mark Gage.

Welcome to new member Mark Gage.

The meeting was opened late at 7:15 [*we weren't in any hurry, since we had the library until 10 – JC*].

Update on Alternate Fields

There was also a lengthy discussion again on the availability of fields for flying. The MARS and RATS Tripoli fields seem to be lost. This leaves the MD/DE Tripoli fields as some of the closest high-power fields around.

Range Ops Report and Failure Debriefings

Our November launch was very successful, despite the slow start. Art reiterated GCC policy that our $25 fee grants us the right to use the field in a non-exclusive capacity. Sharing the field with cross-country track meets is a risk we run. Art has been using his resources to try and get advance notice of these conflicts.

The failure debriefing centered mainly on the lawn dart demise of Joe Libby's "Junk Mail", which suffered from an apparent Aerotech "bonus delay". Joe also thinks that contamination of and/or swapping of delay grains could have been a contributing factor. Art also reported that his streamer duration model suffered from a snapped shock cord, which was made from 100# test Kevlar. Given that Kevlar has no "give" (stretch) to it and that the shock load strength of materials is often far less than the steady-state breaking strength, it was concluded that some sort of shock-absorbing system needs to be used on all models. This could be in the form of elastic, or braided cord, webbing or tube with some "give" to it, or other means to absorb the deployment energy.

PR Committee Report

Nothing to report.

Newsletter

The November/December issue was made available at the meeting.

We are always in need of submitted material. Editor Joe Libby would like to make the "Photo Finish" section a regular part of the Altitude!, so if you have rocket photos to submit please do. We seem to have a few club members with digital cameras, which allow for the direct input of pictures onto our web site, as well as into the newsletter.

The deadline for the next issue is 7 January 2001.

Model of the Month

We had two models this month: a set of two sport scale Exocet missiles by Russ Mozier, and a scratch built ring fin model (the "Revolver") by Pat Flanagan. Each of the modelers stood up to talk for a couple minutes on their respective models.

The voting was held during our break, with the Exocets receiving the winning votes. Congratulations to Russ! [*Bob Jonas, official club election proctor, refused to do any recounts! – JC*]

[*See Members Forum for info about the Exocet, provided to me by Russ, and the Cover Photo – JL*]

Lecture Calendar

The lecture for the January 2001 meeting is on rocket motors, by Bill Rowley. Art will be giving a future talk on "photo rocketry".

Other Business


Thanks to the Wilsons, we have a banner!!!

Group Project

Darren Wright and Tom Mitchell talked a bit on the club project. It's going to be a 95% scale, 2-stage Trailblazer II sounding rocket. The total cost to contributing club members is calculated to be $1500. This includes all new parts, recovery system, electronics and the motor for first flight.

If we could get 15 members to contribute $100 apiece, the cost would be covered. Team members could also get together and design a team T-shirt, too! Then we could take a road trip to MD/DE

Tripoli to launch her. This sounds like a project that could definitely put SoJARS on the map!

Elections

Candidates who were present made their self-nominations, each supported by a brief speech. One nomination was submitted via e-mail and accepted in absentia. We currently have only one nominee for each position. Nominations close on 17 December and the end of the launch. Written summaries are due in to Art Treiman and/or Bob Jonas by 1 January 2001. Younger club members are encouraged to run as co-chair for any position they see fit.

Nominations as they currently stand are:

| | |
|---|---|
| President | Art Treiman (incumbent) |
| Vice-President | Darren Wright |
| Range Ops | Jack Komorowski |
| Secretary | Jeff Gage |
| Treasurer | John Coles (incumbent) |

One thing not mentioned at the meeting is that club officers need to be NAR members.

The summaries and ballots will be distributed via e-mail, with voting either in person at the January meeting or by e-mail proxy ballot prior to the January meeting. Bob Jonas will be collecting the proxy ballots and tallying the votes.

Dues / Members

We are still collecting dues for 2001. As incentive for existing members to renew early, any Adult member renewing prior to 1 January 2001 will receive a $2 discount, paying only $10 for the year. Leader members and Junior members without an Adult sponsor in the club can renew early for $5, a discount of $1.

Meetings

This month we opted to pay the extra $15 to keep the meeting room open until 10 pm. Since the meeting ran at a leisurely pace, and we had the equivalent of three lectures, we didn't finish until 10 with no time left for general socializing.

Lecture(s)

Russ Mozier presented his slide show of his Kennedy Space Center trip. He was able to take a special limited access tour and had digital photos of all manner of buildings, equipment and space hardware.

Bob Ross gave us a construction tip on his (Neubauer 4"?) Mercury Redstone escape tower rebuild project. Now anyone who knows "Bulletproof" Bob knows that he doesn't build light. So he built the escape tower out of hollow styrene rod, but with a music wire core. The escape rocket itself was lathe turned out of wood. The joints all provide for both a mechanical and glue bond, so it's not likely to ever come apart. The end result is a beautiful piece of craftsmanship that will likely stand up to any bonus delay Aerotech cares to throw at it!

Darren Wright presented High Power Rocketry – Part III – motors. Darren showed us the in and outs – literally! – of some half-dozen high power engine cases, along with a few loads to go with them. Along the way, he described the similarities and differences between Aerotech and Kosdon hardware and loads, and explained the differences between the philosophies behind radial and axial sealing of the engine. We were able to look at some different nozzle types, including an Aerotech Medusa nozzle and a Kosdon graphite one. Darren even went as far as to assemble a large (J-something?) reload as a demonstration, discussing some of the finer points of lubrication, sealing and such along the way.

The meeting was adjourned about 9:55pm.

## Photo Finish

A "Rocket Car" designed and built by Steve and Steven Wilson – NOT a working model.

In the background is one of Pat Flanagan's own designs.

Another nice crowd of rocketeers and friends attended the November Launch.

## Photo Correction

On page 16 of the November/December 2000 issue the picture of a rocket that I indicated was Randy DePasquale's actually belongs to Paul DeCraene. It is his Aerotech Astrobee-D. Also, Randy's dad didn't take the picture; Randy took it himself. Apologies to Paul and thanks to Randy, who pointed this error out to me.