

What To Do With Your Club

By Mark “Bunny” Bundick, President, National Association of Rocketry

When you didn't have a Section you could think of thousands of things to do if you only had more people. Now that everyone has joined together and the Section is organized, you may find you're self-staring at the walls. Let's wake up and get all your club members active!

There's one rule to remember when considering an activity for your model rocket club. Don't be afraid to try anything, but don't try everything at once. There's plenty of time for all the projects you dreamed about before you formed your club.

Surprisingly, business meetings can be an activity your members will look forward to. They should be held regularly, at the same time and same place every month. NIRA (my section) has held its meetings in the same spot and time for years. Even now, members who have left the area often return on vacation or for visits and know where to find us. Your members will know where to find you if you stay in one spot.

Meetings are the place to conduct club business. The president runs the meeting, usually with the help of a prepared agenda. The agenda keeps the meeting on track, and assures that important business is attended to. The secretary should read the minutes of the last meeting. This allows those not present last month to know what went on. The treasurer should give his report, then old and pending business is reviewed. New business follows that, then adjournment.

Don't leave fun out of your meetings. NIRA always begins its monthly meetings with its “Model of the Month” contest, where members vote on models displayed and select the best one for this club honor. We also show NASA films and movies or tapes of our own launches and contests. Members have also given talks about modeling techniques, and hardly a month goes by that someone doesn't mention a new product they've tried and liked. These items aren't really club business, but they keep the meetings lively and interesting. Don't be afraid to include, a few of them.

Group launches are the simplest activity to organize for a model rocket club, but I am convinced they are the lifeblood for an active club. Like meetings, they should be on a regular schedule at a regular location. Don't over-organize the launch. Schedule one . . . your members will show up. NIRA uses a Misfire Alley setup and it works quite well. We do have an RSO and a standard procedure for getting permission to launch. It prevents total chaos without becoming complicated.

Don't start off by having formal competitions at launches. Get your feet on the ground first. Let the members fly or not fly as they wish. The bulk of the time at NIRA launches is spent inspecting one another's models and predicting flight performances. This kind of interaction is really educational. Your younger members will learn building and finishing skills, engine selection and flying tips from the older members. And the younger crowd will often be the source of new model ideas you never thought of. Fly, fly, and fly again! You'll never cease having fun.

Try a social outing after your meetings or launches. NOVAAR leaves their meetings only to immediately gather at a local fast food restaurant. Several hot competition sections have hosted various victory parties after contests. You'll need to find someone willing to host the event, but the costs can be low if you make it a "pot luck" affair. When you socialize, you can continue to shoot the breeze, discuss the latest products and laugh over flights at the last contest or launch. After-launch or meeting socializing is another quick, easy-to-organize activity that costs you nothing, so **try** it.

If your town has a public library, ask about setting up a static display of rockets, posters, engines, etc. Other places to look include park district offices, banks, and malls. These displays are great publicity. Since space is nearly always limited, use only the best models you have available. Setting things up is a pleasant way to spend an afternoon, and you get to repeat the performance when taking down the display.

What about a promotion in conjunction with your local hobby shop owner? Many clubs have built a nice kit, and raffled it off at a hobby shop. It gets the club a lot of new names and addresses to contact. The hobby shop owner gets more traffic through his store. If you build several kits, you can hit multiple hobby shops, getting more members involved in the building, printing up the entry blanks, and contacting the hobby shops. A raffle lets you build rockets, but more importantly, it trains more of your members in public relations. What more could you want from a club project than active members, better relations with your local hobby shop, and publicity, all for the cost of a couple of kits?

Informal, non-flying competitions can be great fun. I've already mentioned NIRA's "Model of the Month" contest. How about a static display contest where every member builds the same model or kit bashes the same kit? The Huron Valley Rocket Society did just that as one of their first projects. The engineering and craftsmanship exhibited was superb, and everyone had a great time. Remember to recognize the winners at the meeting following the judging.

Hopefully, I've generated some ideas for your club to try. Remember, if you need help, contact the Section Activities Committee at the address given in the Administrative Directory. Above all, remember . . . Model Rocketry is more fun in a club!

Running a Sanctioned Meet

By Janet e. Rose

Despite the work, the aggravation, the frustrations, running a meet is worth it. There's no people like rocket people. Rocketeers are individuals, and the mix spans all backgrounds, professions, ages. Yet, when they're together on the range and off, **they** are a cooperative though not cohesive group; they make newcomers feel welcome; they are a special breed.

Running a contest requires work before and after as well as during a meet. The first order of business is to find a field large and open enough for a rocket meet and then get permission to use it. Next, contact your Regional Contest Board Chairman and request an Application for Contest Sanction. This form should be filled in with all the appropriate information, and returned to the Chairman at least 30 days in advance of the competition date. It tells him the dates of the prospective meet, the events to be flown, and the name of the Contest Director (CD). The CD is a Senior NAR member who runs and takes responsibility for the meet. The best advice I can give anyone planning a meet is to READ THE PINK BOOK. In the Pink Book you will find all the rules for competition. If there is something you do not understand, call on your Regional Contest Board Chairman for interpretation. You must decide whether to run a Section, a Local, an Open, or a Regional Meet. The first meet a new section runs should be a Section meet as this type of meet puts the least stress on novice organizers. When selecting the events to be flown, consider the size of the field and the competence of the fliers expected to attend, as well as the number of events a contestant can fly in the allotted time. It is difficult to hold a craftsmanship event such as Scale at a small meet. Set a reasonable, but realistic, entry fee. In addition to considering the needs of the contestants, the CD must consider the experience of the people running the meet. If you're planning tracking events, be certain that you have enough capable people willing to track. After submitting your Application for Contest Sanction to the Regional Contest Board Chairman, they will send back a Points Award Sheet which shows that they have received the Sanction Application, checked the events and the total weighting factors for the type of meet, and assigned a sanction number for the meet.

Now is the time to write to the NAR Technical Services (NARTS) to request and pay for CB-1-70s (personal contestant applications which include all information required for crediting contest points, as well as the sportsmanship oath and the parent's signature when required), ribbon awards if you are going to use them, and flight cards. If you will be flying craftsmanship events (Scale, Scale Altitude, Sport Scale, Plastic Model) you >II need judging sheets. You need a flight card per person per event. The flight cards come in three colors, one for each age division. Masters for CB-1-70 and Official Flight Cards as well as Judging Guides are contained in the Forms section of this manual or available online at the NAR website.

The CD must check to see that there are enough stop watches available for the timers, that the trackers and communication system are in good working order if there are altitude events, that a scientific calculator or portable computer is available to reduce tracking data, that there are poles and flags to delineate the range area, and that a table and chairs, an accurate scale, and a metric tape measure are available for the Check-In and Returns people. Make sure your launcher is in good condition, that you have a reliable battery, the clips are clean and the clip leads are not worn, and that you have enough launch pads and

straight, clean launch rods. If you will be flying Egg loft events, arrange to buy the eggs and weigh and number them before the meet.

If circumstances require it, usually for a Regional Meet, but sometimes for Open Meets, the CD should arrange for lodging for out-of-towners. Traditionally, clubs give out trophies and ribbons at Regional Meets, and ribbons at Open and Section Meets. When a club decides to give out meet patches, usually for a Regional, they must be designed and ordered at least two months in advance of the meet. There are a number of ways to publicize a meet. You can send information to Sport Rocketry or the Model Rocketeer for publication. You can design, print, and send out applications to clubs and individual modelers.

The range crew should be appointed early in the planning. A knowledgeable Range Safety Officer (RSO) and Contest Jury are essential for a successful meet. The RSO has absolute authority for the safety of operations, is usually the most visible person on the range, and is the person who qualifies flights. There must be people in charge of Timing, Tracking, Check-In, Returns, Launching, Range Set Up and Break Down, and judges for craftsmanship events. At a small meet, one person can do two or more jobs. There must be enough timers and experienced trackers. Most rocketeers come to meets to fly and don't like to spend time on range duties when they could be prepping, flying, or watching others fly. Therefore, please take this advice seriously get commitments from the range crew and hold them to their commitments.

When the applications start coming back, or the telephone responses start coming in, meet organizers often become excited about the number of people promising to attend and at the same time worry about whether the attendance will cover the cost. It is important to get the phone numbers of prospective contestants so that if there are last minute changes, the contestants can be notified. You must keep an ear to the weather station. If the report requires you to cancel the meet, inform the contestants by Friday night for a weekend meet.

Some people like to run a rather informal meet with time windows for tracking and craftsmanship events only. Not everyone is comfortable with running a meet this way, and a few CD's prefer time windows for every event. In that case, contestants should be informed of the schedule before the meet.

When the day of the meet finally comes, and the skies are only a little gray, and the winds aren't really bad, you should be relatively organized and ready for action. Getting equipment to a meet requires preplanning. Each person should know exactly what he's supposed to bring. When you are flying a meet as well as running it, packing the cars can be an exercise in special relations, keeping in mind that two things cannot occupy the same space at the same time without crimping your super-roc.

A contestant must turn in a CB-1-70 before he can fly a meet. For your protection, you should make sure all fees are paid before a contestant flies a meet. When preparing for a Regional, it is a good idea to have contestants mail in the application and fee so that the paperwork can be finished before the meet. Contestants registering at the meet usually do so at the Check-In table where much of the meet paperwork gets done. Check-In gives out the flight cards, and when the contestant is ready to fly, he or she brings the model and the card to Check-In. At Check-In models and payloads are weighed, eggs are given out and the

number on the egg is written on the card, super rocs arc measured and the length is written on the card, the engine is checked and the engine type is written on the card. It is the responsibility of the contestant to make sure that the information on the card is written correctly. It is the responsibility of Check-In and the RSO to be reasonably sure that the model is stable and appropriate for the event and to see that the contestant's NAR number is on the model. If the RSO needs to know something special about a model such as the use of flashbulb ignition or the color of the tracking powder, this should be written on the flight card as well. Check-In assigns a pad to the contestant and writes the pad number on the flight card. The flight card is given to the RSO who can choose to write flight information himself or he can give the card to the timers or launch officer and have one of them record flight data.

After the contestant flies and recovers the model, the model is brought to the Returns table (if required by the rules of the specific event) where it is checked and the flight card is signed. It is the responsibility of the contestant to make sure that the card is checked and signed.

Most modelers understand the difficulties faced by those running a meet and have a certain amount of tolerance for problems on the range. Yes, there are occasions when a competitor questions the judgment of the RSO, or when the wait at Check-In seems endless due to long duration flights, communications problems, or any of a dozen possible hang-ups. Due to the vagaries of thermal activity everyone wants to fly timed events simultaneously, and there aren't always enough timers to permit this. But disagreements are resolved, discontentment evaporates, and tempers cool. Flying and watching others fly is the point of it all, and every meet has at least one truly spectacular flight. Sharing among rocketeers is central to the enjoyment of a meet... sharing supplies, exchanging information, chasing someone else's model, helping with prepping. It is not unusual to see a contestant explaining his winning technique to his closest competitor.

The end of a meet is the time you will be glad of preplanning. There should be people committed to breaking down the range, and people doing results. The trophies and ribbons should be given at the end of a meet, but often it is not possible after a one-day meet that ends at dusk with everyone exhausted. If results cannot be done on the range, they should be mailed out immediately after the meet.

For the contestants, the meet is over, but for the Contest Director, there's work yet to be done. The financial balance sheet must be worked out. Results have to be written up and mailed out, both to the contestants who like to see the results in writing even if the awards have been given out at the meet, and to the Regional Contest Board Chairman. When doing the results, the organizers of the meet must read the Pink Book for each event. Make sure you know which events require that flights be summed, and which use best flight; which need a returned model, and which do not; which have other factors involved such as length of superroc or unbroken eggs.

Within fourteen days of a meet, the Points Award Sheet must be filled out and mailed to the Regional Contest Board Chairman along with the CB-1-70s and the flight cards. The Points Award Sheet must be completely filled in, with the names and NAR numbers of individuals or teams in alphabetical order grouped by age division, the events listed and the points

added up, and must be signed by the three members of the Contest Jury (judges).

Once you have finished and mailed in the paperwork, you've completed the meet. You can relax and get some sleep. You can start planning the next meet. Some people tend to relive the meet and try to see where they can make the next one better. Don't miss a minute of it. There are no people like rocket people.

Competition Events

Derived from the Website of the NAR

The *US Model Rocket Sporting Code* prescribes rules for over 25 different rocket competition events. Where appropriate, many of these events are further divided by motor power. For example “B (Engine) Altitude” is a different event from “F (Engine) Altitude”, for obvious reasons!

The Events fall into four main groupings:

- **Altitude Competitions**
- **Duration Competitions**
- **Craftsmanship Competitions**
- **Miscellaneous Competitions**

Official US Model Rocket Performance Records can be set in most of these competition events.

The text to follow offers a short description of each event.

Altitude Competitions:

Altitude Achieve the highest altitude

Super-roc Altitude Fly the longest possible rocket to the highest altitude without structural failure. Points are awarded by a formula that takes into account both the length of the rocket and the altitude achieved.

Predicted Altitude Fly your rocket as closely as possible to an altitude you predict.

Set Altitude Fly your rocket as closely as possible to an altitude chosen by the Contest Director. The altitude is announced in advance of the meet and is the same for everyone.

Random Altitude Fly your rocket as closely as possible to an altitude chosen by chance on the day of the meet. The altitude is the same for everyone.

Cluster Altitude Achieve the highest altitude possible with a single-stage model using multiple motors.

Payload Carry a one-ounce cylinder of sand to the highest possible altitude.

Egg Lofting Altitude Carry a fresh hen’s egg to the highest possible altitude.

Dual Egg Lofting Altitude Carry two fresh hen’s eggs to the highest possible altitude.

Duration Competitions:

In general, duration models are not allowed to separate (recover in two or more pieces). This also limits most duration models to being single staged.

Parachute Duration Stay aloft the longest with one or more parachutes.

Streamer Duration, Stay aloft the longest with a single streamer.

Helicopter Duration Stay aloft the longest with a model that uses autorotation as the sole recovery device.

Super-Roc Duration, Stay aloft the longest with the longest possible model. Points are awarded by a formula that takes into account both the length of the rocket and the time aloft.

Egg Lofting Duration Stay aloft the longest while carrying a fresh hen's egg.

Dual Egg Lofting Duration, Stay aloft the longest while carrying two fresh hen's eggs.

Boost/Glider Duration, Stay aloft the longest with a rocket-boosted glider. The model is allowed to separate and may be multi-staged, since only the glider portion is timed.

Rocket/Glider Duration, Stay aloft the longest with a rocket-boosted glider. Nothing is allowed to separate C the entire model must boost vertically, but must return in a stable glide. This challenging event usually requires a model with clever moving parts.

Flex Wing Boost/Glider Duration Same as Boost/Glider, except the model must use flexible wings.

Predicted Duration Stay aloft as closely as possible to a time you predict.

Set Duration Stay aloft as closely as possible to a time chosen by the Contest Director. The time is announced in advance of the meet and is the same for everyone.

Random Duration Stay aloft as closely as possible to a time chosen by chance on the day of the meet. The time is the same for everyone.

Craftsmanship Competitions:

Except for Scale Altitude, any motor power is allowed.

Scale Build and fly an accurate scale model. Supporting data is required. Judges measure and rank the model. The model must make a safe and stable flight.

Scale Altitude Fly an accurate scale model to the highest possible altitude. Models are judged as for scale, and an additional factor is awarded for the altitude achieved.

Super Scale Same as Scale but includes a scale launching complex as well.

Sport Scale Same as Scale, but the model is not measured. It is judged for conformation and craftsmanship by a team of judges standing at a distance.

Giant Scale Same as Sport Scale, except that models cannot be smaller than a given minimum size.

Peanut Scale Same as Sport Scale, except that the models cannot be larger than a given minimum size.

Plastic Model Conversion Construct a common plastic model of a rocket that was not originally manufactured as a flying kit, and convert it to fly in a safe and stable manner. Points are awarded for both craftsmanship and flight qualities.

Space Systems A Sport Scale rocket, along with an optional Sport Scale launch complex, must successfully simulate the flight performance and mission of the original prototype.

Miscellaneous Competitions:

Spot Landing Land your model closest to the spot chosen by the Contest Director. The spot is the same for everyone. Any motor is allowed. This event can be held in three sub-classes: Parachute, Streamer, or Open (Any recovery system allowed).

Drag Race Two rockets are launched simultaneously through a single switch. The judges award points for the model that achieves first motion, achieves the lowest altitude, and lands last. The winner of each “heat” goes on to fly subsequent heats until an overall winner is determined.

Radio-Controlled Glider A combination of Boost/Glider Duration, Set Duration, and spot landing. The object is to fly a Radio-Controlled Boost! Glider as close as possible to a time duration set by the Contest Director, while landing it as close as possible to a spot determined by the Contest Director.

Research and Development Contestants prepare and present a written research or engineering project. Oral presentations are required of competitors being considered for the first four places.

NAR CONTEST BOARD DIRECTORY

If you are planning to have a sanctioned competition sponsored by your section, contact the appropriate contest board chairman for your state.

Serving: **ME, NH, VT, MA, NJ, NY,
RI, CT, PA, OH**

Northeast Region CB Chairman
Jeff Vincent
P.O. Box 523
Slingerlands, NY 12159
(518) 439-2055
E-mail jvincent@wizvax.net

Serving: **MD, DC, VA, WV, DE, NC, SC,
KY, GA, TN, AL, MS, LA, FL, AR, PR,
VI**

Southland Region CB Chairman &
National Contest Board Chairman
Tom Lyon
4403 Gaines Rd.
Richmond, VA 23222
(804) 321-7072
E-mail ZOG43Lyon@aol.com

Serving: **IN, IL, IA, MO, KS, WI, MI,
MN, ND, SD, NE**

Midwest Region CB Chairman
Lila Schmaker
1421 State St.
Vincennes, IN 47591
(812) 882-2449
E-mail lilas@vincennes.net

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Southwest Regional CB Chairman
Terry White
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Cypress, TX 77429
(281) 655-8356
E-mail twhite1@houston.rr.com

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Mountain Region CB Chairman
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Murray, UT 84107
(801) 685-7448
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Serving: **WA, OR, CA, AK, HI**

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NARTREK

By Lew Proudfoot, former chairman of NARTREK

NARTREK: The program of the National Association of Rocketry's Training of Rocketeers for Experience and Knowledge.

NARTREK is:

- For all Rocketeers - young and old!
- A self-paced program designed to improve your knowledge and skill in model rocketry step by step.
- Gives structure and focus to this increasingly diverse hobby.
- A program for rocketeers working alone - and for rocketeers affiliated with an NAR section
- Operates on the honor system.
- Administered from a central point by a staff of experienced volunteer NAR members who will work with you by mail to solve your problems with you.
- Uses existing model rocket kits whenever possible.
- Uses existing publications and books available from NAR Technical Services, Model Rocket Manufacturers, and other easily available sources.
- A program of reasonable cost to you. NAR doesn't make any money from the NARTREK program. You will have to buy your own kits, motors, equipment, and publications.
- YOUR program, with patches for each achievement level, certificates, and congratulatory announcements of your progress in NAR publications.

When you complete the entire NARTREK program, you will be capable of designing, building, and safely flying nearly every type of model rocket. You will be ready to progress into the most advanced areas of model rocketry - national and international competition, advanced technical research, historical research, etc.

How Does NARTREK work?

1. You must meet the basic NARTREK program requirements.
2. Fill out the application form, and mail it, along with your handling fee, to NARTREK Base.
3. You will receive a program packet for the first level. This packet will contain details of each requirement, a list of recommended materials and publications to help you complete this level, and certification forms for each requirement.
4. At your own pace, complete each requirement. If you run into problems, contact NARTREK Base, which will put you in contact with someone who can help.
5. As you complete each requirement, fill out the certification form.

6. When you have completed all the requirements for your current level, mail in all the certification forms to NARTREK Base.
7. NARTREK Base will evaluate your certifications, and send back your Achievement Certificate, along with the appropriate jacket patch. If you have signed up for additional program levels, the next packet will be sent to you automatically.
8. You may sign up for additional levels at any time.
9. Enjoy your hobby!

Starting Out

The program begins with a series of achievement levels in rocketry, each requiring more skill to complete than the one before. When you finish each level you will receive an Achievement Certificate and a jacket patch certifying your accomplishment. You are under no time limit. You progress at your own pace. You begin at the simplest level... Bronze. To fulfill the requirements for Bronze you must:

Perform a 60-second parachute duration flight with a kit model.

Perform a 30-second streamer duration flight with a kit model.

Perform a two-staged flight with a kit model.

Perform a large model flight (D motor or above) with a kit model. Upon completing these requirements you move to the next level.. ..Silver.

NARTREK Program Outline

The program has three achievement levels: Bronze, Silver and Gold. Once you have achieved the Gold level, there are seven advanced achievement areas for you to try:

Achievement Levels

- 1) Bronze
- 2) Silver
- 3) Gold

Advanced Programs:

- 1) Special Research & Development
- 2) Ground Support
- 3) Static Display
- 4) Super Scale
- 5) Plastic Model Conversion
- 6) Radio Controlled Boost Glider
- 7) Competition

We will be adding more advanced programs in the future - including High Power.

Special Note: Once you start a NARTREK Achievement Level, you do not have to complete it within any pre-set time. In fact, you don't ever have to complete it at all! NARTREK is here to increase your enjoyment of Model Rocketry - so don't work at it - have fun!

NARTREK Requirements:

- 1) You must be a member of the National Association of Rocketry. Your NAR number will be used in NARTREK reports.
- 2) You must have built and flown a single-stage model rocket using a kit.

- 3) You must have your own launching equipment. Your NAR section may use a rack launch system, but it is important that you understand the fundamentals of the ignition and launching of model rockets. This equipment is inexpensive and will last you many years.
- 4) You must know and abide by the NAR safety code. All NARTREK activities are based upon the NAR Safety Code.
- 5) You must know the NAR model rocket motor coding system. It is explained in every model rocket motor manufacturer's catalogue.

How to register:

Send me your name, address, and NAR number. Then send me a check for five dollars for each Achievement level, starting with Bronze. We have a special, for \$20, you will be registered for all three achievement levels, and one Advanced Program. As soon as I get your check, I'll mail out your Bronze packet, and you can get started!

Join NARTREK - and fly the NARTREK Gold!!!

NARTREK Base
George Sheil
7311 Ditzler
Raytown, MO. 64133

E-mail: nartrek@nar.org

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