FEBRUARY 1972

MODEL ROCKETEER

OFFICIAL JOURNAL OF THE NATIONAL ASSOCIATION OF ROCKETRY

Vol. XIV No. 1

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UNITED STATES REPRESENTATIVE FEDERATION AERONAUTIQUE INTERNATIONALE

OFFICE OF THE
EXECUTIVE DIRECTOR

November 11, 1971

Mr. James S. Barrowman, President
National Association of Rocketry
Post Office Box 178
McLean, Virginia 22101

Dear Jim:

I wish to congratulate you, the officers and members of the National Association of Rocketry (NAR) on the reemergence of your official journal, MODEL ROCKETEER, as a separate and independent publication. This bold, progressive move is yet another step forward in the continuing development of your organization as a viable force on the national and international aerospace modeling scene. With the type of leadership you have displayed, coupled with the sustaining enthusiastic dynamism of your members, the future of NAR is unlimited.

As you know, NAR enjoys a unique and enviable position in the national and international model rocketry world. As an affiliate of the National Aeronautic Association (NAA) NAR is the only organization that can establish official national records, and through NAA's membership in the Federation Aeronautique Internationale (FAI), official world records. Other groups can establish clubs and claim national and world records in model rocketry but they are meaningless; only those records certified by the NAA, from the Apollo moonshots to the sophisticated radio controlled model airplane to the 8 year-old's robin egg loft, are officially accepted by the United States and by the other countries of the world.

Jim, during my years as Executive Director of the National Aeronautic Association I have watched the NAR grow from a few members and a dozen sections into an organization of thousands of members and more than 130 sections. I am confident that this growth will continue until NAR is one of our larger affiliates.

Again, congratulations on your new MODEL ROCKETEER and my personal wishes for the continued success of the National Association of Rocketry.

Cordially,

Brooke E. Allen
Major General, USAF (Ret.)

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EDITORIAL OFFICE
Elaine Sadowski
1824 Wharton Street
Pittsburgh, Pennsylvania 15203
Telephone (412) 431-5139

ADVERTISING OFFICE
Norman J. Ward
Post Office Box 178
McLean, Virginia 22101
Telephone (703) 536-4299

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EDITOR'S NOOK

This is the first issue of the *Model Rocketeer* in its new format. We hope you like it. You will notice that we are running R & D summaries from contests. The names and addresses of the authors have been included in an attempt to stimulate an exchange of ideas in the Research and Development field. We think that all NAR members should be able to know who is doing what in R & D. We are starting with summaries from MARS VI, held at Aberdeen Proving Ground in October. These will be continued in future issues.

Another of our new features is the "NAR in Action" page. Send your questions about the NAR, and even your gripes, to our "NAR in Action" editor, Bob Mullane. He'll try to find answers to as many of them as he can. This page will also feature explanations of NAR organization and committees and NAR news.

Since we can't travel all over the country to cover regional and area meets and symposiums and conventions, we'd like *you* to send us accounts of your activities. Send contest results and photographs, if possible, along with your articles. We'll try to use as many as we can, and we'll try to give representation to all parts of the country, but remember, it's up to *you* to see that your contest or convention is covered.

We'd like all authors of longer articles to include a short biographical sketch with the article (like the one with the NETS article). We want our members all over the country to get to know each other.

"Section News" will continue with the same format and editor Chuck Gordon, so you sections keep on sending in your news.

Technical articles and plans are hard for the *Model Rocketeer* to get, since we can't pay our authors, but we'd like to run one plan or tech article each month, so, again, we need *your* help. Send your plans and technical articles to Pat Stakem.

We would appreciate your support for the *Model Rocketeer*, and your reactions to our new image.

Elaine Sadowski

Send questions, ideas and gripes about NAR (don't forget about the "Loudly from a Broken Soapbox" and "If I Wrote the Pink Book" columns!) to:

Robert Mullane
NAR in Action Editor
34 Sixth Street
Harrison, New Jersey 07029

Send technical articles and plans to:
Patrick Stakem
Technical Editor
1001 Rockville Pike, Apt. 625
Rockville, Maryland 20852

Section news goes, of course, to:
Charles M. Gordon
NAR Section News
192 Charolotte Drive, Apt. 2
Laurel, Maryland 20810

Any other articles, photographs, cartoons, ideas, etc. go to:
Elaine Sadowski
Model Rocketeer Editor
1824 Wharton Street
Pittsburgh, Pennsylvania 15203

NAR in ACTION!

International Team Selection Criteria

A special committee of the NAR has established the selection criteria for the next NAR International Championship Team. The selection criteria committee consisted of NAR President Jim Barrowman of Seabrook, Maryland, Jess Medina of Seattle, Washington, and Jim Sparks of Lansdale, Pennsylvania. The criteria will be used to select the USA/NAR team to compete at the FAI International Model Rocket Championship. The criteria follow.

I. International Championship Team Selection

A. Competitors. The selection of the United States team competitors for International model rocket championships shall be accomplished in two steps. The first step is to determine by fact of performances according to a fixed schedule of requirements, who is eligible for selection to the international team. The second step is to select, by judgment of committee, who of those eligible is to be a member of the team.

B. Team Manager. The International Team Manager shall be appointed by the NAR President.

II. Selection Committee

A. Responsibility for implementation of the competitor selection procedure rests with a committee of ten (10) members established automatically by the appointment of its chairman by the NAR President. Such appointment shall take place once the last contest year before team selection is completed.

B. Membership on the committee shall consist of:

- Selection Committee Chairman appointed by the NAR President
- NAR Contest and Records Committee Chairman
- NAR–FAI Liaison Committee Chairman
- NAR Leader Administrative Council member elected by the LAC
- 6 individuals who placed 1 through 3 in total competition points in competition age divisions C and D at the end of the last contest before team selection.
- If the person in any of the first four committee membership positions also qualifies for membership by reason of his competition point standing, the NAR President shall appoint an additional person to fill one of the membership positions.

C. The duties of the committee are to:

1. Determine who is eligible for international team selection by applying the schedule of eligibility criteria.
2. Notify those persons eligible.
3. Select from among those eligible an international team of three (3) competitors plus one (1) alternate per event in the international championships for which the team is being selected.

D. The selection committee chairman is responsible for notifying all committee members of their position on the committee; calling and presiding at all committee meetings; and counting all ballots.

E. The NAR Contest and Records Committee Chairman is responsible for supplying the committee with full and complete competition data (events, places, scores, records, etc.) on each eligible person.

F. The NAR-FAI Liaison Officer is responsible for providing the committee with all pertinent information on international competition rules and procedures.

G. The NAR LAC member shall serve as secretary of the committee, keeping a complete record of the committee activities; sending all required notifications; and providing the international team manager and NAR President with the names, addresses, and telephone numbers of the selected team members.

H. A two-thirds (2/3) majority of all committee members is necessary to elect an individual to the team.

I. Committee business can be transacted either at meetings or by mail as is appropriate.

III. Establishment of Eligibility

A. The number of eligibility slots is twice the number of team members to be selected . The number of team competitors allowed in an international championship meet is three per event. In addition, there will be one alternate competitor per event. For example, a team for a three event international championships would number 12 people (of whom 9 will actually go) and the associated number of selection eligibility slots would be 24.

B. To be eligible an individual must have competed in C or D competition age division during the last contest year completed before team selection. The following schedule of criteria is applied in order until all eligibility slots are filled by individuals. If the schedule is exhausted before all eligibility slots are filled, then only those individuals who

have met the criteria in the schedule will be eligible. If the number of individuals who have met the requirements is less than or equal to the number needed for a team, then those persons who meet the criteria shall be the international team. If any eligible person, upon notification, declares himself ineligible, his eligibility slot will be filled by applying the first unused eligibility criteria in the schedule.

1. Top 5 individual competition point holders in each competition age division for the last contest year completed before team selection.
2. One person from each of the top 5 team competition point holders for the last contest year completed before team selection.
3. Individuals placing in the top three places in their competition age divisions in Scale competition at the last NARAM completed before team selection. If more than one scale type event is held at that NARAM, the first mentioned event in the following list shall be used as the selection event:

   a. Scale
   b. Super Scale
   c. Space Systems
   d. Scale Altitude

4. Individuals placing in the top three places in their competition age division in Boost Glider competition at the last NARAM before team selection. If more than one class of Boost Glider is held at that NARAM, then the first mentioned class in the following list shall be used as the selection event:

   a. Sparrow
   b. Swift
   c. Hawk
   d. Eagle
   e. Condor
   f. Hornet

5. Individuals placing in the top three places in their competition age divisions in altitude or payload competition at the last NARAM before team selection. If both Altitude and Payload are held at that NARAM or if more than one class of Altitude or Payload is held, then the first mentioned event and class in the following list shall be used as the selection event:

   a. C1.1 Altitude
   b. C1.2 Altitude
   c. Single Payload
   d. Peewee Payload
   e. C1.3 Altitude
   f. C1.4 Altitude
   g. Dual Payload
   h. Open Payload
   i. C1.0 Altitude

6. Individuals in the top three places in their competition age divisions in Parachute Duration competition at the last NARAM before team selection. If more than one class of Parachute Duration is held at that NARAM, the first mentioned class in the following list shall be used as the eligibility selection event:

   a. C1.1
   b. C1.2
   c. C1.3
   d. C1.0

7. Individuals placing 6 through 10 in total competition points in each competition age division for the last contest year completed before team selection.
8. In groups 4 through 8, the order of eligibility will be based first on highest place and then on age division, starting with the oldest. For example, in an event the order would be:

   First place, division D
   First place, division C
   Second place, division D
   Second place, division C
   Third place, division D
   Third place, division C

Suggested Schedule of Criteria for Selection Committee

1. The selection committee, using the above set of criteria, shall select a pool of eligible people for selection.
2. The committee shall investigate each individual's record for the past contest year, for the following factors:

   A. The number of times that individual has made a qualified flight in the event for which he was selected.

   B. The number of times that individual has placed in the top three in that event.

   C. The number of points gained for the number of wins in that event. (Include weighting factor. Section-1, Area-2, Regional-3)

3. The committee shall divide the number of times that the individual has placed into the number of events. The resulting number gives a consistency factor, which shows how consistent that individual has been for the past contest year.
4. The committee shall next divide the number of times placed into the number of points gained throughout the year. The resulting number shows what kind of competition that individual has been competing in.
5. The individuals are then listed by numbers, highest to lowest. Naturally, the individuals with the highest numbers are the best competitors.

Final Comment:

This schedule should not be the only thing used in selection. The committee should exercise personal judgement also in the selection of the best and most competitive team.

BY-LAWS REVISION COMMITTEE WANTS YOUR OPINION

by Manning Butterworth

NAR By-Laws
Article II. Purpose

The purpose of the National Association of Rocketry, hereafter called the Association, shall be to aid and encourage by all suitable means all people interested in the sciences of rocketry and astronautics and their allied sciences; to create an increasingly wide interest in the scientific techniques pertaining thereto; to prepare, collect, correlate and disseminate by publication or otherwise facts, information, articles, books, pamphlets and other literature pertaining to rocketry and astronautics; to establish local chartered sections of the Association; to establish, enforce, modify and publish standards and rules relating to the construction and operation of model rockets; to collaborate or affiliate with other organizations whether scientific or otherwise, in any manner and to any extent which, in the judgment of the Board of Trustees, will best aid in accomplishing its objectives; to raise funds for research and experimentation; to buy, hold or convey real and personal property; and to engage in other scientific, educational or related activities as the Association or the Board of Trustees may from time to time deem necessary or desirable in connection with the foregoing.

Reading the above paragraph from the By-Laws probably brings to mind a number of services that the NAR offers its members. For example, it supplies plans and technical reports through NARTS; it charters sections; and it has established safety codes and standards for the manufacture of model rocket engines. However, I have heard members say that competition is all that the NAR offers, that all of these separate aims are, in other words, directed toward an end goal of competition. That contests play a large role in the Association is a fact, even though the word "contest" doesn't appear in Article II. Do you feel this means Article II should be rewritten to state competition as a (major) purpose of the NAR? Do you feel that Article II should include additional aims? An example of the latter could be a national technical symposium or convention.

If you feel that the NAR needs to define new or additional goals or to restate its "Purpose" to reflect existing ones, now is the time to speak out. Contact any member of the By-Laws Revision Committee. The members are Manning Butterworth (Chairman), Room 315, 5540 Hyde Park Blvd., Chicago, Illinois 60637; Douglas Ball, 415 Houck House, 61 Curl Drive, Ohio State University, Columbus, Ohio 43210; William D. Boggs, 730 East Dartmouth St., Gladstone, Oregon 97027; and A. W. Guill, 32 Gerdes Rd., New Canaan, Connecticut 06840. Because of his work with the Contest Board, Ben Russell has not found it possible to continue on the committee. No replacement has yet been named.

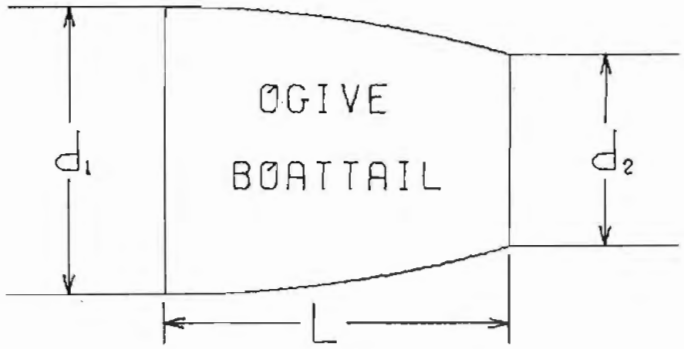
TECHNICAL FEATURE

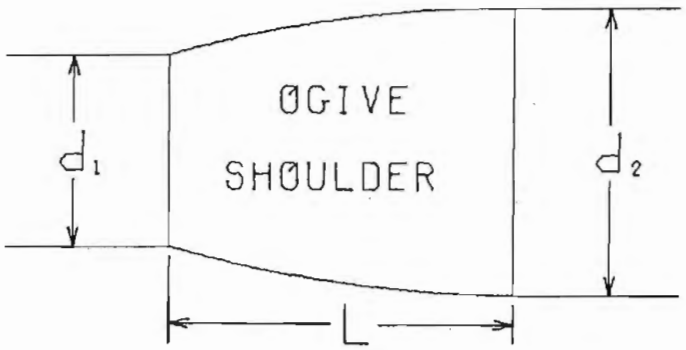
Calculating The Center of Pressure of Ogive Transitions

by James S. Barrowman

Once the lone ogive shaped transition in model rocketry, the ogive boattail on the V-2 rocket has been joined by an increasing number of similar shapes. Ogive boattails have been used in egg capsules, scale models and high performance competition models. The advantage provided by boattails was demonstrated by George Pantalos (Model Rocketry Magazine, July and August 1971). The smooth joint between the cylindrical body tube and an ogive boattail helps keep the airflow laminar and the friction drag low. In this way, ogive boattails offer a further advantage over a conical boattail.

While no specific use of ogive shoulders has been made, the analysis of this shape is virtually identical to that for an ogive boattail and is included for completeness.





Unfortunately the derivation of the C. P. equations for ogive transitions is quite complex and beyond the scope of this article. However, the resulting equations and graph are easy to use.

The symbols used in this article are those defined in "TIR-33, Calculating the Center of Pressure of a Model Rocket" from Centuri Engineering Co.

The $C_N\alpha$ of the ogive transitions can be calculated using the same equations that are used for conical transitions. For an ogive shoulder:

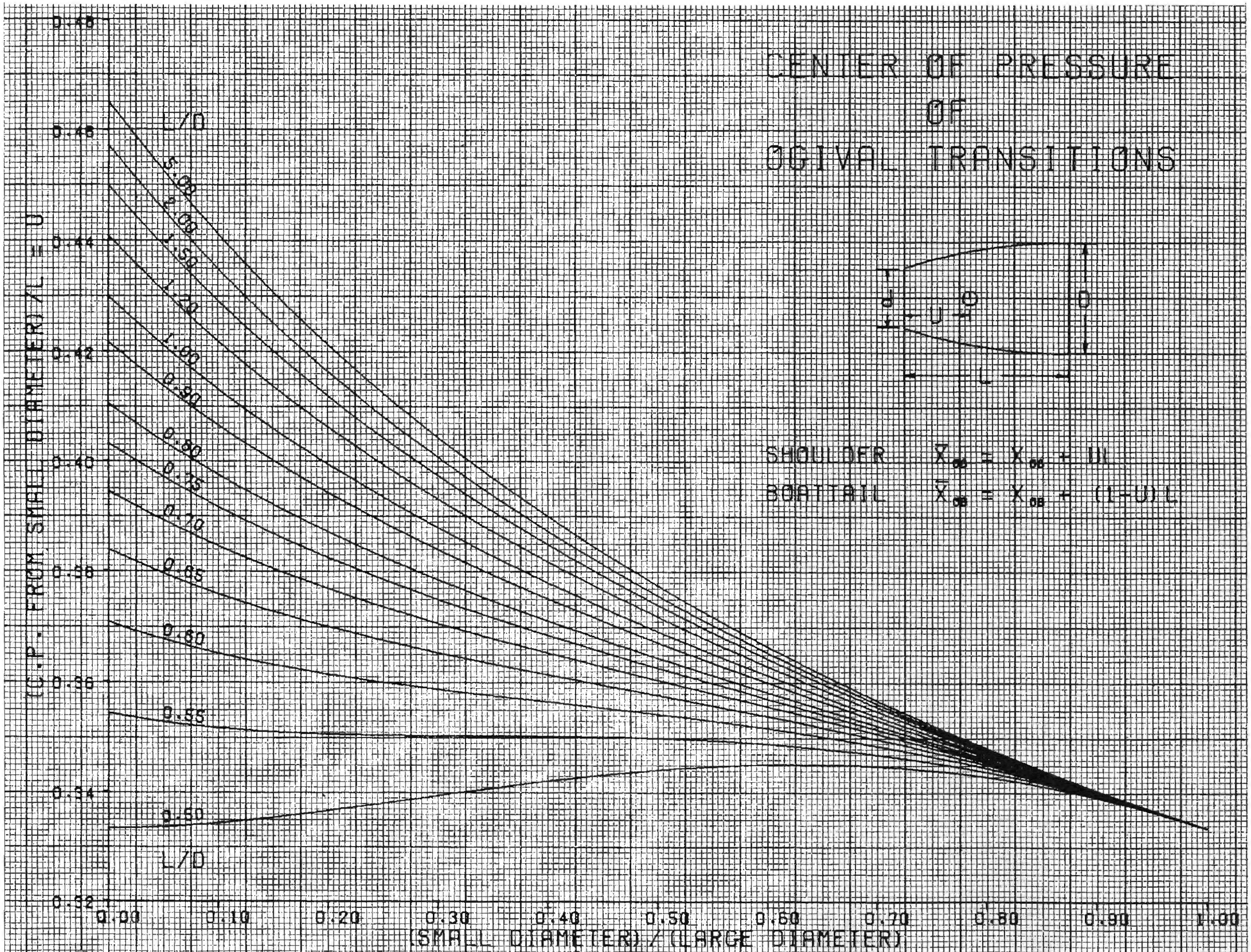
$$(C_N\alpha)_{os} = 2\left[\left(\frac{d_2}{d}\right)^2 - \left(\frac{d_1}{d}\right)^2\right]$$

where d = diameter at the base of the nose.
For an ogive boattail:

$$(C_N\alpha)_{ob} = 2\left[\left(\frac{d_2}{d}\right)^2 - \left(\frac{d_1}{d}\right)^2\right]$$

Note that this is the same equation as the one for the ogive shoulder; however, the force on the ogive boattail comes out negative.

The center of pressure of the ogive transitions is determined using the graph and equations on the next page. Note that upper and lower case d's are used to represent the large and small diameters respectively. Also, X_{OS} and X_{OB} represent the distance between the nose tip and the front edge of the ogive transition.


CENTER ØF PRESSURE
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ØGIVAL TRANSITIONS
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SHOULDER $\bar{X}_{OB} = X_{OB} + UL$
BOATTAIL $\bar{X}_{OB} = X_{OB} + (1-U)L$

CONTEST calendar

James Barrowman, President of NAR, announced the resignation of Richard Sipes, Contest Board Chairman, effective January 1, 1972. Subject to approval by the Board of Trustees, he has appointed Margaret (Dottie) Galloway to replace Mr. Sipes. All correspondence regarding Contest Board business previously mailed to Mr. Sipes should now be sent to Mrs. Galloway at 428 Ben Oaks Drive West, Severna Park, Maryland 21146.

Jan. 23, 1972—USAF Academy, Colorado. Name: COLD-1. Host: Air Force Academy (AFA) 255. Events: Hornet BG, Class 1 Streamer Duration, Open Spot Landing. Contact: Brian Beard, Box 4385, USAF Academy, Colorado 80840.

Feb. 27, 1972—Pottstown, Pennsylvania. Name: Fat Chance World Record Trials I. Host: Missile Minders 133. Events: Class 0, 1, 2, 3, 4, Altitude, Class 0, 1, 2, 3, Parachute Duration, All B/G events, All classes of Streamer Duration, All R/G events, Design Efficiency, Pee Wee Payload, Single Payload. Contact: Carl J. Warner, 665 Woodland Avenue, Pottstown, Pennsylvania 19464; Telephone: (215) 323-4296.

March 5, 1972—Concord, Massachusetts. Name: NERFSec II. Host: New England Rocketry Federation 236. Events: Scale, Super Scale, Hawk R/G, Gnat B/G, Open Spot Landing. Contact: Patrick Griffith, Legion B, Milford, Massachusetts 01757; telephone (617) 473-7654.

Mar. 26, 1972—Houston, Texas. Name; AP-4. Host: Apollo-NASA 103. Events: Quadrathon, Plastic Model. Open Spot Land, Scale, Pigeon Eggloft, Class O P.D., Class I S.D. Contact: B.S. Russell, 14155 Labrador Ave., Apt. 96, Houston, Texas 77047.

Apr. 23, 1972—Houston, Texas. Section Meet. Name: 72-AP-5. Host: Apollo-NASA 103. Events: Quadrathon, Scale, Sparrow B/G, Sparrow R/G, Open Spot Land, Contact: B.S. Russell, 14155 Labrador Ave., Apt. 96, Houston, Texas 77047.

May 14, 1972—Fairfax, Virginia. Name: Washington Area Record Trials (WART-1). Host: Northern Virginia Association of Rocketry 205. Events: Records in any class may be attempted. Competition events: Condor B/G, Swift R/G, Class O P.D., Class 2 S.D. Trophies and ribbons will be awarded to winners. Meet fee (to cover cost of trophies and ribbons) is $2.50. Contact: Randy Thompson, 10814 First Street, Fairfax, Virginia 22030.

May 28, 1972—Houston, Texas. Section Meet. Name: 72-AP-6. Host: Apollo-NASA 103. Events: Plastic Model, Hawk B/G, Scale, Robin Eggloft, Pee Wee Payload, Open S.L., Predicted Altitude. Contact: B.S. Russell, 14155 Labrador Ave., Apt. 96, Houston, Texas 77047.

Conventions, Exhibitions, Foreign Events

March 17, 18, 19, 1972—Pittsburgh, Pennsylvania. Name: Pittsburgh Spring Model Rocketry Convention. Hosts: Steel City 157 and Three Rivers Section 172. Lectures, movies, discussions: R & D, Model Rocketry Programs in the School and Community, Model Rocket Photography, Construction Techniques, Model Rocket Instrumentation, CINEROC, Plastic Models, Variable Geometry Boost/Gliders, Scale Modeling, Basic Boost/Gliders, Parasite Boost/Gliders, Model Rocket Clubs, Rocket Gliders, Club Newsletters. Contact: Elaine Sadowski, 1824 Wharton Street, Pittsburgh, Pennsylvania 15203.

June 1972—Toronto Canada. Toronto Regional. Open meet and seminars sponsored by the Canadian Rocket Society. Competitions and presentation of the Diamond Award in Rocketry. Science teachers and their students especially invited. Contact: CRS, Adelaide St., P.O. Box 396, Toronto 1, Ontario, Canada.

July 7-9, 1972—Montreal Canada. Third National Canadian Model Rocket Conference. Convention and competition open to all model rocketeers from Canada and the United States. Events: Discussion Groups, contests in Scale, Condor B/G, Sparrow B/G, Hawk R/G, Open Spot Landing, and Class O PD. Contact: Canadian Conference 1972, c/o Steven J. Kushneryk, 7800 des Erubles Ave., Montreal 329, Quebec, Canada.

Third Canadian Model Rocket Conference to Be Held in July

The Atmospheric Rocket Research Association will host the Third Canadian Model Rocket Conference on July 7, 8, and 9 in Montreal. The Conference is supported by the City of Montreal, the National Research Council, Bell Canada, and the National Aeronautics and Space Administration, all of which will contribute some sort of aid. The First Canadian Model Rocket Convention, held in July, 1970, was the first major model rocket activity in Canada. A second conference was held in 1971. These conferences have been attended by rocketeers from most parts of Canada. Thirty-five percent of attendees came from the United States, some from as far away as Phoenix, Arizona.

Plans for this year's conference call for 15 hours of speakers, films, and discussions, ranging from model finishing, for the beginner, to trajectory analysis, for the more scientifically oriented rocketeer. Competition events will be Hawk Rocket/Glider, Sparrow and Condor Boost/Glide, Scale, Class O Parachute Duration, and Open Spot Landing.

Any person interested in complete details and entry forms may obtain them by writing to:

Atmospheric Rocket Research Association
Canada Conference 1972
7800 des Erables Avenue
Montreal 329, Quebec, Canada

The entry fee for the conference is ten dollars per person. This includes entry to all activities, banquet, and transportation (by bus) to the launch site. Lodging and other meals must be purchased separately by the rocketeer. Full information on lodging will be included with the application. Families write for *family plan*.

R&D summaries

MARS VI
C Division

"An Investigation of Model Rocket Trajectory and General Performance Influence as a Variable of Pre-Flight Guidance Systems"
Jimmy Johnson, NAR 11060, Port Republic, Maryland 10676
Ronald Carey, NAR 20060, Port Republic, Maryland 20676

**First Place*

This project is an investigation of a new preliminary flight guidance system configuration that is a great improvement over present guidance systems. The model used in the tests showed a substantial drop in launcher/rocket friction and aerodynamic drag generated by launch lugs and other parts of the launch device that must be attached to the rocket.

The system under investigation is the Pneumatic Support Launch System (PSLS). A common launch tower was used as the basis for construction. After much deliberation, it was decided to use several jets attached to each of the three rods of the tower. A flow of air is directed toward the center. A more complicated and expensive pressure retention device was also considered, but the idea was discarded.

A rocket launched from the PSLS has no need for a device on its airframe such as a launch lug or the nylon screws used with a rail type launcher. The rocket remains unattached to any part of the launcher, so rocket/launcher friction is eliminated. The only drag generated by this launch system is that between the rocket and the high pressure air cushion which guides the rocket. This, however, causes no more drag than launching the rocket in a high pressure air mass.

During an extensive testing period, it was found that the PSLS was far more efficient than the common rod or rail type launcher. It was also discovered, that when small-engine rockets were used in a closed breech launcher sufficient pressure was not built up to enable the launcher to function. It was also found that launcher/rocket drag makes the closed breech launcher less efficient than the PSLS.

See next month's MODEL ROCKETEER for additional award-winning summaries.

Coming next month . . .

another in-depth TECHNICAL FEATURE
exclusive to MODEL ROCKETEER

Manning Butterworth's
"On Optical Tracking Systems"

in which he examines tracking geometry and how to optimize that geometry. This plus many other exclusives available only to current NAR members.

Section Directory

NORTHEAST DIVISION--Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont.

Regional Manager
Shirley Lindgren
15 Hunter Avenue
Fanwood, New Jersey 07023

Contest Board Chairman
Al Lindgren
15 Hunter Avenue
Fanwood, New Jersey 07023

New Jersey
Floyd Beebe
1 Oak Street
Wharton, New Jersey 07885

Maine
Charles Andres
RFD 2
North Berwick, Maine 03906

State Heads

Connecticut
Mrs. Josephine Shay
5 Vineyard Lane
Westport, Connecticut 06880

Massachusetts
Trip Barber
Box 121, MIT Branch Post Office
Cambridge, Massachusetts 02139

Pennsylvania
Elaine Sadowski
1824 Wharton Street
Pittsburgh, Pennsylvania 15203

SECTIONS

192 Aerospace Research Association of Northwestern Pennsylvania
Glenn Neely
P.O. Box 50
Meadville, Pennsylvania 16335

234 Apollo 13 Rocketry Club of the Eastern Union County Y.M.H.A.
Peter Rosenblum
c/o Y.M.H.A.
Green Lane
Union, New Jersey 07083

108 Bethlehem Section
Douglass W. List
38 West University Avenue
Bethlehem, Pennsylvania 18015

231 Bloomfield Jr. HS Model Roc. Club
Carl R. Nebelsky
50 Harold Street
Hartford, Connecticut 06112

281 Burlington County Rocket Society
Edward E. Kenyon
126 Haines Road
Mount Laurel, New Jersey 08057

261 CAP Group 225 Rocket Club
Anna M. Daly
P.O. Box 321
Millville, New Jersey 08332

200 Central Model Rocket Club
James Bonner
17 Green Acres Avenue
East Brunswick, New Jersey 08816

220 Central New England Roc. Assn.
El G. Vozeolas
86 Pentucket Avenue
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700 Delaware Street
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76-1/2 East Street
Honeoye Falls, New York 14217

241 Kenmore-Tonawanda Roc. Soc.
Michael Reardon
3049 Delaware Avenue
Kenmore, New York 14217

224 Keystone Model Rocket Society
Ronald D. Claar
RD 1, Box 366F
Duncansville, Pennsylvania 16635

125 Leading Edge Rocketry Club
Daniel Ehrlich
708 Palmer Court
Mamaroneck, New York 10543

259 Lunar Explorers
Robert Herder
Route 4, Highway 31
Flemington, New Jersey 08822

133 Missile Minders
Carl James Warner
665 Woodland Avenue
Pottstown, Pennsylvania 19464

134 MIT Model Rocket Section
Trip Barber
Box 110, MIT Post Office
Cambridge, Massachusetts 02139

190 Model Rocketeers of Lodi, N.J.
James Sedita
59 Mitchell Street
Lodi, New Jersey 07644

136 Monroe Astronautical Roc. Soc.
Robert Staehle
Huntington Hills
Rochester, New York 14622

138 NAR Capitol Area Section (NARCAS)
Jane K. Hopkins
RD 1
Lewisberry, Pennsylvania 17339

166 New Canaan YMCA Space Pioneers
G. Harry Stine
127 Bickford Lane
New Canaan, Connecticut 06840

236 New England Rocketry Fed.
Patrick M. Griffith
Legion B
Milford, Massachusetts 01757

142 North Shore Section
Daniel Weiss
239 Normandy Road
Massapequa, New York 11758

143 Pascack Valley
Brian Skelding
9 Appleton Road
Glen Ridge, New Jersey 07028

258 Phillipsburg Area Rocket Club (PARC)
Lawrence Palmer
Hillcrest Boulevard
Phillipsburg, New Jersey 08865

283 Phoenix Model Rocket Section
James Horton
1546 West 3rd Street
Brooklyn, New York 11204

153 SMARS
Mark Davis
108 South Walnut Street
Milford, Delaware 19963

157 Steel City Section
Alan Stolzenberg
5002 Somerville Street
Pittsburgh, Pennsylvania 15201

172 Three Rivers Section of NAR
Tom P. Wuellette Jr.
353 Hawthorne Road
Pittsburgh, Pennsylvania 15209

251 Turk's Head Organization of Roc.
Andrew Bennett
P.O. Box 135
Exton, Pennsylvania 19341

264 Viking Rocket Club
Floyd R. Beebe
1 Oak Street
Wharton, New Jersey 07885

195 Westover CAP Squadron Section
Douglas Squires
Jabish Street
Belchertown, Massachusetts 01007

165 Xaverian HS Model Rocketry Society
Julius Malecki
320 Marine Avenue
Brooklyn, New York 11209

263 York Skyraiders
Walter N. Platts
338 North Court Street
York, Pennsylvania 17403

by
Charles Gordon

The Memphis University School Model Rocket Society Section (235) in Tennessee has now merged with the Memphis Society of Nautical Modeling, Inc. It is the Ballistics Division of the M.S.N.M.

The M.S.N.M. was formerly concerned solely with model boats. The Society has one hundred and ten members, thirteen of which are in the Ballistics Division with more already expressing an interest to join. The society is the largest club of its type in the United States.

Tennessee rocketeers interested in joining this section should contact Morris Jones, 4288 Charleswood Road, Memphis, Tennessee 38117.

As a result of the demonstration launches flown in September 1971, the Fairchester Section (115) in Westport, Connecticut, has recruited ten new members, five juniors and five seniors. All the new members are now participating in a "training course" in model rocketry. The course, under the direction of John Lane and newsletter editor Bruce Shay, will run for about nine months. The course is designed to advance a beginning rocketeer, within a relatively short length of time, to a level approaching that of the veteran. In this way, the section hopes to promote truly serious model rocketeers, and to stimulate the membership growth of the section.

The section would like to thank Mr. G. Harry Stine for his guidance in setting up the training course. His effort is much appreciated. His assistance has been invaluable.

Appreciation is also extended to the Stamford Museum and Nature Center for their support of this endeavor. The museum took care of the bulk of the advertising for the demos. In addition, they have supplied the section with a meeting room for an additional evening every month.

The Viking Rocket Society Section (203) in Richmond, Virginia, held its first sanctioned contest, Central Area Rocketry Meet (CARM-1), on November 7, 1971 at Hanover Air Park in Virginia. This was a very successful contest for the section. Although the group has not sponsored a meet before, members have attended many contests such as ECRM-5, MARS-4, and NARAM-13, which were used as a guide in the preparation of this meet.

In the Sept-Oct issue of the Modroc Flyer, newsletter of the South Seattle Rocket Society Section (176) in Washington State author Chris Pocock gives vent to his thoughts on the K.M.D.Syndrome in an article titled, "What is the KILL, MAIN & DESTROY SYNDROME?"

In this article, Chris tells some of his observations on model rocketry today and of the attitudes he sees developing in rocketeers and how and why they relate to K.M.D.S.

Basically, he sees model rocketeers getting too "intensely serious" about model rocketry. They are unable to lose and smile at the same time.

A complete reprint of the article has been made here because it is felt that all rocketeers could be included in the subject group if they are not careful.

The following article is from the S.S.R.S. MODROC FLYER, Volume III No. 9 Sept-Oct 1971.

What is the KILL, MAIM & DESTROY SYNDROME?
by Chris Pocock

In recent years, model rocketry has grown and developed tremendously. Technologically, we have made great strides, our modeling skills have improved to the state of a fine art, and the NAR has steadily increased its membership. These things are great, but there are side effects.

Competition is getting tougher, specially in the East. This stiff competition has at times turned hostile, leaving invisible scars in the rocketeer's minds. Few people see this as anything unusual – unfortunate, but not unusual. After three years of close observation, I have come to the conclusion that there is a mental disease among a great many of the eastern rocketeers. I have found that it occurs most often in rocketeers with NAR numbers of four digits, or less. I call this sickness the "Kill, Maim and Destroy Syndrome"... "KMD Syndrome", for short.

Let us now consider the attitudes that prevail at a National meet, or any large gathering of eastern rocketeers. What do we see?

Rocketeers walk the range in battle dress complete with swords or knives. Threatening looks cover faces. Scale models are closely guarded and covered with plastic bags for protection from sabotage. Tempers are hot. Hostile remarks are made about plastics to the advocates of this old modeling material. Threats and plots are conceived and sometimes carried out. Model rocket songs are a major outgrowth of this syndrome; "Watch it, Mac, or I'.. write a song about you!" (How much more malicious can a rocketeer get?) When rockets prang under high thrust, the KMD syndrome sufferer writhes with glee, specially if the rocket nearly creams someone. Afflicted Range Officers often scream and yell with the ferocity and wildness of a rabid dog; make no mistake, they *are* sick.

I think we all recognize these symptoms, but what causes them, and when? Where did it come from? I have found that it starts when rocketeers get so engrossed in this hobby/sport that they can no longer lose and smile at the same time. It starts when model rocketry is no longer fun. There is a contagion to this disease. It can infect rocketeers that are new to the hobby, and has been spreading for many years now – unchecked.

Mr. Stine, in his article about the development of the "Honest Ivan" (Feb. '71 *MRm*) said this, which is related to the state of our hobby's mental health:

"Honest Ivan figured prominently in NARAM-1 as a demonstration bird. It was part of a rather grand spoof that was staged for the benefit of the spectators. Unhappily, that sort of thing isn't done at NARAMS anymore because we are now too intensely serious about model rocketry, we have become overly impressed with ourselves, and we know better than to try a 7-engine cluster in a demonstration."

(It might be of interest here that this quote was partly responsible for inspiring the "Honest Ivan Spoof" that drew a smile, or two, at this year's NARAM.)

There has been too much "Kill, Maim and Destroy" going around. "Spoofs" help lessen the pain of the disease for awhile, but in the long run, the only defense against the KMD Syndrome starts with the individual. The best way to guard against it is to learn to take yourself less seriously and learn to smile. Love your brother and/or sister rocketeers and confront the afflicted who ask your motive with a smile and some understanding. Let's put FUN back into model rocketry where it has all but vanished, and where it still flourishes, let's keep it.

NETS 2 HELD IN NEWARK

by Robert Mullane

Bob Mullane, a member of the Pascack Valley Section, is currently a political science major at St. Peter's College. He lives in Harrison, New Jersey. Bob has served on the LAC, both as chairman and as a regular member, he has been president and newsletter editor for PVS, and he now a member of the NAR's Publications Committee and the "NAR in Action" editor of the Model Rocketeer.

The second North East Technical Symposium (NETS-2) attracted about twenty rocketeers from three states to Saint Benedict's Prep School in Newark, New Jersey, on November 13, 1971. The NETS concept originated last year as a means for small groups to hold convention-type discussions without spending large amounts of time and money.

NETS 2 got underway almost on time at 10:30 a.m. with a brief introductory speech by chairman Kevin Flanagan. He explained that NETS would consist of three discussion groups, each followed by a "free period" where everyone would be encouraged to mingle and further discuss the goings on in the groups. These free periods are especially good for giving the shyer person, who might not participate in the larger discussions, a chance to speak to the leader and to other

group members. The absence of a launch was explained (it didn't really contribute to NETS 1, and besides, there is no launch site in the middle of downtown Newark). Finally, Kevin introduced the first discussion group leader.

Gary Bessong (a member of the Pascack Valley Section, which hosted the symposium; editor of that section's newsletter, "Impulse"; and a professional model builder) led the first group, which was a discussion of scale model building. Gary covered such topics as obtaining data, correlating the data, scaling the model, selecting the proper materials, building the model, getting a good flight from the model, and (having been a scale judge) what to expect from the judges. Both novices and experienced builders enjoyed the presentation and gained much valuable knowledge from Gary's sharing of his know-how.

Following Gary's presentation, lunch and the first free discussion period were held. Lunch was provided for all the NETS participants and consisted of assorted sandwiches, cake, soda, and coffee. (Coffee and cookies had been available all morning.) After lunch, Rev. Gerald O'Leary (advisor to the Grey Bee district of Pascack Valley and a teacher at St. Benedict's) showed a brief filmstrip about general aviation and the aeronautics program offered at St. Benedict's, which Father O'Leary teaches.

The next discussion group was concerned with homemade decals. This was led by John Frankosky, a teacher at the Middle School in East Brunswick, New Jersey. He developed a do-it-yourself process for the students in his rocketry class and school rocketry club and then made it into "Create-a-cal". John now markets an improved version of the product under the name "du-cal". John showed several ways of making professional-looking decals for model rockets. One of the high points of his presentation was the first public demonstration of his soon-to-be available process for making several copies of one design (great for making decals with your NAR number, club emblem, or even your own coat of arms on them for all your rockets). Following the formal presentation, everyone was given a chance to come up and try his hand at decal making.

During the second free time period, several PVS members presented slides of recent Pascack Valley activities including numerous public demonstrations that took place during the summer and fall months.

The final discussion group was led by Lindsay Audin, NAR Trustee, famed R & Der, and co-author of the *NAR R & D Methods Guide.* Lindsay employed a new approach to teaching the techniques of R & D. The idea grew from his experience running NETS 1, which primarily concentrated on R & D, and involved writing a "bogus R & D report" which contained errors of almost every kind made in the writing of R & D reports. After giving everyone a copy of the report (titled "An Idealized Spot Landing System"), Lindsay read through the report with the group and then gave them about 15 minutes to find the errors. Meanwhile, Lindsay did the same thing himself, since he had left the answer key at home. Then he went through the report with the participants asking them to point out the errors that they had found. Some people even found errors that hadn't been intentionally written into the report! This method of running the group let a greater number of people get more fully involved in the discussion and made everyone feel part of the group.

A final free period was combined with a cleaning up of the conference room, and the symposium concluded at the appointed time of 5:30 p.m. NETS 2 proved, as did NETS 1, that a large budget and staff are not necessary for running convention-like discussion groups. Keeping the symposium to one day limited attendance (few people will travel a great distance for a one-day event), so each discussion group only had to be held once, and all participants were able to attend every group. Only one good-sized conference room was needed, and only one meal had to be provided (also, no motel accommodations were required). Has your section considered running a one-day symposium? Why not? Pascack Valley will soon be putting out a booklet detailing the running of NETS 2 and giving a complete account of the happenings in each discussion group. At present, *NETS 1*, a booklet telling all about NETS 1, is available for fifty cents from Pascack Valley Section, c/o Steve Smargassi, 16 Appleton Road, Glen Ridge, New Jersey 07028.

(Editor's Note: See also "Notes on NETS-1", an article by Lindsay Audin in the October, 1971 Model Rocketeer.)

NAR NEWS

Engine Certification Changes. Dr. Gerald Gregorek, Standards and Testing Chairman, has announced the decertification of all Estes D-13 engines manufactured before January 1, 1972. Dr. Gregorek also revealed that Estes D-12 engines have been NAR-safety certified as of December 15, 1971 and will be contest certified as of February 1, 1972.

NARAM-14 Site Named. NARAM-14 will be held in Seattle, Washington. Mr. Jess Medina of the South Seattle Rocket Society will serve as contest director. The dates have not been set yet, but more information will appear in future issues of the *Model Rocketeer*.

LAC Newsletter Contest. As a reminder to all sections with newsletters, the LAC Newsletter Contest Chairman for this year is Andy Elliott. Send your newsletters to him at:

LAC Newsletter Contest
c/o Andy Elliott
10203 Leslie Street
Silver Spring, Maryland 20902

MESS. The Standards and Testing Committee is conducting a Malfunctioning Engine Statistical Survey (MESS). Please fill out the MESS form (found in the January *Model Rocketeer*) or a typewritten copy, and send it to:

MESS
c/o Charles Russell
3480 Cemetery Road
Hilliard, Ohio 43026

whenever you have an engine malfunction.

NAR Trustees to Meet in Pittsburgh. An open meeting of the NAR Board of Trustees will be held at the Brashear Center in Pittsburgh, Pennsylvania, on the fifteenth of January. NAR members interested in attending should contact Elaine Sadowski, 1824 Wharton Street, Pittsburgh, PA 15203.

NAR Gets New Treasurer. The Board of Trustees has approved Trustee Al Lindgren of Fanwood, New Jersey, as the new NAR Treasurer. He replaces John Worth, who resigned in August. We wish Mr. Lindgren good luck with his new office.

Stine No Longer with MPC. The following release dated November 15, 1971 was received from Mr. G. Harry Stine:

"I wish to inform you that Model Products Corporation (MPC) did not exercise the annual contract renewal option on November 1, 1971 for my continued exclusive consulting services in the field of model rocketry.

"There should be no inference drawn to the effect that this action was anything less than completely amicable to both parties. I have enjoyed my association with MPC over the past 30 months, and I wish them the best of luck and success in the future."

TOP TWENTY

as of December 17, 1971

Individuals

Division A

	Name	NAR	Sec	Pts	WF
1.	Wayne Gerhart	19894	176	311	5
2.	Mark Medina	13538	176	258	5
3.	Chris Clemens	12749	136	184	4
4.	Anthony Porzio	19941	165	171	2
5.	Paul Chilcoat	20713	130	163	4
6.	Arthur Peters	19764	221	162	2
7.	Brian Clouse	11563	221	120	2
8.	Nick Stepanovsky	20143	221	110	2
9.	Mike Turtora	20655	205	108	4
10.	James Diamond	20221	215	102	2
11.	Charles Miranda	21200	254	98	4
12.	George Stine	24	166	96	2
13.	Frank Mendyk	16322	142	92	2
14.	Gordon Clouse	20811	221	88	2
15.	Laura Penn	20047	102	75	3
16.	Warren Branch	12777	136	64	4
17.	Joseph Pingre	17331	142	62	2
18.	John Erickson	20112	193	60	1
19.	George Meese Jr.	12972	102	60	3
20.	John Richter	20604	169	54	3

Division B

1.	Jeremy Raw	20092	238	239	6
2.	James Gazur	19366	180	212	2
3.	Kerry Mechtly	16799	113	190	2
4.	Edward Jestes	15444	109	176	2
5.	Glenn Koelher	20012	254	175	4
6.	Timothy Kent	18084	205	168	4
7.	Paul Day	12090	130	142	4
8.	Mike Osness	20492	267	138	2
9.	Randolph Barnhart	19450	248	129	3
	Steve Bryson	16489	240	129	3
10.	James Starks	17691	180	120	2
11.	Mark Hopkins	15577	138	120	3
	Jeffry Nelson	16336	205	120	3
12.	Bernard Penney	20164	130	118	4
13.	Anthony George	20016	254	117	4
14.	Larry Rollins	18181	0	108	2
15.	Robert Biedron	16085	265	105	1
16.	Chris Wurster	18525	166	99	2
17.	David Goldsmith	13498	142	96	2
	Bryan Crist	19270	203	96	2
18.	James Needham	20563	103	94	2
19.	Richard Shivik	18833	136	94	2
20.	Eric Paffrath	20011	254	90	2

Division C

1.	Gary Raley	14803	238	507	5
2.	Robert Thompson	16310	205	424	4
3.	Mike Medina	14148	176	304	5
4.	Alan Dayton	17367	176	276	4
5.	Michael Micci	14613	113	264	3
6.	Paul Porzio	15837	165	220	2
7.	Bruce Kimball	19388	176	216	4
8.	Mark Wargo	10371	103	212	2
9.	David O'Neal	16856	176	211	5
10.	George Purcell	19598	203	210	3
11.	Steve Setzer	16903	130	186	4
12.	James Waurishuk	13706	115	179	2
13.	Frank Osborn	14406	108	170	2
14.	Randy Picolet	13100	238	169	6
15.	Mike McMasters	20826	215	164	2
16.	Mike Tannenbaum	18566	254	162	4
17.	Tony Medina	13987	176	143	3
18.	Gary Tagatz	16627	169	141	3
19.	Richard LaBarre	15528	108	136	4
	James Kerley	12091	130	136	4
20.	Alan Jones	15578	178	134	2

Division D

	Name	NAR	Sec	Pts	WF
1.	James Pommert	16908	176	486	5
2.	Jon Robbins	16092	267	454	5
3.	Douglas Frost	3446	176	262	5
4.	Thomas Ackerman	15910	108	240	4
5.	Terry Lee	9020	203	240	5
6.	Donald Larson	16306	205	229	4
7.	George Meese, Sr.	12973	102	228	3
8.	Howard Kuhn	11628	205	189	4
9.	Penn Goggin	17337	203	176	2
10.	Jess Medina	14147	176	175	5
11.	Harold Mayes	15754	168	160	4
12.	Tom Whymark	9220	254	155	4
13.	David Hendricks	17743	0	146	2
14.	Albert Gerhart	19893	176	145	5
15.	Arnold Jacobsen	12863	166	142	2
16.	Thomas Spilker	16003	168	141	4
17.	William Davis	20018	254	140	2
18.	Thomas Gresshan	21257	0	129	3
19.	Thomas Kuechler	13562	238	125	6
20.	George Pantalos	10620	113	124	2
	Chris Williams	13101	142	124	2

Teams

1.	Robert Thoelen	92	165	243	2
2.	Greg Kennedy	23	139	234	3
3.	Jimmy Johnson	131	0	186	3
4.	Richard Sipes	3	130	159	4
5.	Gary Lindgren	121	0	118	1
6.	William Miller	103	169	117	3
7.	Doug Ball	122	113	108	2
	Glen Scherer, Jr.	85	110	108	2
8.	B. Scott Paniccia	133	221	100	2
9.	Leslie Butterworth	41	167	96	3
10.	Ralph Schiano	140	165	89	1
11.	Connie Stine	14	166	83	2
12.	Tom Lyon	100	139	78	4
13.	James Barrowman	13	139	72	1
14.	William Arthur	114	136	65	3
15.	Jonathan Rains	98	0	60	2
16.	Irvin Philmon	80	150	60	3
17.	Laura Englund	22	166	59	2
18.	Ronald Boggs	7	114	48	2
	Albert Bany	88	114	48	2
19.	Randy Gilbert	141	0	42	2
20.	Steve Kranish	134	139	27	4

Sections

1.	South Seattle Roc. Soc.	176	3169	5
2.	NOVAAR	205	2124	4
3.	Vikings	203	1638	5
4.	Gateway Arch Section	238	1587	6
5.	Xaverian HS MR Soc.	165	1459	2
6.	Monroe Astro. Roc. Soc.	136	1258	4
7.	Elwood Assoc. of Roc.	254	1240	4
8.	Metro. Area Roc. Soc.	130	1155	4
9.	YMCA Space Pioneers	166	1100	2
10.	Columbus Society for the Advancement of Rocketry	113	1070	5
11.	Kent Kondors	267	1042	7
12.	North Shore Section	142	1028	2
13.	Midwestern Rocket Research Association	168	943	4
14.	NARHAMS	139	897	4
15.	Upper Arlington Roc.	221	808	2
15.	Apollo-NASA	103	712	2
17.	Birch Lane Roc. Soc.	109	664	2
18.	Bethlehem Section	108	574	4
19.	Fairchester	115	505	2
20.	T.I.R.O.S.	169	474	3

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