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OFFICIAL JOURNAL OF THE NATIONAL ASSOCIATION OF ROCKETRY

Vol. XIV No. 6

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1972-1973 LAC ELECTION

Following these resumés you'll find the ballot for the 1972-73 NAR Leader Administrative Council. All Leader and Senior members are eligible to vote. We request that you read the following resumés and carefully select the seven Leaders you wish to be on the LAC. Then fill out the ballot and return it immediately. After checking your ballot, please sign your name and attach the address label from this issue of *Model Rocketeer*. All ballots must be accompanied by the address label to insure that only eligible people vote. Cut out the completed ballot and return to: LAC Ballot, c/o Connie Stine, 127 Bickford Lane, New Canaan, Conn. 06840. All ballots must be received by Tuesday August 1, 1972. The results of the election will be announced at NARAM-14 and in a future *Model Rocketeer*.

Doug N. Ball, NAR 9338. I have been a NAR member for six years. With teammate Robert Hagedorn I was the 1969 Reserve Team Champ and in 1970 the National Team Champ. I am currently serving on the Standards and Testing Committee, the By-Laws Revision Committee, and the LAC. I am currently working on the LAC scale paks and the MESS forms. I will be a junior at Ohio State University majoring in Aeronautical engineering. I would like to be elected to the LAC so that I can finish my project.

Mark Barkasy, NAR 5038. Have been model rocketeer for ten years, in the NAR over eight. Was secretary of Cheshire Section for four. Competed NARAM's 8 through 10 with total one first, third and two second places.

Wrote the computer program for Joe Persio's excellent discussion group on closed breech launchers at MIT-3.

Was elected to LAC at NARAM-12. Within LAC I compiled complete film listings for publication and also incepted idea of official NAR slides which Bob Mullane and Lindsay Audin designed.

Sophomore in Aerospace engineering at Alabama. I'm working on forming a section here. Organized modroc display for "Engineering Day" last spring.

David Klouser, NAR 16235. I am in my third year as a NAR member. In this time I have been very active, attending several meets, including Canada (1&2), MIT (3&4) and NARAM's 12-13.

In my locality, I have started the PARC section and have served as its president. I have run several meets, such as PACT-1 (a convention-record trial) and Tannenbaum-1, and I have helped with others.

I am currently engaged as newsletter co-editor, as a member of the NAR Events Commission, starting an educational rocketry program, and running PACT-2. I would like to be able to work for change in the NAR through the LAC.

Gary Lindgren, NAR 10678. As a member of four and a half years experience, I recall when I was not willing to accept the fact that the NAR could ever do anything for me. To me, it seemed like a lot of money dished out for nothing in return.

Later, when I became involved in competition, I felt the great satisfaction that comes with winning a meet. To me then, the money seemed worth it.

Now, I would like to branch out into newer and more challenging phases of this organization. The Leader Administrative Council is just such a wish.

Richard Malecki, NAR 11144. Attended NARAM-10, 11, 13 and all five MIT technical

conventions. Was Georgia Coordinator and member of the LAC in 1970. Started the Xaverian rocketry club, was secretary and editor of its newsletter and presently is one of its advisors. I live in New York and attend school in Georgia. I feel that I can represent both Southland and Northeast regions. Attending both major competitions and conventions, I believe that I can represent both competitive and technical aspects of the members. While on the LAC and as Georgia coordinator I have attempted means for better competition, and fairer NAR committees.

Charles Russell, NAR 10920. I am in my sixth year as a NAR member, and a member of the Columbus Society for the Advancement of Rocketry, having served as a CSAR officer for the past three years.

I am in my second year on the LAC and am this year's chairman. Other activities include serving as the chairman of the Malfunctioning Engine Statistical Survey, and as a member of the Standards and Testing Committee. I am also a former Leader National Champion. I am currently serving in the USAF, undergoing tech school at Chanute AFB, Illinois, in Missile Systems.

Ralph N. Schiano, Jr., NAR 13813. Member of the Xaverian High School Rocketry Society since its inception in early 1969, has been its secretary, editor and publisher of the Xaverian Newsletter (which received Honorable Mention from LAC during term) and served as president. Responsible for its recent expansion under the name of Brooklyn Rocket Society and now serving as its president. Recently appointed New York State Department Head. Present at third and fourth MIT conventions. Attended NARAM-13 as well as numerous meets over the past three years. Presently a student at the Polytechnic Institute of Brooklyn majoring in Aerospace Engineering. Member of the American Institute of Aeronautics and Astronautics.

David Scott, NAR 14875. Is a native Houstonian and a Junior at the Memorial Senior High School in the Spring Branch School District. He has been involved with model rocketry since 1967. He has been with NAR for four years and with Apollo-NASA for three. Soon after he joined Apollo/NASA he became actively involved. He was soon elected vice president and is now serving as president. David helped with the running of NARAM-12 and was a contestant in that meet. David and others within Apollo/NASA have been instrumental in reorganizing the section, and they are now involved in establishing better range facilities, more effective member communications, and receiving a non-profit charter from the Internal Revenue Service. David is keenly interested in serving as a LAC councilman because he feels

that the friends and contacts he has made in the past six years can help him serve his fellow NAR members in the best capacity. He believes that strong leadership is necessary in the Southwest, where none has existed before.

Connie Stine, NAR 1300. I have been a NAR member for the past ten years and a member of the New Canaan YMCA Space Pioneers Section for the past seven. Before I joined the section I often did Association work in our basement.

I have attended NARAM's 8-13. I was Junior National Champion at NARAM-10, and along with my sister, Ellie, was Team Champion at NARAM-13. Both Ellie and I were eligible for the International Team.

Presently I am attending Texas Christian University. I am a member of the 1971-72 LAC, in charge of this election, and write for EMANON, our section newsletter.

Alan Stolzenberg, NAR 6314. Active NAR member for the past eight years. Junior Reserve Champion at NARAM-11. Secretary-Treasurer of the Steel City Section for the past four years. Chairman of the SCS newsletter, contest and records, and membership committees at various times. Chairman of the Pittsburgh Spring Convention for three years. Secretary of 1971-72 Leader Administrative Council.

Robert Thoelen, NAR 13227. Assisted in founding Xaverian Model Rocket Society. Held position of Vice-President, succeeded in raising substantial funds for the club. Assisted in club's reorganization into Brooklyn Rocket Society. Currently President of a division, in full charge of recruiting members and providing instruction. Have run many workshops and attended conventions at MIT. Led club in contest points, 1970, 1971. Have placed at major meets, including NARAM-13.

Senior member, Civil Air Patrol, holds grade of Warrant Officer. Duties include assistant finance officer, activities officer, and head of Model Rocketry Program. Organized first CAP indoor launch. Engineering major, Stevens Institute of Technology.

Ronald J. Wright, NAR 9350. In June I will begin my junior year at California State University at Los Angeles. I am majoring in Police Science and Administration, with a minor in a science. Upon graduation I hope to attend Law school. I became interested in model rocketry in 1965 and joined the NAR shortly thereafter. I am currently President of the Riverside Rocket Center and editor of the Section's newsletter.

I would like to see the LAC develop a file containing the various state and federal statutes which govern modrocs. This file would be at the disposal of the sections for their use. The LAC would also survey pending legislation keeping the NAR membership informed especially in cases of adverse bills.

My choices for the 1972-72 NAR Leader Administrative Council are the following: (Check seven names)

- Doug N. Ball
- Mark Barkasy
- David Klouser
- Gary Lindgren

- Richard Malecki
- Charles Russell
- Ralph N. Schiano, Jr.
- David Scott

- Connie Stine
- Alan Stolzenberg
- Robert Thoelen
- Ronald J. Wright

City _____ State _____ Zip _____ Date _____

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COVER PHOTO—

At ECRM-VI, William Dillon's boost/glider lifts off. See page 10 for the ECRM story.
(Photo by Alan Williams, BAMR Photo Committee)

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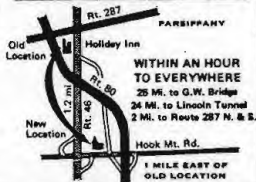
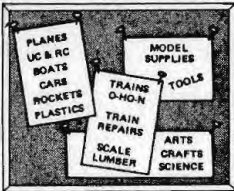
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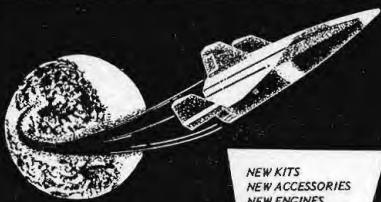
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EDITOR'S NOOK

In this issue you'll find the Leader Administrative Council Ballot. Perhaps some of you are saying, "Why should I waste 8¢ to vote for guys who don't do anything anyway? The would-be LAC members are just a bunch of people who want to get elected so that they can sit around feeling important." It's easy to sympathize with this attitude, and maybe the people who express it are right—why waste the stamp? It is clear that, as a group, this year's LAC hasn't done much (Some individuals *have* been working, and they've been frustrated in their attempts to raise their fellow LAC members. This is not meant as a criticism of the entire LAC; we know how discouraging a situation like this can be.), and to those of us who worked on the LAC and fought for the LAC in its first years, when it was provisional and the members had to prove that it was a body worth having, this is depressing. But then, it's also possible that the NAR *deserves* an apathetic, inactive LAC. Last year's election was conducted by mail to give more people a chance to run for the LAC and to vote for the members of LAC; only 54 ballots were received. Think about it. Is the LAC's apathy only a reflection of the membership's?

While we're on the subject of the LAC, perhaps a comment on the proposed By-Laws amendment that would extend the term to two years to give LAC members a chance to complete long term projects (see "Speak Out on the By-Laws!" on page 7) is in order. We don't think that this is necessary. The LAC's purpose is to initiate and organize projects, but there is nothing that says that other people can't work on them (in fact, other people have worked and are working on LAC projects). Such involvement furthers the purpose of the LAC by getting more Leaders and Juniors involved in the non-competitive aspects of the NAR. The amendment is not only unnecessary, it lets an inactive LAC remain in office twice as long as they would under the present rule, and we certainly don't need that! Please let the By-Laws Revision Committee (and the *Model Rocketeer*) know *you* feel about this amendment.

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:

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Section news goes, of course, to:

Charles M. Gordon
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Starlight, Pa. 18461

Any other articles, photographs, cartoons, ideas, etc. go to:

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LOUDLY FROM A BROKEN SOAPBOX

The opinions expressed in this column are those of the author alone, and they do not necessarily reflect those of the Model Rocketeer or the NAR.

ELITE ALOOFNESS IN THE NAR

by Charlie Zettek, NAR 12593

I lend my wholehearted support to the By-Laws Committee's proposal to allow one-day NAR memberships. I feel that every effort should be made to put this revision into effect as soon as possible for several reasons.

As a vice-president of the Monroe County Astronautical Rocket Society, (Rochester, N.Y.) for the past two years, I have been actively engaged in promoting model rocketry in Monroe County. The club has grown from about 20 members in 1969 to about 35 in 1971. At first glance, it would seem as though the club and the NAR have been thriving in this county. However, one very disturbing fact remains—the percentage of MARS members in the total number of rocketeers in this county is extremely disappointing. A survey was conducted in September 1971 by one of our club members using information from Estes, Centuri, and local hobby shop sales.

Even the best (from NAR's point of view) manipulation of the figures shows that NAR members still constitute less than one percent of all rocketeers in Monroe County. (Ed. note: space does not permit us to publish Charlie's supporting calculations, but they are accurate and available for inspection.) We feel that such a huge number of non-NAR rocketeers is certainly detrimental to the hobby. If an accident should occur, it will almost surely be caused by a non-NAR rocketeer who is ignorant of the safety procedures of NAR. Should such an accident occur, rocketry could be banned in Monroe County and this ban would hurt all rocketeers including NAR members and manufacturers.

I am sure that all NAR members realize the potential hazards of having the overwhelming number of rocketeers being ignorant of NAR safety and organizational features. However, within the NAR there seems to be a certain feeling of self-righteousness, a certain feeling one has of being a member of some sort of privileged elite, which I feel is very detrimental to the progress of the sport of model rocketry.

A very fine example of this "elite aloofness" follows. I have been engaged in planning for a New York State Rocketry Championship to be held this fall. In all fairness, I felt, since probably at least 95% of all rocketeers in New York State are non-NAR, then it would not be correct to say that such a meet would truly be a New York State championship if only NAR members were represented at the meet.

So, I sent preliminary questionnaires to the eight other NAR clubs in New York and also to 21 other rocket clubs which had been listed in the 1970-71 issues of *Model Rocketry*. The questionnaire asked whether or not non-NAR competition should be included in the meet.

The responses I have received to this questionnaire so far have shown some significant lines of thought. One type of thinking, what I call NAR "elite aloofness" is best exemplified by two specific responses. The first reply, by the president of a large NAR club in the state, says, "Do not have non-NAR division, it will be extra work and a true rocket enthusiast is willing to join a worthwhile organization like the NAR." (emphasis mine) The second reply, by a top NAR official—the Northeast Regional Manager, says, "New York has plenty of NAR members that would be more than anxious to come to a State Rocket Championship Meet. Your first concern as a section and mine as Regional Manager is to provide for the NAR members."

I agree that NAR is a worthwhile organization and also that we should provide for NAR members. But it seems very closed minded to say that one cannot be a true rocketeer unless he is a member of NAR. That is like saying that one cannot be a true citizen of the United States unless he is a White Anglo-Saxon Protestant! I cannot be sure why people do not join the NAR. Certainly in many cases the reasons are purely financial. In others, it may be plain ignorance about the true value of the NAR. Still others might simply want to maintain autonomy, while others, despite what we consider mass publicity, simply do not know that the NAR exists.

Whatever the reason, it is a fact that more than 95% of all rocketeers are not in the NAR. Can we call them less proficient or interested in the sport? Of the six replies to the questionnaire which I have received so far, five have been from non-NAR clubs, one from an NAR section. That means that 24% of the non-NAR clubs have shown enough interest in the meet to reply while only 13% of the supposedly "gung-ho" NAR clubs have even bothered to reply to my letter. What does this say about who is more interested in model rocketry?

The replies so far have nearly unanimously approved the proposal to allow non-NAR competitors in a N.Y. Championship. The reply from Stephen Ryan, president of the Lindenwood Model Rocketry Club, is representative of the interest in such a meet. He says, "The LMRC would be proud to compete in your contest. Our club has not competed in any significant meets, and this would give us valuable contest experience." He later says, "I am glad that you are including non-NAR rocketeers in your meet, as many of our members have not yet joined the NAR."

Given this type of interest, should we as NAR members snub our noses at these rocketeers and say, "If you don't play by our rules, you can't play at all?" My personal answer to that question is a definite *no*. I disagree with the Northeast Manager's belief that the primary function of the NAR is to care for its own members. I believe that the primary function of the NAR is, as stated by Mr. Stine in his *Handbook of Model Rocketry*, "NAR does many jobs. Its primary purpose is to advance the art of model rocketry as a scientific hobby, an aerospace sport, and a Space Age educational tool."

How can we as NAR members and NAR sections best advance the art of model rocketry? Certainly by at least two methods: 1. helping the NAR continue as a strong national organization, and 2. helping as many rocketeers as possible learn the safety features of the NAR, and of the different aspects of model rocketry embodied by NAR activities.

The second method is obviously what this article is all about, MARS has run demonstration launches, library exhibits, and NAR contests in order to try to show as many people as possible in this county the present state of the art. The club is made up of NAR members, but we see that a major policy should be to show model rocketry to the outside world, and not demand that in order to learn the skills of model rocketry one must first be an NAR or club member.

I feel that it is very unfortunate that, under the present By-Laws, we will have to ban from a N.Y. State Championship, primarily for insurance reasons, the vast majority of rocketeers in the state—those who are not NAR members. It hardly seems as though NAR is advancing the art of model rocketry by denying many interested rocketeers from gaining the valuable experience and knowledge which can be derived from NAR contests. The By-Laws Committee can change the By-Laws in such a way as to preserve the essential qualities of the NAR, while still allowing non-NAR rocketeers to participate in our contests and thus learn what the NAR has to offer. It is perhaps regrettable that you will not be as easily able to change the self-righteous thinking of many NAR members. After all, why should we believe that we cannot learn anything from rocketeers who are not in NAR?

IN DEFENSE OF SEATTLE

by Norm Wood

I would like to defend the choice of Seattle, Washington as the site of NARAM-14. Last year at NARAM-13, I sat in on the discussion sessions about a site for NARAM-14. The only other two sites which were proposed had definite problems which are not present at Seattle. One proposal came from a group with no experience in running a large meet. The other group submitting a proposal were not sure if an adequate field would be available. Seattle was chosen because they presented the best, most organized proposal.

NARAMs have always been held either on the East coast or in the middle of the U.S. It's true that the majority of the NAR members live on the East coast, but the margin is getting slimmer. Of 67 sections renewed as of March 12, 1972, the East coast had 31 sections to the Pacific coast's 17, but these 17 represent over 25% of the total number of sections. No organization can survive long by ignoring 1/4 of its members and not giving them a chance to show their worth.

I have just returned from a 1200-mile trip to Seattle for Pacific Area Regional Meet-3 (PAR-3) which was a practice for NARAM-14. While there the contestants stayed at a motel which was nicer than anything I've seen at any NARAM and the one which will be used for NARAM-14 is even better at \$4.00 per person per night for 4 in a room. The site is as nice as any I have seen. PAR-3 was as organized as NARAM-13 and served as a test for the launch system and procedures to be used at 14. In short, I think that the Pacific coast and the South Seattle Rocket Society are going to show the rest of the NAR what a really great NARAM should be like.

I think that after the Pacific coast gets their chance at NARAM-14, then the NARAMs should be held either in the middle of the U.S. or they should rotate around the country to give everyone as fair a chance as possible to attend one. (Editor's note: The author is the Pacific Regional Manager.)

MALFUNCTIONING ENGINE STATISTICAL SURVEY REPORT
As of March 31, 1972

Here are the results of the MESS survey for the first quarter of 1972. The response thus far has been good. We've received reports from 32 states on a total of 117 engines. Your continued help and support in filing a MESS form on each malfunctioning engine will be appreciated.

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NAR in ACTION!

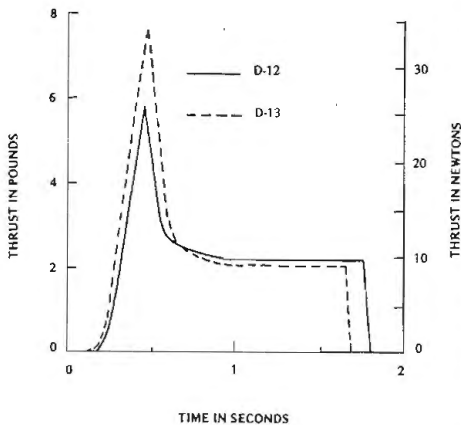
REPORT FROM THE
STANDARDS AND TESTING COMMITTEE

by Dr. G.M. Gregorek, Chairman

During December, 1971, the Estes D-12 engine was tested on the S&T Committee's test stand. All the engines submitted for testing performed well and met the engine standards set by the NAR. Accordingly, the D-12 series was granted safety certification in December and contest certification effective January 31, 1972.

The thrust-time curve of the Estes D-12 is shown below (solid line). This is a tracing from the plotter that displays the output of the S&T test stand. The dotted curve is a tracing from the old Estes D-13 engine, obtained during a test of that engine in November, 1970. The D-12 is a refinement of the D-13 rocket engine. By reducing the "ported" depth of the propellant grain, the initial burning surface area was decreased, which, in turn, lowered the peak thrust from more than 35 Nt. to 25 Nt. The internal combustion chamber pressure was likewise reduced, eliminating nozzle blow outs and blow throughs, which caused some difficulty with the D-13. To maintain total impulse near 20 Nt.-sec., the duration of burn was increased as indicated. These modifications of the D-13 engine reduced the average thrust to 12 Newtons.

The first quarterly report for the Malfunctioning Engine Statistical Survey (MESS) has been prepared by Chas Russell and Mike Wolfe of the MESS Subcommittee.



NAR Engine Type	ENGINE MALFUNCTION			DELAY/EJECTION MALFUNCTION			Summary Total Failures
	Nozzle Blow Out	Blow Through	Catastrophic	Engine Failures	Delay Malfunction	No Ejection	
½A6-2	0	0	0	0	1	1	2
A5-2	0	0	0	0	0	1	1
A5-4	0	2	0	2	0	0	2
A8-3	0	0	0	0	0	7	7
B6-4	0	1	2	3	1	1	5
C6-3	0	1	1	2	0	0	2
C6-5	0	0	0	0	1	5	6
Summary Total Failures	0	4	3	7	3	15	18

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B6-6	0	0	1	1	0	0	0	1
C6-2	2	0	0	2	1	0	1	3
C6-6	0	0	1	1	0	0	0	1
Summary Total Failures	2	0	2	4	1	0	1	5

ESTES INDUSTRIES

A8-3	1	4	0	5	2	1	3	8
B4-2	0	0	0	0	1	0	1	1
B6-4	0	0	0	0	0	3	3	3
B6-6	0	0	0	0	0	1	1	1
B14-5	0	0	0	0	0	4	4	4
C6-3	3	1	1	5	0	1	1	6
C6-5	3	3	3	9	2	3	5	14
D12-5	0	0	1	1	0	1	1	2
D12-7	0	0	0	0	0	1	1	1
½A6-4S	0	0	0	0	0	1	1	1
A5-2S	0	0	0	0	0	1	1	1
½A3-2T	0	3	0	3	1	2	3	6
½A3-4T	0	0	1	1	0	1	1	2
A3-2T	0	1	0	1	0	0	0	1
A3-4T	0	6	3	9	0	0	0	9
A-3	0	0	0	0	1	0	1	1
B-2	0	2	0	2	0	0	0	2
C-3	0	1	0	1	0	0	0	1
C-5	3	0	0	3	0	0	0	3
Summary Total Failures	10	21	9	40	7	20	27	67

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D6-8	0	1	0	1	0	0	0	1
D18-4	0	2	2	4	0	1	1	5
E5-6	4	1	2	7	0	0	0	7
F7-6	0	0	0	0	1	0	1	1
Summary Total Failures	4	4	4	12	1	1	2	14

MODEL PRODUCTS CORPORATION

NAR Engine Type	ENGINE MALFUNCTION			DELAY/EJECTION MALFUNCTION			Summary	
	Nozzle Blow Out	Blow Through	Catastrophic Failure	Engine Failures	Delay Malfunction	No Ejection	Delay Train Failures	Total Failures
C6-0	0	1	0	1	0	0	0	1
C6-4	2	1	0	3	1	0	1	4
A3-6m	0	0	0	0	0	1	1	1
Summary Total Failures	2	2	0	4	1	1	2	6

TOTAL FAILURES ALL MANUFACTURERS

NUMBER % of Total Failures	% ENGINE FAILURES			% DELAY TRAIN FAILURES			Total Failures
	Nozzle Blow Out	Blow Through	Catastrophic Failure	Engine Failures	Dealy Malfunction	No Ejection	
18	31	18	67	13	37	50	117
15.4%	26.5%	15.4%	57.3%	11.1%	31.6%	42.7%	100%

Submitted by: Charles Russell, MESS Chairman
Mike Wolfe, Ass't. Chairman

Biography of Dr. Gerald Gregorek

NAR Trustee, 1969-present, appointed to fill unexpired term of Dr. Willy Ley; Chairman, NAR Standards and Testing Committee, 1969-present; Senior Advisor, CSAR Section; Winner, R&D, Senior Division, NARAM 10 and NARAM 12. Donated Gregorek Trophy for workmanship given each year at NARAM; Professor of Aeronautical Engineering at Ohio State University; Member of Engineering Team which designed the Blue Flame, holder of the land speed record.

MESS forms should be sent to:

Mike Wolfe, MESS Ass't. Chairman
2798 Woodcroft Road
Columbus, Ohio 4304

SPEAK OUT ON THE BY-LAWS

by Manning Butterworth

ARTICLE XII, Leader Administrative Council

Section 1: The Leader Administrative Council (LAC) is an auxiliary body whose purpose shall be to develop Leader member responsibility through the organization of projects which will utilize Junior and Leader member talent in helping to fulfill the purposes of the Association.

Section 2: The LAC shall consist of seven (7) Leader members and one (1) Trustee. The Leader members of the LAC shall be elected annually from the Leader members of the Association by the voting members of the Association for a term of one year, or until their successors are elected. The incumbent LAC members shall organize and execute the election of the successors. The Trustee member of the LAC shall be appointed by the President of the Association.

Section 3: The Trustee member shall be the LAC advisor and liaison between the LAC and Board of Trustees. The Trustee Advisor must be kept informed of all LAC plans and activities; but shall have no vote in LAC affairs.

Section 4: All LAC communications to the sections or general membership and all LAC commitments of NAR funds must have the prior approval of the Trustee Advisor. The LAC shall submit an annual report of its activities to the Board of Trustees.

ARTICLE XIII, Checks, Drafts, Notes & Securities

Section 1: Checks, drafts, notes and orders for payment of the money of the Association shall be drawn and signed by such an officer or officers as may be authorized from time to time by the Board of Trustees.

Section 2: Any brokerage firm may be authorized to effect purchases, sales or other transaction on behalf of the Association as may be deemed necessary by the Board of Trustees.

ARTICLE XIV, Sharing of Earnings

No member, Trustee or officer of the Association, or any person connected with the Association, shall receive at any time any of the net earnings or pecuniary profits from the operation of the Association, provided that this shall not prevent the payment to any such person of such reasonable compensation for services rendered to the Association in effecting any of its purposes as shall be fixed by the Board of Trustees, and no such person or persons shall be entitled to share in the distribution of any of the assets or property upon dissolution of the Association. All members of the Association shall be deemed to have expressly consented and agreed upon such a dissolution or winding up of the affairs of the Association, whether voluntary or involuntary, the assets and property of the Association then remaining in its hands shall be distributed or turned over to such educational or scientific institutions or organizations, upon such terms and conditions, and in such

amounts and proportions, as the Board of Trustees may determine, to be used by the institutions or organizations receiving them for the purposes similar to or kindred to those set forth in the Certificate of Incorporation of the Association as then amended.

ARTICLE XV, Amendments

These By-Laws may be amended at any regular or special meeting of the Board of Trustees, or at any regular or special meeting of the Association, by a two-thirds vote of those members present and voting, provided that a written notice of any proposed amendment be given each Trustee or member at least five (5) days prior to the meeting at which it is to be presented for vote. Amendments originating in meetings of the Board of Trustees are subject to a two-thirds ratification vote of the members present and voting at the next regular or special meeting of the Association, provided such notice is given as above.

The By-Laws Revision Committee is proposing amending Section 2 of Article XII to increase the term of office of LAC members to two years and allow Junior members to vote in the LAC elections. It is felt that this would provide for some degree of involvement for Juniors in the affairs of the NAR and may increase interest in the election process among those nearing voting age. And, a two-year term of office would allow more time to insure that large scale programs and projects could be begun by a LAC member and carried through to completion before leaving the LAC.

The Committee is also proposing that a section be added to Article XII to provide for the possibility of a vacancy in the LAC. The new section would give the LAC Chairman the authority to appoint a Leader member to fill the vacancy subject to the ratification of the LAC. It is felt that this contingency ought to be provided for, and the proposed procedure, which is analogous to that for the Board of Trustees, is consistent with the present responsibility of the LAC to conduct its own elections.

An amendment was discussed in the May By-Laws article which provides that only the Treasurer can disburse NAR funds. Part of this amendment is the deletion of Section 1 of Article XIII. In addition, the Committee is proposing that Section 2 of the same Article be deleted as well since purchases that are made are not made in this way.

Concerning the final Article, the Committee is proposing that all By-Laws amendments be voted on by mail ballot so that the By-Laws will more closely reflect the consensus of all voting members and not just those who are able to attend a meeting of the Association.

This article completes the series on the work of the By-Laws Revision Committee. Next month the *Model Rocketeer* will contain a ballot of the amendments submitted by the Committee. If you have missed part of this series, you can obtain a copy of the complete By-Laws from NAR Technical Services. (Send 25¢ to cover postage and handling to NARTS, Slot and Wing Hobbies, 511 South Century, Rantoul, Illinois 61866.) The Committee wishes to thank those members who have sent in their comment and opinions on the By-Laws revision. It has not been possible to reply to each letter, but the Committee wants these members to know that their letters have been very helpful.

TECHNICAL FEATURE

Tests have shown that boat tailing can increase the performance of model rockets up to 25% when body diameter is significantly larger than the engine diameter. Typical examples of places where boat tailing would be useful are in the designing of efficient rockets for Egg Lifting and Parachute Duration events. In the case of the Egg Lifting event, the egg is about 2" in diameter, while the standard engine size is around 3/4". Parachute Duration rockets are often designed with a parachute compartment larger than the engine diameter so that large parachutes can be held, especially when Mini Jet engines are used.

Conical paper boat tails have been used in the past to reduce drag. These are effective, but generally difficult to build. A simple, efficient boat tail or shoulder can be made from a plastic nose cone. (This technique is used in Competition Model Rockets' new Paratrooper.) The system to be discussed can apply to almost any size body tubes that fit plastic nose cones. This system has one disadvantage. Plastic is difficult to bond except to another piece of plastic, and so plastic fins are usually required. Sheet plastic can be obtained from model rocket manufacturers and hobby shops for this purpose.

As a construction example, a transition from an RB74 to an RB50 body tube has been selected, although any different size body tubes can be used. (All specifically mentioned numbered parts are from CMR.) In this case, we will use an NC74P as the boat tail.

The first problem is cutting the nose cone to form the boat tail. This can be done by first slipping a centering ring (Use the ring that will center the smaller diameter body tube in the larger diameter tube.) over the tubing with the smaller diameter to be used, and then pushing the nose cone over the ring and the body tube until it stops at the end of the tube. (See Figure 1.) The centering ring should be halfway into the nose cone with the nose cone against the end of the body tube. Carefully cut off the tip of the nose cone with a razor saw or razor blade so you can just see the end of the body tube. Trim to fit the end of the body tube and slide the boat tail forward until 1/32" of the body tube shows. Make sure that one-half of the centering ring sticks out of the boat tail, then mark the position of the centering ring. Slide a second centering ring onto the tubing and mark the location. For structural rigidity of the airframe, the centering rings should be at least 1-1/2" apart. Remove all parts from the tubing and cut the body tube to length. (Be careful to cut away the unmarked end!) Glue both centering rings at the marks with white glue. When dry, put a thin coat of plastic cement around the inside of both ends of the plastic boat tail and smooth out the cement with your finger. Slip the plastic boat tail over the body tube until the boat tail covers 1/2 of the rear centering ring. Allow to dry.

Cut three or four fins from .02 sheet plastic and glue to boat tail with plastic cement as shown in Figure 2. Install engine block in the usual manner. This completes the construction of the boat tail assembly.

As you can see, this assembly could make an ideal rear ejection type model. The rocket body can now be glued to the boat tail assembly. The joint can be filled with plastic model contour putty and sanded smooth. The rest of the model is constructed using standard procedures.

The same technique can be used in making shoulders for the rears of payload sections as illustrated in Figure 3. Shouldering allows the use of non-plastic fins.

Another variation that enables wood fins to be used has fins set forward of the boat tail as shown in Figure 4. In this case use a short nose cone (CMR's short parabolic nose cone or ogive nose cone, for example) for the boat tail because with fins set forward it is necessary to be sure the center of gravity is in the proper place for a stable flight. This design is best suited for payload events.

One word of caution. Do not paint the plastic with sanding sealer or dope since these will melt the plastic. Use only paints for plastics.

PLASTIC BOAT TAILS

By Howard R. Kuhn
Drawings by Don Larson

Both Howard Kuhn (of Competition Model Rockets) and Don Larson are members of the NOVAAR Section in the Alexandria, Virginia area. Mr. Kuhn is the section's senior advisor.

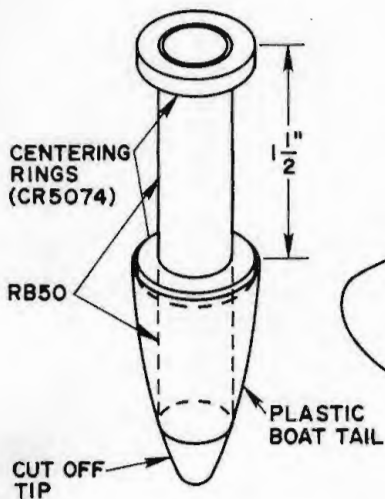


FIGURE 1

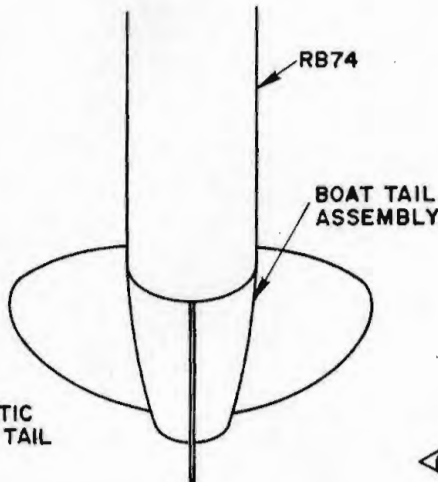


FIGURE 2

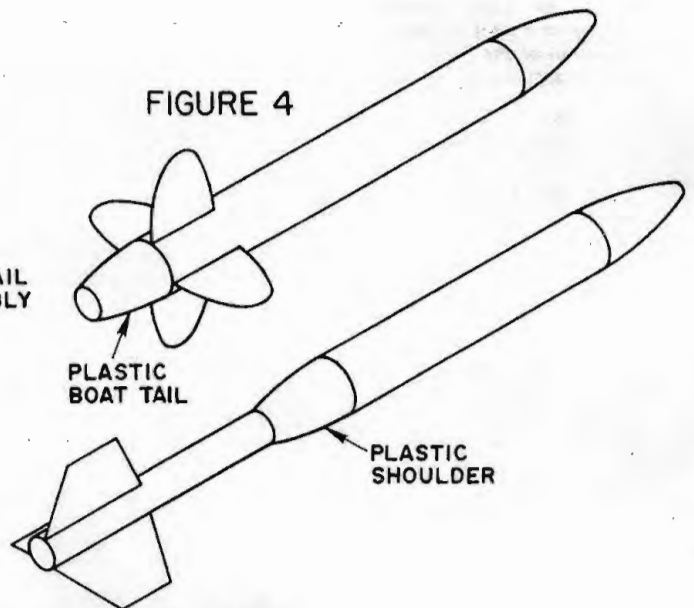


FIGURE 3

US RECORDS

USA RECORDS — A DIVISION — ACCEPTED

Hornet Boost Glide	100 seconds	J. Tam Joines	16 May 71
Class I Parachute Duration	909 seconds	J. Tam Joines	17 Apr 71
Class I Altitude	224 meters	Roy Jacobsen	14 Nov 71
Class O Drag Efficiency	122 meters	Roy Jacobsen	14 Nov 71
Class II Streamer Duration	30 seconds	G.W. Stine	14 Nov 71

USA RECORDS — B DIVISION — ACCEPTED

Class I Streamer Duration	57 seconds	Mickey Buehrer	10 Oct 71
Class III Streamer Duration	63 seconds	Robert Cather	14 Jun 71
Class II Streamer Duration	61 seconds	Mickey Buehrer	10 Oct 71

USA RECORDS — C DIVISION — ACCEPTED

Class O Parachute Duration	328 seconds	Steven Lehnard	5 Dec 70
Sparrow Boost Glide	198 seconds	Jim Pommert	18 Apr 71
Sparrow Rocket Glider	788 seconds	Mike McMasters	29 Aug 71
Class IV Altitude	695 meters	Paul Giguere	25 Sep 71
Pee Wee Payload	272 seconds	Roy Rosenfeld	19 Jun 71
Class I Parachute Duration	1242 seconds	Paul Shelton	2 May 71
Eagle Rocket Glider	132 seconds	Mike Micci	10 Oct 71
Class II Streamer Duration	83 seconds	Michael Scarborough	14 Nov 71
Robin Egg Lofting	203 meters	Bryan Anderson	14 Nov 71

USA RECORDS — D DIVISION — ACCEPTED

Robin Egg Lofting	186 meters	Al Lindgren	20 Sep 70
Hawk Boost Glide	248 seconds	David Ailes	4 Oct 70
Hornet Boost Glide	196 seconds	Thomas Milkie	6 Feb 71
Eagle Boost Glide	249 seconds	Bernard Biales	6 Feb 71
Condor Boost Glide	238 seconds	John Norcross	25 Apr 71
Condor Rocket Glider	170 seconds	Jon Robbins	16 May 71
Pee Wee Payload	202 meters	George Meese Sr.	19 Jun 71
Class III Streamer Duration	111 seconds	George Meese Sr.	9 Aug 71
Class I Altitude	363 meters	Arnold Jacobsen	14 Nov 71
Class O Streamer Duration	48 seconds	George Meese Sr.	30 Oct 71
Pigeon Egg Lofting	371 meters	Jim Pommert	3 Oct 71

USA RECORDS — A DIVISION — PENDING

Class O Drag Efficiency	46 meters	G.W. Stine	30 Apr 72
Hawk Rocket Glider	155 seconds	Andy Kerber	6 May 72
Robin Egg Lofting	156 meters	Roy Jacobsen	7 May 72

USA RECORDS — B DIVISION — PENDING

Eagle Boost Glide	173 seconds	Alan Dayton	29 Nov 70
Roc Egg Lofting	895 meters	Gary Cole	11 Jun 71
Swift Boost Glide	315 seconds	John Langford	14 Nov 71
Class O Drag Efficiency	125 meters	James Gustafson	14 Nov 71
Robin Egg Lofting	123 meters	Chris Wurster	14 Nov 71
Class I Altitude	262 meters	Chris Wurster	14 Nov 71
Hawk Rocket Glider	72.2 seconds	Steve Bryson	31 Oct 71
Sparrow Boost Glide	61 seconds	Bland Team	27 Feb 72
Class O Streamer Duration	31 seconds	Michael J. Lenhard	27 Feb 72
Class O Streamer Duration	17 seconds	John Kennedy	7 May 72
Sparrow Boost Glide	25 seconds	John Kennedy	7 May 72

USA RECORDS — C DIVISION — PENDING

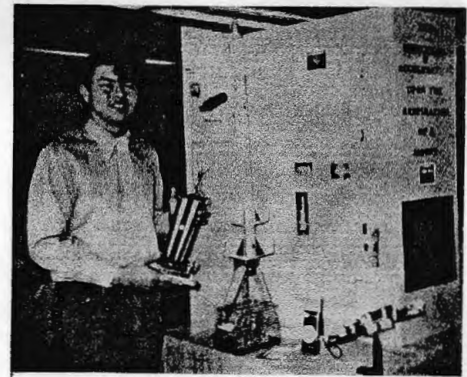
Eagle Boost Glide	193 seconds	Cody Hinman	15 Nov 70
Eagle Boost Glide	279 seconds	Russell Rasmussen	12 Aug 71
Hornet Boost Glide	243 seconds	Randy Picolet	29 Aug 71
Hawk Rocket Glider	60 seconds	Thompson/Meyer Team	12 Sep 71
Class I Altitude	354 meters	Hank Ober	14 Nov 71
Class O Drag Efficiency	176 meters	Hank Ober	14 Nov 71
Class III Parachute Duration	252 seconds	Arthur Barbiarz	2 Feb 72
Class O Streamer Duration	55 seconds	John Omachel	21 Nov 71
Class O Streamer Duration	54 seconds	David Zuchero	27 Feb 72
Pigeon Egg Lofting	444 meters	Bruce Kimball	25 Mar 72
Class O Streamer Duration	33 seconds	Gary Jacobsen	7 May 72

USA RECORDS — D DIVISION — PENDING

Open Payload	641 meters	Kennedy/Gibbs Team	12 Sep 70
Hornet Rocket Glider	48 seconds	Bob Parks	29 May 71
Class II Streamer Duration	112 seconds	Gil Lutz	27 Jun 71

(Continued on page 14)

NAR NEWS



JEFF ESTES

Jeff Estes (NAR 15301) of Lutesville, Mo., placed 1st in the Woodland School District's Science Fair with his project "The Effects of G-Acceleration upon the Respiration of a Mouse". At the Southeast Missouri Regional Fair he placed 3rd in Earth and Space Science, and he also got awards from the Air Force, Army, and Navy (the last one was a first place award over the entire fair; there were different sets of judges), making him the only entrant to place in all armed forces awards. Estes Industries, to top it all off, gave Jeff a Transroc. Congratulations, Jeff!

U.S. TEAM NEWS

As of April 18, 1972, the following people have been *officially selected* to the 1972 United States of America Model Rocket Team by the NAR's International Team Selection Committee:

<i>Parachute Duration</i>	Mrs. Shirley Lindgren Miss Ellie Stine Mr. Jon Randolph
<i>Boost/Glide Duration</i>	Mr. Bernard Biales Mr. Howard Kuhn Mr. James Worthen
<i>Scale Modeling</i>	Mr. Howard Kuhn Mr. Jon Randolph

The Committee is in the process of filling the remaining position on the team.

Bryant Thompson has been appointed Team Manager. He will act as a team captain and handle all arrangements for the team except travel arrangements, which will be made by Jim Kukowski.

Anyone wishing to accompany the U.S. Space Model Team to the First Model Championship of Space Models in Vrsac, Yugoslavia, should contact the Transportation Coordinator, Jim Kukowski, before June 21, 1972.

The NAR has arranged a 16-day European tour that includes the World Championships at Vrsac. The Group Inclusive Tour rate was not known at press time, but can be obtained from Jim by calling him at (301) 762-7354 between the hours of 6:30-11:00 p.m., E.D.T., Monday through Friday.

The absolute deadline for reservations is June 21.

The tour includes Munich, Belgrade/Vrsac, Zagreb, Venice, the Alps and Cologne. A variety of transportation will be used during the trip, and all accommodations will be reasonable (pension type) with options for 1st class type

(Continued on page 12)



ECRM-VI

The Extremely Cold Regional Meet

by Robert Lieber and David Crafton

ECRM-VI was held on April 7-9 at Camp A.P. Hill, near Port Royal, Virginia. Those of the over 175 participants (from Maryland, Delaware, New Jersey, Virginia, Pennsylvania, Georgia, and Massachusetts) who arrived at the motel Friday evening were greeted by weather—not just any weather, mind you, but lousy weather. Temperatures were near freezing, and there were heavy rains, sleet, and occasional snow flurries.

After settling down in our rooms and watching "The Forbin Project" on our black-and-white color TV, we stepped outside and noticed that Jim Barrowman was being attacked with snow balls (or slush balls). Several rocketeers sped to his rescue, and both sides suffered heavy casualties. Fortunately, the battle broke off before anyone was seriously hurt. Credit for this goes to Bruce Blackistone, who stood poised outside his room with a slingshot, ready to get anyone who would not cease hostilities.

Elaine Sadowski's room was unusually cold inside. Upon asking why, we found out that the air conditioner was on. This seemed unusual, considering that it was 25°F. outside, but Elaine told us that Jim Barrowman had just visited her and brought along the cigar he was smoking. Elaine, an enthusiastic pollution fighter, was trying to clear the air.

Later that evening the Steel City Section showed their film "Model Rocketry, the Educational Space-Age Hobby" in their room. Friday night ended with everyone turning in early enough to wake up early Saturday morning and be well-rested.

Saturday morning the weather again dominated the thoughts of the rocketeers. There were snow flurries, 20° temperatures, and winds of 20 mph. It was cold! It was so cold that the National Guard called off the maneuvers that had been scheduled for Camp A.P. Hill that weekend!

After breakfast, the participants proceeded to the launch site, where they saw that picnic tables, which were being used as launch tables,



As NAR President Jim Barrowman looks on, NARHAMS' Paul Conner works on removing the 1/2-inch coating of ice from the range tables. (Photo by Jan Blickenstaff)

were covered with a half-inch of ice. The ice was removed by Paul Conner with the help of a machete and a hammer.

The first events flown were Class O Parachute Duration and Class 2 Streamer Duration. All PD flights that got good times landed in the forest, and many SD flights met the same fate. After lunch, the contestants returned to the range to fly Egg Loft and PeeWee Payload. The tracking in these events was below par due to the low cloud cover, high winds, and frozen eyeballs. Guppy (who stayed out the entire afternoon), Ross Iwamoto, and David Crafton manned the tracking scopes, while Jim Barrowman and Bob Lieber handled base communications. Egg Loft featured many spectacular prangs. Pigeon Egg Loft and PeeWee Payload offered a challenge to the trackers, who were extremely happy when the last rocket was flown.

After the day's flying, the rocketeers returned to the motel to thaw out and eat dinner. The R&D presentations were originally to be held at 8:30, but the R&D judges ate dinner at Aunt Jenny's Pancake Kitchen, notorious for its slow service, and didn't get back until well past 9:00. Rocketeers gathered in room 38 to hear the R&D reports (in spite of the rumor that R&D presentations would be held in the swimming pool spread by head R&D judge Howard Galloway), and while waiting were treated to a songfest led by Bruce Blackistone. By the time the presentations got under way, many of the rocketeers were asleep in their rooms.

On Sunday morning, the rocketeers awoke to a surprise—the sun! When they got out to the launch site, people began trimming their boost/gliders and rocket gliders. Pam Smith was flying her trained sparrow hawk (not a glider, a real hawk!).



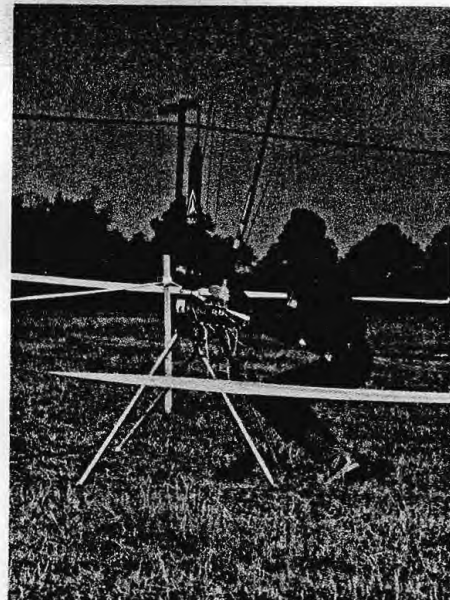
Larry Larson (NARHAMS) prepares to launch his winning glider. (Photo by Alan Williams, BAMR Photo Committee)

There were two rather unusual flights in Hawk Rocket Glider, both in C Division. One was David Crafton's Groundhog, which flew for 28 seconds (taking second place) upside down. Mike Burzynski's Groundhog flew for nine seconds without deploying and took third place. Most of the Swift B/Gs flew acceptably, but many good flights were lost in the sun. A couple of gliders homed in on NARHAMS President Doug McMullen. We hope he has recovered from that attack.

The afternoon ended with the awards being given out, the wind dying, the temperature rising, and the rocketeers headed home. Congratulations to Contest Director Judy Barrowman on a well-run meet.

Robert Lieber is currently the Vice President of the Steel City Section and editor of "Starburst", the section's newsletter. He has been a model rocketeer for 8 years and in the NAR for 3. His recent modroc activities include being a coordinator for the Pittsburgh Spring Convention, helping to produce Steel City's latest film, and doing a lot of work with the Cineroc. Bob is a recent graduate of Taylor-Allderdice High School in Pittsburgh, and he plans to attend the University of Pittsburgh in the fall.

David Crafton is the Steel City Section's President. He has been the launch officer at the past three Pittsburgh Conventions. Dave enjoys flying parasites in Condor B/G. He attended Peabody High School and will also begin at the University of Pittsburgh this fall.



Tom Williams of the Harford Area Space Modelers checks out his rocket. (Photo by Jan Blickenstaff)

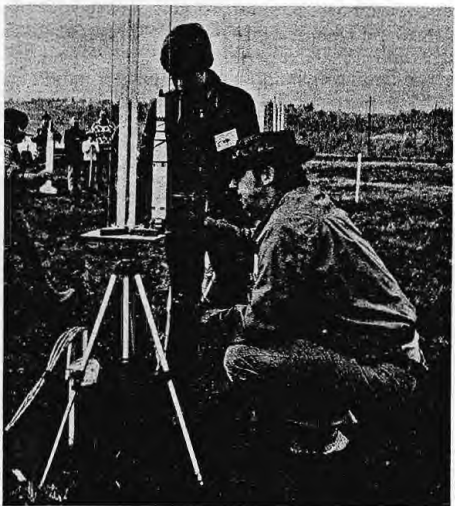
The First Time PAR left West Covina

(Adapted from the "Modroc Flyer", Vol. 4, No. 2)

Photos by Tony Medina



Seattle's Satellite System is composed of 24 pads, all mounted on tripods, each with an adjustable tower, 1/8" rod, and 1/16" rod.



Joe Ewing from Birch Lane gets his second place, D Division Thor Agena ready to go.



The Plastic Model flight judges, Jess Medina, James Jakeman, and James Worthen, really gave a converted Valkyrie the going over, but the 3 Minijet B's still didn't have enough oomph to fly straight. It crashed.

Seattle almost blew it. A minor adding mistake on the range cost the Jet City first place and slipped it into third. The "minor" error was worth over 400 points which Wayne Gerhart accumulated and which a harried range crew had somehow missed in the rush before the awards presentation.

Seattle not only broke its PAR jinx (For the past three years, Seattle members have traveled to West Covina only to be aced out of first place by the Titans each time.), they have another pre-NARAM plus: it was the best meet that the South Seattle Rocket Society ever held.

With an efficient Satellite System and only 50 competitors, the nine events were finished by noon, Sunday, leaving more than enough time for sport flying. But then, that's why Seattle didn't win as many points as they otherwise would have. With Jess Medina as CD, Jim Worthen as Chief Scale Judge, and Al Gerhart helping on the range, D Division lost the main competition from the Jet City. Jim Pommert, who usually does excellent work in B/G, only came through in Eagle B/G and Plastic Model.

C Division had the hottest and fiercest competition of the four divisions. For instance, Hawk B/G had two five-minute flights in only 3rd and 4th places. A seven-minute flight took 2nd, and 1st place was earned with ten minutes. In fact, almost every event was like that, 1st place in another division would be only 4th, or 3rd, or maybe 2nd, in C Division.

There was one disadvantage to the efficiency of the Satellite System. This was evident after KOMO-TV covered the meet Saturday and broadcast it that evening. By the time KING-TV and some newspapers came out to the range Sunday, the meet was over. They showed up around 11:30.

The competition was obviously nothing but the best, but it was more than excellent com-

petition that made PAR-3 one of the best meets held. It was attention to little details, such as central housing, 1st-rate reliable launch equipment, manpower, and weather that really makes NARAM-14 look promising.

CD Jess Medina and Jim Worthen, with the help of Bill Hamilton of the Aeronautics Commission and Bill Dawe, had the range tent set up by Thursday afternoon, and the rest of the range layout was to have been completed the next day. When they got back to the field early Friday morning, the tent was down flatter than a pancake, and a 50mph wind blew across the valley. There was nothing that could be done that day except put up stakes for the rope fencing until everyone's fingers were numb from the cold. There were some misgivings about the next day's weather.

But the weather for the weekend turned out to be superb. No more than 5 mph winds stirred the early Saturday morning air, which kept most of the longer durations in sight of the timers. The high overcast cleared away later in the day, but the temperature stayed in the 40's. (Talk about freak weather conditions—that weekend it snowed enough in the north end of the city to bring out snow plows. There were only light flurries as the range was being set up, but these faded away allowing some terrific flights.)

Almost as many volunteer coordinators as competitors manned the still-new Satellite System as PAR-3 was also intended to work out the bugs for NARAM-14. Without these fine gentlemen and ladies, the meet would not have been as smoothly run as it was, and the South Seattle Rocket Society can't be more appreciative; many thanks. (It is also gratifying to know that many of them have joined the NAR.)

Even though South Seattle didn't walk away with everything, they did put on their best meet to date; so they have been told.



Norm Wood was over 100 points ahead of second place in D Division. His Javelin was the same one that placed him fifth at Aberdeen.



Helmut Reda of the Cosmotarians gets his boost/glider checked in by Mrs. Friddell.



by
Charles Gordon

ATTENTION—ALL SECTION NEWS CONTACTS

The Editor of NAR SECTION NEWS will be working this summer as a camp counselor in upstate Pennsylvania. All correspondence for NAR SECTION NEWS mailed between June 25 and August 10, 1972, only should be sent to:

NAR SECTION NEWS
c/o Charles M. Gordon
Camp B'NAI B'RITH
Starlight, Pennsylvania 18461

CAPCOM STAFF COVERS APOLLO 16 LAUNCH

Staff members of the Broward County Model Rocket Association's (Section # 217 in Fort Lauderdale, Fla.) newsletter, "CAPCOM Model Rocketry Journal" were lucky enough to get press passes for the recent APOLLO 16 launch. Ten passes were gotten by newsletter editor Dick Barnard for the staff.

THANKS FOR SECTION NEWS

Although none of their material was used I would like to thank the following sections for sending in news of their section activities—

Steel City Section
Summit City Section
Buffalo Aerospace Team Section
Shawnee Rocket Association Section
APOLLO/NASA Section
Society of Lodi Area Rocketeers

NAR News — (Continued from page 9)

accommodations. Trip dates are September 18-October 3. Port of embarkation is New York City.

For further information contact:

Jim Kukowski
6 Grandin Circle
Rockville, Maryland 20851
Phone: (301) 762-7354

NEW SPORTING CODE

In order that the membership have adequate time to read and understand the new NAR U.S. Model Rocket Sporting Code, the new sporting code will not be in effect until July 1, 1973.

This means the current sporting code will still be in effect for the coming contest year.

The new sporting code will be printed this July and then distributed to NAR members who join or renew after November 1, 1972.

NEW SECTION ACTIVITIES PERSONNEL

The Section Activities Committee has announced the appointment by Larry Loos of the following Urban Area Coordinators for the state of Missouri: for the Kansas City area, Mike Watson 6008A 152 Terrace, Grandview, Missouri 64030; for Central Missouri (Columbia, Marshall, and Sedalia), John Woods, P.O. Box 243, 509 E. Arrow, Marshall, Missouri 65340; for St. Charles and northern St. Louis, John Raley (aided by his son, Gary), 2895 Lesmer Ct., St. Louis, Missouri 63114; and for southern St. Louis and Festus, Randy Picolet, 3236 January, Apt. 6, St. Louis, Missouri 63139.

T.I.R.O.S. Section
Pascack Valley Section
N.O.V.A.A.R. Section
Phoenix Model Rocket Section

COMPETITION VERSUS SPORT FLYING

The following is from ZOG 43, Vol. 7, No. 8, Newsletter of the NARHAMS (Section #139 in Seabrook, Maryland.)

FROM THE ZOG (president of the section)

Much talk has been started lately on having the NAR concentrate more on sport flying rather than competition. I think this would be a grave mistake. Many of the misconceptions about competition must be uncovered and revealed to all. Competition flying is not "point grubbing" flight to get points and win the section championship. It is a way of allowing modelers of approximately the same age to fly models built for a specific contest, one against the other. A way of allowing modelers to show their modeling skill. Competition is as much fun as sport flying if not more. New members must realize that competition is developed to allow both new and old rocketeers to place in or win in specific events. New rocketeers have as much chance to win as do older members.

Doug McMullen
President NARHAMS

COMPUTER PRINTS NEWSLETTER

Beginning with the March 1972 issue, the ROYAL ROCKETEER, newsletter of the North Royalton Rocket Society (Section #180, in Cleveland, Ohio), features a computer printout format. NRRS member Brian Dolezal, who is attending Case-Western Reserve University, has access to the school's 7 million dollar computer complex. The computer, which is programmed to automatically align the right hand side of each column, is used to prepare the master copy for the final reproduction copy of the newsletter.

V.I.P.'s????????

Six members of the Vikings Rocket Society (Section # 203 in Richmond, Va.) received VIP passes to view the launch of the APOLLO 16 moonship. These passes provided access to the VIP viewing area and places on the VIP tour of the facility. Nice going, VRS.

Ellyn Rocket Society, part of which is quoted below:

"... we have found that a newsletter is just about the most handy thing that a rocket club can have. If it is issued regularly, and at reasonable intervals, news can be spread most efficiently. In a newsletter or magazine one can express something in the utmost detail to everybody concerned; contrasting to a lecture or a speech, the newsletter offers the individual a reference at his/her disposal whenever required. In a growing club, or one with a busy schedule, the newsletter can take the place of long and boring meetings. Furthermore, the newsletter offers a great opportunity for any member to exchange rocketry ideas, opinions, etc. A newsletter need not be as long as an encyclopedia—nor need it be as short as half a page. Latest news and correct details are all that is absolutely necessary. Once a section or a club has accomplished this, they *have* done something really worth bragging about."

Has *your* newsletter been entered in the LAC Newsletter Contest, the contest designed to promote the growth and distribution of section newsletters? Send one copy of each issue published after NARAM-13 to LAC Newsletter Contest, c/o Andy Elliott, 10203 Leslie Street, Silver Spring, Maryland 20902. Any NAR chartered section may enter its newsletter in the competition. For those of you whose newsletter is just starting up, send in as many issues as you have published so far—you still have a chance to win. For those of you who haven't seen them, the judging criteria for the contest were published in the December *Model Rocketeer* (we were still in *MRm* then). Winners will be announced at NARAM-14.

NAR members interested in forming a section in the Miami, Florida area please contact:

George Viso
Telephone: 235-7673

MAKE A MOTION!

Anyone who has a motion or proposal that he or she would like to present at the NARAM-14 Board of Trustees meeting, but who will be unable to attend NARAM, should send a written copy to NAR Secretary, Jay Apt at 15 Line Street, Cambridge, Massachusetts 02138.

MRm DECLARES BANKRUPTCY

Model Rocketry magazine has declared bankruptcy. The last issue published was January/February.

HAVING LEGAL PROBLEMS?

For those of you having legal problems with model rocketry (or who are just interested in the legal aspects of model rocketry), the Riverside Rocket Center is offering a packet of correspondence in regard to a particular California statute. Included are the California model rocket regulations and discussion of them. The cost (to cover postage and duplication) is \$1.00. Write:

Riverside Rocket Center
P.O. Box 2846
Riverside, California 92506

The Riverside group is also interested in hearing about the experiences of other clubs around the country with model rocket legislation.

ATTENTION NEWSLETTER EDITORS!

The *Model Rocketeer* recently received a letter from Jim Conway, Secretary of the Glen

CONTEST alendar

June 17-18, 1972—New Canaan, Connecticut. Name: SPQR-6 Host: YMCA Space Pioneers 166 and sections in Connecticut, Southeastern New York and New Jersey. Events: Class O Drag Efficiency, Pee Wee Payload, Superscale, Class 2 Streamer Duration, Sparrow Rocket Glider, Robin Eggloft, Scale, Class 1 Parachute Duration, Sparrow Boost/Glide. Contact: A.A. Jacobsen, 351 Springwater Lane, New Canaan, Connecticut 06840. Telephone: (203) 966-0870.

June 17-18, 1972—Davenport, Iowa. Name: MAR '72 (Mid-America Regional '72). Host: Hawkeye Section 178. Events: Predicted Altitude, Pee Wee Payload, Robin Eggloft, Scale, R&D, Hornet Boost/Glide, Swift Boost/Glider, Class O Parachute Duration, and Open Spot Landing. Contact: Dan Leckington, 2018 Marquette Street, Davenport, Iowa 52804.

June 17-18, 1972—Atlanta, Georgia. Name: North Georgia Regional Meet 3 — NGRM-III. Host: Metro Atlanta Society for Educational Rocketry (MASER) 128. Events: Hornet Boost/Glide, Swift Boost/Glide, Class O Parachute Duration, Pee Wee Payload, Drag Race, Sparrow Rocket Glider, Class 2 Streamer Duration, Pigeon Eggloft, Eagle Rocket Glider, Sparrow Boost/Glide. Contact: Richard Wallace, 4676 Kingsdown, Dunwoody, Georgia 30336. Telephone: 451-6198.

June 18, 1972—Pottstown, Pennsylvania. Name: ANTEATER-1. Host: S.P.E.A.R. 286. Events: Hornet Boost/Glide, Swift Boost/Glide, Streamer Spot Landing, Class O Streamer Duration, Class 2 Streamer Duration, Sparrow Boost/Glide, Scale, Class 1 Parachute Duration, Class 1 Streamer Duration. Contact: Carl J. Warner, 665 Woodland Avenue, Pottstown, Pennsylvania 19464. Telephone: (215) 323-4296.

June 23, 24, 25, 1972—Houston, Texas. Name: Second Annual Southwest Regional Model Rocket Meet. Host: Apollo/NASA Section 103. Events: June 23—Discussion day, Super Scale, Scale, Robin Eggloft, Hornet Boost/Glide, Swift Rocket/Glider, Plastic Model, Class 3 Streamer Duration, Predicted Altitude, and Parachute Spot Landing. Contact: John Dressel, 8608 Robindell, Houston, Texas 77036.

June 23, 24, 25-1972—New Castle, Delaware. Name: TRI-SEC III. Host: Gemini Model Rocket Society 116. Events: Scale, Design Efficiency, Pigeon Eggloft, Eagle Rocket Glider, Swift Boost/Glide, Class O Parachute Duration, Class O Altitude, Class 1 Streamer Duration. Contact: James McGraw, 2800 Millcreek Road, Wilmington, Delaware 19808. Telephone: (302) 998-2993.

June 24, 1972—Pottstown, Pennsylvania. Name: Last Chance I. Host: S.P.E.A.R. 286. Events: Sparrow Boost/Glide, Swift Boost/Glide, Sparrow Rocket Glider, Class O Altitude, Design Efficiency, Class 4 Altitude, Class

3 Parachute Duration, Class 3 Streamer Duration, Single Payload, Class 0 Streamer Duration. Contact: Carl J. Warner, 665 Woodland Avenue, Pottstown, Pennsylvania 19464.

June 24, 1972—John H. Glenn High School, Huntington, New York. Name: EARACHE-II. Host: Elwood Association of Rocketry 254. Events: Pigeon Eggloft, Sparrow Boost/Glide, Hawk Boost/Glide, Class 1 Streamer Duration, Hornet Boost/Glide, Swift Boost/Glide, Class 0 Parachute Duration, Class 2 Streamer Duration. Contact: Tom Whymark, 17 Eltona Place, East Northport, New York 11731. Telephone: (516) 864-4943.

June 24-25, 1972—Columbus, Ohio. Name: Midwest Model Rocket Regional (MMRR-72). Events: Class 1 Parachute Duration, Class 1 Streamer Duration, Hornet Boost/Glide, Hornet Rocket Glider, Swift Boost/Glide, Robin Eggloft, Peewee Payload, Design Efficiency, Plastic Model, Scale. Contact: G.M. Gregorek, 4451 Danforth Road, Columbus, Ohio 43224. Telephone: (614) 267-4156.

July 8-9, 1972—Shawnee, Kansas. Name: Heart of America Regional Meet II. Host: Midwest Rocket Research Association 168. Events: Roc Eggloft, Robin Eggloft, Pee Wee Payload, Class 0 Parachute Duration, Hawk Boost/Glide, Sparrow Boost/Glide, Sparrow Rocket Glider, and Scale. Contact: Mark Pemberton, 10911 West 70th Terrace, Shawnee, Kansas 66203.

CONVENTIONS, EXHIBITIONS, SEMINARS

MIT B/G POSTAL CONTEST

Postal Contests, in which people compete at a convenient time and place and mail in the results, have been run successfully by the National Free Flight Society and other free flight groups. Bob Parks suggested that the MIT Model Rocket Society bring the postal to model rocketry. We hope it will provide a low pressure way for both the single, isolated modeler and the club member to compete with others here and abroad. Furthermore, this contest is intended to encourage the multi-round form of boost/glider contest. Entries may be flown any time between July 7 and 22.

The winner of the contest will receive a trophy, with ribbons going to the second and third place winners. Everyone entering will receive a copy of the results, which we also hope to publish. Copies of the rules may be obtained by sending a self-addressed envelope to the MITMRS. Send all correspondence to:

MIT Model Rocket Society, Parks Trophy
Box 110, MIT Branch Post Office
Cambridge, Massachusetts 02139

June 17-18, 1972—Toronto, Canada. Name: Toronto Regional-TRRM-2. Host: The Canadian Rocket Society. Theme: Space Exploration via Model Rocketry. Presentation: Diamond Rocketry Trophy. Events: Class 1(A) Parachute Duration, Class 2(B) Streamer Duration, Swift Boost/Glide, Hawk Rocket Glider, Class 4 Eggloft, C/S Landing, R&D, Scale. Contact: Canadian Rocket Society, Adelaide Street P.O. Box 396, Toronto 1, Ontario, Canada.

June 25, 26, 27, 28, 1972—Albuquerque, New Mexico. Name: 1972 Southwestern Model Rocketry Conference. Events: Lectures, discussion groups, flight competition, night launch, R&D competition, and manufacturers displays. All activities, housing and meals will be on the University of New Mexico campus. Contact: SWMRC 72, Physics Department, University of New Mexico, Albuquerque, New Mexico 87106.

June 30-July 2—Easton, Pennsylvania. Name: Second Annual Philipsburg Convention and Trial (PACT-2). Host: PARC Section 258. Events: Class 00 Parachute Duration and Streamer Duration, Class 1 Parachute Duration and Streamer Duration, Gnat Boost/Glide and Rocket Glider, Sparrow Boost/Glide and Rocket Glider, Swift Boost/Glide and Rocket Glider, Hawk and Eagle Boost/Glide, A Engine Heli Duration, D Engine RC Boost/Glide, Night A Engine Boost/Glide and Rocket Glider. Also: Discussion groups, demonstrations, manufacturer's displays, and banquet. Contact: David Klouser, 383 Warren Street, Stewartsville, New Jersey 08886. Telephone: (201) 859-3092.

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 Boost/Glide, Sparrow Boost/Glide, Hawk Rocket/Glider, Open Spot Landing, and Class 0 Parachute Duration. Contact: Canadian Conference 1972, c/o Steven J. Kushneryk, 7800 des Erables Avenue, Montreal 329, Quebec, Canada.

July 8-9, 1972—Union County Technical School, Raritan Road, Scotch Plains, New Jersey. Name: New Jersey 4H Rocketry Championship Meet (part of 4H Youth Fair). Competition open to 4H members only. Displays of all sorts of rockets; electronic and mechanical test stands; real-time, on-line use of a computer for altitude prediction, Barrowman equations, and data reduction; same-day Cineroc movies; real rockets and equipment. Also other 4H Club displays. Anyone can come to watch. Contact: Bob Mullane, 34 Sixth Street, Harrison, New Jersey 07029.

HAM MODROC CONVENTION

July 15, 1972. Name: 1st National Modroc Convention Ham Radio Net to be held on frequency 3992 KC± and 14300 KC± 5 KC. Net control WA1NIC; Net call up CQ Model Rocketeers. Find a Ham and be there! If you're having trouble finding Hams, write:

Tom Belisle
534 Fuller Street
Ludlow, Massachusetts 01056

A NOTE FROM THE CONTEST BOARD

Minimum order for Contest Material is \$5.00. Otherwise include \$1.00 mailing or U.P.S. charge.

Dottie Galloway

A NOTE FROM THE RECORDS SUBCOMMITTEE

Records may be attempted for an unscheduled event at a sanctioned meet, provided that the facilities (trackers, etc.) are available and provided further that the Contest Director and other officials are willing.

Howard Galloway

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 15824 43rd Avenue South
 Seattle, Washington 98188

US RECORDS — (Continued from page 9)

Class I Streamer Duration	74 seconds	Llewellyn Partee	10 Oct 71
Class II Streamer Duration	143 seconds	Llewellyn Partee	10 Oct 71
Class O Drag Efficiency	145 meters	Arnold Jacobsen	14 Nov 71
Design Efficiency	172 m/ns	Howard Kuhn	23 Apr 72
Eagle Rocket Glider	53 seconds	Bernard Biales	7 May 72
Class O Streamer Duration	53 seconds	Barrowman Team	15 Mar 72
Sparrow Rocket Glider	189 seconds	Bernard Biales	16 Apr 72
Hornet Rocket Glider	130 seconds	Michael Chervenak	23 Apr 72
Class O Drag Efficiency	151 meters	G. Harry Stine	30 Apr 72
Robin Egg Lofting	196 meters	Arnold Jacobsen	7 May 72
Pigeon Egg Lofting	438 meters	Paul Vendall	6 May 72
Sparrow Boost Glide	53 seconds	G. Harry Stine	7 May 72

REJECTED*

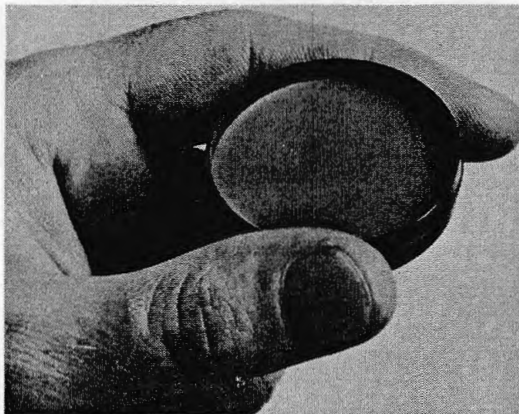
Eagle Boost Glide	279 seconds	12 Aug 71
Open Payload	641 meters	12 Sep 70

*(Lack of signatures on cards—consequently could not get documents signed and/or lack of data (lost cards) to back up record.)

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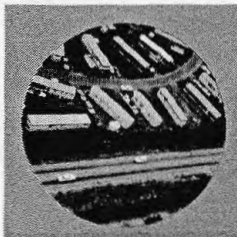
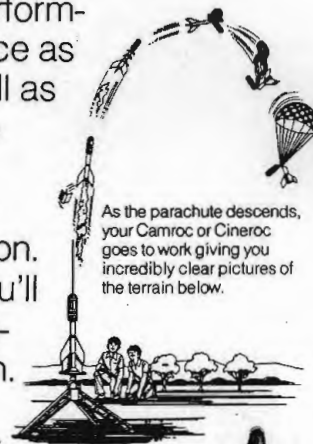
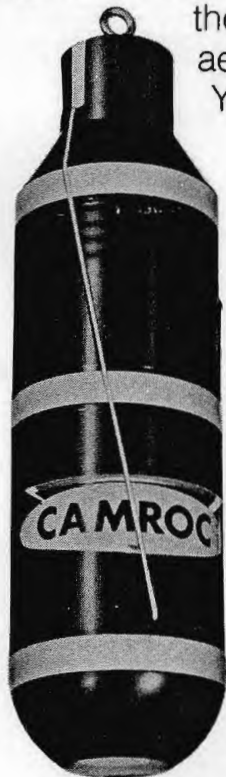


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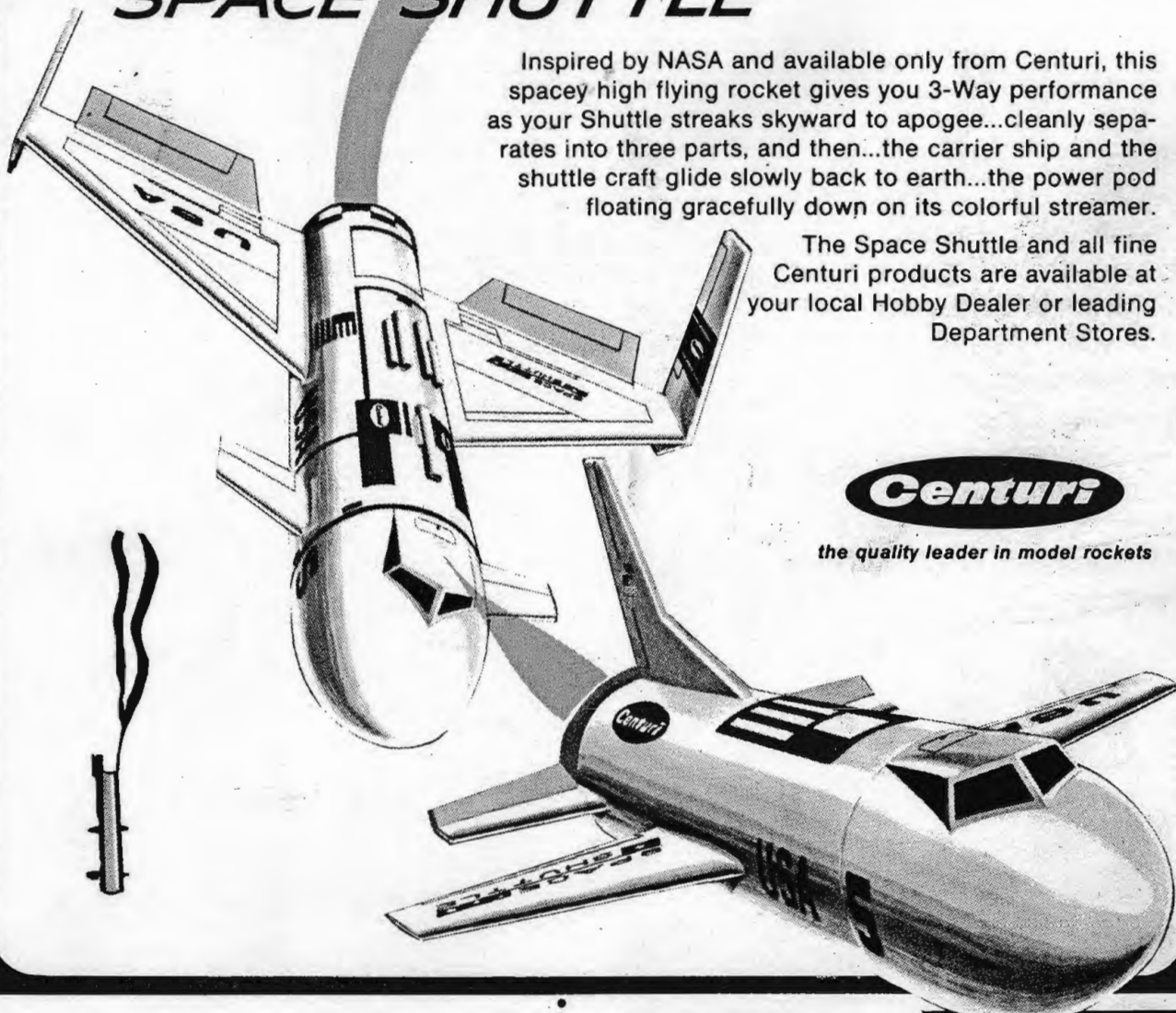
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