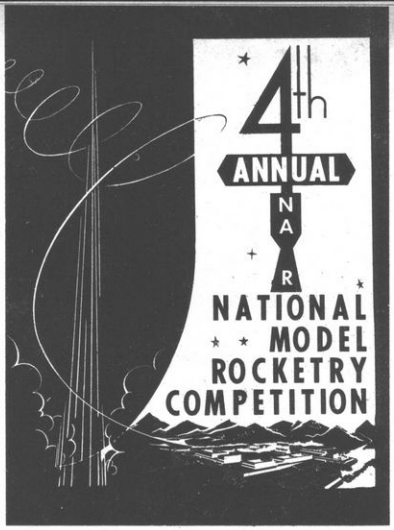
THIS NATS WAS FOR THE "BIRDS"

USAF Academy's cooperation in model rocketry makes National Championship Meet at Colorado Springs a real going (up, that is) affair! Air Forcers place high as boost-gliders steal show.

By G. HARRY STINE



■ The Fourth National Model Rocket Championships made history — and what history! The four-day annual battle of the National Association of Rocketry is always fun, always full of surprises.

The gang began to congregate at the Air Force Academy near Colorado Springs, Colo., on August 22, the day before the meet got under way. For the first time, a NARAM (NAR Annual Meet) was hosted by an installation of the Air Force. The Peak City NAR Section, bossed by Bill Roe, and the Academy's own Rampart Range NAR Section under the wing of Capt. Vern van Vonderen, were co-host sections for the meet. With help from the Academy they had built a new model rocket range near the south entrance of the school overlooked by Pike's Peak and the Rampart Range of the Rockies.

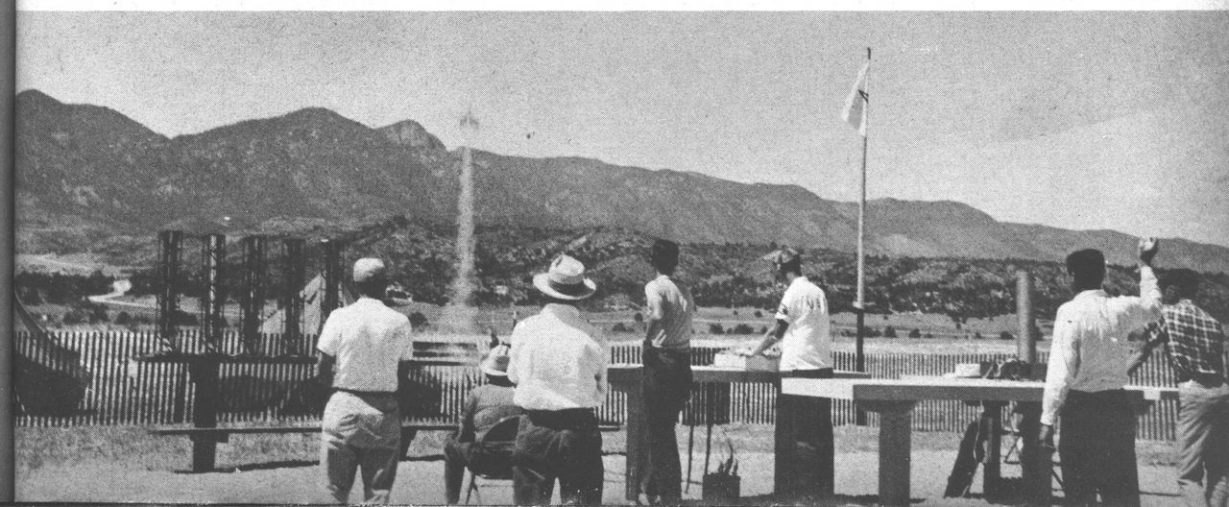
It's a beautiful site, perfect for flying any kind of model rocket. Processing, firing, and launcher tables all permanent; sturdy fence around the launch area; solid range shack that doubled as a range store during the meet; buried comm wires to four tracking stations; roped-off prep area; 48 (count 'em!) launchers for all kinds of birds; and 11 flagpoles. When the meet got under way, there was a flag flying from every pole—national colors, Colorado flag, NAR colors, plus distinctive range flags from 6 competing NAR sections (Peak City, Rampart Range, Mile-High, Fairchester, North Shore, and Valley of the Sun). Add tents for judges, scale judging, officials, refreshment stand . . .

Somebody contended that all we needed were horses and knights to have it look a medieval joust.

Model rocketeers turned up from Connecticut, New York, Minnesota, Texas, Oklahoma, Kansas, Arizona, Illinois, Wisconsin, and Utah. There were about 100 people involved, 80 of whom were contestants. In case you're wondering why so few, NAR had to limit the number of entrants this year or things would have gotten out of hand. NAR aims to hold down the number of contestants in its NARAM through elimination contests and regional meets so that the affair doesn't get too big to manage. Thus, only the best modelers get to come.

Seventeen events were scheduled. By cracking the whip Capt. Vern van Vonderen, CD, got them all flown off. This amounts to something like 1,200 flights—which is a lot of rocket fuel no matter how you look at it. In addition to the usual altitude events, there were scale, scale altitude, R&D, parachute duration, B/G duration, and Aero-space Systems events.

There wasn't as much activity in flat-out altitude this year. Contestants are working with the tougher events which, because of weighting factors, offer more contest points. The scale events were just great with some beautiful models flown. Lt. Bryant "Red" Thompson, the USAF's original "instant rocketeer," showed up with two MX-774 missiles, one for the smaller engines and the other for the larger Coaster Class F11 engines recently approved by NAR. Paul Hans of Manhasset, N. Y., was flying MX-774's, too, plus a scale replica of the NASA "Little Joe" complete with Mercury capsule. John Essman of Denver had a Mercury Redstone. Charlie Hans, a Class F "IRIS." Gordon Mandell of Great Neck, N. Y., a



NATIONAL ASSOCIATION OF ROCKETRY NEW NATIONAL MODEL ROCKET RECORDS ESTABLISHED AT NARAM-4

Class B Altitude: Gary Wright, 2265 feet
Class F Scale Altitude, Junior: Chuck Mauro, 1510 pts.
Class F Scale Altitude, Senior: Bryant A. Thompson, 2190 pts.
Open Altitude, Senior: G. H. Stine, 980 ft.
Open Payload, Senior: David E. Bell, 1700 ft.
Open Scale Altitude, Junior: Paul Hans, 2810 pts.
Open Scale Altitude, Senior: Bryant A. Thompson, 2430 pts.
Class B Payload: Greg McBride, 720 feet.
Double Pee Wee Altitude: Paul Hans, 1960 feet.
Class A Scale Altitude, Junior: Paul Hans, 1745 pts.
Class A Scale Altitude, Senior: C. S. Hans, 1460 pts.
Boost-glide Duration, Senior: Vern Estes, 1 min 22 sec.
Class BA Altitude: Wesley Wada, 1860 feet.

1962 CONTEST YEAR RESULTS

NATIONAL CHAMPION, SENIOR DIVISION: Doug Hylton, 357 points
RESERVE CHAMPION, SENIOR DIVISION: Lt. Bryant Thompson, USAF, 250 points (also highest Senior)
NATIONAL CHAMPION, JUNIOR DIVISION: Tom Rhue, 217 points
RESERVE CHAMPION, JUNIOR DIVISION: Paul Hans, 216 points

SECTION STANDINGS, 1962 (Final)

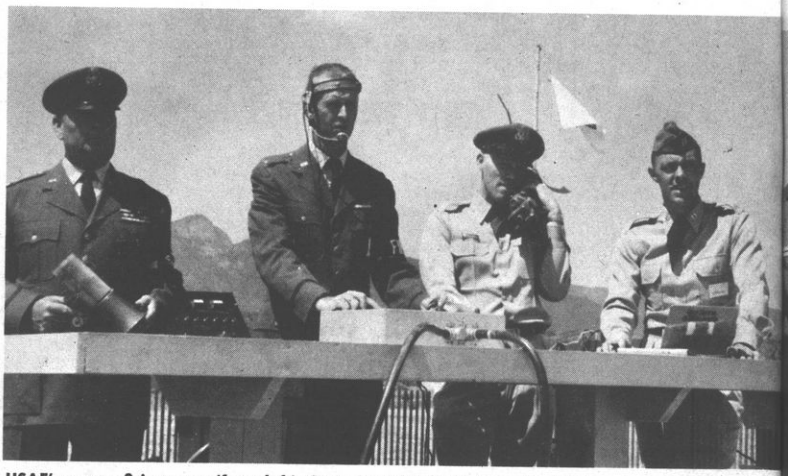
1. Peak City, Colorado Springs, Colo. 1912 points
2. North Shore, Manhasset, N.Y., 1000 points
3. Rampart Range, USAF Academy, Colo., 386 points
4. Fairchester, N.Y.-Conn., 350 points
5. Mile-High, Denver, Colo., 246 points
6. Valley of the Sun, Phoenix, Ariz., 11 points
7. Lompoc Rocket Society, Lompoc, Calif., 2 points

USAF "Genie," plus a Class F "Metroc." In the scale line-up also: ARCAS, ASP I, Viking #7, Viking #10, Jupiter-C, Archer, Polaris (with clear plastic fins), and good ole V-2. There was a lot of painstaking workmanship evident in these birds.

All scalers powered by Type A or B engines flew pretty well, although there was a Regulus and a Rascal that thrashed around the sky above the launch area before calling it quits. Most spectacular scale flights were by Class F models and Open Scale Altitude models, all of which were Type F11-powered. These big powerplants worked fine and gave some terrific flights. The Type F11-3 engine has a tendency to sit on the pad and build up thrust for about a second before it booms the model skyward—this is very Canaveral-ish, of course, and lends an additional element of realism to a scale flight. Some of the Class F birds had trouble because of the more powerful ejection charges used . . . so now we know that for your recovery system you need heavy nylon-dacron line with good knots tied in same!

Boost-glider Duration was another gasser. B/G showed up for the first time last year; now it is an event all to itself. As predicted, there was big rivalry between the Estes "Space Plane" and the Centuri "Aero-Bat." B/G was flown in age divisions, Junior and Senior, as were most of the other events except flat-out altitude. In Junior B/G, it was Space Plane (once the younger birdmen got them trimmed out for glide and weighted up for climb). Ted Walford, 13, son of a USAF Academy professor, turned in 41 seconds with a Space Plane. In Senior B/G, Vern Estes pulled a sneaky—he modified a standard Space Plane kit so that weight was yanked out of the nose when the engine ejected. This creation set a national record of 1:22, Vern breaking his own B/G record. He was followed by Charley Hans flying an Aero-Bat. Leroy Piester of Centuri Engineering turned in 53 seconds for third flying the original, genuine Aero-Bat. Marshall Wilder of CBS Labs, Stamford, Conn., was acclaimed this year's Instant Rocketeer by throwing together an Aero-Bat in 35 minutes and placing 4th in the event, followed by yore correspondent with an Aero-Bat. So the battle of the B/G kits still rages.

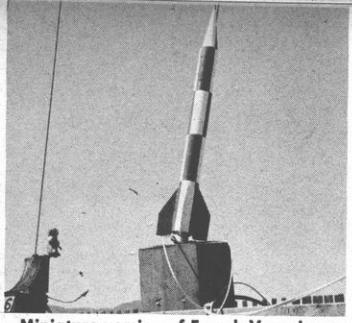
But it sure is a pretty sight to see those B/G'ers go straight up, kick their engines, and then just hang there in a glide.



USAF'ers man firing area (from left): Capt. David Bell; Lt. (now Capt.) Bryant Thompson; Capt. John Barnes; and meet director, Capt. Vern van Vonderen.

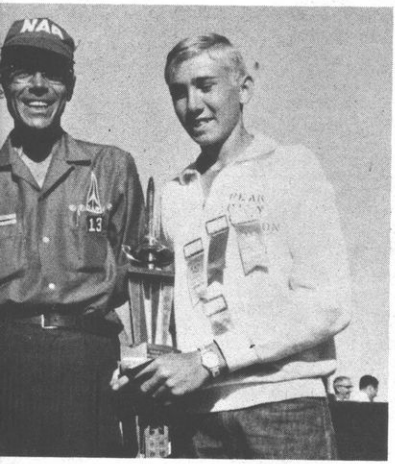
A table covered with trophies awaits winners of NARAM-4. Major Ed Stull and Major Ted Walford brush last speck of dust off attractive awards.

Denverites Greg McBride and John Essman compare their scale Deacon and Mercury-Redstone entries.



Miniature version of French Veronique powered by Coaster Class F engine is ready to go off NARM-4 launcher.

Minnesota's Manning Butterworth at Estes display manned by Brent Norlem, Bill Simon, and Vern Estes.

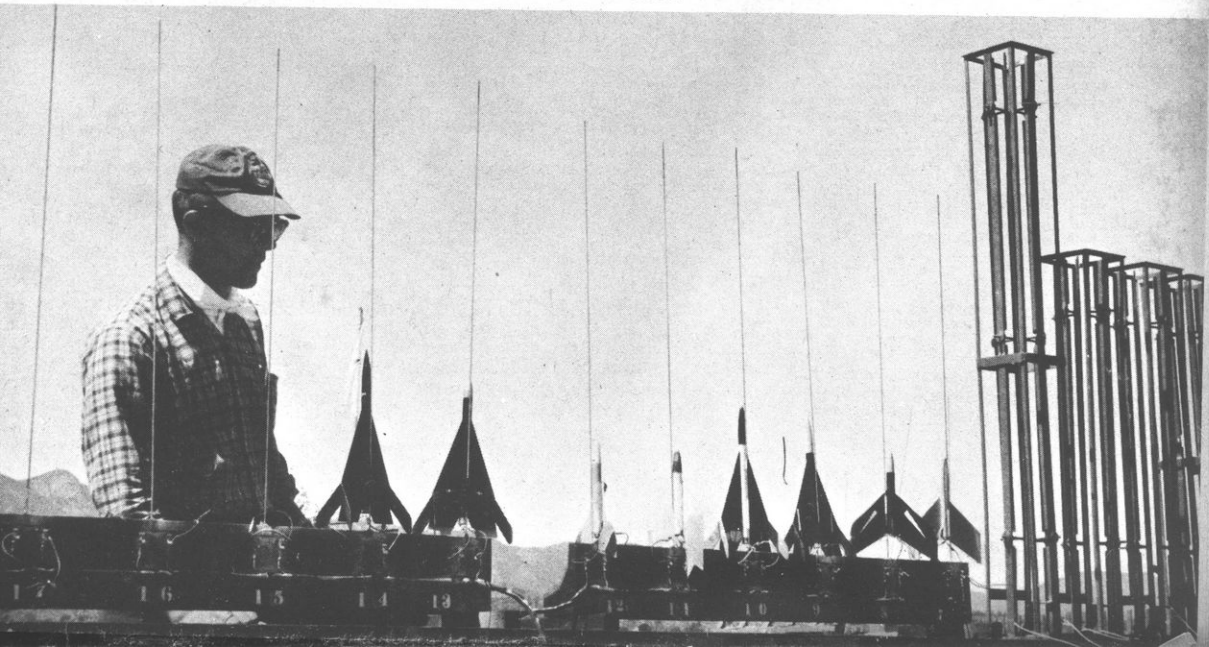


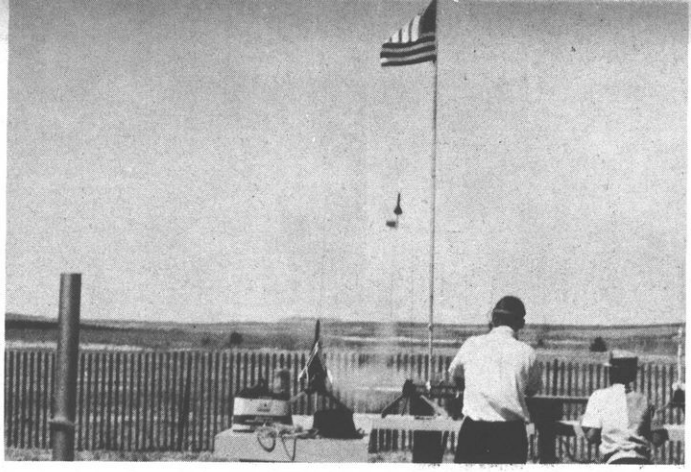
Senior/Leader Champ, Doug Hylton, 18, of Colo. Springs with Chmn Bill Roe.

New recording static test stand from Rocket Development Corp. & Irv Wait.

NAR Junior Champ Tom Rhue, 15, gets award from Maj. Gen. Robert Warren.

Contest Director for NARAM-4, Vern van Vonderen, hooks up a launcher rack of boost-gliders. These winged rockets glide back to earth after "shoot."





Centuri's 2-stage "Black Widow" blasts off (left) as Leroy Piester throws electrical switch.

FOURTH NATIONAL MODEL ROCKET CHAMPIONSHIPS OFFICIAL RESULTS

Spot Landing (land the nose cone of a model nearest a marked spot): FIRST—James Scott, 14, Colorado Springs high school student; SECOND—Tom Rhue, 15, Colo. Springs high school student; THIRD—Paul Hans, 15, Manhasset, N.Y., high school student.

Parachute Duration (how long can a model be kept in the air with a parchute recovery system): FIRST—Paul Hans; SECOND—Capt. David E. Bell, USAF, Andrews AFB; THIRD—Gary Wright, 14, Denver high school student.

Class B Altitude (which free design achieves best altitude with Type B model rocket engine): FIRST—Gary Wright; SECOND—Greg McBride, 14, Colo. Springs high school student; THIRD—Ted Walford, USAF Academy, high school student.

Class F Scale Altitude (which scale model goes highest with Type F model rocket engine): JUNIOR DIVISION. FIRST—Chuck Mauro, 13, Colo. Springs high school student; SECOND—Jim Petrenas, 15, Colo. Springs high school student. SENIOR DIVISION, FIRST—Lt. Bryant Thompson, USAF, missile launching officer; SECOND—Doug Hylton, 18, Colo. Springs high school student; THIRD—Capt. David L. Barr, USAF, Air Force Academy mathematics dept.

Class BA Altitude (which two-stage model goes highest): FIRST—Wesley Wada, 15, Denver high school student; SECOND—G.H. Stine, research scientist.

Open Altitude (two or three stage free design for altitude): JUNIOR DIVISION, FIRST—Tom Rhue; SECOND—Gary Wright. SENIOR DIVISION, FIRST—G. H. Stine; SECOND—Capt. David Barr.

Open Payload (two or three stages, total take off weight 5 ounces including one-ounce standard payload): JUNIOR DIVISION FIRST—Jim Petrenas; SECOND—Wesley Wada; Third—Paul Hans. SENIOR DIVISION, FIRST—Capt. David Bell; SECOND—Capt. David Barr.

Class B Payload (single-staged model carrying one-ounce payload using Type B engine): FIRST—Greg McBride; SECOND—Gordon Mandell, 15, Syosset, N.Y., high school student; THIRD—G. H. Stine.

Double Pee Wee Altitude (two-staged models with very limited engine power): FIRST—Paul Hans; SECOND—Gordon Mandell; THIRD—Chuck Mauro.

Scale (exact scale models capable of flight, judged on adherence to scale, workmanship, degree of difficulty, and flight characteristics): JUNIOR DIVISION, FIRST—John Esssman, 16, Denver high school student; SECOND—Dick Roebken, 14, Colo. Springs high school student; THIRD—James Scott. SENIOR DIVISION, FIRST—Lt. Bryant Thompson; SECOND—Capt. David Barr.

Plastic Scale (non-flying plastic scale models adapted for flight from commercial kits): JUNIOR DIVISION, FIRST—Paul Hans; SECOND—John Essman; THIRD—Gordon Mandell. SENIOR DIVISION, FIRST—G. H. Stine.

Aero-space Systems (scale model of USAF missile which must carry standard payload, land near an assigned spot, be launched on a few minutes' notice): JUNIOR DIVISION, FIRST—Paul Hans; SECOND—Gordon Mandell; THIRD—Chuck Mauro. SENIOR DIVISION, FIRST—Lt. Bryant Thompson; SECOND—Doug Hylton; THIRD—G. H. Stine.

Research & Development (open to designs of any type to stimulate new concepts, new approaches, and new ideas): JUNIOR DIVISION, FIRST—Hans-Scott Team (Paul Hans and Don Scott, 16, Port Washington, N.Y.); SECOND—Wesley Wada; THIRD—Gordon Mandell. SENIOR DIVISION, FIRST—Doug Hylton; SECOND—Lt. Bryant Thompson; THIRD—Capt. David Barr.

Pee Wee Altitude (free design using very limited engine power going for altitude): FIRST—Chuck Mauro; SECOND—Ronney Webster, 13, Salina, Kans.; THIRD—Charles Hans, Manhasset, N.Y., motion picture executive.

Class A Scale Altitude (exact scale models flown for altitude with Type A engine): JUNIOR DIVISION, FIRST—Paul Hans; SECOND—Don Scott; THIRD—Gordon Mandell. SENIOR DIVISION, FIRST—Charles Hans; SECOND—Doug Hylton; THIRD—Lt. Bryant Thompson.

Boost-glider Duration (for models which takeoff vertically but glide down with wings.) JUNIOR DIVISION, FIRST—Ted Walford; SECOND—John Essman; THIRD—James Scott. SENIOR DIVISION, FIRST—Vernon Estes, president of Estes Industries, Inc.; SECOND—Charles Hans; THIRD—Leroy E. Piester, president of Centuri Engineering Co.

R&D was wild one, per usual. Paul Hans and Don Scott of Long Island flew their movie camera rocket which got pictures using an F11-3 engine; this time they will send the movie film to the processing labs with a special plea not to lose same. Wes Wada, 15, of Denver, demonstrated a balanced rudder for B/G that keeps his bird headed into the breeze. Gordon Mandell unveiled a suitcase-full of B/G birds that he had used to work out proper aerodynamic parameters. In Senior R&D, Doug Hylton cooked up a way to double the duration of commercial engines without altering them which took first prize. Red Thompson flew his 3-stage bird that was designed to eliminate Krushnic Effect . . . and it did. Capt. Dave Barr of the Air Force Academy proved again that by filching fletching feathers from arrows you can make good fins. But Capt. Dave Barr from Andrews AFB found out paper fins aren't beefy enough!

This was the first year for model rocketry's most demanding contest event, Aero-space Systems. And it was *tough!* Requirements: a scale USAF missile carrying a standing NAR Payload with its own launcher and firing system, flown on 15-minutes' notice against a target for spot landing with minimum flight altitude of 200 feet. Paul Hans, flying MX-774 took it for Junior Division followed by Gordon Mandell, who got his USAF "Genie" off the ground with but 5 seconds time left. In Senior Division, it was the nerveless competitor-survivor of many major airplane contests, Lt. Thompson, who took first with an MX-774, followed by Doug Hylton and Old Rocketeer Stine flying Pogo-Hi in third. This one is rugged, boys; your bird lies there in the launch area with no engine and no igniter. In 15 minutes, you've got to load it, install an igniter in it, get on the launcher, hook it up, take a wind reading and make corrections, finally push the little button and pray. It may sound easy, but try it under the pressure of a running clock! And varying winds. And a couple of misfires. Whew!

"Plastic Scale" turned out to be a good event, too. It is not too easy to find a scale plastic missile kit that can be modified for flight, and it is not simple to make the modifications, either. Capt. Dave Bell found out that you don't put nose weights in a plastic model using regular cement . . . first cork-screw nose I ever saw on a model! There were Revell V-2's, Hawk Corporal's, Revell Corporal's and Revell X-17's in the line-up that flew. Gordon Mandell had a tough time finding his camouflage-painted V-2 after it landed, it blended in pretty well with the sage brush.

In addition to doing a lot of rocket flying in excellent weather, we accomplished other things, too. The usual bull sessions were in progress continually. We toured through the Academy's aerodynamics and propulsion labs, where everybody wished they had access to the wind tunnels and static test stands for model testing. The guide was rather hard-pressed to answer some of the technical questions

that were tossed at him by the contestants who, after all, had experience with the practical aspects of rocket engines and aerodynamics! We toured the blockhouse at the North American Air Defense Command (NORAD) and watched the Academy Cadets parade.

This was also the first time that every model rocket manufacturer was in one place at the same time. They were all there seeing what the rocketeers were doing with their products—Menford Sutton of Coaster Corp., Vern Estes of Estes Industries, Leroy Piester of Centuri Engineering, Irv Wait of Rocket Development Corp., and Skip Keller of Model Missiles. This gang not only put on a sky-busting manufacturers' demo on the final day of the meet, but were on hand to answer a million questions by the rocketeers.

The Model Rocket Manufacturers Association was formed during NARAM-4; all the commercial types got together in an organization to enforce ethical practices, promote safety standards, and exchange information. A long time in coming, this should mean better model rocket products. NAR and manufacturers are now working together to advance this hobby and solve its remaining problems.

Since it is the manufacturers who make model rocketry possible on our safe-and-sane scale, herewith a report on what they displayed . . .

Estes Industries had a three-D tracking reduction system, a wind tunnel, a simple static test stand, a simple tracking station, lots of models, and printed material on hand with Ole Vern, Brent Norlem, and Model Rocket News hound Bill Simon presiding.

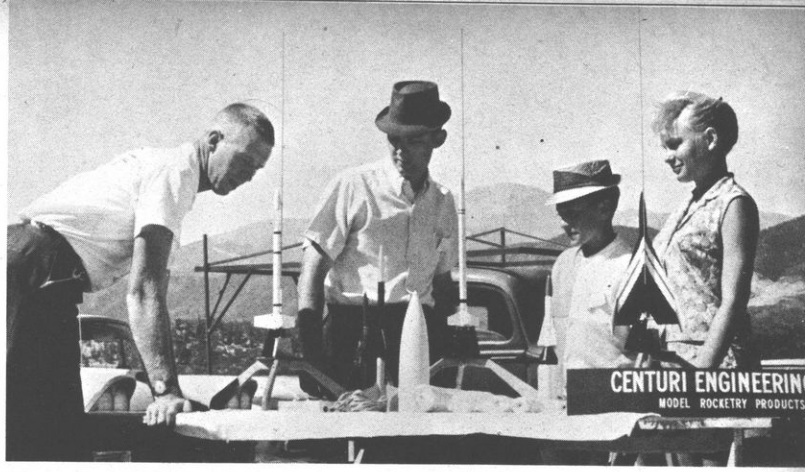
Centuri Engineering Company was represented by Leroy Piester and his wife, Betty, who showed off their Aero-Bat B/G, their new Arcon kit, their launcher, and their line of model rocket supplies; the Centuri "Mini-Max" model rocket engines are still in the development stage.

Two lovely little recording static test stands were shown by Irving Wait of Rocket Development Corp. RDC test stands, model rocket equipment, and engines are available from this new Utah firm. To us the RDC stands look like the greatest thing since electrical ignition; you can get beautiful thrust-time curves from them, and we used Irv's stands to check the performance of the many types of model rocket engines that were available for sale on the range for contest use.

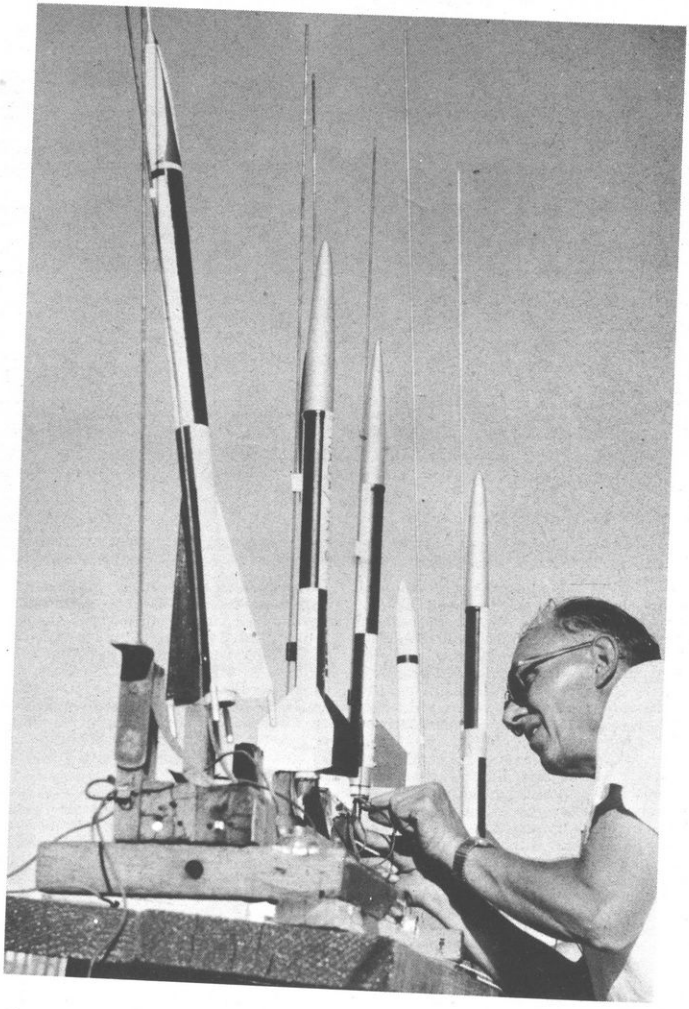
Skip Keller of Model Missiles, Inc., showed the reliable Aerobee-Hi and Arcon kits, and they turned in the sort of perfect flights for which these model rockets are known—straight up with parachute deployment exactly at peak altitude.

Menford Sutton and Jimmy Jackson of Coaster Corporation had all their models on display—Saturn, Space Probe, Mercury, and their new "Centauri" B/G—along with firing panels, launchers, chutes, and engines. Jimmy flew each of them, some with 35-pound engines. The Coaster B/G is a big one, should take small R/C gear with no sweat. Although Coaster F11 engine sits on the pad building up thrust while its slow-burning propellant gets going, the 35-pounder

(*Continued on page* 90)



USAF's "Red" Thompson, skilled air-modeler now excelling in model rocketry, checks Centuri exhibit with firm's Leroy, Kenneth and Betty Piester.



Class F Scale Altitude entries get final check by Charley Hans. Shown are ASP, two NASA IRIS, USAF MX-774, and at end of line-up, another ISIS.

ROCKETS

(*Continued from page* 71)

lights right off and gits. NAR is now testing the 35-pounder for contest use.

As with most any contest, some gripes turned up. But Bill Roe had a system for holding them down. Each contestant was given a little pink card "NARAM-4 MOM-WATS," to be presented to an official if so requested and ten small squares for punches. Each judge carried a railroad conductor's punch to use with the standard NAR punch-card contest scoring sheets. Each time some guy came up with a tale of woe or a gripe, a judge would hear him out, render a decision, then punch his MOM-WATS card. (Confession—I collected five punches.) At the end of the meet, Steve Kushnir, 15, of Colorado Springs totaled 13 punches on his card and was presented with a huge bath towel inscribed "NARAM-4 Crying Towel."

What does MOM-WATS mean? "My Oh My, What A Tough Situation!" They worked, helping make light of several tough situations, gently reminding everyone that this was a sporting contest and not the end of the world.

There was a table full of trophies, one for each event with duplicates for age divisions and a plaque for each second place. All of the model rocket manufacturers coughed up trophies in addition to the Martin-Marietta Corp., Systems Development Corp., The Air Force Association, Revell, Inc., Holly Sugar Corp., and Huyck Corp. There were even two Ford sedans and a Ford pick-up, but they were just "official cars" for use during the meet . . . they wouldn't let us take them home as samples!

America's high-point senior model rocketeer was Red Thompson who had worked hard all year and battled his way through the USAF's own meet for its service personnel at Lackland AFB. Red's long experience in model plane contests paid off well for him; he knew what to do and how to do it . . . and he did a good job of it. On top of that, he could call on his professional USAF experience as an Atlas ICBM launching officer! He didn't cop the Senior Championship, however, Doug Hylton took that.

Doug is an NAR Leader Member, 18 years old. But since he was the only such member in NARAM-4, he could not compete against himself for Leader age division honors. So the Contest Board allowed him to compete with the older Seniors. He was also the 1961 National NAR champ and had been racking up contest points all year. Nobody could touch him in contest points or in his ability to build excellent contest models (although the Seniors gave him a tough race). Doug just finished high school as an honor student, plans to go on to engineering.

Junior Champ was a close race between Tom Rhue and Paul Hans, both 15. They fought this one down to the wire. In fact, it was so close that Tom won by only *one point!* "Tom should have it anyway," Paul told me later. "He missed the 1961 championship by but one point. I'll get it next year because I'm starting right now!"

(*Continued on page* 110)

ROCKETS

(*Continued from page* 90)

The Champ Section pennant will fly for another year over the range of the Peak City Section in Colorado Springs. The runer-up, North Shore Section of Long Island, is gunning for it in 1963! The Air Force Academy's Rampart Range Section ran third with the New York-Connecticut Fairchester Section in fourth place. The Battle of East vs West should be something to watch this coming year; the East Coast rocketeers are out to show the cowboys how to build model rockets!

It's also going to be interesting to observe the Air Force boys again. With Red Thompson, Dave Barr, and Dave Bell leading them as seasoned NARAM veterans, plus Carl Klauck (stationed at Thule, Greenland and flying in the snow), Vern van Vonderen, Ed Stull, John Barnes, the fellows who flew at Lackland, plus some others who didn't make it this year, we oughta see a great surge of model rocket interest in the USAF. After all these years of trying to get a model airplane trophy, Air Force modelers finding that they are much better in model rocketry and it's easier to transport and store their miniature birds.

A slug of national model rocket records were established or surpassed at NARAM-4. Gary Wright, 14, of Denver hit 2265 feet with a single-staged bird powered by a Type B.8-6 engine to take the Class B Altitude record. This with only 1.15 pound-seconds of total impulse! Theoretically, it's impossible. Dave Bell went 1700 feet for an Open Payload record, Senior Division. Red Thompson set two new Senior records—Class F Scale Altitude and Open Scale Altitude. Paul Hans did 1960 feet in Double Pee Wee (Type A lower stage, Type half-A upper stage), and Wes Wada cracked 1860 feet in Class BA Altitude. The Old Rocketeer set a Senior Open Altitude record of a paltry 980 feet (Junior record is 2440 feet!) flying a beat-up 4-year-old Li'l Mark with an MMI Booster equally as old (excuses, excuses); I was the only one who got tracked because some of the other super-duper clustered 3-stagers were all over the sky. And I flew just for points. Shows what will happen if you don't watch out.

Yes, we also flew some chicken eggs! It was an unscheduled event with no prize, but we tried just for fun. The object: fly a fresh, Grade A hen's egg without cracking the shell or scrambling the yolk. Dave Barr made an omlette when his chute failed to deploy. Yours truly scrambled one, I had them bury the whole mess because my chute didn't come out, either.

Paul Hans and Don Scott of Long Island tried it with an egg in place of the movie camera in their Class F camera bird. On first try, the model jammed on the launcher, finally scraped free, and lobbed itself over the launch area fence, clearing it by about six inches and landing in soft sand. The egg was unbroken, but all agreed that wasn't really a proper egg flight. So they jammed (and I do mean jammed) the egg back into its foam rubber acceleration couch, sealed the capsule, put in another F11-3 engine, oiled the launch rod, and this time, it worked! Model went about 500 feet, capsule and booster came down on separate silk parachutes, chickenaut landed gently, egg was unbroken, yolk unscrambled.

Hans and Scott therefore became first to fly an egg successfully. Another historic milestone in the space race has been achieved! (If you think this is easy, just try it! And it's much more fun than flying mice.)

We hear that Hans-Scott are going to fly another egg, hatch it, and have an egg from that chicken to fly next year, and so on, thereby breeding a strain of rocket-powered chickens which they will enter in the B/G events to the consternation of the judges. We can see it all now as the chicken ejects from the nose cone and starts to glide . . . "Disqualified? But, sir! The rules don't say we can't!"

Don Scott, Paul Hans (rt.) get Huyck R&D trophy; Bill Roe beams approval.

After Major General Robert E. Warren, superintendent of the Academy, had presented all the trophies, everyone gathered up their gear and started the homeward trek. We'd missed meals, lost sleep, gotten sunburned, and had a fine collection of scrap balsa in some cases. But NARAM-4 was the biggest meet ever. Accident-free, per usual. Model rocketry had really advanced in a year—B/G's hovering in the sky, Class F engines, B3 engines, nichrome igniters, new manufacturers, new faces, new models, and new ideas galore. CAP getting into the act and USAF more active all the time. NAR membership up 300% in 12 months. Model airplane builders and amateur rocketeers switching over to model rocketry. New vistas and new challenges galore as model rocketry begins to specialize—experts in parachutes, B/G, scale, and staging, to name a few.

To your correspondent it is even more amazing because we can still remember flying our first model rocket in a New Mexico cotton field in early 1957 long before anybody thought of NARAM. Now we observe guys who live thousands of miles apart and who have never met before, strike up a conversation about model rocketry where everybody knows exactly what the others mean.

So now the big cry is: "On to NARAM-5!"

Coaster's Jim Jackson shows wares to USAF's Dave Bell.