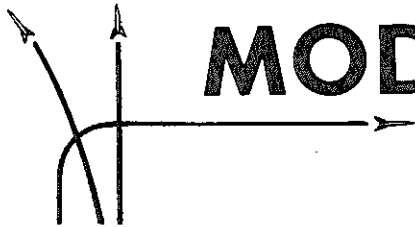


R
D
C



MODEL ROCKET

News-A-Log

Seymour, Indiana ROCKET DEVELOPMENT CORPORATION Summer Issue 1969

NEW LOOK - NEW PRODUCTS - LOW PRICES

Introducing

An entire new fleet of rockets has been added to the RDC line.

These rockets are all new --not just a new look, but new construction concepts and ideas as well. For example, a new reliable trouble-free approach to upper stage ignition--no gluing or taping of engines, no fuse, the ultimate in simplicity -- it is built into our engines, you don't have to do anything extra.

And that's not all. No more slotting the body tube to attach shock cords --our new system leaves inside and outside of tube clean and smooth, no inside snags for streamer or parachute to catch on, faster to install.

Tired of gluing in engine bulkheads? Want to get rid of that job too? On many of the new RDC kits, it's eliminated.

The Enerjet-8 isn't new, but now it's mailable and that is new. The Enerjet-8 is the first mailable Class E engine on the market, shipped prepaid by RDC, of course. No more expensive shipping on these powerful engines.

We've also added plastic parachutes -- but we didn't stop there. We developed a simple system to protect your plastic chutes from being welded together by the heat of the ejection charge. This device works equally well for streamers.

The launcher is another new item. Sturdy steel legs can be secured even in hard, dry ground (but not in rocks or pavement.)

Take your time to look fully through this issue and see all that's new. There's no better way to show your satisfaction than to order. We'll be waiting to hear from you.

RDC Streamlines Operations

-- 3 - 2 - 1 Blast off! RDC is blasting off on an exciting new 1969 season. Almost everything is new at RDC this year, including this newsletter-catalog combination.

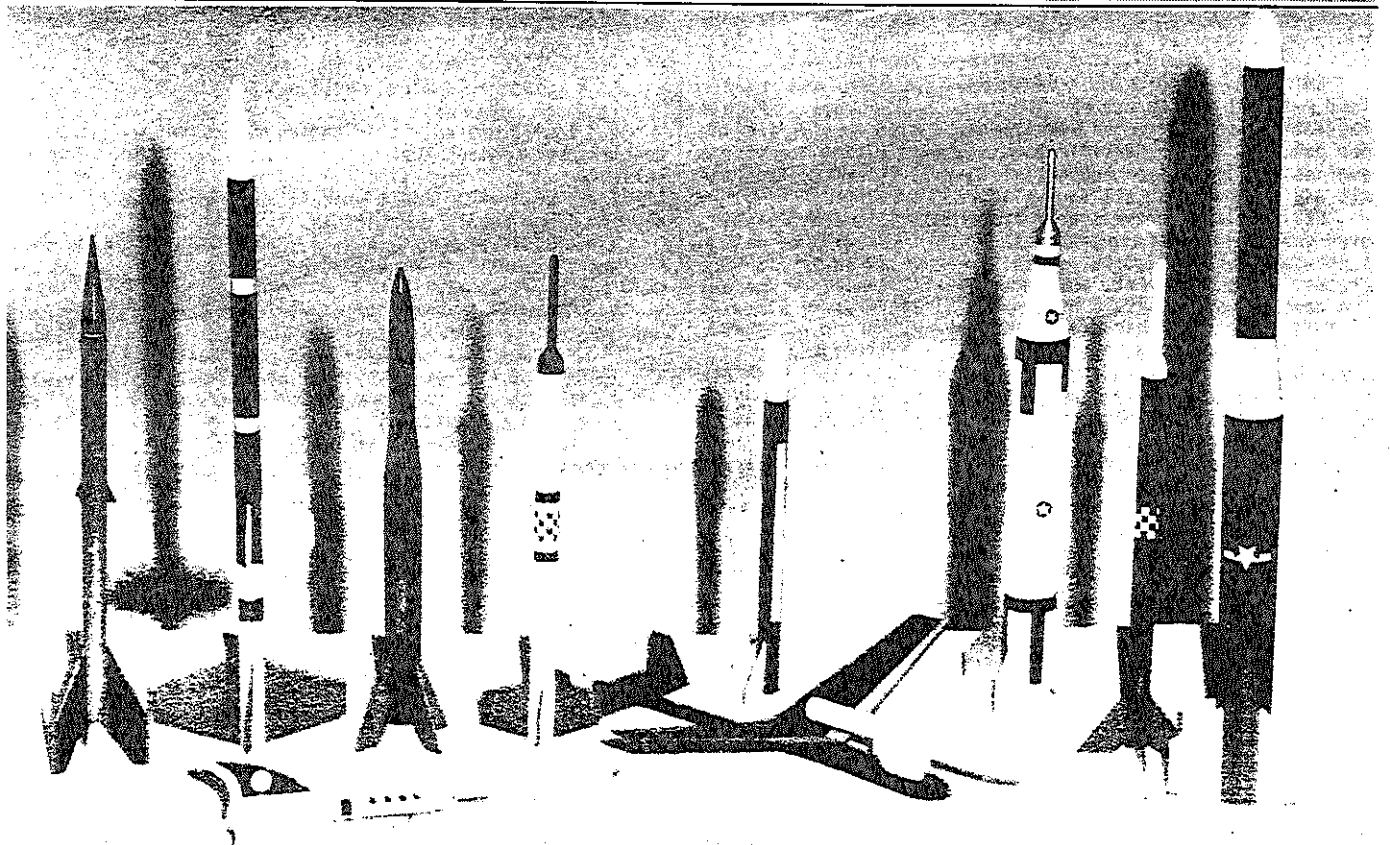
This new type format will give us ample space to bring you feature articles, club news, technical reports, construction tips, plans, etc. Some of these features appear in this issue, others will begin in subsequent editions.

This new newsletter-catalog combo will be issued several times each year. Just how often it comes out and how big it will be is up to you, our reader and customer. There is a direct relationship between our sales and our services.

Each customer who orders from this issue will automatically get Issue No. 2, tentatively scheduled for mid-winter.

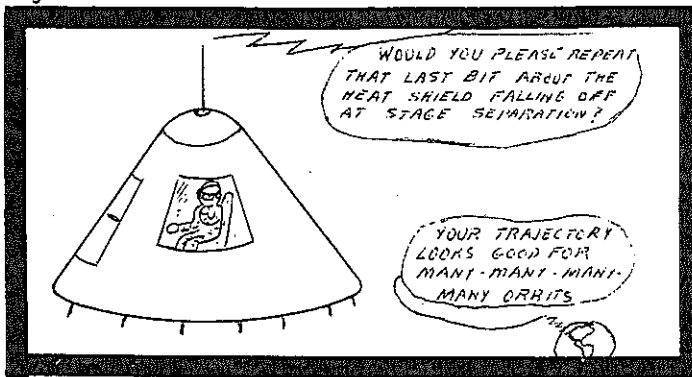
Low - Low - Low. Beginning with this issue you will see some of the lowest prices ever in model rocketry. RDC has streamlined operations and eliminated the middleman (we're dropping dealer sales --these items are strictly mail order) to bring you fast service at lower prices. In particular, see our engine prices on Page 11--and remember, this includes the patented Ignitrite igniter.

THANKS FOR HELPING
Many, many thanks to all of you who thoughtfully and carefully filled out the survey questions on the backs of the 1968 order blanks. We have tabulated the results and many of the new items in this News-A-Log (and in fact the News-A-Log itself) are in direct response to your suggestions. And more will be coming in future editions.



RDC Rocket Fleet--New designs and techniques are featured among the 1969 "birds" in the RDC armada. Left to right are the Interceptor, Vega, Orion,

V-Max, Rawhide, Space Traveler, Cardinal, Starflite II. Center front, the Moon-Glo and the Dragonfly. See detailed descriptions on Pages 3, 4, 5 and 12.



RDC's Model Rocket News-A-Log is published by
ROCKET DEVELOPMENT CORPORATION
Route 3 - Seymour, IN 47274
for established and prospective customers.
Copyright © May 1969

ROCKET DEVELOPMENT CORPORATION begins its ninth year in the model rocket business in 1969 and will continue to strive to produce the finest in equipment for you, the model rocketeer.

Organized in Utah in 1961, the Company moved to Indiana in 1963. In 1966, RDC started producing high energy professional rocket engines and flight rockets for industrial and university applications and in 1967 the Company expanded research operations in the professional field, scaling down this Enerjet line to give model rocketry a real space age engine, the Enerjet-8.

How To Order

Print or write clearly and fill out the order blank completely. Be sure to include your ZIP code.

Orders must be signed by the buyer (or in the case of a minor, by his parent or legal guardian). This signature releases ROCKET DEVELOPMENT CORPORATION, any employee or employees from any responsibility pertaining to the use or misuse of said merchandise. It is the responsibility of the buyer to observe the laws in his area pertaining to the use of the merchandise purchased.

MINIMUM ORDER -- \$1.00. Full payment must accompany all orders. For your own protection, it is better to remit by check or money order, as we cannot be responsible for currency or coins lost in the mails.

SHIPMENT -- Orders will be shipped postpaid via regular land mail to the 50 states and U. S. possessions. Postal regulations permit the shipment of only three rocket engines per package. It is possible for an order of more than three engines (at least two packages) to become separated in transit and they may not all arrive at the same time.

UPS SERVICE--In the states listed below, orders weighing over one pound or of more than \$3.50 in value will be delivered to your door by fast, dependable United Parcel Service trucks. These shipments are automatically insured at no extra cost. Customers in our UPS area who live on a rural route are asked to include specific directions for reaching their homes (such as the nearest crossroads) and to list their phone number so the driver can call if additional directions are needed. UPS area: Alabama, Delaware, D.C., Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Maryland, Michigan, Minnesota, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, West Virginia, Wisconsin.

Future catalogs -- Anyone who places an order from this issue will automatically be placed on the list to receive the next publication.

Effective date for this publication is May 15, 1969. It replaces all previous catalogs. Prices are subject to change without notice.

QUANTITY DISCOUNTS--Discounts for quantity purchases are as follows:			
Order Total	Discount	Shipping	Terms
Before Discount	Allowed		
Up to \$24.99	none	prepaid	
\$25 to \$49.99	10%	FOB Seymour	
\$50 and up	20%	FOB Seymour	

ISSUE HIGHLIGHTS

RDC Rocket Kits in Color	Page 1
How To Order, Safety Code	Page 2
Single Stage Rockets	Pages 3-4
General Purpose Booster Flight Rocket Data	Page 4
Two-Stage Rocket	Page 5
Clustered Engine Rocket	Page 5
Boost Glider	Page 5
Model Building	Page 6
Ignition and Launching	Page 7
Recovery	Page 8
Rocket Clubs	Page 9
Beginner Special	Page 7
Parts for Custom Design	Page 10
Standard Model Rocket Engines	Page 11
Enerjet Power	Page 12

Safety and YOU

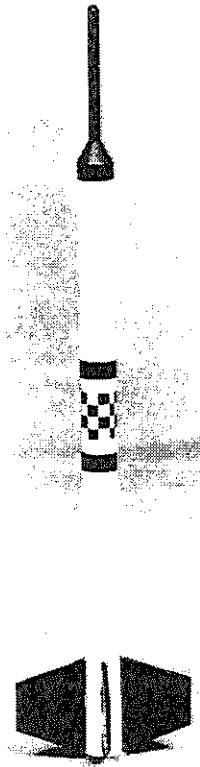
The excellent safety record of model rocketry is no accident -- this space-age hobby was designed for those interested in a responsible enjoyment of activities initiated by the current world-wide appeal of aerospace.

The most important safety factor in model rocketry, however, is beyond our design--that part is YOU, our customer.

The following safety code is for the purpose of protecting YOU. So read it, observe it all, and continue to enjoy this fascinating and educational hobby.

As a responsible model rocketeer, I pledge:

1. I will use only pre-loaded, factory-made, commercial model rocket engines that do not require my mixing of chemicals.
2. I will make model rockets of paper, wood, plastic and other non-metallic materials.
3. I will always use a recovery device in my model rockets that will return them safely to the ground so that they may be flown again.
4. My model rockets will weigh less than 500 grams (one pound) and will contain less than 125 grams (four ounces) of propellant in their engine or engines.
5. My model rockets will contain no explosive warheads.
6. I will fly model rockets in open areas away from buildings and power lines.
7. I will check the stability of my model rockets before flying them so that their flight paths will be predictable.
8. I will use a remotely-operated electrical firing system to ignite and launch my model rockets.
9. I will use a launching device that is no more than 30 degrees from the vertical (straight up).
10. My model rockets will not be flown as weapons against targets.
11. I will fly model rockets in good weather conditions only.
12. I know that model rockets share the air with other objects and must present no hazard to such objects.
13. I know that the end of a launch rod pointed up in the air could be dangerous. I will not allow "horseplay" near the launcher; I will take care when placing rockets on the launcher; and I will keep the tip covered when the launcher is not in use.



V-MAX

Patterned after the popular Cardinal with the sub-sonic (low drag) nose cone.

Features trapezoidal fins and parachute recovery.

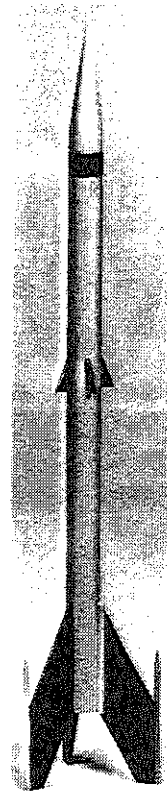
For really way-up-there flights, use as upper stage over Basic Booster.

Excellent for beginner and pro alike.

See Flight Rocket Data Chart on Page 4 for specifications.

KS-4..... \$1.50
(Engines not included)

INTERCEPTOR



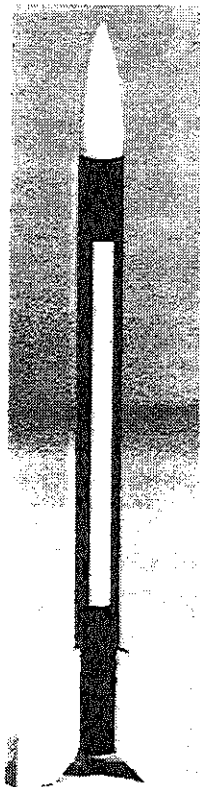
A sharp, slim rocket of a futuristic design that will add to the looks of any collection. Features RDC's new supersonic nose cone design.

Parachute Recovery

See Flight Rocket Data Chart on Page 4 for specifications.

KS-5..... \$2.00
(Engines not included)

Single Stage



RAWHIDE

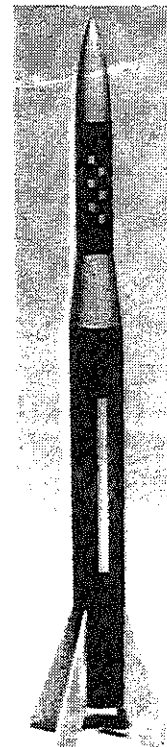
Get 'em up, move 'em out with RAWHIDE.

A rugged, reliable rocket, excellent for the beginner.

Streamer Recovery

See Flight Rocket Data Chart on Page 4 for specifications.

KS-3..... \$1.20
(Engines not included)



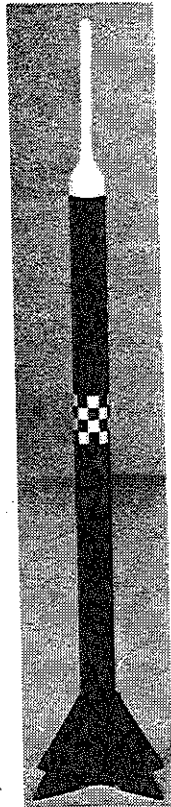
ORION

Should please the novice and the experienced alike. An exceptionally good rocket for parachute recovery. Large compartment makes for easy packing and ejection.

Parachute Recovery

See Flight Rocket Data Chart on Page 4 for specifications.

KS-6..... \$2.00
(Engines not included)



The Cardinal is the first and still most popular rocket designed by RDC. Featuring the sub-sonic nose cone, it is RDC's high altitude workhorse.

Streamer Recovery

See Flight Rocket Data Chart on this page for specifications.

CARDINAL

KS-2.....\$1.30
(Engines not included)

MOON-GLO

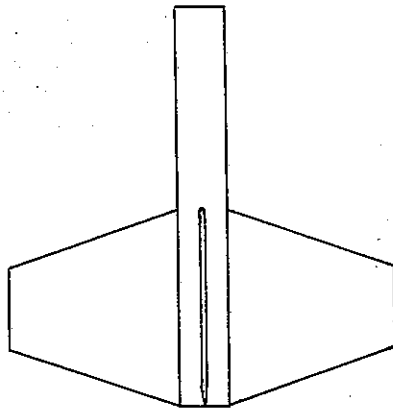
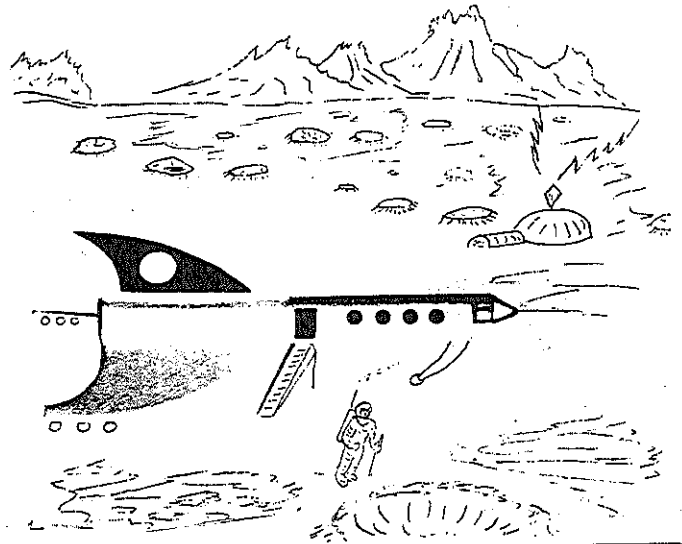
A futuristic design, the Moon-Glo is patterned after some of the space ships from the Buck Rogers comic strips of years past.

This Moon-Glo is decorated as a passenger ferry ship between earth and moon.

Streamer Recovery

See Flight Rocket Data Chart on this page for specifications.

KS-1.....\$1.25
(Engines not included)



BASIC BOOSTER

A basic booster designed to convert a wide variety of single stage rockets to two stage models. Instructions show both three-fin and four fin arrangements. May be used with all RDC single-stage, single-engine rockets.

Tumbles to earth after second stage engine ignites.

See Flight Rocket Data Chart on this page for specifications.

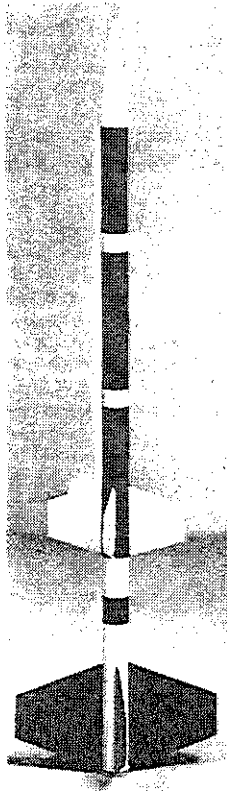
KS-10.....60¢
(Engines not included)

FLIGHT ROCKET DATA

Model	Cat. No.	Recovery System (a)	Recommended Engines	Altitude	Tube Dia.		Length		Weight (minus engine)	
					in.	mm (b)	in.	cm (c)	oz.	g (d)
Interceptor	KS-5	P	A5-3 or B4-4	200-400 feet	.75	19	16.5	42	.8	23
Cardinal	KS-2	S	A5-3 or B4-4	250-500 feet	.75	19	15.5	39	.68	19.5
V-Max	KS-4	P	A5-3 or B4-4	200-400 feet	.75	19	15	38	.7	20
Rawhide	KS-3	S	A5-3 or B4-4	200-400 feet	.75	19	13	33	.72	20.5
Orion	KS-6	P	A5-3 or B4-4	150-350 feet	1.12	28	15.4	39	1.2	35
Space Traveler	KS-7	P	[3] A5-3 or B4-4	300-500 feet	1.688	43	18.8	48	2.0	58
Vega-first stage	KS-8	T	A5-0 or B4-0	400-1000 ft.	.75	19	21	53	1.7	42
-2nd stage	KS-8	S	A5-5 or B4-6		.75	19				
Dragonfly (w/pod)	KS-15	G	B4-2	200 feet	--	--	17.5	44	1.3	37
Basic Booster	KS-10	T	A5-0 or B4-0	variable	.75	19	6	15	.5	14
Moon-Glo	KS-1	S	A5-5 or B4-6	400-600 feet	.75	19	9	23	.53	15
Starflite II	KE-1	P	E29-v	3000 to 4000	1.688	43	24	61	2.9	82

(a) P=parachute, S=streamer (b) inches/millimeters (c) inches/centimeters (d) ounces/grams
T=tumble, G=glide

2-Stage



A streamlined high velocity, two-stage rocket using the RDC basic booster and new supersonic nose cone.

Tumble recovery booster with streamer recovery upper stage to reduce horizontal drift from high altitudes.

See Flight Rocket Data Chart on Page 4 for specifications.

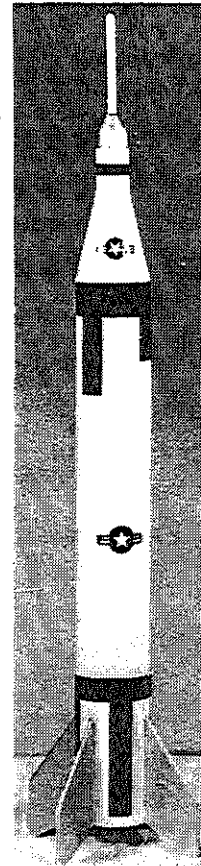
VEGA

KS-8.....\$2.00
(Engines not included)

Clustered Engines

All the features you'd expect in a planetary cruiser ---

- + astronauts' capsule
- + that NASA look
- + BIG three-engine power
- + parachute recovery



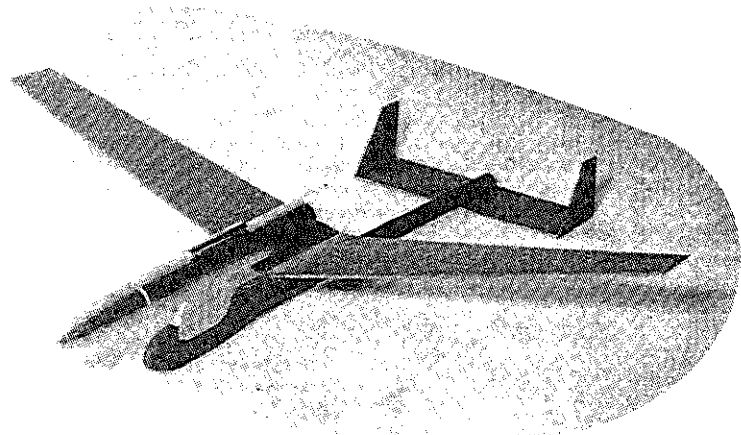
See Flight Rocket Data Chart on Page 4 for specifications.

KS-7.....\$3.00
(Engines not included)

SPACE TRAVELER

Boost Glider

The power pod drives this sharp boost glider into the blue; then POP! the pod separates from the glider as it sails gently around in slow descent. Streamer recovery returns the power pod safely to the ground.



Power pod-glider separation is obtained through a combination of gas pressure and momentum.

See Flight Rocket Data Chart on Page 4 for specifications.

DRAGONFLY

KS-15.....\$2.50
(Engines Not Included)

Lo

Model Building Technical Report No. 1

Building a model can, and should be, lots of fun. The true model builder gets as much enjoyment out of building his bird as he does flying it.

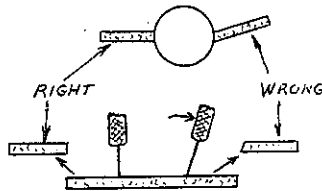
It takes much patience and long hours to be a good model builder; and there is no substitute for practice. Don't expect your first or second or even your third model to be perfect, although you should try for perfection each time.

If there are any words of wisdom to pass along to a beginning modeler, they are **DON'T RUSH!** Take your time, read the instructions completely before you start; then go back and read them again. Do not throw that first model together to get it in the air. Remember, your rocket flies according to how well--not how fast--you make it.

Know the basic tools of model building and how to use them. You should have: (a) a sharp cutting tool such as a hobby knife; (b) sandpaper of coarse, medium and fine grades; and (c) glue, both the quick drying airplane cement and the slower drying, but stronger, white resin glue.

Regardless of the kind of model you are building, there are a few basic construction techniques:

1] Cutting. Learn to cut balsa with your knife. Hold blade straight to cut a part with a good straight edge for a perfect joint. Always use a sharp blade; dull blades mean hard and imperfect cutting.



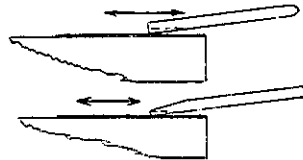
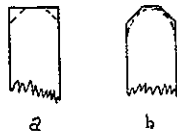
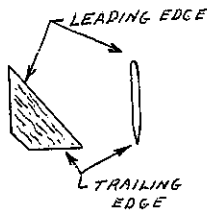
RIGHT	TYPE OF CUTTING	WRONG
	FREEHAND CURVES - CUT IN DIRECTION WHERE GRAIN WILL PULL. BLADE AWAY FROM SHAPE. CLEAN UP LATER AS NECESSARY	
	STRAIGHT CUTS WITH THE GRAIN - USE METAL RULE AS GUIDE - CUT IN DIRECTION THAT GRAIN PULLS BLADE AGAINST STRAIGHTEDGE	
	CROSS GRAIN KNIFE CUTS - ALWAYS CUT FROM EDGE TO CENTRE NEVER OUTWARDS TO AN EDGE	

2] Sanding. Basically there are three grades of sandpaper available--coarse, medium and fine. Use the coarse grade only when you have a lot of balsa to remove or when removing a thick layer of glue from a broken part. Use the fine grade as the last sanding step in obtaining a smooth finish.

Probably the most frequent item you will sand is a balsa fin. The leading edge should be rounded; the trailing edge, tapered.

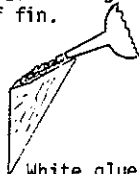
Use medium grade to sand corners off leading edge (a). Use fine grade to round off or finish leading edge as in (b).

Hold sheet of sandpaper flat on edge of table with one hand. Other hand holding fin will then have room to maneuver without rubbing table surface. Move side to be tapered back and forth until desired taper is achieved. Use medium grade first to remove balsa quickly; then repeat steps with fine grade to get smooth finish.



3] Gluing. Don't rush glue joints; let glue dry completely before handling model. Once again, a fin is probably the most common item you will be gluing. For best results, use both types of glue to attach fins to body tubes. The airplane cement (dope) type dries quickly so it is not necessary to hold the fin in place a long time. Once firmly in place the fin joint can be reinforced with white glue.

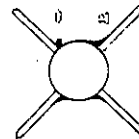
Apply bead of glue to length of fin.



Place fin in proper place on body tube. Let dry 3 to 4 minutes.



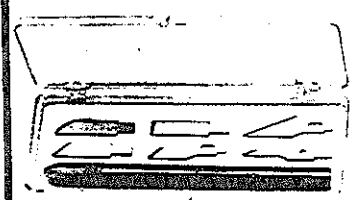
Apply bead of white glue (1) and use a stick to spread glue on tube and fin (2). Let glue dry completely before rotating rocket to do next set of joints.



White glue may also be used to provide an undercoat to your rocket before painting. Place a small amount of white glue on the surface of the fin or tube; use the finger to rub glue evenly over the surface until a thin film of glue completely covers the surface. A thin coat of white glue will dry rapidly so the job won't take long and the rocket will be stronger and more attractive with a very smooth finish.

Balsa parts may feel slightly rough after the glue dries due to raising of the grain of the wood. Use fine grade of sandpaper to smooth over such surfaces. Don't sand so hard as to remove all the glue. Apply a second coat of glue to balsa surfaces, if necessary, for a smooth finish.

Caution--when coating balsa parts with glue, apply to both sides at the same time to avoid warping.



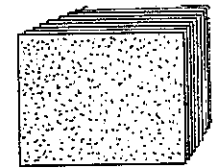
HOBBY KNIFE SET
MS-1.....\$1.25
Popular metal handle with six different blades for all light to medium cutting. In handy plastic case.



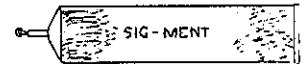
HOBBY KNIFE
MS-2..... 65¢
Lightweight aluminum handle, all purpose blade.



REPLACEMENT BLADES
MS-3.....5/60¢



SANDPAPER
MS-4..... 20¢
Assorted, coarse, medium, fine. Eight sheets.



AIRPLANE CEMENT
MS-5..... 30¢
Super strength for construction, fast drying for field repairs. 2 oz. tube.



WHITE GLUE
MS-6..... 65¢
Dries clear. No staining. Tough, fast setting. 4 oz. bottle.

Ignition and Launching

5-4-3-- Complete Your Countdown with RDC Quality Ignition Supplies



MICRO-GATOR CLIPS
 IG-5.....2/20¢
 Tiny clips especially handy for systems that have limited space.



CROCODILE CLIPS
 IG-4.....2/25¢
 For positive gripping, use these to attach to cable wire, six-volt lantern battery terminals, etc.

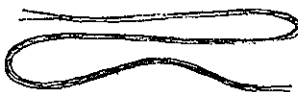


BATTERY CLIPS
 IG-6.....2/60¢
 Attach cables to car batteries with these 25-amp capacity clamps.

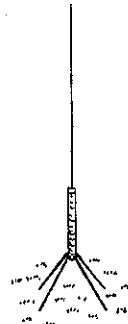


PUSH BUTTON SWITCH
 IG-7..... 90¢
 For use as firing switch. Normally open (off). Mounts in 3/8" dia. hole.

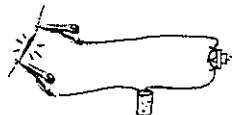
ELECTRIC IGNITION HARDWARE
 IG-9.....\$1.25
 If you have your own cable, this hardware combo will complete an electric ignition system. Kit contains two crocodile clips for battery hook-up, two microgator clips to attach to igniter wires, and one push-button switch. Includes wiring diagram.



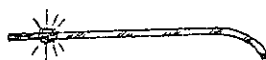
CABLE
 IG-8.....\$1.00
 15-foot coil of two-lead cable for use in electric ignition systems. Combine with Electric Ignition Hardware kit to make your own ignition set-up.



Sta-Put Launcher II
 IG-20.....\$1.00
 New version of sturdy launcher that stays put on breezy days. Legs press into earth for steady support. 1/8" dia. 15" length steel rod.



NICHROME WIRE
 IG-2... 6 feet 25¢
 Resistance wire used in ignition systems. 32-gauge wire (0080" dia.) for low power ignition systems (two size D batteries up to a six-volt lantern battery). Resistance of 10.55 ohms per ft. at 68°F.
 IG-3... 6 feet 30¢
 26-gauge wire (.0159" dia.) for electrical ignition with 12-volt firing systems such as a car battery. Resistance of 2.670 ohms per ft. at 68°F.



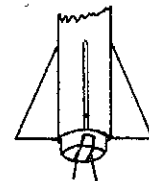
IGNITACORD
 IG-10.....45¢
 Dia. 1/16". Burn rate 8-10 seconds per foot. Five foot coil.

IGNITRITE *

is the answer to your electrical ignition problems; now you can have positive, reliable rocket engine ignition every time, be it a single engine or a cluster of up to four engines.

No rocket engine system is any better than the igniter so use the best, the IGNITRITE!

IG-1.....40¢
 (Kit to make one dozen)



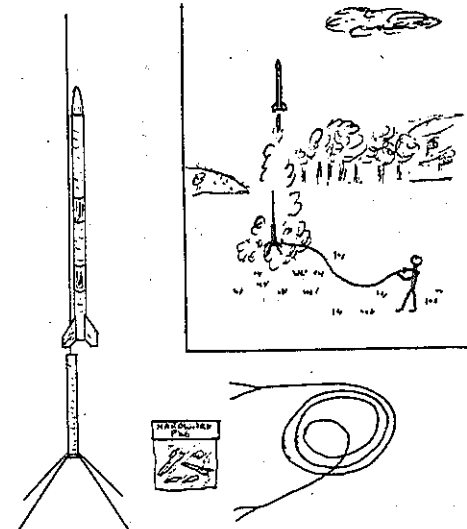
*Trademark
 (PAT. NO. 3,422,763)

For that first venture into model rocketry, try RDC's

FIRST FLIGHTER

SP-1....

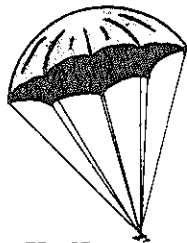
\$4.75



The **First Flighter** is a combination of standard catalog items especially selected and priced for an introductory offer to the beginning rocketeer.

Included:
 RAWHIDE rocket kit - See Page 3 for description
 three single stage engines (A5-3) - See Page 11
 Sta-Put Launcher, electric ignition hardware kit and cable (Cat. No. IG-20, IG-9, IG-8) described on this page.

Recovery

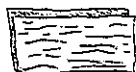


PARACHUTE KIT

R-1.....\$1.00

Instructions and material for several small chutes or one or two large. Includes:

- 36" x 36" square of light weight black plastic canopy material
- 4 snap swivels
- 40 3/4" dia. super adhesive discs
- 32 rugged nylon shroud lines 24" long (four sets)



PARACHUTE MATERIAL

R-6..... 40¢

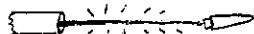
Square yard of easily visible black lightweight plastic



RECOVERY WADDING

R-5..... 25¢

Fire-resistant fibreglass wadding. Place between engine and recovery device to protect device from flash of ejection charge. Sufficient material for up to 30 flights.



SHOCK CORD

R-9.....3/20¢

Elastic cord connects nose cone and body tube. Absorbs shock on ejection of recovery device. 1/8 x 18"

Recovery of your model rocket is extremely important as well as lots of fun. After spending some of your money and time to build a fine model rocket, you will want to give it the handling and care that it deserves.

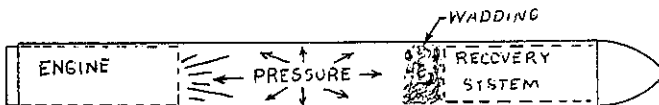
The decisions you make in preparing your rocket for flight will determine how successful recovery will be. Some factors you must consider before launching are:

1. Is it too windy to fly rockets today? Will they drift away never to be seen again? Don't be too impatient, wait for a calm day.
2. Should you use a parachute or streamer? Suggestion -- use streamers on small or light rockets. On larger rockets, use parachutes unless it is windy, then use extra long, or perhaps two, streamers, to cut down the drift.
3. Is it calm enough to use the more powerful engines on a parachute-loaded rocket or will it drift too far? Or should you use the less powerful engines so the rocket will not go so high.
4. Is the recovery area big enough so that your rocket won't drift on to a power line, housetop or get hung up in some trees. Your flying range should equal the altitude you expect to achieve; i.e., if you expect the rocket to go up 300 feet, then your flight area should have no major obstacles in at least 300 feet in all directions from the launcher.

Preparing the Rocket

Step 1. The engine must fit snugly in the body tube. If the ejection charge kicks the engine casing out, you goofed; it wasn't in tightly enough.

Step 2. The nose cone or adapter must fit loosely in the top of the tube. The ejection charge may not drive out the cone or adapter if it fits too tightly.



At the moment the ejection charge actuates, gas pressure is momentarily built up inside the body tube. The pressure will force open one of the ends of the body tube. Make sure it's the nose cone end. If the nose cone fits too snugly, sand with sandpaper until a loose fit is obtained.

Step 3. See that the shock cord is in good shape, not cracked or showing signs of excessive wear. It should be fastened tightly to the body tube.

Step 4. The screw eye must be firmly anchored in the nose cone with the shock cord securely fastened to the screw eye.

Recovery System Devices

Streamers -- These paper strips offer the greatest in simplicity and reliability for rocket recovery--and are the most economical.

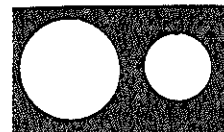
Parachutes--These add a little more glamour to the descent of a rocket, but, except for the heavier rockets where they are needed, chutes are more work to make and harder to package and load into the rocket.

STREAMER KIT

R-2..... 60¢

Equip your kits with RDC double safety streamers. Two nylon lines provide that extra safety margin. If hot ejection gases burn one line through you still have a back up second line intact. Snap swivel on end permits easy change-over for use on other rockets. Includes:

- 36" x 2" lengths of flame resistant paper. Three strips, one red, one blue and one yellow.
- 6 snap swivels
- 8 nylon lines, 24" long
- 20 3/4" dia. super adhesive discs



TAPE DISCS

R-3....1/2" dia.... 25¢
R-4....3/4" dia.... 30¢

Sheets of 30 pressure sensitive discs.



SNAP SWIVELS

R-7.....6/20¢

Use this to hook recovery device to nose cone. Makes it easy to change from chute to streamer, reduces shroud line twisting.



SCREW EYES

R-8.....3/15¢

Attach recovery systems to nose cones. 5/8" long

Revolutionary new means of protecting recovery devices. Simple but so effective.

These chute savers are designed especially for use with plastic parachutes but are also excellent with cloth or paper chutes, streamers.

Rolled from standard aluminum foil and crimped on one end, these chute savers are quickly and easily made when an RDC winding form is used.

The winding forms or mandrels are designed so that the finished "cup" makes a loose slip fit in the rocket body tube.

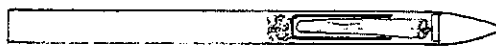
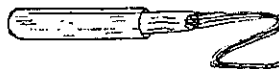
Roll your own on RDC's special form using ordinary household aluminum foil -- chances are Mom has a roll in the kitchen; if not, buy a roll (an almost lifetime supply) at your local grocery.

WINDING FORMS

(for chute savers)

R-10..... 15¢
(for standard 19mm tubes)

R-11..... 20¢
(for 28mm tubes)



New!

Try a

Chute Saver

Model Rocket Clubs

Technical Report No. 2

Model rocket clubs can, and should be, a lot of fun as well as being educational. It can be elaborate or simple--it should be whatever you want it to be.

ORGANIZING

1. Find at least three other persons who are interested in starting a model rocket club. A group can be organized with a minimum of four although five to 10 members would be even better. If you start a good club, your membership will grow rapidly.

Select a location and time to hold your first meeting. Let everyone who is interested know about the meeting so they can plan to be there. Ask one of your parents or another interested adult to assist you in starting the club.

2. Select a club name and temporary chairman to serve until club rules are written. This first meeting is very important--it may be your last if it is not done properly. There are several "must" items.

- a. Get everyone's full name, address and phone number.
- b. Set a definite time and place for the next meeting.
- c. Appoint a committee or group to write a constitution and by-laws (set of rules) under which the club will operate. This committee should present the suggested constitution and by-laws for approval at the second meeting, which should not be adjourned until a workable set is agreed on. See that committee has copy of "Tips For Constitution Committee" printed following this article.

THE ACTIVE CLUB

Now that you are an organized club, you are ready to go. A good club is an active club.

Just what your club activities will be depends on the interest of the individuals. Your club's main interest may be in competition or contest flying against other clubs or against fellow club members. Or your main interest may be in research--or photography--or something else again.

Whatever your interest, the next step is very important for any active club. You need a launch site and a launch schedule.

Launch sites are not always easy to come by and often the assistance of adults is helpful in acquiring a location. Some clubs establish permanent launch dates, such as every other Saturday morning, with Sunday afternoon as an alternate in case of bad weather on the first date. In winter, it is common to substitute club workshop sessions for launchings.

If you develop a real going club, you might desire to add other functions. A club photographer, for example, could take pictures of rocket launchings, club meetings, unusual rocket designs, etc. A club publicity officer would be helpful in reporting club activities to the local newspaper, maintaining a scrapbook of club activities, new articles, etc. Some clubs publish newsletters and exchange them with other rocket groups.

CLUB PROGRAM

Care and caution should be exercised in planning club activities and programs.

Make plans that fall within the club's budget and manpower to handle. Planning vast and expensive programs is easy but carrying out these plans is not. It is better to project modest programs that you can successfully accomplish than to plan elaborate programs that may end in failure. Failing to complete programs may result in decreased interest in the club and even in loss of membership.

Caution should be used in selecting programs so that the interests or desires of one or two members are not imposed on all the members. This is a quick way to destroy the club.

ALWAYS keep in mind that your club is composed of a group of individuals. Each one has his own particular interest in the field of rocketry. Each one should be allowed to work in this particular field whether or not it fits into a specific club program.

Remember the main feature of the club is that you all have a common interest in or related to rocketry. Thus your club should be a fellowship of individuals sharing a common interest but perhaps viewing that common interest in a number of slightly different lights.

SAFETY AND THE CLUB

Before your newly organized rocket club holds its first launch, the club must discuss safety and its importance in the enjoyment of model rocketry.

See a suggested Safety Code on Page 2 of this issue.

Each club member should be thoroughly familiar with the safety code. (Memorizing the club safety code might be a good requirement for membership.)

Your range safety officer should be elected or appointed before the first launch. This is the most important and responsible position in the club. At the launch site, the range safety officer is in complete charge of seeing that the safety rules are enforced.

Building and flying model rockets is lots of fun--doing this together with others, as a club, can make it even more fun.

Your club formula can be: FLYING+FELLOWSHIP = FUN!

TIPS FOR THE CONSTITUTION COMMITTEE

You may want to examine the Constitution of the United States or constitutions of various groups to which your parents belong. A constitution will cover the following in general terms:

Article I--Name (This organization shall be known as (club name) of (town or area))

Article II--Purposes (The basic purposes of this club shall be:

- A. to conduct educational activities so the membership can gain in knowledge of modern rocketry and its special technologies.
- B. to exchange this knowledge with other similar groups.
- C. to develop and encourage safe procedures in the study of rocket science and the fun of sport flying.
- D. any others you may add.)

Article III--Membership (List any special requirements such as age, parental permission, maximum number in club, etc.)

Article IV--Officers (How many, what types.)

Article V--Meetings (How often, headquarters.)

Article VI--Operations (Type of activities the club hopes to undertake, such as research projects, lectures, field trips, launchings, just categories not specific details here)

Article VII--Funds (How money will be secured, dues, donations, fund raising activi-

ties.)

Article VIII--Amendments (The constitution may be amended by a 2/3 vote of the full membership to be taken not earlier than the second regular meeting following the submission of the proposed amendments.)

BY-LAWS: These rules should cover, in detail, the following:

Section 1--Officers' duties.

Section 2--Meetings... (when, where, time, type, i.e., business, launch, lecture, etc.)

Section 3--Dues. (how much, when due, any fines?)

Section 4--Amendments to by-laws (how changed, such as by a majority vote of quorum of members when subject to be voted on has been announced at previous meeting.)

Section 5--Club Safety Code.

News from the Clubs

We'd like to carry a column on news from your rocket clubs. What is your group doing? Are you interested in hearing from other clubs who are in your area so joint meetings or contests could be scheduled?

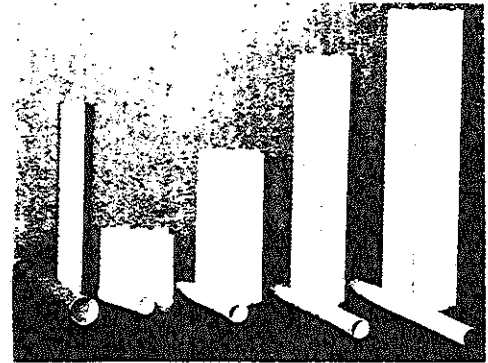
Send in your news, and clear photos, of unusual club activities and we'll include some in the next issue. If you want photos returned, enclose stamped, self-addressed envelope.

Design and Build Your Own Rockets With RDC Quality Parts

Body Tubes

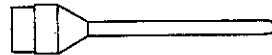
Spiral wound to give true roundness, white vellum wrap provides smoother exterior surface which will take a good finish.

	I.D.	O.D.	Length	Each
BT19-A	0.710"	0.750" (19mm)	2.75"	5¢
BT19-B	0.710"	0.750" (19mm)	6 "	10¢
BT19-C	0.710"	0.750" (19mm)	10 "	15¢
BT19-D	0.710"	0.750" (19mm)	12 "	20¢
BT28-A	1.070"	1.120" (28mm)	8"	20¢



Nose Cones

Rugged, durable machined hardwood. A good finish is easily obtained on this smooth, non-porous surface. Screw eyes do not pull out and recovery device ejects more easily with assistance from momentum of heavier cone.



Subsonic shaped cone, most efficient design for model rockets which travel at velocities well under the speed of sound.

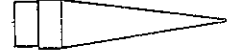
HNC19-A..... 25¢
(4" long)



Trans-sonic shaped cone, In professional rocketry, rockets designed to travel at the speed of sound would have a cone similar to this.

HNC19-B..... 25¢
(2.75" long)

HNC28-A..... 50¢
(2.125" long)



Supersonic shaped cone. You will find nose cones like this one on professional rockets designed to travel at above the speed of sound.

HNC19-C..... 30¢
(3.5" long)

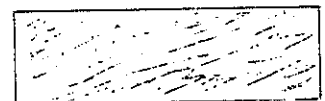
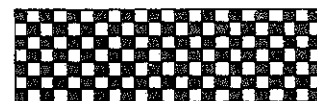
Number Coding
19 series--All parts, nose cones, engine stops, etc. with "19" in catalog number (HNC19 or ES19) will fit 19mm tubes.
28 series--All parts, nose cones, engine mounts, etc. with "28" in catalog number (HNC28 or EM28) will fit 28mm tubes.



MASKING TAPE
MT-1..... 15¢
12-foot roll of 3/8" width



FIN STOCK
FS-1..... 3/60¢
3/32" x 3" x 12" balsa sheet



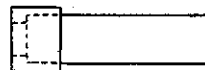
DECAL SHEETS
Big 4" x 11" sheets of fuel-proof decal from which hundreds of original designs can be cut. Distinctive trim for model rockets. Merely cut out desired design with scissors or hobby knife. Soak in water for about 30 seconds or until the decal slides freely from backing paper. Place in position, decal up, and slide paper from under it. Gently pat out air bubbles and be sure edges are tight to surface.

D-1..... 25¢
(Solid color. Indicate choice: red, white, blue, black, yellow, green, silver, orange, copper, gold.)

D-2..... 25¢
(Checkerboard. 1/4" squares. Indicate choice: red and white or orange and black.)

ENGINE MOUNTS
EM28-1..... 25¢

Hardwood ring with fiber sleeve especially designed to center and hold engine in BT28 body tube.



ENGINE STOPS
ES19-2..... 3/25¢

Hollow fiber bulkheads for positioning engines.

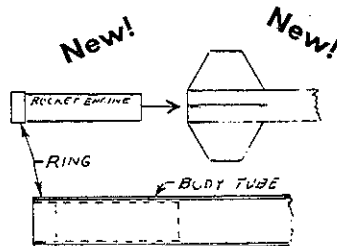


A number of the new models introduced this year by RDC use a new system for securing engines in place in the body tube.

The tough job of positioning and gluing engine bulkheads inside the body tube has been replaced by a new technique. The new system provides a smooth, unobstructed inner body tube that yields maximum

performance of the ejection charge, deployment of recovery system.

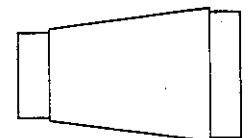
A narrow band is attached to the rear of the rocket engine. This ring butts up against the end of the body tube with the same engine-stopping result as the bulkhead.



There are a variety of ways that the thrust-stop ring may be attached to your engine:

- 1] A 5/16" long ring (supplied in kits using this system) is glued to end of engine.
- 2] Make your own engine stop by cutting an old body tube into 5/16"-length pieces.
- 3] Or you could employ this technique by placing about four wraps of masking tape around the rear of the engine casing.

ES19-1..... 12/15¢



TUBE ADAPTER
TA-1..... 50¢

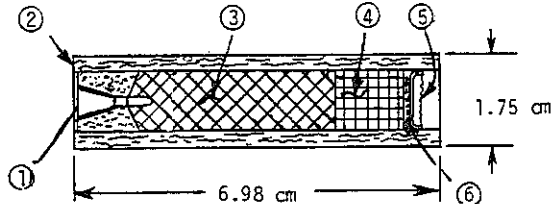
Lightweight balsa adapter for joining BT28 with BT 19 tubes 1.5" long.

Standard Engines

NOW YOU CAN SAVE \$ ON ROCKET ENGINES AT RDC! The power level of the engines has been adjusted to permit faster manufacturing and the lower production costs mean lower prices. Our production line has been streamlined to include an even more rigid quality control system, assuring you of the best possible engine at the lowest possible price.

TYPICAL MODEL ROCKET MOTOR CONSTRUCTION

Model rocket engines are small solid propellant rocket engines which are constructed of non-metallic materials. All chemical ingredients of a combustible nature are pre-mixed and ready for use.



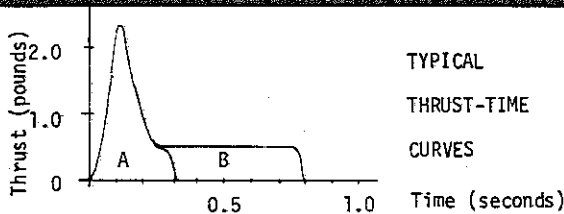
- 1 - Nozzle
- 2 - Paper Casing
- 3 - Propellant
- 4 - Delay Charge
- 5 - Adhesive Cap
- 6 - Ejection Charge

THREE BASIC MODEL ROCKET ENGINE DIVISIONS

Single Stage Engines--These contain delay and ejection charges. The delay charge is designed to operate the recovery system by initiating the ejection charge near the peak of trajectory.

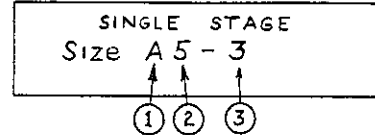
Booster Engines--These have no delay or ejection charges and are used to boost multi-stage rockets and ignite the stage above the booster stage. Some boost gliders are also designed to use a booster engine.

Upper Stage Engines--These are similar to single stage engines except they have delay charges of a longer burning time. The upper stage rocket will travel at a greater velocity than the single stage rocket due to speed imparted by the initial or booster stage. Because of the higher velocity of the upper stage, a longer "coasting" time is required to reach peak altitude.



MARKING

Rocket engines are classified and marked according to the power level. The engine classification and marking system is easy to understand and provides the rocketeer with useful information.



- 1] Power level--the total power output of the engine. In rocketeers' language, this is Total Impulse (average thrust x burn time).
- 2] Average thrust--given in newtons (4.45 newtons = one pound or one pound = 0.224 newtons).
- 3] Time Delay--the period from the end of measurable thrust to actuation of the ejection charge.

Total Impulse (I_t) is a measure of the total power or energy available in the rocket engine. If you want to know how powerful a rocket engine is, find its total impulse --peak thrust or thrust at any one given point during burning is not a measure of total power.

Example of Total Power

- Total Impulse/Avg Thrust/Burn Time
- Engine 1) 1.0 lb.-sec. = 1.0lb. x 1.0 sec. (1 x 1 = 1)
 - Engine 2) 1.0 lb. sec. = 2.0lb. x 1/2 sec. (2 x 1/2 = 1)
 - Engine 3) 1.0 lb.-sec. = 1/2lb. x 2.0 sec. (1/2 x 2 = 1)

A novice might think that engine No. 2 with two pounds average thrust is more powerful but as you can see, engines 1, 2 and 3 all have the same power or total impulse.

Total Impulse Classification

Symbol	Pound-Seconds	Newton-Seconds (metric system)
A	0.28 to 0.56	1.25 to 2.50
B	0.56 to 1.12	2.50 to 5.00
E	4.49 to 8.96	20.01 to 40.0

ROCKET ENGINE DATA

Engine Type	Total Impulse (lb-sec)	Total Impulse (newton-sec)	Peak Thrust (oz)	Average Thrust (oz)	Thrust Duration (sec)	Propellant Weight (grams)	Color Code	Delay Time ($\pm 15\%$)	Price Packet of three *
Single Stage									
A5-3	.32	1.424	35	16	.32	2.05	Black	3	65¢
B4-4	.64	2.85	35	13	.80	4.10	Black	4	75¢
Upper Stage									
A5-5	.32	1.424	35	16	.32	2.05	Purple	5	65¢
B4-6	.64	2.85	35	13	.80	4.10	Purple	6	75¢
Booster Stage									
A5-0	.32	1.424	35	16	.32	2.05	Red	0	60¢
B4-0	.64	2.85	35	13	.80	4.1	Red	0	70¢
B4-2	.64	2.85	35	13	.80	4.1	Black	2	75¢

SPECIAL - FOR USE WITH DRAGONFLY BOOST GLIDER, HEAVY SINGLE STAGE MODELS

*IGNITRITE igniters for dependab]e, instantaneous electric ignition are furnished with each engine packet.

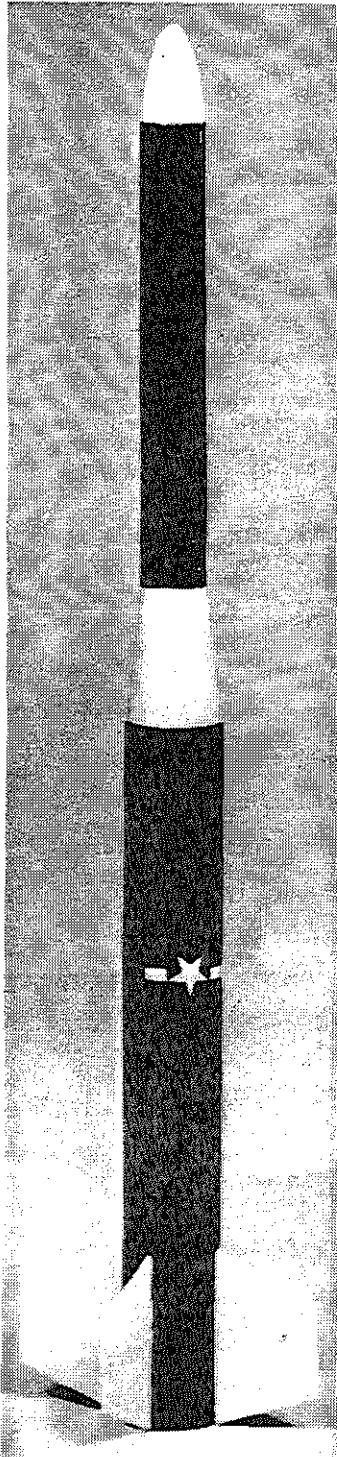
Full instructions included with each engine order.

Enerjet Power

A NEW DIMENSION IN MODEL ROCKET ENGINES - PACKS A BIG WALLOP IN A SMALL PACKAGE

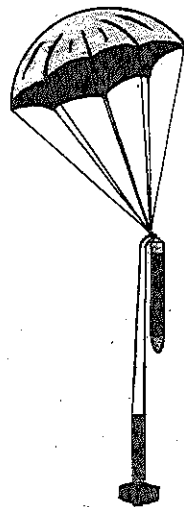
STARFLITE II

IS GO FOR 4,000-FT ALTITUDE WITH ENERJET-8 POWER!



An excellent rocket for the experimenter who is looking for that extra space for a payload and the power to lift it. Payload compartment has 1.06" inside diameter and is just over 7" long.

A large plastic parachute brings the STARFLITE II gently back to earth.



Because this model can go up to 3,000 to 4,000 feet and has parachute recovery, we suggest you have a very large recovery area if you expect to get this one back after a flight.

STARFLITE II KE-1..... \$3.95

Complete instructions come with kit. Engines are not included.

The STARFLITE II is not a beginner's kit. RDC recommends you have considerable model rocket experience before trying this one.

ANOTHER FIRST IN MODEL ROCKETRY!!!

FIRST High Energy Propellant in Model Rocketry in 1968

NOW FIRST mailable Type E model rocket engine

The ENERJET - 8 is not only the first model rocket engine to use a high energy space-age type propellant, it is the first of its power class to be approved for mailing through the U. S. postal service. No more expensive shipping charges for big engines. The ENERJET-8 is shipped prepaid.

NEW HIGHER THRUST

Our 1969 streamlining has affected the ENERJET-8 production line too. The engine has been redesigned to provide a higher peak thrust at ignition and a higher average thrust. The new high thrust levels are especially useful to those using heavy payloads or flying rockets near to the maximum weight (1.0 lb.) allowed in model rocketry.

Included with the ENERJET engine is a variable Time Delay-Eject (TDE) unit which lets you select the delay time you want to suit your particular need.

Power Performance

Heart of the ENERJET-8 is the RDC-developed composite propellant which delivers two and one-half times more power per unit volume than other model rocket engines. The propellant is case-bonded to the fiberglass engine casing. Nozzles and end plugs are of graphite.

An ENERJET-8 engine (Type E29-v) has the same power output as approximately 12 RDC standard "B" engines.

ENERJET-8 Specifications

Dimensions:
Length.....2.5"
Length, with TDE..4.5"
Outside diameter..1.125"

Weights:
Unloaded engine....37 grams
Propellant.....20 grams
TDE.....10 grams
TOTAL 67 grams

Performance:
Specific Impulse (Isp)..175
Thrust Time.....1.2 sec
Total Impulse.....7.7 lbs
Average Thrust.....6.4 lbs
(28.5 newton-sec.)
Peak Thrust.....8.0 lbs
(35.6 newton-sec.)

ENERJET-8 (Type E29-v)



ENERJET-8 with TDE



ENERJET-8 engine (Type E29-v)

\$2.50

Complete with TDE unit, igniter, instruction. Postpaid.

