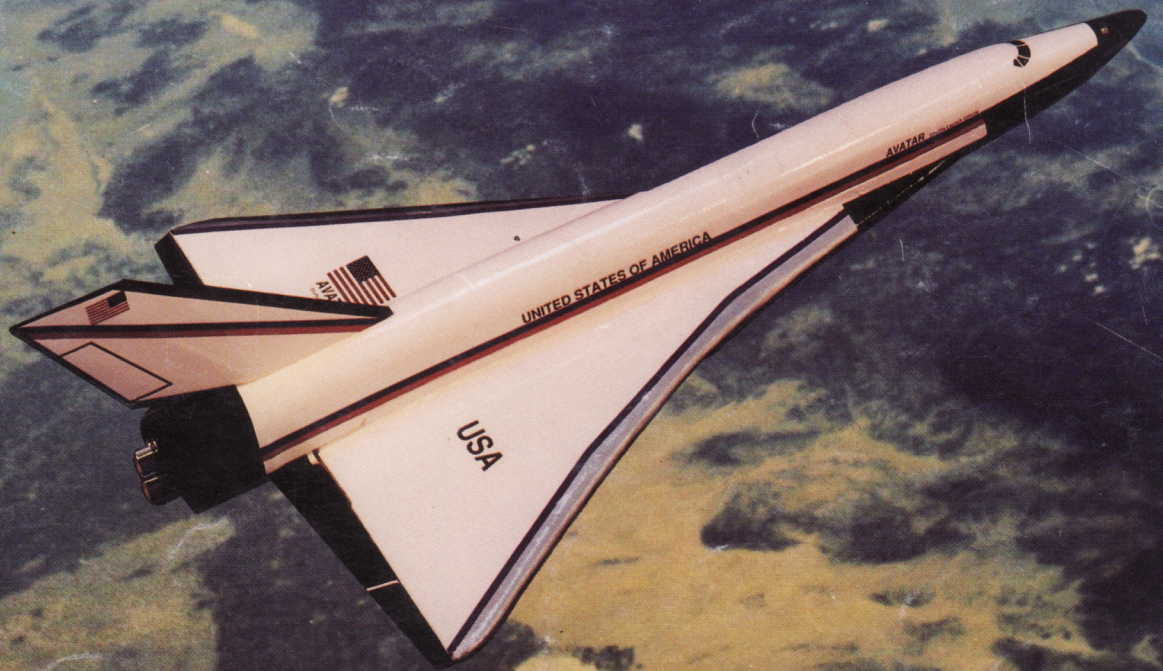
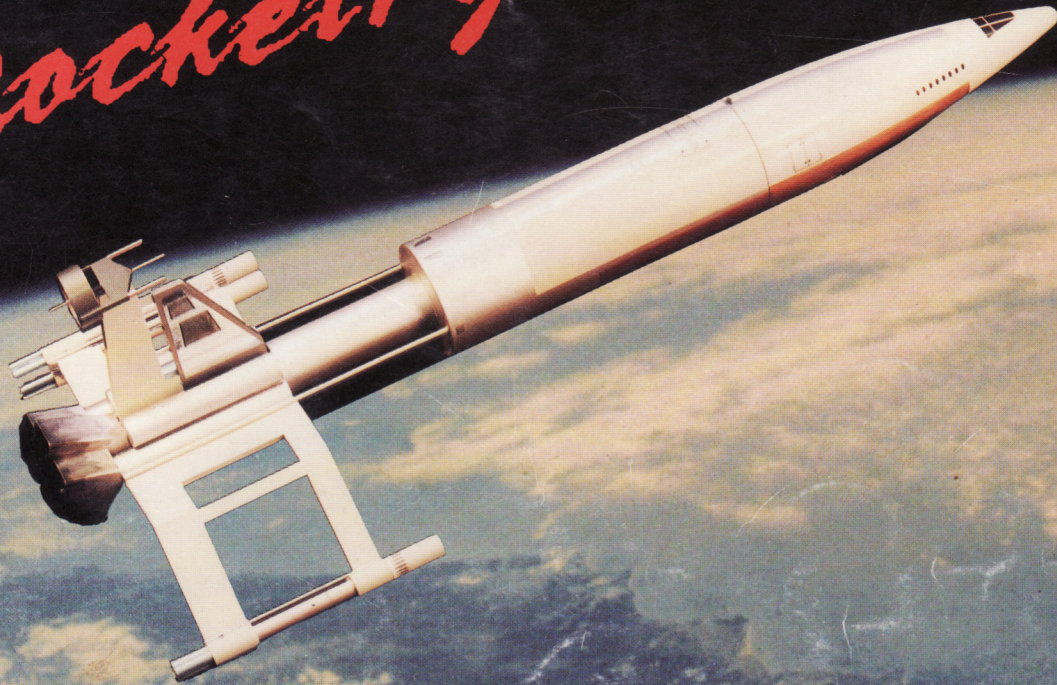


North Coast Rocketry



1992 Catalog \$3.00

From Your Friends at North Coast Rocketry



Hello!

Welcome to the exciting world of North Coast Rocketry! We are pleased to present our 1992 catalog of products for the advanced rocketeer. Last year was a year of phenomenal growth for North Coast Rocketry, and we hope that, with your ongoing support, our growth will continue.

We have added a number of challenging kits and products to the catalog this year. We hope that you who have been a customer in the past will find something new that intrigues you; for those of you new to high power and North Coast Rocketry, please enjoy!

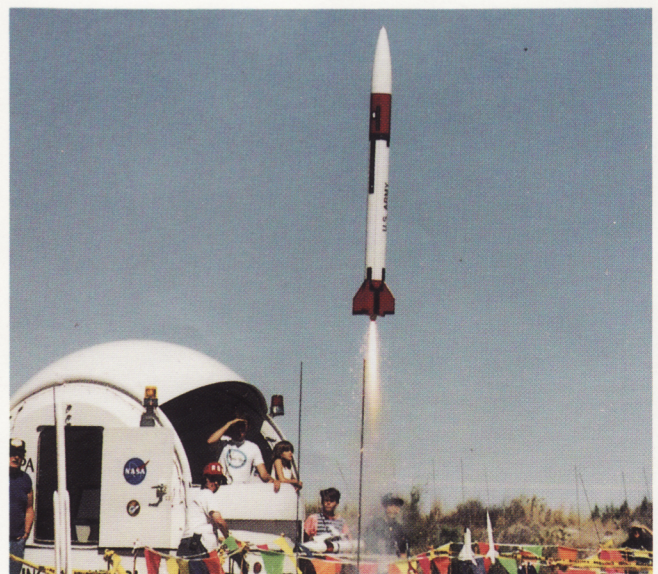
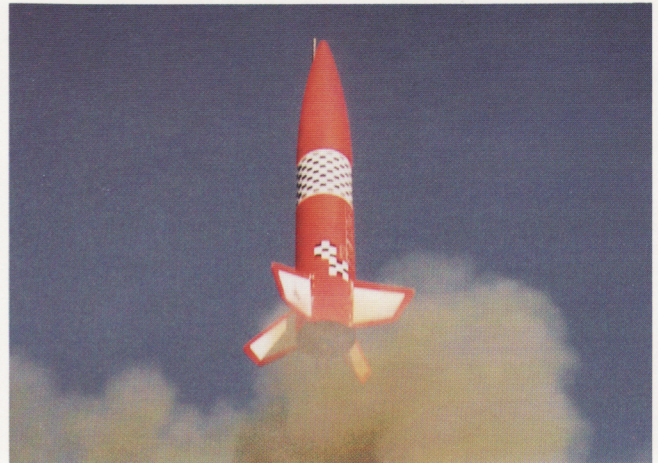
North Coast Rocketry was formed in 1983 by Chris Pearson and Matt Steele to provide a source for advanced rocketry kits, motors, and related products. At that time, the high power hobby was just taking off, and there just wasn't a source of high quality parts for E, F, and G powered models. Since then, North Coast Rocketry has grown from offering high power rocket components to offering a full fledged line of rocketry products. Unlike others, we've been around since the start of the high power rocketry movement. As a matter of fact, we're the oldest high power rocketry company still in business.

Our staff consists of a number of people across the country, many who are long time rocketeers. As you may note from our new address, we are moving to consolidate all of our operations in Utah. We hope this will provide faster and better quality service in the long run. All manufacturing, sales and shipping will be handled by Matt Steele, Robyn Steele, and Dan Kafun. Chris Pearson will continue to develop additional products and sales. Other staff members include Toni McKinnon (Parachute Production), Jimmy Williams (Launchers), Chas Russell (Consultant), and Doug Pratt (Consultant).

With your help and support, North Coast Rocketry has grown to be the largest mail order supplier of high power rocketry products in the world. No one offers more to the advanced rocketeer than North Coast Rocketry!

So, browse through the catalog. We hope you'll find something that interests you. Give us a call, or write us a letter, and keep 'em flying high!

Matt, Chris, Dan,
and the whole gang at NCR



Getting Started in High Power Rocketry

Patriot "Ready To Fly" Kit

All the components you need to get started flying!

Imagine this: A shiny white tripod sitting in the middle of a large, clear field. On it is a large scale model of the US Army's **Patriot** ground to air missile, poised for flight with the sunlight glistening off its realistic markings and insignia.

Suddenly there's a slight hiss, and then a bright flash! A powerful blast from the tail of the **Patriot** thrusts it into the air on a roaring column, of flame and smoke. Within seconds, it's a thousand feet in the air, and arcing over gently. The nose cone pops, and "There it is!" A bright orange parachute gracefully unfolds, and your **Patriot** floats gently to the ground, ready to fly again. There's just no thrill like the flight of a large rocket like the **Patriot** with a composite motor!

Here's what your **Patriot "Ready to Fly"** package includes:

- **Patriot High Power Rocket Kit**

The exciting 1/4 scale **Patriot** can soar to altitudes of 1000', yet builds easily in only a couple of nights! The kit features a bright orange 36" diameter parachute, realistic scale decals, precision die cut fins, a lightweight plastic nose cone, 1/4" diameter launch lugs, and detailed building instructions.

- **Modular Launch Pad**

The easy-to-set up, easy-to-use Modular Launch Pad is big enough to handle high power rockets like the **Patriot**. The sturdy tripod design is stable on all surfaces, and the white PVC legs require no painting or finishing. The Modular Launch Pad features a 1/4" diameter, 4 foot long rod to guide your **Patriot** skyward, and a pivot assembly that makes it easy to load and adjust the rocket while on the pad.

- **The LC-2 Launch Controller**

The LC-2 Launch Controller has 30' of cable to allow you to stand a safe distance away to witness the impressive flights. Also included is a safety interlock (so the rocket cannot be launched until the interlock is inserted), an arming light (to tell you that the rocket is ready to fire), and two heavy duty battery clips to connect to your car battery.

- **Two NAR Certified Rocket Motors**

These motors will send your **Patriot** hundreds of feet into the sky, yet they are safe to handle and store. After boosting the rocket into the air using the same type of composite propellant as in the Space Shuttle SRBs, a thick white delay smoke allows you to see the rocket as it coasts to peak altitude. When it hits apogee, the motor fires an "ejection charge" that separates the nose cone from the body, and blows the parachute out of the body tube. Each motor comes with its own igniter.

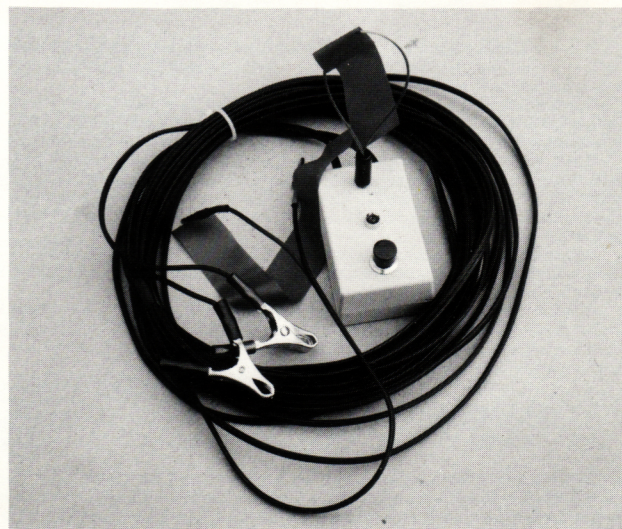
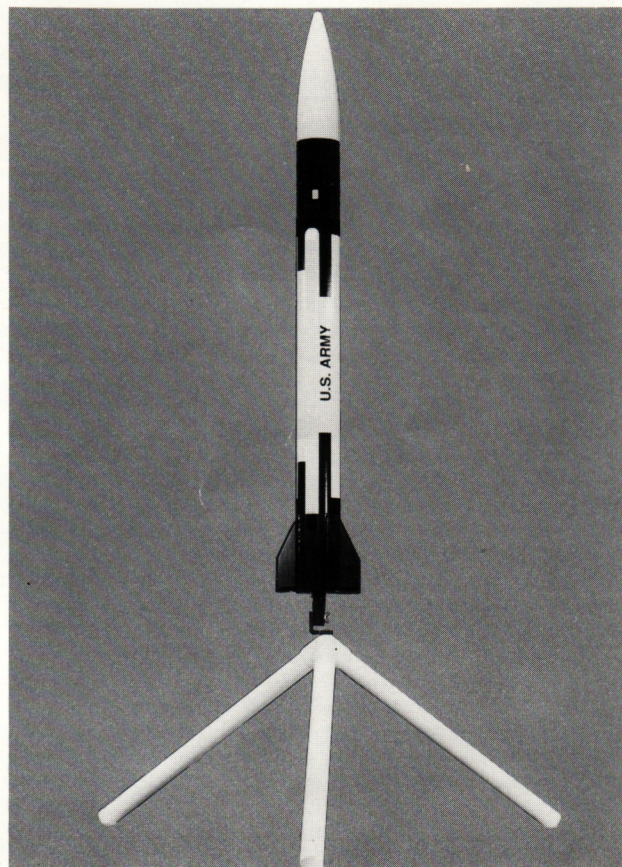
- **Recovery Wadding**

Heat-resistant fiberglass wadding prevents the hot gasses of the ejection charge from singeing the parachute. Enough for two flights is included.

- **"An Introduction to High Power Rocketry"**

This tech report will bring you up to date on how to build and fly high power rockets. An invaluable aid to get you ready to fly.

Just add glue, paint, and a few nights of assembly time, and you'll be ready to go! If you were to buy this package separately, it would cost \$150.00. But, the package price is only \$119.95!



NCR Patriot "Ready to Fly" Kit
Order# RTF-1 \$119.95

General Information

NATIONAL ASSOCIATION OF ROCKETRY

The National Association of Rocketry (NAR) is the official non-profit national organization for consumer rocketry. The NAR establishes safety rules, certifies records, publishes technical literature, sponsors contests, and promotes model rocketry.

North Coast Rocketry is a big supporter of the National Association of Rocketry. As a matter of fact, Matt is an elected Trustee in the Association. NCR also helps sponsor national meets, conventions, and international contests.

Your membership in the NAR entitles you to a one year subscription to *American Spacemodeling Magazine*, a Membership Decal, and a NAR Technical Services catalog. Also available is personal and club liability insurance. And, you can have the fun of meeting other NAR members through local, regional and national level events.

The NAR has developed a progressive high power rocketry certification program that allows it's members to purchase H class motors and higher. **To join the NAR, write to:**

National Association of Rocketry, 1311 Edgewood Dr., Altoona, WI 54720 or call (800) 262-4872.



TRIPOLI ROCKETRY ASSOCIATION, INC.

The National Organization of Advanced, Non-Professional Rocketry

Tripoli is a rocketry organization for advanced, non-professional rocketry. Tripoli membership will entitle you to a subscription to the *Tripolitan* journal. Once you are a member, you earn the privilege to build and fly high power models by having another Tripoli member or official "certify" that you have the skills and experience necessary to fly these larger models. Once you have become certified, you may buy the H class motors and larger.

North Coast Rocketry also actively supports Tripoli. Chris Pearson has been awarded a lifetime membership on the basis of his early support and efforts on behalf of the organization.

Tripoli also sponsors local and national level events. These are often quite spectacular, with many high powered birds being flown in a single day. They are often worth attending, even if you just want to watch. **To join, contact :**

Tripoli Rocketry Association, P.O. Box 40475, St. Petersburg, FL 33743

HOW TO USE THIS CATALOG

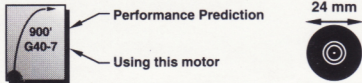
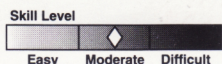
Before you browse any further, take a quick second to look over this page. It will help explain some of the things you'll find further on. Each of our kits have icons that assist you in selecting the proper kit for you.

First of all, there is a skill level system. This should help you gauge the level of difficulty that each kit presents. Each kit has a "skill level indicator", with the pointer indicating the model's relative degree of difficulty to build and fly within the difficulty group.

Easy: If you've flown Estes kits in the past, particularly D12 powered models, then these models should be fairly easy to build. The only different techniques used in these kits are the substitution of epoxy, plywood, ripstop nylon, and elastic for the materials and components that Estes usually uses. As a general rule, "Easy" kits should be the first ones you purchase from NCR.

Moderate: These kits represent more challenge than the "Easy" kits. Typically, these equate to Estes Skill Level 4 kits. They require familiarity with basic high power building skills in order to build successfully.

Difficult: These kits require skills not normally learned by building and flying Estes kits or other model rockets. Examples include composite motor clusters, radio control, built up fins, added detailing, and Class B motor (i.e., H, I, J) powered rockets. These kits are recommended for experienced modelers only.



Secondly, we've tried to answer the age old question of "How high do they go?". Each kit has an "altitude indicator" that presents the performance prediction of that model with certain baseline motor types we sell. These are only predictions, though, so your actual altitudes may vary. These predictions will make it easier to pick the model that best suits your flying

What to Expect...

If you have never built a **North Coast Rocketry** kit before, you'll find a number of differences between our kits and other rocket kits. In general, our kits are designed to be stronger and tougher than others, so you can use high power E, F, and G motors in them time after time. Below is a look at the individual components that make a North Coast advanced rocketry kit unique.

• **Nose Cone:** North Coast offers a series of plastic nose cones for it's airframe tubes. It is strong, durable, and yet very safe in high power rockets.

• **Payload Section:** Some kits from NCR feature a large, spacious payload section. Common payloads flown in NCR kits are the ALT-M-1 Altitude Data Logger, and the XMTR-1 Transmitter.

• **Bulkhead:** NCR bulkhead kits consist of a tube coupler, a screw eye, and a plywood insert. These bulkheads seal off the payload section. They are lighter and stronger than balsa bulkheads.

• **Screw Eyes:** These are similar to standard rocketry screw eyes, but considerably larger in size.

• **Shock Cord:** One of the keys to flying models time after time is having a shock cord that won't break after a few flights. North Coast uses a braided elastic cord, rather than rubber, for all of its kits. The elastic is stronger, won't burn as easily, and doesn't hang up on the inside of the tube.

• **Parachute:** All of our parachutes are made of ripstop nylon with heavy duty shroud lines sewn into the parachute for strength. Stripping a line is next to impossible!

• **Launch Lug:** Heavy duty, large diameter lugs are required for big rocket kits. Most kits come with 1/4" diameter lugs standard. The 2.125" motor kits use 1/2" lugs.

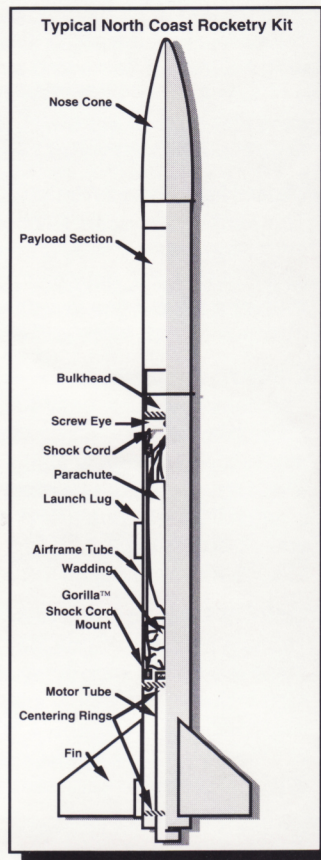
• **Airframe Tubing:** NCR airframe tubes are thick wall, heavy duty tubes that won't crimp in flight, and won't dent on the ground. These tough tubes are one key reason why you can fly an NCR kit again and again.

• **Gorilla™ Shock Cord Mount:** An industry exclusive! This mount is stronger, more reliable than other shock cord mounts. It consists of aircraft cable anchored to the centering ring.

• **Centering Rings:** Made of either Duraply or aircraft plywood, these are precision rings made to fit motor tubes to airframe tubes.

• **Fins:** Made from 3 ply birch plywood (generally 5/32" thick), these fins are strong enough to fly on high power rockets. They also are easier to sand and finish than balsa.

NOTE: Because of reliability problems, NCR kits do not use ejection baffles. We have found fiberglass wadding to be far superior.



field, and they should give you some insight as to the relative performance of similar models. The altitudes were calculated using a specially written prediction program. The values were then rounded off to the nearest 50 feet due to the variances between models and motors.

We've also tried to make it clear what type of motor goes into what type of model, with six diameters of rocket motors now available on the market. Below are the motors we use in our kits.

13 mm (.5" diameter x 1.75" long) These are the Estes "Mini" engine series, and are used in our competition series. Motors of this diameter fit our CBT-50 tube.

18 mm (.690" diameter x 2.75" long) These are the "standard" size motors. Currently, Estes manufactures 1/2A, A, B & C black powder propellant motors in this size. Aerotech manufactures composite propellant D & E motors in this size. Motors of this diameter fit our BT-7 and CBT-74 tube.

24 mm (.945" diameter; lengths from 2.75" to 4.83") This is the Estes "D12" size. Estes makes black powder D motors, while Aerotech makes E, F, & G composite propellant motors in this size. Motors of this diameter fit our BT-9 tube.

29 mm (1.125" diameter; lengths from 3.25" to 10.50") This is the standard "high power" motor size, first popularized by Flight Systems, Inc. Aerotech manufactures composite motors in the F, G range, and H motors in this size. Motors of this diameter fit our BT-11 tube.

1.50" (length varies from 7.50" to 13.0") Aerotech produces a large variety of H and I motors in this diameter. Motors of this diameter fit our BT-15 tube.

2.125" (length varies from 5.0" to 12.875") Aerotech makes I, J and larger motors in this size. Motors of this diameter fit our BT-21 tube.

Please be aware that the weights listed in the catalog are typical weights only. Your kit or part may vary due to a number of factors.

NEW North Coast Radio Controlled Rocketry Kits for 1992!

AVATAR

Based on a second generation shuttle design, the **AVATAR** is a rocket glider designed for radio control or free flight. It is perfect for the first time RC flyer, as it goes together very easily, and flies straight and true.

The **AVATAR** was designed by Del Signore and Jim Wilson of Gemini Hobby Products. It has been further refined by Doug Pratt and Matt Steele.

The **AVATAR** makes it easy to transition rocketeers from sailplanes and RC hand launch gliders into radio controlled booster gliders and rocket gliders. It is not the ultimate thermal soarer--the design and construction materials allow it to be more forgiving for your first flights (and landings). While the **AVATAR** isn't a competition ship, you'll find it to be a lot of fun, and fairly easy to build and fly. The delta wing planform and long nose section helps the boost phase stay straight and true. As a matter of fact, if the **AVATAR** is built and aligned carefully, it should fly "hands off" on boost.

The glider is also strong enough to boost under the power of E15 motors, or the less expensive E18 Aerotech 24mm reload kit. For even higher flights, the F40 reload kit is recommended.

The fuselage, which is easily detached, was designed for Futaba mini radio gear, and if you own that type of gear, you'll be delighted by the ease of installation! If you choose to use other mini gear, the **AVATAR** easily accommodates that as well.

Only two channels are required for the **AVATAR**. The **AVATAR** uses elevon control, mixing the elevator and aileron channels for control. Both mechanical and electronic mixing can be accommodated.

The **AVATAR** adds a new dimension to rocketry!

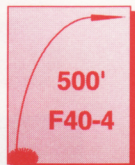
Recommended motors:

E11-3, E15-4, E18-4, E30-4, F12-3, F24-4, F39-6

Length:	38.0"
Wingspan:	24.0"
Weight (without radio):	14.0 oz
Catalog #	K-88
Price	\$49.95

Note: The Avatar and Avatar Arrow are also available on a custom built basis (with or without radio). Call for pricing and delivery.

Skill Level



24 mm



AVATAR ARROW

If you want an RC glider, but are unsure of your abilities on booster, here's the model for you. The large booster vehicle provides straight up flights without needing to touch the controls. When at apogee, a flick of the elevator separates the two vehicles. The **AVATAR** returns to earth under radio control, the Arrow booster is recovered separately on its own 24" parachute. This package includes the **AVATAR** kit, as well as booster vehicle and attachment hardware.

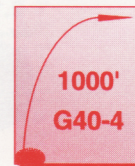
Recommended motors:

F25-4, F50-4, G40-4, G80-4

Length:	78"
Wingspan:	24"
Weight (w/o radio):	25 oz
Catalog #	K-89
Price	\$79.00



Skill Level



29 mm



NEW North Coast High Power Rocketry Kits for 1992!



HOBGOBLIN

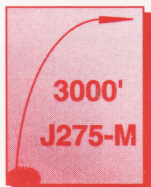
The **HOBGOBLIN** is a monster version of the old Estes Goblin kit. The **HOBGOBLIN** features through-the-wall fins, custom graphic decal patterns, a 60" parachute and a 2.125" motor mount. The kit features the new BT-8 body tube, though-the-wall 1/4" plywood fins, heavy duty Gorilla Shock Cord Mount, 1/2" launch lugs, and our new "Posi-Lock" motor retainer system. Surely Vern Estes never dreamed about this!

Recommended motors:
I357-M, I154-M, I211-M, I284-M,
J180-M, J275-L, J460-L, K550-L

Length: 60"
Diameter: 8.0"
Weight: 9 lbs.
Catalog # K-90
Price \$169.95

*Please allow 4-8 weeks for shipment;
kits are custom built for each order.*

Skill Level



KORONA

The **KORONA** is one of the largest rocket kit available today! The **KORONA** is the flagship of the NCR kit line. The kit uses our new BT-8 body tube, with an outside diameter of 8". Power is provided by a core 4" or 2.125" motor mount (your choice). The kit features though-the-wall 1/4" plywood fins, heavy duty Gorilla Shock Cord Mount, 1/2" launch lugs, and our new "Posi-Lock" motor retainer system. This bird adds up to BIG fun!

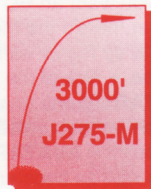
Recommended motors:

J180-S, J275-M, J460-M

Length: 106"
Diameter: 8.0"
Weight: 10 lbs.
Catalog # K-91
Price: \$199.95

*Please allow 4-8 weeks for shipment;
kits are custom built for each order.*

Skill Level



D REGION TOMAHAWK

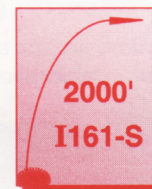
The NCR **D Region Tomahawk** is the impressive kit you've been waiting for! This majestic model of NASA Round 12.08 GT stands over seven feet tall! Featuring an easy to paint payload section, 48" parachute recovery, plastic nose cone, and through-the-wall fins, the D Region flies to altitude on 1.5" motors. An impressive kit to add to your collection!

Recommended motors:

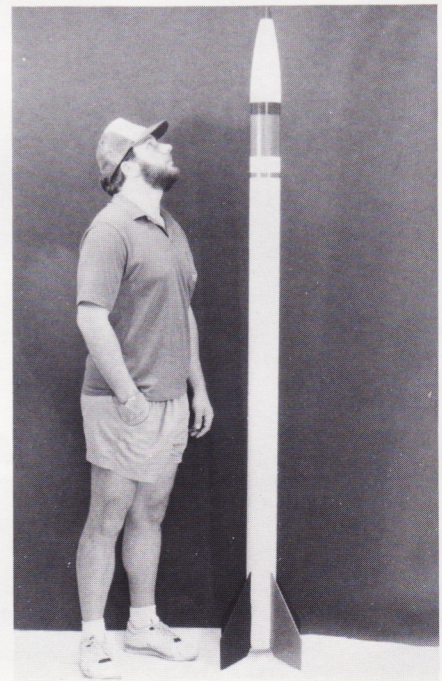
H73-S, H123-M, H242-M, I112-S,
I161-M

Length: 86"
Diameter: 4.0"
Weight: 36 oz
Catalog # K-92
Price: \$69.95

Skill Level



**Available in
August 1992**



NEW North Coast High Power Rocketry Kits for 1992!

QUASAR NG

The NCR **QUASAR NG** is the "Next Generation" Quasar from the old Centuri days. This version is updated for the 1990's with through the wall fins, plastic tail cone and nose cone, custom decals, and outboard motor pods that can accommodate MRC FX smoke motors if you desire (up to six FX motors per flight!) It's rugged construction and futuristic "Buck Rogers" styling will appeal to novice and experienced modelers alike.

Recommended motors:
F25-4, F50-4, G40-7, G80-7

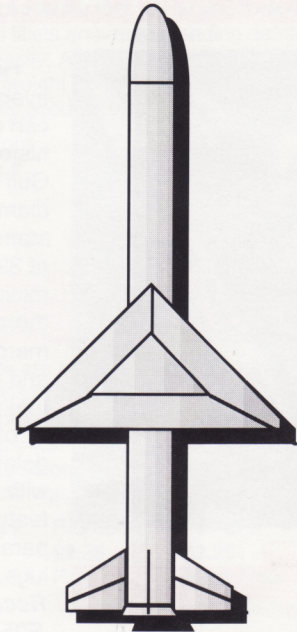
Length: 43"
Diameter: 4.0"
Weight: 22 oz.
Catalog # K-93
Price: \$59.95

BLACK HOLE BETTY

A futuristic concept ship for the advanced modeler who loves detailing, the **Black Hole Betty** is sure to get a lot of second looks. This unique bird features advanced construction techniques using laminated plastic, plywood and balsa to achieve a unique effect. This is a fun rocket to build and paint, and it flies arrow straight. For all the "modelers" out there, let your imagination run wild!

Recommended motors:
F25-4, F50-4, G40-7, G80-7

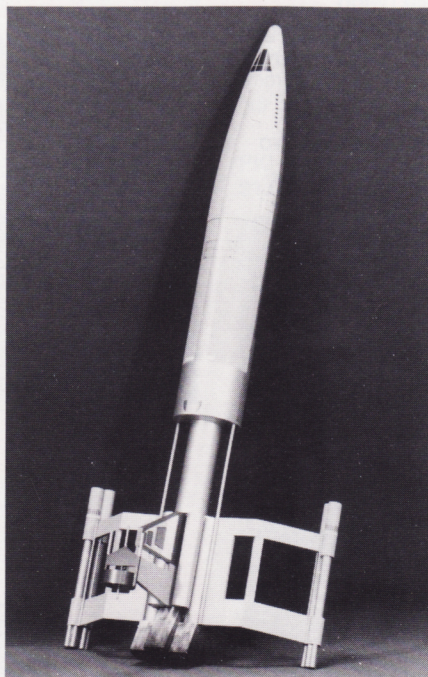
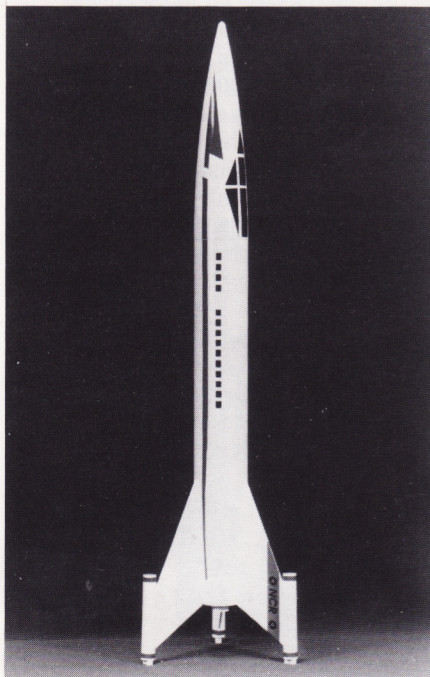
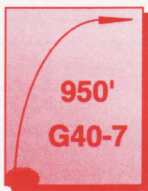
Length: 48.0"
Diameter: 4.0"
Weight: 24 oz
Catalog # K-94
Price \$59.95



Skill Level



Skill Level



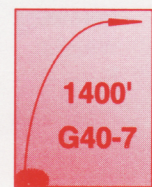
OSC PEGASUS®

This is an exciting scale model of Orbital Science Corporation's Pegasus launch vehicle. The OSC Pegasus is the first booster developed exclusively for commercial payload launches. Our exclusive kit, based on official blueprints, features built up plastic fins and wings for easy finishing and accurate profiles. This challenging kit will acquaint you with some advanced scale building techniques. Two color decals and a clear plastic fin are also included. Recovery is by a 24" ripstop nylon parachute.

Recommended motors:
F25-6, F50-6, G40-7, G80-7

Length: 32"
Diameter: 2.70"
Wingspan: 14.25"
Weight: 16 oz
Catalog # K-95
Price \$49.95

Skill Level



North Coast Rocketry Kits

PATRIOT



Here's a model that everyone will recognize! You can own a 1/4 scale of this historic lifesaver of the Persian Gulf War. Based around our 4" diameter tube, this big bird stands 54.5" tall and weighs in at 32 oz. It's low drag design minimizes weathercocking, yet there is plenty of stability margin. Three decal sheets and die cut fins are included to make building a snap. You can fly off small fields with the short delay F motors, or go for broke with G power! The Patriot features a ripstop nylon 36" parachute and 1/4" dia. launch lugs.

Recommended motors:
F25-4, F50-4, G40-7, G80-7

Catalog # K-85
Length: 54.5"
Diameter: 4.00"
Weight: 32 oz
Price: \$49.95

Skill Level



29 mm



PHANTOM 4000

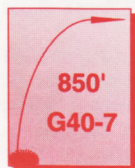


The **Phantom 4000** is the perfect BIG rocket for becoming familiar with high power rocketry. Great for demonstration flights with it's slow, realistic lift offs, and graceful recovery, this bird is a must! The **Phantom 4000** is our most popular kit. No one will think this is a toy when you bring it on the launch field! Recovery is by a 36" bright orange ripstop nylon parachute and the Gorilla™ heavy duty shock cord system. Includes our new roll pattern decal sheet.

Recommended motors:
F25-4, F50-6, G40-7, G80-7

Catalog # K-24
Length: 50"
Diameter: 4.00"
Weight: 25 oz
Price: \$39.95

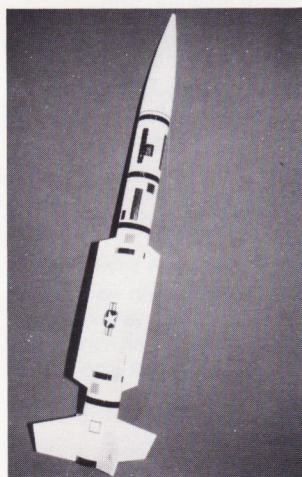
Skill Level



29 mm



SA-14 ARCHER XL



The **SA-14 Archer XL** is patterned after a prototype ship-to-air missile being developed for NATO. The large size and authentic detailing are certain to attract a lot of attention. The **SA-14 Archer XL** includes balsa strakes, two decal sheets, and die cut fins. Easy to assemble, and spectacular in flight! The **SA-14 Archer** features a ripstop nylon 36" parachute and 1/4" dia. launch lugs.

Recommended motors:
F25-4, F50-4, G40-7, G80-7

Catalog # K-76
Length: 62"
Diameter: 4.0"
Weight: 30 oz
Price \$49.95

Skill Level



29 mm



PHANTOM 4000HD



The **Phantom 4000 HD** is our response to those of you who asked for more power! Designed for the NCR 1.5" or 2.125" motor tube, the **Phantom 4000 HD** features through the wall fins for extra strength. This kit is perfect for your confirmation/certification flights to qualify for higher power rocket motors. Includes our new roll pattern decal sheet.

Recommended motors:
Type A: H73-M, H123-M, H242-M, I112-M, I161-M, I154-M, I211-M
Type B: J180-M, J275-L

Catalog # K-31A (1.50" mm)
Catalog # K-31B (2.125" mm)
Length: 56"
Diameter: 4.00"
Weight: 36 oz
Price: \$54.95

Skill Level



1.50" 2.125"



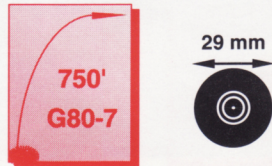
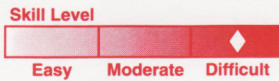
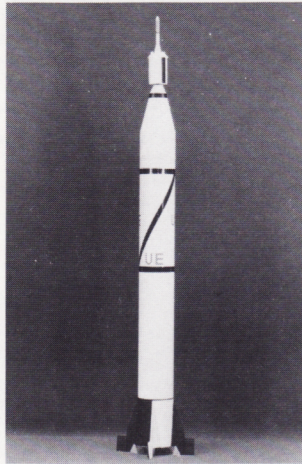
North Coast Rocketry Kits

JUNO-1

The **Juno 1** is the historic vehicle that launched America's first satellite, Explorer 1, into orbit. The NCR kit was designed in honor of the 20th anniversary of the Explorer 1 launch. This is a kit for experienced modelers, as it includes built up plastic fins, a multiple section nose cone, and a number of scratch built parts. The NCR **Juno-1** is an impressively sized model of this historic vehicle.

Recommended motors:
G40-4, G80-4

Length: 47.75"
Diameter: 4.0"
Weight: 37.0 oz
Catalog # K-58
Price: \$69.95



VIKING

The NCR **Viking** is one of our kits that is really generating a lot of excitement. A big 4" diameter main vehicle provides plenty of payload and parachute space, while the two strap on motors add extra kick. If you've been waiting to move up in model size, this is the model for you! Features a 36" ripstop nylon parachute, 1/4" launch lugs, and our new roll pattern pattern decal sheet.

Recommended motors:
Core: G40-4, G80-4 (single motor only)
Outboard Motors (2): F25, F50, G40, G80

Length: 67"
Diameter: 4.0"
Weight: 46 oz.
Catalog # K-48
Price \$59.95

Also available with optional 1.5" motor mount at no additional charge. Order **K48A**.



MAGNA

The NCR **Magna** is an experimental rocket designed with the experienced rocketeer in mind. The model's large size makes it easy to track and recover, yet this baby really gets up there. The dramatic slow lift off will impress everyone. It is a workhorse model, capable of achieving great altitudes, even with large payloads. Includes our new roll pattern decal sheet, 3/8" and 1/2" dia. launch lugs and a 48" ripstop nylon parachute.

Recommended motors:
J180-M, J275-7
With 1.5" motor mount adapter:

H123-S, H242-S, I 112-M,

I 161-M, I 154-M, I 211-M

Length: 84"
Diameter: 4.0"
Weight: 65 oz.



ORION

The NCR **Orion** is an advanced rocket designed for the professional experimenter and rocketeer.

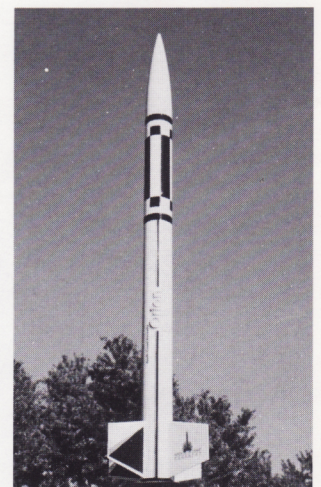
Experience one of our top-of-the-line kits! Super large payload section and heavy duty construction are perfect for research flights. Includes our new roll pattern decal sheet, 3/8" and 1/2" dia. launch lugs and a 48" ripstop nylon parachute.

Recommended motors:
J180-M, J275-7
With 1.5" motor mount adapter:

H123-S, H242-S, I 112-M,

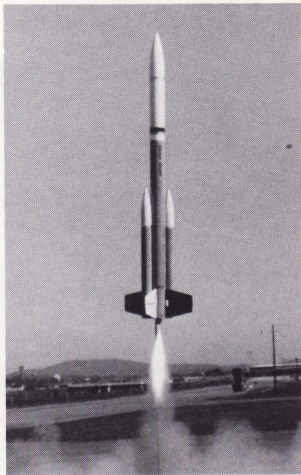
I 161-M, I 154-M, I 211-M

Length: 67"
Diameter: 4.0"
Weight: 60 oz.
Catalog # K-51
Price: \$69.95



North Coast Rocketry Kits

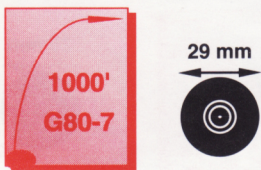
BRIGHTHAWK



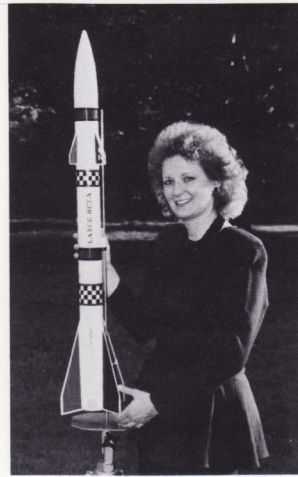
Designed to be a scale "look alike", the NCR **Brighthawk** features 100 small screws to add the final detailing touch to an impressive kit. The model includes a detailed payload section, fin sections, a special decal sheet and strap on booster segments. One of our most popular kits, this is sure to be the centerpiece of your collection. Easy to build and fly. Recovery is by a 36" bright orange ripstop nylon parachute. Includes plastic nose cones for both core and strap ons.

Recommended motors:
F50-4, G40-7, G80-7

Length: 53"
Diameter: 2.70"
Weight: 32 oz.
Catalog # K-33
Price: \$49.95



LANCE BETA



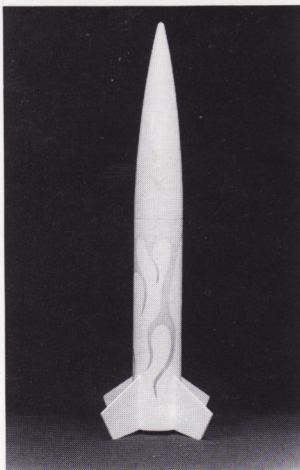
The **Lance Beta** represents a future tactical nuclear missile for use across the world. Both a bright development test paint scheme and an operational olive drab paint scheme are featured, as well as realistic, detailed decals. The **Lance Beta** also features a large payload section that is perfect for beacons such as the XMTR-1. The **Lance Beta** is impressive both in the air and on the ground. Features a 36" ripstop nylon parachute, 1/4" launch lugs and a plastic nose cone.

Recommended motors:
F25-6, F50-6, G40-10, G80-10

Length: 45"
Diameter: 2.70"
Weight: 22 oz.
Catalog # K-47
Price: \$34.95



BIG BRUTE



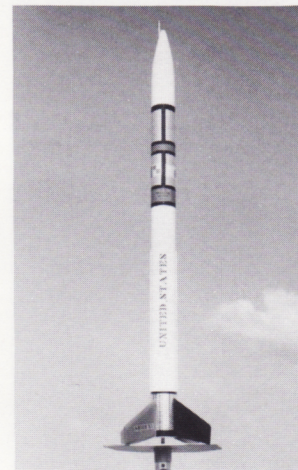
The perfect high power demo rocket! This rugged sport model can be flown nearly out-of-sight on F motors, or punch it into orbit on a G! The **Big Brute** features slow, realistic take-offs. Recovery is by colorful 24" rip-stop nylon parachute. If you are looking for an impressive flying model, but have a small field, this should be perfect! This model includes a plastic nose cone, custom decals, and 1/4" launch lugs.

Recommended motors:
F25-6, F50-6, G40-10, G80-10

Length: 35"
Diameter: 4.0"
Weight: 16 oz
Catalog # K-53
Price: \$29.95



AIRES XL



The **AIRES XL** features sounding rocket styling for the budget conscious rocketeer. Designed for 24 mm motors, the **AIRES XL** kit includes built up plastic fins (with reinforced through the wall mounts), plastic conduits, custom decals and a silver monokote trim sheet for the payload section. Recovery is by an 18" ripstop nylon parachute. Explore advanced modeling and flying concepts with **AIRES XL!**

Recommended motors:
D12-3, D12-5, E15-7, E30-7

Length: 42.25"
Diameter: 1.88"
Weight: 10.0 oz
Catalog # K-73
Price: \$24.95



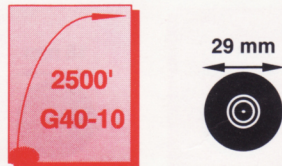
North Coast Rocketry Kits

CORPORAL

The NCR **Corporal** is a sport scale model of one of the USA's first battlefield ballistic missiles. Experience realistic liftoffs with F25 power! Never before offered in a model rocket kit, this design will be unique in your collection. Decals included to match the Corporal's flight test paint scheme. The Corporal is a great sport model as well. The kit includes balsa conduit covers and realistic decals.

Recommended motors:
F25-9, F50-9, G40-10, G80-10

Length: 41.5"
Diameter: 1.88"
Weight: 13 oz
Catalog # K-41
Price: \$29.95

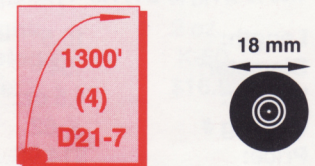
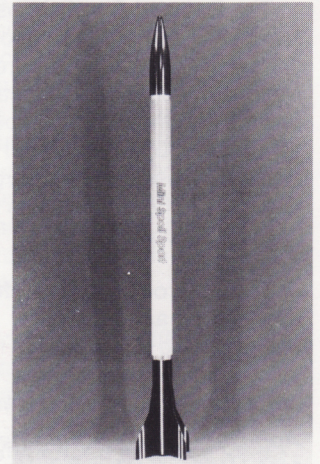


MINI SPOIL SPORT

A fun kit for those who like to use 18mm motors for impressive fire and smoke flights! The **Mini Spoil Sport** flies great on clusters of black powder motors. If that's a little tame for your taste, try putting four 18mm D21 motors, and watch this baby go out of sight! This bird will appeal to those rocketeers with limited flying fields, as well as those who want to ease into clustered model rockets. Where else but at NCR are you going to find such a kit? Now featuring a plastic nose cone!

Recommended Motors: (4 required) B6-2, B6-4, C6-5, D21-7

Length: 40.5"
Diameter: 1.88"
Weight: 14 oz
Catalog # K-3
Price: \$29.95

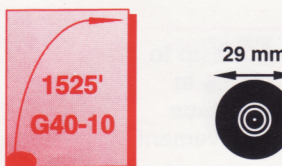


ELIMINATOR

Classic sporty lines grace the NCR **Eliminator**. Designed with high performance and utility in mind, the **Eliminator** features a large payload section, four pre-cut plywood fins, custom decals, and a 24" bright orange ripstop nylon parachute. The **Eliminator** is perfect for the ALTM-1 altitude data logger and other electronic payloads.

Recommended motors:
F10-4, F25-6, F50-6, G40-10, G80-10

Length: 45"
Diameter: 2.70"
Weight: 21 oz
Catalog # K-45
Price: \$24.95



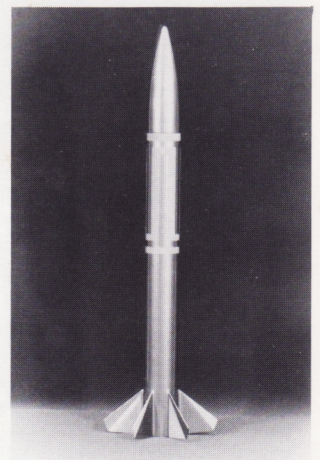
MINI KATANA

Cluster fans, do we have a model for you!!

The **Mini Katana** has a main motor tube designed to fit a 24 mm motor, with up to seven 18 mm motor mounts surrounding the main motor mount. The result is plenty of smoke and fire, but without the expense of other clusters. The model is designed to be flown with either a single motor or a cluster of two, four or seven 18 mm motors. Great for small fields on a D12-3!

Recommended motors:
(Single motor option) D12-3, E15-4, E30-4

Length: 33"
Diameter: 2.70"
Weight: 14 oz
Catalog # K-56
Price: \$34.95



North Coast Rocketry Competition Kits

ROTAROC A

The **Rotaroc A** is the most successful helicopter duration design ever. It has held more National records than any other design, and swept the competition at NARAM-30, winning in all four divisions. Designed by George Gassaway, the Rotaroc A is fun to fly, even if you're not into competition.

The Rotaroc soars gracefully into the sky, and at apogee deploys three rotor blades. It then starts spinning, much like a helicopter, to a gentle descent.

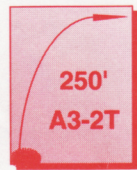
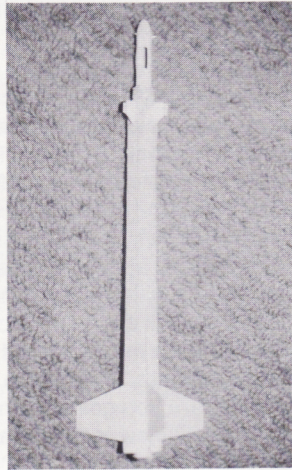
Applicable Competition Events:

1/2A Helicopter Duration, A Helicopter Duration

Recommended motors:

1/2A3-2T, A3-2T, A3-4T

Length: 15.5"
Diameter: .54"
Weight: 1.5 oz.
Catalog # K-62
Price: \$14.95



ROTAROC B/C

The **Rotaroc B/C** is a contest winner, and a former US National Record holder in both B and C Helicopter Duration. Designed by George Gassaway, the Rotaroc B/C is a good sized model that is especially popular at demos as well as contests. Try one and see!

The Rotaroc soars gracefully into the sky, and at apogee deploys three rotor blades. It then starts spinning, much like a helicopter, to a gentle descent.

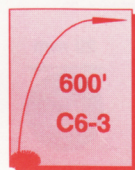
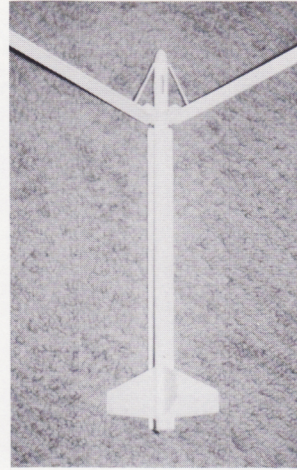
Applicable Competition Events:

B Helicopter Duration, C Helicopter Duration, D Helicopter Duration

Recommended motors:

B4-2, B6-2, C5-3, C6-3

Length: 19.5"
Diameter: .73"
Weight: 1.5 oz.
Catalog # K-63
Price: \$15.95



ROTAROC D

The **Rotaroc D** is a scaled up version of the popular Rotaroc for those of you out there who don't fly anything less than D power anymore! The **Rotaroc D** is perfect for demos and fun flying as well as competition.

The Rotaroc soars gracefully into the sky, and at apogee deploys three rotor blades. It then starts spinning, much like a helicopter, to a gentle descent.

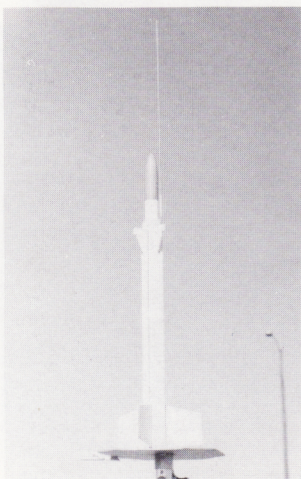
Applicable Competition Events:

D Helicopter Duration, E Helicopter Duration

Recommended motors:

D12-3, E6-8, E15-10

Length: 21.25"
Diameter: 1.00"
Weight: 4 oz.
Catalog # K-81
Price: \$19.95



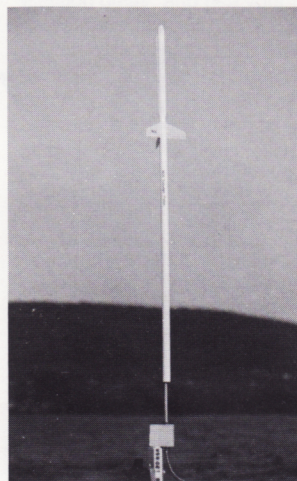
KICKSTART PISTON

The NCR **Kickstart Piston** allows you to squeeze out the every bit of performance from your mini motor model. This state of the art zero volume piston features a brass piston head and lightweight 18" piston tube for maximum performance. Easily adapts to any launcher that takes 1/4" rods. The kit includes two locking collars that hold the piston firmly in place, yet release for easy tube cleaning and replacement.

Recommended motors:

Mini-motors only

Length: 18"
Diameter: .535"
Catalog # K-77
Price: \$19.95



Adds up to 10% in altitude improvement

North Coast Rocketry Competition Kits

E-Z SLIDER A

For a competitive rocket glider, try the **E-Z Slider A** slide wing rocket glider. During boost, the wing is held in the rear position for straighter flights. At ejection, the restraining thread burns through, allowing the wing to slide forward for glide! The slide wing design is a favorite among the competition crowd.

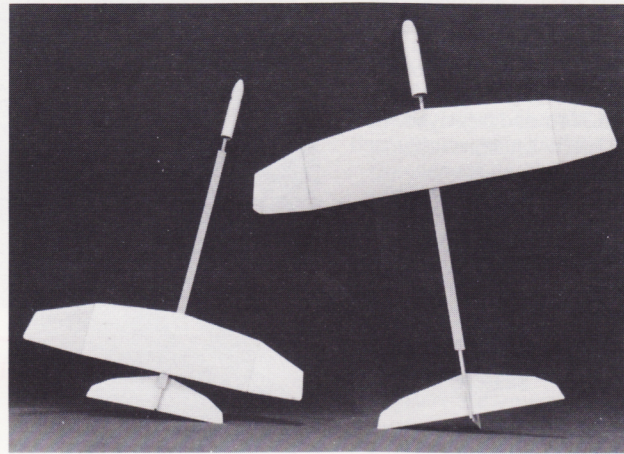
Applicable Competition Events:

1/2A Rocket Glide, A RG, 1/2A Boost Glide, A BG

Recommended motors:

1/2A3-2T, A3-2T

Length: 16.5"
Diameter: .54"
Weight: 1.5 oz.
Catalog # K-79
Price: \$15.95



Skill Level

Easy Moderate **Difficult**

250'
A3-2T

13 mm

E-Z SLIDER B/C

The **E-Z Slider B/C** represents the state of the art in the rocket glide event. Using the popular "slide wing" approach allows for arrow straight boosts and super transition to glide. Get your running shoes on if you fly this bird. The kit includes balsa wing and nose cone, plywood wing rails, and a mylar tape strip to protect the wing.

Applicable Competition

Events: B Rocket Glide, C RG, B Boost Glide, C BG

Recommended motors: B4-2, B6-2, C6-3, C5-3

Length: 23"
Diameter: .73"
Weight: 2 oz.
Catalog # K-80
Price: \$16.95

Skill Level

Easy Moderate **Difficult**

450'
B4-2

18 mm

STILETTO A

The **Stiletto A** is sure to be a winner. Based on a simple wing planform, this is the perfect glider to get started with in competition. Yet, the **Stiletto A** will win its share of contests, too, as it broke the US Record in 1/2A BG. The **Stiletto A** includes streamer recovery on the pod.

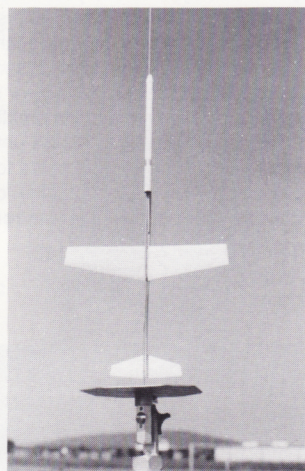
Applicable Competition

Events: 1/2A Boost Glide Duration, A Boost Glide Duration

Recommended motors:

1/2A3-2T, A3-2T, A3-4T

Length: 26.5"
Diameter: .54"
Weight: 1.5 oz.
Catalog # K-64
Price: \$14.95



Skill Level

Easy Moderate **Difficult**

250'
A3-2T

13 mm

STILETTO B

The **Stiletto B** is the easy way to get started in full size boost gliders. It trims easily, and is nearly immune to death dives, making it a reliable competition model. It's sure to be a winner! The **Stiletto B** includes streamer recovery on the pod.

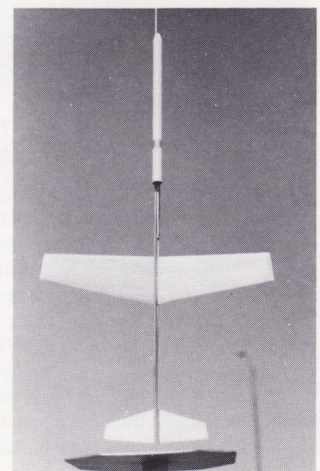
Applicable Competition

Events: B Boost Glide Duration, C Boost Glide Duration

Recommended motors:

B4-2, B6-2, C5-3, C6-3

Length: 29"
Diameter: .73"
Weight: 1.5 oz.
Catalog # K-65
Price: \$15.95



Skill Level

Easy Moderate **Difficult**

600'
C6-3

18 mm

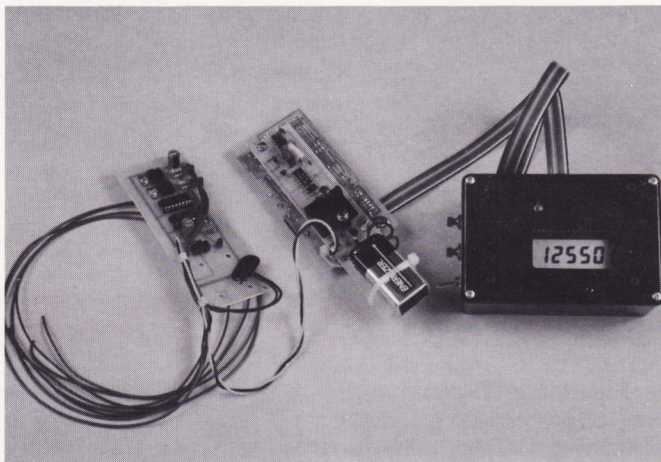
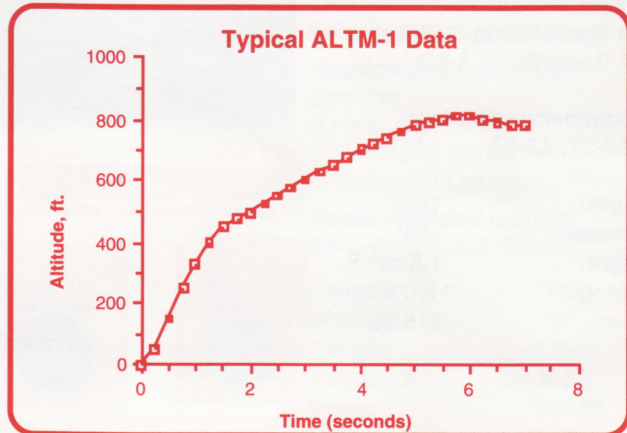
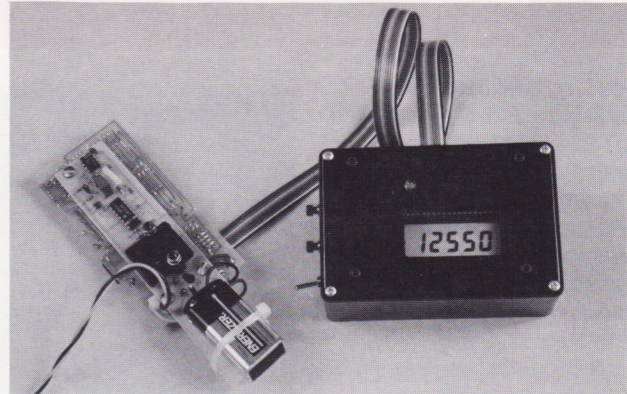
North Coast Rocketry / Transolve Payloads

ALTM-1 ALTITUDE DATA LOGGER

The **ALTM-1** is a sophisticated electronic payload that measures your rocket's altitude and reads out the data upon recovery. The **ALTM-1** payload uses a vacuum reference strain gauge sensor (which is accurate to ± 50 feet) to determine altitude. It then stores that information on board. When the digital readout ground unit is connected, the data is retrieved from the **ALTM-1** and displayed. The whole package fits inside a 12" length of BT-23! Altitude, velocity, and acceleration can be determined using the **ALTM-1**. Additional **ALTM-1** payload sections can be purchased, and we offer a repair service for damaged units. This is a professional data logger (our customers include John Hopkins Applied Physics Lab and Disney Imagineering) that hobby enthusiasts can afford and use as well. Designed and built by John Fleischer, the **ALTM-1** was recently featured in *Radio Electronics*.

Weight: 6 oz (less 9v battery)
Catalog # ALTM-1 **Price:** \$229.95

Payload Only (Does not include ground display unit)
Catalog# ALTM-1P **Price:** \$169.95



BAROMETRIC PRESSURE RELEASE OPTION

This add-on option for the **ALTM-1** is another printed circuit board, 5 1/2" X 2", which attaches to your **ALTM-1**.

Two outputs from the **ALTM-1DLX** are provided. First a drogue parachute is fired 50 feet after apogee, and the main parachute is fired at 1000 feet during descent. A safety feature of the unit will not allow the unit to operate until 1100 ft altitude has been attained. Parachute ejection is provided by our ejection charge unit or similar device (not included). Custom main altitude settings are available for an additional \$2.50 fee. The **ALTM-1DLX** is powered by another 9V battery. The additional power supply is required to avoid the **ALTM-1** program from crashing when the **ALTM-1DLX** fires the ejection charge unit. The **ALTM-1DLX** comes assembled with a new EPROM.

ALTM-1 owners who wish to upgrade their existing units can do so for \$89.95. This upgrade will include a 2 MHz clock, and the addition of a new EPROM and latest software. **ALTM-1** owners who wish to upgrade their unit to include the **ALTM-1DLX** can do it themselves easily, or return it to NCR for upgrade.

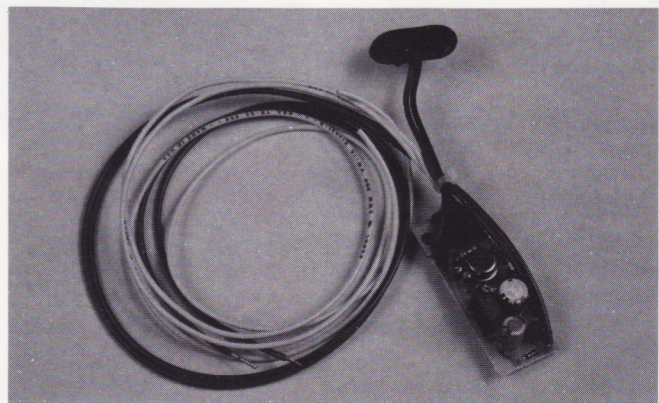
Upgrade Only
Catalog # ALTM-UPGR **Price:** \$89.95

Catalog # ALTM-1DLX **Price:** \$299.95

VEET-1 TIMER

The **VEET-1** is a **V**ariable **E**lectronic **E**jection **T**imer that will allow delayed deployment of your recovery system. Program it for an ejection delay, and use your motor ejection charge to kick out a small chute or parastream. Then, at just the right time, the **VEET-1** will eject a larger chute, for a safe landing and minimal drift. It features programmable delays from .5 sec to 40 seconds, and is small enough to fit in most high power rockets. The **VEET-1** is activated by breaking a circuit, usually a small wire looped under the motor's nozzle (that way, it won't start until the motor ignites). When the timer goes off, it sends a small pulse to the igniter or ejection charge. We suggest that our **EJU-1** ejection charge units be used in conjunction with the **VEET-1** for maximum reliability.

Weight: 1 oz (+ 9v bat)
Catalog # VEET-1
Price: \$39.95

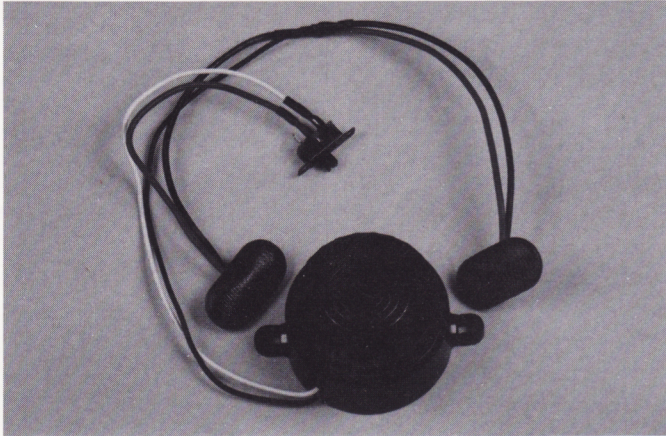


North Coast Rocketry /Transolve Payloads

BEEP-1 AUDIO LOCATOR

The **BEEP-1** is an audio locator for finding your models when they land out of sight. In other words, a variable tone sonalert 95 db! A must for payloads like the **ALTM-1**, where you can't afford to lose a model. We're not talking about a wimpy buzzer here, either, but a Mallory "Sonalert" that puts out 95 db! It fits inside a BT-18, and comes completely preassembled. It can use two or three 9 volt transistor batteries for power, depending on how long you want to look (and listen) for your model.

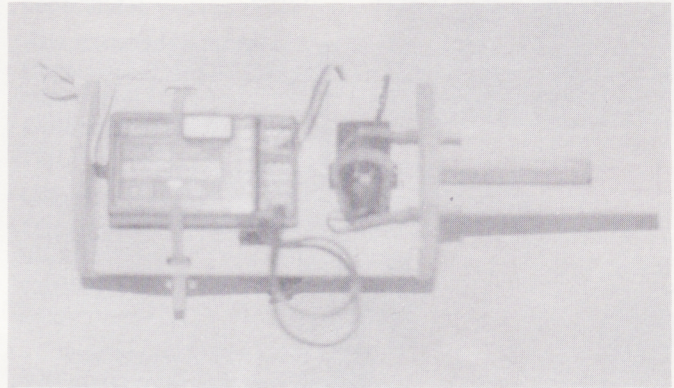
Weight: 2 oz (+9v bat)
Catalog # BEEP-1
Price: \$29.95



RC-1 ELECTRONIC SWITCH

For radio controlled staging or ejection, the **RC-1** Electronic Switch can be used. This switch plugs into a radio control receiver output, replacing a servo. It turns on and off on command, sending a 500ma current when on. You supply the connectors for your particular radio. The **RC-1** is small in size (1.125" x .75" x .5") and lightweight. Instructions and plans for a suggested carrier module are included. The **RC-1** will set off both flashbulbs and Pyropak Electric Matches. Requires a radio control transmitter and receiver, battery pack, and multimeter (for calibration). For advanced modelers only.

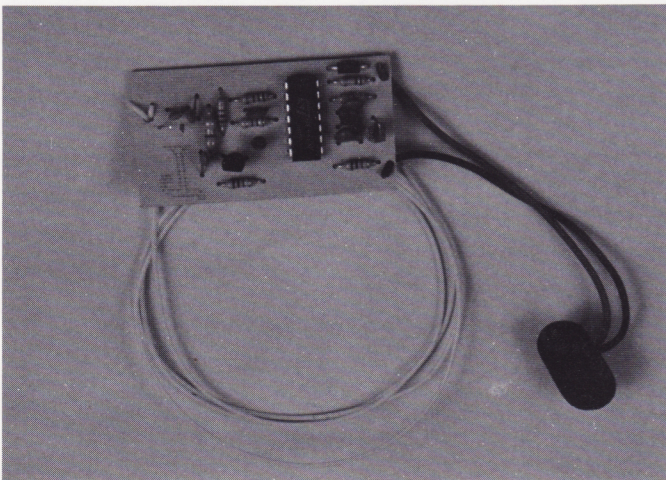
Weight: 1 oz
Catalog # RC-1
Price: \$29.95



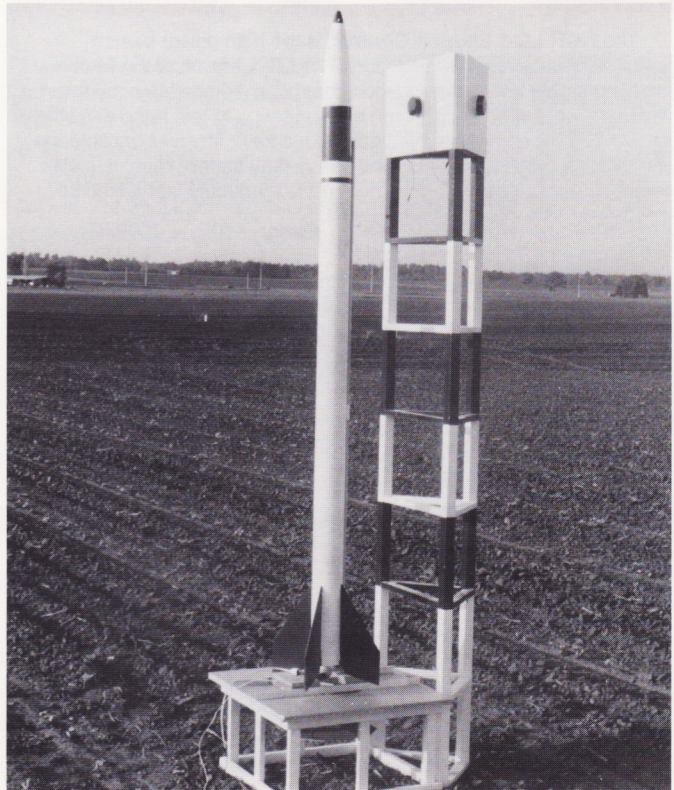
XMTR-1 TRANSMITTER

With the **XMTR-1** transmitter beacon, here's a way to never lose that expensive kit again! A mere 1 oz. (without a nine volt battery) and just 1.2" x 2.4" x 0.5" in size. Comes assembled; you just supply the crystal to match your 27 mHz walkie talkie. Over 1000' range on the ground, and much more in the air with a 100 mw transmitter. Directional antenna plans included.

Weight: 1 oz (+ 9v bat)
Catalog # XMTR-1
Price: \$49.95



Advanced payloads such as the **ALTM-1**, **XMTR-1**, and **BEEP-1** can be flown in advanced rockets like the D Region Tomahawk.

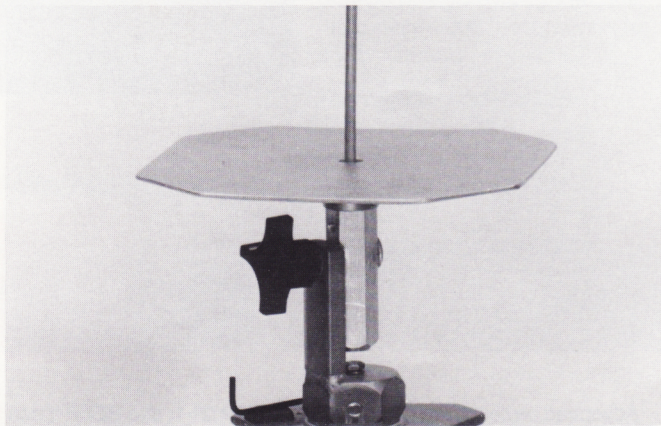


North Coast Rocketry Launch Equipment

HIGH POWER LAUNCH PAD

There have been a lot of requests for a heavy duty, high power launching pad that will handle the large 1/4", 3/8" and 1/2" launch rods. We are pleased to present the NCR **High Power Launch Pad**. This is a rugged, all metal tripod launcher that will handle up to fifteen pound rockets. The launcher features a heavy duty blast deflector, "no slip" legs, and a clip that secures the launch leads. Also, it offers 360° azimuth rotation and elevation adjustment from zero to plus or minus 30°. One 1/8" diameter x 3' rod, one 3/16 diameter x 3' rod and one 1/4" diameter, 6 foot, 2 piece rod are included. An adapter is included to equip your pad with a 3/8" and 1/2" diameter rod is also included. The HPLP-1 will last for years and handle all of your high power needs. It is an exceptional value! Why pay big bucks for a plastic launch pad that you'll eventually outgrow?

Catalog # HPLP-1 Price: \$149.95



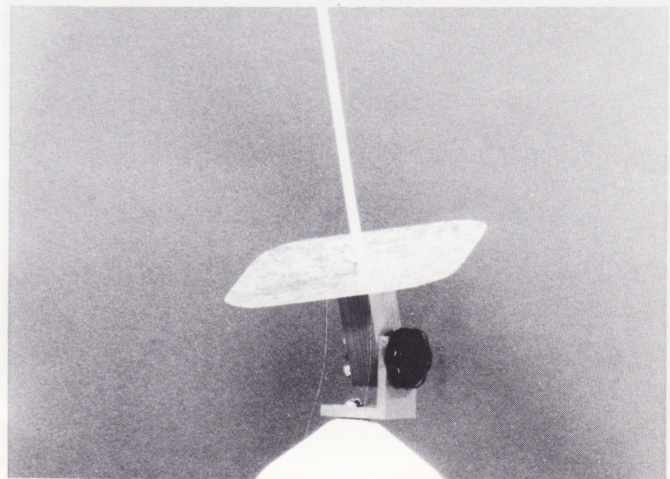
MODULAR LAUNCH PAD

NEW!

The NCR **Modular Launch Pad** was designed for those who need an inexpensive, easy-to-transport launch pad. The easy-to-set up, easy-to-use modular launch pad is big enough to handle most high power rockets. The sturdy tripod design is stable on all surfaces, and the white PVC legs require no painting or finishing.

The Modular Launch Pad features a 1/4" diameter, 4 foot long rod to guide your rocket skyward, and a pivot assembly that makes it easy to load and adjust the rocket while on the pad. Also, it offers 360° azimuth rotation and elevation adjustment. The pad can be easily adapted for smaller launch rods as well. For rockets up to 4 lbs in weight, and 4" in diameter.

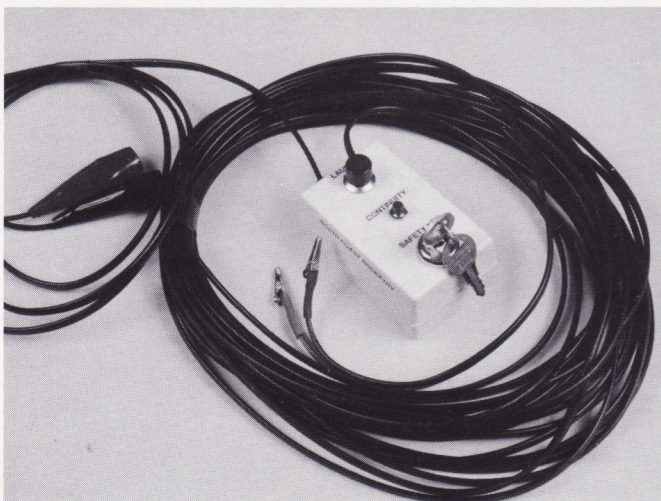
Catalog # MLP-1 Price: \$39.95



LC-1 LAUNCH CONTROL

The NCR **LC-1 Launch Control** is the high power launch controller you've been looking for. The LC-1 has all of the features that you would build into a launch controller: An audible continuity checker (who wants to squint in the sun trying to see if the dim little light is on?); a safety key that looks like a key; fifty feet of cable for safely launching big rockets; and heavy duty battery clips. It is also flashbulb and electric match safe. The LC-1 should last a lifetime.

Catalog # LC-1 Price: \$59.95

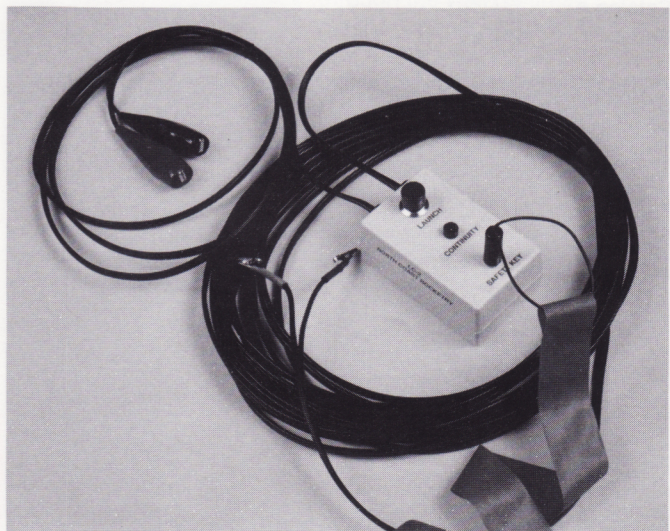


LC-2 LAUNCH CONTROL

NEW!

The **LC-2 Launch Control** is our economy controller for rockets up to G power. The LC-2 has a bright light continuity check, 30' of cable, and a safety key that's nearly impossible to lose. Two heavy duty battery clips make it easy to hook up to a car battery or other power source. Heavy duty construction throughout makes the LC-2 an outstanding value.

Catalog # LC-2 Price: \$34.94



PIC ADHESIVES

So many times people have asked us, "What adhesives should we use to build our North Coast rockets?". We looked around the past few years, but couldn't really identify a superior brand to recommend. That is, until **PIC Adhesives** were introduced. After extensively sampling their product line, we were delighted. We use **PIC Adhesives** exclusively on all of our demo and R&D models. As such, North Coast is proud to be the only manufacturer to offer a complete line of superlative adhesives that should meet **ALL** of your hobby needs.

"PIC POXY" 4 1/2 MINUTE

This two part epoxy system is what you'll need to build most high power rockets! It has fast setting action, high strength, and toughness. Pot life is 3-5 minutes, and handling time (the time until the bond is tack free and can support light loading) is 15 minutes. Full strength is achieved in one hour. This epoxy will even cure at low temperatures, so it's great for on the field fixes!

Net Weight: 9 oz. set
Catalog # PIC 905
Price: \$10.99

PIC "QUICK CURE" CA

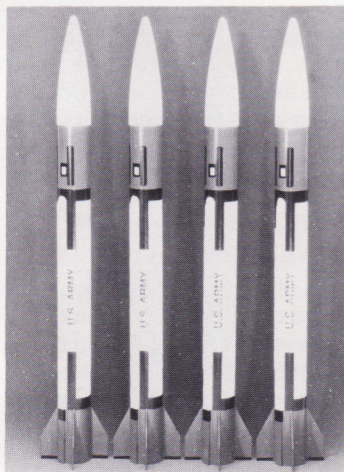
This CA glue is water thin and cures in seconds. Perfect for sealing the edges of body tubes, launch lugs, and for tacking parts in place. Sold in high density translucent bottles so you can see how much is available.

Net Weight: 1 oz.
Catalog # PIC 200
Price: \$4.99

PIC FIBERGLASS CLOTH

This 3/4 oz. fiberglass cloth is ideal for reinforcing fin/body joints, tubes, and finishing models. Apply with PIC Coating Pox. One sheet per package, 36" x 30".

Catalog # PIC 022
Price: \$7.99



PIC "BEST CHOICE" CA+

This is the best choice for overall construction use, and indispensable for most building projects. Medium cure rate (30 second), gap filling, fillet forming CA+ cyanoacrylate that is perfect for areas where the strength of epoxies is not required. Ideal for tacking fins in place until epoxy cures.

Net Weight: 1 oz.
Catalog # PIC 101
Price: \$4.99

PIC "PRONTO" ACCELERATOR

You just can't build without this! A bond accelerator that "freezes" the surface of CA adhesives, allowing for "instant" bonding. Perfect for fillets, tacking fins in place until epoxies cure, and 1001 other uses. It will also assist the "skinning over" of PIC POXY adhesives.

Net Weight: 2 oz.
Catalog # PIC 802
Price: \$4.99

PIC COATING POXY

This is the way to finish high power models! A two part brushable low viscosity epoxy system for finishing, fiberglassing, and laminating composites. It sands smooth and easily with a minimum of hassle, and adds incredible strength to any area. Pot life is 9 minutes, and handling time is 1.5 hours. Full cure is achieved in 6 hours. This economical 19 oz. size will finish more than 25 rockets.

Net Weight 19.2 oz.
Catalog # PIC 974
Price: \$22.95

PIC "TIPS 'N TOPS"

Spare dispensing nozzles and nozzle caps for PIC CA, CA+, and CA++. Handy for special jobs needing trimmed nozzles, and to prevent spillage. Four nozzles and caps per bag.

Catalog # PIC 650
Price: \$1.09

"PIC POXY LITE"

A epoxy paste that will let you make fantastic fillets and repair landing damage. Sands easily. Add strength to areas with 1/3 less the weight of regular epoxy. It's especially good for through the wall fin fillets.

Net Weight: 6 oz set
Catalog # PIC 980
Price: \$9.49

PIC "MICRO DROPPER" TIPS

These are not only a must for anyone who uses CA, but they're the best we've ever seen. These tips allow fine control of CA's during application, minimizing waste and mess. Packaged ten to a pack, these will delight the master modeler.

Catalog # PIC 660 PIC 670
Price: \$2.25 \$2.25
Size: Fine Extra Fine

"PIC ' PATCH" FILLER

A fast drying, lightweight, fluffy paste that fills plywood, Aerofoam, fiberglass, and balsa. Recommended to fix dents, dings or bubbles. Apply in thin layers, and sand minutes later. Doesn't crack or shrink. Thins with water, and has a long shelf life.

Net Weight: 8 oz.
Catalog # PIC 600
Price: \$4.99

**Call Toll Free
 1-800-877-6032
 to order today!**



North Coast Rocketry Publications

BASIC HIGH POWER ROCKETRY

If you are new to high power rocketry, we've compiled a series of technical reports that will assist you in getting started. *Basic High Power Rocketry* takes you through a description of high power rocketry to a detailed explanation of composite motors, and advice on glues, construction techniques, stability, launchers, and launch controllers. The report comes in an attractive loose leaf binder for easy reference. Order Catalog# **BHPR-1, \$16.95**

Basic High Power Rocketry contains the following technical reports:

An Introduction To High Power Rocketry

This report introduces the concept of high power rocketry to the modeler, looks at the materials used, current rules and regulations, and describes a brief history of the growth of high power rocketry.

NCR Tech Report #B1 Catalog # TR-B1

High Power Rocketry Construction Techniques

Detailed instructions on how to make through-the-wall fins, strong shock cord and motor mounts, and failsafe recovery systems that high power rockets require.

NCR Tech Report #B2 Catalog # TR-B2

An Introduction to Composite and Reloadable Motors

A description of how composite motors are made, the benefits of composite motors, and a look at the reloadable motor technology. An invaluable reference for any modeler.

NCR Tech Report #B3 Catalog # TR-B3

High Power Rocket Adhesive Techniques

An overview of available adhesives, how they work, and what are the best applications of each type. Read this before you purchase any type of glue!

NCR Tech Report #B4 Catalog # TR-B4

Basic Paint and Finishing Techniques

An overview of paints and fillers available for rocket use. Includes comments on how to best use each type, and how to make great looking models.

NCR Tech Report #B5 Catalog # TR-B5

Basic Stability Considerations For Advanced Rockets

An in-depth look at basic stability design and test methods that insure that your models fly safely.

NCR Tech Report #B6 Catalog # TR-B6

High Power Rocket Launch Control Systems

An overview of launch control systems. It will help you determine the right launch system. This report presents relay systems, flashbulb safe launch controllers, and audible continuity systems.

NCR Tech Report #B7 Catalog # TR-B7

The Care and Feeding of Rocket Launchers

How to maintain and improve your current launcher. Includes painting, cleaning, helpful tools, transport, and advice.

NCR Tech Report #B8 Catalog # TR-B8

Filing An FAA Waiver

An explanation of the current regulations requiring a waiver, and examples of the forms used.

NCR Tech Report #B9 Catalog # TR-B9

Each report is also available separately for \$2.50 each. Order individual reports by catalog number.

ADVANCED HIGH POWER ROCKETRY

If you are fairly experienced in high power rocketry, we've compiled a series of technical reports that will take you to new heights. *Advanced High Power Rocketry* takes you through a description of clustering and staging techniques, advanced electronics, supersonic and mile high rockets, advanced materials, and advanced finishing techniques. The report comes in an attractive loose leaf binder for easy reference. Order Catalog# **AHPR-1, \$16.95**

Advanced High Power Rocketry contains the following technical reports:

Clustering High Power Rockets

How to safely and reliably ignite clusters of black powder and composite motors using the latest techniques. Explores igniter installation techniques and flashbulb igniters in depth.

NCR Tech Report #A1 Catalog # TR-A1

Staging High Power Rockets

Techniques on how to stage high power cluster rockets. A detailed look at how to build and use electronic staging systems, radio control, fuse systems, digital timers, and mercury switches.

NCR Tech Report #A2 Catalog # TR-A2

Radio Transmitters and Rocketry

An overview of transmitters developed for rocket use in the past 25 years, including the state-of-the-art XMTR-1. Diagrams for various transmitters included.

NCR Tech Report #A3 Catalog # TR-A3

Composites in High Power Rocketry

An in-depth essay of composite materials such as fiberglass, kevlar®, and carbon fiber, and how to best use each one in model rockets.

NCR Tech Report #A4 Catalog # TR-A4

Advanced Finishing and Detailing Techniques

This report shows how to put those perfect finishing touches on models. Advanced paint techniques, monokote trim sheets, detailing, and more are covered.

NCR Tech Report #A5 Catalog # TR-A5

Supersonic Rocketry

A detailed look at what design considerations and verification methods are required for supersonic flight. Includes a suggested design.

NCR Tech Report #A6 Catalog # TR-A7

Mile High Rocketry

How to design and fly rockets to maximum altitudes in excess of a mile high. Includes a suggested design.

NCR Tech Report #A8 Catalog # TR-A8

Each report is also available separately for \$2.50 each. Order individual reports by catalog number.

THE COMPLETE HIGH POWER ROCKETRY REPORT SET

Take advantage of our best deal on technical reports and get both sets of reports in the same binder! Only **\$27.95!** Save \$5.95 over buying the report collections separately. Plus, you'll have all the reports together in one handy reference source.

Order Catalog# CRS-1 \$27.95

North Coast Rocketry Airframe Tubing

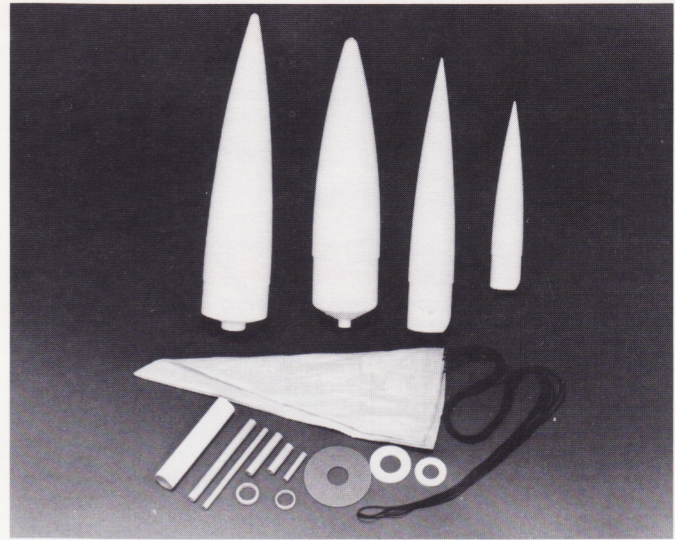
AIRFRAME TUBES

North Coast Rocketry High Performance, High Strength Airframe Tubes are the industry standard. We built our business around these tubes, and we're sure you'll like them. Our tubes have thick walls so that they can take the power of E, F, G, and H motors without reinforcement. If you want strength, you've got it! If you want a lighter weight tube, the inner layer can be peeled out easily. All airframe tubes are glassine coated. They sand, prime and paint very easily.

The BT-9 and BT-11 motor tubes are white wrapped for superior glue penetration. The BT-15 and BT-21 are extra thick for super strength as 1.5" and 2.125" motor mount tubes or minimum diameter airframes.

All airframe tubes are 34" in length, except the BT-8, which is also available in a 58" length.

Catalog #	ID	OD	Thickness	Price
BT-7	0.72"	0.76"	.020"	\$2.95
BT-9	0.95"	1.00"	.025"	\$3.95
BT-11	1.14"	1.21"	.035"	\$4.49
BT-15	1.53"	1.65"	.060"	\$5.49
BT-18	1.80"	1.88"	.040"	\$5.49
BT-21	2.14"	2.26"	.060"	\$5.95
BT-26	2.62"	2.70"	.040"	\$5.95
BT-39	3.89"	3.97"	.040"	\$6.95
BT-8/34	7.80"	8.00"	.100"	\$22.95
BT-8/58	7.80"	8.00"	.100"	\$35.95



MOTOR TUBES

Identical in construction to our airframe tubing, these motor tubes are available in shorter lengths for use as motor tubes.

Catalog #	Tube	Length	Price
MT-9/6	BT-9	6"	\$1.00
MT-11/6	BT-11	6"	\$1.50
MT-11/12	BT-11	12"	\$1.75
MT-15	BT-15	17"	\$3.00
MT-21	BT-21	17"	\$3.50

ENGINE BLOCKS

Spiral wound kraft paper rings to hold motors in place. These are a must for high power rockets, as you just can't count on tape to hold the motor in place. If you want the flexibility of using different length motors, epoxy them in as far in as your longest motor, and then use a tube coupler as a spacer for shorter motors.

Catalog #	Fits	Price
EB-7	BT-7	5 for \$2.25
EB-9	BT-9	5 for \$2.75
EB-11	BT-11	5 for \$3.50
EB-15	BT-15	1 for \$1.25
EB-21	BT-21	1 for \$1.50

NOSE CONES

These nose cones are the same ones that we use in our high power rocketry kits. A (P) designates a plastic, blow molded nose cone; an (F) indicates fiberglass.

Catalog #	Fits Tube	Length	Shoulder	Price
NC-18P	BT-18	7.25"	1.75"	\$4.75
NC-26P	BT-26	8.50"	2.25"	\$7.50
NC-39P1 (ACE)	BT-39	16.0"	2.00"	\$13.50
NC-39P2 (LOC)	BT-39	11.0"	2.00"	\$13.50
NC-8F	BT-79	36.0"	2.00"	\$79.95

MOTOR ADAPTERS

For mounting smaller motors in larger diameter motor tubes, each motor adapter kit consists of two centering rings, motor tube, thrust ring, and instructions.

Catalog #	Adapts:	Length	Price
AD-1	24 mm motors to 29 mm mount	6"	\$4.00
AD-2	1.125" motors to BT-15	12"	\$5.00
AD-3	1.50" motors to BT-21	12"	\$6.00

CENTERING RINGS

These high strength rings are made from aircraft plywood or Dura-Ply to adapt BT-9, BT-11, BT-15 or BT-21 motor tubes to larger diameter tubes. Great for scratch built designs.

Catalog #	Fits Tube	Motor Tube	Price
CR-18-9	BT-18	BT-9	\$1.25
CR-18-11	BT-18	BT-11	\$1.25
CR-26-9	BT-26	BT-9	\$1.75
CR-26-11	BT-26	BT-11	\$1.75
CR-26-15	BT-26	BT-15	\$1.75
CR-39-11	BT-39	BT-11	\$2.50
CR-39-15	BT-39	BT-15	\$2.50
CR-39-21	BT-39	BT-21	\$2.50

PARACHUTES

These are the same high quality parachutes that go in all our kits. Simply the best in the business! Our parachutes are orange ripstop nylon that resists burning and does not "set" when stored folded up. Shroud lines are 60 lb test twisted nylon cord. The edges are serged to prevent fraying.

Catalog #	Diameter	Price
PARA-18	18"	\$4.95
PARA-24	24"	\$10.95
PARA-36	36"	\$15.95
PARA-48	48"	\$19.95

STREAMERS

Bright orange ripstop nylon streamers are just the ticket for those high altitude flights that would drift too far on a parachute. These feature attachment loops at both ends.

Catalog #	Width	Length	Price
STR-1	4"	40"	\$8.95
STR-2	6"	60"	\$10.95

TUBING COUPLERS

Spiral wound paper couplers that fit inside our airframe tubing. For use as motor spacers or joining airframe sections.

Catalog #	To Fit Tube	Length	Price
TC-7/1	BT-7	1.0"	\$0.75
TC-7/2	BT-7	2.0"	\$1.00
TC-9	BT-9	1.5"	\$1.25
TC-11	BT-11	2.0"	\$1.25
TC-15	BT-15	3.0"	\$1.75
TC-18	BT-18	3.0"	\$1.75
TC-21	BT-21	4.0"	\$2.00
TC-26	BT-26	4.0"	\$2.50
TC-39	BT-39	6.0"	\$4.00

North Coast Rocketry Components

BULKHEADS

Hollow tubing bulkheads are perfect for nose blocks and payload sections. These kits consist of a tubing coupler, pre-fit plywood backing plate, and a screw eye. These are stronger, lighter, and more durable than solid bulkheads.

Catalog #	To Fit Tube	Length	Price
BH-18	BT-18	3.0"	\$4.50
BH-26	BT-26	4.0"	\$5.00
BH-39	BT-39	6.0"	\$6.00

ADAPTER RINGS

Spiral wound kraft paper adapter rings for mounting motor tubes into airframe tubes or larger motor tubes.

Catalog #	Adaptors	Length	Price
AR-9	BT-9 to BT-11	1.75"	\$1.00
AR-11	BT-11 to BT-15	2.0"	\$1.50
AR-15	BT-15 to BT-18	3.0"	\$1.50
AR-21A	BT-15 to BT-21	3.0"	\$1.75

LAUNCH LUGS

The LL-1/4, LL-3/8, and LL-1/2 are spiral wound brown kraft paper, that is glassine coated for better appearance and moisture resistance. They are perfect for high power rockets! Lugs come up to 6" in length and are available to fit all popular launch rod sizes. You can buy smaller lengths pre-cut, or buy a 6" length and cut it yourself. The LL-3/16 is a white 3/16" launch lug.

Catalog #	Fits Rod	Length	Price
LL-3/16	3/16"	1.5"	\$0.25
LL-1/4-1	1/4"	1.0"	\$0.50
LL-1/4-6	1/4"	6.0"	\$1.00
LL-3/8-2	3/8"	2.0"	\$0.50
LL-3/8-6	3/8"	6.0"	\$1.00
LL-1/2-3	1/2"	3.0"	\$0.75
LL-1/2-6	1/2"	6.0"	\$1.25

SHOCK CORD

Heat resistant, high strength elastic cord that is the best shock cord available. Don't mess around with anything else! Specify length that you want in yards.

Catalog #	Width	Maximum Model Mass	Price Per Yard
SC-1	.25"	16 oz	\$1.00
SC-2	.50"	24 oz	\$1.00
SC-3	.75"	48 oz	\$1.25
SC-4	1.0"	60 oz	\$1.50

GORILLA™ SHOCK CORD MOUNTS

This is an industry exclusive, extensively tested by NCR to provide the most reliable and safest shock mount system for high power rockets available today. The **Gorilla™ Shock Cord Mount System** (patent pending) will probably outlast the rest of your rocket! The kit consists of 36" of steel cable, two cable connectors, and complete instructions. All you do is drill two holes in your centering ring, slide one end of the cable through, and crimp the connector. Then, make a loop for the shock cord on the other end. The unique design leaves the walls of the body tube clean, so parachutes and wadding can't catch! The **GSCM-1** is fine for small models up to BT-26; use the **GSCM-2** and the new **GSCM-3** for larger models. Order shock cord and centering ring separately.

Catalog #	Cable Diameter	Breaking Strength	Price
GSCM-1	.037"	120 lbs	\$3.95
GSCM-2	.063"	270 lbs	\$4.95
GSCM-3	.125"	500 lbs	\$7.95

NEW!

SCREW EYES

Screw eyes for attaching recovery systems to either nose cones or bulkheads. Chrome plated, these are great for high power rockets.

Catalog #	Length	Eye Size	Price
SE-2	1 7/8"	1/2"	\$0.50
SE-3	2 1/4"	3/4"	\$0.75

COMPETITION BODY TUBES

Competition modelers have different requirements than high power flyers, so we've designed some tubes especially for competition. These are light weight, easy to sand, and easy to finish. And, they beat the competition in price, too!

Catalog #	ID	OD	Length	Price
CBT-5/9	.515"	.535"	9"	\$1.25
CBT-5/18	.515"	.535"	18"	\$2.00
CBT-7/9	.710"	.730"	9"	\$1.50
CBT-7/18	.710"	.730"	18"	\$2.50

TRACKING POWDER

Bright red powder in an easy to use squeeze bottle. Is great in the sky, and cleans up easy if you get it on you while handling it on the ground. Great for demos, too! Four ounce bottle.

Catalog #	Price
TRACK-1	\$4.00

NCR T-SHIRTS

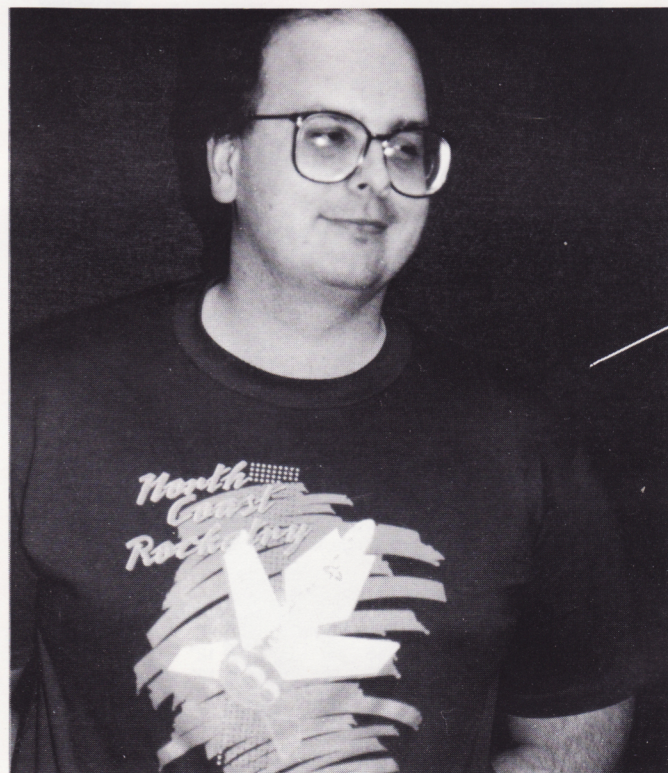
You don't want to be without this attractive T-shirt with the North Coast logo! Let everyone know you're a high power flyer! A four color graphic is featured on dark blue high quality T-shirt. Available in small, medium, large, extra large, and extra extra large. Please specify size when ordering.

Catalog #	Price
TS-2 (S, M, L, or XL)	\$16.95
TS-2 (XXL)	\$17.95

NCR HATS

You've asked for them, so here they are! Attractive, one size fits all baseball hats with the North Coast Logo prominently displayed. The hats are blue with mesh tops for comfort in the hot sun.

Catalog #	Price
HAT-1	\$7.50



North Coast Rocketry Recovery Supplies

TRIM MONOKOTE

For all of those out there who have asked us how we get such super finishes on our display models, **Trim Monokote** is the answer! Why fuss with masking tape, paint, primer and a lot of hassle, when making perfect models can be as easy as applying a sheet of **Trim Monokote**? The stuff looks great, is easy to work with, and can even be painted over! Each sheet is 5" wide x 36" long, which will cover a number of models. Please specify color.

Catalog #	Price
TMK-1	\$2.00

Available in the following solid colors: Black, Red, White, Orange, Yellow

Catalog #	Price
TMK-2	\$2.25

Available in the following checkerboard patterns:
Red on White, Black on White, Red on Clear, Black on Clear

Catalog #	Price
TMK-3	\$2.50

Available in the following solid colors: Day-Glo Red, Day-Glo Orange

PRISMA TRIM

This is a pressure sensitive, textured metalized film that reflects every color of the rainbow. Easily cut with scissors or a knife. Makes for spectacular effects, and really dresses up a model. Each sheet is 6" wide by 24" long.

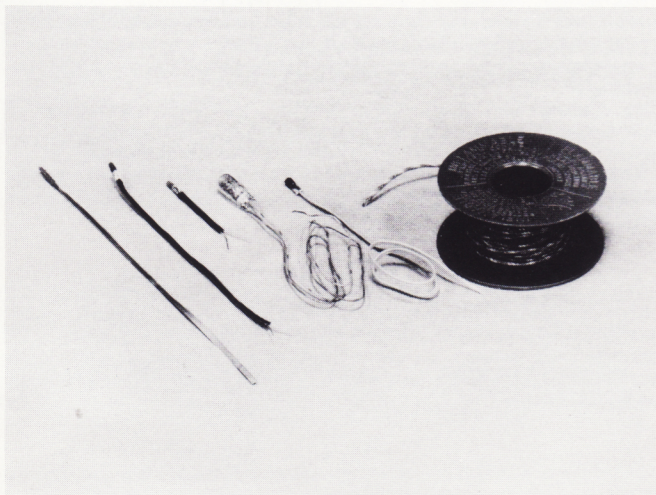
Catalog #	Price
PRISM-1	\$5.00

Available in the following colors: Red, Silver, Gold, and Blue

ADHESIVE MYLAR

This is a pressure sensitive, one mil thick metalized mylar film film that contest modelers have grown to know and love. It's super for decoration, too! Each sheet is 6" wide by 24" long. Available in either silver or gold. Please specify color.

Catalog #	Price
AM-1G (Gold)	\$2.00
AM-1S (Silver)	\$2.00



PYROPAK™ ELECTRIC MATCHES

Offered exclusively by North Coast, these are an absolute must for reliable flying. Throw away your Solar Igniters and Copperheads and start using these—no more misfires! The PPEM-1 electric matches have 3" leads. Ten per pack. The PPEM-2 have 6" leads.

Catalog #	Price
PPEM-1	\$7.75
PPEM-2	\$8.75

FLASHBULB IGNITERS

The traditional flashbulb igniter has been taken one step further! These are pre-made for your convenience. Why bother wiring your own, when you can buy these? They feature 12" leads.

Catalog #	Price
FB-1	\$1.25

LONG LEAD ELECTRIC MATCHES

Offered exclusively by North Coast, these electric matches have a greater amount of pyrogen to insure ignition. These igniters feature small diameter heads to fit most motors (including D12s), and 60" leads. For spectacular, reliable ignition, these are great. Check them out with your launch system before installing into your rocket motor; some electrical systems will set them off during the continuity check.

Catalog #	Price
EM-1	\$1.50

THERMALITE WICK

For special ignition challenges, we offer fast or slow thermalite wick in 36" lengths. The fast type typically burns at 5" per second; the slow at 1.25". For use with electrical ignition systems only!

Catalog #	Rate	Price
TMW-1	(Fast)	\$3.50
TMW-2	(Slow)	\$3.50
TMW-3 (Roll)	(Fast)	\$49.95
TMW-4 (Roll)	(Slow)	\$39.95

COPPERHEAD™ IGNITERS

Here's the revolutionary single lead igniter from Aerotech. They can be used in all motors—just pick the correct length. The Copperhead igniter is easy igniter to install in composite motors. An Interlock™ clip is required to use. Six per pack.

Catalog #	Use In	Length	Price
CH-2	1/2A-D motors	2"	\$1.75
CH-4	D-E motors	4"	\$2.59
CH-8	F-H motors	8"	\$3.39

EJECTION CHARGE UNITS

For use with the VEET-1 ejection timer or RC-1 radio controlled electronic switch, these ejection charge units contain a small amount of pyrotechnic powder that is initiated by a flashbulb. The powder charge is adequate for pressuring 24" of BT-39. You may remove some of the powder for use in smaller rockets.

Catalog #	Price
EJU-1	\$1.95

INTERLOCK™ IGNITER CLIP

Use with the Copperhead™ Igniter for fast, easy hookups!

Catalog #	Price
IC-1	\$3.39

NEW!

How To Order

ORDERING IS EASY!

BY TELEPHONE...

You may place your order with North Coast Rocketry by using our convenient telephone hot line, **1-800-877-6032**. This number can be used 24 hours a day (with the help of our NCR answering machine). To talk to Robyn or Matt in person, try to call from **8 AM to 5 PM Mountain time Monday through Friday**. We can ship phone orders using Visa, Master Card, or COD. To make it easy when you order, be sure to have the catalog numbers and quantities ready when you call.

BY FAX...

You may place your order with North Coast Rocketry by using our convenient fax line, **1-800-877-6032**. This number can be used 24 hours a day. Please use our order form when making an order by fax. We can ship fax orders using Visa, Master Card, or COD.

Please include your full name and shipping address, including zip code and phone numbers.

BY MAIL...

Please use our order form when making an order by mail. New order forms will be sent with each purchase. Be sure to add the appropriate handling and shipping fees.

Please include your full name and shipping address, including zip code and phone numbers. Our preferred method of shipment is via United Parcel Service, but orders with a post office box may be sent via the mail. Check or money order for payment in full must be included with your order. **Please make checks payable to North Coast Rocketry.**

Send all orders to:
North Coast Rocketry
4848 S. Highland Drive, Suite #424
Salt Lake City, UT 84117

CREDIT CARD ORDERS...

North Coast Rocketry accepts Visa and Mastercard as payment on orders to anywhere in the world. When using your credit card, please provide your credit card billing address, if different from the shipping address, and a daytime phone number. All credit cards orders will be authorized through the issuing financial institution. If authorization is not granted for any reason, we reserve the right to cancel the order. It is up to the customer to resolve any such problems with the financial institution and to reorder once the problem is resolved.

COD ORDERS...

We are happy to offer COD service to our customers shipping via UPS only in the United States. COD service is not available to other destinations or by different shipping means. Due to the extra costs involved in processing COD orders, an addition \$5.00 will be charged. We ask that you please be sure someone is available to accept delivery. If you miss delivery and the order is sent back, please let us know why. Otherwise, COD service may not be available to you on future orders.

SHIPPING/PACKAGING FEES...

Shipping and handling fees are a necessary evil. We wish we didn't have to charge them, but boxes, packing, and shipping do cost money. Our shipping charges are as follows:

Up to \$24.99	\$4.75
\$25.00- \$74.99	\$6.50
\$75.00- \$100.00	\$8.50
Over \$100.00	\$12.50
UPS Motor Surcharge (for all motors, and thermalite).....	\$5.00
COD (additional to above charges).....	\$5.00
2nd Day Air (additional to above chgs).....	\$12.50
Next Day Air (additional to above chgs).....	\$22.50

Utah Residents please add applicable sales tax

This is, of course, good only if you live in the lower 48 United States or have an APO/FPO number. If you don't, well...

FOREIGN ORDERS....

If you want to order from outside the continental United States, please use Visa or Mastercard only. That way, we can charge you the actual shipping fees plus a \$10.00 handling fee. It is the cheapest and easiest for both you and us. Please be patient when ordering; there's a lot of paperwork to go through, particularly if it's the first time we're shipping to your country.

Please note that NCR is not permitted to ship motors, ignitors, and flammable materials to foreign countries (except Canada).

PROBLEMS...

All inquiries will be personally answered promptly. If you have a problem with a North Coast Rocketry product, please let us know. Calling the NCR Toll Free # (1-800-877-6032) is the quickest way to resolve a problem.

Before we ship a product to you, we carefully inspect it to insure that it is in perfect condition. If it arrives in less than perfect condition, call us. We are more than upset when anything comes between our service and your satisfaction. If UPS damages the box or parts inside, you must to call them and get an authorization number prior to NCR re-shipping your order. They have the responsibility to fix your problem. But call us, so we can expedite shipment of your replacement items.

If you have to return an item to the plant, please send it to:

North Coast Rocketry
4848 S. Highland Drive, Suite #424
Salt Lake City, UT 84117

If you have a copy of the receipt, please send it along. It'll help us with our records, but it's not necessary to get your replacement order processed.

YOUR CUSTOMER NUMBER....

You will be assigned a unique customer number when you place your first order with us. This number can be found directly to the right of your name on your invoice or in the upper left-hand portion of mailing labels. It begins with the first five letters of your last name. Please use the same customer number and name whenever you place an order or contact us with a problem or question. This ensures the fastest possible processing and service.

SHIPPING...

North Coast Rocketry will ship your order via one of our standard shipping methods unless you specify otherwise. Standard shipping methods are UPS (United Parcel Service) which will be used whenever possible and Parcel Post, which will be used for shipments to APO's, FPO's foreign countries, and other areas not served by UPS. If you have a street address in addition to a P.O. Box address, please use it when ordering.

NCR GUARANTEE....

If for any reason you do not like or want something you receive from NCR, you may return it as long as it is in new and unused condition for a full refund or exchange.

When you receive your order, check to be sure that every item listed as being shipped on the invoice is included in the package. Verify the billing information on the invoice, that no shipping damage occurred, and review kits for possible missing parts. If you find anything unsatisfactory, please contact us so necessary action can be taken.

BACKORDERS...

We backorder out-of-stock merchandise whenever possible unless you specify that you do not want a backorder. When we backorder an item for you, you're assured the item will be shipped out or you will be notified as soon as it comes through our doors. If you decide you want to cancel a backorder, please call or write to let us know.

RESPONSIBILITY...

North Coast Rocketry and its suppliers certify that they have exercised reasonable care in the design and manufacture of their products. As NCR can not control the storage or use of its products, we can not assume any responsibility for product storage, transport, or use. The buyer assumes all risks and liabilities therefore, and accepts and uses the products based on these conditions. No warranty, either expressed or implied, is made regarding these products, except for the replacement of those products which are determined by us to be defective in manufacture.

By ordering from North Coast Rocketry, the buyer understands and acknowledges the above paragraph, and agrees to hold harmless North Coast Rocketry from any claim arising from use or association of such products.

(This is all legal gobbledeygook, but we have to put it in. In other words, it means "If you buy from us, you assume all risks and liabilities". That's reasonable, isn't it?)

REFUNDS...

At your request, we will gladly issue refund checks for any outstanding cash credit on your account generated by an order payment of check or money order. If the order was paid by credit card, we will credit your charge card account. Due to processing costs involved, we ask that you do not request a refund for any amounts under \$5.00. Any such credits left on your account with us can be used toward future orders.

WE WISH YOU COULD COME FOR A VISIT, BUT....

We're strictly a mail order facility and regret that we are not able to handle walk-in orders, returns, tours, inquiries, etc.

North Coast Rocketry Photo Gallery



North Coast Rocketry Advanced Rocket Kits
Above: Black Hole Betty, 1/4 Scale Patriot, and Quasar NG,
Below: Mini Katana, Big Brute, and Hobgoblin



North Coast Rocketry

**Remember rockets?
Bet you don't remember
rockets this big or powerful!**

The NCR PATRIOT (*shown in the background*) is over 4 ft. tall and can soar to over 1000 feet on a G motor. The kit features huge, three color decal sheets and die cut plywood fins. This is the most impressive Patriot kit you can buy!

\$49.95

Our "READY TO FLY" PATRIOT kit includes a launcher, launch controller, and two motors to get you "into the air" in no time flat. It's the best way to get flying, and our best kit value!

\$119.95

The AVATAR SLV (*far right*) is a lightweight, impact resistant styrene glider over 3' long that boosts under rocket power, and then glides back to earth either by radio control or free flight.

\$49.95

The SA-14 ARCHER (*center*) that resembles a futuristic air to air missile. Highly detailed, the SA-14 ARCHER can defend your airspace, too.

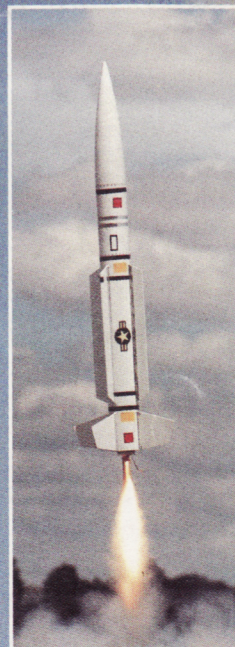
\$49.95

The PHANTOM 4000 (*lower left*) is our most popular entry into high power rocketry, the PHANTOM 4000 goes together quickly, and flies great! Altitudes of 1200' are possible, and recovery is by a colorful 36" parachute.

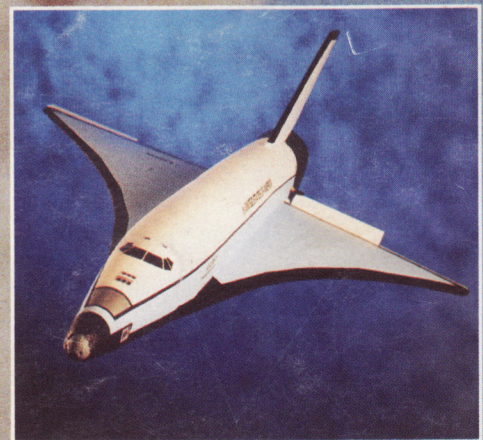
\$39.95

Always fly your rockets in accordance with the NAR Safety Code and applicable laws and regulations.

Recommended for modelers 18 and older.



Always fly your rockets in accordance with the NAR Safety Code



**TO ORDER, CALL
(800) 877-6032**

**OR WRITE TO:
North Coast Rocketry**

Suite 424
4848 South Highland Drive
Salt Lake City, UT 84117

North Coast Rocketry Mailer

Home _____
 Address _____
 City/State/Zip _____
 Phone (Day & Evening) _____
 Credit Card # _____
 Exp. Date _____

* A phone number is required for all credit card orders and all orders being shipped outside the Continental United States.

Order # _____ Order Date _____ Terms _____ Ship Via _____
 Check/MO Visa MasterCard COD Ground 2nd Day Air Next Day Air

Fold Here First

From: _____

Place Stamp Here



TO:
North Coast Rocketry
4848 South Highland Drive, Suite #424
Salt Lake City, UT 84117

Hasten!

Fold Here Last

Please take a moment and let us about yourself.
 1. How do you prefer your items to be shipped?
 2. Would you like to receive our newsletter?
 3. What do you prefer to pay for your items?
 4. Please check or indicate if you prefer the following:
 5. What type of payment do you prefer?
 6. Please check or indicate if you prefer the following:

FOR YOUR INFORMATION

Order one normally shipped UPS Ground. Prices allow a minimum of 2 weeks for most orders and 1 week for telescopes and for orders. If you are in a hurry, we can ship in the continental U.S. via UPS Second Day Air for an additional \$10.00 shipping charge or via UPS Next Day Air for an additional \$20.00 shipping charge.

All orders being sent outside the continental United States should be packed using a Visa or MasterCard, and will be sent by air unless otherwise specified. Actual shipping costs plus a \$5.00 handling fee will be charged. Please remember that postage, handling fee, and insurance are not included in the shipping & packaging fee.

Shipping & Packaging Fee	Shipping & Packaging Fee
Up to \$24.99	\$4.75
\$25.00 - \$49.99	\$6.00
\$50.00 - \$99.99	\$8.00
\$100.00 - \$199.99	\$10.00
Over \$200.00	\$12.00

Additional Shipping Charges (add to above)

UPS 2nd Day Air	\$12.50
UPS Next Day Air	\$23.50
COD	\$5.00
UPS Motor Second Day	\$5.00

* Add applicable sales tax (AL, OH & DE residents only)

Thank you for ordering from North Coast Rocketry!