

Advanced Rocketry



MODEL

AVIATION FUELS



LARGE SCALE ROCKETRY DIV.

CATALOG

March 1987

\$2.00



RD 6, BOX 172, EDWARDS AVE.,
CLARKS SUMMIT, PA. 18411 U.S.A.



To All Our Longtime Friends & Customers: We THANK You !

As you look through our 1987 edition and see all the various Rocket related items, you begin to realize, we've selected only the finest of products in today's market. With over 33 years of experience in this hobby, I have seen many companies start up only to close their doors within a few brief years.

Our company AAA MODEL AVIATION FUELS was formed by my wife & myself with a friend back in 1974, to supply the model aircraft hobblist with Custom Blended fuels as well as the raw chemicals for club brewing. In 1980, I attended the World Space Modeling Championships and talking with so many wonderful people from everywhere, decided to start up our Large-Scale-Rocketry-Div., since the East coast needed a supply center. A place where the Rocket enthusiast could order several manufacturers products, pay only one shipping & handling charge, obtain some unique items not readily available through most outlets, and above everything else- receive their orders yesterday when it was most needed. This is the reason we EXCEL above ALL the rest- our extremely Fast Service — which is Second to NONE — We CARE !

Factors such as this developed our business perspective and formed our theme- "Remember- North America is Our Front Door" and the "One Stop Rocket Shop" from our warehousing facility. We are not like a few others in the rocket game, we do maintain a business address and phone number other than our home's, and don't work from our basement as a cottage industry creeper.

With the advent of higher weight limits & the use of 'G' power motors we will begin to stock the larger rocket motors under Class B and sell to persons who comply with NFPA-1122. You may call for an appointment to come up and pick up your class B motors with your Tripoli R.A. card.

We sincerely hope you will derive sufficient data from our 1987 cat. to pursue your hobby to it's fullest. We also wish to thank all our old customers for their continued support, and extend a 'WELCOME' to those new to AAA MODEL AVIATION FUELS and the pursuit of HIGH POWER ROCKETRY.

HAPPY FLYING & GOD BLESS,

Alexander A. & Mary C. Andrade
(Doc) The Owners

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RD 6, Box 172, Edwsville,
Clarks Summit, PA 18411
U.S.A.



World Space Modeling
Championships-1980

Naval Air Engineering Center
Lakehurst, NJ—September 7-12



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AEROTECH MOTORS

MODEL & EXPERIMENTAL ROCKET MOTORS

* D7-X

ENDBURNER-INITIAL THRUST SLUG
.938 X 2.00"
TOTAL WT. 26.1 G
PROP. WT. 11.0 G
TOTAL IMPULSE 20 N-SEC.
BURN TIME 3.0 SEC.
DELAYS 0, 2, 4, 6 & 8 SEC.

* E6-X

ENDBURNER-INITIAL THRUST SLUG
.938 X 2.75"
TOTAL WT. 39.7 G
PROP. WT. 21.5 G
TOTAL IMPULSE 40 N-SEC.
BURN TIME 7.2 SEC.
DELAYS 0, 2, 4, 6 & 8 SEC.

* E10-X

MOONBURNER-DUAL THRUST
.938 X 2.75"
TOTAL WT. 38.7 G
PROP. WT. 20.5 G
TOTAL IMPULSE 40 N-SEC.
BURN TIME 4.0 SEC.
DELAYS 0, 2, 4, 6 & 8 SEC.

E22-X

REGRESSIVE
.938 X 2.75"
TOTAL WT. 40.0 G
PROP. WT. 20.0 G
TOTAL IMPULSE 40 N-SEC.
BURN TIME 1.9 SEC.
DELAYS 4, 8, 12 SEC.

* E28-X

SUBDUED PROGRESSIVE
.938 X 2.75"
TOTAL WT. 39.6 G
PROP. WT. 18.9 G
TOTAL IMPULSE 40 N-SEC.
BURN TIME 1.4 seconds
DELAYS 0, 4, 8 & 12 sec.

E55-X

SUBDUED PROGRESSIVE
.938 X 2.75"
TOTAL WT. 40.5 G
PROP. WT. 20.5 G
TOTAL IMPULSE 40 N-SEC.
BURN TIME .73 SEC.
DELAYS 5, 10, 15 SEC.

* F9-X mid-range 'F' ultimate D-size replacement

DELAYS AVAILABLE
0, 2, 4 & 8 sec.

* F10-X

ENDBURNER-INITIAL THRUST
1.125 X 3.50"
TOTAL WT. 70.5 G
PROP. WT. 40.5 G
TOTAL IMPULSE 80 N-SEC.
BURN TIME 7.9 SEC.
DELAYS 0, 2, 4, 6 & 8 SEC.

* F20-X

MOONBURNER-DUAL THRUST
1.125 X 3.50"
TOTAL WT. 67.7 G
PROP. WT. 37.7 G
TOTAL IMPULSE 80 N-SEC.
BURN TIME 4.0 SEC.
DELAYS 0, 4, 8, 12 SEC.

* F80-X

SUBDUED PROGRESSIVE
1.125 X 3.50"
TOTAL WT. 69.5 G
PROP. WT. 37.7 G
TOTAL IMPULSE 80 N-SEC.
BURN TIME 1.0 SEC.
DELAYS 5, 10, 15, 20 SEC.

* F30-X

DELAYS AVAILABLE
0, 4, 7 & 10 sec.

* F41-X

DELAYS AVAILABLE
0, 4, 8 & 12 seconds

G15-X

4,8,12

G60-X

5,10,15,20

***G25-X**

5, 10

G70-X

5,10,15

G45-X

5, 10, 15 SEC.

G125-X

5,10,15 SEC.



* Designates NAR CERTIFIED Motors

"NOTE": SPECIAL RESTRICTIONS ON
'H-I-J' MOTOR ORDERS- NFPA 1122
CALL US FOR APPOINTMENT TO PICK-UP

H 90-X

10 & 15

I 65-X

10 & 15

H 120-X

10 & 15

I 140-X

10 & 15 SEC.

H 125-X

10 & 15 SEC.

J 100-10

DELAYS

CROWN ROCKET TECHNOLOGY

E & F Type Model Rocket Motors

ROCKET MOTOR SPECIFICATIONS

TYPE (CAT NO)	DIA X LENGTH in (mm)	WEIGHT oz (g)	PROP. MASS oz (g)	IMPULSE lb-sec (n-sec)	DELAYS sec
E45 (92XX)**	0.938 x 3.25 (24 x 83)	1.52 (43)	0.69 (19.5)	9.0 (40.0)	4, 7, 10
F50 (93XX)**	1.125 x 3.25 (29 x 83)	2.01 (57)	0.81 (23.0)	10.6 (47.0)	5, 7, 9
F67 (94XX)**	1.125 x 4.00 (29 x 102)	2.82 (80)	1.39 (39.5)	18.0 (80.0)	4, 8, 12

ESTES INDUSTRIES

enerjet

MAGNUM-D

B4-2	B8-3	C6-7	D12-0
B4-4	B8-5	C5-3	D12-3
B4-6	B8-7		D12-5
B6-0	C6-0		D12-7
B6-4	C6-3		D11-9
B6-6	C6-5		



FLIGHT SYSTEMS, INC.

MOTOR: * D18-X * D20-X * E5-X

THRUST TIME:	2.3 SEC.	.6 SEC	4.5 SEC
DIMENSIONS:	21 X 95	21 X 95	21 X 95
INIT. WT. (G):	43 GMS	45 GMS	45 GMS
TIME DELAYS:	0,4,6	0,3,5,7	0,4,6
TOTAL IMPULSE:	20 N	15 N	22 N
MAX THRUST:	3.6 KG	10 LB	2.5 KG

MOTOR: * E60-X * F7-X * F100-X

THRUST TIME:	.6 SEC.	9. SEC.	.5 SEC
DIMENSIONS:	27 X 100	27 X 150	27 X 150
INIT. WT. (G):	78 GMS	110 GMS	110 GMS
TIME DELAYS:	0,4,6,8	4,6	0,4,6,8,10
TOTAL IMPULSE:	30 N	60 N	50 N
MAX THRUST:	9. KG	3.5 KG	16 KG

VULCAN SYSTEMS INC.

COMPOSITE PROPELLANT ROCKET MOTORS
MODEL & EXPERIMENTAL

* **E26-X E30-X F52-X F54-X**
F MOTOR DELAYS 5, 7, 10, 12 SEC. (24MM)
E MOTOR DELAYS 5, 7, 10 SEC. (24MM)

E38-X F30-X F67-X F150-X
F MOTOR DELAYS 5, 7, 10, 12 SEC. (29MM)
E MOTOR DELAYS 5, 7, 10 SEC. (29MM)

PLEASE CALL FIRST FOR AVAILABILITY
(717)586-1759- 587-5420

G44-X G58-X G100-X
G MOTOR DELAYS 5, 7, 10, 12 SEC.(29MM)

H76-X H142-X H316-X I 283-X
H & I MOTOR DELAYS 6, 9, 12 SEC.(38MM- 1.5"

"NOTE": SPECIAL RESTRICTIONS ON
'H-I-J' MOTOR ORDERS- NFPA 1122
CALL US FOR APPOINTMENT TO PICK-UP

* **CANAROC ROCKET MOTORS** *
" EARLY 80'S VINTAGE COLLECTABLES "

B4-6 BX= \$5, C6-3 & C6-5 PK= \$7,
B14-7 & C9-7 PKS= \$10
D18-3, D18-5, D18-7 PKS = \$10

PLEASE ORDER MOTORS USING DELAY DESIRED.

The American Dream © 1976
SKILL LEVEL 2



Deluxe

THE AMERICAN DREAM WAS DESIGNED WITH YOU IN MIND. WE HAVE KEPT IT A SKILL LEVEL 2 SO CONSTRUCTION IS QUICK AND EASY. WITH GREAT EYE APPEAL AS WELL AS FANTASTIC PERFORMANCE IT FEATURES: PRE-CUT PLYWOOD FINS AND RINGS, A SPECIAL AAA-EJECTION BAFFLE/ SHOCK CORD & ENGINE MOUNT, THROUGH-THE-WALL FIN MOUNTING, A TEST MOUNT FOR USING D & E SIZE ENGINES - THE 35" NYLON PARACHUTE RECOVERY GIVES THIS GRACEFUL BIRD A SAFE LANDING EVERY LAUNCH. AS WITH ALL AAA MODEL AVIATION FUELS CUSTOM KITS, THIS IS 100% QUALITY ENGINEERED FOR FUN & SAFETY. NOT LEGAL IN EITHER STANDARD OR HEAVY-DUTY AAA BODY TUBES.

LENGTH: 58.5" RECOMMENDED MOTORS (1)
DIAMETER: 2.25" F100-6 F10-4 F67-8
FIN SPAN: 8.5" F20-8 F15-8 F44-8
AAA-AMD E60-6 E45-7 F50-5
F10-4 F10-4 D12-7

Made in U.S.A.

"PENNSYLVANIA"
CRUDE
SPORT-PAYLOADER

"CHEAPEST & EASIEST KIT"

LESS THAN 1 HR. ! DESIGNED TO USE
THE POWERFUL "E & P'S" !

THE P.C. GIVES YOU:

- * STURDY HI-STRENGTH BODY TUBES !
- * PRE-CUT PLYWOOD FINS !
- * HI-STRENGTH SHOCK CORD
- * HI-STABILITY DESIGN !!
- * VERY SIMPLE CONSTRUCTION
- * EFFICIENT PLASTIC NOSE- CONE !
- * HI-VISIBILITY STREAMER !

RECOMMENDED MOTORS:

E60-4, E30-6, E38-5
F100-6, F50-7, F30-7, F10-4, F15-4
F20-8, F41-9, F45-8, F67-8, F80-10

SKILL LEVEL

2



LENGTH: 32 1/4"
DIAMETER: 2.6"
WEIGHT: 7 OZ.

ONLY \$11.95

Made in U.S.A. © 1968

MAGNUM
NIKE-RAM 2

SKILL LEVEL 2

* BEST FULL PRODUCTION KIT OF 1985 *
WITH COMPOSITE G'S, THE NIKE-RAM CAN
ACCELERATE UP TO THE SPEED OF SOUND.

SPORT & PAYLOADER

A DELUXE KIT MEANS:

- * AAA QUALITY BODY & ENGINE TUBES !
- * QUALITY BIRCH PLY. PRE-CUT FINS !
- * AAA SPECIAL EJECTION BAFFLING !
- * THROUGH-THE-WALL FIN MOUNTING !
- * PRE-CUT QUALITY PLY RINGS !
- * LARGE BRIGHT STREAMER
- * SEVERAL ACCENT STRIPES & STENCILS !
- * SEVERAL EPOXY DABBERS & BRUSH
- * BOTTOM LINE- IT LASTS & LASTS & LASTS !!

SPECIFICATIONS:
LENGTH 44.25"
BODY DIA. 2.63"
NET WEIGHT 11 OZ.

RECOMMENDED MOTORS:

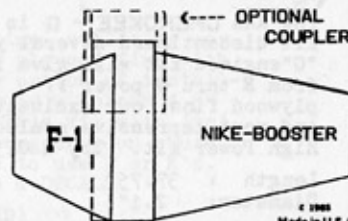
29MM (1) 24MM (3)
E60-4, F100-8, F10-4, F15-4, D12-7, E6-4,
E30-6, E38-5, F50-5, F67-8 E10-4, E28-8
F20-8, F41-9, F45-8, F80-10 E45-7, F9-8,
G10-4, G15-4, G25-8, F44-12, F101-15
G60-10, G65-10, G125-10

UNIVERSAL
"NIKE" BOOSTER KIT

MODEL MOTORS TYPE
F-1 F30, F41, F80, G60, G65-0
D-1 D12, E28, E50, F44-0
D-3 (3) D12, E28, E50-0

- * INCREASED ALTITUDE & LIFTING POWER WITH THIS EXTRA STAGE !!
- * SPECTACULAR STAGED FLIGHTS !
- * SOLIDLY DESIGNED TUMBLE RECOVERY !
- * USE TO LIFT ROCKETS UP TO 3.5" IN DIA.
- * CAN BE ORDERED WITH AN AEROTECH MOTOR

F-1 = \$4.95 / W AT F30 OR F41= \$12.
D-1 = \$3.95 / W. ESTES D12= \$5.
D-3 = \$4.95 / W. PK D12'S= \$10.



Made in U.S.A.

LARGE ROCKET KITS SPECIFICALLY DESIGNED FOR COMPOSITES

Advanced Rocketry

MINATOR

LARGE EXPERIMENTAL ROCKET

FOR AEROTECH 165'S OR J100'S
* VERY LIMITED PRODUCTION KIT *
DESIGNED FOR VIDEO & TELEMETRY PAYLOADS

- * AIRCRAFT BIRCH PRE-CUT FINS & RINGS.
- * STRONGEST BT'S IN THE INDUSTRY !!
- * REDUNDANT HEMI-PARACHUTES !
- * EFFICIENT PLASTIC NOSE-CONE !
- * SOLID CONSTRUCTION
- * HI-STABILITY DESIGN !!
- * CHOICE OF ENGINE-MOUNTS
- * 1.5" J'S OR 2.125" J'S
- * LENGTH 54"
- * DIAMETER 3.5"
- * AVER. WT. 25-32 OZ. EMPTY



MANUFACTURED ON AN AS ORDERED BASIS.

Made in U.S.A. ©

SENTRY H.V.T.V.

"EXPERIMENTAL-TYPE" ROCKET

-VERY LIMITED PRODUCTION KIT-
POWERED BY 3 MOTORS FOR INCREDIBLE
FLIGHTS OUT OF SIGHT !!

- * AAA HIGH STRENGTH BODY & ENGINE TUBES !!
- * AIRCRAFT BIRCH PRE-CUT FINS !
- * PRE-CUT TUBES & PLY RINGS !
- * HEMISPHERICAL PARACHUTE !
- * ACCENT STRIPES & STENCIL !
- * AAA'S SPECIAL EJECTION BAFFLE
- * EXTRA STRENGTH SHOCK-CORD

ULTRA-DESIGN PLASTIC NOSE CONE

SPECIFICATIONS:
LENGTH 54.2"
BT DIA. 2.65"

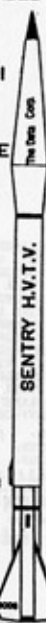
NET WT. 12 OZ.

RECOMMENDED MOTORS :

D12-7 WITH ADAPT. TEST FLIGHT
E60-8, E38-10, E35-10, F100-10

F15-8, F20-8, F30-10, F41-9, F67-10
G15-12, G25-10, G60-15, G65-15

SENTRY H.V.T.V.
HYPER VELOCITY TEST VEHICLE



MANUFACTURED ON AN AS ORDERED BASIS.

Made in U.S.A. ©

CHEROKEE - G



The AAA CHEROKEE - G is a scaled up version of the ESTES 'D' kit discontinued several years ago. This sleek and powerful "G"engine kit will give impressive high performance flights from E thru G power !! Our kit features through-the-wall plywood fins, our exclusive AAA BT 2.1 HD tubing, a large BNC and most impressive scaled up DECALS to truly beautify this High Power kit. Try a G25 or G60 if you dare !

Length : 37.75"
Diameter : 2.1"

EM-F Recommended Motors :
Medium delays- E's
Long delays-F & G's

LASERSONICS KITS

Our LASERSONIC Line are truly High Performance rocket kits designed to give you the maximum performance (design Computer aided) a motor has to offer. Most flights will result in the so called 'Out-of-Sight' type with velocities exceeding MACH 1. Only our TRAN-SON-IC 775 kit with a 'C' motor can not, unless your the owner of an AeroTech 18mm "E".



TRAN-SON-IC 775

Smallest in our fleet, a mere .775" using our exclusive .038 wall BT-20HD with a balsa or plastic nosecone, ply fins & DECALS. This is minimum diameter High Power ruggedness that Lasts & Lasts! The TRAN-SON-IC 775 kit was fully successfully flight tested at Z2 using an AeroTech "E" by our Research & Development Flight Director! Length: 27" Diameter: .775" Recommended Motors: Long delays.

LASERSONIC 1350

Mid-sized version of the TRAN-SON-IC 775, the 1350 was designed to fly on any 1.125" motors. The payload section will house any item that can fit into a 1.25" inside dia. Ruggedly designed to be recovered via bright streamer again and again, this kit is complete with bright PNC-56RW, our Thick White-Wall tubing, plywood fins for through-the-wall strength, an EM-F, complete hardware & DECALS.

Length: 38.25" Diameter: 1.34"

LASERSONIC 1650

The 1650 is the largest offered at this time, utilizing our Thick White-Wall BT 1.65HD & 5 ply- birch plywood fins with a rugged plastic nosecone. You have the option of installing the 'F' engine mount or just slipping in a Vulcan 1.5" motor and punching a hole in the sky ! This kit with its through-the-wall fin mounting and small rugged nylon chute produces GREAT flights whether you decide to use E or H's. This kit comes complete with all hardware & DECALS.

Length: 47.5" Diameter: 1.646" & (1.52" ID)

THE BIGGER THE BETTER !!



MAGNUM PENNSYLVANIA CRUDE



**LARGE SPORT-PAYLOADER
LEAST EXPENSIVE-MOST VERSATILE
ROCKET KIT PRODUCED TO DATE !!**

THE MAGNUM P.C. GIVES YOU :

- * PRECISION ENGINEERED BODY TUBING OF UNSURPASSED STRENGTH !
- * PRECISION MACHINED PLYWOOD FINS & CENTERING RINGS !
- * HEAVY-DUTY ELASTIC SHOCK CORD FOR HIGH POWER APPLICATIONS.
- * LARGE BRIGHT PARACHUTE OF RUGGED RIP-STOP NYLON !
- * EXTREMELY STABLE DESIGN & EASY SIMPLE CONSTRUCTION !!
- * VERY EFFICIENT - EASY TO FINISH PLASTIC NOSECONE !

INTERCHANGEABLE EM SYSTEM !!!

- * PREP & CHANGE AT THE RANGE FROM F TO H, SINGLE TO MULTI.
- * RUGGED HOST 2.6 ACCEPTS ONE 1.125" OR 1.5" MOUNT INCLUDED.
- * ACCEPTS THREE 1.125" OR FOUR .94" MOUNTS INCLUDED.

MASTER THE POSSIBILITIES-LIMITED ONLY BY YOUR IMAGINATION !!!!!

LENGTH : 57 "
DIAMETER : 4 "

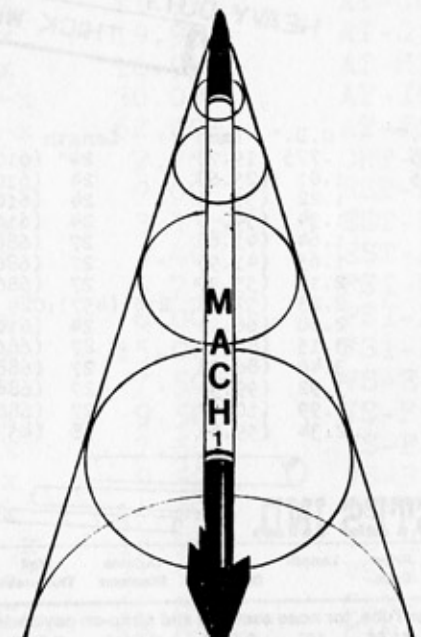
The MAGNUM PENNSYLVANIA CRUDE is our response to request for a BIG rocket to become familiar with the new wave of High Power. Simply great for demonstration flights with a slow, realistic lift off, majestic recovery and its versatility for field size. With the NEW N.A.R. weight & propellant limits increase, you can fly as a Model Rocket or opt for the max in power. Designed to allow you to use Vulcan 1.5" motors in our new AAA BT-1.65 EM as well as standard 'D', 'F', sized motors, our MAGNUM P.C. features plywood through-the-wall fin attachment for max strength.

THE STANDARD OF INDUSTRY = 4 "

© 1985

Made in U.S.A.

MACH 12 & 16 GO FOR IT - IF YOU DARE !



LASERSONICS MACH 12 MACH 16

This kit could be considered a part of the LaserSonic line, but we have decided to premiere it by itself for 1987. It is available in both versions due to pocket-book conditions. This is the ONLY minimum diameter PRODUCTION kit for Breaking-The-Sound-Barrier period. Produced in two distinct sizes & two Airframe materials. Capable of SINGLE engine flights to over ONE MILE, No Bull about it!

	MACH 12	MACH 12+	MACH 1.6	MACH 1.6+
Diameter	: 1.22"OD	Same	--- 1.65"	Same
Length	: 27.50 "	24.50"	--- 47.50"	46.75"
Airframe	: Fiber	Glass	--- Fiber	Glass
Fins (3)	: FiberGlass, precision cut,	thin sheet stock		
Nosecone	: Precision turned &	---	Dense ABS Plastic shell to	
	polished Hardwood,		be filled with (epoxy-lead)	
	hollow to add wt.		for proper balancing w/ motor.	
Shockcord	: Heavy-Duty Nylon-elastic with all kits			
Recovery	: Streamer Rip-stop	---	HD NYLON PARACHUTE	
	fiber Nylon			
Payload	: none	none	--- 13.50"fiber 14.00"glass	
Skill	: Quick & Easy, straight forward as with all fiber,			
	with Fiberglass & epoxy a little more than average.			
Motors	: G45-G60-G125-15sec.	---	H90-H120-H125-10sec w/adaptor	
	H90-H120-15	---	H76-15;H142-15;H316-15;I283-15	

MODEL ROCKET

PARTS AND ACCESSORIES

Heat-welded
Strong
Lightweight
Smooth

HIGH QUALITY AIRFRAME TUBES

HEAVY DUTY

THICK WHITE-WALL

Cat #	I.D."	O.D." (mm)	Length	WT. (gm)
AAA-BT20HD	.705	.775 (19.7)	24" (610mm)	25.
-BT110HD	.955	1.01 (25.6)	24 (610mm)	30.
-BT112HD	1.14	1.22 (31.)	24 (610mm)	47.
-BT113HD	1.26	1.34 (34.)	24 (610mm)	53.
-BT1.64HD	1.56	1.64 (41.6)	27 (686mm)	69.
-BT1.65HD	1.52	1.65 (41.9)	27 (686mm)	114.
-BT2.1 HD	2.00	2.10 (53.3)	27 (686mm)	100.
-BT72HD	2.17	2.25 (57.1)	B18 (457); C24 (610)	55-75
-BT80HD	2.53	2.60 (66.)	24 (610mm)	65.
-BT90HD	3.08	3.15 (80.)	27 (686mm)	125.
-BT95HD	3.28	3.40 (86.3)	27 (686mm)	220.
-BT100HD	3.84	3.92 (99.5)	27 (686mm)	160.
-BT101HD	3.89	3.99 (101.)	27 (686mm)	188.
FSI-RT225HD	2.25	2.34 (59.4)	18 (457mm)	70.

ESTES IND.

Prod. No.	Description	Price Each	Length	Inside Diameter	Outside Diameter	Wall Thickness	Weight in Oz. Net.	Ship.
30302	BT-5	\$1.65	18"	0.515"	0.541"	0.013"	.219	11
30316	BT-20	\$1.85	18"	0.710"	0.736"	0.013"	.288	11
30352	BT-50	\$1.85	18"	0.950"	0.976"	0.013"	.378	11
30382	BT-55	\$2.15	18"	1.283"	1.325"	0.021"	.672	11
30396	BT-60	\$2.30	18"	1.595"	1.637"	0.021"	.960	11
30424	BT-70	\$2.85	17.5"	2.175"	2.217"	0.021"	1.300	14

FLIGHT SYSTEMS, INC.

Catalog No	I.D.	O.D.	LENGTH
AAA-BT-71's	2.175"	2.225"	A=9", B=18", C=24" Like Estes BT70
FSI-RT-718	.715"	.75"	18 " Standard wall
FSI-RT-816	.888"	.93	16 " " 21mm eng.mt.
FSI-RT-1018	1.130"	1.17"	18 " " "
FSI-PT-19	1.04 "	1.125"	18 " Heavy wall Phenolic tube
FSI-HT-114	1.14 "	1.22"	16 " Heavy wall engine mount 27mm
FSI-RT-1218	1.30 "	1.34"	18 " Centuri replacement
FSI-RT-1518	1.60 "	1.64"	18 " Centuri replacement
FSI-RT-1718	1.80 "	1.84"	18 " Standard wall light
FSI-RT-1918	2.00 "	2.04"	18 " Standard wall light

Page #	Catalog #	Price	Catalog #	Price
3	AT-D7-x	\$ 7.95ea.	AT-E6-x	\$ 9.95ea
3	AT-E10-x	7.95	AT-E22-x	10.00
3	AT-E28-x	7.00	AT-E55-x	10.00
3	AT-F9-x	10.00	AT-F10-x	12.00
3	AT-F20-x	9.95	AT-F80-x	9.95
3	AT-F30-x	8.95	AT-F41-x	9.95
3	AT-G15-x	19.95ea	AT-G25-x	15.95
3	AT-G45-x	11.95	AT-G60-x	15.00
3	AT-G70-x	19.95	AT-G125-x	15.00
3	AT-H90-x	16.95+	AT-H120-x	25.95+
3	AT-H125-x	30.00+	AT-I65-x	62.00+
3	AT-I140-x	62.00+	AT-J100-10	82.00+
4	CRT-E45-x	7.75	CRT-F50-x	8.00
4	CRT-F67-x	9.00	EST-B4-x	3.15pk
4	EST-B6-x	3.15pk	EST-B8-x	3.30
4	EST-C6-x	3.40	EST-D12-x	5.80
4	FSI-D18-x	5.75pk	FSI-D20-x	5.75pk
4	FSI-E5-x	6.00	FSI-E60-x	13.75
4	FSI-F7-x	15.00	FSI-F100-x	15.00
5	VS-E26-x	7.50ea	VS-E30-x	7.50ea
5	VS-F52-x	9.50	VS-F54-x	9.50
5	VS-E38-x	7.50	VS-F30-x	9.50
5	VS-F67-x	9.50	VS-F150-x	11.50
5	VS-G44-x	15.00	VS-G58-x	15.00
5	VS-G100-x	15.95	VS-H76-x	36.00+
5	VS-H142-x	31.95+	VS-H316-x	41.00+
5	VS-I283-x	62.00+	CAN-B's	5.00pk
5	CAN-C's	10.00pk	CAN-B14's	10.00
5	CAN-C6's	7.00	CAN-D18's	10.00
6	AAA-AmD	24.95	AAA-MNR-2	20.00
6	AAA-MNR-2D	24.95	(Parts of kits Avail.)	
6	AAA-P.C.	11.95	AAA-UNBspec.	3.00
7	AAA-MINATOR	40.00	AAA-SENTRY	34.95
7	AAA-CHEROKEE	24.00	8 AAA-LS-775	4.95
8	AAA-LS-1350	12.95	AAA-LS-1650	15.95
9	AAA-Mag.P.C.	49.95	w/ Interchangeable	EM's
10	AAA-LSM 1.2	9.99	AAA-LSM 1.2+	19.99
10	AAA-LSM 1.6	25.00	AAA-LSM 1.6+	35.00
11	AAA-BT20HD	1.75	AAA-BT110HD	1.75
11	-BT112HD	1.95	-BT113HD	1.95
11	-BT164HD	2.00	-BT165HD	3.00
11	-BT2.1HD	3.50	-BT72B HD	2.50
11	-BT72C HD	3.00	-BT80HD	3.50
11	-BT90HD	4.50	-BT95HD	7.00
11	-BT100HD	6.00	-BT101HD	5.00
11	FSI-RT225HD	3.25	-BT71 A	.75

Page #	Catalog #	Price	Catalog #	Price
11	AAA-BT71 B	\$ 2.25	AAA-BT71 C	\$ 2.75
11	FSI-RT718	1.25	FSI-RT818	1.45
11	-RT1018	1.60	-RT114	2.00
11	-PT 19	2.50	-RT1218	1.70
11	-RT1518	1.80	-RT1718	2.00
11	-RT1918	2.25		
12	AAA-TC 7	.30	FSI-SC 7	.35
12	FSI-SC 8	.70	AAA-TC 110	.40
12	-SC 10	.75	-TC 102P	1.00
12	-SC 12	.95	-TC 13	.50
12	-SC 15	1.00	-TC 16	.60
12	-SC 17	1.00	-TC 165HD	2.00
12	-SC 19	1.10	-TC 2.1HD	2.00
12	-SC 22	1.30	-TC 72-4	1.25
12	AAA-TC 80-4	1.50	-TC 90-4	1.50
12	-TC 95	2.00	-TC 100	1.50
12	-TC 101	1.50	FSI-BB 8	.95
12	FSI-BB 10	1.00	-BB 12	1.10
12	-BB 15	1.15	-BB 17	1.40
12	-BB 19	1.70	-HB 22	1.75
12	AAA-HB2.1	1.50	AAA-HB 72	1.50
12	-HB 80	1.75	-HB 90	2.00
12	-HB 95	2.50	-HB 100	2.50
12	-HB101	2.50	-HB1.65	2.00
12	FSI-NC171	2.75	FSI-NC172	3.95
12	-NC71	1.30	-NC81H	1.75
12	-NC101H	1.95	-NC121	2.00
12	-NC152	3.45	-NC191	5.00
13	EST-BNC20B	1.80	EST-BNC20R	1.90
13	-BNC50J	1.90	-BNC50K	2.15
13	-PNC50KA	1.85	-BNC50Y	2.55
13	-PNC50Y	2.35	-PNC55AC	2.95
13	-PNC55AO	3.00	-PNC60MS	2.60
13	-PNC60AH	3.70	-BNC70AJ	4.15
	AAA-BNC30	1.50	AAA-PNC30	2.00
13	C.D-LS	5.75	C.D-TR	6.00
13	-Son40	6.00	-Son80	6.00
13	-WASP	6.50	FSI-MK 2	5.00
13	FSI-MK 3	7.25	-MK 4	7.00
13	-MK 5	6.00	-MK 6	7.00
13	-MK 7	7.00	-MK14	30.00
13	-MK15	9.00	-MK16	12.00
13	-MK16F	12.00	-MK17	4.50
13	-MK18	11.50		
14	AAA-CR2.1 D	1.25pr	AAA-CR2.1F	1.25pr
14	-CR70-8	1.50	-CR70-D	1.50

B.

Page #	Catalog #	Price	Catalog #	Price
14	AAA-CR70-F	\$ 1.50pr	AAA-CR80-D	\$ 1.70
14	-CR80-F	1.70	-CR80-3D	2.00
14	-CR90-D	2.00	-CR90-F	2.00
14	-CR90-3F	2.50	-CR90-3D	2.50
14	-CR95-F	3.00	-CR95-3F	3.50
14	-CR95-1.5"	2.50	-CR100-D	3.00
14	-CR100-3D	3.50	-CR100-F	3.00
14	-CR100-3F	3.50	-CR101-D	3.00
14	-CR101-3D	3.50	-CR101-5D	4.00
14	-CR101-F	3.00	-CR101-3F	3.50
14	-CR101-5F	4.00	-CR101-1.5"	2.50
14	AAA-CR810	.60	AAA-CR812	.90
14	-CR815	1.00	-CR817	1.10
14	-CR819	1.20	-CR1012	.70
14	-CR1015	1.15	-CR1017	1.20
14	-CR1019	1.30	-CR225	1.50
14	-CR3010	.60	-CR3912	.80
14	-CR3913	1.00	-CR3113	1.00
14	-CR3116	1.25		
15	EST-TA5560	3.60	EST-TA6070	3.35
15	FSI-HTS810	2.25	FSI-TS1215	2.45
15	AAA-9080	6.00	AAA-TS100-90	8.00
15	*-5560 Pla.	2.00	-FGT-1/"	.35
15	-FGT-3/"	.42	-FGT-4/"	.75
15	-FGTEM1.1/"	.55	-FGTEM1.5/"	.58
15	-FGT-5 /"	1.00	-FGTBT80/"	.80
15	-GR-5/8"	6.00	-GR-1"	9.00
15	-GR-1.5"	16.00	-GR-2"	19.95
15	-G Yarn	2.50	AAA-BFS-1	1.75
15	-PFS-1	3.00	-BFS-2	2.00
15	-PFS-2	3.75	-BFS-3	2.25
15	-BFS-4	3.00	-PFU-1	3.00
15	-PFU-2	1.25		
16	AAA-EM70-D*	3.00	AAA-EM70-F*	3.25
16	-EM80-F	3.50	-EM80-3D	4.50
16	-EM90-F	3.50	-EM90-3D	4.50
16	-EM90-3F	6.00	-EM95-3F	6.00
16	-EM95-1.5"	5.00	-EM100-F	3.50
16	-EM100-3F	6.00	-EM101-F	3.50
16	-EM101-3F	6.00	-EM101-1.5"	5.00
16	AAA-PNC56A	2.25	AAA-PNC165	2.50
16	-PNC165RW	3.00	-PNC80K	4.00
16	-PNC80 Sp.	5.00	FSI-BNC225M	5.50
16	-PNC95	10.00	AAA-PNC100RW	11.50
16	-PNC100	11.00	ACE-PNC-39	10.75
16	FSI-NP 20	5.00	FSI-NP 22	5.20

C.

Page#	Catalog #	Price	Catalog #	Price
16	FSI-NP 24	\$ 5.30	FSI-NP 26	\$ 5.50
16	AAA-NP 12	4.25	AAA-NP 14½	4.75
16	-NP 18	4.90	-NP 36s	10.00
16	-NP 36m	10.50	-M45 / ft.	2.50
16	AAA-SC 1/16	1.50	AAA-SC 1/4	1.50
16	-SC 1/2	1.50	-SC 3/8	1.75
16	-SC 3/4	2.00	*-SC 1"	2.25
16	-S 12 (3)	2.00	-S 13 (2)	2.00
16	-SS-1	1.00	-SS-2	1.25
16	-SS-3	1.50	-MP 5212	2.50
16	-MP 5218	2.75	1.64	
17	AAA-AEROBEE 2.6	29.95	AAA-AeroBee	14.95
18	AAA-BANDIT 3X	64.95	Interchange EM's	
19	AAA-THERM. Red- Yellow- White pks			5.00
19	C.D- E-igniters	2.00	C.D- F-igniters	2.00
19	FSI- I ign. 1A-10; 20; 25; 30 pks ea.			2.75
19	AAA-SF 100 roll	13.95	AAA-EEM (20)	6.00
19	-LL-1B	1.00	AAA-EFM (20)	6.00
19	-LL-1G	1.00	-LL-2	1.25
19	-LL-3	1.00	-LL-4B	2.00
19	AAA-TG 8	2.00	-HF-1	2.00
19	-HP 1	2.25	-HP 2	6.00
19	-HP 3	6.00	AAA-SP-5	4.50
19	-SP15	4.50	-SP30	4.50
19	-TR-1	.75pk	-TR-2	.75pk
19	-TR-3	.75pk	-EB-1	1.50
19	-EB-2	1.75	AAA-FSI-Cat.	2.00
19	-CAN-Cat	5.00	-CAN-Guide	5.00
19	-AT- Cat	1.00	-CL Cat	1.00
19	AAA-SE-214½	1.00	-SE-114	1.00
19	-SE-10	1.25	-SE-6	1.25
19	AAA-MLN-1's pk	2.50	AAA-MLN-2's	2.50pk
19	-MLN-3's pk	2.50	-MLN-4's	4.75
20	AAA-PAP 3	16.00	-PAP 4	19.98
20	-TAPES 3/	1.00	-TAPES 20/	5.00
20	AAA-FBI- AG1 6/	3.00	C.D-MC-4P	3.00
20	C.D-2250P	2.00	C.D-2650P	2.00
21	AAA-SS2,600	70.00	AAA-NR 2,600	55.00
21	Call about your needs after 5Pm 717-587-5420			

Advanced Rocketry Group SweatShirts (Canada)
Med. & Larg @ \$10.00 T-Shirts @ \$6.00
AAA Advanced Rocketry Hats Med. 4.50

H.D. LARGE TUBING COUPLERS

Connect Same Size Body Tubes
Either Permanently or for Staging.



Cat #		*NEW for 1987
AAA-TC-7	.705	for BT20HD
FSI-SC-7	.715	" RT718
-SC-8	.903	" RT818
AAA-TC-110	.955	" BT110HD
FSI-SC-10	1.13	" RT1018
AAA-TC-102P	1.14	" BT112HD
FSI-SC-12	1.30	" RT1218
AAA-TC-13	1.26	" BT113HD
FSI-SC-15	1.60	" RT1518
AAA-TC-16	1.56	" BT1.64HD
-TC-165*	1.52	" BT1.65HD
FSI-SC-17	1.80	" RT1718
-SC-19	2.00	" RT1918
AAA-TC-2.1HD*	2.00	" BT2.1HD
-TC-72-4	2.17	" BT70-72HD
FSI-SC-22	2.25	" HT225HD
AAA-TC-80-4	2.53	" BT80HD
-TC-90-4	3.08	" BT90HD
-TC-95Exp	3.28	" BT95Exp
-TC-100	3.84	" BT100HD
-TC-101	3.89	" BT101HD

SOLID & HOLLOW BULKHEADS

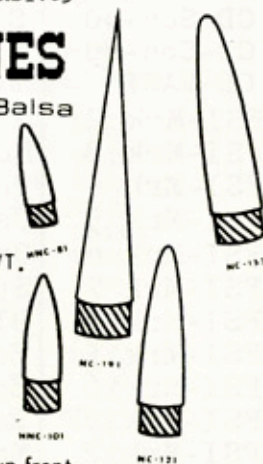
Connect Body Tubes of the Same Size.
Build and Connect Payload Sections.
Any Application Requiring Complete Blockage of Tubes.

Cat #		*NEW for 1987
FSI-BB 8	FSI-BB15	AAA-HB2.1*
-BB10	-BB19	AAA-HB95
-BB12	-BB22	-HB72
		-HB80
		-HB90
		-HB100
		-HB101
		-HB1.65*

FSI & ESTES CONES

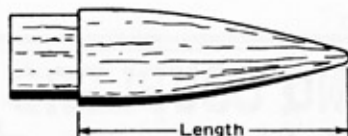
Precision Machined, Lightweight Balsa
Except as Noted

CAT. NO.	"A"	"B"			
FSI-NC-171	FITS	NOSE			
FSI-NC-172	TUBE	CONE			
FSI-NC-71	I.D.	LENGTH	AVERAGE	NET WT.	SHIP WT.
FSI-HNC-81	.903"	2.8"	.50 oz.	7 oz.	
FSI-HNC-101	1.13"	3.5"	.50 oz.	7 oz.	
FSI-NC-121	1.30"	5.3"	.60 oz.	7 oz.	
FSI-NC-152	1.60"	6.0"	1.00 oz.	10 oz.	
FSI-NC-191	2.00"	10.7"	2.00 oz.	12 oz.	

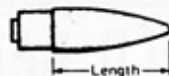


*Hardwood nose cone when extra weight is needed up front.
Extra durability. Easy finishing.

BALSA NOSE CONES







PLASTIC NOSE CONES



Balsa nose cones are machined from high grade light-weight balsa lumber. They require "sand and seal" finishing before painting, and a screw eye (not included) for shock cord attachment.

Plastic nose cones are precision-molded in a wide variety of shapes and sizes. Most have bases with lugs (or eyelets) for attaching shock cords. Plastic cones are ready-to-use in bright colors. May be painted with enamel.

Shape	No.	Description	Dimensions			Average Weight	Ship. Wt.
			1	2	3		
	5	BNC-20A	13/16"	0.736"	1/4"	0.03 oz.	1 oz.
	6	BNC-20B	1-11/16"	0.736"	5/16"	0.05 oz.	1 oz.
	7	BNC-20R	2-3/4"	0.736"	3/8"	0.07 oz.	2 oz.
	8	PNC-20N	2-3/4"	0.736"	1/2"	0.12 oz.	2 oz.
	9	BNC-50J	1-3/8"	0.976"	1/2"	0.08 oz.	4 oz.
	10	BNC-50K	2-3/4"	0.976"	1/2"	0.13 oz.	4 oz.
	11	PNC-50KA	2-3/4"	0.976"	1/2"	0.13 oz.	4 oz.
	12	BNC-50X	3-1/4"	0.976"	1/2"	0.15 oz.	4 oz.
	13	BNC-55AA	3-1/8"	1.325"	1/2"	0.15 oz.	4 oz.
	14	BNC-55F	3-7/8"	1.325"	1/2"	0.19 oz.	4 oz.
	15	PNC-55AC	5-3/8"	1.325"	3/8"	0.32 oz.	6 oz.
	16	PNC-55AO	5"	1.325"	3/4"	0.43 oz.	4 oz.
	17	PNC-60MS	3-1/8"	1.637"	5/8"	0.39 oz.	4 oz.
	18	PNC-60AH	6-5/8"	1.637"	7/8"	1.00 oz.	6 oz.

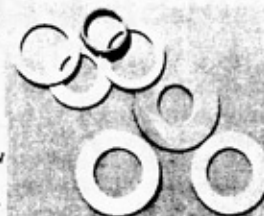
C.D. & FSI MODEL ROCKET KITS

Catalog No.

CD-LS	LongStar, 26.5"x 1.0"
CD-TR	TransRoc, 17.5"x 1.0"
CD-Son-40	Sonics 40, 14.5"x 1.0"
CD-Son-80	Sonics 80, 17.5"x 1.0"
CD-WASP	W.A.S.P., 14.5"x 1.0"
FSI-Mrk 2	Star Gazer, .903"x 23"
FSI-Mrk 3	Nova, 1.13"&.903"x 18"
FSI-Mrk 4	Voyager, 1.13"x 22.5"
FSI-Mrk 5	Oso, 1.1"x 29"
FSI-Mrk 6	Orbit, 1.13"&.903x 22"
FSI-Mrk 7	Sprint, 1.13"&.903x 15"
FSI-Mrk14	Black Brant II, 2.1"x 41.5"
FSI-Mrk15	Echo I, 1.34"x 20.5"
FSI-Mrk16	Eos D, 1.3"&1.6"x 42.5"
FSI-Mrk16F	Eos F, 1.3"&1.6"x 42.5"
FSI-Mrk17	Mach 1 Dart, Upper stage
FSI-Mrk18	Maverick, 1.64"x 29"

PLYWOOD CENTERING RINGS

ULTRA LIGHTWEIGHT PRECISION CUT PLYWOOD EXTRA STRONG



We make centering rings for our tubing sizes as well as anyone elses. All we need to know is the ID of the tube and the engine size to be used. If more than (1) engine, then the #.

Listed below by BT size, then engine tube size, HD or Regular BT. Cat. No.

AAA-CR2.1HD-D	BT2.1HD	AAA tube # 110	for a 24mm eng.
CR2.1HD-F	BT2.1HD	# 112	" 29mm "
AAA-CR70 HD-D	BT70-72	FSI tube # 8	" 21mm "
CR70 HD-D	BT70-72	AAA tube # 110	" 24mm "
CR70 HD-F	BT70-72	# 112	" 29mm "
AAA-CR80 HD-D	BT80HD	# 110	" 24mm "
CR80 HD-F	BT80HD	# 112	" 29mm "
CR80 HD-3D	BT80HD	# 110	" 3- 24mm "
AAA-CR90 HD-D	BT90HD	# 110	" 24mm "
CR90 HD-3D	BT90HD	# 110	" 3- 24mm "
CR90 HD-F	BT90HD	# 112	" 29mm "
CR90 HD-3F	BT90HD	# 112	" 3- 29mm "
AAA-CR95Exp-F	BT95Exp	# 112	" 29mm "
CR95Exp-3F	BT95Exp	# 112	" 3- 29mm "
CR95EXP-1.5	BT95EXP	#1.65	" 38mm "
AAA-CR100HD-D	BT100HD	# 110	" 24mm "
CR100HD-3D	BT100HD	# 110	" 3- 24mm "
CR100HD-F	BT100HD	# 112	" 29mm "
CR100HD-3F	BT100HD	# 112	" 3- 29mm "
AAA-CR101HD-D	BT101HD	# 110	" 24mm "
CR101HD-3D	BT101HD	# 110	" 3- 24mm "
CR101HD-5D	BT101HD	# 110	" 5- 24mm "
CR101HD-F	BT101HD	# 112	" 29mm "
CR101HD-3F	BT101HD	# 112	" 3- 29mm "
CR101HD-5F	BT101HD	# 112	" 5- 29mm "
CR101HD-1.5	BT101HD	#1.65	" 38mm "

All our rings are the same ones used in our Custom Eng. Mts.

PAPER CENTERING RINGS

CR-810	centering ring for .903 tube in 1.13" tube
CR-812	" " " " " 1.34" body
CR-815	" " " " " 1.64" body
CR-817	" " " " " 1.84" body
CR-819	" " " " " 2.04" body
CR1012	" " " HRT1018 " 1.34" body
CR1015	" " " " " 1.64" body
CR1017	" " " " " 1.84" body
CR1019	" " " " " 2.04" body
CR-225	" " " " " 2.34" body
CR3010	" " " use in CRT#2110 with 1.01" OD
CR3912	" " " 1.01"OD in 1.22" OD, CRT#2112
CR3913	" " " 1.01"OD in 1.34" OD, CRT#2113
CR3113	" " " 1.22"OD in 1.34" OD, CRT#2113
CR3116	" " " 1.22"OD in 1.64" OD, CRT#2116

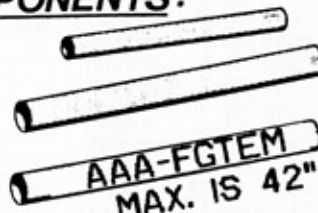
BALSA & PLASTIC TRANSITIONS

CONNECT BT'S OF DIFFERENT SIZES

Catalog No.

EST-TA5560	Balsa Adapter for BT55 to BT60
EST-TA6070	Balsa Adapter for BT60 to BT70, 71's, 72's
FSI-HTS-810	Hardwood Trans for .903" tube to 1.13" tube
FSI-TS-1215	Balsa Trans sect. for 1.3" tube to 1.6" tube
AAA-TS-9080	Plastic section for BT-90HD to BT-80 HD
AAA-TS-100-90	Plastic section for BT-100HD to BT-90HD

STRUCTURAL COMPONENTS:



FIBERGLASS TUBING Filament wound fiberglass tubing is useful for any application where an extremely strong, lightweight High Pressure chamber or a High Performance airframe is required.

This is the same material used by the Dept. of Defense in its R & D programs, as well as several Rocket Motor Manuf. We carry two grades, a thick wall for engine designing & a thin wall for engine mounting tubes or high performance airframes.

Cat #	I.D."	O.D."	Length max.
AAA-FGT 1	.63 (16mm)	.69 (17.5mm)	60 (1524)
-FGT 3	1.01 (25.6mm)	1.125 (28.5mm)	60 (1524)
-FGT 4	1.50 (38.1mm)	1.625 (41.3mm)	18 (45.7)
-FGTEM 1.1	1.13 (28.7mm)	1.22 (31.0mm)	42 (1067)
-FGTEM 1.5	1.54 (39.1mm)	1.64 (41.6mm)	42 (1067)
-FGT 5	2.00 (50.8mm)	2.125 (54.0mm)	60 (1524)
-FGT80	2.53 (64.2mm)	2.60 (66.0mm)	60 (1524)

We will sell to your requirements; by the foot or by the inch! Pricing will be on the inch per item.

GRAPHITE RODS

NASA spec. graphite rods are used to form a nozzle in motor manuf. as well as crucibles or engine bells. We stock four sizes of one foot lengths.
GR-5/8=.625"dia.: GR-1= 1"dia.: GR-150= 1.5"dia.: GR200= 2"dia.

GRAPHITE YARN

Graphite fibers, the super lightweight, ultrastrong ultrastiff material used by the aircraft, spacecraft, and sporting industries. You can use it to reinforce fins, wings, etc. This yarn is composed of 15K individual continuous filaments, which can be spread into a thin ribbon of 1" or so. Just epoxy in place & when cured you've strengthened the bond. Sold in TEN Foot lengths.

AAA-BFS-1 Balsa Fin Stock, 3/32"x 3x 12	3 pcs of select
AAA-PFS-1 Plywood	" " x 6x " birch
AAA-BFS-2 Balsa	" 1/8 " x 3x " select
AAA-PFS-2 Plywood	" " x 6x " birch or poplar
AAA-BFS-3 Balsa	" 3/16"x 3x " Select or Hard
AAA-BFS-4 Balsa	" 1/4 " x 4x " Select or Hard
AAA-PFU-1 Plastic Fin Unit #13 BT, black 4 fin as Challenger II	
AAA-PFU-2 Plastic Fin unit as Scorpion kit, for .976"BT	

AAA CUSTOM MOTOR MOUNTS

These mounts hold and center the rocket engine in the "airframe" body tube.

CUSTOM ENGINE MOUNTS: Our 'Tri-A' engine mounts are INOVATIVE and used exclusively in our kits. Just like a snap-fit kit; you first assemble, check alignment- adjusting & then glue. They include a punched engine tube(s), baffle- shockcord mt., centering rings, a shockcord & snap-swivel. All are ultra lightweight, PRECISION cut Plywood & heavy-duty parts. Custom work done to your sizes.

Cat. No.	
AAA-EM80 F	Fits a 1.125"dia. motor in our BT-80HD
EM80 3D	Three .94 "dia. motors for above.
AAA-EM90 F	Fits a 1.125"dia. motor in our BT-90HD
EM90 3D	Three .94 "dia. motors for above.
EM90 3F	" 1.125"dia. " " "
AAA-EM95 3F	" 1.125"dia. " " BT-95 EXPL.
EM95 ?	Custom work you design(4-F's; 7- .94's) CALL us.
AAA-EM100-F	Fits a 1.125"dia. motor in our BT-100HD
EM100-3F	Three 1.125"dia. motors for above.
AAA-EM101-F	Fits a 1.125"dia. motor in our BT-101, or Estes'.
EM101-3F	Three 1.125"dia. motors for above-NOT Estes'.

LARGE NOSE CONES

AAA-PNC56A	Same as on Phoenix-Bird, fits a 1.34" body tube
AAA-PNC165	Canaroc type on BB-V, fits a 1.64" body tube
PNC165RW	" reworked, fits a CRT-2116 tube
AAA-PNC80-K	Estes cone used on BT-80, 8.12" long, 2.55"dia
PNC80-Sp.	" Reworked to fit our BT-80HD loosely
FSI-NC225M	For F.S.I.'s large HT-225
AAA-PNC95-T	For our Experimental BT-95, 3.4"dia.x 11.5L
PNC95-L	same as above but with loose fit for ejection
AAA-PNC100RW	Reworked Pershing-1A cone, loose fit in BT100HD
PNC100	Standard " tight fit in BT100HD
ACE-PNC39	Perfect fit in our BT101HD or ace BT, 16"x3.98"

H.D. PARACHUTES, STREAMERS

SHOCK-CORDS

FSI-NP20	Nylon chute, 20"	SS-1	SnapSwivel pk of 6, sm.
FSI-NP22	Nylon chute, 22"	SS-2	SnapSwivel pk of 6, med.
FSI-NP24	Nylon chute, 24"	SS-3	SnapSwivel pk of 6, Lg.
FSI-NP26	Nylon chute, 26"		
AAA-NP12	Nylon chute, 12"	MP5212	Mylar kit, 12"
AAA-NP18	Nylon chute, 18"	MP5218	Mylar kit, 18"
AAA-NP36S	Nylon chute, 36"		
AAA-NP36M	Nylon chute, 36"&mod.kit		
AAA-M45	Mylar 1/2mil., 45"wide x /ft.		
AAA-SC116	ShockCord, light wt. 10'		
AAA-SC14	ShockCord, med. wt. 10'		
-SC12	ShockCord, Rev. wt. 8'		
-SC34	ShockCord, X Rev. 8'		
-SC38	ShockCord, med. wt. 10'		
-S12	Streamers(3), 2"x 7 1/2'		
-S13	Streamers(2), 3"x		

AEROBEE-HI "NRL-41"

THIS SCALED NAVY VERSION WAS THE REAL "HI" BY AEROJET, INC. BACK IN 1952, THEY DEVELOPED THE 23.6 FOOT ROCKET TO ACHIEVE A 165 MILE PEAK ALT.

TRUE SCALE OF .173 = 49.125" L & 2.6" DIA. THIS IS REAL SCALE NOT A TESTY VERSION !

Characteristics of the Research Rockets

Air Force Aerobee-Hi (Model AJ11-6)
and Navy Aerobee-Hi (Model RV-N-13b)

PERFORMANCE

Thrust of rocket motor	4100	4100
Thrust of booster	18,000	18,000

DIMENSIONS

Over-all length (without booster)
Length of booster
Diameter
Payload volume

	AJ11-6	RV-N-13b
Over-all length (without booster)	20 ft 11 in.	23 ft 7.4 in.
Length of booster	6 ft 7 in.	6 ft 6.6 in.
Diameter	15 in.	15 in.
Payload volume	6 ft ³	6 ft ³

WEIGHT

	120-200	120-200
Payload		
Empty	234	269
Oxidizer	641	745
Fuel	247	313
Helium	6	7

The Aerobee was originally designed to replace the rapidly running out supply of V-2 rockets captured at the end of World War II. Scientists realized the need for a small reliable rocket that could safely carry the valuable payload of instruments required for making measurements at high altitudes. The development of the rocket (originally called Venus) was carried out by the Aerojet Engineering Corporation (now Aerojet-General) for the Applied Physics Laboratory at Johns Hopkins University and the Naval Research Laboratory.

WITH 120-LB PAYLOAD

Brennschluss altitude	122,500 ft	131,000 ft
Brennschluss velocity	6770 ft/sec	6650 ft/sec
Peak altitude	165 mi	165 mi

What is now only a postscript to the story of the Aerobee will one day be a story in its own right. In 1952 Aerojet, Inc. (now the Aerojet General Corporation), approached the Air Force and the Navy with a proposal which said that a better Aerobee could be made by building it with a good deal of magnesium and with stainless steel of the 410 series. The proposal was accepted and the new rocket was built. Its name became Aerobee-Hi. Its existence was announced in April 1955 and on May 2, 1956, the first one was fired at White Sands.

BANDIT 3X

VERY LARGE SPORT-PAYLOADER



THE 3X BANDIT GIVES YOU :

- * PRECISION ENGINEERED BODY TUBING OF UNSURPASSED STRENGTH !
- * PRECISION MACHINED PLYWOOD FINS & CENTERING RINGS !
- * HEAVY-DUTY ELASTIC-NYLON SHOCK CORD FOR HIGH POWER.
- * LARGE BRIGHT PARACHUTE OF RUGGED RIP-STOP NYLON !
- * EXTREMELY SIMPLE CONSTRUCTION & VERY STABLE DESIGN !
- * VERY EFFICIENT ACE PLASTIC NOSE CONE !

INTERCHANGEABLE EM SYSTEM !!!

- * PREP & CHANGE AT THE RANGE, FROM F TO H, SINGLE TO MULTI.
- * RUGGED HOST 2.6 ACCEPTS ONE 1.125 " OR 1.5 " MOUNTS INCLUDED
- * ACCEPTS THREE 1.125" OR FOUR .94" MOTORS MOUNTS INCLUDED.

MASTER THE POSSIBILITIES- LIMITED ONLY BY YOUR IMAGINATION !!!!!!!
LENGTH : 83.25"
DIAMETER : 4."

IGNITION MATERIAL

"THERMALITE WICK" For making your own ignitors as used with the AeroTech, Crown, & PSI line. Basically like 'EnerJet' material with resistance wire braiding & fabric covering. Used for direct Second-Stage or flashbulb type ignition. Standard lengths FIVE ft. Cat. No.

Therm.Red "Slow" approx. 1.5" per second burn rate, fabric red
Therm.Yel. "Medium" " 3. " per second burn rate, fabric yellow
Therm.White "Fast-Rapido" 5. " Per second burn rate, fabric white

Pack of 4 IGNITERS

CDI-E for the A, B, C, D, and E Motors

CDI-F for "F" motors ... Pack of 4

FSI-I Igniters 1A-10; 1A-20; 1A-25; 1A-30/pks

-SF100 Safty-Fuse, 100'x3/32" D.

SPECIALLY DESIGNED "ECONOMICAL" ELECTRIC MATCHES (AT'S) REPLACEMENT

AAA-EEM PACK OF 20/ \$6.00 FOR CORBURN E-TYPE MOTORS.
AAA-EFM 20/ \$6.50 FOR COREBURN F-TYPE MOTORS.

Miscellaneous

Cat #

AAA-LL 1B Launch Lugs to fit a 1/4" rod, Brass in Pk of 2.
-LL 1G " " " " " Glass in Pk of 3.
-LL 2 Launch Lugs to fit a 3/16" rod, Paper in Pk of 6.
-LL 3 " " " " " a 1/8" rod, Paper in Pk of 6.
-LL 4 Launch Lugs to fit a 1/2" rod, Brass in Pk of 2.
AAA-TG 8 TiteBond alph. Glue in 8 oz. bottle
AAA-HF 1 Comp. Dynamics Hobby-Foam Kits, 80 grams
-HP 1 HOBBY-POXY type 1 epoxy
-HP 2 " " type 2 epoxy
-HP 3 " " type 3 epoxy
AAA-SP-5 Super-Poxy 2 part epoxy Quick Cure 5 min. 4 1/2 oz.
-SP15 Super-Poxy 2 part epoxy Mid Cure 15 min. 4 1/2 oz.
-SP30 Super-Poxy 2 part epoxy Slow Cure 30 min. 4 1/2 oz.
AAA-TR-1 Thrust Rings for PSI .903 tube Pk of 2.
-TR-2 Thrust Rings for 'F' size tube 1.13" (2).
-TR-3 Thrust Rings for 'D' size tube .95" (2).
AAA-EB-1 Epoxy Brushes, Pk of 6 med. size 1/2".
-EB-2 Epoxy Brushes, Pk of 6 Lg. size 5/8".
AAA-PSI-C P.S.I. Catalog 1980's ? (does not change)
-CAN-C CANAROC Catalog Early 80's COLLECTOR ITEM
-CAN-G " " " " COLLECTOR ITEM
AAA-AT -C AeroTech Catalog of motors
AAA-CL -C AAA Chemical List Catalog
AAA-SE-214 1/2 Screw-Eyes, small 5/8"L x 3/16" I. (Pk 12)
-SE-114 " " medium 1"L x 1/4" I. (Pk 6)
-SE-10 " " Large 1 3/8"L x 1/2" I. (Pk 6)
-SE-6 " " Ex.Large 2"L x 5/8" I. (Pk 3)

PRESSURE SENSITIVE MYLAR LETTERS & NUMBERS:

The final touch to give your bird a ONLY look as one-of-a-kind. Both letters & numbers come on the same sheet, 3 sizes, 4 colors.
AAA-MLN-1BL Black 1", 1W- 1/2" White, 1S- 1/4" Silver, 1G- Gold, 1R- Red.
AAA-MLN-2BL Black 1/2", 2R- Red 1/2"
AAA-MLN-3BL Black 1/4", 3R- Red 1/4", 3S- Silver 1/4".
AAA-MLN-4BL Black 3" Numbers & Letters.

Miscellaneous

AAA-PAP3 POLISHED ALUM. POLES 3/4" OD X 6' (3) LENGTH

AAA-PAP4 POLISHED ALUM. POLES 3/4" OD X 6' (4) LENGTHS

AAA-TAPES MIL.SPEC. U.S.GOV'T. TRAINING CASSETTE'S- USED

PERFECT TO RERECORD MUSIC OR OTHER INSTRUCTIONS ON . QUALITY
MADE IN THE U.S.A. NOT JAPAN-FOR U.S.GOV'T. USE 1001 TITLE'S- TANK-
MACHINE GUN-TRUCK-AIRCRAFT-"REPAIR"! TILL ALL SUPPLIES ARE GONE-
3/\$1.00 OR 20/\$5.00

AAA-FBI AG-1 FLASHBULB IGNITOR W/WIRES -6/\$3.00

USED IN CLUSTERING TO IGNITE THERMALITE WICKS

ROCKET PLANS:

MINI-CINEROC MODIFICATION PLANS- Due to the phase-out of the Cineroc aerial movie camera by Estes Industries, this modification will be limited to Cinerocs or Cineroc parts you may have now. Finished camera specifications are: DIAMETER: 1.25" (fits BT-55) FILM TYPE & CAPACITY: 9 feet of Kodak G160 Super-8 NEI WEIGHT: 2.5 oz. RUNNING SPEED: 31 frames per second. Approx. 30% less weight and 40% less drag than the standard camera.

Cat. #CD-MC4P

ENERJET 2250 SOUNDING ROCKET PLANS- Scale drawing of the Enerjet 2250 Sounding Rocket. Original parts are no longer available but a good scale model may be built from these plans. This rocket was used by the U.S. Air Force in a cadet ballistics training program at the USAF Academy.

Cat. #CD-2250P

UPDATED 2650 SOUNDING ROCKET PLANS- Originally intended to replace the 2250 Sounding Rocket, our version was built with a booster for greater altitudes. When built around an Estes BT-60 or Centuri ST-16, the model is a challenge to your building & flying skills- each stage uses a cluster of three rocket motors. The full-size version was flown at the California Mojave Test Area (MTA) to an altitude of 8,000 feet. (As with the 2250, original parts are no longer available.)

Cat. #CD-2650P

Technical Reports

AIR-3: This "ACE Information Report" includes instructions for motor installation, clustering and staging techniques. Only \$1.99
AIR-4: ACE Fugue Shroud Construction. How-to techniques for making boattails, reducers, nose cones and custom shapes. \$1.50
AIR-5: Boosted Dart Theory. Theoretical and practical techniques, performance of boosted dart high altitude vehicles. Only \$4.95
AIR-6: Motor Selection and Performance Optimization. Necessary and basic techniques and theoretical trends of performance. \$3.95
AIR-7: Ground Support Equipment. Description of various types of equipment and applications. Launchers, actuators, photo. \$2.50
AIR-10: Construction Techniques. Comprehensive summary and "how-to" book of advanced techniques. A must. Only \$4.95 48pp
FSG-1: U.S. Rockets Single Stage Flight Sheet Guide. Alt. vs. Wt., Coast vs. Wt., and Drag vs. Velocity for 12 kits with various motor choices. Better than any catalog. 1" to 6" rockets. \$9.95
FSG-2: U.S. Rockets Multi-Stage Flight Sheet Guide. Alt. vs. Wt., Coast vs. Wt., and Drag vs. Velocity for 12 kits with various motor choices. An industry first! 1" to 6" rockets. Only \$9.95

CUSTOM ORDERED KITS

" STARSEEKER-2,600 "

2600 SUPER-GLASS PRO-AIRFRAME G-10.
70"L X 2.6"D TO USE 1.5" OR 2.12" MOTORS
I,J,K,L'S IN EXCESS OF 2600 N/SEC.

NIKE-RAM 2,600

"ALL-WEATHER" MAGNUM

WITH THE FBT-80 PRO-AIRFRAME G-10
44.2"L X 2.6"D TO USE 29, 38, 54 MM
STANDARD WILL BE 29MM MOUNT-
CAN BE ORDERED WITH ANY ABOVE.

U.S.ROCKETS & ACE ROCKETS

ASK- CALL OR WRITE ABOUT YOUR FAVORITE
KITS. WE WILL STOCK THEIR FINE LINES
THIS YEAR! "JUST THE REAL THINGS" NO
RE-ENGINEERED TYPES !!!

CUSTOM FABRICATED PARTS

ENGINE MOUNTS LONGER THAN STANDARD
CENTERING RINGS - ENGINE MOUNTS
SMALL RUNS OF SPECIAL SIZE BODY-TUBES

IMPORTANT

PLEASE READ THIS INFORMATION before ordering merchandise

SHIPMENTS **WITHIN** CONTINENTAL U.S.



Please include Full Payment for merchandise, plus
sufficient allowance for Postage and Insurance

OVER-PAYMENTS WILL BE REFUNDED

All merchandise is offered subject to prior sale

SORRY, NO COD ORDERS ACCEPTED

UPS shipments are insured up to \$100.00; include
25¢ for each additional \$100.00 or fraction thereof.

FREIGHT SHIPMENTS

If speed is not essential, motor freight is the most economical
for heavy shipments. Minimum rate is for 100 pounds. Specify
carrier you prefer or rely on our choice for best service.

IMPORTANT — Please use a separate page for all
correspondence. This will help us to speed servicing
your Order and assure a prompt reply to your letter.

POSTAGE CHART

Sub Total	Shipping Charge
\$10-19.99	\$ 2.50
20-29.99	2.75
30-39.99	3.00
40-49.99	3.25
50-74.99	3.75
75-99.99	4.50

Orders over \$100.00 - Add 4% for postage and handling.

Canadian orders add to the above figures:

\$ 0. to \$39.99 Purchase- \$1.50

\$40. to \$99.99 Purchase- \$3.00

\$100. up add 3%

Notice: The prices in this catalog are current as of **MAR.**
1987. This catalog supercedes all previous catalogs,
data sheets and price lists. Prices subject to change
without notice.

487089

**"We guarantee shipment the same week of receipt on "instock"
items. Specialty orders may take slightly longer."**

SHIPPING INFORMATION

The following information is provided in accordance with the requirements set
forth in Trade Regulation Rule 435, promulgated by the Federal Trade Commission.

We normally ship within 3 working days after receipt of your order. Occasionally an item may be
temporarily out of stock, in which case delivery is subject to factory reorder. Generally, this is between
2 weeks and 30 days. We refund the full amount of any item which is no longer available. If your order
has been shipped after a delay of longer than 30 days without prior agreement, you may, if you desire,
return it intact immediately after receipt of order for full refund, including shipping charges. Our
Expediting Staff is available after business hours to answer order status inquiries.

CANADIAN SHIPMENTS

SMALL PACKAGES WILL BE SHIPPED VIA PARCEL POST. MOTOR FREIGHT WHERE APPLICABLE.

Please note: We will not ship UPS to Canada (unless requested by the customer)
because of the additional (broker's) fee involved which is the responsibility of the customer.

Manufacturer's and distributor's only obligation shall be to re-
place such quantity of the product proven to be defective.
User shall determine the suitability of the product for his in-
tended use, and assume all risk and liability in connection
therewith.

**WARNING: NO MERCHANDISE WILL BE SHIPPED WITHOUT
DISCLAIMER SIGNATURE**

Watch for new products as we add to our available line.

Prices subject to change without notice.

HAPPY FLYING AND MAY LIFE ALWAYS BE GENTLE WITH YOU

24 APR 1987

THE LEADING SPACE MODEL CATALOG



"PROVIDING LEADERS THE DECISIVE EDGE - ALWAYS"

FIRST CLASS MAIL



Address Correction Requested





MODEL AVIATION FUELS®

24 APR 1987

12R



DATE _____
ORDERED BY (PLEASE PRINT OR TYPE CLEARLY) PHONE NO. () _____

NAME _____

STREET _____

CITY _____

STATE _____ ZIP _____

SUB. ITEMS NOT IN STOCK YES _____ NO _____



ORDER # _____

Large Scale Rocketry Div.

CASH ORDER FORM

Phone (717) 586-1759 / 587-5420

ENTERED _____

MFG.	STOCK	QTY.	U/M	PRICE OF EACH	DESCRIPTION	TOTAL PRICE	
							1
							2
							3
							4
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							34

PLEASE NOTE: The DECALS for our Kits are still at the Manufacturers & they should be in the kits by mid JUNE . We have included Mylar letters & numbers

IMPORTANT

PLEASE READ THIS INFORMATION before ordering merchandise
Manufacturer's only obligation shall be to replace such quantity of the product proven to be defective. User shall determine the suitability of the product for his intended use, and assume all risk and liability in connection therewith.

WARNING: NO MERCHANDISE WILL BE SHIPPED WITHOUT DISCLAIMER
SIGNATURE. X _____

POSTAGE CHART

Sub Total	Shipping Charge
\$ 10-19.99	\$2.50
20-29.99	2.75
30-39.99	3.00
40-49.99	3.25
50-74.99	3.75
75-99.99	4.50

TOTAL PRICE	
N.J. RESIDENTS ADD 6% SALES TAX	▶
P.A. RESIDENTS ADD 6% SALES TAX	▶
UPS ZONE ▶	SHIPPING COST (SEE CHART) ▶
P.A. RESIDENTS INCLUDE 6% SALES TAX ON SHIPPING CHARGES	▶
BALANCE DUE FROM PREVIOUS ORDER	▶
TOTAL AMOUNT DUE	▶

Orders over \$100.00 - Add 4% for postage and handling.

THE ACE INJECTION MOLDED ' PNC-39 '

THIS IS IT AS FAR AS PNC'S GO !!!

This outstanding PNC is 16" long & perfectly fits Ace, & AAA BT-101's. Most everyone's Large kits are using it & we stock it. You can produce your own Custom Kit taking the best features of all kits and turn out a Prize-winning model. This is not a heavy foam cone, but the lightest-strongest on the market. For the contest inclined, this cone can hold water or sand for a weight loft event and can keep the weight as far forward as possible & when finished- empty it out & fly normally.

AAA is OVERSTOCKED on FSI ROCKET TUBING -MUST SELL- SPECIAL LIMITED DEAL !!

FSI RT-618 for 18mm motors OD .755" List 1.45 take 55 % off by the Doz.

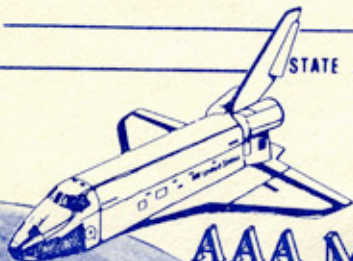
FSI RT-818 for 21mm motors OD .921" List 1.65 take 55 % off by the Doz.

FSI RT-10 VHD 24" for 27mm motors List 2.00 take 50 % off each.

FSI RT-1218 OD 1.34" List 2.00 take 40 % off each. Other tubing as discounted.

NAME _____
ADDRESS _____
CITY _____ STATE _____ ZIP
CODE _____

PLACE
STAMP
HERE



AAA MODEL AVIATION FUELS

LARGE SCALE ROCKETRY DIV.)

RD 6, BOX 172, EDWARDS AVE.,
CLARKS SUMMIT, PA. 18411 U.S.A.