



MASA Planet

Volume 9, Issue 1

January 2006

Safety First!

Motor Data


The certified motor list is your friend!

Ted Cochran
NAR 69921

This issue of the *Planet* includes our annual publication of the list of NAR-approved rocket motors, through H-impulse. I haven't ever found all this information in one place, so I've collected it here. This year I was able to fill in almost every cell in the table. I hope you enjoy it.

It's important to have reliable motor data to make predictable, safe flights, but it's equally important that you make use of it. A weaker-than-expected peak thrust, or a longer-than-expected delay, and your nice new rocket becomes land fill.

Pay particular attention to peak thrust, which nearly always occurs at the beginning of the motor burn. Your rocket needs to be moving at least four times the wind speed when it clears the rod or rail. If the rocket is underpowered, you run the risk weathercocking or dynamic instability.

Check out the NAR safety report for more information, and have a safe 2006! 

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Club Activities

Welcome Back!

MASA enters its tenth year

MASA members last year continued to add to our recreational and educational legacy. We conducted 11 organized launches, in which we collectively managed to burn well over 800 motors on over 700 flights. We held ten club meetings and two club parties, conducted over 30 outreach activities, including students, scouts, 4-H kids, and Team America Rocket Challenge teams (including two of the top three in the country!).

We had the best contest year, ever, as well, including several trophies at NARAM, and a top-ten finish as a Section.

To round out a great year, we welcomed lots of new members (increasing our end-of-year membership count to 46), and a goodly number of High Power certifications and NARTREK awards.

Congratulations to all of us! 

2006 Dues

This issue of the *MASA Planet* is the annual freebie. It is sent to all members registered as of December 2005, mostly to make sure that you have the chance to read this notice :-).

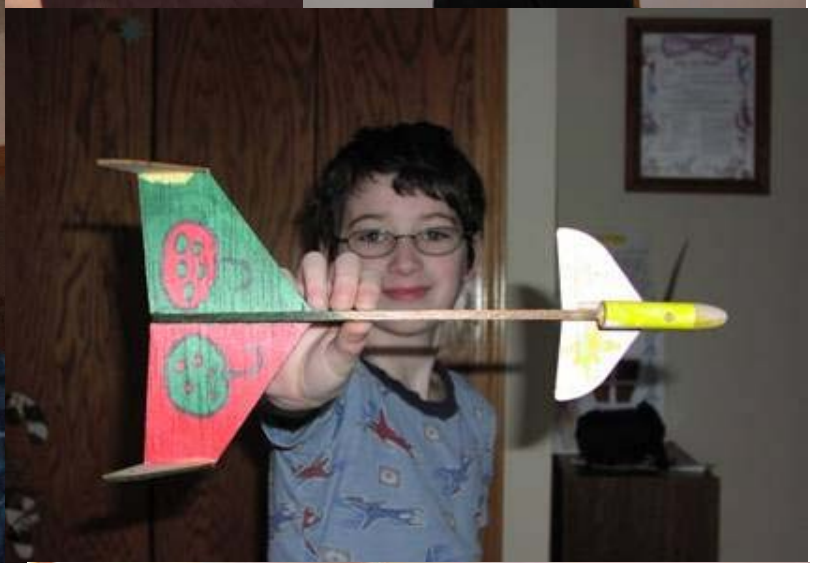
2006 Dues (\$10 Individual, \$12 Family, \$5 Junior) are now due. We strive to keep dues at a minimum level. Your money goes to pay for such items as club informational printings, newsletter printing and mailing, yearly NAR section dues, educational materials, gifts to landowners, and contest prizes.

The next *Planet* will be sent by U.S. mail only to those who have renewed their memberships and who have also requested that it be mailed to them. To renew, visit:

<http://www.mn-rocketry.net/masa/joinmasa.htm>

Holiday Party Fun!

Photos by Buzz McDermott



MEETING SCHEDULE

THURSDAY, JANUARY 12 (ONE WEEK LATE!)

Location: Science Museum of Minnesota

Time: 7 PM to 9 PM

Topic: 2006 Plans, Elections, Badge Selection

THURSDAY, FEBRUARY 2

Location: Science Museum of Minnesota

Time: 7 PM to 9 PM

Topic: TBD in January

THURSDAY, MARCH 2

Location: Science Museum of Minnesota

Time: 7 PM to 9 PM

Topic: TBD in January

NARCON

FRIDAY, MARCH 10 - SUNDAY, MARCH 12

Location: UW Parkside, Kenosha, WI

More info: <http://www.narcon2006.org/>

LAUNCH SCHEDULE

**NOTE: TIMES AND LOCATIONS SUBJECT TO CHANGE!
CHECK THE WEB SITE FOR UPDATES**

SATURDAY, JANUARY 28

Location: White Bear Lake

Time: 10 AM to 1 PM

Theme: TBD January 12

SATURDAY, FEBRUARY 25

Location: White Bear Lake

Time: 10 AM to 1 PM

Theme: TBD January 12

SATURDAY, MARCH 25

Location: Elk River VFW

Time: 9 AM to 2 PM

Theme: TBD January 12

Summer fun



Alan Estenson

America's private space fleet makes an appearance at Oshkosh.

Club Activities

2006 Officer Elections

After a bruising primary, a very hotly-contested general election, and a runoff election decided by last-minute write-in ballots from the cemetery districts of Chicago's south side, MASA's officers for 2006 have been determined.

They are:

Mike Erpelding, re-elected for a third term as President by acclamation,

Stuart Lenz, re-elected for a second term as Vice-President by acclamation, and

Dave Whitaker, re-elected for a second term as Secretary-Treasurer, also by acclamation.

Past President Alan Estenson has volunteered to continue as webmaster (no former MASA presidents were harmed in the making of this decision).

Ted Cochran has volunteered to continue as Newsletter Editor.

And Russ Durkee has no choice but to continue forever as MASA Founding President--not even a trip to Antarctica can help him escape that fate!

Please continue to volunteer to help these folks in any way you can: Volunteer at outreach events, help out at launches, offer to present at meetings, submit photos and articles for the web site and the newsletter, and in general continue to pay forward so that others can enjoy our hobby!

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Summer fun!



Alan Estenson

Carpenter family readies a Fat Boy at the picnic.

Outreach

Cub Scout Launch

November 19th? Plenty warm for rockets!

Photos by Buzz McDermott

Mike Erpelding and Buzz McDermott helped about sixty Cub Scouts from the Lino Lakes area build and fly rockets on November 19th. Thanks to Lee Frisvold who covered for Mike at the regularly scheduled launch, MASA was able to support this activity. The scouts built a variety of E2Xs and Gnomes, and, as we would expect, had a blast!



Blast from the Past

(Here's a plan from the August, 1970 edition of *Model Rocketry*, courtesy of Mark Thell. --Ed)

Reader Design Page

This month's Reader Design is the *Wasp-II*, a two-stage sport rocket, submitted by Tony Barrett of Mansfield, Ohio. The upper-stage stands 17½" long, and is suitable, if used without the booster, as a parachute duration rocket.

Parts List

- 1 Body Tube BT-55V
- 1 Nose Cone..... BNC-55AC
- 2 Engine Mount.....EH-2055

3/32" and 1/8" Balsa Sheet, Glue, Paint, Etc. (All parts available from Estes Industries.)

UPPER-STAGE FIN (FULL SIZE) (MAKE 4) 3/32" Balsa

BOOSTER FIN (FULL SIZE) (MAKE 4) 1/8" Balsa

Each month *Model Rocketry* will award a \$5.00 prize for the best original rocket design submitted by a reader during the preceding month. To be eligible for this prize, entries should be carefully drawn in black ink on a single sheet of 8½ by 11 paper. Sufficient information should be contained in the drawing so that the rocket can be constructed without any additional information.

Submit entries to:
Rocket Design
Model Rocketry
Box 214
Boston, Mass., 02123

Technical Data

2006 Certified Motor Data Table

For solid propellant motors available in Minnesota

The rules with regard to motor use, in very brief form:

- A **FAA Waiver** is required for all flights with more than 125 g propellant weight.
- Except for certification attempts, a **Level 1 Certification** is required for HPR motors, defined as having more than 62.5g propellant OR more than 80 N average thrust OR more than 160 Nsec total impulse

Information, where available, is based on digging through a lot of web sources (NAR, TMT, CAR, AT, Thrustcurve.org) and is believed but not guaranteed to be accurate. NAR went to a five year recertification cycle this year, so many motors that were due to expire last month got a new lease on life. Hybrid motors are also available starting at G impulse, but are not included here.

Key:

Mfr data in blue

Organization data in black

Motor may not be used under Notification Rules

Motor may be used conditionally

Designation	Mfg.	Size (mm)	Prop Mass (grams)	Tot Imp (N-sec.)	Peak Thrust (N)	Avg thrust (N)	Burn Time (sec)	Cert. Org.	Decertified date, Add'l Notes, Restrictions
1/4A Motors									
MicroMaxx-1	Quest	6 x 26	0.4	0.18	1.23	0.22	0.82	NAR	Expires 12/31/2007
MicroMaxx-2	Quest	6 x 26	0.5	0.35				NAR	1/8A0.35-0.5
1/4A2-2,4	Apogee	10.5 x 38	0.8	0.57	5.4	2.5	0.23	NAR	Expires 12/31/2007
1/4A3-3T	Estes	13 x 45	0.8	0.59	5	2.4	0.25	NAR	
1/2A Motors									
1/2A2-2,4,6	Apogee	10.5 x 38	1.5	1.22	4	1.9	0.63	NAR	Expires 12/31/2007
1/2A3-2T,4T	Estes	13 x 45	2	1.09	7.6	3	0.36	NAR	
1/2A6-2	Estes	18 x 70	2.6	1.13	7.9	3.4	0.33	NAR	
A Motors									
A2-0,3,5,7	Apogee	10.5 x 57	3	2.5	4.8	1.9	1.3	NAR	Expires 12/31/2007
A10-3, PT	Estes	13 x 45	3.8	2	12.6	2.4	0.85	NAR	
A3-4T	Estes	13 x 45	3.3	2.22	5.8	2.2	1	NAR	
A8-3,5	Estes	18 x 70	3.3	2.32	9.7	3.2	0.7	NAR	
A6-4	Quest	18 x 70	3.5	2.1	11.8	5.2	0.4	NAR	
B Motors									
B2-0,3,5,7,9	Apogee	10.5 x 89	6	4.8	5.5	1.9	2.5	NAR	Expires 12/31/2007
B7-4,6,8,10	Apogee	13 x 45	2.8	5	14.8	6.7	0.74	NAR	Expires 12/31/2007
B4-2,4	Estes	18 x 70	6	4.3	12.8	4.2	1.03	NAR	
B6-0	Estes	18 x 70	5.6	4.33	12.1	5	0.86	NAR	
B6-2,4,6	Estes	18 x 70	5.6	4.33	12.1	5	0.86	NAR	
B6-4	Quest	18 x 70	6.5	4.6	14.4	6.2	0.75		
C Motors									
C4-3,5,7	Apogee	18 x 50	4.5	8.9	11.3	3.8	2.4	NAR	Expires 12/31/2007
C6-4,7,10	Apogee	13 x 83	7	10	21.1	7.6	1.3	NAR	Expires 12/31/2007
C10-4,7,10	Apogee	18 x 50	4.9	9.6	25.7	10	1	NAR	Expires 12/31/2007
C5-3	Estes	18 x 70	11.3	9.1	21.9	5.3	1.7	NAR	Expires 12/31/2007
C6-0,3,5,7	Estes	18 x 70	10.8	8.8	14.1	4.7	1.9	NAR	
C11-0,3,5,7	Estes	24x70	12	8.8	21.7	10.9	0.81	NAR	
C6-0	Quest	18 x 70	12	8.6	13.4	5.3	1.6	NAR	
C6-3,5	Quest	18 x 70	12	8.1	10.8	4.7	1.7	NAR	

Designation	Mfg.	Size (mm)	Prop Mass (grams)	Tot Imp (N-sec.)	Peak Thrust (N)	Avg thrust (N)	Burn Time (sec)	Cert. Org.	Decertified date, Add'l Notes, Restrictions
D Motors									
D21-4,7	Aerotech	18 x 70	9.6	19.6	32.1	20.8	0.94	NAR	
D7-RC	Aerotech RMS	24 x 70	10.5	18.5	11	6.5	2.9	NAR	
D9-4,7	Aerotech RMS	24 x 70	10.1	18.8	20	10	1.9	NAR	
D13-4,7,10	Aerotech RMS	18 x 70	9.8	19.3	23.6	12.7	1.5	NAR	
D15-4,6	Aerotech RMS	24 x 70	8.9	20	31.4	16.5	1.2	NAR	
D24-4,7	Aerotech RMS	18 x 70	8.8	20	39	21.2	0.94	NAR	
D3-3,5,7	Apogee	18 x 77	9.8	18.4	10.6	2.9	6.4	NAR	Expires 12/31/2007
D10-3,5,7	Apogee	18 x 70	9.8	18.8	25.1	13.4	1.4	NAR	Expires 12/31/2007
D11-P	Estes	24 x 70	24.5	17.5	26	9.4	1.9	NAR	
D12-0,3,5,7	Estes	24 x 70	21.1	17	29.7	10.2	1.7	NAR	
E Motors									
E15-4,7,PW	Aerotech	24 x 70	20.1	39.7	28.8	15.1	2.6	NAR	
E30-4,7	Aerotech	24 x 70	19.3	39.5	48.3	32.4	1.2	NAR	
E6-RC	Aerotech RMS	24 x 70	21.5	37.5	11.9	5.3	7.1	NAR	
E7-RC	Aerotech RMS	24 x 70	17.1	29.4	11.6	5.4	5.4	NAR	
E12J-RC	Aerotech RMS	24 x 70	30.3	34.2	18.3	11.2	3.1	NAR	
E16-4,7	Aerotech RMS	29 x 124	19	37.7	37.2	18.8	2	NAR	
E18-4,8	Aerotech RMS	24 x 70	20.7	36.5	30.1	17.1	2.1	NAR	
E23-5,8	Aerotech RMS	29 x 124	17.4	35.3	38.2	22.5	1.6	NAR	
E28-8	Aerotech RMS	24 x 70	18.4	39.7	50.5	32.5	1.2	NAR	
E6-4,6,8,P	Apogee	24 x 70	21.5	38.7	20.1	6.4	6.1	NAR	Expires 12/31/2007
E10-6,10	Ellis	24 x 102	28.3	35.8	31.2		2.9	TMT	
E9-4,6,8,P	Estes	24 x 95	35.8	28	19.5	9.0	3.1	NAR	
F Motors									
F20-4,7	Aerotech	29 x 73	30	60.5	52.1	22.6	2.7	NAR	
F21W-4,6,8	Aerotech	24 x 95	30	55	42.0	22.0	2.5	TRA	Prod on hold 11/05
F23FJ-4,7	Aerotech	29 x 73	32	52.9	48.7	23.8	2.2	NAR	
F25W-4,6,9	Aerotech	29 x 98	35.6	77.9	46.8	25.6	3.1	NAR	
F26FJ-6,9	Aerotech	29 x 98	43.1	62.2	39.2	27	2.5	NAR	
F32-5,10,15	Aerotech/RV	24 x 124	37.7	79.2	55.6	29.1	2.7	NAR	Expires 12/31/2007
F42T-4	Aerotech	29 x 83	27	52.9	66	43	1.3	NAR	
F50-4,6,9	Aerotech/PML	29 x 95	37.9	76.8	79.6	53.7	1.4	NAR	
F72-5,10,15	Aerotech/RV	24 x 124	36.8	74.9	98.8	61.9	1.2	NAR	Expires 12/31/2007
F12-2,5	Aerotech RMS	24 x 70	30	43.2	23.5	14.7	2.9	NAR	
F13-RC	Aerotech RMS	32 x 107	32.3	62.1	20.0	12.2	5.1	NAR	
F16-RC	Aerotech RMS	32 x 107	62.5	75.5	26.4	13.3	5.7	NAR	
F22-4,7	Aerotech RMS	29 x 124	46.3	65	31.2	19.6	3.3	NAR	
F23-RC-SK	Aerotech RMS	32 x 107	37.8	67.4	36.0	19.4	3.5	NAR	
F24-4,7	Aerotech RMS	24 x 70	19	47.3	41.0	22.2	2.1	NAR	
F37-6,10,14	Aerotech RMS	29 x 99	28.2	50.7	46.5	31.7	1.6	NAR	
F39-6,9	Aerotech RMS	24 x 70	22.7	50	59.5	37.3	1.3	NAR	
F40-4,7,10	Aerotech RMS	29 x 124	40	78.1	68.1	37.9	2.1	NAR	
F52-6,8,11	Aerotech RMS	29 x 124	36.6	73	79.0	51.4	1.4	NAR	
F62T-S,M,L	Aerotech RMS	29 x 89	30.5	51	62.3	48	1	TRA	
F10-4,6,8	Apogee	29 x 85	40.7	76.3	28.2	10.7	7.1	NAR	Expires 12/31/2007
F23-6,10	Ellis	24 x 140	31.2	67.9	39.2		3.6	TRA	



Summer Fun!

Mark Thell shows off a prized possession at the Summer Picnic. (Photo by Alan Estenson).

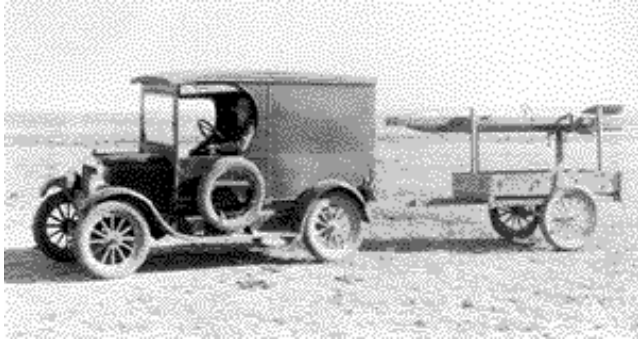
Designation	Mfg.	Size (mm)	Prop Mass (grams)	Tot Imp (N-sec.)	Peak Thrust (N)	Avg thrust (N)	Burn Time (sec)	Cert. Org.	Decertified date, Add'l Notes, Restrictions
G Motors									
G25-5,10,15	Aerotech	29 x 124	62.5	117.5	41.2	22.2	5.3	NAR	Expires 12/31/2007
G35-4,7	Aerotech	29 x 98	50	100.8	76.2	34.7	2.9	NAR	Expires 12/31/2007
G38FJ-4,7	Aerotech	29 x 98	55	87.7	78.2	40.2	2.2	NAR	
G40W-4,7,10	Aerotech/PML	29 x 124	55.1	113.7	66.9	37.2	3.1	NAR	
G55-5,10,15	Aerotech/RV	24 x 177	62.5	119.6	84.7	49	2.4	NAR	Expires 12/31/2007
G80-4,7,10	Aerotech/PML	29 x 124	56.9	116.3	105.2	77.5	1.5	NAR	
G12RC	Aerotech RMS	32 x 107	51.1	87	20.6	10.2	8.6	NAR	Expires 12/31/2007
G33-5,7	Aerotech RMS	29 x 124	72.2	98.4	50.9	30.1	3.3	NAR	Req L1 Cert
G54-6,10,14	Aerotech RMS	29 x 124	46	81.1	81.6	53.7	1.5	NAR	
G61W-S,M,L	Aerotech RMS	38 x 106	60.9	120	83.2	60.5	1.8	TRA	Pending
G64-4,8,10	Aerotech RMS	29 x 124	62.5	118.8	98.3	56.8	2.1	NAR	
G67R-S,M	Aerotech RMS	38 x	57.6	110	80	67	1.6	TRA	Pending
G75J-S,M	Aerotech RMS	29 x 194	114	148	98.4	67.8	2.2	TRA	
G77R-S,M	Aerotech RMS	29 x 149	55.4	105	100	77	1.3	TRA	Pending
G79W-S,M,L	Aerotech RMS	29 x 149	58.6	115	100.7	80.6	2	TRA	Pending
G101T-S,M,L	Aerotech RMS	29 x 125	46	85	100	85	1	TRA	Req L1 Cert
G104T-S,M,L	Aerotech RMS	29 x 125	43.9	81.5	102.3	85	1	TRA	
137G60-12A	Cesaroni Tech	38 x 125	78.4	139.4	103	70.3	2	TRA	Req L1 Cert
G69-12A	Cesaroni Tech	38 x 125	62.5	128.8	85.9	66.6	1.9	TRA	
G79SS-13A	Cesaroni Tech	38 x 125	82.7	129	95.9	79.9	1.6	TRA	Req L1 Cert
G20-3	Ellis	29 x 149	62	124.2	46	20.7	5.5	TRA	
G35-6,10	Ellis	29 x 65	62	124.2	56.2	32	3.9	TRA	
G37-6, 10, P	Ellis	29 x 181	62	110.5	68	36	3.1	TRA	
H Motors									
ALL MOTORS H AND ABOVE REQUIRE LEUP AND LEVEL 1 CERTIFICATION									
H45W-10,15	Aerotech	38 x 194	186	289.3	102	42	6	TRA	Req FAA WAIVER
H55W-6,10,14	Aerotech	29 x 191	93	157.1	113.3	66.2	2.45	TRA	
H70W-6,10,14	Aerotech	29 x 229	126	214.8	143	85	2.6	TRA	Req FAA WAIVER
H125W-S,M,L	Aerotech	29 x 330	185.7	321.8	307	130	2.6	TRA	Req FAA WAIVER
H73J-S,M	Aerotech RMS	38 x 152	125	188.6	97.1	72.4	2.55	TRA	
H97J-S,M	Aerotech RMS	29 x 238	140.9	191.2	111.5	90.8	2.23	TRA	Req FAA WAIVER
H112J-S,M	Aerotech RMS	38 x 191	187.5	265.7	121.7	88.6	2.92	TRA	Req FAA WAIVER
H123W-S,M,L	Aerotech RMS	38 x 152	125	246.8	174.2	108	1.76	TRA	
H128W-S,M,L	Aerotech RMS	29 x 194	92.2	177.9	168.7	150	1.27	TRA	
H148R-S,M,L	Aerotech RMS	38 x 152	115.1	208	198.5	144	1.43	TRA	
H165R 10,15,P	Aerotech RMS	29 x 194	83.1	165	200.5	167	0.99	TRA	
H180W-S,M,L	Aerotech RMS	29 x 238	123	236.8	228.5	204.6	1.3	TRA	
H210R 10,P	Aerotech RMS	29 x 238	110.8	220	265	210	0.99	NAR	
H220-6,10,14	Aerotech RMS	29 x 238	106.4	215.4	275.7	215.4	1	NAR	
H238T-S,M,L	Aerotech RMS	29 x 194	83.8	178.4	263.4	189.7	0.71	TRA	
H242T-S,M,L	Aerotech RMS	38 x 152	110	246	276.6	172	1	TRA	
H268R-10,14,P	Aerotech RMS	29x	166	320	338	265	1.16	NAR	Req FAA WAIVER
H143SS-13A	Cesaroni Tech	38 x 185	187	247	167	142.4	1.73	CAR	Req FAA WAIVER
H153-13A	Cesaroni Tech	28 x 185	143.9	258	188.3	147.8	1.75	CAR	Req FAA WAIVER
H110-13A	Cesaroni Tech	38 x 606	145.6	271	156	131	2.1	TRA	Req FAA WAIVER
H48-P	Ellis	38 x 200	145	214	101	56.6	4.4	TRA	Req FAA WAIVER
H50-6,10	Ellis	29 x 279	142	264.3	108.9	50.2	5.3	TRA	Req FAA WAIVER
H275-10	Ellis	29 x 275	163	293.5	641.6	271	1.1	TRA	Req FAA WAIVER
H144LW-17A	Loki	38 x 190	126	239.3	254	155	1.5	TRA	Req FAA WAIVER

Tech Tips

Going Mobile With Rocket Construction

How to manage during non-rocketry-oriented vacations

Rick Vatsaas



Great.

Your lovely bride has been needling you for months about driving sixteen hours to for a weeklong visit to her Aunt Ethel, who lives in a segment of the country totally devoid of any diversion, either natural or man-made. You have a whole week's idleness ahead of you, consisting of nothing but an old farm house, a few chickens, and Uncle Charlie's redneck humor to keep you entertained.

The kids, of course, will have hours of fun playing with the rusty nails and peeling lead paint in the anthrax infested barnyard, but what are YOU going to do? It's bad family politics to disappear all day, even if the only place to go is the county museum, where they have largest collection of bailing twine in the world, outside of a twine factory.

Your wife knows you will be whining and begging to go home early if you don't have a toy to play with, so why don't you bring that rocket kit you have been itching to start? It will probably be the one time in your life she will actually encourage your hobby.

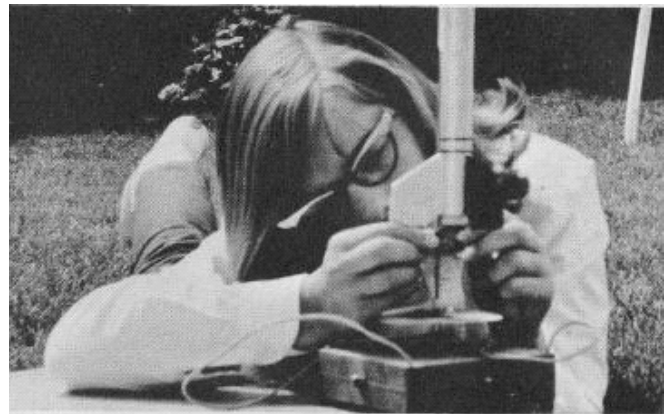
Most rocket kit projects are highly mobile, even some high power kits, as long as you don't plan having to do anything really serious like fiber-glassing a body tube or turning a nose cone. But it is a really good idea to select the project based on the kind of work area available, duration of the vacation, and availability of supplies, should you forget something at home.

Whether you fly or drive will also affect the scope of your project.

Work area

It would be really bad manners to set up shop on the kitchen table, where your sanding debris may end up in the food preparation (even though it would be impossible discern the flavor of sawdust in Aunt Ethel's meatloaf). The best place to set up, of course, would be a dark place in the cellar, which your father in-law undoubtedly thinks you belong in anyway.

Remember, however, that your wife occasionally needs to put you on display, so be sure to pop up every so often while the epoxy is curing, for a cup of chicory and a lively discussion about the neighbor's



thyroid condition.

If the family allows, you may set up shop in front of the television set, right next to cousin Ernest, who reportedly last got out of the Lazy-boy during the '92 World Series. Keeping ol' Ernest company, and reporting occasionally whether he is still breathing, will win you lots of brownie points with the in-laws. The only drawback is that you have to watch whatever it is Earnest is watching, because if you attempt to change the channel, he may become animate, and NOBODY wants that.

Be really careful with your tools and supplies in this environment since you will probably be working on a TV tray while sitting on a sofa or easy chair. It wouldn't be overly appreciated if you spilled superglue into your lap and adhered yourself to that Chesterfield sofa that has been in the family since Great-Grandpa pulled it off a rubbish heap in the midst of the Depression.

Painting

In most every circumstance you will want to save this step for when you get home, unless the project is really small, or your hosts have large out building where no one will mind the fumes or overspray. If you do paint, DO NOT warn your nephews that the paint is wet, for they will have to touch it to be sure.



Essential Items

Your typical tools: Bring whatever you think you might need and can reasonably pack. (Go over your kit instructions to determine what types of tools you'll need). If flying to your destination, make sure anything that can be interpreted as weapon (X-acto knives, etc.) gets packed into checked luggage, and don't bring glues, paints, or any volatile chemicals, unless of course, your plan is to ditch the entire vacation by hiding out in an FBI holding cell.

Cutting surface: Bring a cutting surface or buy one at the local hobby store or building supply. A sheet of hard board works well for this. Cut it to size that it is reasonably portable (hint: many building supply stores, such as Home Depot, will cut it for no charge). If you add felt to the bottom, the cutting board will also protect what ever surface you end up working on, such as Aunt Ethel's Antique Formica Buffet Table. If you are really clever, use strips of molding or 1x2 to put an edge around the cutting surface, that way you can move the board without necessarily having all your stuff roll off, should it tip.

Storage containers

One large enough to hold the model in its various stages of completion. Also add one or more storage containers for all your tools. You should plan on

keeping all your equipment very neat and orderly. Your host will appreciate it, and if you can prove how truly anal retentive you are, those relatives will never want to visit you at your house.

Important Things to remember

Make sure material use is appropriate for the location. Don't sand balsa in Grandma's sitting room, or spray primer at the wedding reception. It might be okay to pull out the cyan-acrylate at Aunt Ula's funeral, because then the tears in your eyes will be truly genuine.

Be polite about your project. For you married guys, you want your spouse to perceive your habit of bringing along a hobby as an asset, not a point of contention. Be ready to put down your activity when called upon to view slides of Aunt Ethel's whirlwind vacation to Manhattan (Kansas) or admire the results of her recent bunion surgery.



Take me out to the ball game

If you have kids in sports activities you'll find yourself hanging out at practices and Games. This will require more or less of your attention, depending on the event. These occasions don't lend themselves to rocket building per se, but you can get a lot of sanding done while sitting on the side lines and cheering. I also made myself a kit for assembling plastic parachutes and streamers while sitting at little league games

Author's note

The characters in this article are complete fabrications by the author and not intended to portray any person, real or imagined, nor related by blood or marriage to the author or his spouse. Anyone suggesting otherwise is slandering the fine reputation of my in-laws.

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Milestones

Welcome New MASA Members!

Chad, Corie, Andrew, and Alexander Tarara from Burnsville, MN

Congratulations!

Congratulations to Mike Erpelding on his engagement to Amber!

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Enter your own design! Vote early and often!

Summer fun!



Alan Estenson

Fat Boy drag race.



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