

## LAUNCH SUMMARY

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total number of flights	101
total number of low power flights	59
total number of HPRLite flights	21
total number of high power flights	21
total single stage flights	98
total cluster flights	0
total multiple stage flights	2
total cluster/staged flights	1
total number of motors expended	106
total impulse expended	11420.7
total number of flyers	50
number of states represented	1
States TX	

	<b>flight class</b>	<b>flights</b>
U	0.000-0.000 Ns	0
1/8A	0.001-0.312 Ns	0
1/4A	0.312-0.625 Ns	0
1/2A	0.625-1.250 Ns	4
A	1.250-2.500 Ns	4
B	2.500-5.000 Ns	15
C	5-10 Ns	19
D	10-20 Ns	9
E	20-40 Ns	8
F	40-80 Ns	11
G	80-160 Ns	12
H	160-320 Ns	7
I	320-640 Ns	8
J	640-1280 Ns	4
K	1280-2560 Ns	0
L	2560-5120 Ns	0
M	5120-10240 Ns	0
N	10240-20480 Ns	0
O	20480-40960 Ns	0
totals		101

	<b>Top Ten Individual Flyers</b>	<b>number of flights</b>
1.	Jacob Mehr	9
2.	Rick Schlemphorst	6
3.	Tom Blakeney	6
4.	Caden	4
5.	Jeff Schwab	4
6.	Mike Shaffer	3
7.	Dan Smith	3
8.	Sebastian	3
9.	Chris Bender	3
10.	Steve Taylor	3

## LAUNCH SUMMARY

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<b>Top Ten All-Around Flyers (individual + team)</b>		<b>number of flights</b>
1.	Jacob Mehr	9
2.	Rick Schlemphorst	6
3.	Tom Blakeney	6
4.	Jeff Schwab	5
5.	Caden	4
6.	Mike Shaffer	3
7.	Dan Smith	3
8.	Sebastian	3
9.	Chris Bender	3
10.	Steve Taylor	3

<b>Top Ten Motor Users</b>		<b>number of motors</b>
1.	Jacob Mehr	14
2.	Rick Schlemphorst	6
3.	Tom Blakeney	6
4.	Caden	4
5.	Jeff Schwab	4
6.	Mike Shaffer	3
7.	Dan Smith	3
8.	Sebastian	3
9.	Chris Bender	3
10.	Steve Taylor	3

<b>Top Ten Total Impulse Users</b>		<b>Tot Imp, N-s</b>
1.	Steve Taylor	1544.2
2.	Robert Hildenger	1423.0
3.	John Dyer	1199.2
4.	Jeff Schwab	815.2
5.	Chris Bender	802.5
6.	Chuck Crabb	711.8
7.	Steve B	579.2
8.	Wilson Little	579.2
9.	Tom Blakeney	442.2
10.	Robert Hagen	354.9

## MOTOR USAGE

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motor	type	TotImp (N-s)	prop wt (g)	single stage	cluster power	staged power	cluster staged	total usage
ES 1/2A3	13mm SU	1.1	0.0	4	0	0	0	4
ES A10T	13mm SU	2.5	3.8	1	0	0	0	1
ES A8	18mm SU	2.5	3.3	3	0	2	0	5
ES B4	18mm SU	5.0	6.0	2	0	0	0	2
ES B6	18mm SU	5.0	5.6	13	0	2	0	15
ES C11	24mm SU	8.8	0.0	3	0	0	0	3
ES C6	18mm SU	9.0	10.8	14	0	0	0	14
AT D10	18mm SU	18.8	0.0	1	0	0	0	1
ES D11	24mm SU	13.0	17.5	1	0	0	0	1
ES D12	24mm SU	17.0	21.1	7	0	0	4	11
ES E12	24mm SU	27.2	31.8	2	0	0	0	2
ES E16	29mm SU	33.4	40.0	1	0	0	0	1
AT E28T	24mm RL	40.0	18.4	1	0	0	0	1
ES E9	24mm SU	27.9	35.8	4	0	0	0	4
ES F15	29mm SU	49.6	60.0	2	0	0	0	2
AT F25W	29mm SU	79.6	35.6	1	0	0	0	1
AT F26	29mm SU	62.2	0.0	1	0	0	0	1
ES F26	29mm SU	62.2	0.0	1	0	0	0	1
AT F44	24mm SU	41.5	0.0	1	0	0	0	1
ES F50	29mm SU	76.8	0.0	1	0	0	0	1
AT F50T	29mm SU	80.0	37.9	3	0	0	0	3
AT G125	29mm SU	128.0	0.0	2	0	0	0	2
AT G40W	29mm SU	114.1	55.1	2	0	0	0	2
AT G53	29mm RL	90.9	0.0	1	0	0	0	1
AT G64W	29mm RL	118.8	62.5	1	0	0	0	1
AT G74	29mm SU	82.8	0.0	1	0	0	0	1
AT G76	29mm RL	118.0	0.0	2	0	0	0	2
AT G77	29mm RL	105.0	0.0	1	0	0	0	1
AT G80T	29mm SU	116.0	56.9	2	0	0	0	2
AT H123W	38mm RL	213.5	125.0	2	0	0	0	2
AT H135	29mm SU	225.8	0.0	1	0	0	0	1
AT H182	29mm SU	218.0	0.0	2	0	0	0	2
AT H195	29mm SU	236.1	0.0	1	0	0	0	1
AT H45	38mm SU	289.0	0.0	1	0	0	0	1
AT I140T	54mm SU	579.2	327.2	5	0	0	0	5
AT I285	38mm RL	420.0	0.0	1	0	0	0	1
AT I357T	38mm RL	342.5	166.2	1	0	0	0	1
AT I500	38mm SU	620.0	0.0	1	0	0	0	1
AT J270	38mm SU	703.0	0.0	1	0	0	0	1
AT J350W	38mm RL	700.0	375.0	1	0	0	0	1
AT J425	38mm SU	676.0	0.0	1	0	0	0	1
AT J500	38mm RL	723.0	0.0	1	0	0	0	1
totals		11420.7		98	0	4	4	106

number of different motor types = 42

**TOTAL FLIGHT SUMMARY**

Rocketeer	Home Town	state	motor usage		model power		HPRlite		HPR		indiv total	team total
			Num	TotImp	ind	tm	ind	tm	ind	tm		
Caden	TC	TX	4	287.9	4	0	0	0	0	0	4	0
Cameron	Dallas	TX	2	14.0	2	0	0	0	0	0	2	0
Cameron	Richardson	TX	1	9.0	1	0	0	0	0	0	1	0
Daijah	Dallas	TX	1	9.0	1	0	0	0	0	0	1	0
Delyia		TX	1	5.0	1	0	0	0	0	0	1	0
Harmony	Sachse	TX	2	22.0	2	0	0	0	0	0	2	0
Jacob	Plano	TX	1	9.0	1	0	0	0	0	0	1	0
Natalie	Fate	TX	1	1.1	1	0	0	0	0	0	1	0
Nick	McKinney	TX	1	2.5	1	0	0	0	0	0	1	0
Nikolas	Frisco	TX	2	85.0	2	0	0	0	0	0	2	0
Sebastian	Garland	TX	3	20.3	3	0	0	0	0	0	3	0
Taylor	McKinney	TX	1	2.5	1	0	0	0	0	0	1	0
Tiffany	Fate	TX	2	2.2	2	0	0	0	0	0	2	0
Valerie	Fate	TX	1	1.1	1	0	0	0	0	0	1	0
Steve B	Frisco	TX	1	579.2	0	0	0	0	1	0	1	0
Nikolas Barnett	Frisco	TX	1	5.0	1	0	0	0	0	0	1	0
Steve Barnett	Frisco	TX	1	225.8	0	0	0	0	1	0	1	0
Sam Barone	Plano	TX	2	208.0	1	0	0	0	1	0	2	0
Casey Bender	Garland	TX	1	2.5	1	0	0	0	0	0	1	0
Chris Bender	Garland	TX	3	802.5	1	0	0	0	2	0	3	0
Wesley Bender	Garland	TX	2	14.0	2	0	0	0	0	0	2	0
Tom Blakeney	Fort Worth	TX	6	442.2	5	0	0	0	1	0	6	0
Fletcher Brunson	Dallas	TX	2	10.0	2	0	0	0	0	0	2	0
Chuck Crabb	Flower Mound	TX	2	711.8	1	0	0	0	1	0	2	0
John Dyer	Dallas	TX	2	1199.2	0	0	0	0	2	0	2	0
Bill Gee	Plano	TX	2	32.2	2	0	0	0	0	0	2	0
Robert Hagen	Bowie	TX	2	354.9	1	0	0	0	1	0	2	0
Robert Hildenger	McKinney	TX	2	1423.0	0	0	0	0	2	0	2	0
Abby Little	Frisco	TX	1	105.0	1	0	0	0	0	0	1	0
Tommy Little	Frisco	TX	1	116.0	1	0	0	0	0	0	1	0
Wilson Little	Frisco	TX	1	579.2	0	0	0	0	1	0	1	0
Gavin Livingston	McKinney	TX	1	5.0	1	0	0	0	0	0	1	0
Ted Macklin	Van Alstyne	TX	2	200.8	2	0	0	0	0	0	2	0
Jacob Mehr	Dallas	TX	14	288.5	9	0	0	0	0	0	9	0
Rachel Mehr	Frisco	TX	1	62.2	1	0	0	0	0	0	1	0
Amado Pereira	Garland	TX	2	104.7	2	0	0	0	0	0	2	0
Steve Pierce	Cross Roads	TX	2	267.6	1	0	0	0	1	0	2	0
Rick Schlemphorst	Roanoke	TX	6	221.1	6	0	0	0	0	0	6	0
Andrea Schlepphorst	Roanoke	TX	1	5.0	1	0	0	0	0	0	1	0
Jacob Schwab	Plano	TX	2	36.0	1	1	0	0	0	0	1	1
Jeff Schwab	Plano	TX	4	815.2	2	1	0	0	2	0	4	1
Cameron Serna	Richardson	TX	1	5.0	1	0	0	0	0	0	1	0
Mike Shaffer		TX	3	118.7	3	0	0	0	0	0	3	0
Dan Smith	Watauga	TX	3	23.0	3	0	0	0	0	0	3	0
George Sprague	Mesquite	TX	1	213.5	0	0	0	0	1	0	1	0
Jack Sprague	Hickory Creek	TX	2	42.4	2	0	0	0	0	0	2	0
Steve Taylor	McKinney	TX	3	1544.2	0	0	0	0	3	0	3	0
Harmony W.	Sachse	TX	1	9.0	1	0	0	0	0	0	1	0
Jeff Webb	Frisco	TX	1	128.0	0	0	0	0	1	0	1	0
Rachel Webb	Frisco	TX	1	49.6	1	0	0	0	0	0	1	0
<b>totals</b>			<b>106</b>	<b>11420.7</b>	<b>79</b>	<b>1.0</b>	<b>0</b>	<b>0.0</b>	<b>21</b>	<b>0.0</b>	<b>100</b>	<b>0.0</b>

total number of flyers = 50

## FLIGHT LOG

rocketeer(s)	stg	cls	type	TotImp	rocket	motor(s)	comment
Natalie	1		low ½A	1.1	ES Bandit	ES 1/2A3	1st fly new member to DAK
Tiffany	1		low ½A	1.1	ES Bandit	ES 1/2A3	1st fly new member to DAK
Tiffany	1		low ½A	1.1	Estes Bandit	ES 1/2A3	2nd launch today
Valerie	1		low ½A	1.1	ES Bandit	ES 1/2A3	1st fly new member to DAK
Nick	1		low A	2.5	QU AS1	ES A8	
Sebastian	1		low A	2.5	ES Crossfire	ES A8	
Taylor	1		low A	2.5	ES X A5	ES A8	
Casey Bender	1		low A	2.5	ES Mokitteheit	ES A10	
Cameron	1		low B	5.0	ES Metalizer	ES B6	
Delyia	1		low B	5.0	ES Metalizer	ES B6	
Harmony	1		Low B	5.0	ES Alpha	ES B6	
Nikolas	1		low B	5.0	U Skyhawk	ES B4	
Nikolas Barnett	1		low B	5.0	U Nuke	ES B4	
Wesley Bender	1		low B	5.0	ES Sky Trax	ES B6	
Tom Blakeney	1		low B	5.0	ES Sky Dart	ES B6	
Fletcher Brunson	1		low B	5.0	ES Shuttle Xpress	ES B6	
Fletcher Brunson	1		low B	5.0	ES Shuttle Xpress	ES B6	My first flight ever!!
Bill Gee	1		low B	5.0	RRR P-Chuter	ES B6	
Gavin Livingston	1		low B	5.0	ES Code Red	ES B6	first flight for a 3-year-old
Jacob Mehr	1		low B	5.0	QU No Idea	ES B6	
Andrea Schlepphorst	1		low B	5.0	ES Crayon	ES B6	
Cameron Serna	1		low B	5.0	ES Metalizer	ES B6	
Dan Smith	1		low B	5.0	ES Interceptor	ES B6	
Jacob Mehr	2		low C	7.5	QU No Idea	1 x ES B6, 1 x ES A8	
Jacob Mehr	2		low C	7.5	QU No Idea	1 x ES B6, 1 x ES A8	
Sebastian	1		low C	8.8	ES Lancer	ES C11	Hope it works
Chuck Crabb	1		low C	8.8	RRR Scortch	ES C11	
Jacob Schwab	1		low C	8.8	U Comet	ES C11	
Cameron	1		low C	9.0	ES Metalizer	ES C6	
Cameron	1		low C	9.0	ES Metalizer	ES C6	
Daijah	1		low C	9.0	ES Metalizer	ES C6	
Jacob	1		low C	9.0	ES Silver Fox	ES C6	
Sebastian	1		Low C	9.0	ES EPM-010	ES C6	
Wesley Bender	1		low C	9.0	ES Code Red	ES C6	
Jacob Mehr	1		Low C	9.0	ES Alpha	ES C6	
Jeff Schwab	1		low C	9.0	RRR Red Shift	ES C6	
Jeff Schwab	1		low C	9.0	RRR Red Star	ES C6	
Mike Shaffer	1		low C	9.0	SCR Mars Liner PMC	ES C6	
Dan Smith	1		Low C	9.0	QU Super Bird	ES C6	
Dan Smith	1		Low C	9.0	ES Twister	ES C6	
Jack Sprague	1		Low C	9.0	ES Alpha	ES C6	possible contest event - stre
Harmony W.	1		Low C	9.0	ES Baby Bertha	ES C6	
Tom Blakeney	1		low D	13.0	AAR Monocopter	ES D11	
Harmony	1		low D	17.0	U Thin Mint	ES D12	
Tom Blakeney	1		low D	17.0	SCR Mig-21	ES D12	
Jacob Mehr	1		low D	17.0	U UNK	ES D12	
Jacob Mehr	1		low D	17.0	U UNK	ES D12	
Rick Schlemphorst	1		low D	17.0	SX Falcon 9	ES D12	first flight
Rick Schlemphorst	1		low D	17.0	DFR Delta II	ES D12	first flight
Rick Schlemphorst	1		low D	17.0	ES Big Daddy	ES D12	
Mike Shaffer	1		low D	18.8	SCR Mars Liner PMC	AT D10	
Bill Gee	1		Low E	27.2	ES Big Bertha	ES E12	
Jacob Schwab & Jeff Schwab	1		low E	27.2	RRR Diamond Ring	ES E12	w/ altimeter
Caden	1		low E	27.9	U Topshot	ES E9	
Caden	1		low E	27.9	ES Big Daddy	ES E9	
Amado Pereira	1		low E	27.9	ES QCC Explorer	ES E9	

## FLIGHT LOG

rocketeer(s)	stg	cls	type	TotImp	rocket	motor(s)	comment
Rick Schlemphorst	1		low E	27.9	ES Big Daddy	ES E9	first flight
Jack Sprague	1		low E	33.4	RRR Diamond Ring	ES E16	Pretty stock RedRiver diam
Chris Bender	1		low E	40.0	TLP KH-31 Krypton	AT E28	
Jacob Mehr	1		Hlt F	41.5	ES No Idea	AT F44	
Steve Pierce	1		Hlt F	49.6	ES Ascender	ES F15	Zombie Hunter
Rachel Webb	1		Hlt F	49.6	ES Ascender	ES F15	
Rachel Mehr	1		Hlt F	62.2	ES Leviathan	ES F26	
Rick Schlemphorst	1		Hlt F	62.2	ES Nike Smoke	AT F26	First flight of this rocket
Jacob Mehr	2	*	Hlt F	68.0	U UNK	3 x ES D12, 1 x ES D12	
Amado Pereira	1		Hlt F	76.8	U Nike Smoke	ES F50	
Tom Blakeney	1		Hlt F	79.6	AT Arreaux	AT F25	
Nikolas	1		Hlt F	80.0	LOC Demolisher	AT F50	
Sam Barone	1		Hlt F	80.0	ES Nike Smoke	AT F50	
Rick Schlemphorst	1		Hlt F	80.0	ES Nike Smoke	AT F50	
Ted Macklin	1		Hlt G	82.8	ES Nike Smoke	AT G74	
Mike Shaffer	1		Hlt G	90.9	LOC Legacy	AT G53	
Abby Little	1		Hlt G	105.0	ES Leviathan	AT G77	
Caden	1		Hlt G	114.1	AT IQSY Tomahawk	AT G40	
Tom Blakeney	1		Hlt G	114.1	NCR Patriot 1/4 Scale	AT G40	
Tommy Little	1		Hlt G	116.0	SCR Tommy Tube	AT G80	
Jacob Mehr	1		Hlt G	116.0	U UNK	AT G80	
Caden	1		Hlt G	118.0	AT Cheetah	AT G76	
Ted Macklin	1		Hlt G	118.0	SCR Baby Ruth	AT G76	
Robert Hagen	1		Hlt G	118.8	AT Arrow	AT G64	Telemetry altimeter paylo
Sam Barone	1		HPR G	128.0	PML Small Endeavour	AT G125	DMS new blue
Jeff Webb	1		HPR G	128.0	BD Horizon	AT G125	
Tom Blakeney	1		HPR H	213.5	SCR OD	AT H123	
George Sprague	1		HPR H	213.5	LOC V2	AT H123	
Steve Pierce	1		HPR H	218.0	NCR Patriot	AT H182	Go bold, or go home
Jeff Schwab	1		HPR H	218.0	LOC EZI-65	AT H182	
Steve Barnett	1		HPR H	225.8	LOC NORAD	AT H135	cert flight
Robert Hagen	1		HPR H	236.1	MC Torrent	AT H195	junior cert flight
Steve Taylor	1		HPR H	289.0	PML Phobos	AT H45	
Chris Bender	1		HPR I	342.5	SCR Fav'rit 2B	AT I357	dual deploy
Chris Bender	1		HPR I	420.0	SCR Cherokee-I	AT I285	Dual deploy with cable cutt
Steve B	1		HPR I	579.2	LOC Hyperloc	AT I140	
John Dyer	1		HPR I	579.2	MC Torrent	AT I140	dual deploy, first try
Wilson Little	1		HPR I	579.2	WI Wildman Jr	AT I140	first attempt dual deploy
Jeff Schwab	1		HPR I	579.2	LOC EZI-65	AT I140	
Steve Taylor	1		HPR I	579.2	LOC Cyclotron	AT I140	
John Dyer	1		HPR I	620.0	MC Torrent	AT I500	dual deploy
Steve Taylor	1		HPR J	676.0	PML Aurora	AT J425	
Robert Hildenger	1		HPR J	700.0	PL Dominator 3	AT J350	cert flight
Chuck Crabb	1		HPR J	703.0	SCR Scortch 3XL	AT J270	cert flight
Robert Hildenger	1		HPR J	723.0	PL Dominator 3	AT J500	

total flights = 101

### ROCKET KIT TYPE SUMMARY

Manufacturer	Model	Name	wt,oz	len,in	dia,in	flts
Art Applewhite Rockets	Monocopter *		0.0	0.0	0.0	1
Aerotech	Arreaux		12.0	43.0	1.9	1
Aerotech	Arrow *		0.0	0.0	0.0	1
Aerotech	Cheetah		10.0	32.0	1.9	1
Aerotech	IQSY Tomahawk		13.0	41.0	1.9	1
Binder Design	Horizon *		0.0	0.0	0.0	1
Unknown	Delta II *		0.0	0.0	0.0	1
Estes Industries, Inc.	Alpha		0.8	12.2	1.0	3
Estes Industries, Inc.	Ascender		11.0	42.1	2.0	2
Estes Industries, Inc.	Baby Bertha		1.9	12.8	1.6	1
Estes Industries, Inc.	Bandit		1.6	16.5	1.0	3
Estes Industries, Inc.	Big Bertha		2.2	24.0	1.6	1
Estes Industries, Inc.	Big Daddy *		0.0	0.0	0.0	3
Estes Industries, Inc.	Code Red *		0.0	0.0	0.0	2
Estes Industries, Inc.	Crayon *		0.0	0.0	0.0	1
Estes Industries, Inc.	Crossfire *		0.0	0.0	0.0	1
Estes Industries, Inc.	EPM-010		2.4	35.2	1.0	1
Estes Industries, Inc.	Interceptor *		0.0	0.0	0.0	1
Estes Industries, Inc.	Lancer		1.3	18.0	1.0	1
Estes Industries, Inc.	Leviathan		17.5	41.5	3.0	2
Estes Industries, Inc.	Metalizer *		0.0	0.0	0.0	6
Estes Industries, Inc.	Mokittheit *		0.0	0.0	0.0	1
Estes Industries, Inc.	Nike Smoke *		0.0	0.0	0.0	4
Estes Industries, Inc.	No Idea *		0.0	0.0	0.0	1
Estes Industries, Inc.	QCC Explorer *		0.0	0.0	0.0	1
Estes Industries, Inc.	Shuttle Xpress *		0.0	0.0	0.0	2
Estes Industries, Inc.	Silver Fox *		0.0	0.0	0.0	1
Estes Industries, Inc.	Sky Dart *		0.0	0.0	0.0	1
Estes Industries, Inc.	Sky Trax *		0.0	0.0	0.0	1
Estes Industries, Inc.	Twister		0.5	9.5	0.7	1
Estes Industries, Inc.	X A5 *		0.0	0.0	0.0	1
Unknown	Bandit *		0.0	0.0	0.0	1
LOC/Precision	Cyclotron *		0.0	0.0	0.0	1
LOC/Precision	Demolisher *		0.0	0.0	0.0	1
LOC/Precision	EZI-65		35.0	56.5	4.0	2
LOC/Precision	Hyperloc *		0.0	0.0	0.0	1
LOC/Precision	Legacy		14.0	50.1	1.6	1
LOC/Precision	NORAD *		0.0	0.0	0.0	1
LOC/Precision	V2 *		0.0	0.0	0.0	1
Madcow	Torrent *		0.0	0.0	0.0	3
North Coast Rocketry	Patriot		32.0	54.5	4.0	1
North Coast Rocketry	Patriot 1/4 Scale *		0.0	0.0	0.0	1
Proline	Dominator 3 *		0.0	0.0	0.0	2
Public Missiles Limited	Aurora *		0.0	0.0	0.0	1
Public Missiles Limited	Phobos		30.9	57.5	2.3	1
Public Missiles Limited	Small Endeavour *		0.0	0.0	0.0	1
Quest	AS1 *		0.0	0.0	0.0	1
Quest	No Idea *		0.0	0.0	0.0	3
Quest	Super Bird		2.8	31.2	1.4	1
Red River Rocketry	Diamond Ring *		0.0	0.0	0.0	2
Red River Rocketry	P-Chuter *		0.0	0.0	0.0	1
Red River Rocketry	Red Shift *		0.0	0.0	0.0	1
Red River Rocketry	Red Star *		0.0	0.0	0.0	1
Red River Rocketry	Scotch *		0.0	0.0	0.0	1
SpaceX	Falcon 9 *		0.0	0.0	0.0	1
The Launch Pad	KH-31 Krypton *		0.0	0.0	0.0	1
Unknown	Comet *		0.0	0.0	0.0	1
Unknown	Nike Smoke *		0.0	0.0	0.0	1
Unknown	Nuke *		0.0	0.0	0.0	1

### ROCKET KIT TYPE SUMMARY

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Manufacturer	Model	Name	wt,oz	len,in	dia,in	flts
Unknown	Skyhawk *		0.0	0.0	0.0	1
Unknown	Thin Mint *		0.0	0.0	0.0	1
Unknown	Topshot *		0.0	0.0	0.0	1
Unknown	UNK *		0.0	0.0	0.0	4
Wildman	Wildman Jr *		0.0	0.0	0.0	1

total number of kit rocket types = 64



### SCRATCH BUILT SUMMARY

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<b>Rocketeer</b>	<b>Model</b>	<b>Name</b>	<b>wt,oz</b>	<b>len,in</b>	<b>dia,in</b>	<b>fts</b>
Ted Macklin	Baby Ruther		0.0	0.0	0.0	1
Chris Bender	Cherokee-1		0.0	0.0	0.0	1
Chris Bender	Fav'rit 2B		0.0	0.0	0.0	1
Mike Shaffer	Mars Liner PMC		0.0	0.0	0.0	2
Tom Blakeney	Mig-21		0.0	0.0	0.0	1
Tom Blakeney	OD		0.0	0.0	0.0	1
Chuck Crabb	Scotch 3XL		0.0	0.0	0.0	1
Tommy Little	Tommy Tube		0.0	0.0	0.0	1

total number of scratch rocket types = 8

### MANUFACTURER SUMMARY

Abbrev	Manufacturer	Number motors used	Flights using motors	Flights using airframe
U	Unknown	0	0	12
AAR	Art Applewhite Rockets	0	0	1
AT	Aerotech	39	39	4
BD	Binder Design	0	0	1
ES	Estes Industries, Inc.	67	62	42
LOC	LOC/Precision	0	0	8
MC	Madcow	0	0	3
NCR	North Coast Rocketry	0	0	2
PL	Proline	0	0	2
PML	Public Missiles Limited	0	0	3
QU	Quest	0	0	5
RRR	Red River Rocketry	0	0	6
SX	SpaceX	0	0	1
TLP	The Launch Pad	0	0	1
WI	Wildman	0	0	1
	scratch built			9
	<b>totals</b>	<b>106</b>	<b>101</b>	<b>101</b>

number of manufacturers = 15