

# Tripoli Rocketry Association

## Project Submission Template

Flight for (check one): LDRS Commercial  LDRS EX  BALLS  Other  XPRS

Launch Site: Blackrock

Launch Date(s): Sep 22,23 2006

**Note: Completed form must be emailed to [pgordzelik@aol.com](mailto:pgordzelik@aol.com) no later than 30 days before launch date.**

### Flyer Data:

Flyers' names and addresses (for a group, list primary flyer first, use additional paper as needed)	TRA # (All group members must be TRA members in good standing)	TRA Cert. Level
David Flynn 17847 Beneda Lane #12 Santa Clarita, CA 91351	8380	3
Kurt Gugisberg 4829 Kinkspine Rd. Rolling Hills Estates, CA 90274	2731	3, TAP Member
		none

### Rocket Data:

Rocket name	Extreme Rush	Kit name, manufacturer (or "Scratchbuilt")	Scratchbuilt
If not a kit, describe the rocket briefly (3 FNC, scale model, upscale from kit, important features, color scheme, etc.)	2 stage M1315W-P to M1315W-P 4 inch all fiberglass, sustainer is an upscale of the PML Sudden Rush and was my L3 cert rocket. Sustainer is black, white and blue, booster is red, white and blue. Locking interstage coupler, movie camera, GPS recorder, Rocket Hunter, Mission Control x 3 for electronics.		
Height (feet/inches)	12/1 1/2	Diameter (inches)	4.025
Weight without motors (lb)	22	Weight with all motor(s) (lb)	47
Drogue (describe)	R24D Pro and 20 feet of 1" tubular nylon		
Main parachutes (describe)	R9C Sustainer and Booster 1" tubular nylon		
Deployment method & charge	Booster: main(2g BP) at barometric apogee, backup + 2 seconds(4g BP) Sustainer: Drogue(2g BP) at barometric apogee, Backup drogue(2g BP) at 2500 feet, Main(2g BP) at 1500 feet, Backup main (4g BP) at 1000 feet.		
Electronics (if > one device, list brand and model of each)	Mission Control from Rocket Motion x 3		
	GPS Recorder (home made)		
	Movie Camera SVP, and 2ea Rocket Hunters		
Initial thrust, lb	530	Thrust/weight ratio	10:1
Briefly describe airframe, fins, nose, and payload, re. materials and methods: plywood, G10, carbon fiber, Kevlar, filament-wound, hand-layup, wall thickness, fin thickness, fin attachment method, etc. Generally, the larger or more complex the rocket, the more detail that should be provided. Photographs and/or drawings are expected. Use additional paper as needed.			
<p>Airframes: Filament wound fiberglass tubing (hawk mountain)            Motor Tubes: Phenolic w/ 1/2" plywood centering rings            Sustainer: Thru the wall construction, 3 G10 3/16" fins            Booster: Thru the wall construction, 3 G10 3/16" fins with 2 layers of fiberglass from tip to tip            Nose Cone: Fiberglass (scotglas) with aluminum tip, solid state movie camera, GPS Recorder            Motor retention: Aluminum interstage coupler and tail cone with snap-rings.</p>			
Web site: <a href="http://www.dmf-rockets.com/extremerush/index.html">http://www.dmf-rockets.com/extremerush/index.html</a>			

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**Propulsion Data:**

	Number of motors	Manufacturer (or EX mfr.)	Designation (e.g., N2000) and delay	Propellant Weight	Total Impulse N-s
Main Motor(s)	1	Aerotech	M1315W-P	3499g	6713Ns
Add'l motors					
Add'l motors					
Airstarts					
Second stage	1	Aerotech	M1315W-P	3499g	6713Ns
Third stage					
TOTAL INSTALLED Propellant Weight / Impulse N-s				6998g	13426Ns
Describe each EX Motor: diameter, designation (J200, etc.), type and number of grains, propellant description, anticipated pressure, etc. Motors of less than 10240 N-s may be described very briefly. For larger motors, a printout from a motor modeling program is expected. Additional information (casing wall thickness, specific propellant formulation, etc.) is also expected for such motors. Use additional paper as needed.					

**Ignition and Launch System Data:**

Rail/Rod; length, other launch system details	12 foot standard(1/4") rail
Motor ignition description and sequence (if applicable)	Booster: Ground start Sustainer: 4 seconds after booster burnout, if successful separation.

**Simulation Data:** Results from (data should be included from each program or simulation actually used)

Simulation estimate based on (one is required, two are better)	Barrowman	RockSim	Rogers ALT	SpaceCAD	Other (describe)
Cd (coefficient of drag)		N/A			
Stability margin (calibers of stability)		4.55/3.88			
Velocity (ft/s): At top of launcher		72ft/s			
Maximum Velocity		833/1937			
Maximum altitude (ft)		33,000			
Will staging occur at >Mach 1.0? (Y/N/not applicable)		No			

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## **Project Submission Template**

Submitted 8/29/06

Received     /    /    

TRA BoD approved     /    /