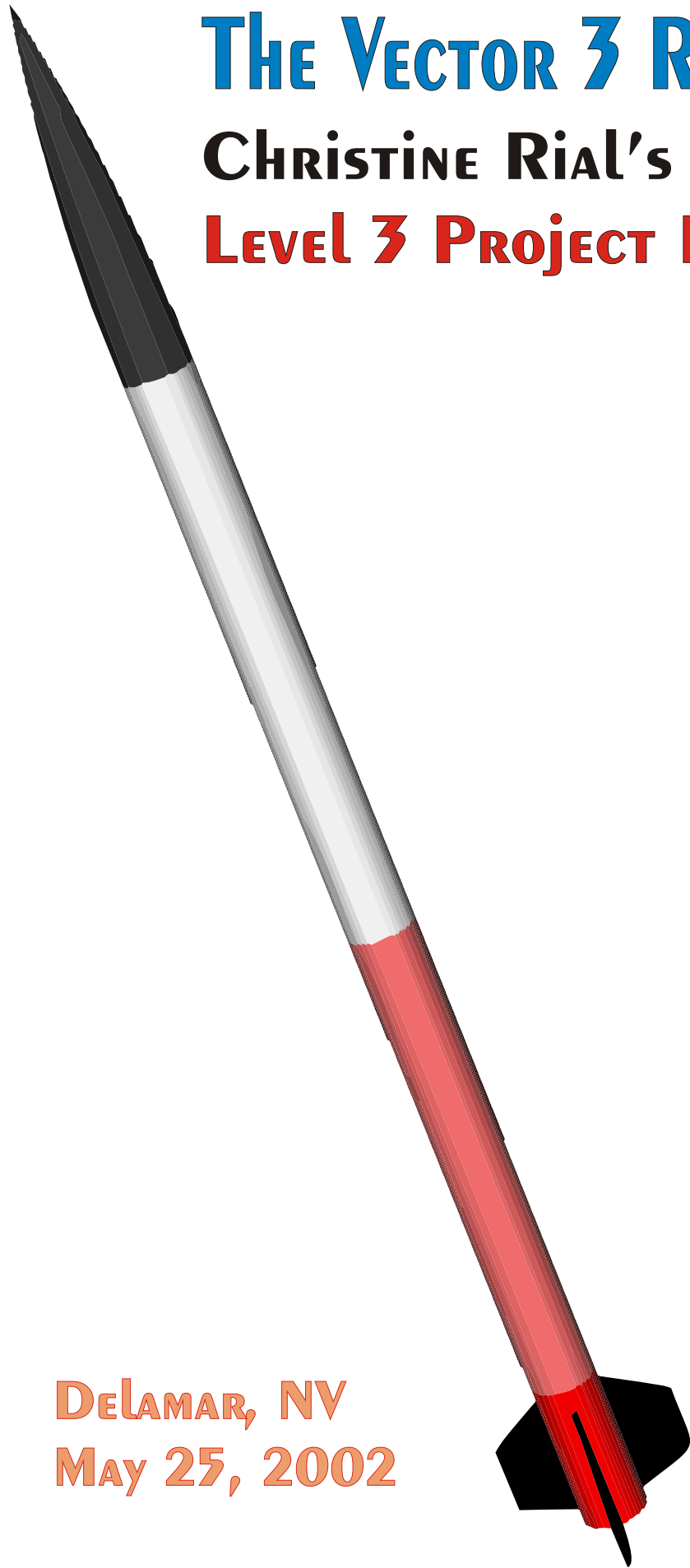



# **THE VECTOR 3 ROCKET**

**CHRISTINE RIAL'S**  
**LEVEL 3 PROJECT REPORT**



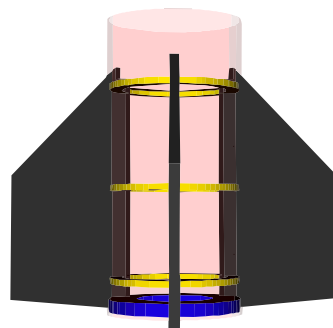
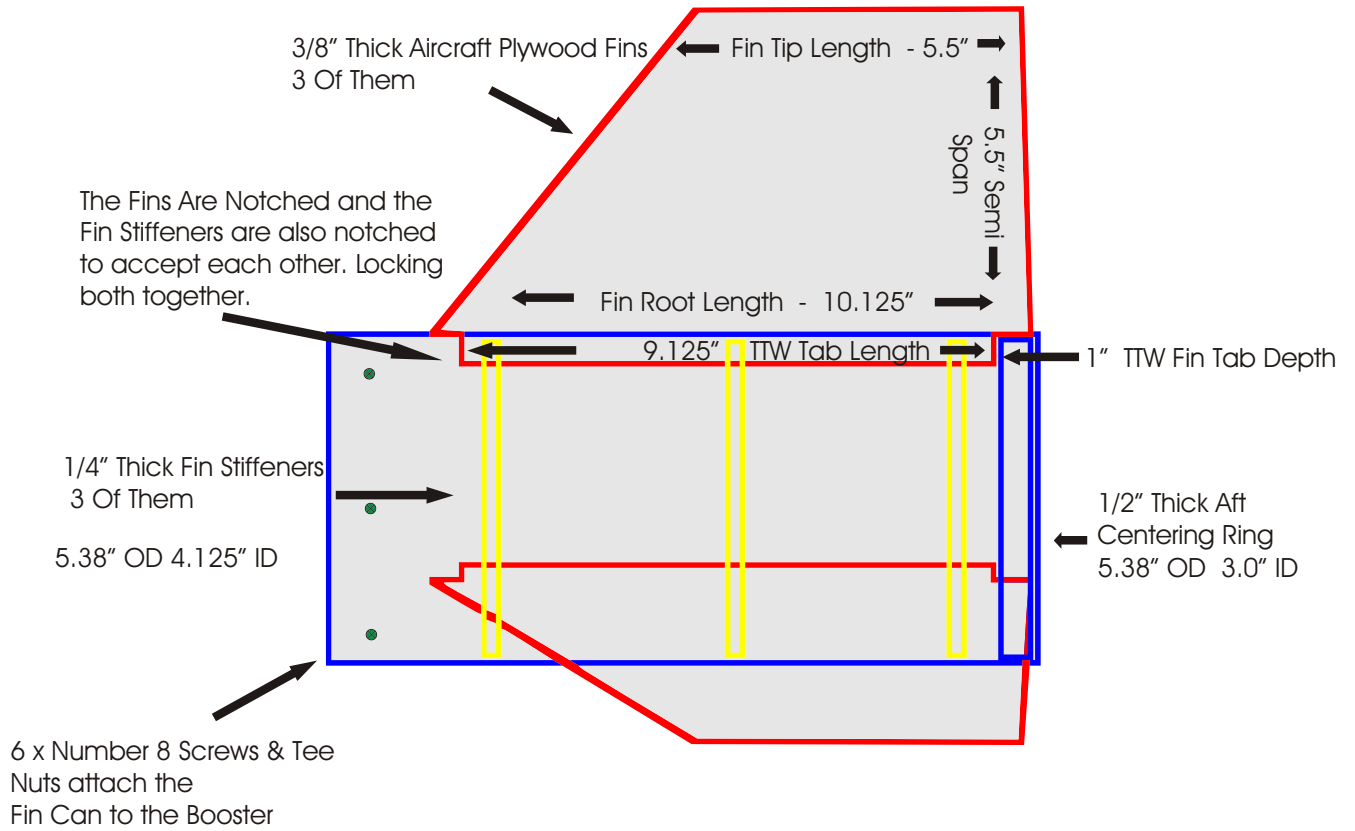
**DELAMAR, NV**  
**MAY 25, 2002**

# PRE-FLIGHT DATA CAPTURE FORM

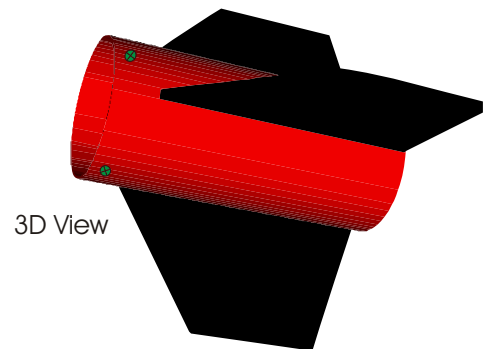
NAME: <b>Christine Rial</b>	ADDRESS: 3314 Hills Church Rd Export, PA, 15632	PHONE #: 724-733-7679 Home 724-861-0235 Work
TRA#: <b>7529</b>	LAUNCH LOCATION: <b>Delamar, NV</b>	DATE: <b>05/25/2002</b>
ROCKET SOURCE: KIT      SCRATCH 	ROCKET NAME: <i>Vector 3</i> / <b>FMB</b>	COLORS: <b>Red White Black</b>
ROCKET DIAMETER: <b>5.5 Inches</b>	ROCKET LENGTH: <b>9 Ft 7.75 In</b>	ROCKET WEIGHT LOADED: <b>30 lb 5 oz - 13.735 kg</b>
AVIONICS DESCRIPTION: <b>RDAS Altimeter Ham Radio DTMF Decoder</b>	MOTOR TYPE: <b>Aerotech M1315W</b>	THRUST TO WEIGHT RATIO: <b>12:1</b>
LAUNCHER REQUIREMENTS: <b>Blacksky Rail or NASSA Launch Tower</b>	LENGTH: <b>9 Foot</b>	
CENTER OF PRESSURE: <b>89.5 Inches</b>	HOW CALCULATED: <b>RockSim</b>	
CENTER OF GRAVITY: <b>69 Inches</b>	HOW CALCULATED: <b>RockSim</b>	
MAXIMUM VELOCITY: <b>809 MPH 1.08 Mach</b>	HOW CALCULATED: <b>wRASP</b>	
MAXIMUM ALTITUDE: <b>12,000 Feet</b>	HOW CALCULATED: <b>wRASP</b>	
WAS FLIGHT SUCCESSFUL:	YES:	NO:
TAP MEMBER:	<b>Kreig Williams</b>	
TAP MEMBER:	<b>Mark Mazzon</b>	
TAP MEMBER:	<b>Jerry McKinlay</b>	

The Red Number Will Change After Construction

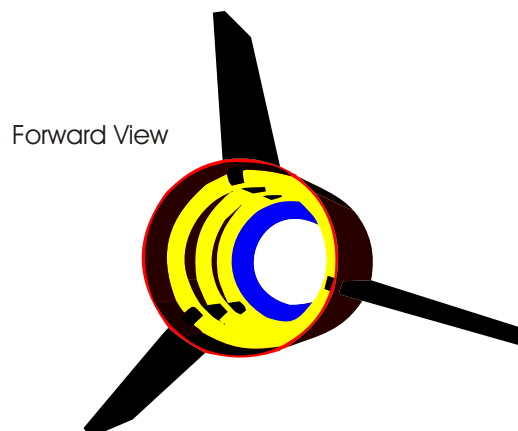
# The Fin Can Page



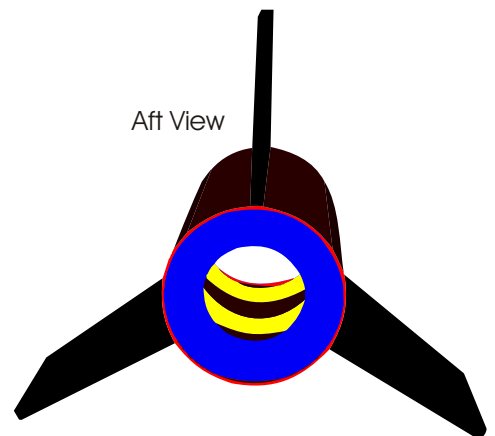
Internal Structures View



3D View

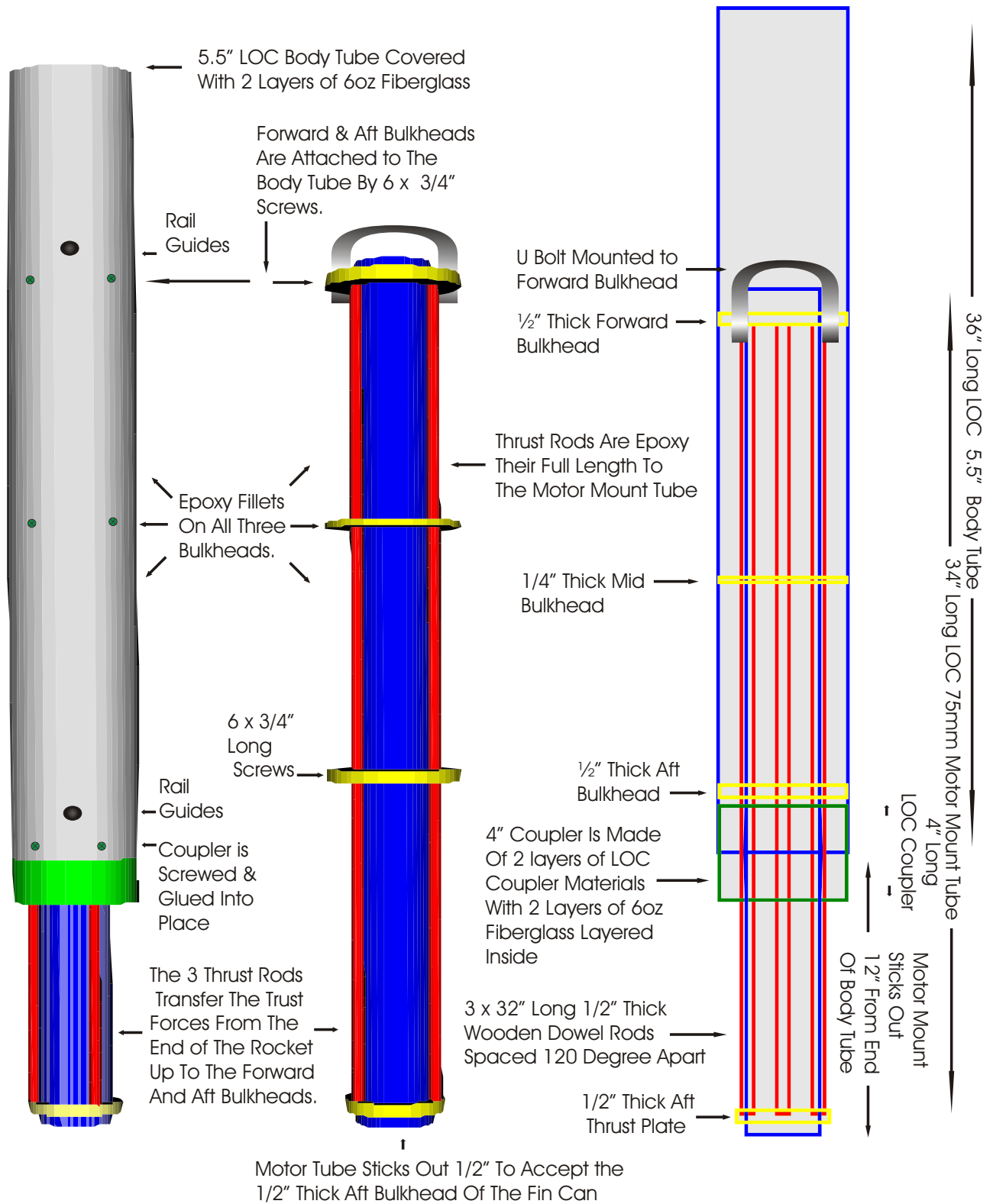


Forward View

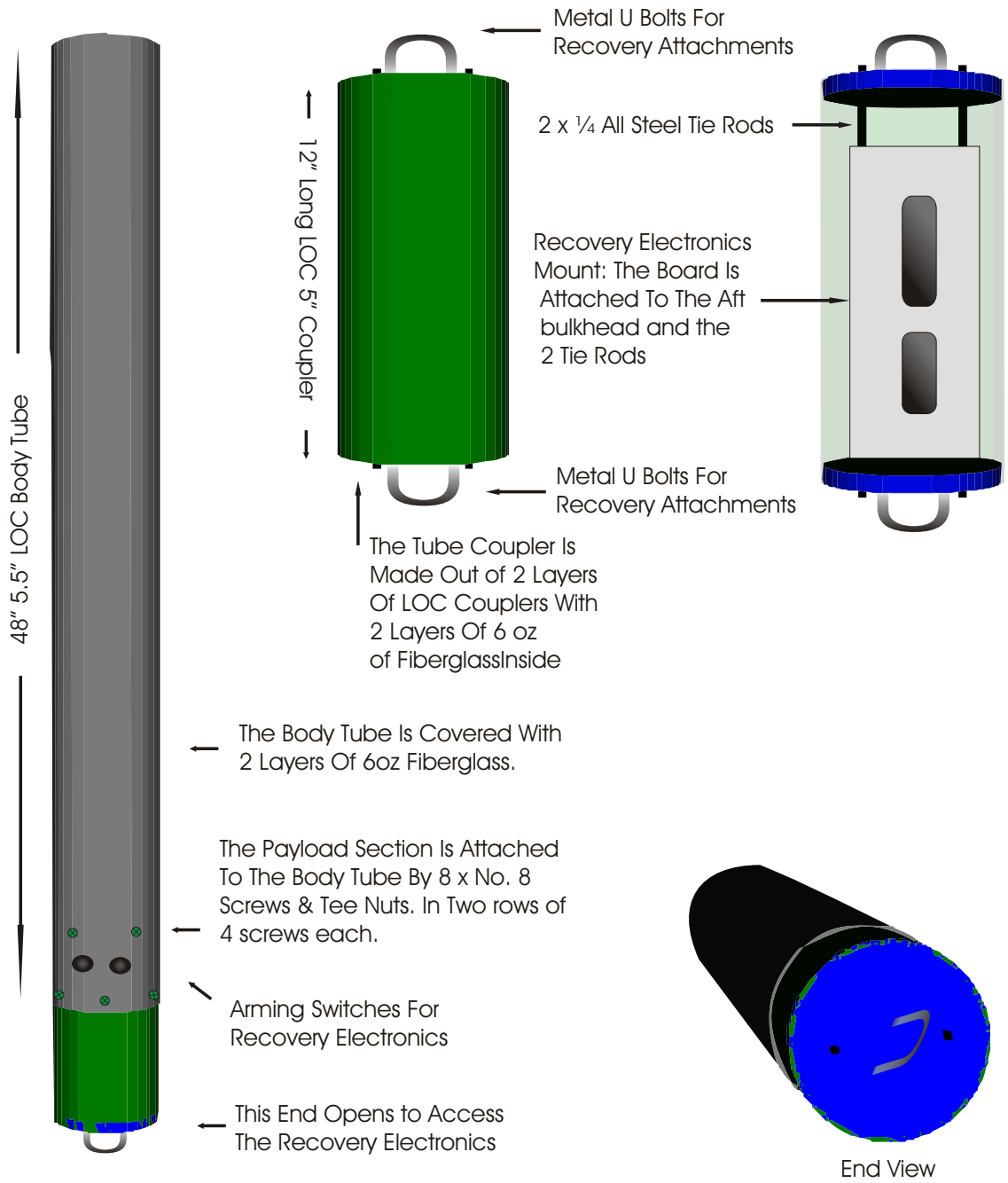


Aft View

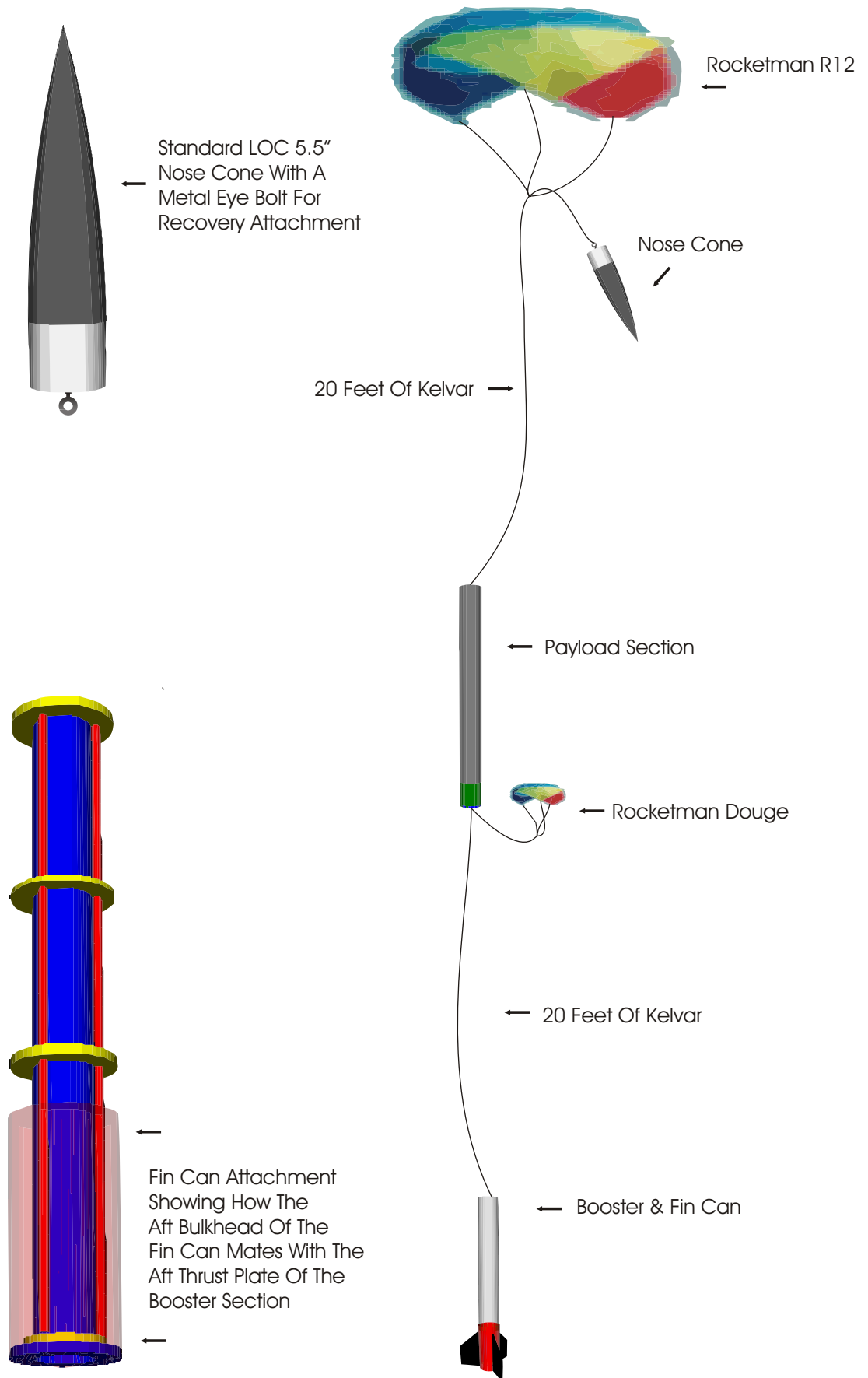
# The Booster Section



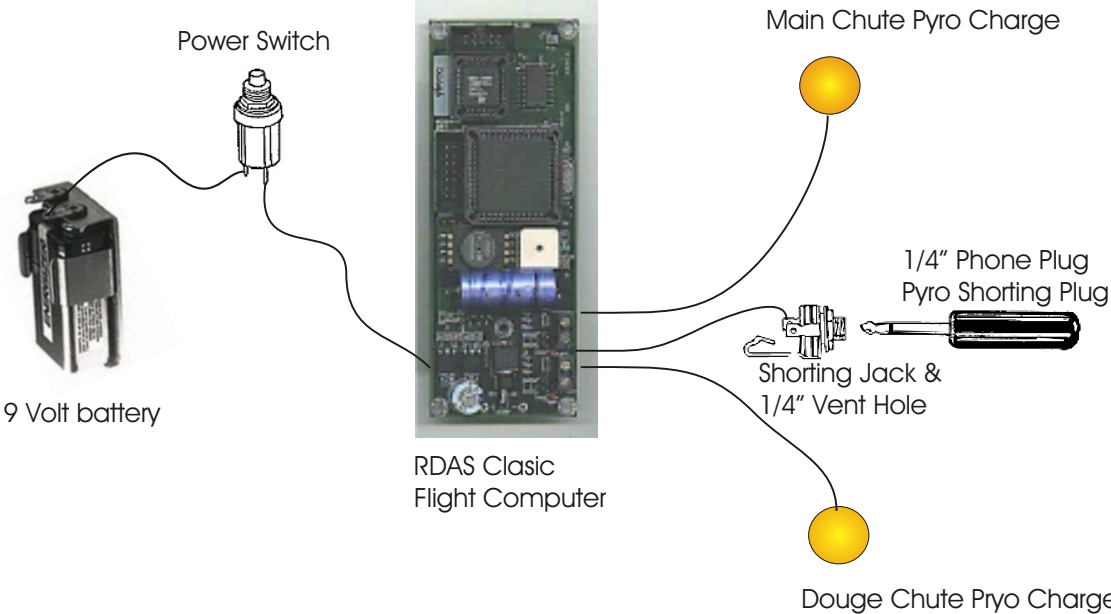
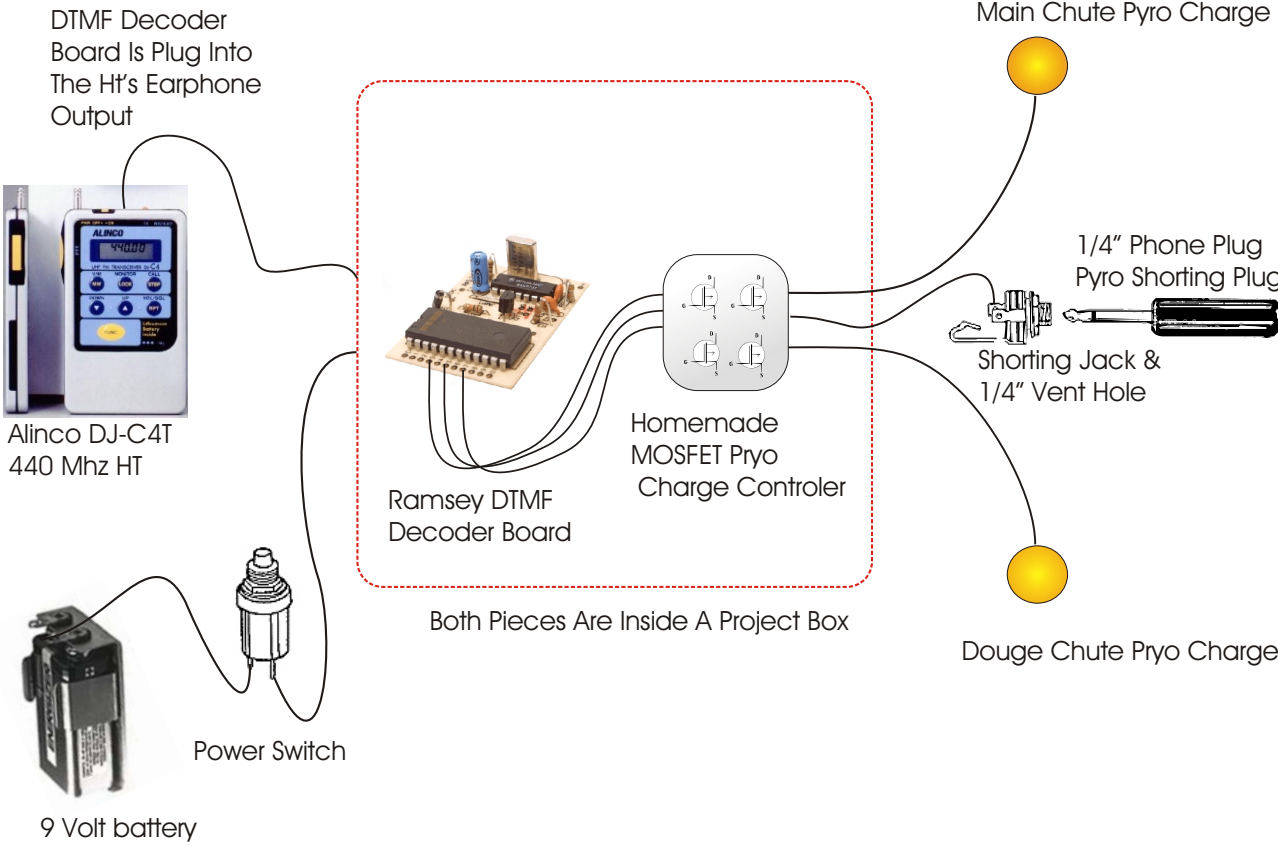
# The Payload Section



# The Recovery Page



# The Recovery Electronics



# Pre-Flight Check List

Done One Day Before Launch.

1. \_\_\_\_ Slide Payload Section into place and secure with the 8 screws
2. \_\_\_\_ Attach Main Recovery harness to nosecone and the top of the payload section
3. \_\_\_\_ Pack Main Chute into deployment bag
4. \_\_\_\_ Attach Main Chute to nosecone.
5. \_\_\_\_ Remove Electronics from payload section.
6. \_\_\_\_ Check all wiring for loose or broken connections
7. \_\_\_\_ Upload flight software for adjusted current condition into the RDAS unit
8. \_\_\_\_ Test new 9 volt batteries
9. \_\_\_\_ Test Recover altimeter and Radio Links.
10. \_\_\_\_ Double check power switches are off. Reinstall Recovery electronics
11. \_\_\_\_ Attach Drogue recovery harness to payload section and the motor mount.
12. \_\_\_\_ Attach Drogue chute to payload section.
13. \_\_\_\_ Unpack Fin Can and attach to Booster with 6 screws.

# Flight Day Check List

Done the morning of the flight

1. \_\_\_\_ Assemble the motor per manufacture instruction
2. \_\_\_\_ Assemble the Main Pyro. Charge
3. \_\_\_\_ Assemble the Drogue Pyro. Charge
4. \_\_\_\_ Open payload section and install the Main Pyro. Charge
5. \_\_\_\_ Install The Drogue Pyro. Charge in the booster section.
6. \_\_\_\_ Open Payload section and Double Check RDAS and Radio Units
7. \_\_\_\_ Hookup Pyro. Charges to the RDAS unit and Radio Unit.
8. \_\_\_\_ Check for continuity on both Pyro Charges
9. \_\_\_\_ Close up the payload section and secure the all threads bolts.
10. \_\_\_\_ Double Check motor assembly for no missing pieces and everything is secure.
11. \_\_\_\_ Install Motor into Booster
12. \_\_\_\_ Secure Motor in place with clips & screws.
13. \_\_\_\_ Mate the Payload section with the Booster section
14. \_\_\_\_ Secure with sheer pins.
15. \_\_\_\_ Mate Nosecone with Payload section
16. \_\_\_\_ Secure with sheer pins.
17. \_\_\_\_ Fill Out Flight Card, Get pad assignment
18. \_\_\_\_ Load Rocket into launch rail.
19. \_\_\_\_ Install inighiter in motor
20. \_\_\_\_ Turn on Power to RDAS and check for continuity

# Flight Day Check List

## Page 2 Continue

21. \_\_\_\_ Turn on Power to Radio Unit and check for reception test
22. \_\_\_\_ Take Pictures
23. \_\_\_\_ Request LCO Launch The Rocket
24. \_\_\_\_ Go Recover the Rocket!
25. \_\_\_\_ Get Level 3 Book Signed Off