

2018\_Purposed\_Flight-Risk\_RSO\_Policies

Proposed Launch Safety Policy Changes For	Safety Related Problem Statement(s)	Purposed Safety Requirements (addresses each prob #s)		
<b>#1 Flights: All HP Flights</b>	<b>Problem #s</b>	<b>Requirement #s</b>		
All RSO approved flights (or at least all HP flights)	<p>RSO &amp; LCO Go/No-Go is too "gut feel" based on many variables like:</p> <p><b>P1.1)</b> rocket fin size, T:W ratio, motor thrust curve, stability</p> <p><b>P1.2)</b> ballistic risks of wind direction to crowd location to rod length</p> <p><b>P1.3)</b> drift risks for wind direction / strength for drift to river or armory</p> <p>and</p> <p>P1.4) on field builds and first flight builds/engineering increases failure rates</p>	<p>We Think We Need a "<u>Kentland Go/No-Go Tool</u>" (on tablet?) for real time calculations for:</p> <p><b>R1.1)</b> Rocket flight stability "quick-sim"</p> <p><b>R1.2)</b> Ballistic recovery area / risk (using real time wind vectors)</p> <p><b>R1.3)</b> Main@Apogee drift pattern for 2,400 river and 2,600 armory avoidance (using basic sim + real time wind vectors)</p> <p>NOTES: Jordan is creating a software tool to address these requirements.</p> <p>and</p> <p><b>R1.4a)</b> Policy: No HP 1st Flight, on-field-builds</p> <p><b>R1.4b)</b> Any major component repairs or redesigns (e.g. fin fixes, lugs, MMTs) require double RSO checkoff</p>		
<b>#2 Flights: K and Over, aggressive thrust or complex flights</b>	<b>Problem #s</b>	<b>Requirement #s</b>		
Anyone Flying K and over, aggressive thrust, or complex/multi-motor	<p><b>P2.1)</b> K &amp; over launches pose larger than avg risk (if launch or recovery fail)</p> <p><b>P2.2)</b> Aggressive launches have higher stress failure rates &amp; need more scrutiny</p>	<p>New "<u>K &amp; Over / Aggressive Flights Requirements</u>":</p> <p><b>R2.1 / 2.2)</b> Must receive 2-RSOs sign-offs</p>		
<b>#3 Flyers: Non-club, guest, students or team flyers</b>	<b>Problem #s</b>	<b>Requirement #s</b>		
<p>Non-Club flyers or teams who are:</p> <ul style="list-style-type: none"> <li>- guests / "out of town" / non-NRVR members</li> <li>- student / team / inexperienced flyers</li> </ul>	<p><b>P3.1)</b> Non-NRVR-Member (K &amp; over) launches pose MUCH higher risks</p> <p><b>P3.2)</b> Guest / Student flyers often don't know RSO requirements / expectations = higher builds &amp; flight risks</p> <p><b>P3.3)</b> Non-NRVR member rockets (even <u>medium power</u>) problems are "invisible" or often need of deeper RSO inspection before launch</p>	<p>New "<u>Non-NRVR Member Pre-Flight Requirements</u>":</p> <p><b>R3.1)</b> "RSO teardown inspection" &amp; sign-off (K &amp; over)</p> <p><b>R3.2)</b> Send guest/ student flyers our RSO checklist &amp; flight card (to set expectations BEFORE launch)</p> <p><b>R3.3)</b> Pre-Flight Data Capture review (medium power &amp; over) for non-NRVR/guest/student flyers</p>		
<b>#4 Rockets: Exotic/Complex/Research Flights</b>	<b>Problem #s</b>	<b>Requirement #s</b>		
<p>Anyone Flying Exotic, Complex (multi-motor), or Research Builds</p> <ul style="list-style-type: none"> <li>-Non traditional rocket types (mono-copter, unique or "weird designs" etc)</li> <li>-Research motors</li> <li>-"Complex" multimotor (clusters, staged, etc) flights</li> </ul>	<p><b>P4.1)</b> Exotic Rockets have higher failure rates</p> <p><b>P4.2)</b> Research motors have higher failure rates</p> <p><b>P4.3)</b> Complex motor clusters and stages flights have much higher failure rates</p>	<p>New "<u>Exotic Rocket, Complex Motor &amp; Research Motor Flight Requirements</u>":</p> <p><b>R4.1 / 4.3)</b> Exotic &amp; Complex rocket "RSO teardown inspection" &amp; sign-off</p> <p><b>R4.2)</b> Research motors must receive 2-RSO sign-offs</p> <p><b>R4.1 / 4.3)</b> Possible push of exotic or complex flights to research-only launch day layouts (if too risky)</p>		