**Angelfire Flight Data**

Date: June 18, 2006  
Location: Brothers Oregon  
Elevation: 4525 feet MSL  
Temp: 68 F  
%RH: 37%  
Wind: Approx 5 mph at ground level

Motor: Aerotech L952W  
LO weight: 47 lbs

Comments:  
- Slow liftoff and not perfectly vertical.  
- Main chute accidentally deployed at apogee.  
- Landed 0.67 miles from flight line.

**Flight Event Timeline**

<table>
<thead>
<tr>
<th>Time (Sec)</th>
<th>Event</th>
<th>Altitude (feet)</th>
<th>Speed (ft/sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>Motor Ignition</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1.98</td>
<td>Peak Acceleration</td>
<td>197</td>
<td>206</td>
</tr>
<tr>
<td>4.39</td>
<td>Altitude = 1000 feet</td>
<td>1000</td>
<td>434</td>
</tr>
<tr>
<td>5.68</td>
<td>Peak Velocity</td>
<td>1592</td>
<td>479</td>
</tr>
<tr>
<td>6.45</td>
<td>Motor burnout (Accel = 0)</td>
<td>1952</td>
<td>458</td>
</tr>
<tr>
<td>20.29</td>
<td>Barometric apogee detection</td>
<td>5132</td>
<td>36</td>
</tr>
<tr>
<td>21.55</td>
<td>Accelerometer apogee detection</td>
<td>5248</td>
<td>1</td>
</tr>
<tr>
<td>22.00</td>
<td>Drogue chute ejection charge fires</td>
<td>5245</td>
<td>-6</td>
</tr>
<tr>
<td>231.20</td>
<td>Touch down</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Drogue chute sink rate: n/a  
Main chute sink rate: 22.8 ft/sec

- Time to apogee: 21.6 sec, 0.36 min  
- Time on drogue: n/a, n/a  
- Time on main: 22.0 sec, 0.37 min  
- Total flight time: 231.2 sec, 3.85 min

**NOTE**  
The MissileWorks altimeters were responsible for drogue and main parachute ejection charge firings.
Angelfire Acceleration  June 18, 2006  L952W motor

- Peak acceleration ~ 4 G's
- Zero acceleration
- -12.3 G shock of only 100ms duration. Did shock cord suddenly come tight?
- Drogue ejection charge fired
- Airframe tumbles and main chute inflates

Max Acc Alt 5,248 feet

Accelerometer Data
Barometric Data
Drogue ejection charge marker

Angelfire Altitude  June 18, 2006  L952W motor

- Max Baro Alt 5,132 feet
- Max Acc Alt 5,248 feet

Accelerometer Data
Barometric Data
Drogue ejection charge marker
Drogue ejection charge fires at -6.0 feet/sec

Peak Velocity = 479 feet/sec
(326 mph)

Calculation of parachute descent rate
3898 feet at 50 sec
711 feet at 190 sec
Descent rate = 22.8 feet/sec
Angelfire Acceleration       June 18, 2006       L 952W motor

Peak Acceleration ~ 4 G's

Accel = 0 G's

AeroTech L952W Nominal Thrust Curve

Thrust in pounds

Time in Seconds

0 1 2 3 4 5 6 7 8

0 50 100 150 200 250

Time in Seconds

0 1 2 3 4 5 6 7 8

Measured Acceleration
Motor Burnout marker
Averaged Acceleration

Peak Acceleration ~ 4 G's

Accel = 0 G's