OVERHEAD LAUNCH STEPS
(Ref: Handbook 10-1401, Appendix E, Local Policy)

11/11/2007

The TRS can track radiosondes in overhead conditions, once the radiosonde has risen a significant distance from the surface (approximately 5000 ft AGL or 5 minutes), such that minor radiosonde movements (such as the pendulum motion of the radiosonde) do not incur large changes in azimuth (which are likely to produce over-current errors).

Background Information: If during the time of release, light winds are expected to occur below 5000 ft AGL (overhead conditions) OR the radiosonde is expected to cross directly over the TRS below 5000 ft AGL, you need to be aware of the potential for TRS over-current errors. The over-current errors (MCU 0x0800 in the RWS Hardware Status Display) indicate the TRS is accelerating too rapidly. These errors most commonly occur during the first five minutes of an overhead flight and only while in WAGS. Once five or more over-current errors occur in rapid succession, the TRS will turn off the affected motor to protect it from damage and suspend tracking in that axis. If less than five over-current errors occur, placing the TRS in Manual for 20 seconds will reduce the likelihood the TRS will lockup due to multiple over-currents.Use these procedures when you expect a balloon to go overhead (light winds).

1. Follow guidelines in Procedure 2 of this binder through Balloon Release and then perform the following steps.

2. Use the Clinometer and Compass Roses to get Azimuth and Elevation readings. Using the LCDU's **Up/Down/Left/Right** arrow keys, orientate the antenna to your readings you've taken.

3. On the upper right portion of the LCDU, you'll see errors for Direction/Elevation and arrows telling you which way to slew the antenna. You want to get these errors into the low double digits or even single digits.

4. Once you've accomplished this, you can place the antenna in Auto Track by hitting the "4" key. Signal strength should increase and Azimuth/Elevation errors should decrease. You're on the sonde.

5. If Signal strength and Azimuth/Elevation errors do not increase/decrease respectively, take one more azimuth/elevation reading from the clinometer/compass rose and slew the antenna to those coordinates. **Leave the antenna in Manual Track mode and immediately return to the office.**

6. Upon returning to the office, use the Antenna/TRS Display to place the antenna in the **"Search"** mode.

a. If GPS is being received, the antenna will move to the last known GPS location. If GPS is not received move the antenna manually to the direction the balloon is traveling and select **"Search".**

b. The antenna will start with a "Limited Search" pattern. If the Search pattern goes into **"Full Search"**, with the antenna elevation going to 90 degrees, **stop the "Search" and manually reposition the antenna and begin the "Limited Search" again.**

7. Repeat as necessary until you obtain the sonde signal of the flight terminates.