Using Jumpmaster
an eTrex Vista accessory

The eTrex Vista’s Jumpmaster is an accessory designed for experienced skydivers, particularly those in the military. A military ‘jumpmaster’ is the individual in charge of a unit of skydivers coordinating a unit or cargo drop. Special operation forces including Navy SEALS, Army Rangers, Army Green Berets, Marine Static and Freefall jumpers, Army Static jumpers, foreign special operation forces and others benefit from the Jumpmaster accessory.

The Jumpmaster follows military guidelines for calculating a jumpmaster’s high altitude release point (HARP). The accessory can auto-detect when you have jumped to begin navigating toward the desired impact point (DIP) using the barometer and electronic compass.

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email at sales@garmin.com

We hope you enjoy Jumpmaster and thank you again for choosing GARMIN!
The Jumpmaster Page

The Jumpmaster page allows you to set the jump type to one of three types (HAHO, HALO, or Static). The jump type selected determines what additional setup information is required. For all jump types, altitudes (drop or opening) are measured in feet above ground level (AGL).

For HAHO jumps, a desired impact point (DIP) must be set. This is a waypoint marked where the jumpmaster wants to land. The drop altitude of at least 1,000 feet must be specified next, and for HAHO jumps, it is assumed the drop altitude is the same as the opening altitude. Common values for a drop altitude range from 12,000-24,000 feet AGL.

For HALO jumps, the required information is the same as the HAHO jump type, plus an opening altitude. This altitude may not be a larger value than the drop altitude. Common values for an opening altitude range from 2,000 to 6,000 feet AGL.

For Static jumps, a drop altitude of at least 1,000 feet must be specified. A constant wind speed and direction for the duration of the jump is assumed.

For HAHO and HALO jumps, wind speeds and directions can be entered for every 1,000 feet of canopy drift (CD) and every 2,000 feet of free fall drift (FFD). These wind speeds are entered on the Wind Setup page by selecting the Wind button.

“Forward Throw” and “Course to HARP” allow a user to determine the direction and magnitude the aircraft will carry him after jumping and before freefall or canopy drift begins.

A number of additional constants are entered on the Constant Setup page by selecting the Constant button.

A checkbox at the bottom allows for auto-navigation to the DIP. If you want your Vista to determine when you have jumped, this box should be checked. A message displays describing how to manually navigate the route.

Clicking the Goto HARP button begins the navigation process and will take you to the Wind Setup page if that information is missing or automatically setting up the route with the calculated HARP and then the selected DIP before taking you to the Navigation page.

The Wind Setup Page

Wind speeds and directions are added on the Wind Setup page.

Wind speeds are measured in knots and directions are based on origination of wind. This information is usually based on data collected from National Oceanographic & Atmospheric Administration (NOAA) or by a drop zone support team leader (DZSTL) monitoring the course of a Pilot Balloon (PiBal) dropped from a plane.

Jumpmaster is capable of handling doglegs in wind direction.

Select “Clear All” from the Option Menu of this page to clear the list of wind speeds and directions. Wind speeds and directions must be entered as a pair to be valid. Those pairs left as “_ _ _” will be ignored in calculations.

The Constant Setup Page

The Constant Setup page allows you to fine-tune certain aspects of the planned jump.

All jump types also can use a “Percent Max” to increase or decrease the range or their jump. Entries less than 100% decrease drift distance to the DIP while those greater than 100% increase drift distance. More experienced jumpmasters may choose to use smaller numbers while those less experienced may use larger numbers.

“Safety Factor” is used in HAHO jump types to allow a margin or error for a jump. Safety factors are usually integer values, no smaller than two, and are determined by the jumpmaster based on specifications for the jump.

A number of K values may be specifiable for different jumps. HAHO jumps use K-open while HALO jumps use K-open and K-freefall. Static jumps use K-static. K-values are based on the parachute canopy rating. Each parachute should be labeled with a K value. Common values may range from 3.0 for K-freefall to 48.0+ for HAHO K-open.

Select “Restore Defaults” from the Option Menu of this page to reset the values.
Definitions

The following is a list of abbreviations and acronyms commonly used by military jumpmasters that also relate specifically to this accessory:

- **AGL**: Above Ground Level Altitude measure
- **CD**: Canopy Drift drift while parachute is open
- **DIP**: Desired Impact Point location where landing should occur
- **DZ**: Drop Zone area where landing should occur
- **DZSTL**: Drop Zone Support Team Leader
- **LFFD**: Free Fall Drift drift before parachute is open
- **HAHO**: High Altitude High Opening type of jump
- **HALO**: High Altitude Low Opening type of jump
- **HARP**: High Altitude Release Point location jumper exits from plane
- **MSL**: Mean Sea Level Altitude measure
- **NOAA**: National Oceanographic & Atmospheric Administration
- **PRP**: Primary Release Point HARP plus forward throw of aircraft

The following list of additional terms are often used by jumpmasters:

- **Drop Altitude**: Altitude when jumpmaster exits aircraft, measured in AGL
- **Forward Throw**: Horizontal distance traveled by due to aircraft speed
- **HAHO Jump**: Type of jump where the jumpmaster jumps from a very high altitude and opens chute at a high altitude
- **HALO Jump**: Type of jump where the jumpmaster jumps from a very high altitude and opens chute at a low altitude
- **K values**: Wind drag values for parachutes
- **Opening Altitude**: Altitude when jumpmaster opens chute, measured in AGL
- **Static Jump**: Type of jump where wind speed and direction are assumed constant for the duration of the jump

The following “typical” example is used in jumpmaster training courses. While the solution to this problem is outside the scope of this document, this example is included to give an idea of the capabilities of the Jumpmaster accessory.

**EXAMPLE: HALO JUMP**

The exit altitude is 14,000 feet. The jumpmaster wants 1,000 feet for canopy assembly and a 1,000-foot arrival altitude over the DZ.

Winds are as follows:

<table>
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<tr>
<th>Altitude</th>
<th>Velocity</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
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<td>25</td>
<td>090</td>
</tr>
<tr>
<td>12000</td>
<td>22</td>
<td>080</td>
</tr>
<tr>
<td>10000</td>
<td>21</td>
<td>090</td>
</tr>
<tr>
<td>9000</td>
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<td>090</td>
</tr>
<tr>
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<td>20</td>
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</tr>
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<td>7000</td>
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<td>080</td>
</tr>
<tr>
<td>1000</td>
<td>8</td>
<td>080</td>
</tr>
</tbody>
</table>

The jumpmaster plans a course to the HARP at 235 degrees at 300 feet forward throw. Given the coordinate for the DIP, calculate the HARP.