

A Tool to Determine Minimum Turnback Altitudes

Before you fly you should know the minimum altitude you need to be at to consider at turnback in the event of a loss of power. To determine the minimum altitude for a given density altitude, headwind, and runway length, you can use a chart like the one on page 2. To receive a chart that is customized for your plane, you can measure or look up a few flight characteristics of your plane and enter these into the form at WWW.Bertha2.com/Aviation. Within a few days, you will receive an email containing a chart like the one on page 2 customized for your plane and skill level.

Note: As this tool is in development, it should not be used for aeronautical decision making, but still may be of interest to you. We would appreciate your feedback. There is no cost to you, and you can submit any number of requests.

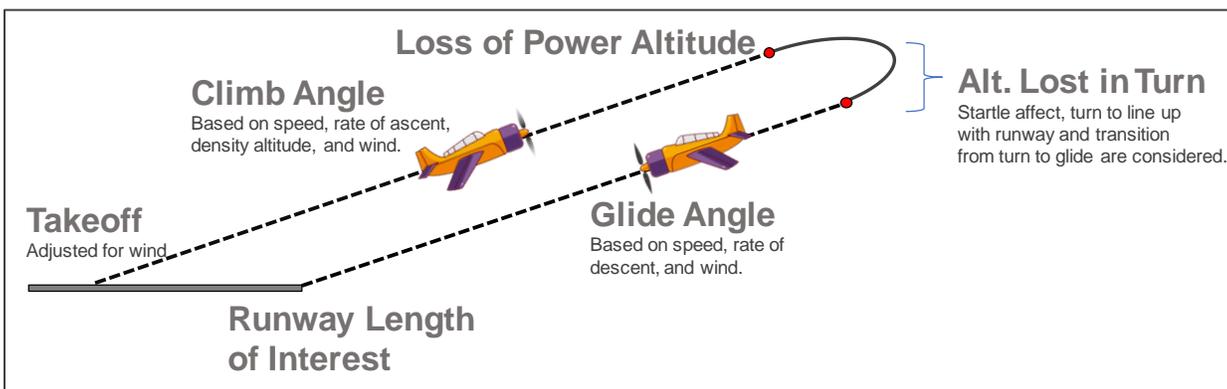
FLIGHT CHARACTERISTICS

Start by gathering a few basic flight characteristics of your plane. Download the procedure for measuring these or for looking them up in your POH (see procedure in the [link](#) above). Within a single flight you can measure all that's needed.

<p>Takeoff</p> <p>Ground roll distance: <input type="text" value="1520"/> ft.</p> <p>Runway Length: <input type="text" value="3898"/> ft.</p>	<p>Climb</p> <p>Climb Speed: <input type="text" value="75"/> KIAS</p> <p>Rate of Climb: <input type="text" value="745"/> ft./min.</p>
<p>Turnback</p> <p>Altitude Lost in 180° Turn: <input type="text" value="395"/> ft.</p>	<p>Glide</p> <p>Glide Speed: <input type="text" value="75"/> KIAS</p> <p>Rate of Descent: <input type="text" value="825"/> ft./min.</p>

MODEL

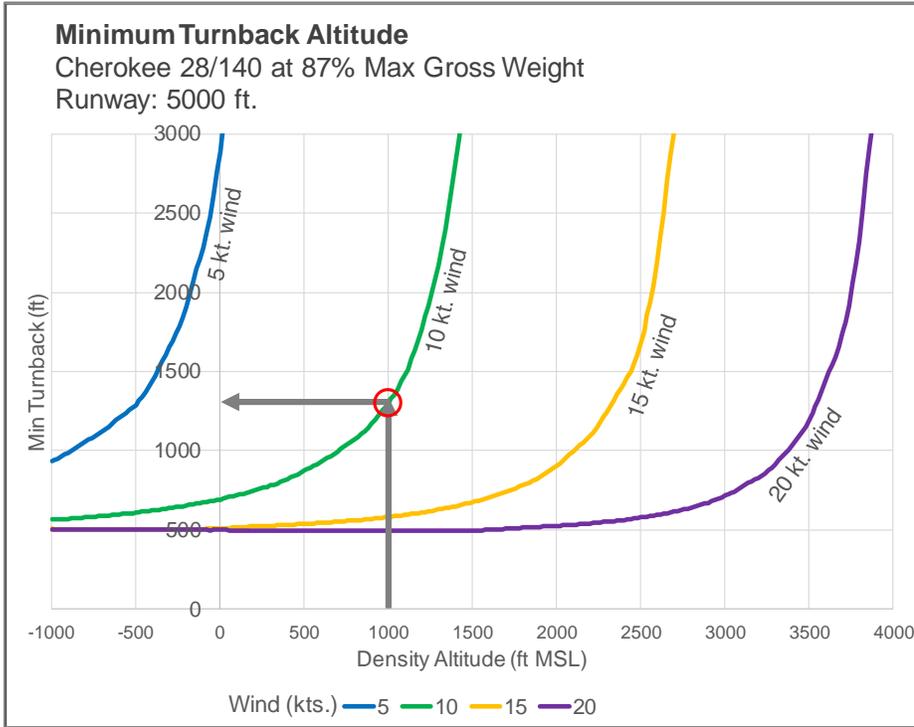
Based on the flight characteristics, a chart (see page 2) is made that shows the minimum altitude that is needed to return to the runway for various density altitudes and head winds. You can specify up to 3 runway lengths. The charts are based on a model which calculates the plane's flight path modified for density altitude and winds. The model also applies statistical safety factors to the flight characteristics. The reported minimum altitudes include these safety factors.



CHARTS

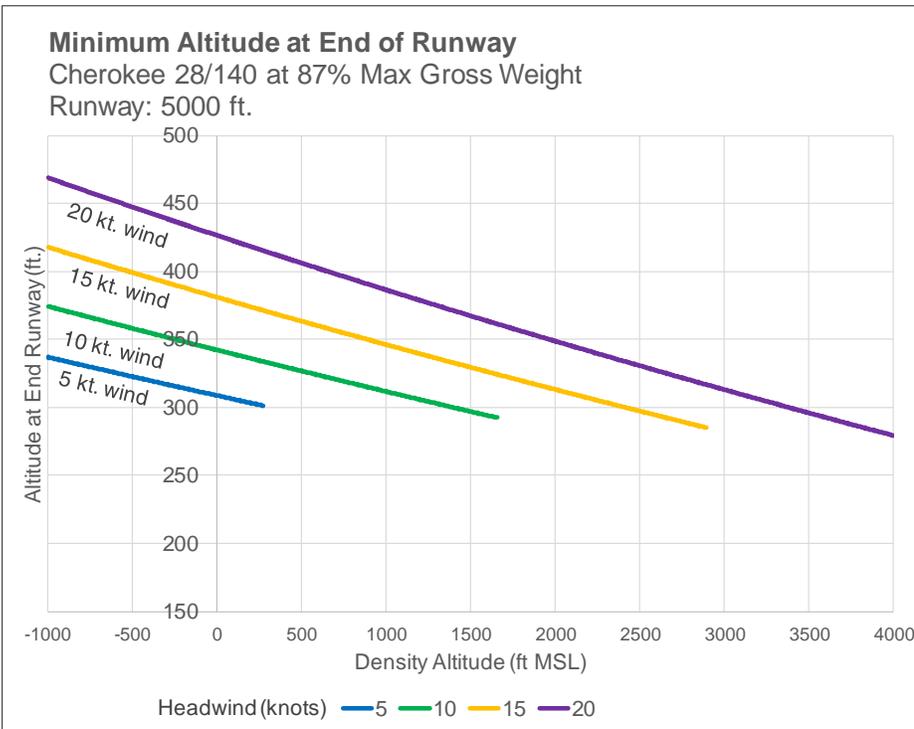
Minimum Turnback Altitude

This chart shows the minimum altitude a turnback should be considered for a given density altitude and head wind. Example: On a day with density altitude at 1,000 ft and a headwind of 10 kts. the minimum turnback altitude is 1300 ft.



Minimum Altitude at End of Runway

This chart shows the minimum altitude when crossing the end of the runway for the above graph to apply.



Contact Info:
Rick Marshall
marshallsoftwarellc@gmail.com
Phone: (952) 270-0393