during late morning, and then both remain somewhat steady for several hours during the afternoon. The height band rises and broadens with thermal height. Sometimes the top of the height band is limited by the base of cumulus clouds. Cloud base may slowly increase by thousands of feet over several hours, during which the height band also increases. Thermals often "shut off" rapidly late in the day, so a good rule of thumb is to stay higher late in the day. *[Figure 11-14]*

It is a good idea to stop and thermal when at or near the bottom of the height band. Pushing too hard can lead to an early off-field landing. Pushing too hard leads to loss of time at lower altitudes because the pilot is trying to climb in weak lift conditions.

Another way to increase cross-country speed is to avoid turning at all. A technique known as dolphin flight can be used to cover surprising distances on thermal days with little or no circling. The idea is to speed up in sink and slow down in lift while only stopping to circle in the best thermals. The speed to fly between lift areas is based on the appropriate MacCready setting. This technique is effective when thermals are spaced relatively close together, as occurs along a cloud street.

As an example, assume two gliders are starting at the same point and flying under a cloud street with frequent thermals and only weak sink between thermals. Glider 1 uses the conditions more efficiently by flying faster in the sink and slower in lift. In a short time, glider 1 has gained distance on glider 2. Glider 2 conserves altitude and stays close to cloud base by flying best L/D through weak sink. To stay under the clouds, he is forced to fly faster in areas of lift, exactly opposite of flying fast in sink, slow in lift. At the end of the cloud street, one good climb quickly puts glider 1 near cloud base and well ahead of glider 2. *[Figure 11-15]* The best speed to fly decreases time in sink and therefore decreases the overall amount of descent but produces the best forward progress. Being slower in sink increases time descending and slows forward progress, while being fast in lift decreases time in lift and altitude gained.

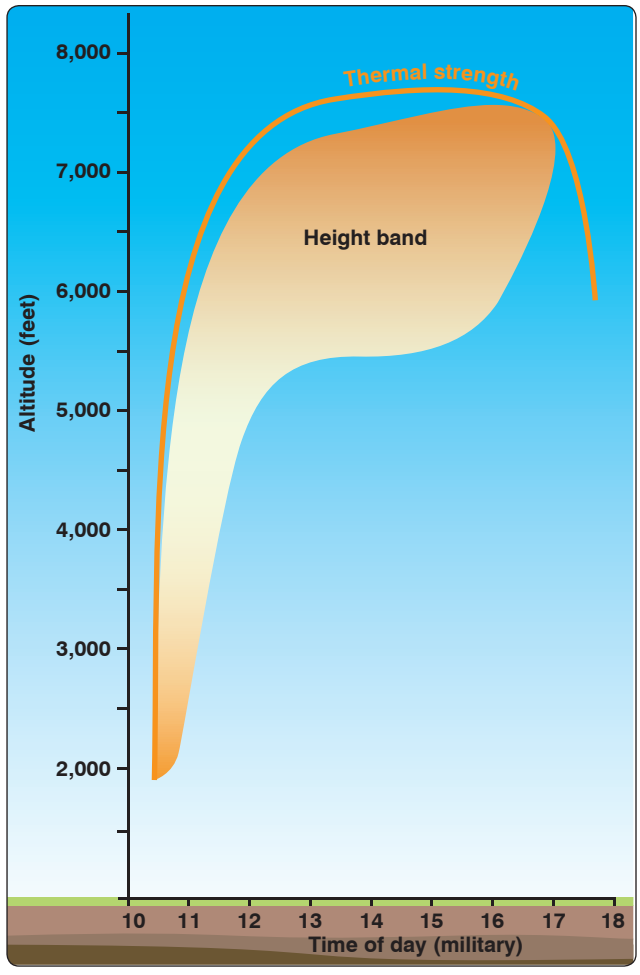

Figure 11-14. *Thermal height and height band versus time of day.*

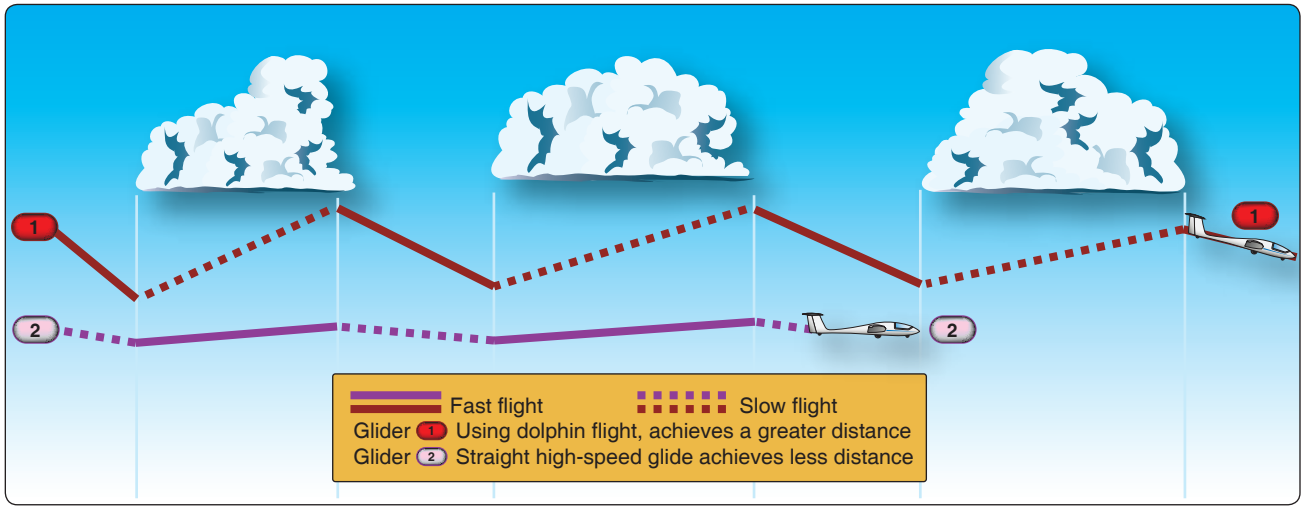

Figure 11-15. *Advantage of proper speed to fly under a cloud street.*