

Estimating In-flight Visibility & Cloud Clearance

There are a number of ways to develop your skill in estimating your in-flight visibility and cloud clearance. These techniques will help you establish a continuous weather assessment habit. It will also help you calibrate your perceptions and learn when to trust what you see.

- ✓ Listen to the ATIS or ASOS/AWOS as you pass near an airport. First try to evaluate the basic weather conditions based on what you see. Then listen to the ATIS or ASOS/AWOS and compare the official report to your own evaluation of conditions, as well as with any previous reports you have seen from this location.
- ✓ Use the length of a runway you pass in flight to estimate distances.
 - A runway that is 5,300 feet long is about a mile. Look to see how far ahead you can see, and estimate the number of runways that it would take to cover that distance.
 - A 2,600 foot runway would be about a half mile, and so on. In this case, visibility is less than 3 miles if you cannot see 6 runway lengths ahead.
- ✓ If you know your aircraft's groundspeed, you can estimate distance. Look to the most distant point you can see ahead and then time how long it takes to reach it.
 - If, for example, your ground speed is 105 knots, that's about 120 mph and you'll cover about 2 miles per minute. If you reach the point in less than 90 seconds, the in-flight visibility is less than 3 miles!
 - A simple variation on this technique is to use GPS or DME while flying directly to or from a waypoint or VOR. Just look at the beginning and ending mileage on the GPS or DME to see how far you've flown to reach the farthest point you can see.
- ✓ If you need to know the lateral distance to a cloud, start timing when the cloud is ahead of you and at about a 45° angle (halfway between your 10 and 11 o'clock or between your 1 and 2 o'clock positions). Stop timing when the cloud is off your wingtip. The distance you've traveled forward will now be equal to the distance between you and the cloud. If you were traveling at 120 mph, it will take you about 11 seconds to travel 2000 feet. If the cloud took less than 11 seconds to arrive off your wingtip, you are now less than 2000 feet horizontally from that cloud.

(courtesy of Max Trescott, SJ Flight)