

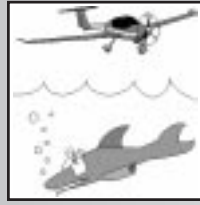


Over SBA our indicated altitude is 3,000 feet but our true altitude is only 2,000 MSL as shown in Figure 24, position D. Is this a problem? Yes! What happens if there is a mountain at 2,500 feet MSL along your path? (Figure 25A). Looking at the face of the altimeter (its indicated altitude), it appears you'll clear the mountain by 500 feet. In reality, you're 500 feet below the top of the mountain. Under these conditions, there's a good chance that your airplane's landing gear might conk the head of some camper sitting around a campfire on top of that hill. What a shock it would be if it were night time and you thought you would clear that 2,500 foot mountain by 500 feet. You might end up with a Coleman stove, camping gear and raccoons stuck to your airplane.

Suppose you're over SBA and suddenly you realize your mistake of not updating the altimeter setting. You call the SBA tower and the controller tells you the altimeter setting is 29.25" Hg (He or she will actually say "Altimeter setting is two-niner-two-five." The "inches of mercury" part is understood and never spoken.) You set this in the Kollsman window. What will your altimeter read? The difference between the recalibrated pressure in the expandable capsule and static pressure is now two inches. Therefore, the altimeter reads a true altitude of 2,000 feet (Figure 25B), at which point you immediately begin climbing back to your previously selected altitude of 3,000 feet. By updating the altimeter setting, the indicated altitude (what the altimeter shows) is now the same as the true altitude (your height above sea level). Good pilots make it a point to update their altimeter setting at least every 100 miles (if not more often).

In Figure 25B, did you notice that twisting the knob and moving the numbers down from 30.25" Hg to 29.25" Hg caused the hands to unwind 1,000 feet worth? This progression is shown in Figure 26. From a strictly mechanical point of view,

### When There's No Sea Beneath Thee



Whenever an ATC facility gives you the altimeter setting, that's the pressure at sea level underneath them. You are, I hope, wondering how an airport near Denver, Colorado, located at over 5,000 feet MSL, measures the pressure at sea level when there is no sea under the airport.

Sea level is a relative constant across the globe (excluding tides). ATC personnel can easily calculate what the pressure at sea level underneath them would be, if they could dig down to that level and if there were a sea there. This is often calculated by a mechanical device at the ATC facility (later I'll show you the device they use to calculate sea level pressure—you're not going to believe it.)

### FAILURE TO UPDATE YOUR ALTIMETER SETTING CAN CAUSE ALTIMETER ERRORS

