

DENSITY ALTITUDE

Perhaps the most challenging departure procedures apply in areas of rising terrain. If the airport you're departing is already up in the hills, density altitude may become a major factor in your ability to make a safe IFR departure. Check out the instrument departure procedures for Angel Fire, N.M., a popular ski resort and summer destination, reproduced at right.

Taking off on Runway 35? Forget it—no instrument departures are authorized. Launching from the southbound runway? Climb on a heading of 172 degrees to 8900 feet (field elevation is 8379) and then start a climbing right turn to 14,000 feet and follow the charted route. Maintain a minimum climb gradient of 526 feet per nm while you do so.

Recalling that for a given indicated airspeed the true airspeed (and therefore groundspeed) increases as altitude increases, and knowing that a headwind for takeoff might easily become a tailwind as you clear the lower ridges, I'd have to climb at something close to 1000 fpm all the way to 14,000 feet to fly the instrument departure. That's not likely to happen in a normally aspirated A36 Bonanza. Can the airplane you fly allow using this procedure?

