

the ODP might indicate that you should "turn left (or right) as soon as practicable." Because of these obstacles' untidy location, one-mile visibility and a 300-foot ceiling will be listed in the takeoff minimum requirement for that airport.

It's important to know that obstacles located within 1 NM of the departure end of the runway (the DER) that penetrate the 40:1 OIS might normally require a climb gradient higher than 200 feet per NM for a short distance past the DER (Figure 11). You can only imagine how complicated ODPs would become if you had multiple climb gradients for one runway over a short distance.

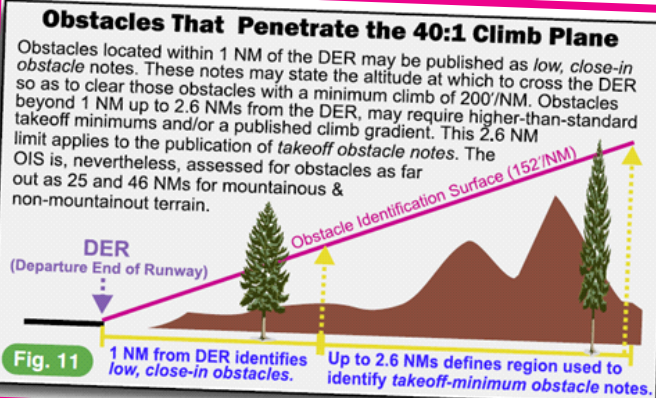
To eliminate the confusion, ODP designers will list the obstacle(s) AGL and MSL height and location relative to the DER in Section L of the *Takeoff Minimums* page (Figure 12A). Why? So you can avoid it during departure. Get the hint? You have to see this obstacle to avoid it and that implies you must do whatever is necessary (liftoff early, turn around the obstacle, or stay in bed until the weather improves). The textual ODP description for Delano, California (Figure 12A) indicates that there's a 65-foot tree located 600 feet from the departure end of the runway that's 500 feet left of Runway 14's centerline.

The FAA is slowly changing the *Takeoff Minimums* section (Figure 12B) to show the minimum altitude at which to cross the DER so as to avoid close-in obstacles at a minimum climb rate of 200 foot/NM. At Brazil, when departing Rwy 9, to avoid the low, close-in obstacle, you need to cross the DER at 92 feet to safely clear trees standing at 118 feet AGL above the DER.

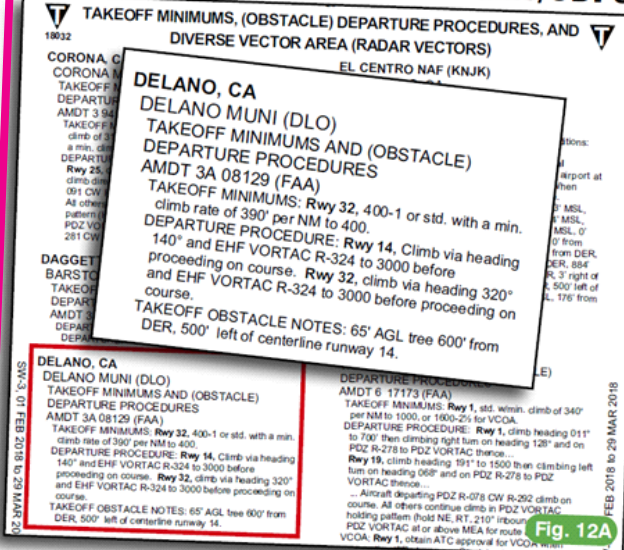
If ODPs ensure an obstruction-free departure, then why aren't they included in your clearance when departing IFR at any airport, towered or non-towered? The answer is, ATC can assign them when you depart into Class B, C, D or E (controlled) airspace. (Note: at airports without control towers but within a Class E surface area, ATC does have the option of specifying the takeoff/turn or the initial heading to be flown after takeoff, as necessary. ATC will obtain or solicit your concurrence, before takeoff, that these items will allow compliance with traffic patterns, terrain, and avoiding obstruction.)

Keep in mind that ATC has no jurisdiction over the Class G airspace. That's why they don't assign these ODPs. On the other hand, ATC may assign an ODP in Class G (uncontrolled) airspace when it's necessary to prevent a traffic separation problem (such as two airplanes departing IFR at non-towered airports in close proximity to each other).

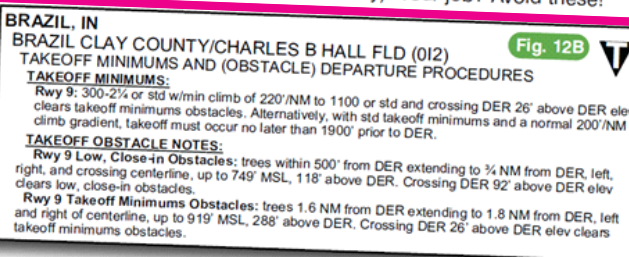
Unfortunately, ODPs are not available at all airports because not all airports have instrument approaches. That doesn't mean, however, that there aren't other resources available for finding a safe way out. Safe IFR departures can be made if you talk to a few of the airport locals about airport geography and local departure procedures. Before departure, determine what minimum



TPP Section L Takeoff Minimums/ODPs



To prevent multiple climb gradients after departure, ODP designers will identify obstacles penetrating the 40:1 climb plane within 1 mile of the DER (departure end of the runway). Your job? Avoid these!



The FAA is now showing *Takeoff Obstacle Notes* providing minimum altitudes at which to cross the DER so as to avoid the identified obstacle (located within 1 mile of the DER) with a minimum climb rate of 200 feet/NM.

out a sectional chart and identifying the highest obstacle in the departure path. This becomes your minimum ceiling height for departure. Using a minimum of one mile of visibility for departures, until the aircraft is above or moving away from the referenced obstacle, also provides an excellent safety advantage. The plain fact is that it's easier to avoid an obstacle you can see.

Obstacles that penetrate the 40:1 OIS beginning at the DER (departure end of the runway) and sloping up at 152'/NM are identified by ODP designers. They will list the obstacle(s) AGL and MSL height and location relative to the DER and RWY centerline in the ODP so they can be avoided during departure.

Aircraft min/climb of 200'/NM assumed to begin at 35 feet above the DER.



Highlight areas and magenta boxes represent material that has changed on Pages 14-8 and 14-10 in Chapter 14 of the *Instrument Pilot's Handbook*.

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Rod Machado's Instrument Pilot's Handbook

To operate under BasicMed you need to:

1. Visit a state-licensed physician at least once every 48 months (to the date of your exam) for an examination sufficient to determine the absence of any medical conditions that could interfere with the safe operation of an aircraft. This exam must have been performed on or after April 24, 2017.

2. Take a free online medical education course every 24 calendar months (for example, AOPA offers such a free course).

The limitations for aircraft and pilot operating under BasicMed:

1. You may fly an aircraft having up to a 12,500-pound maximum certificated takeoff weight.

2. This aircraft is authorized to carry no more than seven occupants (that's six passengers plus you, the pilot).

3. You may conduct VFR or IFR flights within the United States, the Bahamas and Mexico only.

4. You may fly at an indicated airspeed of 250 knots or less and fly at an altitude that's at or below 18,000 feet mean sea level.



Update IFR Handbook, Chapter 10, Page 10-36.

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Rod Machado's Instrument Pilot's Handbook

Convective SIGMETs (WST)—Another version of the SIGMET is the *convective SIGMET* (WST). These are the granddaddies of in-flight advisories and report things that are hazards to all aircraft. These are the baddest of the bad boys, the things with which no pilot in his or her right mind chooses to mix. You can hurt yourself even *thinking* about some of this stuff.

A convective SIGMET is associated with convective activity such as severe thunderstorms. Any convective SIGMET implies severe or greater turbulence, severe icing, and low-level wind shear. Sound like fun? You like one-way trips? A convective SIGMET may be issued as a result of any of the following nastinesses: A line of thunderstorms at least 60 miles long with thunderstorms affecting at least 40 percent of its length, an area of active thunderstorms judged to have a significant impact on the safety of aircraft operations covering at least 40 percent of the area concerned and exhibiting a very strong radar reflectivity intensity, a significant satellite or lightning signature, tornadoes, hail 3/4 inch or greater at the surface, and surface wind gusts greater than or equal to 50 knots. It is also issued for embedded or severe thunderstorm(s) expected to occur for more than 30 minutes during the valid period regardless of the size of the area.

