Obstacle Departure Procedures

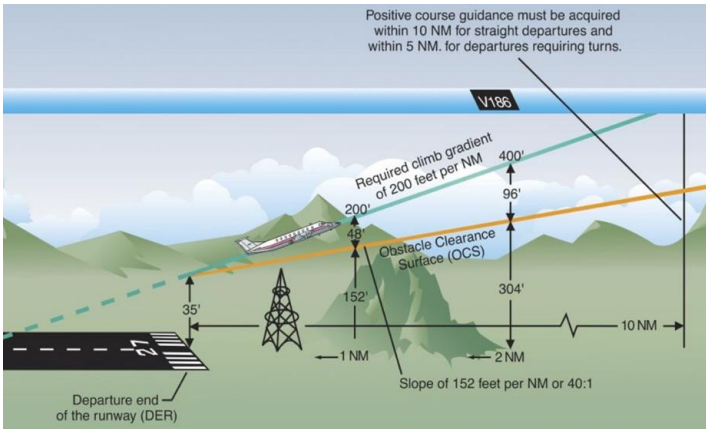
Conditions: IFR

Obstacle Departure Procedures (ODPs)

❑ Two main types of Departure Procedures (DPs):
- Obstacle Departure Procedures(ODPs)
- Standard Instrument Departures (SIDs)

❑ ODPs are preplanned IFR procedures that provide obstruction clearance from the terminal area to the appropriate en-route structure.

❑ ODPs are listed in the Takeoff Minimums and Obstacle Departure Procedures section of the TPP. A "**T**" on an approach plate indicates an airport has take-off minimums or departure procedures. The existence of a DVA or VOCA will also be noted.



Other Departure options:

❑ A Diverse (random) departure /airport without a published ODP. Aircraft should cross the Departure End of Runway (DER) at least 35 feet high, and climb to an altitude of 400 feet above ground level at a rate of 200 feet per nautical mile or better before turning on course or to the heading assigned in the clearance

- The standard 200 FPNM climb gradient provides a min of 48 FPNM of obstacle clearance (ATC may utilize a climb gradient greater than the standard within a DVA) Positive acquisition of course guidance should be acquired within 5 to 10 NM of the DER..

❑ A Diverse Vector Area (DVA) is an area in which ATC may provide random radar vectors during an uninterrupted climb from the DER until above the MVA/MIA. The DVA provides obstacle and terrain avoidance in lieu of taking off from a runway under IFR using an ODP or SID

❑ A Visual Climb Over Airport (VCOA) is a departure option for aircraft, operating in VMC equal to or greater than the specified visibility and ceiling, to visually climb to the published "climb-to" altitude

❑ Radar Departure is a departure option for airports with ATC

Flight Planning with an ODP

❑ Although not required while operating under FAR Part 91, it is important to realize that ODPs exist for a reason.
- Due to terrain and obstacles, the design of an ODP may incorporate:
  - Climb gradient greater than 200 FPNM,
  - Increase in takeoff minimums to allow the aircraft to "see and avoid" the obstacles
  - Reduced takeoff length
  - Specific departure route

❑ ODPs do **NOT** take into consideration the performance of the aircraft; it only considers obstacle protection

❑ When an increased climb gradient is specified - calculate aircraft performance, particularly when flying out of airports that are HIGH, HOT or HUMID (High Density Altitude)

❑ Convert the required FPNM to FPM to determine if the aircraft is capable of meeting the required climb gradient.
To aid in calculations, the front of the TPP booklet contains a rate of climb table

❑ Considering the forecasted weather, departure runways, and existing ODP, plan the flight route, climb performance, and fuel burn accordingly to compensate for the departure procedure.

❑ Flight Plan: Enter- "will depart (airport) (runway) via textual ODP" in the remarks section of the flight plan.

CLIMB/DESCENT TABLE 10042

INSTRUMENT TAKEOFF OR APPROACH PROCEDURE CHARTS
RATE OF CLIMB/DESCENT TABLE
(ft. per min)

A rate of climb/descent table is provided for use in planning and executing climbs or descents under known or approximate ground speed conditions. It will be especially useful for approaches when the localizer only is used for course guidance. A best speed, power, altitude combination can be programmed which will result in a stable glide rate and altitude favorable for executing a landing if minimums exist upon breakout. Care should always be exercised so that minimum descent altitude and missed approach point are not exceeded.

CLIMB/DESCENT ANGLE (degrees and tenths)	ft/NM	GROUND SPEED (knots)										
		60	90	120	150	180	210	240	270	300	330	360
2.0	210	210	320	425	530	635	743	850	955	1060	1165	1275
2.5	265	265	400	530	665	795	930	1060	1195	1325	1460	1590
VERTICAL PATH ANGLE 2.7	287	287	430	574	717	860	1003	1147	1290	1433	1576	1720
VERTICAL PATH ANGLE 2.8	297	297	446	595	743	892	1041	1189	1338	1486	1635	1783
VERTICAL PATH ANGLE 2.9	308	308	462	616	770	924	1078	1232	1386	1539	1693	1847
VERTICAL PATH ANGLE 3.0	318	318	478	637	797	956	1115	1274	1433	1593	1752	1911
VERTICAL PATH ANGLE 3.1	329	329	494	659	823	988	1152	1317	1481	1646	1810	1975
VERTICAL PATH ANGLE 3.2	340	340	510	680	850	1020	1189	1359	1529	1699	1869	2039
VERTICAL PATH ANGLE 3.3	350	350	526	701	876	1052	1227	1402	1577	1752	1927	2103
VERTICAL PATH ANGLE 3.4	361	361	542	722	903	1083	1264	1444	1625	1805	1986	2166
3.5	370	370	555	745	930	1115	1300	1485	1670	1860	2045	2230
4.0	425	425	640	850	1065	1275	1490	1700	1915	2125	2340	2550
4.5	480	480	715	955	1195	1435	1675	1915	2150	2390	2630	2870
5.0	530	530	795	1065	1330	1595	1860	2125	2390	2660	2925	3190
5.5	585	585	880	1170	1465	1755	2050	2340	2635	2925	3220	3510
6.0	640	640	960	1275	1595	1915	2235	2555	2875	3195	3510	3830
6.5	690	690	1040	1385	1730	2075	2425	2770	3115	3460	3805	4155
7.0	745	745	1120	1490	1865	2240	2610	2985	3355	3730	4105	4475
7.5	800	800	1200	1600	2000	2400	2800	3200	3600	4000	4400	4800
8.0	855	855	1280	1710	2135	2560	2990	3415	3845	4270	4695	5125
8.5	910	910	1360	1815	2270	2725	3180	3630	4085	4540	4995	5450
9.0	960	960	1445	1925	2405	2885	3370	3850	4330	4810	5295	5775
9.5	1015	1015	1525	2035	2540	3050	3560	4065	4575	5085	5590	6100