



IMC Club Meeting

October 1, 2026





Facilitator

John Scarry AGI/IGI

Pilot since 2000

Instrument Rated

1,100 hours all but about 5 minutes VFR



Questions of the Month

What is VCOA and can it be a part of your IFR clearance?

What is the difference between an ODP and a SID?

Today's discussion is based
on a presentation
submitted
by Karen Kalishek
Green Bay, WI EAA/IMC
Club Leader



What is VCOA?



**CORVALLIS, OR
CORVALLIS MUNI (CVO)
TAKEOFF MINIMUMS AND (OBSTACLE)
DEPARTURE PROCEDURES
AMDT 6A 16315 (FAA)**

TAKEOFF MINIMUMS: **Rwy 9**, std. w/min. climb gradient of 270' per NM to 2900 or 3300-3 for VCOA. **Rwy 17**, std. w/min. climb gradient of 271' per NM to 2900 or 3300-3 for VCOA. **Rwy 27**, std. w/min. climb gradient of 337' per NM to 3100 or 3300-3 for VCOA. **Rwy 35**, std. w/min. climb gradient of 350' per NM to 3100 or 3300-3 for VCOA.

VCOA



What is a VCOA?

- a. Very Convoluted Obstacle Approach
- b. Velocity Camber of Attack
- c. Verified Clearance Obstruction Altitude
- d. Visual Climb Over Airport

VCOA



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VCOA



What is a VCOA?

Pilot/Controller Glossary : “a departure option for an IFR aircraft, operating in visual meteorological conditions equal to or greater than the specified visibility and ceiling, to visually conduct climbing turns over the airport to the published ‘climb-to’ altitude from which to proceed with the instrument portion of the departure. **VCOA procedures are developed to avoid obstacles greater than 3 statute miles from the departure end of the runway as an alternative to complying with climb gradients greater than 200 feet per nautical mile.** Pilots are responsible to advise ATC as early as possible of the intent to fly the VCOA option prior to departure. These textual procedures are published in the ‘Take-Off Minimums and (Obstacle) Departure Procedures’ section of the Terminal Procedures Publications and/or appear as an option on a Graphic ODP.”

Bishop, CA elevation 4,214'

VCOA



BISHOP (BIH)

TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES

AMDT 4A 18088 (FAA)

TAKEOFF MINIMUMS: **Rwy 8, 12, 17**, 9000-3 for VCOA.

Rwy 26, std. w/ min. climb of 280' per NM to 10400', or 9000-3 for VCOA. **Rwys 30, 35**, std. w/ min. climb of 285' per NM to 10500', or 9000-3 for VCOA.

DEPARTURE PROCEDURE: **Rwys 26, 30**, climbing right turn on heading 360, thence... **Rwy 35**, climbing left turn on heading 290, thence...

VCOA: **All runways**, obtain ATC approval for VCOA when requesting IFR clearance. Climb in visual conditions to cross Bishop airport at or above 13000' before proceeding on course.

VCOA



Can ATC assign a VCOA?

- a. Yes, they can
- b. No, they can not

VCOA



Can ATC assign a VCOA?

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VCOA



Can ATC assign a VCOA?

AIM 5-2-8 states that pilots must request it:

Pilots are responsible to advise ATC as early as possible of the intent to fly the VCOA option prior to departure.

and

ATC orders 4-3-2 say that ATC may not offer it:

Do not solicit use of the Visual Climb over Airport (VCOA) option.

TERPS 14-4 has all the technical details and explains the purpose, which is to: allow aircraft that can't maintain a 200ft/nm climb to climb safely within a limited area over the airport.

VCOA



Can you fly an ODP and VCOA on the same departure?

- a. Yes, you can
- b. No, you can not

VCOA



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VCOA



Can you fly an ODP and VCOA on the same departure?

The VCOA is an **alternative** to flying an ODP, useful when aircraft performance does not meet the specified climb gradient.

It is designed as a vertical cylinder (called a Visual Climb Area in the TERPS) of airspace over the airport that is safe to climb in, based on airport elevation, runway positions and a default airspeed of 250 kts (although other airspeeds can be used). Even if the VCOA dimensions aren't charted or stated in the DP, for an airport at 2000 msl the radius of the cylinder is at least 2nm at 90 kts, or 2.8 nm at 250 kts. The climb has to be in visual conditions, so terrain clearance shouldn't be an issue.

VCOA



VCOAs are designed for IFR departure in mountainous terrain where you cannot meet the minimum climb gradient of the ODP.

When would you use one?

VCOA



Note: VCOAs are IFR procedures.

You can do the same maneuver VFR e.g. when departing Hawthorne to reach the Mini Route at 4,500'. You can ask for a climb in the pattern. I have heard it referred to as a box pattern.

Departures



Surveying for Departures

What guidelines are used when surveying an airport for departures?

_____ AGL when crossing the departure end of runway, climb to _____ feet on runway heading, with a climb gradient of _____ feet per nm

Surveying for Departures

Departures



What guidelines are used when surveying an airport for departures?

35' AGL when crossing the departure end of runway, climb to 400 feet on runway heading, with a climb gradient of 200 feet per nm.

Departures



The AFD has a Rate of Climb Chart that converts Ground Speed to ft/NM. Keep in mind that indicated airspeed is not the same as ground speed and the chart does not account for headwinds or tailwinds. Density Altitude is not accounted for either.

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
	2.8	297	297	446	595	743	892	1041	1189	1338	1486	1635	1783
	2.9	308	308	462	616	770	924	1078	1232	1386	1539	1693	1847
	3.0	318	318	478	637	797	956	1115	1274	1433	1593	1752	1911
	3.1	329	329	494	659	823	988	1152	1317	1481	1646	1810	1975
	3.2	340	340	510	680	850	1020	1189	1359	1529	1699	1869	2039

Departures



AIM 5-2-8

Departure Procedures

1. Unless specified otherwise, required obstacle clearance for all departures, including diverse, is based on the pilot crossing the departure end of the runway at least 35 feet above the departure end of runway elevation, climbing to 400 feet above the departure end of runway elevation before making the initial turn, and maintaining a minimum climb gradient of 200 feet per nautical mile (FPNM), unless required to level off by a crossing restriction, until the minimum IFR altitude.

Departures



What is a diverse departure?

- a. From the end of the departure runway, an aircraft can depart in any direction with assurance of obstacle clearance,
- b. From the point of being 400 AGL, an aircraft can be assigned one of several different charted transitions by ATC,
- c. From the point of being 400 AGL, an aircraft can depart in any direction if able to maintain a minimum climb of 200 ft/nm
 - a)

Diverse Departure



All runways with published instrument approaches are surveyed for departures. If a runway qualifies for a diverse departure, then a separate procedure is not necessary or published for that runway.

An aircraft can depart in any direction above 400 AGL if maintaining a climb gradient of at least 200 feet/NM

- a. From the end of the departure runway, an aircraft can depart in any direction with assurance of obstacle clearance,
- b. From the point of being 400 AGL, an aircraft can be assigned one of several different charted transitions by ATC,
- c. From the point of being 400 AGL, an aircraft can depart in any direction if able to maintain a minimum climb of 200 ft/nm

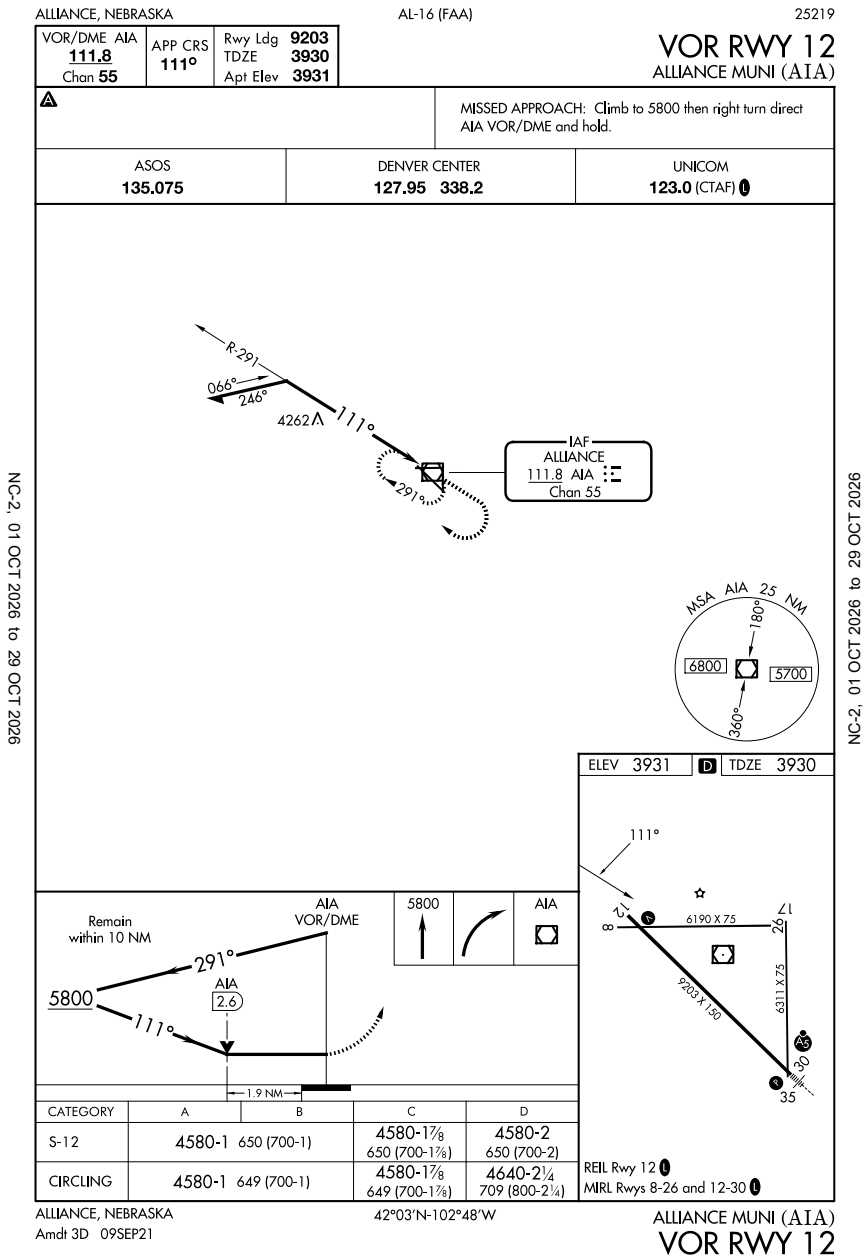
Identifying a diverse departure.

Departures



When you see this symbol ▼ on the approach plate, it means that either there are non-standard takeoff minimums or that there is a published departure procedure. So one way to find airports with a diverse departure is to look for ones without that symbol. It is a **necessary**, but **not sufficient** condition.

Departures



Departures



What is an ODP?

- a. Obstruction Departure Path,
- b. Obstacle Departure Procedure,
- c. One Dreaded Policy

Departures



What is an ODP?

- a. Obstruction Departure Path,
- b. Obstacle Departure Procedure,
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Departures



ODP vs. SID

An obstacle departure procedure (ODP) is an instrument procedure you can fly to guarantee obstacle clearance when you're departing from an airport. There are two types of ODPs: textual, and graphical.

Unlike a Standard Instrument Departure (SID), which optimizes traffic flow and provides obstacle clearance, **an ODP is only designed to provide obstacle clearance.**

Departures



KSBP ODPs

SAN LUIS OBISPO, CA

SAN LUIS OBISPO COUNTY RGNL (SBP)

TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES

AMDT 8 25FEB21 (24081) (FAA)

TAKEOFF MINIMUMS:

Rwys 7, 25, NA-Obstacles.

Rwy 11, std w/min climb of 412' per NM to 2100 or 2800-3 for VCOA.

Rwy 29, std w/min climb of 460' per NM to 2000 or 2800-3 for VCOA.

DEPARTURE PROCEDURE:

Rwy 11, climb on heading 110° to 700, then climbing right turn to intercept MQO VORTAC R-115 to MQO VORTAC and hold, continue climb in MQO holding pattern (hold southeast, left turns, 306° inbound) to cross MQO VORTAC at or above 4000 or MEA for route of flight.

Rwy 29, climb on heading 290° to intercept MQO VORTAC R-050 to MQO VORTAC and hold, continue climb in MQO holding pattern (hold southeast, left turns, 306° inbound) to cross MQO VORTAC at or above 4000 or MEA for route of flight.

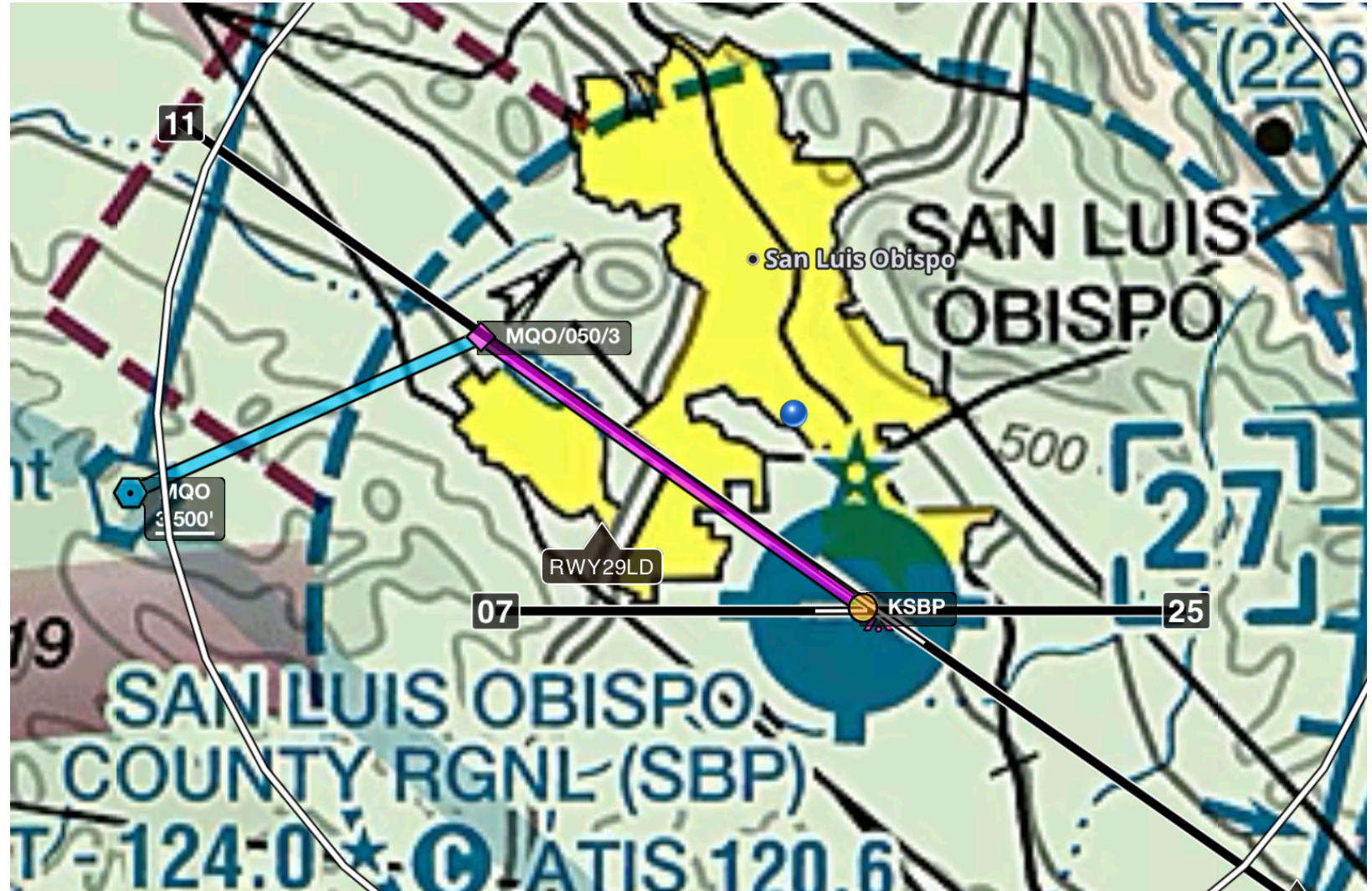
VCOA:

Rwys 11, 29, obtain ATC approval for VCOA when requesting IFR clearance. Climb in visual conditions to cross San Luis Obispo County Rgnl at or above 2900 before proceeding direct MQO VORTAC.

TAKEOFF OBSTACLE NOTES:

KSBP Rwy 29 ODP

Departures



Departures



Do ODPs Really Matter?

If conditions are VMC, should we bother looking up ODPs – much less fly them?

- a. No, you can see any obstacles,
- b. No, ODPs are entirely optional and there are better uses of time,
- c. Yes, it is good SOP whether in IMC or VMC conditions

Departures



Do ODPs Really Matter?

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Departures



Do ODPs Really Matter?

If conditions are VMC, should we bother looking up ODPs – much less fly them?

A 2004 Learjet accident in San Diego illustrates how a moment's inattention can lead to disaster. The highly experienced crew, flying a well-equipped business jet from a major metropolitan area, took off after the tower had closed and ignored the published departure procedure. They climbed straight out after departing on runway 8 (instead of the climbing left turn the ODP suggested) and while the weather was VMC it was a dark night. With the high terrain just east of the airport hidden, the airplane flew right into the side of a mountain.

"Cleared as filed" or "cleared direct" IFR clearance does NOT assure terrain or obstacle clearance when departing from airports without ATC radar coverage.

Terminology



Terminology

ODPs are a subset of ____ and are depicted ____

- a. SIDs, only textually,
- b. DPs, graphically and/or textually,
- c. DPs, only textually

Terminology



Terminology

ODPs are a subset of ____ and are depicted ____

- a. SIDs, only textually,
- b. DPs, graphically and/or textually,
- c. DPs, only textually

Terminology



Terminology

Departure Procedures (DP) - generic term for any kind of departure procedure. Two types, two subtypes.

Note: The FAA changed terminology several years ago, then later went back to the original terminology. Depending on when texts were written, terminology used may differ

Standard Instrument Departures (SIDs):

- Graphically depicted with a name, (e.g. BLUE MESA DEPARTURE)
- Design is based primarily on what is convenient for ATC traffic flow. May have steep climb gradients as well as specific equipment requirements.

Terminology



Terminology

Obstacle Departure Procedures (ODPs)

- ❖ Generally designed to be available to the largest number of aircraft possible (e.g. may assume only a VOR receiver and low aircraft performance)
 - Textual ODPs : found in IFR Takeoff Minimums and (Obstacle) Departure Procedures section of the IAP charts and usually fairly simple – turn to a heading, intercept a radial, etc.
 - Graphic ODPs: Charted when too complicated to describe textually. They include the word (OBSTACLE) in the name, e.g. MONTROSE DEPARTURE (OBSTACLE). May have significant routing designed so that low performance airplanes can meet obstacle clearance requirements

Can ATC assign an ODP?

Departures



- a. Yes, they can
- b. No, they can not,

Can ATC assign an ODP?

Departures



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Departures



Can ATC assign an ODP?

FAA Order 7110.65R, Air Traffic Control--the Controller's Handbook:

“Where only textually described instrument departure procedures (ODP) have been published for a location and pilot compliance is necessary to insure separation, include the procedure as part of the ATC clearance.”

E.G. “Depart via the (airport name) (runway number) departure procedure.”

However, “If a published IFR departure is not included in an ATC clearance, compliance with such a procedure is the pilot's prerogative.”

Therefore, ODPs may be flown without ATC clearance unless an alternate departure procedure (SID or radar vector) has been specifically assigned by ATC

Departures



ODP Examples

1. If ATC says "N12345, cleared to XYZ airport, depart via BCD airport RWY 18 departure procedure, blah blah blah," the pilot must comply with the clearance. There is a 99.9% chance that a life/certificate-saving reason exists for why the ODP is being issued.
2. +90% of clearances are "cleared to XYZ airport as filed..." . If there is nothing else to indicate a specific route assignment, the pilot may choose to fly an ODP without notifying ATC.
3. If "cleared to XYZ airport, ABCDE1 departure (or radar vectors to ABC), blah blah," then a pilot may not fly an ODP unless they get explicit ATC approval to do so.

Can You File an ODP?

Departures



- a. Yes, you can
- b. No, you can not

Departures



Can You File an ODP?

Although uncommon, you can file an ODP

E.g. Enter “will depart KGRB runway 6 via textual ODP” in the remarks section of your flight plan. If you do not file the DP, you can still inform ATC before takeoff that you’re going to fly the ODP*, letting them know what to expect.

*unless assigned a SID or vectored

- a. Yes, you can,
- b. No, you can not,

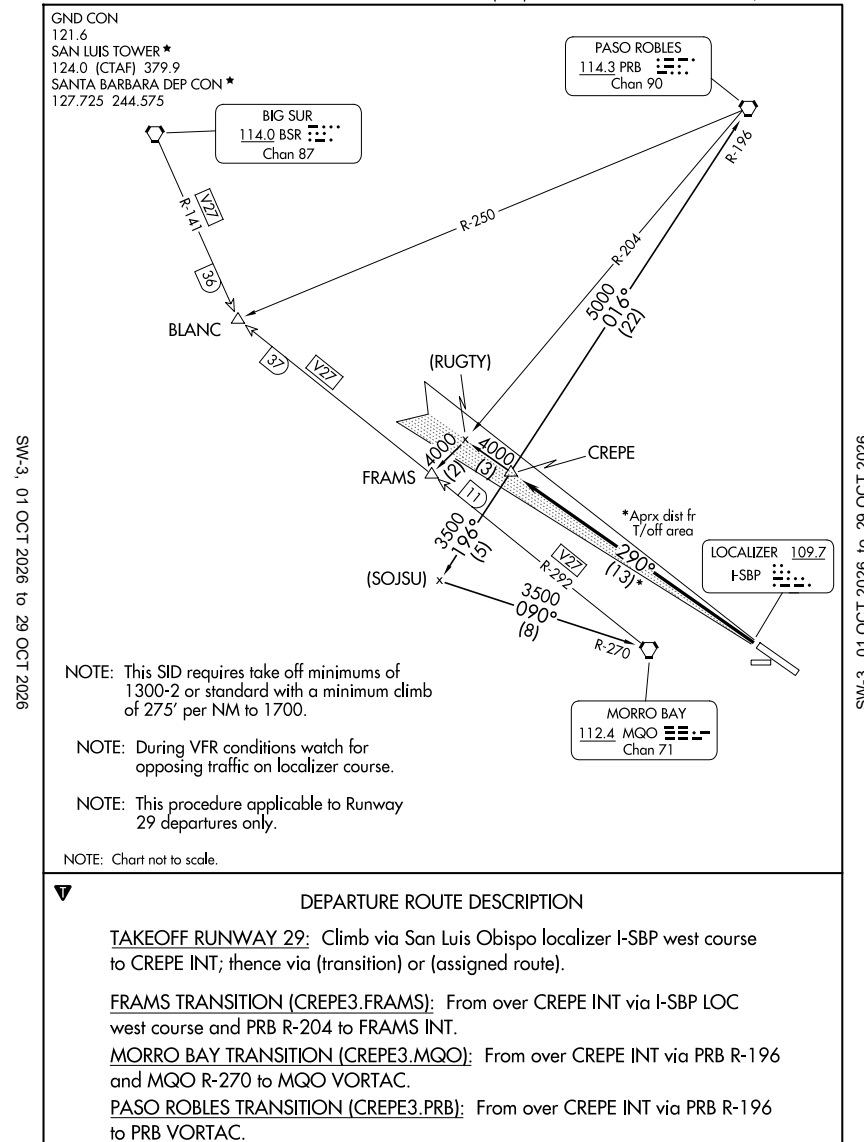
Departures



(CREPE3.CREPE) 24081

CREPE THREE DEPARTURE

SAN LUIS OBISPO COUNTY RGNL (SBP)
AL-989 (FAA) SAN LUIS OBISPO, CALIFORNIA



SW-3, 01 OCT 2026 to 29 OCT 2026

SW-3, 01 OCT 2026 to 29 OCT 2026

CREPE THREE DEPARTURE

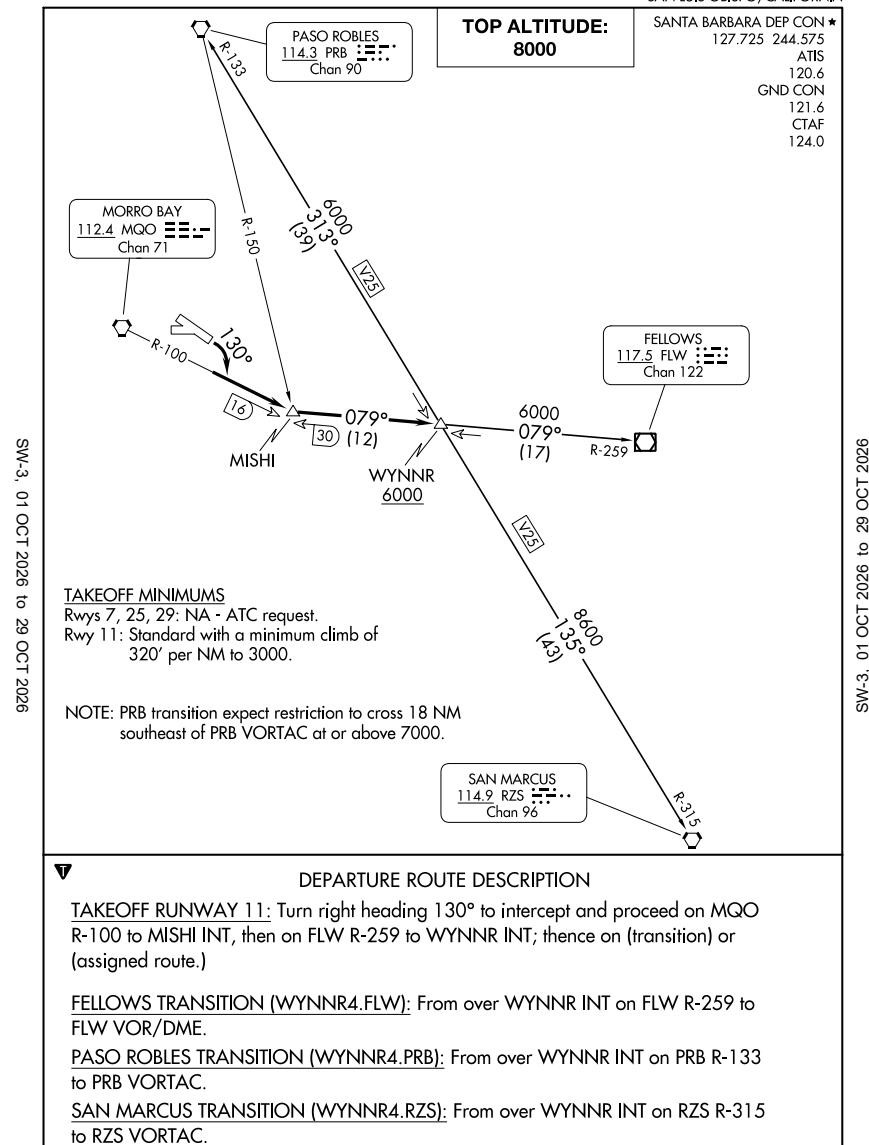
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SAN LUIS OBISPO, CALIFORNIA
SAN LUIS OBISPO COUNTY RGNL (SBP)

Departures



(WYNNR4.WYNNR) 26246 AL-989 (FAA) SAN LUIS OBISPO COUNTY RGNL (SBP)
WYNNR FOUR DEPARTURE SAN LUIS OBISPO, CALIFORNIA



SW-3, 01 OCT 2026 to 29 OCT 2026

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WYNNR FOUR DEPARTURE
 (WYNNR4.WYNNR) 05NOV20

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 SAN LUIS OBISPO COUNTY RGNL (SBP)

Departures

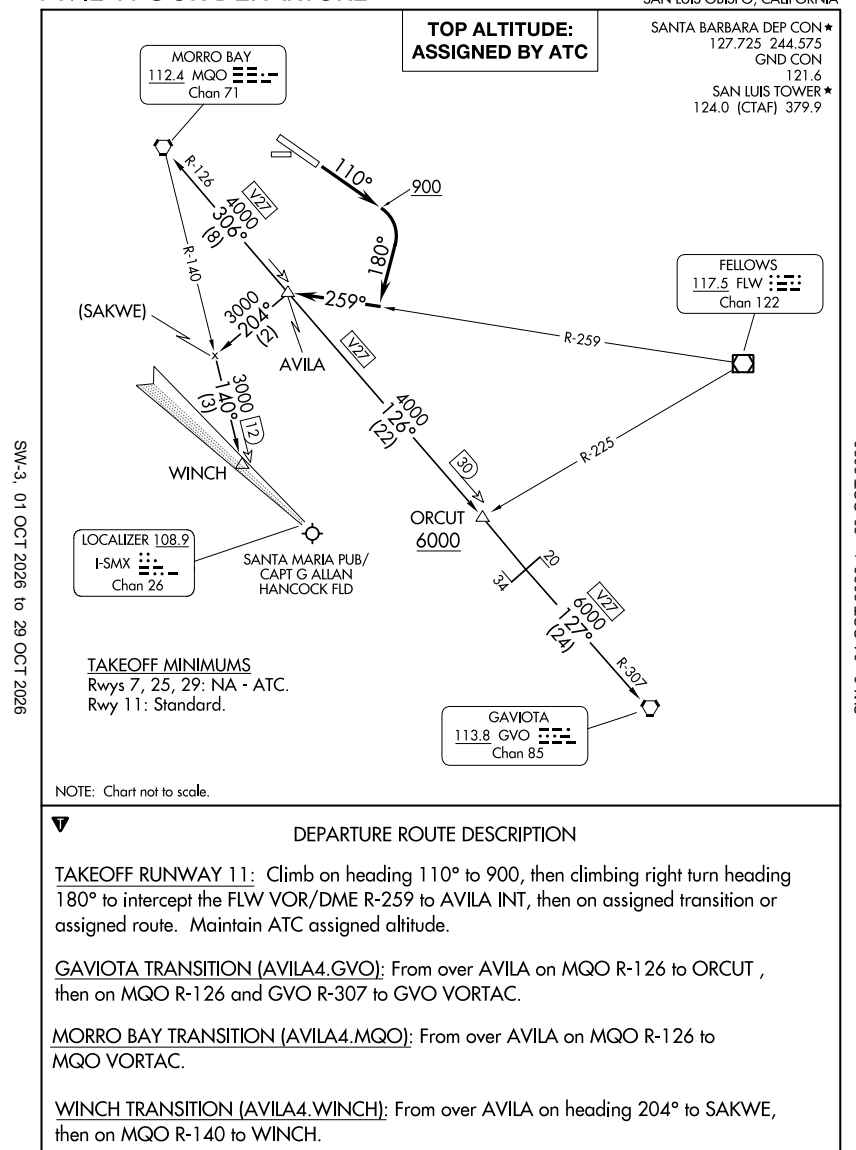


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AL-989 (FAA)

AVILA FOUR DEPARTURE

SAN LUIS OBISPO COUNTY RGNL (SBP)
SAN LUIS OBISPO, CALIFORNIA



AVILA FOUR DEPARTURE
(AVILA4.AVILA) 30JAN20

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SW-3, 01 OCT 2026 to 29 OCT 2026

Departures



Next Meeting November 5th