

**FEDERAL AVIATION ADMINISTRATION  
FLIGHT STANDARDS SERVICE  
RNAV (RNP) STANDARD INSTRUMENT APPROACH PROCEDURE  
TITLE 14 CFR PART 97.33**

Bearings, headings, courses, tracks and radials are magnetic. Elevations and altitudes are in feet, MSL, except HAT, HAA, TCH, and RA. Altitudes are minimum altitudes unless otherwise indicated.  
Ceilings are in feet above airport elevation. Distances are in nautical miles unless otherwise indicated, except visibilities which are in statute miles or feet RVR.

<b>AIRPORT ID</b> PDX	<b>PROCEDURE NAME</b> RNAV (RNP) Z RWY 28L	<b>ORIGINAL/AMENDMENT</b> 1	<b>CITY</b> PORTLAND	<b>STATE</b> OR
<b>AIRPORT ELEVATION</b> 31	<b>TDZE</b> 23	<b>SUPERSEDED</b> RNAV (RNP) Z RWY 28L	<b>DATED</b> 06/26/2014	<b>EPOCH YEAR</b> 2010
<b>FACILITY</b> RNAV	<b>COORDINATES OF FACILITIES</b>	<b>ACTUAL EFFECTIVE DATE</b>	<b>REQUIRED EFFECTIVE DATE</b> ROUTINE	<b>MAG VAR</b> 16E <b>CANCEL/SUSPEND</b>

**TERMINAL ROUTES**

FROM	FIX TYPE	TO	FIX TYPE	LEG TYPE	FO/FB	RNP	COURSE	DISTANCE	ALTITUDE
ROAGE	IF	DSHUT		TF	FB	1.00	015.88	2.51	3200
DSHUT		NOLGE		RF	FB	1.00	(2.34 NM RADIUS CCW (CFBHS))	2.22	2500
NOLGE		ADDUM	PFAF	RF	FB	1.00	(2.34 NM RADIUS CCW (CFBHS))	1.57	2000
HPSTR	IF	HANAH		TF	FB	1.00	283.23	4.36	2900
HANAH		ADDUM	PFAF	TF	FB	1.00	283.16	3.00	2000
ADDUM	PFAF	RW28L	MAP	TF	FO	0.30	283.12	6.04	
RW28L	MAP	2100 MSL		CA			283.12		2100
2100 MSL		UBG VOR/DME		DF	FO	1.00			4000

**MISSED APPROACH**

**MAP:**

RNP: DA

**MISSED APPROACH INSTRUCTIONS:**

CLIMB TO 2100 THEN CLIMBING LEFT TURN TO 4000 DIRECT UBG VOR/DME AND HOLD.

**ALTERNATE MISSED APPROACH INSTRUCTIONS:**

**PROFILE:**

1. PT	SIDE OF COURSE	OUTBOUND	FT WITHIN	MILES OF	(IAF)
2. PROFILE STARTS AT ADDUM					
3. FAC: 283.12	PFAF: ADDUM		DIST PFAF TO MAP:		DIST PFAF TO THLD:
4. MIN ALT: ADDUM 2000					
5. DIST TO THLD FROM PFAF: 6.04	MM:	IM:	150 HAT:	376 HAT:	1.01
6. MIN GP INCPT: 2000	GP ALT AT PFAF: ADDUM 2000			OM:	GS ANT:
7. GP ANGLE: 3.00	34:1: IS CLEAR	20:1: IS CLEAR	TCH: 54.8		IM:
8. MSA FROM: RW28L 5800					



PBN REQUIREMENTS NOTE:

RNP AR APCH - GPS. AUTHORIZATION REQUIRED. FROM DSHUT: RF.

NOTES:

CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, PROCEDURE NA BELOW -5°C OR ABOVE 54°C.  
CHART PROFILE NOTE: VGSI AND RNAV GLIDEPATH NOT COINCIDENT (VGSI ANGLE {ANGLE}/TCH {FEET}).  
CHART PROFILE NOTE: SEE PLANVIEW FOR MULTIPLE IF LOCATIONS.  
CHART NOTE: SIMULTANEOUS APPROACH AUTHORIZED.  
CHART SPEED ICON IN PLANVIEW AT ROAGE: MAX 210 KIAS.

ADDITIONAL FLIGHT DATA:

CHART LOCALIZER RWY 28R

HOLD S, LT, 003.00 INBOUND.  
CHART AT OR ABOVE 4000 AT ROAGE.

MINIMUMS:

TAKEOFF: SEE FAA FORM 8260-15A FOR THIS AIRPORT

ALTERNATE: NA ☐ STANDARD

CATEGORY:	A			B			C			D			E		
FINAL TYPE	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA
AUTHORIZATION REQUIRED															
RNP 0.30 DA	399	6000	376	399	6000	376	399	6000	376	399	6000	376			

CHANGES - REASONS

1. REMOVED INTERMEDIATE SEGMENT FROM WIDMR. - ATC REQUEST.
2. ADDED NEW INTERMEDIATE FROM ROAGE. - ATC REQUEST.
3. TERMINAL ROUTE FROM DSHUT TO NOLGE DISTANCE CHANGED FROM 2.23 TO 2.22. - DSHUT MOVED.
4. TERMINAL ROUTE FROM NOLGE TO ADDUM RADIUS CHANGED FROM 2.33 TO 2.34. - DSHUT MOVED.
5. ADDED PROFILE LINE 7 20:1 OS CLEAR. - 20:1 IS CLEAR.
6. REMOVED CHART NOTE: GPS REQUIRED AND ADDED PBN REQUIREMENTS NOTE RNP AR APCH - GPS. AUTHORIZATION REQUIRED. FROM DSHUT: RF. - 8260.19J.
7. CHART NOTE CHANGED FROM FOR UNCOMPENSATED BARO-VNAV SYSTEMS, PROCEDURE NA BELOW -15C (5F) OR ABOVE 54C (130F) TO FOR UNCOMPENSATED BARO-VNAV SYSTEMS, PROCEDURE NA BELOW -5°C OR ABOVE 54°C. - 8260.19J.
8. CHART NOTE CHANGED FORM VGSI AND RNAV GLIDEPATH NOT COINCIDENT TO VGSI AND RNAV GLIDEPATH NOT COINCIDENT (VGSI ANGLE {ANGLE}/TCH {FEET}). - 8260.19J
9. REMOVED NOTE CHART PLANVIEW NOTE AT WIDMR: MAX 210 KIAS AND ADDED CHART SPEED ICON IN PLANVIEW AT ROAGE: MAX 210 KIAS. - WIDMR REMOVED AND SPEED RESTRICTION NOW PART OF ROAGE ROUTE.
10. ADDED ADDITIONAL FLIGHT DATA CHART AT OR ABOVE 4000 AT ROAGE. - 8260.19J
11. REMOVED RNP 0.27 DA. - ATC REQUEST.
12. RNP 0.30 DA CHANGED DA/HAT FROM 494/471 TO 399/376. - NEW FINAL CONTROLLER IDENTIFIED.
13. PROFILE LINE 5 CHANGED DIST FROM 351 HAT: 0.93 NM TO 376 HAT: 1.01 - RNP 0.27 REMOVED, UPDATED TO RNP 0.30 MINS.
14. REMOVED NOTES: CHART NOTE: USE OF FD OR AP PROVIDING RNAV TRACK GUIDANCE REQUIRED DURING SIMULTANEOUS OPERATIONS, CHART PLANVIEW NOTE ADJACENT TO WIDMR: RF REQUIRED. - DATA CAPTURED IN PBN REQUIREMENT NOTES.
15. NOTE CHANGED FROM CHART NOTE: SIMULTANEOUS APPROACH AUTHORIZED WITH RWY 28R TO SIMULTANEOUS APPROACH AUTHORIZED. - ATC REQUEST.
16. ADDITIONAL FLIGHT DATA REMOVED ROUTE TYPE: A, H, ROUTE TYPE QUALIFIER1: F, ROUTE TYPE QUALIFIER2: S - NO LONGER REQUIRED.



COORDINATED WITH:

A4A

X

ALPA

X

AOPA

X

APA

X

HAI

NBAA

X

OTHER:

ZSE, PDX ATCT, AMGR, ST AERO

FLIGHT CHECKED BY

WENDI S GIMA

Digitally signed by

JOSEPH L ZEDER

Sep 04, 2024

OFFICE

FPO

DATE

08/30/2024

DEVELOPED BY

TYLER MITCHELL

Digitally signed by

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Sep 04, 2024

OFFICE

AJV-A432

DATE

05/31/2024

APPROVED BY

CASIMIR L. TABAKA

Digitally signed by

JOSEPH L ZEDER

Sep 04, 2024

OFFICE

AJV-A432

DATE

10/31/2024

TITLE

MANAGER

**FEDERAL AVIATION ADMINISTRATION  
FLIGHT STANDARDS SERVICE  
STANDARD INSTRUMENT APPROACH PROCEDURE DATA RECORD**

<u>AIRPORT ID</u>	<u>PROCEDURE NAME</u>	<u>AMDT NO.</u>	<u>CITY</u>	<u>STATE</u>	<u>AIRPORT ELEVATION</u>	<u>FACILITY</u>
PDX	RNAV (RNP) Z RWY 28L	1	PORTLAND	OR	31	RNAV

**PART A: OBSTRUCTION DATA SEGMENTS**

**INTERMEDIATE**

**FROM** ROAGE **TO** DSHUT

RNP 1.00 DISTANCE 2.51 PAT MAP HAT HMAS

<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
AAO	452721.00N/1222715.00W	1332	215	8	4B	500				AC8 AT1360	3200
TERRAIN	452718.00N/1222715.00W	1131 (1100)								AS1500	2600

**COMPUTATIONS**

ALT KIAS KTAS HAA VKTW TR BA DTA COURSE CHANGE DVEB VEB OCS RF CENTER FIX/DISTANCE

**SEGMENT REMARKS:**

**INTERMEDIATE STEPDOWN**

**FROM** DSHUT **TO** NOLGE

RNP 1.00 DISTANCE 2.22 PAT MAP HAT HMAS

<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
AAO	452739.00N/1222530.00W	1286	215	8	4B	500				AC8	1800
TERRAIN	452836.00N/1222615.00W	971 (1000)								AS1500	2500

**COMPUTATIONS**

RF SEGMENT ALT KIAS KTAS HAA VKTW TR BA DTA COURSE CHANGE DVEB VEB OCS RF CENTER FIX/DISTANCE  
DSHUT-NOLGE 3200 210 225.97 3169.2 42.44 2.34 24.17 0 0  
(CFBHS)/2.22 NM

**SEGMENT REMARKS:**



INTERMEDIATE

FROM

NOLGE

TO

ADDUM

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>	<u>HMAS</u>
1.00	1.57				

<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
AAO	453000.00N/1222800.00W	804	215	8	4B	500				AC8 AT688	2000
TERRAIN	453103.00N/1222509.00W	377 (400)								AS1500	1900

COMPUTATIONS

RF SEGMENT

NOLGE-ADDUM

ALT

250

KIAS

210

KTAS

223.59

HAA

2469.2

VKTW

33.49

TR

2.34

BA

22.38

DTA

0

COURSE CHANGE

0

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

(CFBHS)/1.57 NM

SEGMENT REMARKS:

INTERMEDIATE

FROM

HPSTR

TO

HANAH

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>	<u>HMAS</u>
1.00	4.36				

<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
AAO	452915.00N/1222621.00W	1063	215	8	4B	500				AC8 AT1329	2900
TERRAIN	452715.00N/1222130.00W	793 (800)								AS1500	2300

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:



INTERMEDIATE STEPDOWN

FROM

HANAH

TO

ADDUM

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>		<u>HAT</u>		<u>HMAS</u>				
1.00	3.00										
<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
AAO	452915.00N/1222621.00W	1063	215	8	4B	500				AC8 AT429	2000
TERRAIN	452915.00N/1222621.00W	862 (900)								AS1000	1900

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:

FINAL

FROM

ADDUM

TO

RW28L

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>		<u>HAT</u>		<u>HMAS</u>				
0.30	6.04		DA		376						
<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
TREE	453348.00N/1223415.00W	138	215	8	4B		20.70:1				399

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:

MSA

CENTER

RW28L

RADIUS

25

<u>SECTOR</u>	<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>BEARING</u>	<u>DISTANCE</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
360-360	AAO	455300.00N/1220324.00W	034	28.7	4728	215	8	4B	1000			5800

MSA REMARKS:



NOTES/EXPLANATIONS FROM PROCEDURE SEGMENTS:

VEGETATION HEIGHTS PROVIDED BY I-TEN PHOTOGRAMMETRY DIVISION THROUGH PORT OF PORTLAND AND FPT:  
- WASHINGTON SIDE OF THE COLUMBIA RIVER: 85 FT.  
- OREGON SIDE OF THE COLUMBIA RIVER: 75 FT.  
- GOVERNMENT ISLAND: 130 FT

PART B: SUPPLEMENTAL DATA

COMMUNICATIONS WITH

ZSE ARTCC, PDX APP CON, PDX TOWER

<u>WX SERVICE</u>	<u>LOCATION</u>	<u>HRS OPERATION</u>	<u>ALTIMETER SOURCE</u>	<u>DISTANCE</u>	<u>SERVICE-A</u>	<u>ADJUSTMENTS</u>
ASOS	PDX	24	PDX	0	Y	0
<u>BACK-UP WX SERVICE</u>	<u>LOCATION</u>	<u>HRS OPERATION</u>	<u>ALTIMETER SOURCE</u>	<u>DISTANCE</u>	<u>SERVICE-A</u>	<u>ADJUSTMENTS</u>

WX REMARKS:

BACK-UP ALTIMETER NOT PUBLISHED, REDUNDANT REPORTING ON AIRPORT.

<u>PRIMARY NAVAID</u>	<u>MONITOR POINT</u>	<u>HRS OPERATION</u>	<u>CAT</u>
<u>APPROACH AND RUNWAY LIGHTING SYSTEM</u>	<u>RUNWAY MARKINGS</u>	<u>RUNWAY VISUAL RANGE</u>	
RW03 - MIRL, REIL, PAPI-4L	NPI-G		
RW21 - MIRL, REIL, PAPI-4R	NPI-G		
RW10L - MALSR, C/LINE, HIRL, PAPI-4L	PIR-G	APPROACH, MIDPOINT, ROLL OUT	
RW10R - ALSF-2, TDZ, C/LINE, HIRL, PAPI-4R	PIR-G	APPROACH, MIDPOINT, ROLL OUT	
RW28L - MALSR, HIRL, C/LINE, PAPI-4L	PIR-G	APPROACH, MIDPOINT, ROLL OUT	
RW28R - MALSR, C/LINE, HIRL, PAPI-4R	PIR-G	APPROACH, MIDPOINT, ROLL OUT	

<u>GLIDESLOPE ANGLE</u>	<u>ELEV RWY THRESHOLD</u>	<u>TCH</u>	<u>ELEV GS ANTENNA</u>	<u>DISTANCE FROM RWY</u>	<u>VGSI ANGLE</u>	<u>TCH</u>
3.00	22.7	54.8			3.00	72.3

FINAL APPROACH COURSE AIMING

RUNWAY THRESHOLD	<input checked="" type="checkbox"/>	FT FROM THRESHOLD	DISPLACED THRESHOLD DISTANCE
ON CENTERLINE	<input checked="" type="checkbox"/>	FT FROM CENTERLINE	

CRITICAL TEMPERATURES

<u>CRITICAL LOW</u>	<u>CRITICAL HIGH</u>	<u>ACT</u>	<u>APT ISA</u>
-5C	+54C	-5C	+14.94C

CRITICAL TEMPERATURE REMARKS:

AVERAGE COLD TEMPERATURE DERIVED FROM 5-YEAR HISTORY (2019-2023).  
CRITICAL LOW TEMPERATURE BASED ON ACT.  
DESCENT RATE (FPM): STANDARD TEMP 955 HIGH TEMP 1260.

"VISUAL PORTION OF FINAL" PENETRATIONS



HELICOPTER 'VISUAL PORTION OF FINAL' PENETRATIONS

and/or

5280-FT "PROCEED VFR" SEGMENT LEVEL SURFACE AREA PENETRATIONS

PENETRATIONS REMARKS:

PART C: GENERAL REMARKS:

PRECIPITOUS TERRAIN EVALUATION COMPLETED.

PART D: AIRSPACE

DOCKET #

ALL DISTANCES TO 1/100NM; ELEVATION TO NEAREST 100 FEET; COORDINATES TO 1/100 SECOND; DEG TO 1/100 DEGREE

DISTANCE FROM	THLD	TO 1000FT POINT	3.84
WIDTH OF	FINAL	SEGMENT AT 1000FT POINT	1.20
TRUE COURSE OF	FINAL	SEGMENT CONTAINING 1000FT POINT	299.12
HIGH TERRAIN IN	FINAL	SEGMENT CONTAINING 1000FT POINT	300
DISTANCE FROM	THLD	TO 1500FT POINT	8.04
WIDTH OF	INTERMEDIATE	SEGMENT AT 1500FT POINT	4.00
TRUE COURSE OF	INTERMEDIATE	SEGMENT CONTAINING 1500FT POINT	299.16
HIGH TERRAIN IN	INTERMEDIATE	SEGMENT CONTAINING 1500FT POINT	900

THRESHOLD COORDINATES (IF STR-IN)	453449.85N/1223502.05W
ARP COORDINATES	453519.35N/1223548.73W
RUNWAY APCH END AND DIST FURTHEST FROM ARP	RUNWAY 28R DISTANCE 1.32 NM
FAF COORDINATES	453153.86N/1222731.51W
FIX NAME COORDINATES	IF HANAH 453026.14N/1222347.70W

REMARKS

PART E: PREPARED BY

NAME	OFFICE	DATE	TITLE
TYLER MITCHELL	AJV-A432	05/31/2024	AERONAUTICAL INFORMATION SPECIALIST

