

# RNAV - STANDARD INSTRUMENT APPROACH PROCEDURE TITLE 14 CFR PART 97.33

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TERMINAL ROUTES										MISSED APPROACH						
FROM		TO		COURSE AND DISTANCE				ALTITUDE		LPV: DA LNAV/VNAV: DA LNAV: RW31						
VANTZ		FLOWR (FB)		348.11 / 17.00				5000		CLIMB TO 3700 DIRECT DUCKA AND HOLD.						
ELKES		HOBGU (FB)		308.04 / 14.79				7100								
HOBGU		FLOWR (FB)		307.90 / 10.00				5000		ADDITIONAL FLIGHT DATA: HOLD NW, RT, 127.38 INBOUND. CHART FAS OBST: 348 TREE 453120N/1225603W CHART FAS OBST: 352 TOWER 453158N/1225605W 979 AAO 452719N/1225217W DISTANCE TO THLD FROM 385 HAT: 1.06 NM. CHART VDP AT 1.29 MILES TO RW31* *LNAV ONLY. WAAS CHANNEL # 69417 REFERENCE PATH ID: W31A LTP HAE: 37.5 M						
BONVL		CUKIS (FB)		227.37 / 21.76				7000								
CUKIS		FLOWR (FB)		227.04 / 13.28				5000								
PDX VOR/DME		MULES (FB)		161.88 / 8.45				4000								
MULES (IAF)		NNIKE (FB)		222.92 / 8.87				4000								
(SEE FORM 8260-10)																
1. PT _____ SIDE OF COURSE _____ OUTBOUND _____ FT WITHIN _____ MILES OF _____ (IAF)																
2. PROFILE STARTS AT NNIKE																
3. FAC: 307.63 FAF: INTLL _____ DIST FAF TO MAP: 5.41 THLD: 5.41																
4. MIN. ALT: NNIKE 4000, INTLL 2000, ZABAX/2.00 NM TO RW31 880*																
5. DIST TO THLD FROM OM: _____ MM: _____ IM: _____ 150 HAT: _____ 100 HAT: _____ GS ANT: _____																
6. MIN GS INCPT: 2000 GS ALT AT: INTLL 2000 OM: _____ MM: _____ IM: _____																
7. GS ANGLE: 3.00 TCH: 52.0 34:1 IS NOT CLEAR																
8. MSA FROM: RW31 5000																
MAG VAR: 16E EPOCH YEAR: 2010																
MINIMUMS																
TAKEOFF: SEE FAA FORM 8260-15A FOR THIS AIRPORT																
ALTERNATE: N A																
STANDARD @																
CATEGORY =====>		A			B			C			D			E		
		DH/MDA	VIS	HAT/HAA	DH/MDA	VIS	HAT/HAA	DH/MDA	VIS	HAT/HAA	DH/MDA	VIS	HAT/HAA	DH/MDA	VIS	HAT/HAA
LPV DA		589	1 1/4	385	589	1 1/4	385	589	1 1/4	385	589	1 1/4	385			
LNAV/VNAV DA		657	1 1/2	453	657	1 1/2	453	657	1 1/2	453	657	1 1/2	453			
LNAV MDA		660	1	456	660	1	456	660	1 1/4	456	660	1 1/2	456			
CIRCLING		680	1	472	680	1	472	680	1 1/2	472	760	2	552			
NOTES:																
CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -15C (5F) OR ABOVE 54C (130F).																
@ NA WHEN LOCAL WEATHER NOT AVAILABLE.																
CHART NOTE: DME/DME RNP-0.3 NA.																
CHART NOTE: VISIBILITY REDUCTION BY HELICOPTERS NA.																
*LNAV ONLY																
(SEE FORM 8260-10)																
CITY AND STATE		ELEVATION: 208 TDZE: 204		FACILITY IDENTIFIER: RNAV		PROCEDURE NO./AMDT NO./EFFECTIVE DATE:		SUP: RNAV (GPS) RWY 30								
PORTLAND, OR		AIRPORT NAME: PORTLAND-HILLSBORO				RNAV (GPS) RWY 31, ORIG-A		AMDT: ORIG								
						15 NOVEMBER 2012		DATED 06/03/2010								

US DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION  
**RNAV - STANDARD**  
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**TERMINAL ROUTES, (CONT.):**

FROM	TO	COURSE AND DISTANCE	ALTITUDE
FLOWR (IAF)	NNIKE (FB)	307.16 / 9.55	4000
NNIKE (IF)	INTLL (FB)	307.70 / 6.40	2000
INTLL (FAF)	ZABAX/2.00 NM TO RW31 (FB)	307.63 / 3.41	
ZABAX/2.00 NM TO RW31	RW31 (MAP) (FO)	307.60 / 2.00	
RW31 (MAP)	589 MSL	307.60	
589 MSL	DUCKA (FO)		3700

**NOTES, (CONT.):**

CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT ELKES VIA V165 EASTBOUND AND FOR ARRIVALS AT MULES VIA V448 NORTHBOUND.

CHART NOTE: VDP AND BARO-VNAV NA WHEN USING PORTLAND INTL ALTIMETER SETTING.

CHART NOTE: WHEN LOCAL ALTIMETER SETTING NOT RECEIVED, USE PORTLAND INTL ALTIMETER SETTING AND INCREASE ALL DA AND MDA 60 FEET, INCREASE LPV ALL CATS, LNAV/VNAV ALL CATS, AND LNAV CATS C AND D VISIBILITY 1/4 MILE.

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QUALITY  
CHECKED

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FLIGHT STANDARDS SERVICE - FAR PART 97.33

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FAS DATA BLOCK INFORMATIONDATA FIELDDATA

OPERATION TYPE 0  
SBAS SERVICE PROVIDER IDENTIFIER 0  
AIRPORT IDENTIFIER KHIO  
RUNWAY RW31  
APPROACH PERFORMANCE DESIGNATOR 0  
ROUTE INDICATOR  
REFERENCE PATH DATA SELECTOR 0  
REFERENCE PATH IDENTIFIER (APPROACH ID) W31A  
LTP/FTP LATITUDE 453206.1555N  
LTP/FTP LONGITUDE 1225639.1625W  
LTP/FTP ELLIPSOIDAL HEIGHT +00375  
FPAP LATITUDE 453317.8400N  
FPAP LONGITUDE 1225754.4400W  
THRESHOLD CROSSING HEIGHT (TCH) 00052.0  
TCH UNITS SELECTOR (METERS OR FEET USED) F  
GLIDEPATH ANGLE (GPA) 03.00  
COURSE WIDTH AT THRESHOLD 106.75  
LENGTH OFFSET 0736  
HORIZONTAL ALERT LIMIT (HAL) 40.0  
VERTICAL ALERT LIMIT (VAL) 50.0

CRC REMAINDER

30BD342C

ADDITIONAL PATH POINT RECORD INFORMATION

ICAO CODE K1  
LTP ORTHOMETRIC HEIGHT +00604  
FPAP ORTHOMETRIC HEIGHT +00604

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[illegible][illegible][illegible]

SEGMENT	1	2	3	4	5	6	7	8	9	0	1	2	3
SUSAP	KHIOK1FR31	ABONVL	010BONVLK1EA0E		IF					18000		A	JS
SUSAP	KHIOK1FR31	ABONVL	020CUKISK1EA0E		020TF		22740218					A	JS
SUSAP	KHIOK1FR31	ABONVL	030FLOWRK1EA0E	A	020TF		22700133	+	05000			A	JS
SUSAP	KHIOK1FR31	ABONVL	040NNIKEK1EA0EE	B	010TF		30720096	+	04000			A	JS
SUSAP	KHIOK1FR31	ACUKIS	010CUKISK1EA0E		IF					18000		A	JS
SUSAP	KHIOK1FR31	ACUKIS	020FLOWRK1EA0E	A	020TF		22700133	+	05000			A	JS
SUSAP	KHIOK1FR31	ACUKIS	030NNIKEK1EA0EE	B	010TF		30720096	+	04000			A	JS
SUSAP	KHIOK1FR31	AELKES	010ELKESK1EA0E		IF					18000		A	JS
SUSAP	KHIOK1FR31	AELKES	020HOBGUK1EA0E		020TF		30800148					A	JS
SUSAP	KHIOK1FR31	AELKES	030FLOWRK1EA0E	A	020TF		30790100	+	05000			A	JS
SUSAP	KHIOK1FR31	AELKES	040NNIKEK1EA0EE	B	010TF		30720096	+	04000			A	JS
SUSAP	KHIOK1FR31	APDX	010PDX K1D 0V		IF					18000		A	JS
SUSAP	KHIOK1FR31	APDX	020MULESK1EA0E	A	020TF		16190085	+	04000			A	JS
SUSAP	KHIOK1FR31	APDX	030NNIKEK1EA0EE	B	010TF		22290089	+	04000			A	JS
SUSAP	KHIOK1FR31	AVANTZ	010VANTZK1EA0E		IF					18000		A	JS
SUSAP	KHIOK1FR31	AVANTZ	020FLOWRK1EA0E	A	020TF		34810170	+	05000			A	JS

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	AIRPORT NAME: <b>PORTLAND-HILLSBORO</b>				AMDT: <b>ORIG</b>
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SUSAP	KHIOK1FR31	AVANTZ	030NNIKEK1EA0EE	B	010TF	30720096	+	04000				A	JS
SUSAP	KHIOK1FR31	R	010NNIKEK1EA0E	I	IF		+	04000	18000			A	JS
SUSAP	KHIOK1FR31	R	020INTLLK1EA1E	F	051TF	30770064	+	02000			RW31	K1PGA	JS
SUSAP	KHIOK1FR31	R	020INTLLK1EA2WALPV										JS
SUSAP	KHIOK1FR31	R	021ZABAXK1EA0E	S	031TF	30760034	V	0088000891		-300		A	JS
SUSAP	KHIOK1FR31	R	030RW31	K1PGOGY	M 031TF	30760020		00250		-300		A	JS
SUSAP	KHIOK1FR31	R	040		0 M CA	3076	+	00589				A	JS
SUSAP	KHIOK1FR31	R	050DUCKAK1EA0EY		DF		+	03700				A	JS
SUSAP	KHIOK1FR31	R	060DUCKAK1EA0EE	R	HM	12740040	+	03700				A	JS

[illegible][illegible][illegible]

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ARINC SUMMARY - 424-18 - RNAV (GPS)

ROUTES	TRANSITION	FIX	SEQ	USE	PATH	TURN	FO/FB	RNP	MAG (TRUE)	DISTANCE	ALTITUDE	SPEED
	BONVL	BONVL	010		IF		FB					
	BONVL	CUKIS	020		TF		FB	2.0	227.4 (243.4T)	021.8		
	BONVL	FLOWR	030	IAF	TF		FB	2.0	227.0 (243.0T)	013.3	AA 05000	
	BONVL	NNIKE	040		TF		FB	1.0	307.2 (323.2T)	009.6	AA 04000	
	CUKIS	CUKIS	010		IF		FB					
	CUKIS	FLOWR	020	IAF	TF		FB	2.0	227.0 (243.0T)	013.3	AA 05000	
	CUKIS	NNIKE	030		TF		FB	1.0	307.2 (323.2T)	009.6	AA 04000	
	ELKES	ELKES	010		IF		FB					
	ELKES	HOBGU	020		TF		FB	2.0	308.0 (324.0T)	014.8		
	ELKES	FLOWR	030	IAF	TF		FB	2.0	307.9 (323.9T)	010.0	AA 05000	
	ELKES	NNIKE	040		TF		FB	1.0	307.2 (323.2T)	009.6	AA 04000	
	PDX	PDX	010		IF		FB					
	PDX	MULES	020	IAF	TF		FB	2.0	161.9 (177.9T)	008.5	AA 04000	
	PDX	NNIKE	030		TF		FB	1.0	222.9 (238.9T)	008.9	AA 04000	
	VANTZ	VANTZ	010		IF		FB					
	VANTZ	FLOWR	020	IAF	TF		FB	2.0	348.1 (004.1T)	017.0	AA 05000	
	VANTZ	NNIKE	030		TF		FB	1.0	307.2 (323.2T)	009.6	AA 04000	
		NNIKE	010	FACF	IF		FB				AA 04000	
		INTLL	020	FAF	TF		FB	0.5	307.7 (323.7T)	006.4	AA 02000	
		ZABAX	021	SDF	TF		FB	0.3	307.6 (323.6T)	003.4	AA 00880	GS 00891
		RW31	030	MAP	TF		FO	0.3	307.6 (323.6T)	002.0	AT 00250	

MISSED APPROACH	FIX	SEQ	USE	PATH	TURN	FO/FB	RNP	MAG (TRUE)	DISTANCE	ALTITUDE	SPEED
		040		CA		FB		307.6 (323.6T)		AA 00589	
	DUCKA	050		DF		FO				AA 03700	
	DUCKA	060		HM	R	FO		127.4 (143.4T)	004.0	AA 03700	

POINT DATA	WAYPOINT	LAT IN SECS	LONG IN SECS	LAT IN MINS	LONG IN MINS
	PDX	N453537.30	W1223622.57	N4535.622	W12236.376
	BONVL	N453048.02	W1215414.32	N4530.800	W12154.239
	CUKIS	N452059.59	W1222149.41	N4520.993	W12221.824
	DUCKA	N454812.75	W1231340.09	N4548.213	W12313.668
	ELKES	N445455.28	W1221758.65	N4454.921	W12217.978
	FLOWR	N451457.20	W1223834.79	N4514.953	W12238.580
	HOBGU	N450652.79	W1223014.38	N4506.880	W12230.240
	INTLL	N452744.73	W1225205.16	N4527.746	W12252.086
	MULES	N452710.51	W1223555.86	N4527.175	W12235.931
	NNIKE	N452235.44	W1224642.15	N4522.591	W12246.703
	VANTZ	N445759.96	W1224018.33	N4457.999	W12240.306
	ZABAX	N453029.60	W1225457.86	N4530.493	W12254.964

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RUNWAY DATA	RW31	N453206.16	W1225639.16	N4532.103	W12256.653
	RWY	THRESHOLD ELEVATION	TCH		
	RW31	00198	52		

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