

# RADIO FIX AND HOLDING DATA RECORD

**NAME:** BATYL **STATE:** WA **COUNTRY:** US **ICAO REGION CODE:** K1  
**LATITUDE/LONGITUDE:** 454452.04N/1223529.61W **TYPE:** WP

**AIRSPACE DOCKET:** **FIX TYPE OF ACTION:** NO CHANGE

**HOLDING:** **HOLDING TYPE OF ACTION:** NO CHANGE

**PATTERNS:**

PAT	DIR	IDENT	TYPE	RAD/CRS/BRG	CRS INBOUND	TURN (L OR R)	LEG LENGTH TIME DME	HOLDING ALTITUDES MIN MAX	TEMPLATES MIN MAX
1	N		WP	345.00	165.00	R	5	4400 6000	6 6

**CONTROLLING OBSTRUCTIONS:**

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	AAO	455515.00N/1223427.00W	1615	4E
1	310	AAO	455936.00N/1223527.00W	3155	2A

**PRECIPITOUS TERRAIN ADDITIONS:**

PAT	SPEED	ADDITION
1	310	190

**HOLDING RESTRICTIONS:**

HOLDING LIMITED TO ESTABLISHED PATTERN.

**PROCEDURES REQUIRING CLIMB-IN-HOLD:**

PAT	PROCEDURE TITLE	AIRPORT IDENT	CITY	STATE
1	RNAV (RNP) Y RWY 28R	KPDX	PORTLAND	OR (US)
1	RNAV (RNP) Z RWY 10L	KPDX	PORTLAND	OR (US)

**REMARKS:**

PRECIPITOUS TERRAIN EVALUATION COMPLETED.

**FIX USE:**

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (RNP) Y RWY 28R		1	KPDX	PORTLAND	OR (US)
IAP	RNAV (RNP) Z RWY 10L		1	KPDX	PORTLAND	OR (US)
IAP	RNAV (GPS)-B			KVUO	VANCOUVER	WA (US)
STAR	KRATR (RNAV)			KPDX	PORTLAND	OR (US)

**REQUIRED CHARTING:** STAR, IAP

**COMPULSORY REPORTING POINT:** NO

**RECORD REVISION NUMBER:** 2 **DATE OF REVISION:** 05/19/2022

**REASON FOR REVISION:**

ADDED FIX USE FOR IAP KVUO RNAV (GPS)-B.  
 ADDED HOLDING PAT1 200K AAO ACCURACY CODE 4E.  
 DELETED REMARK, "HOLDING PAT1 200K - IPDS DERIVED ACCURACY."  
 DELETED PRECIPITOUS TERRAIN ADDITION HOLDING PAT1 200K 0 FT.

**INITIATED BY:** **DATE:** **ORGANIZATION:** **NAME:**  
**OFFICE OF PRIMARY RESPONSIBILITY:** AJV-A431 **NAME:** DONALD LANIER  
**APPROVED BY:** **DATE:** 05/19/2022 **OFFICE:** AJV-A431 **NAME:** LONNIE EVERHART  
**SIGNATURE:**

# RADIO FIX AND HOLDING DATA RECORD

NAME: BATTLE GROUND VORTAC STATE: WA COUNTRY: US ICAO REGION CODE: K1  
 LATITUDE/LONGITUDE: 454452.12N/1223529.53W TYPE:

AIRSPACE DOCKET: FIX TYPE OF ACTION: NO CHANGE

**FIX MAKE-UP FACILITIES:**

FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC		MRA	MAA
							NM	FEET			
1	BATTLE GROUND	BTG	VORTAC	VH							45000

**FIX RESTRICTIONS:**

MCA V112 5000 EASTBOUND  
 MCA V182 5000 EASTBOUND  
 MCA V448 9400 NORTHEAST BOUND  
 MCA V468 5300 NORTHEAST BOUND  
 MCA V520 4700 EASTBOUND

**HOLDING:** HOLDING TYPE OF ACTION: MODIFY

**PATTERNS:**

PAT	DIR	IDENT	TYPE	RAD/CRS/BRG	CRS INBOUND	TURN (L OR R)	LEG LENGTH TIME	DME	HOLDING ALTITUDES		TEMPLATES	
									MIN	MAX	MIN	MAX
1	NW	BTG	VORTAC	329.16	149.16	R	1		4200	14000	5	18
2	N	BTG	VORTAC	343.83	163.83	R	1		4200	14000	5	18
3	S	BTG	VORTAC	163.00	343.00	R	1		5000	45000	5	29
4	N		WP	345.00	165.00	R		5	4200	14000	6	19
5	S		WP	163.00	343.00	R		10	24000	40000	20	28

**CONTROLLING OBSTRUCTIONS:**

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	AAO	455400.00N/1223512.00W	1132	4E
1	310	AAO	455936.00N/1223548.00W	3252	4E
2	200	AAO	455445.00N/1223451.00W	1277	4E
2	310	AAO	455936.00N/1223548.00W	3252	4E
3	200	AAO	454703.00N/1223106.00W	837	4E
4	200	AAO	455515.00N/1223427.00W	1615	4E
4	310	AAO	455936.00N/1223548.00W	3252	4E

**PRECIPITOUS TERRAIN ADDITIONS:**

PAT	SPEED	ADDITION
4	310	200

**HOLDING RESTRICTIONS:**

HOLDING LIMITED TO ESTABLISHED PATTERN(S)

**PROCEDURES REQUIRING CLIMB-IN-HOLD:**

PAT	PROCEDURE TITLE	AIRPORT IDENT	CITY	STATE
1	TAKEOFF MINIMUMS	KPDX	PORTLAND	OR (US)
1	VOR-A	KPDX	PORTLAND	OR (US)
1	TAKEOFF MINIMUMS	KSPB	SCAPPOOSE	OR (US)
1	VOR/DME-A	KSPB	SCAPPOOSE	OR (US)
1	TAKEOFF MINIMUMS	KVUO	VANCOUVER	WA (US)
2	ILS OR LOC RWY 28R	KPDX	PORTLAND	OR (US)
2	ILS OR LOC RWY 10L	KPDX	PORTLAND	OR (US)
2	LOC/DME RWY 21	KPDX	PORTLAND	OR (US)
4	RNAV (GPS) Y RWY 10L	KPDX	PORTLAND	OR (US)
4	RNAV (GPS) X RWY 28R	KPDX	PORTLAND	OR (US)
4	RNAV (GPS)-A	KTTD	PORTLAND	OR (US)

**REMARKS:**

PRECIPITOUS TERRAIN EVALUATION COMPLETED.  
 PAT 3 REQUESTED BY PDX APP CON AND ZSE.  
 PAT 5 10 MILE LEG PER ATC REQUEST, MAX DME LEG LENGTH FOR TEMPLATE 20 IS 12 NM.  
 BTG MAG VAR 1975/E21.

**FIX USE:**

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	EUGENE			KEUG	EUGENE	OR (US)
DP	CANBY			KHIO	PORTLAND	OR (US)
DP	SCAPO			KHIO	PORTLAND	OR (US)
DP	CASCADE (RNAV)			KPDX	PORTLAND	OR (US)
DP	HRMNS (RNAV)			KPDX	PORTLAND	OR (US)
DP	LAVAA (RNAV)			KPDX	PORTLAND	OR (US)
DP	PORTLAND			KPDX	PORTLAND	OR (US)
DP	TAKEOFF MINIMUMS		1	KPDX	PORTLAND	OR (US)
DP	WHAMY (RNAV)			KPDX	PORTLAND	OR (US)
DP	BLUE LAKE			KTTD	PORTLAND	OR (US)
DP	TAKEOFF MINIMUMS			KTTD	PORTLAND	OR (US)
DP	REDMOND			KRDD	REDMOND	OR (US)

DP	SALEM		KSLE	SALEM	OR (US)
DP	TAKEOFF MINIMUMS	1	KSPB	SCAPPOOSE	OR (US)
DP	YELM		KOLM	OLYMPIA	WA (US)
DP	KENT		KBFI	SEATTLE	WA (US)
DP	NEEDLE		KBFI	SEATTLE	WA (US)
DP	SEATTLE		KSEA	SEATTLE	WA (US)
DP	TAKEOFF MINIMUMS	1	KVUO	VANCOUVER	WA (US)
DP	NACHES		KYKM	YAKIMA	WA (US)
EN ROUTE	HIGH/LOW CHART	3			(US)
EN ROUTE	J1				(US)
EN ROUTE	J136				(US)
EN ROUTE	J15				(US)
EN ROUTE	J159				(US)
EN ROUTE	J16				(US)
EN ROUTE	J189				(US)
EN ROUTE	J67				(US)
EN ROUTE	J82				(US)
EN ROUTE	V112				(US)
EN ROUTE	V182				(US)
EN ROUTE	V23				(US)
EN ROUTE	V287				(US)
EN ROUTE	V448	3			(US)
EN ROUTE	V468				(US)
EN ROUTE	V495				(US)
EN ROUTE	V500				(US)
EN ROUTE	V520				(US)
IAP	LOC RWY 17		KUAO	AURORA	OR (US)
IAP	ILS OR LOC RWY 22		KMMV	MC MINNVILLE	OR (US)
IAP	RNAV (GPS) RWY 22		KMMV	MC MINNVILLE	OR (US)
IAP	ILS OR LOC RWY 13R		KHIO	PORTLAND	OR (US)
IAP	NDB-B		KHIO	PORTLAND	OR (US)
IAP	RNAV (GPS) RWY 13R		KHIO	PORTLAND	OR (US)
IAP	HI-ILS OR LOC RWY 28R		KPDX	PORTLAND	OR (US)
IAP	HI-ILS OR LOC/DME RWY 10R		KPDX	PORTLAND	OR (US)
IAP	HI-TACAN RWY 10R		KPDX	PORTLAND	OR (US)
IAP	ILS OR LOC RWY 10L	2	KPDX	PORTLAND	OR (US)
IAP	ILS OR LOC RWY 10R		KPDX	PORTLAND	OR (US)
IAP	ILS OR LOC RWY 28L		KPDX	PORTLAND	OR (US)
IAP	ILS OR LOC RWY 28R	2	KPDX	PORTLAND	OR (US)
IAP	ILS RWY 10R (CAT II - III)		KPDX	PORTLAND	OR (US)
IAP	ILS RWY 10R (SA CAT I)		KPDX	PORTLAND	OR (US)
IAP	LOC/DME RWY 21	2	KPDX	PORTLAND	OR (US)
IAP	RNAV (GPS) X RWY 28R	4	KPDX	PORTLAND	OR (US)
IAP	RNAV (GPS) Y RWY 10L	4	KPDX	PORTLAND	OR (US)
IAP	TACAN RWY 28L		KPDX	PORTLAND	OR (US)
IAP	VOR-A	1	KPDX	PORTLAND	OR (US)
IAP	RNAV (GPS)-A	4	KTTD	PORTLAND	OR (US)
IAP	LOC/DME RWY 15		KSPB	SCAPPOOSE	OR (US)
IAP	RNAV (GPS) RWY 15		KSPB	SCAPPOOSE	OR (US)
IAP	VOR/DME-A	1	KSPB	SCAPPOOSE	OR (US)
STAR	HELNS		KUAO	AURORA	OR (US)
STAR	HELNS		KHIO	PORTLAND	OR (US)
STAR	OCITY	3	KHIO	PORTLAND	OR (US)
STAR	HELNS		KPDX	PORTLAND	OR (US)
STAR	HHOOD (RNAV)		KPDX	PORTLAND	OR (US)
STAR	KRATR (RNAV)		KPDX	PORTLAND	OR (US)
STAR	OCITY	3	KPDX	PORTLAND	OR (US)
STAR	TMBRS (RNAV)		KPDX	PORTLAND	OR (US)
STAR	HELNS		KTTD	PORTLAND	OR (US)
STAR	OCITY	3	KTTD	PORTLAND	OR (US)
STAR	OLYMPIA	3	KPAE	EVERETT	WA (US)
STAR	OLYMPIA	3	KRNT	RENTON	WA (US)
STAR	OLYMPIA	3	KBFI	SEATTLE	WA (US)
STAR	HAWKZ (RNAV)	5	KSEA	SEATTLE	WA (US)
STAR	OLYMPIA	3	KSEA	SEATTLE	WA (US)

**REQUIRED CHARTING:** DP, STAR, MILITARY IAP, IAP, EN ROUTE LOW, EN ROUTE HIGH, CONTROLLER LOW, CONTROLLER HIGH

**COMPULSORY REPORTING POINT:** NO

**RECORD REVISION NUMBER:** 39

**DATE OF REVISION:** 07/11/2024

**REASON FOR REVISION:**

1. PATTERNS: PAT 5 MIN/MAX TEMPLATES CHANGED FROM 23/31 TO 20/28.
2. REMARKS: UPDATED PAT 5 10 MILE LEG DME TEMPLATE FROM 23 TO 20, STILL 12 NM.

**INITIATED BY:**                      **DATE:**                      **ORGANIZATION:**                      **NAME:**

**OFFICE OF PRIMARY RESPONSIBILITY:**                      AJV-A431                      **NAME:** RICHARD CHRISTENSEN

**APPROVED BY:**                      **DATE:** 07/11/2024                      **OFFICE:** AJV-A431                      **NAME:** ERIC N SUSKI

**SIGNATURE:**

# RADIO FIX AND HOLDING DATA RECORD

NAME: BUWZO

STATE: WA

COUNTRY: US

ICAO REGION CODE: K1

LATITUDE/LONGITUDE: 465708.19N/1221834.62W

TYPE: WP, DME

AIRSPACE DOCKET:

FIX TYPE OF ACTION: NO CHANGE

**FIX MAKE-UP FACILITIES:**

FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC NM	FEET	MRA	MAA
1	SEATTLE	SEA	VORTAC	H	161.00	180.00	29.00	29.00		10000	17500

HOLDING:

HOLDING TYPE OF ACTION: NO CHANGE

**FIX USE:**

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	CBAIN (RNAV)			KBFI	SEATTLE	WA (US)
DP	NRVNA (RNAV)			KBFI	SEATTLE	WA (US)
DP	OZWLD (RNAV)			KSEA	SEATTLE	WA (US)
STAR	HELNS	1		KUAO	AURORA	OR (US)
STAR	HELNS	1		KHIO	PORTLAND	OR (US)
STAR	HELNS	1		KPDX	PORTLAND	OR (US)
STAR	KRATR (RNAV)			KPDX	PORTLAND	OR (US)
STAR	HELNS	1		KTTD	PORTLAND	OR (US)

REQUIRED CHARTING: DP, STAR, EN ROUTE LOW, CONTROLLER LOW

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 5

DATE OF REVISION: 07/19/2018

**REASON FOR REVISION:**

1. FIX USE: DELETED KSEA DP ATOME (RNAV) - PROCEDURE CANCELLED.
2. FIX USE: ADDED KSEA DP OZWLD (RNAV).
3. REQUIRED CHARTING: CONTROLLER LOW ADDED.

INITIATED BY:

DATE:

ORGANIZATION:

NAME:

DEVELOPED BY:

DATE: 02/21/2018

OFFICE: AJV-5433

NAME: ANDREA CHANEY

APPROVED BY:

DATE:

OFFICE: AJV-5430

NAME: PATRICK MULQUEEN

SIGNATURE:

DISTRIBUTION:

NFDC

FPO: WST

ARTCC: ZSE

ATC FACILITY: BOEING TOWER, PDX APP CON, SEA APP CON, SEA TOWER

OTHER:

# RADIO FIX AND HOLDING DATA RECORD

NAME: CREAK STATE: WA COUNTRY: US ICAO REGION CODE: K1

LATITUDE/LONGITUDE: 454801.10N/1221816.07W TYPE: WP, INT, DME

AIRSPACE DOCKET: FIX TYPE OF ACTION: NO CHANGE

## FIX MAKE-UP FACILITIES:

FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC NM FEET	MRA	MAA
1	PORTLAND	I-GPO	LOC/DME		029.02	045.02	18.70	18.70	5700	6000
2	BATTLE GROUND	BTG	VORTAC	H	054.25	075.25		12.46	5700	6000

## EXPANDED SERVICE VOLUME (ESV):

FAC IDENT	FAC TYPE	RADIAL/BEARING	DISTANCE	MIN ALTITUDE	MAX ALTITUDE
I-GPO	LOC/DME	R-029	19	5700	6000

HOLDING: HOLDING TYPE OF ACTION: NO CHANGE

## REMARKS:

PORTLAND (FAC 1) AND BATTLE GROUND (FAC 2) USED TO ESTABLISH FIX COORDINATES.

## FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	LOC/DME RWY 21	1, 2		KPDX	PORTLAND	OR (US)
STAR	HHOOD (RNAV)			KPDX	PORTLAND	OR (US)
STAR	KRATR (RNAV)			KPDX	PORTLAND	OR (US)
STAR	TMBRS (RNAV)			KPDX	PORTLAND	OR (US)

REQUIRED CHARTING: STAR, IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 4 DATE OF REVISION: 06/25/2015

## REASON FOR REVISION:

1. ADDED HHOOD, KRATR AND TMBRS RNAV STAR TO FIX USE.
2. ADDED FIX MAKE-UP.
3. ADDED STAR TO REQUIRED CHARTING.
4. ADDED WP TO FIX TYPE.

INITIATED BY: DATE: ORGANIZATION: NAME:  
DEVELOPED BY: DATE: 09/09/2014 OFFICE: AJV-354 NAME: JIMMY HUGHES  
APPROVED BY: DATE: 04/15/2015 OFFICE: AJV-354 NAME: JILL OLSON

SIGNATURE:

DISTRIBUTION: NFDC  
FPO: WST  
ARTCC: ZSE  
ATC FACILITY: PDX TOWER  
OTHER:

# RADIO FIX AND HOLDING DATA RECORD

**NAME:** HELNS **STATE:** WA **COUNTRY:** US **ICAO REGION CODE:** K1

**LATITUDE/LONGITUDE:** 461525.10N/1221834.58W **TYPE:** WP, DME

**AIRSPACE DOCKET:** **FIX TYPE OF ACTION:** NO CHANGE

**FIX MAKE-UP FACILITIES:**

FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC NM FEET	MRA	MAA
1	BATTLE GROUND	BTG	VORTAC	H	360.00	021.00	32.75	32.75	10000	17500
2	SEATTLE	SEA	VORTAC	H	161.00	180.00	70.73	70.73	10000	17500

**EXPANDED SERVICE VOLUME (ESV):**

FAC IDENT	FAC TYPE	RADIAL/BEARING	DISTANCE	MIN ALTITUDE	MAX ALTITUDE
SEA	VORTAC	R-161	71	10000	17500

**HOLDING:** **HOLDING TYPE OF ACTION:** MODIFY

**PATTERNS:**

PAT	DIR	IDENT	TYPE	RAD/CRS/BRG	CRS INBOUND	TURN (L OR R)	LEG LENGTH TIME DME	HOLDING ALTITUDES MIN MAX	TEMPLATES MIN MAX
1	N	BTG	VORTAC	360.00	180.00	L	1-1 1/2	10400 17500	11 18
2	N	WP	WP	005.20	185.20	L	10	11000 17500	10 18

**CONTROLLING OBSTRUCTIONS:**

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	230	TERRAIN	461128.02N/1221139.34W	8365	2A
2	230	TERRAIN	461128.02N/1221139.34W	8365	2A

**PRECIPITOUS TERRAIN ADDITIONS:**

PAT	SPEED	ADDITION
1	230	380
2	230	380

**REASON FOR NONSTANDARD HOLDING:**

PAT 1 ATC REQUEST.  
PAT 2 ATC REQUEST

**HOLDING RESTRICTIONS:**

HOLDING LIMITED TO ESTABLISHED PATTERN.

**REMARKS:**

BATTLE GROUND (FAC 1) USED TO ESTABLISH FIX COORDINATES.  
PRECIPITOUS TERRAIN EVALUATION COMPLETED.  
NOTE: HOLDING OBSTACLES ARE BARE TERRAIN ON RIM OF MT ST. HELENS. NO CONSTRUCTION ANTICIPATED.

**FIX USE:**

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
STAR	HELNS	1, 2	1	KUAO	AURORA	OR (US)
STAR	HELNS	1, 2	1	KHIO	PORTLAND	OR (US)
STAR	HELNS	1, 2	1	KPDX	PORTLAND	OR (US)
STAR	KRATR (RNAV)		2	KPDX	PORTLAND	OR (US)
STAR	HELNS	1, 2	1	KTTD	PORTLAND	OR (US)

**REQUIRED CHARTING:** STAR, EN ROUTE LOW

**COMPULSORY REPORTING POINT:** NO

**RECORD REVISION NUMBER:** 7 **DATE OF REVISION:** 03/29/2018

**REASON FOR REVISION:**

1. RAISED HOLDING PATTERN 1 MIN ALT FROM 10000 TO 10400.
2. UPDATED BOTH HOLDING PATTERN CONTROLLING OBSTACLES.
3. CHANGED PRECIPITOUS TERRAIN ADDITION FOR BOTH PATTERNS FROM 375 TO 380.
4. ADDED HELNS STAR AT KHIO, KTTD, AND KUAO TO FIX USE.

**INITIATED BY:** **DATE:** **ORGANIZATION:** **NAME:**

**DEVELOPED BY:** **DATE:** 11/07/2017 **OFFICE:** AJV-5431 **NAME:** LIAM DONAHUE

**APPROVED BY:** **DATE:** **OFFICE:** AJV-5430 **NAME:** PATRICK MULQUEEN

**SIGNATURE:**

**DISTRIBUTION:** NFDC  
FPO: WST

**ARTCC:** ZSE  
**ATC FACILITY:** PDX APP CON  
**OTHER:**

# RADIO FIX AND HOLDING DATA RECORD

**NAME:** HYKER

**STATE:** WA

**COUNTRY:** US

**ICAO REGION CODE:** K1

**LATITUDE/LONGITUDE:** 455551.24N/1222918.23W

**TYPE:** WP

**AIRSPACE DOCKET:**

**FIX TYPE OF ACTION:** ESTABLISH

**HOLDING:**

**HOLDING TYPE OF ACTION:**

**FIX USE:**

**USE TYPE**  
STAR

**USE TITLE**  
KRATR (RNAV)

**FAC**

**PAT**

**AIRPORT IDENT**  
KPDX

**CITY**  
PORTLAND

**STATE**  
OR (US)

**REQUIRED CHARTING:** STAR

**COMPULSORY REPORTING POINT:** NO

**RECORD REVISION NUMBER:** ORIG

**DATE OF REVISION:** 10/17/2013

**INITIATED BY:**

**DATE:**

**ORGANIZATION:**

**NAME:**

**DEVELOPED BY:**

**DATE:** 05/29/2013

**OFFICE:** AJV-354

**NAME:** JON DENTON

**APPROVED BY:**

**DATE:** 08/21/2013

**OFFICE:** AJV-354

**NAME:** DEBORAH COPELAND

**SIGNATURE:**

**DISTRIBUTION:**

**NFDC**  
**FPO:** WST  
**ARTCC:** ZSE  
**ATC FACILITY:** PDX APP CON  
**OTHER:**



# RADIO FIX AND HOLDING DATA RECORD

NAME: KRATR

STATE: WA

COUNTRY: US

ICAO REGION CODE: K1

LATITUDE/LONGITUDE: 460523.57N/1222409.90W

TYPE: WP, DME

AIRSPACE DOCKET:

FIX TYPE OF ACTION: NO CHANGE

## FIX MAKE-UP FACILITIES:

FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC NM	FEET	MRA	MAA
1	BATTLE GROUND	BTG	VORTAC	H	360.00	021.00	22.00	22.00		7000	17500

HOLDING:

HOLDING TYPE OF ACTION: NO CHANGE

## FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
STAR	HELNS	1		KUAO	AURORA	OR (US)
STAR	HELNS	1		KHIO	PORTLAND	OR (US)
STAR	HELNS	1		KPDX	PORTLAND	OR (US)
STAR	KRATR (RNAV)			KPDX	PORTLAND	OR (US)
STAR	HELNS	1		KTTD	PORTLAND	OR (US)

REQUIRED CHARTING: STAR

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 3

DATE OF REVISION: 03/29/2018

## REASON FOR REVISION:

ADDED WP TO FIX TYPE.  
UPDATED FIX USE.

INITIATED BY:

DATE:

ORGANIZATION:

NAME:

DEVELOPED BY:

DATE: 11/07/2017

OFFICE: AJV-5431

NAME: LIAM DONAHUE

APPROVED BY:

DATE:

OFFICE: AJV-5430

NAME: PATRICK MULQUEEN

SIGNATURE:

DISTRIBUTION:

NFDC  
FPO: WST  
ARTCC: ZSE  
ATC FACILITY: PDX APP CON  
OTHER:

# RADIO FIX AND HOLDING DATA RECORD

NAME: NACIY STATE: OR COUNTRY: US ICAO REGION CODE: K1

LATITUDE/LONGITUDE: 452900.82N/1221841.32W TYPE: WP, RADAR, INT, DME

AIRSPACE DOCKET: FIX TYPE OF ACTION: MODIFY

### FIX MAKE-UP FACILITIES:

FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC NM	FEET	MRA	MAA
1	PORTLAND	I-IAP	LOC/DME		103.04	119.04	14.07	14.10		3700	4500
2	BATTLE GROUND	BTG	VORTAC	H	122.26	143.26		19.76		3700	4500
3	NEWBERG	UBG	VOR/DME	H	053.25	074.25	29.24	29.24		3700	17500

HOLDING: HOLDING TYPE OF ACTION: NO CHANGE

### PATTERNS:

PAT	DIR	IDENT	TYPE	RAD/CRS/BRG	CRS INBOUND	TURN (L OR R)	LEG LENGTH TIME	DME	HOLDING MIN	ALTITUDES MAX	TEMPLATES MIN	MAX
1	E	I-IAP	LOC/DME	103.04	283.04	L	1		3700	4500	4	5

### CONTROLLING OBSTRUCTIONS:

PAT	AIRSPED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	AAO	452818.00N/1220824.00W	2412	4E

REASON FOR NONSTANDARD HOLDING:  
PAT 1 TERRAIN

HOLDING RESTRICTIONS:  
HOLDING LIMITED TO ESTABLISHED PATTERN.

### REMARKS:

PORTLAND (FAC 1) USED TO ESTABLISH FIX COORDINATES.  
I-IAP DME COORDINATES: 453547.95N/1223613.55W.  
PRECIPITOUS TERRAIN EVALUATION COMPLETED.

### FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	HI-ILS OR LOC RWY 28R	1		KPDX	PORTLAND	OR (US)
IAP	ILS OR LOC RWY 28R	1, 2	1	KPDX	PORTLAND	OR (US)
IAP	RNAV (GPS) X RWY 28R			KPDX	PORTLAND	OR (US)
IAP	RNAV (RNP) Z RWY 28R			KPDX	PORTLAND	OR (US)
STAR	HHOOD RNAV			KPDX	PORTLAND	OR (US)
STAR	KRATR RNAV			KPDX	PORTLAND	OR (US)
STAR	TMBRS RNAV			KPDX	PORTLAND	OR (US)

REQUIRED CHARTING: STAR, MILITARY IAP, IAP, CONTROLLER

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 4 DATE OF REVISION: 02/01/2018

### REASON FOR REVISION:

ADDED UBG VOR/DME AS FIX MAKE-UP FAC 3.  
PROCEDURE NAME CHANGED FROM "HI-ILS OR LOC/DME RWY 28R" TO "HI-ILS OR LOC RWY 28R AT KPDX".  
ADDED STAR TO REQUIRED CHARTING.

INITIATED BY: DATE: ORGANIZATION: NAME:  
DEVELOPED BY: DATE: 07/06/2017 OFFICE: AJV-5423 NAME: HEIDI SNIDER  
APPROVED BY: DATE: OFFICE: AJV-5420 NAME: JULIE MORGAN

SIGNATURE:

DISTRIBUTION: NFDC  
FPO: WST  
ARTCC: ZSE  
ATC FACILITY: PDX APP CON  
OTHER:

# RADIO FIX AND HOLDING DATA RECORD

**NAME:** SEATTLE VORTAC      **STATE:** WA      **COUNTRY:** US      **ICAO REGION CODE:** K1  
**LATITUDE/LONGITUDE:** 472607.34N/1221834.62W      **TYPE:**  
**AIRSPACE DOCKET:**      **FIX TYPE OF ACTION:** NO CHANGE

**FIX MAKE-UP FACILITIES:**

FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC NM	FEET	MRA	MAA
1	SEATTLE	SEA	VORTAC	VH							45000

**FIX RESTRICTIONS:**  
MCA V4 6200 EASTBOUND  
MCA V2 4300 EASTBOUND  
MCA V298 4300 EASTBOUND  
MCA V120 6300 EASTBOUND  
MCA V495 4700 SOUTHBOUND

**HOLDING:**      **HOLDING TYPE OF ACTION:** NO CHANGE

**PATTERNS:**

PAT	DIR	IDENT	TYPE	RAD/CRS/BRG	CRS INBOUND	TURN (L OR R)	LEG LENGTH TIME	DME	HOLDING ALTITUDES MIN	MAX	TEMPLATES MIN	MAX
1	E	SEA	VORTAC	110.00	290.00	L	1		3000	18000	4	16
2	SE	SEA	VORTAC	130.00	310.00	L	1		3000	18000	4	16

**CONTROLLING OBSTRUCTIONS:**

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	AAO	472357.00N/1220809.00W	765	4E
1	310	AAO	471854.00N/1215815.00W	1368	4E
2	200	AAO	472712.00N/1221709.00W	725	4E
2	310	AAO	470754.00N/1221003.00W	1073	4E

**REASON FOR NONSTANDARD HOLDING:**  
PAT 1 ATC REQUEST.  
PAT 2 ATC REQUEST.

**HOLDING RESTRICTIONS:**  
HOLDING LIMITED TO ESTABLISHED PATTERN(S)

**PROCEDURES REQUIRING CLIMB-IN-HOLD:**

PAT	PROCEDURE TITLE	AIRPORT IDENT	CITY	STATE
1	TAKEOFF MINIMUMS	KRNT	RENTON	WA (US)
1	RENTN	KRNT	RENTON	WA (US)
1	TAKEOFF MINIMUMS	KBFI	SEATTLE	WA (US)
2	TAKEOFF MINIMUMS	KSEA	SEATTLE	WA (US)

**REMARKS:**  
PRECIPITOUS TERRAIN EVALUATION COMPLETED.  
ASSIGNED FACILITY MAG VAR E19/2000.

**FIX USE:**

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	PORTLAND			KPDX	PORTLAND	OR (US)
DP	PAINE			KPAE	EVERETT	WA (US)
DP	YELM			KOLM	OLYMPIA	WA (US)
DP	TAKEOFF MINIMUMS			KPLU	PUYALLUP	WA (US)
DP	RENTN		1	KRNT	RENTON	WA (US)
DP	TAKEOFF MINIMUMS		1	KRNT	RENTON	WA (US)
DP	KENT			KBFI	SEATTLE	WA (US)
DP	NEEDLE			KBFI	SEATTLE	WA (US)
DP	TAKEOFF MINIMUMS		1	KBFI	SEATTLE	WA (US)
DP	BANGR (RNAV)			KSEA	SEATTLE	WA (US)
DP	ELMAA			KSEA	SEATTLE	WA (US)
DP	HAROB (RNAV)			KSEA	SEATTLE	WA (US)
DP	MOUNTAIN			KSEA	SEATTLE	WA (US)
DP	SEATTLE			KSEA	SEATTLE	WA (US)
DP	SUMMA			KSEA	SEATTLE	WA (US)
DP	TAKEOFF MINIMUMS		2	KSEA	SEATTLE	WA (US)
DP	NARROWS			KTIW	TACOMA	WA (US)
DP	TAKEOFF MINIMUMS			KTIW	TACOMA	WA (US)
DP	NACHES			KYKM	YAKIMA	WA (US)
EN ROUTE	J1					(US)
EN ROUTE	J12					(US)
EN ROUTE	J189					(US)
EN ROUTE	J20					(US)
EN ROUTE	J5					(US)
EN ROUTE	J502					(US)
EN ROUTE	J503					(US)
EN ROUTE	J505					(US)

EN ROUTE	J523			(US)
EN ROUTE	J65			(US)
EN ROUTE	J70			(US)
EN ROUTE	J90			(US)
EN ROUTE	Q902			(US)
EN ROUTE	V120			(US)
EN ROUTE	V2			(US)
EN ROUTE	V23			(US)
EN ROUTE	V27			(US)
EN ROUTE	V298			(US)
EN ROUTE	V4			(US)
EN ROUTE	V495			(US)
IAP	ILS OR LOC RWY 20	KPWT	BREMERTON	WA (US)
IAP	RNAV (GPS) RWY 34L	KPAE	EVERETT	WA (US)
IAP	ILS OR LOC RWY 15	KGRF	FORT LEWIS	WA (US)
IAP	RNAV (GPS) RWY 15	KGRF	FORT LEWIS	WA (US)
IAP	HI TACAN Z RWY 14	KNUW	OAK HARBOR	WA (US)
IAP	HI TACAN Z RWY 25	KNUW	OAK HARBOR	WA (US)
IAP	HI TACAN Z RWY 32	KNUW	OAK HARBOR	WA (US)
IAP	HI TACAN Z RWY 7	KNUW	OAK HARBOR	WA (US)
IAP	ILS OR LOC RWY 17	KOLM	OLYMPIA	WA (US)
IAP	RNAV (GPS) RWY 17	KOLM	OLYMPIA	WA (US)
IAP	ILS OR LOC RWY 8	KCLM	PORT ANGELES	WA (US)
IAP	HARBOR VISUAL RWY 14R	KBFI	SEATTLE	WA (US)
IAP	ILS OR LOC RWY 14R	KBFI	SEATTLE	WA (US)
IAP	ILS OR LOC RWY 32L	KBFI	SEATTLE	WA (US)
IAP	BAY VISUAL RWY 16 R/C/L	KSEA	SEATTLE	WA (US)
IAP	HUSKY VISUAL RWY 16 R/C/L	KSEA	SEATTLE	WA (US)
IAP	ILS OR LOC RWY 16C	KSEA	SEATTLE	WA (US)
IAP	ILS OR LOC RWY 16L	KSEA	SEATTLE	WA (US)
IAP	ILS OR LOC RWY 16R	KSEA	SEATTLE	WA (US)
IAP	ILS OR LOC RWY 34C	KSEA	SEATTLE	WA (US)
IAP	ILS OR LOC RWY 34L	KSEA	SEATTLE	WA (US)
IAP	ILS OR LOC RWY 34R	KSEA	SEATTLE	WA (US)
IAP	ILS RWY 16C (CAT II - III)	KSEA	SEATTLE	WA (US)
IAP	ILS RWY 16C (SA CAT I)	KSEA	SEATTLE	WA (US)
IAP	ILS RWY 16L (CAT II - III)	KSEA	SEATTLE	WA (US)
IAP	ILS RWY 16L (SA CAT I)	KSEA	SEATTLE	WA (US)
IAP	ILS RWY 16R (CAT II - III)	KSEA	SEATTLE	WA (US)
IAP	ILS RWY 16R (SA CAT I)	KSEA	SEATTLE	WA (US)
IAP	ILS RWY 34C (SA CAT I - II)	KSEA	SEATTLE	WA (US)
IAP	ILS RWY 34L (SA CAT I - II)	KSEA	SEATTLE	WA (US)
IAP	ILS RWY 34R (SA CAT I - II)	KSEA	SEATTLE	WA (US)
IAP	MALL VISUAL RWY 34 R/C/L	KSEA	SEATTLE	WA (US)
IAP	ILS OR LOC RWY 17	KTIW	TACOMA	WA (US)
STAR	HELNS	KUAO	AURORA	OR (US)
STAR	HELNS	KHIO	PORTLAND	OR (US)
STAR	HELNS	KPDX	PORTLAND	OR (US)
STAR	KRATR (RNAV)	KPDX	PORTLAND	OR (US)
STAR	HELNS	KTTD	PORTLAND	OR (US)
STAR	CHINS	KPAE	EVERETT	WA (US)
STAR	OLYMPIA	KPAE	EVERETT	WA (US)
STAR	CHINS	KRNT	RENTON	WA (US)
STAR	GLASR	KRNT	RENTON	WA (US)
STAR	OLYMPIA	KRNT	RENTON	WA (US)
STAR	SKYKO	KRNT	RENTON	WA (US)
STAR	CHINS	KBFI	SEATTLE	WA (US)
STAR	GLASR	KBFI	SEATTLE	WA (US)
STAR	JAWBN	KBFI	SEATTLE	WA (US)
STAR	OLYMPIA	KBFI	SEATTLE	WA (US)
STAR	SKYKO	KBFI	SEATTLE	WA (US)
STAR	CHINS	KSEA	SEATTLE	WA (US)
STAR	GLASR	KSEA	SEATTLE	WA (US)
STAR	JAWBN	KSEA	SEATTLE	WA (US)
STAR	OLYMPIA	KSEA	SEATTLE	WA (US)
STAR	SKYKO	KSEA	SEATTLE	WA (US)
STAR	ARRIE	KTCM	TACOMA	WA (US)
STAR	GLASR	KTCM	TACOMA	WA (US)
STAR	JAWBN	KTCM	TACOMA	WA (US)
STAR	WHYTE	KTCM	TACOMA	WA (US)

**REQUIRED CHARTING:** DP, STAR, MILITARY IAP, IAP, EN ROUTE LOW, EN ROUTE HIGH, CONTROLLER LOW, CONTROLLER HIGH

**COMPULSORY REPORTING POINT:** NO

**RECORD REVISION NUMBER:** 31

**DATE OF REVISION:** 05/16/2024

**REASON FOR REVISION:**

1. ADDED RNAV (GPS) RWY 35 AT S50 IN FIX USE.
2. ADDED SKYKO AT KBFI AND KRNT IN FIX USE.
3. DELETED WATTR (OBSTACLE) AT KCLM IN FIX USE.

2/8/24: THIS IS AN UPDATED COPY OF THE FORM DEVELOPED ON 8/28/23.

1. DELETED RNAV (GPS) RWY 35 AT S50 IN FIX USE.

**INITIATED BY:**

**DATE:**

**ORGANIZATION:**

**NAME:**

**OFFICE OF PRIMARY RESPONSIBILITY:**

AJV-A423

**NAME:** DANIEL JOHNSEN

**APPROVED BY:**

**DATE:** 01/25/2024

**OFFICE:** AJV-A423

**NAME:** MICHAEL GARRITY

**SIGNATURE:**

# RADIO FIX AND HOLDING DATA RECORD

**NAME:** SHYNE

**STATE:** WA

**COUNTRY:** US

**ICAO REGION CODE:** K1

**LATITUDE/LONGITUDE:** 453318.57N/1221547.07W

**TYPE:** WP

**AIRSPACE DOCKET:**

**FIX TYPE OF ACTION:** ESTABLISH

**HOLDING:**

**HOLDING TYPE OF ACTION:**

**FIX USE:**

**USE TYPE**  
STAR

**USE TITLE**  
KRATR (RNAV)

**FAC**

**PAT**

**AIRPORT IDENT**  
KPDX

**CITY**  
PORTLAND

**STATE**  
OR (US)

**REQUIRED CHARTING:** STAR

**COMPULSORY REPORTING POINT:** NO

**RECORD REVISION NUMBER:** ORIG

**DATE OF REVISION:** 10/17/2013

**INITIATED BY:**

**DATE:**

**ORGANIZATION:**

**NAME:**

**DEVELOPED BY:**

**DATE:** 05/29/2013

**OFFICE:** AJV-354

**NAME:** JON DENTON

**APPROVED BY:**

**DATE:** 08/21/2013

**OFFICE:** AJV-354

**NAME:** DEBORAH COPELAND

**SIGNATURE:**

**DISTRIBUTION:**

**NFDC**  
**FPO:** WST  
**ARTCC:** ZSE  
**ATC FACILITY:** PDX APP CON  
**OTHER:**

# RADIO FIX AND HOLDING DATA RECORD

**NAME:** VOODU

**STATE:** WA

**COUNTRY:** US

**ICAO REGION CODE:** K1

**LATITUDE/LONGITUDE:** 454642.84N/1224050.82W

**TYPE:** WP

**AIRSPACE DOCKET:**

**FIX TYPE OF ACTION:** NO CHANGE

**HOLDING:**

**HOLDING TYPE OF ACTION:** NO CHANGE

**FIX USE:**

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (RNP) Z RWY 10L			KPDX	PORTLAND	OR (US)
IAP	RNAV (RNP) Z RWY 10R			KPDX	PORTLAND	OR (US)
STAR	KRATR (RNAV)			KPDX	PORTLAND	OR (US)

**REQUIRED CHARTING:** STAR, IAP

**COMPULSORY REPORTING POINT:** NO

**RECORD REVISION NUMBER:** 1

**DATE OF REVISION:** 10/17/2013

**REASON FOR REVISION:**

ADDED STAR TO CHARTING.  
UPDATED FIX USE.

**INITIATED BY:**

**DATE:**

**ORGANIZATION:**

**NAME:**

**DEVELOPED BY:**

**DATE:** 05/29/2013

**OFFICE:** AJV-354

**NAME:** JON DENTON

**APPROVED BY:**

**DATE:** 08/21/2013

**OFFICE:** AJV-354

**NAME:** DEBORAH COPELAND

**SIGNATURE:**

**DISTRIBUTION:**

**NFDC**  
**FPO:** WST  
**ARTCC:** ZSE  
**ATC FACILITY:** PDX APP CON  
**OTHER:**