

# RADIO FIX AND HOLDING DATA RECORD

NAME: EYWOK STATE: WA COUNTRY: US ICAO REGION CODE: K1  
 LATITUDE/LONGITUDE: 480621.38N/1221723.78W TYPE: WP, 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	MRA	MAA
1	EVERETT	I-PAE	LOC		343.15	359.15		12.80	3000	5000
2	PAINE	PAE	VOR/DME	L	337.50	357.50	11.18	11.18	3000	5000
3	PENN COVE	CVV	VOR/DME	L	096.36	115.36	19.33	19.33	3000	5000

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		WP	343.15	163.15	R		4	3000	6000	5	6
2	N	I-PAE	LOC	343.15	163.15	R	1		3000	5000	5	6

## CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	AAO	480742.35N/1221457.17W	819	2C
2	200	AAO	480742.35N/1221457.17W	819	2C

## HOLDING RESTRICTIONS:

HOLDING LIMITED TO ESTABLISHED PATTERNS

## REMARKS:

EVERETT (FAC 1) AND PENN COVE (FAC 3) USED TO ESTABLISH FIX COORDINATES  
 PRECIPITOUS TERRAIN EVALUATION COMPLETED.

## FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	ILS Y OR LOC Y RWY 16R	1, 2, 3	2	KPAE	EVERETT	WA (US)
IAP	RNAV (GPS) RWY 34L		1	KPAE	EVERETT	WA (US)
IAP	RNAV (GPS) Y RWY 16R		1	KPAE	EVERETT	WA (US)
SPECIAL IAP	RNAV (RNP) M RWY 34L			KPAE	EVERETT	WA (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 3 DATE OF REVISION: 12/07/2017

## REASON FOR REVISION:

- MOVED FIX 11.89 FEET EAST.
- AMENDED FAC 1 MAG BRG FROM 342.14 TO 343.15.
- ADDED DME VALUE TO FAC 3.
- AMENDED PAT 1 AND PAT 2 INBOUND HOLDING COURSE FROM 162.14 TO 163.15.
- AMENDED ILS OR LOC/DME Y RWY 16R TO ILS Y OR LOC Y RWY 16R AT KPAE IN FIX USE.
- DESIGNATED RNAV (RNP) M RWY 16R AT KPAE FROM IAP TO SPECIAL IAP IN FIX USE.

DEVELOPED BY: DATE: 07/28/2017 OFFICE: AJV-5422 NAME: PETER GUIMOND

APPROVED BY: DATE: OFFICE: AJV-5420 NAME: JULIE MORGAN

SIGNATURE:

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

# RADIO FIX AND HOLDING DATA RECORD

NAME: PAINE VOR/DME STATE: WA COUNTRY: US ICAO REGION CODE: K1  
 LATITUDE/LONGITUDE: 475511.40N/1221640.08W 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	MRA FEET	MAA
1	PAINE	PAE	VOR/DME	L						17500

HOLDING: HOLDING TYPE OF ACTION: NO CHANGE

## PATTERNS:

PAT	DIR	IDENT	TYPE	RAD/CRS/BRG	CRS INBOUND	TURN (L OR R)	LEG TIME	LENGTH DME	HOLDING ALTITUDES MIN	MAX	TEMPLATES MIN	MAX
1	NW	PAE	VOR/DME	329.04	149.04	R	1		2000	10000	4	9

## CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	ANTENNA (53-034715)	475144.15N/1221708.59W	817	1A
1	310	ANTENNA (53-034715)	475144.15N/1221708.59W	817	1A

## HOLDING RESTRICTIONS:

HOLDING LIMITED TO ESTABLISHED PATTERN

## PROCEDURES REQUIRING CLIMB-IN-HOLD:

PAT	PROCEDURE TITLE	AIRPORT IDENT	CITY	STATE
1	BELLEVUE	KRNT	RENTON	WA (US)
1	TAKE-OFF MINIMUMS	KPAE	EVERETT	WA (US)

## REMARKS:

PRECIPITOUS TERRAIN EVALUATION COMPLETED.  
 ASSIGNED FACILITY MAG VAR: 20E (1990).

## FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	ARLINGTON			KAWO	ARLINGTON	WA (US)
DP	PAINE			KPAE	EVERETT	WA (US)
DP	TAKE-OFF MINIMUMS			KPAE	EVERETT	WA (US)
DP	NASWI			KNUW	OAK HARBOR	WA (US)
DP	YELM			KOLM	OLYMPIA	WA (US)
DP	BELLEVUE		1	KRNT	RENTON	WA (US)
DP	CBAIN (RNAV)			KBFI	SEATTLE	WA (US)
DP	KENT			KBFI	SEATTLE	WA (US)
DP	NEEDLE			KBFI	SEATTLE	WA (US)
DP	NRVNA (RNAV)			KBFI	SEATTLE	WA (US)
DP	ATOME (RNAV)			KSEA	SEATTLE	WA (US)
DP	BANGR (RNAV)			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)
EN ROUTE	V23					(US)
EN ROUTE	V287					(US)
IAP	LOC RWY 34			KAWO	ARLINGTON	WA (US)
IAP	NDB RWY 34			KAWO	ARLINGTON	WA (US)
IAP	RNAV (GPS) RWY 34			KAWO	ARLINGTON	WA (US)
IAP	RNAV (GPS) RWY 29			KBVS	BURLINGTON/MOUNT VERNON	WA (US)
IAP	ILS Y OR LOC Y RWY 16R			KPAE	EVERETT	WA (US)
IAP	ILS Z OR LOC Z RWY 16R			KPAE	EVERETT	WA (US)
IAP	ILS Z RWY 16R (SA CAT II)			KPAE	EVERETT	WA (US)
IAP	RNAV (GPS) RWY 34L			KPAE	EVERETT	WA (US)
IAP	RNAV (GPS) Y RWY 16R			KPAE	EVERETT	WA (US)
IAP	RNAV (GPS) Z RWY 16R			KPAE	EVERETT	WA (US)
IAP	VOR-A			KPAE	EVERETT	WA (US)
IAP	RNAV (GPS) Y RWY 16			KRNT	RENTON	WA (US)
IAP	RNAV (GPS) Z RWY 16			KRNT	RENTON	WA (US)
IAP	ILS OR LOC RWY 32L			KBFI	SEATTLE	WA (US)
IAP	RNAV (GPS) Y RWY 14R			KBFI	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 14R			KBFI	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		1	KSEA	SEATTLE	WA (US)
IAP	ILS OR LOC RWY 34L		1	KSEA	SEATTLE	WA (US)
IAP	ILS OR LOC RWY 34R		1	KSEA	SEATTLE	WA (US)
IAP	ILS OR LOC Y RWY 16R			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)	1	KSEA	SEATTLE	WA (US)
IAP	ILS RWY 34L (SA CAT I & II)	1	KSEA	SEATTLE	WA (US)
IAP	ILS RWY 34R (SA CAT I & II)	1	KSEA	SEATTLE	WA (US)
IAP	RNAV (GPS) Y RWY 16C		KSEA	SEATTLE	WA (US)
IAP	RNAV (GPS) Y RWY 16L		KSEA	SEATTLE	WA (US)
IAP	RNAV (GPS) Y RWY 16R		KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 16C		KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 16L		KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 16R		KSEA	SEATTLE	WA (US)
IAP	RNAV (GPS)-A		KS43	SNOHOMISH	WA (US)
SPECIAL IAP	RNAV (RNP) M RWY 16R		KSEA	SEATTLE	WA (US)
STAR	MADEE (RNAV)		CYXX	ABBOTSFORD, BRITISH COLUMBIA	(CA)
STAR	MADEE (RNAV)		CZBB	DELTA, BC	(CA)
STAR	MADEE (RNAV)		KBLI	BELLINGHAM	WA (US)
STAR	EPHRATA		KRNT	RENTON	WA (US)
STAR	GLASR		KRNT	RENTON	WA (US)
STAR	EPHRATA		KBFI	SEATTLE	WA (US)
STAR	GLASR		KBFI	SEATTLE	WA (US)
STAR	EPHRATA		KSEA	SEATTLE	WA (US)
STAR	GLASR		KSEA	SEATTLE	WA (US)
STAR	GLASR		KTCM	TACOMA	WA (US)

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

**COMPULSORY REPORTING POINT:** NO

**RECORD REVISION NUMBER:** 18

**DATE OF REVISION:** 12/07/2017

**REASON FOR REVISION:**

1. AMENDED PAT 1 200 KIAS AND 310 KIAS CONTROLLING OBSTACLE HEIGHT FROM 814 MSL TO 817 MSL AND OBSTACLE ID FROM KPAET000224 TO 53-034715 TO MATCH UPDATED AIRNAV DATA. NO CHANGE TO MIN HOLDING ALTITUDE.
2. DELETED JAWBN STAR AT KSEA FROM FIX USE.
3. ADDED RNAV (GPS) Y RWY 16R AT KSEA TO FIX USE.
4. DELETED VOR/DME RWY 16R AT KPAE FROM FIX USE.
5. ADDED VOR-A AT KPAE TO FIX USE.
6. AMENDED ILS OR LOC/DME Z RWY 16R TO ILS Z OR LOC Z RWY 16R AT KPAE IN FIX USE.
7. AMENDED ILS OR LOC/DME Y RWY 16R TO ILS Y OR LOC Y RWY 16R AT KPAE IN FIX USE.

**DEVELOPED BY:**                      **DATE:** 08/01/2017                      **OFFICE:** AJV-5422                      **NAME:** PETER GUIMOND

**APPROVED BY:**                      **DATE:**                      **OFFICE:** AJV-5420                      **NAME:** JULIE MORGAN

**SIGNATURE:**

**DISTRIBUTION:**      **NFDC**  
**FPO:** WST  
**ARTCC:** ZSE  
**ATC FACILITY:** SEA 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:

INFO

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							45000

## FIX RESTRICTIONS:

MCA V2-298 4300 EASTBOUND  
MCA V120 6300 EASTBOUND  
MCA V4 6200 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 MIN	MAX	TEMPLATES MIN	MAX
1	E	SEA	VORTAC	110.00	290.00	L	1-1 1/2		3000	18000	4	16
2	SE	SEA	VORTAC	130.00	310.00	L	1-1 1/2		3000	18000	4	16

## CONTROLLING OBSTRUCTIONS:

PAT	AIRSPED	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

## HOLDING RESTRICTIONS:

HOLDING LIMITED TO ESTABLISHED PATTERNS

## PROCEDURES REQUIRING CLIMB-IN-HOLD:

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

## REMARKS:

PRECIPITOUS TERRAIN EVALUATION COMPLETED.  
FACILITY ASSIGNED 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	WATTR			KCLM	PORT ANGELES	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	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	RNAV (GPS) RWY 15	KGRF	FORT LEWIS	WA (US)
IAP	HI TACAN RWY 14	KNUW	OAK HARBOR	WA (US)
IAP	HI TACAN RWY 7	KNUW	OAK HARBOR	WA (US)
IAP	HI TACAN TWY 32	KNUW	OAK HARBOR	WA (US)
IAP	HI TACAN Y RWY 25	KNUW	OAK HARBOR	WA (US)
IAP	HI TACAN Z RWY 25	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	NDB RWY 16	KRNT	RENTON	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	ILS RWY 14R	KBFI	SEATTLE	WA (US)
IAP	LOC/DME RWY 14R	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)
IAP	NDB RWY 35	KTIW	TACOMA	WA (US)
STAR	HELNS	KUAO	AURORA	OR (US)
STAR	HELNS	KHIO	PORTLAND	OR (US)
STAR	HELNS	KPDX	PORTLAND	OR (US)
STAR	KRATR	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	EPHRATA	KRNT	RENTON	WA (US)
STAR	GLASR	KRNT	RENTON	WA (US)
STAR	OLYMPIA	KRNT	RENTON	WA (US)
STAR	CHINS	KBFI	SEATTLE	WA (US)
STAR	EPHRATA	KBFI	SEATTLE	WA (US)
STAR	GLASR	KBFI	SEATTLE	WA (US)
STAR	JAWBN	KBFI	SEATTLE	WA (US)
STAR	OLYMPIA	KBFI	SEATTLE	WA (US)
STAR	CHINS	KSEA	SEATTLE	WA (US)
STAR	EPHRATA	KSEA	SEATTLE	WA (US)
STAR	GLASR	KSEA	SEATTLE	WA (US)
STAR	JAWBN	KSEA	SEATTLE	WA (US)
STAR	OLYMPIA	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, CONTROLLER, EN ROUTE LOW, EN ROUTE HIGH

**COMPULSORY REPORTING POINT:** NO

**RECORD REVISION NUMBER:** 23

**DATE OF REVISION:** 09/14/2017

**REASON FOR REVISION:**

UPDATED KBFI FIX USE FROM "HARBOR VISUAL RWY 13R, ILS OR LOC RWY 13R, ILS OR LOC RWY 31L" TO " HARBOR VISUAL RWY 14R, ILS OR LOC RWY 14R, ILS OR LOC RWY 32L".

ADDED FIX USE KBFI ILS RWY 14R AND LOC/DME RWY 14R AND KPDX KRATR STAR.

REMOVED KS50 AUBURN DP FROM FIX USE AND PROCEDURES REQUIRING CLIMB-IN-HOLD AND REMOVED KIW TAKEOFF MINIMUMS FROM FIX USE.

ADDED REMARK "FACILITY ASSIGNED MAG VAR E19/2000".

REMOVED HOLDING PAT1 AND 4 AND RENUMBERED PAT 2 TO 1 AND PAT 3 TO 2.

REMOVED REMARK "PAT 1 MAX ALTITUDE AT ATC REQUEST".

**DEVELOPED BY:**

**DATE:** 04/06/2017

**OFFICE:** AJV-5433

**NAME:** BEV L BORDY (CHRISTINE BAYSE)

**APPROVED BY:****DATE:****OFFICE:** AJV-5430**NAME:** PATRICK MULQUEEN**SIGNATURE:****DISTRIBUTION:****NFDC****FPO:** WST**ARTCC:** ZSE**ATC FACILITY:** SEA APP CON**OTHER:**