FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE
GRAPHIC DEPARTURE PROCEDURES (DP)

Bearings, headings, courses, tracks and radials are magnetic. Elevations and altitudes are in feet, MSL Altitudes are minimum altitudes unless otherwise indicated
Ceilings are in feet above airport elevation. Distances are in nautical miles. Visibilities are in statue miles or feet RVR unless otherwise indicated.

DP NAME	NUMBER	DP COMPUTER CODE	SUPERSEDED NUMBER	DATED	EFFECTIVE DATE
HAROB	SIX	HAROB6.HAROB	FIVE	10/15/2015	12 OCT 2017

TYPE:	OBSTACLE	COPTER	SID	SPECIAL	RNAV
	☐	☐	☒	☐	☒

DP ROUTE DESCRIPTION:

TAKEOFF RWY 16C: CLIMB HEADING 164.34 TO AT/ABOVE 932, THEN DIRECT OTLIE, THEN ON TRACK 163.99 TO CROSS RENBE AT/ABOVE 3000, THEN ON DEPICTED ROUTE TO HAROB, CROSS HAROB AT OR ABOVE 10000, THENCE…
TAKEOFF RWY 16L: CLIMB HEADING 164.34 TO AT/ABOVE 932, THEN DIRECT CAVOB, THEN ON TRACK 165.64 TO CROSS RENBE AT/ABOVE 3000, THEN ON DEPICTED ROUTE TO HAROB, CROSS HAROB AT OR ABOVE 10000, THENCE…
TAKEOFF RWY 16R: CLIMB HEADING 164.33 TO AT/ABOVE 932, THEN DIRECT WESET, THEN ON TRACK 160.90 TO CROSS RENBE AT/ABOVE 3000, THEN ON DEPICTED ROUTE TO HAROB, CROSS HAROB AT OR ABOVE 10000, THENCE…
TAKEOFF RWY 34C: CLIMB HEADING 344.34 TO AT/ABOVE 932, THEN DIRECT NESOE, THEN ON TRACK 344.34 TO CROSS WUREL AT/ABOVE 3100, THEN ON DEPICTED ROUTE TO HAROB, CROSS HAROB AT OR ABOVE 10000, THENCE…
TAKEOFF RWY 34L: CLIMB HEADING 344.33 TO AT/ABOVE 932, THEN DIRECT CUSBU, THEN ON TRACK 349.02 TO CROSS WUREL AT/ABOVE 3100, THEN ON DEPICTED ROUTE TO HAROB, CROSS HAROB AT OR ABOVE 10000, THENCE…
TAKEOFF RWY 34R: CLIMB HEADING 344.34 TO AT/ABOVE 932, THEN DIRECT DODVE, THEN ON TRACK 342.13 TO CROSS WUREL AT/ABOVE 3100, THEN ON DEPICTED ROUTE TO HAROB, CROSS HAROB AT OR ABOVE 10000, THENCE…

...ON (TRANSITION). MAINTAIN ASSIGNED ALTITUDE, EXPECT FILED ALTITUDE/FLIGHT LEVEL 15 NM FROM SEA VORTAC.

TRANSITION ROUTES (GRAPHIC DEPICTION ONLY):

TRANSITION NAME	TRANSITION COMPUTER CODE	FROM FIX/NAVAID	TO FIX/NAVAID	COURSE	DISTANCE	MEA	MOCA	CROSSING ALTITUDE/FIXES
HOQUIAM	HAROB6.HQM	HAROB	HQM VORTAC	TRACK 233.03	48.80	10000	3600	
ERAVE	HAROB6.ERAVE	HAROB	ERAVE	TRACK 200.59	24.90	10000	4200	
HISKU	HAROB6.HISKU	HAROB	FEPOT	TRACK 200.84	12.18	15000	3800	
		FEPOT	HISKU	TRACK 159.64	155.32	15000	5400	
FEPOT	HAROB6.FEPOT	HAROB	FEPOT	TRACK 200.84	12.18	15000	3800	

PROCEDURAL DATA NOTES:

NOTE: RNAV 1.
NOTE: RADAR REQUIRED.
NOTE: DME/DME/IRU OR GPS REQUIRED.
NOTE: CROSS HAROB AT OR ABOVE 10000.
NOTE: FOR NON-GPS EQUIPPED AIRCRAFT DEPARTING RWY 16L,16C, 16R OLM DME MUST BE OPERATIONAL FOR HQM TRANSITION.

QUALITY 8 CHECKED

FEDERAL AVIATION ADMINISTRATION
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NOTE: FOR NON-GPS EQUIPPED AIRCRAFT DEPARTING RWYS 34L, 34C PAE DME MUST BE OPERATIONAL, ADDITIONALLY OLM DME MUST BE OPERATIONAL FOR HQM TRANSITION.
NOTE: FOR NON-GPS EQUIPPED AIRCRAFT DEPARTING RWY 34R PAE AND SEA DMES MUST BE OPERATIONAL, ADDITIONALLY OLM DME MUST BE OPERATIONAL FOR HQM TRANSITION.

TAKEOFF MINIMUMS:
RWY 16L, 16R: STANDARD WITH MINIMUM CLIMB OF 500 FT PER NM TO 3000, AND MINIMUM CLIMB OF 229 FT PER NM TO 10000.
RWY 16C: STANDARD WITH MINIMUM CLIMB OF 410 FT PER NM TO 3000, AND MINIMUM CLIMB OF 229 FT PER NM TO 10000.
RWY 34L, 34C, 34R: STANDARD WITH MINIMUM CLIMB OF 490 FT PER NM TO 3100.

TAKEOFF OBSTACLES NOTES:
NOTE: RWY 16L, TREES BEGINNING 2908 FT FROM DER, 1064 FT RIGHT OF CENTERLINE, UP TO 100 FT AGL/476 FT MSL.
NOTE: RWY 16C, TREES BEGINNING 4477 FT FROM DER, 484 FT RIGHT OF CENTERLINE, UP TO 100 FT AGL/507 FT MSL.
NOTE: RWY 16R, TREES, ANTENNA ON BUILDING AND LIGHT POLE BEGINNING 488 FT FROM DER, 436 FT LEFT OF CENTERLINE, UP TO 100 FT AGL/507 FT MSL. TREES BEGINNING 1137 FT FROM DER, 587 FT RIGHT OF CENTERLINE, UP TO 100 FT AGL/468 FT MSL.
NOTE: RWY 34L, FENCE 189 FT FROM DER, 401 FT RIGHT OF CENTERLINE, UP TO 12 FT AGL/420 FT MSL. TREES BEGINNING 4010 FT FROM DER, 857 FT LEFT OF CENTERLINE, UP TO 100 FT AGL/522 FT MSL.

CONTROLLING OBSTACLES:
OBSTACLE MANDATING ODP ROUTE DEVELOPMENT: RWYS 16L,16C, 16R, 34L, 34C, 34R: 14410 FT MSL TERRAIN 465107.40N/1214521.90W.

LOST COMMUNICATIONS PROCEDURES:

ADDITIONAL FLIGHT DATA:
REFERENCE MAG-VAR: 16E EPOCH YR 2020.
DME/DME ASSESSMENT: SAT (RNP 2.0).
CHART: TOP ALTITUDE: ASSIGNED BY ATC.

AIRPORTS SERVED:

AIRPORT NAME	CITY	STATE
SEATTLE-TACOMA INTL	SEATTLE	WA

COMMUNICATIONS:
ATIS, CLNC DEL, DEP CON.

FIXES AND/OR NAVAIDS:
SEATTLE VORTAC.

REMARKS:
ABBREVIATED AMENDMENT.

QUALITY 8 CHECKED

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FLIGHT INSPECTED BY: BRYAN VEIT — *Digitally signed by* ***BEV L BORDY*** Aug 01, 2017 — **OFFICE SYMBOL:** FICO — **DATE:** 6/27/17

DEVELOPED BY: SYLVAN DRAKES — *Digitally signed by* ***SYLVAN DRAKES*** May 22, 2017 — **OFFICE SYMBOL:** AJV-5433 — **DATE:** 05/02/2017

APPROVED BY: PATRICK MULQUEEN — *Digitally signed by* ***BEV L BORDY*** Aug 01, 2017 — **OFFICE SYMBOL:** AJV-5430 — **DATE:**

REQUIRED EFFECTIVE DATE:
ROUTINE.

COORDINATED WITH:

A4A	ALPA	AOPA	APA	HAI	NBAA
☒	☒	☒	☒	☐	☒

OTHER:
ATA, KSEA ATCT, APCH CON, ZSE ARTCC, WESTERN FPO.

CHANGES - REASONS:
1. UPDATED MAGNETIC VARIATION (MAG VAR) FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT (KSEA) - UPDATED FROM 17E (EPOCH YEAR 2010) "TO" 16E (EPOCH YEAR 2020) - MAGNETIC VARIATION UPDATE REQUIRED.
2. CHANGED VIA "TO" ON IN DP ROUTE DESCRIPTION - VIA NO LONGER USED.
3. UPDATED REFERENCE ADDITIONAL FLIGHT DATA MAG VAR DATA FROM KSEA 17E EPOCH YR 10 "TO" KSEA 16E EPOCH YR 2020.
4. ADDED SCHEDULED AIR CARRIERS (A4A) TO COORDINATED WITH.

QUALITY 8 CHECKED

FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE
DEPARTURE (DATA RECORD)

DP NAME	NUMBER	DP COMPUTER CODE	SUPERSEDED NUMBER	DATED	EFFECTIVE DATE
HAROB	SIX	HAROB6.HAROB	FIVE	10/15/2015	12 OCT 2017

FIX/NAVAID	LAT/LONG	C	FO/FB	LEG TYPE	TC	DIST (NM)	ALTITUDE	SPEED	REMARKS
RW16L (AER)	472749.66N/1221827.90W	N	-	-	-	-			CG 500 FT PER NM TO 3000
932 MSL		-	-	VA	180.34	-			CG 229 FT PER NM TO 10000
CAVOB	472346.29N/1221830.05W	Y	FO	DF	-	-			
RENBE	471913.31N/1221841.56W	Y	FB	TF	181.64	4.55	AT/ABOVE 3000		
RICHR	471824.08N/1222615.23W	Y	FB	TF	260.98	5.21			
EMRLD	471856.99N/1224610.79W	Y	FB	TF	272.44	13.57			
HAROB	471436.00N/1230227.00W	Y	FB	TF	248.65	11.90	AT/ABOVE 10000		
RW16C (AER)	472749.71N/1221839.55W	N	-	-	-				CG 410 FT PER NM TO 3000
932 MSL		-	-	VA	180.34				CG 229 FT PER NM TO 10000
OTLIE	472352.17N/1221841.62W	Y	FO	DF	-				
RENBE	471913.31N/1221841.56W	Y	FB	TF	179.99	4.65	AT/ABOVE 3000		
RICHR	471824.08N/1222615.23W	Y	FB	TF	260.98	5.21			
EMRLD	471856.99N/1224610.79W	Y	FB	TF	272.44	13.57			
HAROB	471436.00N/1230227.00W	Y	FB	TF	248.65	11.90	AT/ABOVE 10000		
RW16R (AER)	472749.81N/1221904.29W	N	-	-	-				CG 500 FT PER NM TO 3000
932 MSL		-	-	VA	180.33				CG 229 FT PER NM TO 10000
WESET	472421.05N/1221906.07W	Y	FO	DF	-				
RENBE	471913.31N/1221841.56W	Y	FB	TF	176.90	5.14	AT/ABOVE 3000		
RICHR	471824.08N/1222615.23W	Y	FB	TF	260.98	5.21			
EMRLD	471856.99N/1224610.79W	Y	FB	TF	272.44	13.57			
HAROB	471436.00N/1230227.00W	Y	FB	TF	248.65	11.90	AT/ABOVE 10000		

QUALITY 8 CHECKED

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FLIGHT STANDARDS SERVICE
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FIX/NAVAID	LAT/LONG	C	FO/FB	LEG TYPE	TC	DIST (NM)	ALTITUDE	SPEED	REMARKS
RW34L (AER)	472625.92N/1221905.01W	N	-	-	-	-			CG 490 FT PER NM TO 3100
932 MSL		-	-	VA	000.33	-			
CUSBU	472954.68N/1221903.23W	Y	FO	DF	-	-			
WUREL	473319.52N/1221836.66W	Y	FB	TF	005.02	3.43	AT/ABOVE 3100		
ATOME	473627.23N/1222147.61W	Y	FB	TF	325.48	3.80			
BREMM	473712.00N/1222806.00W	Y	FB	TF	279.96	4.33			
HAROB	471436.00N/1230227.00W	Y	FB	TF	226.10	32.48	AT/ABOVE 10000		
RW34C (AER)	472616.69N/1221840.36W	N	-	-	-	-			CG 490 FT PER NM TO 3100
932 MSL		-	-	VA	000.34	-			
NESOE	472955.64N/1221838.45W	Y	FO	DF	-	-			
WUREL	473319.52N/1221836.66W	Y	FB	TF	000.34	3.40	AT/ABOVE 3100		
ATOME	473627.23N/1222147.61W	Y	FB	TF	325.48	3.80			
BREMM	473712.00N/1222806.00W	Y	FB	TF	279.96	4.33			
HAROB	471436.00N/1230227.00W	Y	FB	TF	226.10	32.48	AT/ABOVE 10000		
RW34R (AER)	472552.22N/1221828.94W	N	-	-	-	-			CG 490 FT PER NM TO 3100
932 MSL		-	-	VA	000.34	-			
DODVE	472955.59N/1221826.80W	Y	FO	DF	-	-			
WUREL	473319.52N/1221836.66W	Y	FB	TF	358.13	3.40	AT/ABOVE 3100		
ATOME	473627.23N/1222147.61W	Y	FB	TF	325.48	3.80			
BREMM	473712.00N/1222806.00W	Y	FB	TF	279.96	4.33			
HAROB	471436.00N/1230227.00W	Y	FB	TF	226.10	32.48	AT/ABOVE 10000		

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FLIGHT STANDARDS SERVICE
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DP NAME	NUMBER	DP COMPUTER CODE	SUPERSEDED NUMBER	DATED	EFFECTIVE DATE
HAROB	SIX	HAROB6.HAROB	FIVE	10/15/2015	12 OCT 2017

FIX/NAVAID	LAT/LONG	C	FO/FB	LEG TYPE	TC	DIST (NM)	ALTITUDE	SPEED	REMARKS
HAROB	471436.00N/1230227.00W	Y	-	IF	-	-			HAROB6.ERAVE
ERAVE	465435.00N/1232406.00W	Y	FB	TF	216.59	24.90			
HAROB	471436.00N/1230227.00W	Y	-	IF	-	-			HAROB6.FEPOT
FEPOT	470451.00N/1231308.00W	Y	FB	TF	216.84	12.18			
HAROB	471436.00N/1230227.00W	Y	-	IF	-	-			HAROB6.HISKU
FEPOT	470451.00N/1231308.00W	Y	FB	TF	216.84	12.18			
HISKU	443000.00N/1225639.00W	Y	FB	TF	175.64	155.32			
HAROB	471436.00N/1230227.00W	Y	-	IF	-	-			HAROB6.HQM
HQM VORTAC	465649.35N/1240857.37W	Y	FB	TF	249.03	48.80			

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