

**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.

<u>AIRPORT ID</u> BWI	<u>PROCEDURE NAME</u> RNAV (RNP) X RWY 33L	<u>ORIGINAL/AMENDMENT</u> ORIG	<u>CITY</u> BALTIMORE	<u>STATE</u> MD
<u>AIRPORT ELEVATION</u> 143	<u>TDZE</u> 143	<u>SUPERSEDED</u>	<u>ORIGINAL/AMENDMENT</u> NONE	<u>DATED</u>
<u>FACILITY</u> RNAV	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u>	<u>REQUIRED EFFECTIVE DATE</u> ROUTINE	<u>MAG VAR</u> 11W <u>CANCEL/SUSPEND</u>
				<u>EPOCH YEAR</u> 2000

TERMINAL ROUTES

<u>FROM</u>	<u>FIX TYPE</u>	<u>TO</u>	<u>FIX TYPE</u>	<u>LEG TYPE</u>	<u>FO/FB</u>	<u>RNP</u>	<u>COURSE</u>	<u>DISTANCE</u>	<u>ALTITUDE</u>
KOOLZ	IAF	WICCA		TF	FB	1.00	356.98	6.29	3000
WICCA	IF	VGEGA		TF	FB	1.00	356.57	4.40	1800
VGEGA	PFAF	* RANKS		TF	FB	0.30	356.30	2.56	
RANKS		* BRDLE		RF	FB	0.30	(1.26 NM RADIUS CCW (CFLBT))	0.46	
BRDLE		* RW33L	MAP	TF	FO	0.30	335.23	2.05	
RW33L	MAP	479 MSL		CA			335.23		
479 MSL		BMORE		DF	FO	1.00			3000

MISSED APPROACH

MAP:

RNP: DA

MISSED APPROACH INSTRUCTIONS:

CLIMB TO 3000 DIRECT BMORE AND HOLD.

ALTERNATE MISSED APPROACH INSTRUCTIONS:

PROFILE:

- PT SIDE OF COURSE OUTBOUND FT WITHIN MILES OF (IAF)
- PROFILE STARTS AT WICCA
- FAC: * PFAF: VGEGA DIST PFAF TO MAP: DIST PFAF TO THLD:
- MIN ALT: WICCA 3000, VGEGA 1800
- DIST TO THLD FROM PFAF: 5.06 MM: IM: 150 HAT: 336 HAT: 0.92 GS ANT:
- MIN GP INCPT: 1800 GP ALT AT PFAF: VGEGA 1800, RANKS 986, BRDLE 839 OM: MM: IM:
- GP ANGLE: 3.00 34:1: IS CLEAR 20:1: IS CLEAR TCH: 55.4
- MSA FROM: RW33L 2600



PBN REQUIREMENTS NOTE:

RNP AR APCH - GPS, RF.

NOTES:

CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, PROCEDURE NA BELOW -11°C OR ABOVE 54°C.
CHART PROFILE NOTE: VGS1 AND RNAV GLIDEPATH NOT COINCIDENT (VGS1 ANGLE {ANGLE}/TCH {FEET}).
CHART SPEED ICON IN PLANVIEW AT KOOLZ: MAX 210 KIAS.

ADDITIONAL FLIGHT DATA:

HOLD NW, RT, 155.10 INBOUND.
CHART MANDATORY 5000 AT KOOLZ.

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*	479	2600	336	479	2600	336	479	2600	336	479	2600	336			

CHANGES - REASONS

ORIGINAL PROCEDURE.

COORDINATED WITH:

A4A ALPA AOPA APA HAI NBAA

OTHER: ZDC, POTOMAC APP CON, BWI ATCT, AMGR.

FLIGHT CHECKED BY

MICHAEL G CAMPBELL

ERIC N SUSKI

Jul 25, 2024

Digitally signed by

OFFICE

FPO

DATE

07/23/2024

DEVELOPED BY

ERIC N SUSKI (JUDITH TUTTLE)

ERIC N SUSKI

Jun 13, 2024

OFFICE

AJV-A431

DATE

01/31/2024

APPROVED BY

ERIC N SUSKI

Digitally signed by

ERIC N SUSKI

Jun 13, 2024

OFFICE

AJV-A431

DATE

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>
BWI	RNAV (RNP) X RWY 33L	ORIG	BALTIMORE	MD	143	RNAV

PART A: OBSTRUCTION DATA SEGMENTS

INITIAL

FROM KOOLZ **TO** WICCA

RNP 1.00 **DISTANCE** 6.29 **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>
TOWER (24-000913)	390036.77N/0763631.88W	1049	20	3	1A	1000				AC3 AT948	3000
TERRAIN	390100.00N/0763403.00W	187 (200)								AS1500	1700

COMPUTATIONS

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

SEGMENT REMARKS:

INTERMEDIATE

FROM WICCA **TO** VGEGA

RNP 1.00 **DISTANCE** 4.40 **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>
TOWER (24-000913)	390036.77N/0763631.88W	1049	20	3	1A	500				AC3 AT248	1800
TERRAIN	390303.00N/0763657.00W	209 (200)								AS1500	1700

COMPUTATIONS

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

SEGMENT REMARKS:



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AIRPORT ELEVATION
143

FACILITY
RNAV

FINAL

FROM
VGEGA

TO
RANKS

RNP
0.30

DISTANCE
2.56

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>
							ASC				986

COMPUTATIONS

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

SEGMENT REMARKS:

FINAL STEPDOWN

FROM
RANKS

TO
BRDLE

RNP
0.30

DISTANCE
0.46

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>
							ASC				839

COMPUTATIONS

RF SEGMENT ALT KIAS KTAS HAA VKTW TR BA DTA COURSE CHANGE DVEB VEB OCS RF CENTER FIX/DISTANCE
RANKS-BRDLE 986 165 171.74 842.4 21.7 1.26 23.47 0 0 4279.36 21.25:1 (CFLBT)/0.46 NM

SEGMENT REMARKS:

FINAL STEPDOWN

FROM
BRDLE

TO
RW33L

RNP
0.30

DISTANCE
2.05

PAT

MAP
DA

HAT
336

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>
TREE	390854.00N/0763951.00W	212	215	8	4B		21.25:1			AC8	479

COMPUTATIONS

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

SEGMENT REMARKS:



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FACILITY
RNAV

MISSED APPROACH: LEVEL SURFACE

FROM
DA **TO**
BMORE

RNP
0.30-1.00

DISTANCE

PAT

MAP

HAT

HMAS
318

OBSTRUCTION	COORDINATES	ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
							ASC				3000
TOWER (24-000450)	391716.23N/0764537.03W	1464	20	3	1A	1000					2500
TERRAIN	392221.00N/0764827.00W	590 (600)								AS1500	2100

COMPUTATIONS

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

SEGMENT REMARKS:

MSA

CENTER **RADIUS**
RW33L 25

SECTOR	OBSTRUCTION	COORDINATES	BEARING	DISTANCE	ELEV MSL	HORZ	VERT	AC	ROC	OCS	ADJUSTMENTS	MIN ALT
360-360	TOWER (24-000503)	393659.00N/0765136.00W	352	28.5	1598	500	125	5E	1000			2600

MSA REMARKS:

NOTES/EXPLANATIONS FROM PROCEDURE SEGMENTS:



AIRPORT ID
BWI

PROCEDURE NAME
RNAV (RNP) X RWY 33L

AMDT NO.
ORIG

CITY
BALTIMORE

STATE
MD

AIRPORT ELEVATION
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FACILITY
RNAV

PART B: SUPPLEMENTAL DATA

COMMUNICATIONS WITH

KBWI TOWER

WX SERVICE ASOS	LOCATION BWI	HRS OPERATION 24	ALTIMETER SOURCE BWI	DISTANCE 0	SERVICE-A Y	ADJUSTMENTS 0
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BACK-UP WX SERVICE	LOCATION	HRS OPERATION	ALTIMETER SOURCE	DISTANCE	SERVICE-A	ADJUSTMENTS
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WX REMARKS:

BACKUP ALTIMETER SETTING NOT REQUIRED; REDUNDANT LOCAL SOURCES EXIST.

PRIMARY NAVAID	MONITOR POINT	HRS OPERATION	CAT
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APPROACH AND RUNWAY LIGHTING SYSTEM	RUNWAY MARKINGS	RUNWAY VISUAL RANGE
RW10 - ALSF-2, HIRL, TDZ, C/LINE, PAPI-4R	PIR-G	APPROACH, MIDPOINT, ROLL OUT
RW15L - REIL, HIRL, PAPI-4L	PIR-G	APPROACH, ROLL OUT
RW15R - MALSR, HIRL, C/LINE, PAPI-4R	PIR-G	APPROACH, MIDPOINT, ROLL OUT
RW28 - MALSR, HIRL, C/LINE, PAPI-4L	PIR-G	APPROACH, MIDPOINT, ROLL OUT
RW33L - MALSR, HIRL, C/LINE, TDZ, PAPI-4L	PIR-G	APPROACH, MIDPOINT, ROLL OUT
RW33R - MALSR, HIRL, REIL, PAPI-4L	PIR-G	APPROACH, ROLL OUT

GLIDESLOPE ANGLE 3.00	ELEV RWY THRESHOLD 132.0	TCH 55.4	ELEV GS ANTENNA	DISTANCE FROM RWY	VGSI ANGLE 3.00	TCH 72.3
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FINAL APPROACH COURSE AIMING

RUNWAY THRESHOLD	<input checked="" type="checkbox"/>	FT FROM THRESHOLD	DISPLACED THRESHOLD DISTANCE	500
ON CENTERLINE	<input checked="" type="checkbox"/>	FT FROM CENTERLINE		

CRITICAL TEMPERATURES

CRITICAL LOW -11C	CRITICAL HIGH +54C	ACT -11C	APT ISA +14.72C
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CRITICAL TEMPERATURE REMARKS:

AVERAGE COLD TEMPERATURE DERIVED FROM 5-YEAR HISTORY (2018-2022).
CRITICAL LOW TEMPERATURE BASED ON ACT.
DESCENT RATE (FPM): STANDARD TEMP 957 HIGH TEMP 1262.

"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.

100 FOOT TREES USED PER EASTERN FPT.

VDP NOT ESTABLISHED - RNP PROCEDURE.

MANDATORY ALTITUDE AT KOOLZ REQUIRED BY ATC (MATCH RESTRICTION ON TROYZ STAR).

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	3.18
WIDTH OF	FINAL	SEGMENT AT 1000FT POINT	1.20
TRUE COURSE OF	FINAL	SEGMENT CONTAINING 1000FT POINT	356.30
HIGH TERRAIN IN	FINAL	SEGMENT CONTAINING 1000FT POINT	200
DISTANCE FROM	THLD	TO 1500FT POINT	4.75
WIDTH OF	FINAL	SEGMENT AT 1500FT POINT	1.20
TRUE COURSE OF	FINAL	SEGMENT CONTAINING 1500FT POINT	356.30
HIGH TERRAIN IN	FINAL	SEGMENT CONTAINING 1500FT POINT	200

THRESHOLD COORDINATES (IF STR-IN) 390955.14N/0763948.33W
ARP COORDINATES 391032.62N/0764008.37W
RUNWAY APCH END AND DIST FURTHEST FROM ARP RUNWAY 10 DISTANCE 0.96 NM
FAF COORDINATES 390522.03N/0763710.97W
FIX NAME COORDINATES

REMARKS

THLD DISPLACED 500FT, ACTUAL COORDINATES: 390951.13N/0763944.61W

PART E: PREPARED BY

NAME
ERIC N SUSKI (JUDITH TUTTLE)

OFFICE
AJV-A431

DATE
01/31/2024

TITLE
AERONAUTICAL INFORMATION SPECIALIST

