

**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</u> RALEIGH-DURHAM INTL	<u>AIRPORT ID</u> KRDU	<u>PROCEDURE NAME</u> RNAV (RNP) Z RWY 5L	<u>ORIGINAL/AMENDMENT</u> 3	<u>CITY</u> RALEIGH/DURHAM	<u>STATE</u> NC
<u>AIRPORT ELEVATION</u> 435	<u>TDZE</u> 384	<u>SUPERSEDED</u> RNAV (RNP) Z RWY 5L	<u>ORIGINAL/AMENDMENT</u> 2B	<u>DATED</u> 05/24/2018	<u>MAG VAR</u> 9W
<u>FACILITY</u> RNAV	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u> 25 FEBRUARY 2021	<u>REQUIRED EFFECTIVE DATE</u> ROUTINE	<u>CANCEL/SUSPEND</u>	<u>EPOCH YEAR</u> 2020

TERMINAL ROUTES

THIS IS A CORRECTED COPY OF A PROCEDURE ORIGINALLY PUBLISHED IN TL 21-03.

FROM	FIX TYPE	TO	FIX TYPE	LEG TYPE	FO/FB	RNP	COURSE	DISTANCE	ALTITUDE
OTTOS	IAF	CHWDR		TF	FB	1.00	067.92	6.38	5000
CHWDR	IAF	BOULE		TF	FB	1.00	054.02	3.14	4000
BOULE		SCHOO		TF	FB	1.00	054.05	2.65	3000
SCHOO	IF	WEPAS		TF	FB	1.00	054.07	3.00	2200
HEAVE	IF	JEMMY		TF	FB	1.00	234.13	2.72	5100
JEMMY		ZOSAP		TF	FB	1.00	234.10	1.55	4700
ZOSAP		WEPAS	PFAF	RF	FB	1.00	(2.50 NM RADIUS CCW (CFVVL))	7.86	2200
WEPAS	PFAF	RW05L	MAP	TF	FO	0.30	054.09	5.58	
RW05L	MAP	1000 MSL		CA			54.09		1000
1000 MSL		DUHAM		DF	FO	1.00			2200

MISSED APPROACH

MAP:

RNP: DA

MISSED APPROACH INSTRUCTIONS:

CLIMB TO 1000 THEN CLIMBING LEFT TURN TO 2200 DIRECT DUHAM AND HOLD.

ALTERNATE MISSED APPROACH INSTRUCTIONS:



PROFILE:

1. PT	SIDE OF COURSE	OUTBOUND	FT WITHIN	MILES OF	(IAF)
2. PROFILE STARTS AT WEPAS					
3. FAC:	054.09	PFAF: WEPAS	DIST PFAF TO MAP:		DIST PFAF TO THLD:
4. MIN ALT:	WEPAS 2200				
5. DIST TO THLD FROM OM:	5.58	MM:	IM:	150 HAT:	300 HAT: 0.82
6. MIN GP INCPT:	2200	GP ALT AT PFAF : WEPAS 2200		OM:	GS ANT:
7. GP ANGLE:	3.00	34:1: IS CLEAR	20:1: IS CLEAR	TCH: 57.4	MM: IM:
8. MSA FROM:	RW05L 3400				

PBN REQUIREMENTS NOTE:

RNP AR APCH - GPS. ←

NOTES:

CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, PROCEDURE NA BELOW -12°C OR ABOVE 54°C.
CHART PROFILE NOTE: SEE PLANVIEW FOR MULTIPLE IF LOCATIONS.
CHART PROFILE NOTE: VGSI AND RNAV GLIDEPATH NOT COINCIDENT (VGSI ANGLE {ANGLE}/TCH {FEET}).
CHART PLANVIEW NOTE ADJACENT TO HEAVE: RF REQUIRED.
CHART NOTE: SIMULTANEOUS APPROACH AUTHORIZED, EXCEPT FOR ARRIVALS AT HEAVE.
CHART NOTE: FOR INOPERATIVE ALS, INCREASE RNP 0.10 ALL CATS VISIBILITY TO RVR 4500.
CHART PLANVIEW NOTE AT OTTOS: MAX 210 KIAS.
CHART PLANVIEW NOTE AT HEAVE: MAX 210 KIAS UNTIL WEPAS.
CHART PLANVIEW NOTE AT CHWDR: MAX 210 KIAS.

ADDITIONAL FLIGHT DATA:

CHART MANDATORY 6000 AT HEAVE.
CHART MANDATORY 6000 AT OTTOS.
HOLD N, RT, 172.91 INBOUND.
DISTANCE TO THLD FROM 300 HAT: 0.82 NM.



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 0.10 DA	684	2400	300	684	2400	300	684	2400	300	684	2400	300			
RNP 0.30 DA	780	3500	396	780	3500	396	780	3500	396	780	3500	396			

1/12/2021: THIS IS A CORRECTED COPY OF THE FORM APPROVED ON 11/9/2020.

1.CORRECTED PBN REQUIREMENT NOTE TO ADD "GPS".



CHANGES - REASONS

1. RNP 0.10 DA/HAT DECREASED FROM 727/343 TO 684/300; VISIBILITY DECREASED FROM RVR 3000 TO 2400. - NEW OBSTACLE EVALUATION; NEW VISCHECK VALUES.
2. RNP 0.30 DA/HAT DECREASED FROM 821/437 TO 780/396; VISIBILITY DECREASED FROM RVR 5000 TO 3500. - NEW OBSTACLE EVALUATION; NEW VISCHECK VALUES.
3. UPDATED IAF TRANSITION FROM OTTOS; OTTOS COURSE/LENGTH UPDATED FROM 063.87/7.08 TO 067.92/6.38, ALTITUDE UPDATED FROM 4300 TO 5000. - STEPDOWN WAYPOINTS CHWDR AND PRANK ADDED.
4. SCHOO (IF) TO VANZI (FAF) UPDATED TO SCHOO (IF) TO WEPAS (FAF); COURSE/LENGTH UPDATED FROM 054.04/7.70 TO 054.07/3.00, ALTITUDE UPDATED FROM 1900 TO 2200. - VANZI REPLACED WITH WEPAS TO MATCH ILS OR LOC RWY 5L/RNAV (GPS) Y RWY 5L PER FPT REQUEST.
5. HEAVE (IF) TO JEMMY COURSE/LENGTH UPDATED FROM 234.19/3.01 TO 234.13/2.72, ALTITUDE UPDATED FROM 5000 TO 5100. - POINTS HEAVE AND JEMMY MOVED PER FPT REQUEST.
6. JEMMY TO ZOSAP COURSE/LENGTH UPDATED FROM 233.94/0.70 TO 234.10/1.55. - POINTS JEMMY AND ZOSAP MOVED PER FPT REQUEST
7. ZOSAP TO VANZI (FAF) UPDATED TO ZOSAP TO WEPAS (FAF); LENGTH UPDATED FROM 7.85 TO 7.86, ALTITUDE UPDATED FROM 1900 TO 2200. - VANZI REPLACED WITH WEPAS TO MATCH ILS OR LOC RWY 5L/RNAV (GPS) Y RWY 5L PER FPT REQUEST.
8. VANZI (FAF) TO RW05L UPDATED TO WEPAS (FAF) TO RW05L; COURSE/LENGTH UPDATED FROM 054.10/4.63 TO 054.09/5.58. - VANZI REPLACED WITH WEPAS TO MATCH ILS OR LOC RWY 5L/RNAV (GPS) Y RWY 5L PER FPT REQUEST.
9. RW05L (MAP) TO MAPPI, MAPPI TO ESTMA UPDATED TO RW05L TO 1000 MSL, 1000 MSL TO DUHAM; ALTITUDE UPDATED FROM 3000 TO 2200. - CA LEG ADDED; PER FPT REQUEST.
10. MISSED APPROACH INSTRUCTIONS UPDATED FROM "CLIMB TO 3000 ON TRACK 054.14 TO MAPPI AND ON TRACK 003.97 TO ESTMA AND HOLD" TO "CLIMB TO 1000 THEN CLIMBING LEFT TURN TO 2200 DIRECT DUHAM AND HOLD. - PER FPT REQUEST.
11. UPDATED PROFILE STARTS AT VANZI TO PROFILE STARTS AT WEPAS; PROFILE LINE 3: FAC CHANGED FROM 054.10 TO 054.09; FAF UPDATED FROM VANZI TO WEPAS. - VANZI REPLACED WITH WEPAS TO MATCH ILS OR LOC RWY 5L/RNAV (GPS) Y RWY 5L PER FPT REQUEST.
12. UPDATED PROFILE LINE 4: MIN ALT CHANGED FROM VANZI 1900 TO WEPAS 2200. - PER FPT REQUEST.
13. UPDATED PROFILE LINE 5: DIST TO THLD FROM OM: FROM 4.63 TO 5.58; DISTANCE TO THLD FROM 343 HAT: 0.89 TO 300 HAT: 0.82; AND "DISTANCE TO THLD FROM 343 HAT: 0.89 NM" REMOVED FROM ADDITIONAL FLIGHT DATA. - VANZI REPLACED WITH WEPAS PER FPR REQUEST; RNP 0.10 DA DECREASED DUE TO NEW CONTROLLER.
14. UPDATED PROFILE LINE 6: MIN GP INCPT: FROM 1900 TO 2200; GP ALT AT PFAF: FROM VANZI 1900 TO WEPAS 2200. - VANZI REPLACED WITH WEPAS PER FPR REQUEST
15. PBN REQUIREMENTS NOTE: RNP AR APCH ADDED; PBN REQUIREMENTS NOTE: RNP AR APCH REMOVED. - IAW 8260.58A TABLE 1-2-1.
16. UPDATED CHART NOTE FROM "FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -9C OR ABOVE 47C" TO "FOR UNCOMPENSATED BARO-VNAV SYSTEMS, PROCEDURE NA BELOW -12C OR ABOVE 54C. - IAW 8260.19H 8-6-9 S; UPDATED WEATHER STUDY (2014-2018) USED FOR SLOPE CALCULATIONS AND TO DETERMINE UPPER/LOWER TEMPERATURE LIMITS FOR UNCOMPENSATED BARO-VNAV SYSTEMS.
17. UPDATED CHART NOTE: FROM "FOR INOPERATIVE ALS, INCREASE RNP 0.10 DA ALL CATS VISIBILITY TO RVR 6000 AND RNP 0.30 ALL CATS VISIBILITY TO 1 3/8 SM" TO "FOR INOPERATIVE ALS, INCREASE RNP 0.10 ALL CATS VISIBILITY TO RVR 4500". - RECOMPUTED USING VISI CHECK APPLICATION AND FORMATTED IAW 8260.19H PARA 8-6-11 O(3)(D).
18. ADDITIONAL FLIGHT DATA: UPDATED MAX SPEED AT OTTOS FROM 230 KIAS TO 210 KIAS. - PER FPT REQUEST.
19. ADDITIONAL FLIGHT DATA: UPDATED CHART MINIMUM ALTITUDE 5000 AT HEAVE TO CHART MANDATORY 6000 AT HEAVE. - PER FPT REQUEST.
20. ADDITIONAL FLIGHT DATA: DELETED "ROUTE TYPE: A, H," "ROUTE TYPE QUALIFIER 1: F" AND "ROUTE TYPE QUALIFIER 2: S." - NO LONGER A DOCUMENTATION REQUIREMENT.
21. ADDITIONAL FLIGHT DATA: UPDATED MISSED APPROACH HOLD FROM "HOLD NE, RT, 205.00 INBOUND" TO "HOLD N, RT, 172.91 INBOUND." - PER FPT REQUEST.
22. UPDATED "CHART NOTE: SIMULTANEOUS APPROACH AUTHORIZED" TO "CHART NOTE: SIMULTANEOUS APPROACH AUTHORIZED, EXCEPT FOR ARRIVALS AT HEAVE." - TO MATCH RNAV (RNP) Z RWY 5R.
23. REMOVED CHART NOTE: USE OF FD OR AP PROVIDING RNAV TRACK GUIDANCE REQUIRED DURING SIMULTANEOUS OPERATIONS. - NO LONGER REQUIRED.
24. REMOVED CHART PLANVIEW NOTE: RADAR REQUIRED FROM JEMMY TO ZOSAP. - NO LONGER REQUIRED.
25. REMOVED "PBN REQUIREMENTS NOTE: ADJACENT TO HEAVE: RF REQUIRED." ADDED "CHART PLANVIEW NOTE ADJACENT TO HEAVE: RF REQUIRED." - IAW 8260.19H 4-6-10 H(2).
26. ADDITIONAL FLIGHT DATA: REMOVED "CHART: 379 OL LOC," REMOVED "CHART LOC RWY 5R," REMOVED "CHART FAS OBST: 510 TOWER." - NOT REQUIRED ON RNP PROCEDURES.

04/28/2020: THIS IS AN UPDATED COPY OF THE FORM DEVELOPED ON: 12/19/2019:

1. ADDED IAF AT CHWDR IN TERMINAL ROUTES.
2. REPLACED FIX PRANK WITH FIX BOULE.

COORDINATED WITH:

A4A ☒ **ALPA** ☒ **AOPA** ☒ **APA** ☒ **HAI** ☐ **NBAA** ☒ **OTHER:** ZDU, RDU APP CON, RDU ATCT, AMGR

FLIGHT CHECKED BY

THOMAS ROBERT CONKLIN

Digitally signed by

WARDELL HENNING

Nov 09, 2020

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FIOG

DATE

03/04/2020

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DATE

12/19/2019

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