

**FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE
ILS STANDARD INSTRUMENT APPROACH PROCEDURE
TITLE 14 CFR PART 97.29**

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> KRNO	<u>PROCEDURE NAME</u> ILS Z OR LOC Z RWY 17R	<u>ORIGINAL/AMENDMENT</u> 1	<u>CITY</u> RENO	<u>STATE</u> NV		
<u>AIRPORT ELEVATION</u> 4415	<u>TDZE</u> 4415	<u>SUPERSEDED</u> ILS Z OR LOC Z RWY 16R	<u>ORIGINAL/AMENDMENT</u> ORIG-B	<u>DATED</u> 04/26/2018	<u>MAG VAR</u> 13E	<u>EPOCH YEAR</u> 2020
<u>FACILITY</u> I-RNO	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u> 3 NOVEMBER 2022	<u>REQUIRED EFFECTIVE DATE</u> 11/03/2022	<u>CANCEL/SUSPEND</u>		

TERMINAL ROUTES

FROM	FIX TYPE	TO	FIX TYPE	LEG TYPE	FO/FB	RNP	COURSE	DISTANCE	ALTITUDE
HOBOA	IAF	JUDPU		TF	FB	1.00	036.81	18.03	12200
JUDPU		ZONBI		TF	FB	1.00	004.62	11.32	10700
ZONBI		AMIES		RF	FB	1.00	(3.99 NM RADIUS CW (CFCDH))	6.52	9400
AMIES		WALAR		RF	FB	1.00	(3.76 NM RADIUS CW (CFBSB))	4.51	8000
LIBGE	IAF	ROARS		TF	FB	1.00	167.08	6.55	9200
ROARS		WALAR		TF	FB	1.00	167.12	4.00	8000
WINRZ	IAF	WALAR		TF	FB	1.00	216.00	9.70	8000
KLOCK	IAF	BELBE		TF	FB	1.00	330.75	8.90	9000
BELBE	IF	SLABS		TF	FB	1.00	330.72	4.40	9000
SLABS		ZOMPO		RF	FB	1.00	(3.01 NM RADIUS CCW (CFDRJ))	8.58	7500
WALAR	IF	ZOMPO/I-RNO 12.75 DME		CF	FB		167.12	4.11	7500
ZOMPO/I-RNO 12.75 DME		DISCS/I-RNO 10.75 DME		CF	FB		167.12	2.00 (I-RNO)	7400
DISCS/I-RNO 10.75 DME	FAF	HONEL/I-RNO 8.16 DME		CF	FB		167.12	2.59 (I-RNO)	
HONEL/I-RNO 8.16 DME		WUMKA/I-RNO 2.46 DME	MAP	CF	FO		167.12	5.70 (I-RNO)	
WUMKA/I-RNO 2.46 DME	MAP	4615 MSL		CA			167.12		
4615 MSL		ZAKBI		DF	FB	1.00			
ZAKBI		USINE		TF	FB	1.00	182.59	6.69	
USINE		YARKU		TF	FO	1.00	127.37	9.36	13000

QUALITY
10
CHECKED

MISSED APPROACH

MAP:

ILS: DA
LOC: WUMKA/I-RNO 2.46 DME

MISSED APPROACH INSTRUCTIONS:

CLIMB TO 13000 ON THE RNAV MISSED APPROACH ROUTE TO YARKU AND HOLD, CONTINUE CLIMB-IN-HOLD TO 13000.
*MISSED APPROACH REQUIRES MINIMUM CLIMB OF 390 FEET PER NM TO 8000.

ALTERNATE MISSED APPROACH INSTRUCTIONS:

PROFILE:

1. PT	SIDE OF COURSE	OUTBOUND	FT WITHIN	MILES OF	(IAF)
2. PROFILE STARTS AT WALAR					
3. FAC:	167.12	FAF: DISCS/I-RNO 10.75 DME	DIST FAF TO MAP: 8.29	DIST FAF TO THLD: 8.89	
4. MIN ALT:	WALAR 8000, ZOMPO/I-RNO 12.75 DME 7500, DISCS/I-RNO 10.75 DME 7400, HONEL/I-RNO 8.16 DME 6540				
5. DIST TO THLD FROM OM:	MM:	IM:	150 HAT:	200 HAT: 0.43	GS ANT: 1200
6. MIN GP INCPT:	7400	GP ALT AT PFAF :	DISCS/I-RNO 10.75 DME 7400	OM:	MM: IM:
7. GP ANGLE:	3.10	34:1:	20:1:	TCH: 59.0	
8. MSA FROM:	ARP KRNO 12000				

PBN REQUIREMENTS NOTE:

DME REQUIRED.
RNP APCH - GPS.

NOTES:

CHART NOTE: CIRCLING RWY 8 NA AT NIGHT.
CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT LIGBE ON V165 AND T274 NORTHWEST BOUND.
CHART PROFILE NOTE: SEE PLANVIEW FOR MULTIPLE IF LOCATIONS.
CHART PROFILE NOTE: VGSI AND ILS GLIDEPATH NOT COINCIDENT (VGSI ANGLE {ANGLE}/TCH {FEET}).
CHART NOTE: # FOR INOPERATIVE ALS, INCREASE S-ILS 17R ALL CATS VISIBILITY TO 2 SM.
CHART NOTE: *RVR 1800 AUTHORIZED WITH USE OF FD OR AP OR HUD TO DA.
CHART SPEED ICON IN PLANVIEW AT JUDPU: MAX 230 KIAS.
CHART SPEED ICON IN PLANVIEW AT LIBGE: MAX 230 KIAS.
CHART SPEED ICON IN PLANVIEW AT WINRZ: MAX 230 KIAS.
CHART SPEED ICON IN PLANVIEW AT KLOCK: MAX 210 KIAS.
CHART SPEED ICON IN PLANVIEW AT BELBE: MAX 210 KIAS.

ADDITIONAL FLIGHT DATA:

CHART AT OR ABOVE 12000 AT LIBGE.
CHART AT OR ABOVE 10000 AT KLOCK.
CHART AT OR ABOVE 11000 AT WINRZ.
CHART AT OR ABOVE 16000 AT HOBOA.
CHART CIRCLING ICON
CHART MANDATORY 7500 AT ZOMPO
FAS OBST: 5450 AAO 393711N/1194729W.
HOLD S, RT, 349.76 INBOUND.
CHART FAS OBST: 5101 VEGETATION (32-064569) 393449N/1194532W.
CHART VDP AT 4.69 DME.
DISTANCE VDP TO THLD 2.83 NM.



MINIMUMS:
TAKEOFF: SEE FAA FORM 8260-15A FOR THIS AIRPORT

ALTERNATE: NA ILS: CAT A, B, C, D 800-2; LOC: CAT A, B 1100-2, CAT C, D 2100-3

CATEGORY:	A			B			C			D			E		
	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
S-ILS 17R*	4615	2400	200	4615	2400	200	4615	2400	200	4615	2400	200			
S-ILS 17R#	5138	1 5/8	723	5138	1 5/8	723	5138	1 5/8	723	5138	1 5/8	723			
S-LOC 17R	5420	4000	1005	5420	5500	1005	5420	2 1/2	1005	5420	2 1/2	1005			
CIRCLING	5420	1 1/4	1005	5420	1 1/2	1005	6480	3	2065	6480	3	2065			



CHANGES - REASONS

1. COURSE FROM HOBOA TO JUDPU CHANGED FROM 033.81 TO 036.81 -- MAGNETIC VARIATION CHANGED FROM 16 E TO 13 E.
2. DISTANCE FROM HOBOA TO JUDPU 19.78 TO 18.03 - JUDPU MOVED 1.75 NM SOUTHWEST.
3. COURSE FROM JUDPU TO ZONBI CHANGED FROM 356.04 TO 004.62 -- MAGNETIC VARIATION CHANGED FROM 16 E TO 13 E AND JUDPU MOVED 1.75 NM SOUTHWEST AND ZONBI MOVED 2433.75 FT NORTHEAST.
4. DISTANCE FROM JUDPU TO ZONBI CHANGED FROM 9.49 TO 11.32 -- JUDPU MOVED 1.75 NM SOUTHWEST AND ZONBI MOVED 2433.75 FT NORTHEAST.
5. DISTANCE ZONBI TO AMIES CHANGED FROM 6.93 TO 6.52 - ZONBI MOVED 1.75 NM SOUTHWEST.
6. CHANGED PROCEDURE NAME FROM ILS Z OR LOC Z RWY 16R TO ILS Z OR LOC Z RWY 17R - MAGNETIC VARIATION CHANGED FROM 16 E TO 13 E.
7. CHANGED COURSE FROM LIBGE TO ROARS FROM 164.08 TO 167.08 - MAGNETIC VARIATION CHANGED FROM 16 E TO 13 E.
8. CHANGED COURSE FROM ROARS TO WALAR FROM 164.12 TO 167.12 - MAGNETIC VARIATION CHANGED FROM 16 E TO 13 E.
9. CHANGED COURSE FROM WINRZ TO WALAR FROM 213.00 TO 216.00 - MAGNETIC VARIATION CHANGED FROM 16 E TO 13 E.
10. CHANGED COURSE FROM WALAR TO ZOMPO TO DISCS FROM 164.12 TO 167.12 - MAGNETIC VARIATION CHANGED FROM 16 E TO 13 E.
11. CHANGED FINAL APPROACH COURSE FROM DISCS TO HONEL TO RWY 17R FROM 164.12 TO 167.12 - MAGNETIC VARIATION CHANGED FROM 16 E TO 13 E.
12. CHANGED MISSED APPROACH CA COURSE FROM 164.12 TO 167.12 - MAGNETIC VARIATION CHANGED FROM 16 E TO 13 E.
13. CHANGED MISSED APPROACH COURSE FROM ZAKBI TO USINE FROM 179.59 TO 182.59 - MAGNETIC VARIATION CHANGED FROM 16 E TO 13 E.
14. CHANGED MISSED APPROACH COURSE FROM USINE TO YARKU FROM 124.37 TO 127.37 - MAGNETIC VARIATION CHANGED FROM 16 E TO 13 E.
15. CHANGED HOLDING INBOUND COURSE AT YARKU FROM 346.76 TO 349.76 - MAGNETIC VARIATION CHANGED FROM 16 E TO 13 E.
16. VDP DISTANCE CHANGED FROM 4.7 DME TO 4.69 DME - BASED ON CURRENT EVALUATION.
17. CHANGED ILS VISIBILITY ALL CATS FROM 1 7/8 TO 1 5/8 - IAW 8260.3E TABLE 3-3-1.
18. REMOVED "DME/DME RNP - 0.3 NA" AND "RNAV 1 - GPS REQUIRED" NOTES AND REPLACED WITH PBN REQUIREMENTS NOTE "RNP APCH - GPS" - IAW 8260.19I 8-6-8B.
19. REMOVED ALL REFERENCE TO "LOC ONLY" AND "" IN REFERENCE TO LOCALIZER ONLY -- IAW 8260.19I 1-1-5F(12).
20. ADDED ADDITIONAL FLIGHT DATA NOTE "FAS OBST: 5450 AAO 393711N/1194729W" - 7:1 EXCLUDED OBSTACLE DOCUMENTED IAW 8260.19I 8-6-10(E).
21. REPLACED "# CHART NOTE: FOR INOPERATIVE MALSR, INCREASE S-ILS 16R ALL CATS VISIBILITY TO 2 1/2 MILE" WITH "CHART NOTE: # FOR INOPERATIVE ALS, INCREASE S-ILS 17R ALL CATS VISIBILITY TO 2 SM" - IAW 8260.19I 8-6-11(O)3.
22. REPLACED THE "CROSS SYMBOL" WITH "" ON "RVR 1800 AUTHORIZED WITH USE OF FD OR AP OR HUD TO DA" AND "MISSED APPROACH REQUIRES MINIMUM CLIMB OF 390 FEET PER NM TO 8000" NOTE -- * SYMBOL NO LONGER USED FOR LOC ONLY DESIGNATION.
23. REPLACED NOTE "CIRCLING RWY 7 NA AT NIGHT" WITH "CIRCLING RWY 8 NA AT NIGHT" - RWY 7 BECAME RWY 8 DUE TO MAGNETIC VARIATION CHANGE.
24. COURSE FROM KLOCK TO BELBE CHANGED FROM 327.75 TO 330.75 - MAGNETIC VARIATION CHANGED FROM 16 E TO 13 E.
25. COURSE FROM BELBE TO SLABS CHANGED FROM 327.72 TO 330.72 - MAGNETIC VARIATION CHANGED FROM 16 E TO 13 E.
26. CHANGED ADDITIONAL FLIGHT DATA NOTE FROM "CHART MANDATORY 16000 AT HOBOA" TO "CHART AT OR ABOVE 16000 AT HOBOA" - ALTITUDE AT HOBOA CHANGED FROM MANDATORY TO AT OR ABOVE AND FORMATTED IAW 8260.19I 8-6-10(N).
27. CHANGED ADDITIONAL FLIGHT DATA NOTE FROM "CHART MANDATORY 10000 AT KLOCK" TO "CHART AT OR ABOVE 10000 AT KLOCK" - ALTITUDE AT KLOCK CHANGED FROM MANDATORY TO AT OR ABOVE AND FORMATTED IAW 8260.19I 8-6-10(N).
28. CHANGED CHART NOTE FROM "CHART PLANVIEW NOTE AT KLOCK: AT 210 KIAS" TO CHART SPEED ICON IN PLANVIEW AT KLOCK: MAX 210 KIAS" -- CHANGED MANDATORY AIRSPEED OF 210 AT KLOCK TO MAX AIRSPEED OF 210 AND FORMATTED IAW 8260.19I 4-6-10(G).
29. CHANGED SPEED RESTRICTIONS AT LIBGE FROM AT 230 TO MAX 230 AND UPDATED PLANVIEW NOTE AT LIBGE FROM "AT 210 KIAS" TO "MAX 210 KIAS" - IAW 8260.19I 4-6-10(G).
30. CHANGED SPEED RESTRICTIONS AT WINRZ FROM AT 230 TO MAX 230 AND UPDATED PLANVIEW NOTE AT WINRZ FROM "AT 210 KIAS" TO "MAX 210 KIAS" - IAW 8260.19I 4-6-10(G).
31. CHANGED PLANVIEW NOTE FROM "PROCEDURE NA FOR ARRIVALS AT LIBGE ON V165 NORTHWEST BOUND" TO "CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT LIBGE ON V165 AND T274 NORTHWEST BOUND" - T274 AND V165 OVERLAP.
32. REMOVED PLANVIEW NOTE ADJACENT TO HOBOA AND KLOCK "RNP-1 GPS REQUIRED, RF REQUIRED" - NOT REQUIRED BY 8260.19I CRITERIA.

COORDINATED WITH:

A4A **ALPA** **AOPA** **APA** **HAI** **NBAA** **OTHER:** ZOA, RNO APP CON, RNO ATCT, AMGR, WESTERN FPT.

FLIGHT CHECKED BY

PENDING

OFFICE

DATE

Digitally signed by
CASIMIR L TABAKA
Aug 23, 2022

DEVELOPED BY

KARLIE BUNTIN

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