

**FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE
VOR STANDARD INSTRUMENT APPROACH PROCEDURE
TITLE 14 CFR PART 97.23**

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> KAEL	<u>PROCEDURE NAME</u> VOR RWY 17	<u>ORIGINAL/AMENDMENT</u> 1E	<u>CITY</u> ALBERT LEA	<u>STATE</u> MN		
<u>AIRPORT ELEVATION</u> 1261	<u>TDZE</u> 1260	<u>SUPERSEDED</u> VOR RWY 17	<u>ORIGINAL/AMENDMENT</u> 1D	<u>DATED</u> 11/05/2020	<u>MAG VAR</u> 1E	<u>EPOCH YEAR</u> 2010
<u>FACILITY</u> AEL	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u>	<u>REQUIRED EFFECTIVE DATE</u> ROUTINE	<u>CANCEL/SUSPEND</u>		

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>
GOTHE INT		AEL VOR/DME					334.77	8.89	2900
AEL VOR/DME		GROVY/5.00 DME					353.00	5.00	2900
ALMAY INT	IAF	CIBAY/11.00 DME	NOPT				128.00 (HDG) & 173.00	9.72 & 5.57 (AEL R-353)	2900
KASPR INT	IAF	CIBAY/11.00 DME	NOPT				253.00 (HDG) & 173.00	7.22 & 4.12 (AEL R-353)	2900
CIBAY/11.00 DME	IF	GROVY/5.00 DME					173.00	6.00 (AEL R-353)	2900

MISSED APPROACH

MAP:

JULBU/0.36 DME

MISSED APPROACH INSTRUCTIONS:

CLIMB TO 2500 THEN CLIMBING RIGHT TURN TO 2900 DIRECT AEL VOR/DME AND HOLD.

ALTERNATE MISSED APPROACH INSTRUCTIONS:

PROFILE:

1. PT L SIDE OF COURSE 353.00 OUTBOUND 2900 FT WITHIN 10 MILES OF GROVY/5.00 DME (IAF)

2.

3. FAC: 173.00 FAF: GROVY/5.00 DME DIST FAF TO MAP: DIST FAF TO THLD: 4.64

4. MIN ALT: GROVY/5.00 DME 2900

8. MSA FROM: AEL VOR/DME 3400



EQUIPMENT REQUIREMENTS NOTES:

DME REQUIRED.

NOTES:

CHART NOTE: CIRCLING RWY 5, 23 NA AT NIGHT.
CHART NOTE: RWY 17 HELICOPTER VISIBILITY REDUCTION BELOW 3/4 SM NOT AUTHORIZED.
CHART PROFILE NOTE: VGSI AND DESCENT ANGLES NOT COINCIDENT (VGSI ANGLE {ANGLE}/TCH {FEET}).
CHART NOTE: WHEN LOCAL ALTIMETER SETTING NOT RECEIVED, USE AUSTIN ALTIMETER SETTING: INCREASE ALL MDA 60 FEET; INCREASE S-17 CAT C/D VISIBILITY 1/2 SM AND CIRCLING CAT A/C/D VISIBILITY 1/4 SM

ADDITIONAL FLIGHT DATA:

HOLD S, RT, 353.00 INBOUND.
CHART FAS OBST: 1712 WINDMILL (27-021016) 434622N/0932437W.
CHART 1709 WINDMILL 434645N/0932453W.
CHART VDP AT 2.63 DME.
DISTANCE VDP TO THLD 2.28 NM.
FAC CROSSES RWY C/L EXTENDED 2909 FT FROM THLD.
GROVY TO RW17: 3.23/50.

MINIMUMS:

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

ALTERNATE: NA ☐ STANDARD - CAT C 800-2 1/4, CAT D 800-2 1/2, NA WHEN LOCAL WEATHER NOT AVAILABLE.

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
S-17	2020	1	760	2020	1	760	2020	2	760	2020	2	760			
CIRCLING	2020	1	759	2020	1 1/4	759	2020	2 1/4	759	2040	2 1/2	779			

CHANGES - REASONS

- 1. TERMINAL ROUTES: REMOVED "INT" FROM FIXES GROVY AND CIBAY - JAY VOR/DME DECOMMISSIONING
- 2. CHANGED "CIRCLING TO RWY 5/23 NA AT NIGHT" TO "CIRCLING RWY 5, 23 NA AT NIGHT" - IAW 8260.19I PARA 8-6-11(2)(G)
- 3. CHANGED "VGSI AND DESCENT ANGLES NOT COINCIDENT" TO "VGSI AND DESCENT ANGLES NOT COINCIDENT (VGSI ANGLE {ANGLE}/TCH {FEET})" - IAW 8260.19I PARA 8-6-9M(2)
- 4. INCORPORATED PNOTAM 1/1817 AMDT 1D
- 5. ADDED "CHART VDP AT 2.63 DME; DISTANCE VDP TO THLD 2.28 NM." TO ADDITIONAL FLIGHT DATA - VDP NOW PUBLISHABLE IAW 8260.3E 2-6-5, PREVIOUS FINAL SDF WAS REMOVED AMDT 1B.
- 6. REMOVED DR CNF FIXES FROM ADDITIONAL FLIGHT DATA - NO LONGER REQUIRED.

06/30/23: THIS IS A CORRECTED COPY OF THE FORM APPROVED ON 05/11/23.
1. CHANGED CHART NOTE FROM "RWY 17 HELICOPTER VISIBILITY REDUCTION BELOW 3/4 NOT AUTHORIZED" TO "CHART NOTE: RWY 17 HELICOPTER VISIBILITY REDUCTION BELOW 3/4 SM NOT AUTHORIZED".
2. CHANGED AMENDMENT NUMBER FROM "1C" TO "1D" IN LINE 2 OF BASIC INFORMATION BLOCK.



<u>AIRPORT ID</u> KAEL	<u>PROCEDURE NAME</u> VOR RWY 17	<u>ORIGINAL/AMENDMENT</u> 1E	<u>CITY</u> ALBERT LEA	<u>STATE</u> MN
<u>COORDINATED WITH:</u> A4A <input type="checkbox"/> ALPA <input checked="" type="checkbox"/> AOPA <input checked="" type="checkbox"/> APA <input type="checkbox"/> HAI <input type="checkbox"/> NBAA <input checked="" type="checkbox"/> <u>OTHER:</u> ZMP, AMGR, RST APP CON.				
<u>FLIGHT CHECKED BY</u> PROCESSED IAW TECHNICAL SUPPORT GROUP (AJF-17) MEMO DATED 07/07/2021 GUIDANCE FOR PROCEDURAL CHANGES REQUIRING FLIGHT INSPECTION/VALIDATION		<u>OFFICE</u>	<u>DATE</u>	<i>Digitally signed by</i> JASON KRETSCHMER
<u>DEVELOPED BY</u> ROSE BOONE-WALT	<i>Digitally signed by</i> ROSE BOONE-WALT May 03, 2023	<u>OFFICE</u> AJV-A421	<u>DATE</u> 03/15/2023	Jun 30, 2023
<u>APPROVED BY</u> JASON KRETSCHMER	<i>Digitally signed by</i> JASON KRETSCHMER Jun 30, 2023	<u>OFFICE</u> AJV-A421	<u>DATE</u>	<u>TITLE</u> MANAGER



FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE
STANDARD INSTRUMENT APPROACH PROCEDURE DATA RECORD

<u>AIRPORT ID</u> KAEL	<u>PROCEDURE NAME</u> VOR RWY 17	<u>AMDT NO.</u> 1E	<u>CITY</u> ALBERT LEA	<u>STATE</u> MN	<u>AIRPORT ELEVATION</u> 1261	<u>FACILITY</u> AEL
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PART A: OBSTRUCTION DATA SEGMENTS

FEEDER

FROM
GOTHE INT

TO
AEL VOR/DME

<u>RNP</u>	<u>DISTANCE</u> 8.89	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>	<u>HMAS</u>							<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>
												1.TOWER (27-001982)	434030.00N/0932713.00W	1592	250	50	4D	1000					2600
												2.TERRAIN	434021.00N/0932612.00W	1352 (1400)								AS1500	2900

COMPUTATIONS

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

SEGMENT REMARKS:

FEEDER

FROM
AEL VOR/DME

TO
GROVY/5.00 DME

<u>RNP</u>	<u>DISTANCE</u> 5.00	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>	<u>HMAS</u>							<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>
												3.WDMLL (27-020624)	434458.38N/0932816.52W	1727	500	50	5D	1000					2800
												4.TERRAIN	434445.00N/0931742.00W	1365 (1400)								AS1500	2900

COMPUTATIONS

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

SEGMENT REMARKS:



AIRPORT ID KAEL	PROCEDURE NAME VOR RWY 17	AMDT NO. 1E	CITY ALBERT LEA	STATE MN	AIRPORT ELEVATION 1261	FACILITY AEL					
INITIAL											
FROM ALMAY INT			TO CIBAY/11.00 DME								
RNP	DISTANCE 9.72/5.57	PAT	MAP	HAT	HMAS						
OBSTRUCTION	COORDINATES	ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
5.TOWER (27-001422)	440246.00N/0932304.00W	1827	500	50	5D	1000					2900
6.TERRAIN	445524.00N/0932021.00W	1303 (1300)								AS1500	2800

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

SEGMENT REMARKS:

INITIAL											
FROM KASPR INT			TO CIBAY/11.00 DME								
RNP	DISTANCE 7.22/4.12	PAT	MAP	HAT	HMAS						
OBSTRUCTION	COORDINATES	ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
5.TOWER (27-001422)	440246.00N/0932304.00W	1827	500	50	5D	1000					2900
7.TERRAIN	444827.00N/0932133.00W	1323 (1300)								AS1500	2800
COMPUTATIONS											
ALT	KIAS	KTAS	HAA	VKTW	TR	BA	DTA	COURSE CHANGE	DVEB	VEB OCS	RF CENTER FIX/DISTANCE

SEGMENT REMARKS:



INTERMEDIATE

FROM
CIBAY/11.00 DME

TO
GROVY/5.00 DME

RNP	DISTANCE 6.00	PAT	MAP	HAT			HMAS					
OBSTRUCTION	COORDINATES		ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
8.TOWER (27-001230)	434936.00N/0932307.00W		1730	500	50	5D	500					2300
9.TERRAIN	434705.70N/0932219.90W		1370 (1400)								AS1500	2900

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

INTERMEDIATE: PT

FROM
10 NM

TO
GROVY/5.00 DME

RNP	DISTANCE 10.00	PAT	MAP	HAT			HMAS					
OBSTRUCTION	COORDINATES		ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
8.TOWER (27-001230)	434936.00N/0932307.00W		1730	500	50	5D	500					2300
9.TERRAIN	434705.70N/0932219.90W		1370 (1400)								AS1500	2900

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



FINAL

FROM
GROVY/5.00 DME

TO
JULBU/0.36 DME

RNP	DISTANCE 3.10	PAT	MAP JULBU/0.36 DME	HAT 760	HMAS							
OBSTRUCTION	COORDINATES		ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
10.WINDMILL (27-021016)	434621.66N/0932436.77W		1712	500	50	5D	250				AC50	2020

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

PROCEDURE TURN

FROM
GROVY/5.00 DME

TO
10 NM

RNP	DISTANCE	PAT	MAP	HAT	HMAS							
OBSTRUCTION	COORDINATES		ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
5.TOWER (27-001422)	440246.00N/0932304.00W		1827	500	50	5D	1000					2900
9.TERRAIN	434705.70N/0932219.90W		1370 (1400)								AS1500	2900

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



AIRPORT ID
KAEL

PROCEDURE NAME
VOR RWY 17

AMDT NO.
1E

CITY
ALBERT LEA

STATE
MN

AIRPORT ELEVATION
1261

FACILITY
AEL

CIRCLING

☐ ALL CATS

☒ CAT A

☒ CAT B

☒ CAT C

☒ CAT D

☐ CAT E

☐ NOT AUTHORIZED

OBSTRUCTION	COORDINATES	RADIUS	HAA	ELEV MSL	HORZ	VERT	AC	ROC	OCS	ADJUSTMENTS	MIN ALT
CATEGORY A											
TANK (27-021857)	433955.88N/0932224.89W	1.31	759	1415	20	3	1A	300		SI	2020
CATEGORY B											
TOWER (27-025861)	433846.64N/0932204.53W	1.85	759	1447	20	20	1C	300		SI	2020
CATEGORY C											
TOWER (27-000002)	433807.10N/0932220.10W	2.91	759	1563	250	50	4D	300		SI	2020
CATEGORY D											
WINDMILL (27-020621)	434352.69N/0932555.11W	3.80	779	1682	500	50	5D	300		AC50	2040

CIRCLING REMARKS:

MSA

CENTER
AEL VOR/DME

RADIUS
25

SECTOR	OBSTRUCTION	COORDINATES	BEARING	DISTANCE	ELEV MSL	HORZ	VERT	AC	ROC	OCS	ADJUSTMENTS	MIN ALT
360-360	TWR (27-000324)	433742.00N/0930912.00W	108	10.0	2321	20	50	1D	1000			3400

MSA REMARKS:

NOTES/EXPLANATIONS FROM PROCEDURE SEGMENTS:

QUALITY
34
CHECKED

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PART B: SUPPLEMENTAL DATA

COMMUNICATIONS WITH

ZMP ARTCC, PNM FSS, RST APP CON

<u>WX SERVICE</u>	<u>LOCATION</u>	<u>HRS OPERATION</u>	<u>ALTIMETER SOURCE</u>	<u>DISTANCE</u>	<u>SERVICE-A</u>	<u>ADJUSTMENTS</u>
AWOS-3PT	KAEL	24	KAEL	0.18	Y	0
<u>BACK-UP WX SERVICE</u>	<u>LOCATION</u>	<u>HRS OPERATION</u>	<u>ALTIMETER SOURCE</u>	<u>DISTANCE</u>	<u>SERVICE-A</u>	<u>ADJUSTMENTS</u>
AWOS-3	KAUM	24	KAUM	18.93	Y	48

WX REMARKS:

RASS PRESSURE PATTERNS THE SAME
KAEL 1261, KAUM 1234
RA = 47.3.

<u>PRIMARY NAVAID</u>	<u>MONITOR POINT</u>	<u>HRS OPERATION</u>	<u>CAT</u>
AEL VOR/DME	MOCC	24	1

<u>APPROACH AND RUNWAY LIGHTING SYSTEM</u>	<u>RUNWAY MARKINGS</u>	<u>RUNWAY VISUAL RANGE</u>
RW05	NPI-G	
RW17 - MIRL (PCL), REIL (PCL), ODALS (PCL), PAPI-4L (PCL)	NPI-G	
RW23	NPI-G	
RW35 - MIRL (PCL), REIL (PCL), PAPI-4L (PCL)	NPI-G	

<u>GLIDESLOPE ANGLE</u>	<u>ELEV RWY THRESHOLD</u>	<u>TCH</u>	<u>ELEV GS ANTENNA</u>	<u>DISTANCE FROM RWY</u>	<u>VGSI ANGLE</u>	<u>TCH</u>
					3.00	30.0

FINAL APPROACH COURSE AIMING

RUNWAY THRESHOLD	<input type="checkbox"/>	2909	FT FROM THRESHOLD	DISPLACED THRESHOLD DISTANCE
ON CENTERLINE	<input checked="" type="checkbox"/>		FT FROM CENTERLINE	

CRITICAL TEMPERATURES

<u>CRITICAL LOW</u>	<u>CRITICAL HIGH</u>	<u>ACT</u>	<u>APT ISA</u>

CRITICAL TEMPERATURE REMARKS:



"VISUAL PORTION OF FINAL" PENETRATIONS

Final Type	VOR 17
34:1	
TREE (KAELL010) 434129.36N/0932211.42W (5.58)	TREE (KAELL006) 434125.05N/0932209.52W (10.98)

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.

ORDER 8260.3 CHAPTER 2 APPLIED TO 1709 WINDMILL (27-020668) 434644.90N/0932453.37W.

ORDER 8260.3, CHAPTER 2, NEW CIRCLING CRITERIA APPLIED.



<u>AIRPORT ID</u> KAEL	<u>PROCEDURE NAME</u> VOR RWY 17	<u>AMDT NO.</u> 1E	<u>CITY</u> ALBERT LEA	<u>STATE</u> MN	<u>AIRPORT ELEVATION</u> 1261	<u>FACILITY</u> AEL
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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	2.97
WIDTH OF	FINAL	SEGMENT AT 1000FT POINT	2.34
TRUE COURSE OF	FINAL	SEGMENT CONTAINING 1000FT POINT	174.00
HIGH TERRAIN IN	FINAL	SEGMENT CONTAINING 1000FT POINT	1400
DISTANCE FROM	THLD	TO 1500FT POINT	4.64
WIDTH OF	FINAL	SEGMENT AT 1500FT POINT	2.50
TRUE COURSE OF	FINAL	SEGMENT CONTAINING 1500FT POINT	174.00
HIGH TERRAIN IN	FINAL	SEGMENT CONTAINING 1500FT POINT	1400

THRESHOLD
COORDINATES
(IF STR-IN)

434115.85N/0932213.82W

ARP COORDINATES

434052.73N/0932205.33W

RUNWAY APCH END
AND DIST FURTHEST
FROM ARP

RUNWAY 35 DISTANCE 0.43 NM

FAF
COORDINATES

434552.64N/0932257.99W

FIX NAME
COORDINATES

REMARKS

QUALITY
34
CHECKED

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PART E: PREPARED BY

<u>NAME</u> ROSE BOONE-WALT	<u>OFFICE</u> AJV-A421	<u>DATE</u> 03/15/2023	<u>TITLE</u> AERONAUTICAL INFORMATION SPECIALIST
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