

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> KAOO	<u>PROCEDURE NAME</u> ILS OR LOC RWY 21	<u>ORIGINAL/AMENDMENT</u> 9	<u>CITY</u> ALTOONA	<u>STATE</u> PA		
<u>AIRPORT ELEVATION</u> 1503	<u>TDZE</u> 1486	<u>SUPERSEDED</u> ILS OR LOC RWY 21	<u>ORIGINAL/AMENDMENT</u> 8C	<u>DATED</u> 12/07/2017	<u>MAG VAR</u> 10W	<u>EPOCH YEAR</u> 2005
<u>FACILITY</u> I-AOO	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u>	<u>REQUIRED EFFECTIVE DATE</u> 11/30/2023	<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>
HUDON	IAF	KEWER INT	NOPT				254.00	10.22 (JST R-074)	4300
KEWER INT	IF/IAF	ALTOO OM					205.98	6.05 (I-AOO)	3500

MISSED APPROACH

MAP:

ILS: DA
LOC: 6.04 NM AFTER ALTOO OM

MISSED APPROACH INSTRUCTIONS:

CLIMB TO 2100 THEN CLIMBING RIGHT TURN TO 5000 ON HEADING 295 AND ON JST R-096 TO ZOTBI/JST 11.70 DME AND HOLD, CONTINUE CLIMB-IN-HOLD TO 5000.

ALTERNATE MISSED APPROACH INSTRUCTIONS:

PROFILE:

1. PT SIDE OF COURSE OUTBOUND FT WITHIN MILES OF (IAF)
2. HOLD NE KEWER, RT, 205.98 INBOUND, 4300 FT. IN LIEU OF PT (IAF), MAX 6000.
3. FAC: 205.98 FAF: ALTOO OM DIST FAF TO MAP: 6.04 DIST FAF TO THLD: 6.04
4. MIN ALT: KEWER INT 4300, ALTOO OM 3500
5. DIST TO THLD FROM OM: 6.04 MM: IM: 150 HAT: GS ANT: 998
6. MIN GS INCPT: 3500 GS ALT AT PFAF: ALTOO OM 3444 OM: 3444 MM: IM:
7. GS ANGLE: 3.00 34:1: 20:1: TCH: 52.0
8. MSA FROM: ARP KAOO 4400

EQUIPMENT REQUIREMENTS NOTE:

DME REQUIRED.

QUALITY
26
CHECKED

NOTES:

CHART NOTE: CIRCLING NA TO RWYS 12 AND 30.

CHART NOTE: CIRCLING NA FOR CATS C, D NW OF RWYS 12 AND 21.

CHART NOTE: FOR INOPERATIVE ALS INCREASE S-LOC 21 VISIBILITY CATS C AND D TO 2 SM.

ADDITIONAL FLIGHT DATA:

CHART CIRCLING ICON

HOLD E, RT, 276.04 INBOUND.

FAS OBST: 1943 AAO 402315N/0781821W.

2205 AAO 402412N/0781803W.

MINIMUMS:

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

ALTERNATE: NA ☐ ILS: STANDARD - NA WHEN LOCAL WEATHER NOT AVAILABLE.; LOC: STANDARD - CAT C 1300-3, CAT D 1400-3, 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-ILS 21	1686	1/2	200	1686	1/2	200	1686	1/2	200	1686	1/2	200			
S-LOC 21	2240	1/2	754	2240	3/4	754	2240	1 3/4	754	2240	1 3/4	754			
CIRCLING	2240	1	737	2240	1 1/4	737	2800	3	1297	2840	3	1337			

CHANGES - REASONS

1. MISSED APPROACH INSTRUCTIONS: CHANGED FROM "CLIMB TO 2100, THEN CLIMBING RIGHT TURN TO 5000 ON HEADING 295 AND JST R-096 TO ZOTBI INT/JST 11.70 DME AND HOLD, CONTINUE CLIMB-IN-HOLD TO 5000." TO "CLIMB TO 2100 THEN CLIMBING RIGHT TURN TO 5000 ON HEADING 295 AND ON JST R-096 TO ZOTBI/JST 11.70 DME AND HOLD, CONTINUE CLIMB-IN-HOLD TO 5000." - ZOTBI NO LONGER AN INT.
2. REMOVED ALTERNATE MISSED APPROACH - FPT REQUEST, REC VORMON
3. PROFILE LINE 6: CHANGED GS ALT AT PFAF: FROM "ALTOO OM 3473" TO "ALTOO OM 3444"; OM FROM "3478" TO "3444" - NEW TARGETS EVALUATION.
4. NOTES: ADDED "DME REQUIRED" TO EQUIPMENT REQUIREMENTS NOTE - REC VORMON
5. NOTES: CHANGED FROM "CHART NOTE: CIRCLING TO RWY 3, 12, 30 NA AT NIGHT." TO "CIRCLING NA TO RWYS 12 AND 30" - STANDARDIZED CIRCLING RESTRICTIONS BETWEEN PROCEDURES AND RESTRICTIONS REMOVED FROM RWY 3.
6. CHART NOTE: CHANGED FROM "FOR INOPERATIVE ALS INCREASE S-LOC 21 VISIBILITY CATS C AND D TO 2 1/2 MILES." TO "CHART NOTE: FOR INOPERATIVE ALS INCREASE S-LOC 21 VISIBILITY CATS C AND D TO 2 SM." - 8260.3E TABLE 3-3-1
7. ADDITIONAL FLIGHT DATA: CHANGED 7:1 FROM "2139 AAO 402439N/0781745W." TO "2205 AAO 402412N/0781803W." - NEW TARGETS EVALUATION
8. ADDED "MAX 6000" TO PROFILE LINE 2 -- UPDATED 8260.19I, 8-6-7.B(2).
9. ADDITIONAL FLIGHT DATA CHANGED FROM "FAS OBST: 2199 AAO 402347N/0781817W." TO "FAS OBST: 1943 AAO 402315N/0781821W." - 7:1 TAKEN RESULTING IN NEW CONTROLLER.
10. ADDITIONAL FLIGHT DATA: CHANGED FROM "HOLD W, RT, 096.04 INBOUND." TO "HOLD E, RT, 276.04 INBOUND." - HOLDING ENTERED THE NO COURSE SIGNAL ZONE OF JST.

COORDINATED WITH:

A4A ☒ ALPA ☒ AOPA ☒ APA ☒ HAI ☐ NBAA ☒ OTHER: ZOB, JOHNSTOWN APP CON, AMGR

FLIGHT CHECKED BY
PENDING

Digitally signed by
ERIC N SUSKI
Sep 19, 2023

OFFICE

DATE

DEVELOPED BY
ERIC N SUSKI (COLE NESBITT)

Digitally signed by
ERIC N SUSKI
Sep 19, 2023

OFFICE
AJV-A431

DATE
07/03/2023

APPROVED BY
ERIC N SUSKI

Digitally signed by
ERIC N SUSKI
Sep 19, 2023

OFFICE
AJV-A430

DATE

TITLE
MANAGER

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

<u>AIRPORT ID</u> KAOO	<u>PROCEDURE NAME</u> ILS OR LOC RWY 21	<u>AMDT NO.</u> 9	<u>CITY</u> ALTOONA	<u>STATE</u> PA	<u>AIRPORT ELEVATION</u> 1503	<u>FACILITY</u> I-AOO
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PART A: OBSTRUCTION DATA SEGMENTS

INITIAL

FROM
HUDON

TO
KEWER INT

<u>RNP</u>	<u>DISTANCE</u> 10.22	<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>
AAO	403142.00N/0781915.00W		2756	250	10	4B	1000				PR90 AT454	4300
TERRAIN	403142.00N/0781915.00W		2555 (2600)								AS1500	4100

COMPUTATIONS

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

SEGMENT REMARKS:

INTERMEDIATE

FROM
KEWER INT (IF/IAF)

TO
ALTOO OM

<u>RNP</u>	<u>DISTANCE</u> 6.05	<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>
AAO	403142.00N/0781915.00W		2756	250	10	4B	500				PR90 AT154	3500
TERRAIN	402936.00N/0782003.00W		2424 (2400)								AS1000	3400

COMPUTATIONS

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

SEGMENT REMARKS:



FINAL: ILS

FROM
ALTOO OM

TO
RW21

RNP	DISTANCE 6.04	PAT	MAP DA	HAT 200	HMAS							
OBSTRUCTION	COORDINATES		ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
								ASC				1686

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: LOC

FROM
ALTOO OM

TO
6.04 NM AFTER ALTOO OM

RNP	DISTANCE 6.04	PAT	MAP 6.04 NM AFTER ALTOO OM	HAT 754	HMAS							
OBSTRUCTION	COORDINATES		ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
AAO	402315.00N/0781821.00W		1943	250	10	4B	250				XL2 SA-157 XP202	2240

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

XP ADJUSTED TO MATCH PREVIOUS AMENDMENT.



HOLD-IN-LIEU OF PT

FROM
KEWER

TO
P-6

RNP	DISTANCE	PAT P-6	MAP	HAT			HMAS					
OBSTRUCTION	COORDINATES		ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
10.TOWER (42-001286)	402915.00N/0782108.00W		2850	500	125	5E	1000				AT330 PR120	4300
TERRAIN	403121.00N/0781954.00W		2575 (2600)								AS1500	4100

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:

MISSED APPROACH : ILS

FROM
DA

TO
ZOTBI

RNP	DISTANCE	PAT	MAP	HAT			HMAS 1512					
OBSTRUCTION	COORDINATES		ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
								ASC				5000
AAO	401721.00N/0783348.00W		3350	250	10	4B	1000				PR110	4500
TERRAIN	401721.00N/0783348.00W		3149 (3100)								AS1500	4600

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:



MISSED APPROACH : LOC

FROM
6.04 NM AFTER ALTOO OM

TO
ZOTBI

RNP	DISTANCE	PAT	MAP	HAT			HMAS 1988					
OBSTRUCTION	COORDINATES		ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
								ASC				5000
AAO	401721.00N/0783348.00W		3350	250	10	4B	1000				PR110	4500
TERRAIN	401721.00N/0783348.00W		3149 (3100)								AS1500	4600

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

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											
TREE	401712.00N/0781803.00W	1.31	737	1705	250	10	4B	300		XP235	2240
CATEGORY B											
TREE	401712.00N/0781803.00W	1.86	737	1705	250	10	4B	300		XP235	2240
CATEGORY C											
15.TOWER (42-002950)	401735.00N/0781538.00W	2.94	1297	2365	500	125	5E	300		AC125	2800
CATEGORY D											
AAO	401336.45N/0781907.39W	3.85	1337	2522	50	20	2C	300			2840

CIRCLING REMARKS:
XP ADJUSTED TO KEEP CURRENT MINS.



MSA

CENTER
ARP KAOO

RADIUS
25

SECTOR	OBSTRUCTION	COORDINATES	BEARING	DISTANCE	ELEV MSL	HORZ	VERT	AC	ROC	OCS	ADJUSTMENTS	MIN ALT
360-360	WM (42-020547)	400126.08N/0784745.02W	243	27.3	3328	500	125	5E	1000			4400

MSA REMARKS:

NOTES/EXPLANATIONS FROM PROCEDURE SEGMENTS:



PART B: SUPPLEMENTAL DATA

COMMUNICATIONS WITH
ZOB ARTCC, AOO FSS, JST APP CON

<u>WX SERVICE</u> ASOS	<u>LOCATION</u> KAOO	<u>HRS OPERATION</u> 24	<u>ALTIMETER SOURCE</u> KAOO	<u>DISTANCE</u> 0	<u>SERVICE-A</u> Y	<u>ADJUSTMENTS</u> 0
<u>BACK-UP WX SERVICE</u> AWOS-3	<u>LOCATION</u> KHMZ	<u>HRS OPERATION</u> 24	<u>ALTIMETER SOURCE</u> KHMZ	<u>DISTANCE</u> 15.51	<u>SERVICE-A</u> Y	<u>ADJUSTMENTS</u> 86

WX REMARKS:
RASS PRESSURE PATTERNS THE SAME
KAOO 1503 KHMZ 1149
RA = 85.3

<u>PRIMARY NAVAID</u> I-AOO	<u>MONITOR POINT</u> AOCC	<u>HRS OPERATION</u> 24	<u>CAT</u> 1
<u>APPROACH AND RUNWAY LIGHTING SYSTEM</u>		<u>RUNWAY MARKINGS</u>	<u>RUNWAY VISUAL RANGE</u>
RW12 - MIRL (PCL), REIL (PCL), PAPI-4L (PCL)		BSC-G	
RW03 - HIRL (PCL), REIL (PCL), PAPI-4L (PCL)		NPI-G	
RW30 - MIRL (PCL), REIL (PCL), PAPI-4R (PCL)		NPI-G	
RW21 - MALSR (PCL), HIRL (PCL), PAPI-4L (PCL)		PIR-G	

<u>GLIDESLOPE ANGLE</u> 3.00	<u>ELEV RWY THRESHOLD</u> 1469.3	<u>TCH</u> 52.0	<u>ELEV GS ANTENNA</u> 1464.8	<u>DISTANCE FROM RWY</u> 998	<u>VGSI ANGLE</u> 3.00	<u>TCH</u> 52.0
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FINAL APPROACH COURSE AIMING

RUNWAY THRESHOLD	☒	FT FROM THRESHOLD	DISPLACED THRESHOLD DISTANCE
ON CENTERLINE	☒	FT FROM CENTERLINE	

CRITICAL TEMPERATURES

<u>CRITICAL LOW</u>	<u>CRITICAL HIGH</u>	<u>ACT</u>	<u>APT ISA</u>
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CRITICAL TEMPERATURE REMARKS:



"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:

VDP NOT ESTABLISHED - FINAL FACILITY DOES NOT HAVE DME.

PRECIPITOUS TERRAIN EVALUATION COMPLETED.

100 FT VEGETATION HEIGHT USED PER FPT CHECKLIST.

NOTE: WHEN LOCAL ALTIMETER SETTING NOT RECEIVED, USE BEDFORD ALTIMETER SETTING AND INCREASE S-ILS 21 DA TO 1772 FEET; INCREASE ALL MDAS 100 FEET AND S-LOC 21 VISIBILITY CATS C AND D 1/4 SM. INCREASE CIRCLING CAT A VISIBILITY 1/4 SM.

NOTE: FOR INOPERATIVE ALS WHEN USING BEDFORD ALTIMETER SETTING; INCREASE S-ILS 21 VISIBILITY ALL CATS TO 7/8 MILE.

ORDER 8260.3 CHAPTER 2 APPLIED TO 2205 AAO 402412.00N/0781803.00W.

ORDER 8260.3, CHAPTER 2, NEW CIRCLING CRITERIA APPLIED.



AIRPORT ID KAOO	PROCEDURE NAME ILS OR LOC RWY 21	AMDT NO. 9	CITY ALTOONA	STATE PA	AIRPORT ELEVATION 1503	FACILITY I-AOO
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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	4.02
WIDTH OF	FINAL	SEGMENT AT 1000FT POINT	1.09
TRUE COURSE OF	FINAL	SEGMENT CONTAINING 1000FT POINT	195.98
HIGH TERRAIN IN	FINAL	SEGMENT CONTAINING 1000FT POINT	1800
DISTANCE FROM	THLD	TO 1500FT POINT	5.64
WIDTH OF	FINAL	SEGMENT AT 1500FT POINT	1.44
TRUE COURSE OF	FINAL	SEGMENT CONTAINING 1500FT POINT	195.98
HIGH TERRAIN IN	FINAL	SEGMENT CONTAINING 1500FT POINT	1800

THRESHOLD
COORDINATES
(IF STR-IN)

401811.31N/0781903.84W

ARP COORDINATES

401746.90N/0781912.10W

RUNWAY APCH END
AND DIST FURTHEST
FROM ARP

RUNWAY 3 DISTANCE 0.48 NM

FAF
COORDINATES

402359.86N/0781653.32W

FIX NAME
COORDINATES

REMARKS

QUALITY
26
CHECKED

FAA Form 8260-9 / (11/16) Supersedes Previous Edition

Electronic Version

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PART E: PREPARED BY

<u>NAME</u> ERIC N SUSKI (COLE NESBITT)	<u>OFFICE</u> AJV-A431	<u>DATE</u> 07/03/2023	<u>TITLE</u> AERONAUTICAL INFORMATION SPECIALIST
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