

FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE
RNAV (GPS) 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> CASTLE	<u>AIRPORT ID</u> KMER	<u>PROCEDURE NAME</u> RNAV (GPS) RWY 13	<u>ORIGINAL/AMENDMENT</u> 1	<u>CITY</u> ATWATER	<u>STATE</u> CA
<u>AIRPORT ELEVATION</u> 190	<u>TDZE</u> 190	<u>SUPERSEDED</u> RNAV (GPS) RWY 13	<u>ORIGINAL/AMENDMENT</u> ORIG-C	<u>DATED</u> 03/08/2012	<u>MAG VAR</u> 15E
<u>FACILITY</u> RNAV	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u> 5 DECEMBER 2019	<u>REQUIRED EFFECTIVE DATE</u> ROUTINE	<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>
PATYY		DIGQY		TF	FB	1.00	090.02	9.66	2000
VOLTA		DIGQY		TF	FB	1.00	013.33	11.95	2000
DIGQY	IAF	GANQA		TF	FB	1.00	041.19	8.06	2000
AWALI	IAF	GANQA		TF	FB	1.00	216.04	9.93	2000
GANQA	IF	RILRE		TF	FB	1.00	125.95	5.56	1700
RILRE	FAF	RW13	MAP	TF	FO	0.30	125.99	4.57	
RW13	MAP	600 MSL		CA			125.99		600
600 MSL		TURLO		DF	FO	1.00			4000

MISSED APPROACH

MAP:

LPV: DA
 LNAV/VNAV: DA
 LNAV: RW13

MISSED APPROACH INSTRUCTIONS:

CLIMB TO 600 THEN CLIMBING LEFT TURN TO 4000 DIRECT TURLO AND HOLD, CONTINUE CLIMB-IN-HOLD TO 4000.

ALTERNATE MISSED APPROACH INSTRUCTIONS:



PROFILE:

1. PT	SIDE OF COURSE	OUTBOUND	FT WITHIN	MILES OF	(IAF)
2.	PROFILE STARTS AT GANQA				
3. FAC:	125.99	FAF: RILRE	DIST FAF TO MAP: 4.57	DIST FAF TO THLD: 4.57	
4. MIN ALT:	GANQA 2000, RILRE 1700				
5. DIST TO THLD FROM OM:	MM:	IM:	150 HAT:	200 HAT: 0.45	GS ANT:
6. MIN GP INCPT:	1700	GP ALT AT FAF : RILRE 1700	OM:	MM:	IM:
7. GP ANGLE:	3.00	34:1: IS CLEAR	20:1: IS CLEAR	TCH: 55.0	
8. MSA FROM:	RW13 5600				

PBN REQUIREMENTS NOTE:

RNP APCH.

NOTES:

CHART NOTE: CIRCLING NA SW OF RWY 13-31.
CHART PROFILE NOTE: VGSI AND RNAV GLIDEPATH NOT COINCIDENT (VGSI ANGLE {ANGLE}/TCH {FEET}).
CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -15°C OR ABOVE 54°C.
CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT PATYY ON V111-113 SOUTHWEST BOUND AND ON V113 NORTHWEST BOUND.
CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT VOLTA ON V113 SOUTHEAST BOUND.
CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT AWALI ON V23 SOUTHEAST BOUND.
CHART NOTE: FOR INOPERATIVE ALS, INCREASE LNAV/VNAV ALL CATS VISIBILITY TO 1 3/8 SM, INCREASE LNAV CATS A/B VISIBILITY TO 1 SM, AND INCREASE LNAV CAT C/D VISIBILITY TO 1 1/8 SM.

ADDITIONAL FLIGHT DATA:

CHART KMCE IN PLANVIEW.
CHART CIRCLING ICON.
CHART VDP AT 1.05 NM TO RW13*
*LNAV ONLY
WAAS CHANNEL #50211
REFERENCE PATH ID: W13A
CHART FAS OBST: 345 TREE 372426N/1203548W.
HOLD NW, RT, 126.52 INBOUND
LTP HAE: 26.4 M



MINIMUMS:

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

ALTERNATE: NA ☐ STANDARD

<u>CATEGORY:</u>	A			B			C			D			E		
<u>FINAL TYPE</u>	<u>DA/MDA</u>	<u>VIS</u>	<u>HAT/HAA</u>	<u>DA/MDA</u>	<u>VIS</u>	<u>HAT/HAA</u>	<u>DA/MDA</u>	<u>VIS</u>	<u>HAT/HAA</u>	<u>DA/MDA</u>	<u>VIS</u>	<u>HAT/HAA</u>	<u>DA/MDA</u>	<u>VIS</u>	<u>HAT/HAA</u>
LPV DA	390	3/4	200	390	3/4	200	390	3/4	200	390	3/4	200			
LNAV/VNAV DA	655	1	465	655	1	465	655	1	465	655	1	465			
LNAV MDA	600	3/4	410	600	3/4	410	600	3/4	410	600	3/4	410			
CIRCLING	660	1	470	660	1	470	720	1 1/2	530	800	2	610			



CHANGES - REASONS

1. CHANGED AIRPORT ELEVATION FROM 191 TO READ 190 - NEW AIRPORT SURVEY.
2. CHANGED DIGQY TO GANQA SEGMENT COURSE FROM 038.13 TO READ 041.19 AND DISTANCE FROM 8.03 TO READ 8.06 IN TERMINAL ROUTES SECTION - IF MOVED TO FACILITATE 90 DEGREE TURNS FROM INITIAL SEGMENTS TO INTERMEDIATE SEGMENT.
3. CHANGED AWALI TO GANQA SEGMENT COURSE FROM 218.52 TO READ 216.04 AND DISTANCE FROM 9.94 TO READ 9.93 IN TERMINAL ROUTES SECTION - IF MOVED TO FACILITATE 90 DEGREE TURNS FROM INITIAL SEGMENTS TO INTERMEDIATE SEGMENT.
4. CHANGED GANQA TO RILRE SEGMENT DISTANCE FROM 6.05 TO READ 5.56 IN TERMINAL ROUTES SECTION - IF MOVED TO FACILITATE 90 DEGREE TURNS FROM INITIAL SEGMENTS TO INTERMEDIATE SEGMENT/FAF MOVED TO CREATE 3.0 DEGREE GLIDESLOPE PATH WITH 55.0 FT TCH.
5. CHANGED RILRE TO RW13 DISTANCE FROM 4.51 TO READ 4.57 IN TERMINAL ROUTES SECTION - FAF MOVED TO CREATE 3.0 DEGREE GLIDESLOPE PATH WITH 55.0 FT TCH.
6. CHANGED MISSED APPROACH INSTRUCTION FROM CLIMB TO 4000 DIRECT JOXUB AND ON TRACK 036.07 TO TURLO AND HOLD, CONTINUE CLIMB-IN-HOLD TO 4000 TO READ CLIMB TO 600 THEN CLIMBING LEFT TURN TO 4000 DIRECT TURLO AND HOLD, CONTINUE CLIMB-IN-HOLD TO 4000 IN MISSED APPROACH SECTION - TARGETS WILL NOT DRAW MISSED APPROACH AS PUBLISHED DUE TO SHORT DISTANCE TO FIRST FIX AND 90 DEGREE TURN TO CLEARANCE LIMIT/FPT REQUEST VIA EMAIL.
7. CHANGED DIST FAF TO MAP AND DIST FAF TO THLD FROM 4.51 TO READ 4.57 ON LINE 3 - FAF MOVED TO CREATE 3.0 DEGREE GLIDESLOPE PATH WITH 55.0 FT TCH.
8. CHANGED DIST TO THLD FROM 200 HAT FROM 0.97 TO READ 0.45 ON LINE 5 - LPV FINAL SEGMENT NOW ASC.
9. ADDED IS CLEAR TO 20:1 ON LINE 7 - REQUIRED DOCUMENTATION BY CRITERIA.
10. ADDED RNP APCH TO PBN REQUIREMENTS NOTE SECTION - REQUIRED DOCUMENTATION BY CRITERIA.
11. REMOVED CHART NOTE: DME/DME RNP-0.3 NA FROM NOTES SECTION - NO LONGER REQUIRED BY CRITERIA.
12. CHANGED CHART NOTE: BARO-VNAV NA WHEN USING MERCED RGNL/MACREADY FIELD ALTIMETER SETTING TO READ CHART NOTE: BARO-VNAV AND VDP NA IN NOTES SECTION AND MOVED FROM NOTES SECTION TO 8260-9 GENERAL REMARKS SECTION - BOTH ALTIMETER SOURCES TRANSMIT ON WMSCR/CALCULATED FOR CONTINGENCY PURPOSES.
13. CHANGED CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -15°C (5°F) OR ABOVE 48°C (118°F) TO READ CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -15°C OR ABOVE 54°C IN NOTES SECTION - TARGETS CALCULATION/FARENHEIT EQUIVALENTS NO LONGER REQUIRED TO BE DOCUMENTED PER CRITERIA.
14. MOVED ALSTG NOTE TO THE BACK OF THE -9 - BOTH ALTIMETER SOURCES TRANSMIT ON WMSCR/CALCULATED FOR CONTINGENCY PURPOSES.
15. CHANGED CHART NOTE: FOR INOPERATIVE ALSF-1 INCREASE VISIBILITY LPV ALL CATS AND LNAV CAT D TO 1 1/4, AND LNAV CATS A AND B TO 1 TO READ CHART NOTE: FOR INOPERATIVE ALS, INCREASE LNAV/VNAV ALL CATS VISIBILITY TO 1 3/8 SM, INCREASE LNAV CATS A/B VISIBILITY TO 1 SM, AND INCREASE LNAV CAT C/D VISIBILITY TO 1 1/8 SM IN NOTES SECTION - VISCHECK CALCULATIONS/LPV FINAL SEGMENT NOW ASC.
16. MOVED CHART NOTE: FOR INOPERATIVE ALSF-1 WHEN USING MERCED RGNL/MACREADY FIELD ALTIMETER SETTING, INCREASE VISIBILITY LPV ALL CATS TO 1 1/4, AND LNAV CATS A AND B TO 1 TO THE BACK OF THE -9 - VISCHECK CALCULATIONS/BOTH ALTIMETER SOURCES TRANSMIT ON WMSCR/CALCULATED FOR CONTINGENCY PURPOSES.
17. ADDED CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT PATYY ON V111-113 SOUTHWEST BOUND AND ON V113 NORTHWEST BOUND, CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT VOLTA ON V113 SOUTHEAST BOUND, AND CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT AWALI ON V23 NORTHWEST BOUND TO NOTES SECTION - REQUIRED DOCUMENTATION BY CRITERIA/TURN ONTO TERMINAL SEGMENT FROM AIRWAY EXCEEDS 90 DEGREES.
18. CHANGED CHART MERCED RGNL/MACREADY FIELD AIRPORT TO READ CHART KMCE IN PLAN VIEW IN ADDITIONAL FLIGHT DATA SECTION - REQUIRED DOCUMENTATION BY CRITERIA.
19. ADDED CHART CIRCLING ICON TO ADDITIONAL FLIGHT DATA SECTION - REQUIRED DOCUMENTATION BY CRITERIA.
20. CHANGED LPV ALL CATS DA/HAT FROM 555/364 TO READ 390/200 IN MINIMUMS SECTION - LPV FINAL SEGMENT NOW ASC.
21. CHANGED LNAV/VNAV ALL CATS HAT FROM 464 TO READ 465 IN MINIMUMS SECTION - NEW AIRPORT SURVEY/RWY 13 TDZE CHANGED FROM 191 TO READ 190.
22. CHANGED LNAV ALL CATS HAT FROM 409 TO READ 410 IN MINIMUMS SECTION - NEW AIRPORT SURVEY/RWY 13 TDZE CHANGED FROM 191 TO READ 190.
23. CHANGED LNAV CAT D VIS FROM 1 TO READ 3/4 IN MINIMUMS SECTION - VISCHECK CALCULATION.
24. CHANGED CIRCLING CAT A CMDA/HAA FROM 640/449 TO READ 660/470 IN MINIMUMS SECTION - NEW CIRCLING CRITERIA APPLIED/NEW CIRCLING CAT A CONTROLLING OBSTACLE/NEW AIRPORT SURVEY/AIRPORT ELEVATION CHANGED FROM 191 TO READ 190.
25. CHANGED CIRCLING CAT B HAA FROM 469 TO READ 470 IN MINIMUMS SECTION - NEW AIRPORT SURVEY/AIRPORT ELEVATION CHANGED FROM 191 TO READ 190.
26. CHANGED CIRCLING CAT C CMDA/HAA FROM 660/469 TO READ 720/530 IN MINIMUMS SECTION - NEW CIRCLING CRITERIA APPLIED/NEW CIRCLING CAT C CONTROLLING OBSTACLE/NEW AIRPORT SURVEY/AIRPORT ELEVATION CHANGED FROM 191 TO READ 190.
27. CHANGED CIRCLING CAT D CMDA/VIS/HAA FROM 760 / 2 / 569 TO READ 800 / 2 / 610 IN MINIMUMS SECTION - NEW CIRCLING CRITERIA APPLIED/NEW CIRCLING CAT D CONTROLLING OBSTACLE/NEW AIRPORT SURVEY/AIRPORT ELEVATION CHANGED FROM 191 TO READ 190.
28. CHANGED RWY 13 LTP LATITUDE FROM 372335.1045N TO READ 372335.1050N AND LTP LONGITUDE FROM 1203451.4495W TO READ 1203451.4520W IN FAS DATA BLOCK INFORMATION SECTION - NEW AIRPORT SURVEY UPDATED RWY 13 LTP COORDINATES.
29. CHANGED RWY 13 FPAP LATITUDE FROM 372204.3700N TO READ 372204.3785N AND FPAP LONGITUDE FROM 1203319.5100W TO READ 1203319.5045W IN FAS DATA BLOCK INFORMATION SECTION - TARGETS CALCULATION.
30. CHANGED VERTICAL ALERT LIMIT FROM 50.0 TO READ 35.0 IN FAS DATA BLOCK INFORMATION SECTION - 200' HAT FOR LPV PROCEDURE IMPLEMENTED.
31. CHANGED CRC REMAINDER FROM E70B04F2 TO READ 268FC088 IN FAS DATA BLOCK INFORMATION SECTION - NEW AIRPORT SURVEY UPDATED RWY 13 LTP COORDINATES.



AIRPORT
CASTLE

AIRPORT ID
KMER

PROCEDURE NAME
RNAV (GPS) RWY 13

ORIGINAL/AMENDMENT
1

CITY
ATWATER

STATE
CA

COORDINATED WITH:

A4A ☐ ALPA ☒ AOPA ☒ APA ☐ HAI ☐ NBAA ☒ OTHER: NORCAL, AMGR, FIU FSS, ATA

FLIGHT CHECKED BY

CHARLES D CUNNINGHAM

OFFICE

FICO

DATE

12/15/18

Digitally signed by

ALLAN WILL

Jan 04, 2019

DEVELOPED BY

MICHAEL R. GARRITY JR.

Digitally signed by

MICHAEL GARRITY

Nov 27, 2018

OFFICE

AJV-5423

DATE

11/01/2018

Digitally signed by

ALLAN WILL

Jan 04, 2019

TITLE
MANAGER

APPROVED BY

JULIE MORGAN

OFFICE

AJV-5420

DATE

QUALITY
22
CHECKED

FAS DATA BLOCK INFORMATION

<u>DATA FIELD</u>	<u>DATA</u>
OPERATION TYPE	0
SBAS SERVICE PROVIDER IDENTIFIER	0
AIRPORT IDENTIFIER	KMER
RUNWAY	RW13
APPROACH PERFORMANCE DESIGNATOR	0
ROUTE INDICATOR	
REFERENCE PATH DATA SELECTOR	0
REFERENCE PATH IDENTIFIER (APPROACH ID)	W13A
LTP/FTP LATITUDE	372335.1050N
LTP/FTP LONGITUDE	1203451.4520W
LTP/FTP ELLIPSOIDAL HEIGHT	+00264
FPAP LATITUDE	372204.3785N
FPAP LONGITUDE	1203319.5045W
THRESHOLD CROSSING HEIGHT (TCH)	00055.0
TCH UNITS SELECTOR (METERS OR FEET USED)	F
GLIDEPATH ANGLE (GPA)	03.00
COURSE WIDTH AT THRESHOLD	106.75
LENGTH OFFSET	0000
HORIZONTAL ALERT LIMIT (HAL)	40.0
VERTICAL ALERT LIMIT (VAL)	35.0
CRC REMAINDER	268FC088

ADDITIONAL PATH POINT RECORD INFORMATION

ICAO CODE	K2
LTP ORTHOMETRIC HEIGHT	+00580
FPAP ORTHOMETRIC HEIGHT	+00580

