GOVERNMENT/INDUSTRY AERONAUTICAL CHARTING FORUM
Instrument Procedures Group
October 17, 2006
HISTORY RECORD

FAA Control # 06-02-266

Subject: Lack of Pilot and Controller Understanding of when an IF/IAF fix is an IF.

Background/Discussion: With the advent of the new ATC direct-to-the-IF procedure there is the potential for confusion when the IF also serves as a course reversal IAF as in the attached example procedure [RNAV (GPS) RWY 10R] at Boise, ID (KBOI). This is exacerbated by the fact that controllers have another ATC procedure whereby they can clear aircraft directly to any IAF instead of using the new direct-to-the IF procedure. So, when is a dual IF/IAF an IF and when is it an IAF? The short answer is that the fix is first and foremost, an IF, but it serves a secondary purpose of being the course-reversal IAF. Further, if it is treated as an IAF, then the course reversal must be accomplished. But, when is it treated as an IF and when is it treated as an IAF?

There is no material in the 7110.65R, the Instrument Procedures Handbook (IPH), or the Aeronautical Information Manual (AIM) that resolves this ambiguity. NBAA will present a series of slides to show the TERPS segments and how they interface using the KBOI RNAV (GPS) 10R IAP as a case study.

Recommendations: The FAA must develop a graphical and textual section for the 7110.65R, IPH, and AIM, which will provide unambiguous clarity to the application of the IF/IAF dual-purpose fix. We recommend that a simplified version of our slide presentation form the basis for graphical and textual material to resolve this ambiguity.

This recommendation is related to our charting recommendation to chart all intermediate fixes on a priority basis. Note that Jeppesen has “IF/IAF” at Bosie, but NACO does not.

Comments: This recommendation affects the 7110.65R, the Instrument Procedures Handbook, and the Aeronautical Information Manual.

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Date: September 12, 2006


KBOI/BOI
BOISE AIR TERMINAL/GOWEN
JEPPESEN
28 FEB 03 (12-2)
BOISE, IDAHO
RNAV (GPS) Rwy 10R
ATIS 123.9
BOISE Approach (R) 119.6
BOISE Tower 118.1
Ground 121.7
RNAV
Final Apch Crs 098°
Minimum Alt SITSE 4100′ (1264′)
LNAV/VNAV DA(H) 3140′ (304′)
Apt Elev 2871′
TDZE 2836′
MISSED APCH: Climb to 6000′ via 098° course to PUKIE then climbing RIGHT turn direct BOYCA and hold.
Alt Set: INCHES
Trans level: FL 180
Trans alt: 18000′
1. GPS or RNP-0.3 required. 2. DME/DME RNP-0.3 not authorized. 3. Baro-VNAV not authorized below -20°C (-4°F).
9400′
MSA RW10R
Jeppesen charts shows WONIT as "IF/IAF" in accordance with current policy.
NICPE
PARMO
WONIT
SITSE
RW10R
PUKIE
BOYCA
RENOL
Caldwell Industrial
Nampa Mun
4 NM
0.8 NM to RW10R
LNAV only.
[TCH 55′]
Gnd speed-Kts 70 90 100 120 140 160
Descent angle [3.00°] 372 478 531 637 743 849
MAP at RW10R
MALSR
VASI
6000′ via 098° PUKIE
STRAIGHT-IN LANDING RWY 10R
LNAV/VNAV DA(H) 3140′ (304′)
LNAV MDA(H) 3140′ (304′)
RAIL out ALS out
CIRCLE-TO-LAND
Not Authorized North of Rwy 10L-28R
A RVR 24 or ½ RVR 40 or ¾ RVR 50 or 1 RVR 24 or ½ RVR 40 or ¾ RVR 50 or 1 90 3320′ (449′)-1
B 120 3340′ (469′)-1
C 140 3340′ (469′)-1½
D RVR 40 or ¾ RVR 50 or 1 RVR 50 or 1 165 3440′ (569′)-2
CHANGES: Airport elevation, TDZE, minimums.
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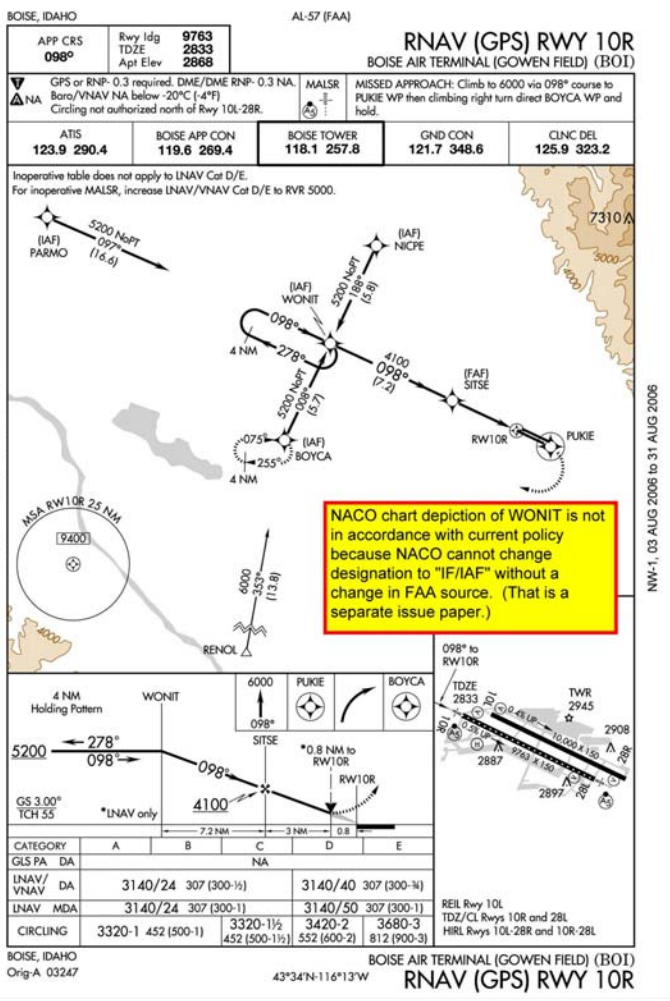

BOISE, IDAHO
AL-57 (FAA)
APP CRS 098°
Rwy Idg 9763
TDZE 2833
Apt Elev 2868
RNAV (GPS) RWY 10R
BOISE AIR TERMINAL (GOWEN FIELD) (BOI)
GPS or RNP- 0.3 required. DME/DME RNP- 0.3 NA.
Baro/VNAV NA below -20°C (-4°F)
Circling not authorized north of Rwy 10L-28R.
MALSR
MISSED APPROACH: Climb to 6000 via 098° course to PUKIE WP then climbing right turn direct BOYCA WP and hold.
ATIS 123.9 290.4
BOISE APP CON 119.6 269.4
BOISE TOWER 118.1 257.8
GND CON 121.7 348.6
CLNC DEL 125.9 323.2
Inoperative table does not apply to LNAV Cat D/E.
For inoperative MALSR, increase LNAV/VNAV Cat D/E to RVR 5000.
(IAF) PARMO
(IAF) NICPE
(IAF) WONIT
(IAF) BOYCA
(FAF) SITSE
RW10R
PUKIE
MSA RW10R 25 NM
9400
RENOL
NACO chart depiction of WONIT is not in accordance with current policy because NACO cannot change designation to "IF/IAF" without a change in FAA source. (That is a separate issue paper.)
4 NM Holding Pattern
098° to RW10R
TDZE 2833
TWR 2945
2908
2887
2897
*0.8 NM to RW10R
*LNAV only
GS 3.00°
TCH 55
7.2 NM
3 NM
CATEGORY A B C D E
GLS PA DA NA
LNAV/VNAV DA 3140/24 307 (300-½) 3140/40 307 (300-¾)
LNAV MDA 3140/24 307 (300-1) 3140/50 307 (300-1)
CIRCLING 3320-1 452 (500-1) 3320-1½ 452 (500-1½) 3420-2 552 (600-2) 3680-3 812 (900-3)
REIL Rwy 10L
TDZ/CL Rwys 10R and 28L
HIRL Rwys 10L-28R and 10R-28L
BOISE, IDAHO
Orig-A 03247
43°34′N-116°13′W
BOISE AIR TERMINAL (GOWEN FIELD) (BOI)
RNAV (GPS) RWY 10R
NW-1, 03 AUG 2006 to 31 AUG 2006
NW-1, 03 AUG 2006 to 31 AUG 2006

Initial Discussion Meeting 06-02: New issue introduced by Rich Boll, NBAA. Rick presented a briefing on air traffic procedures when issuing direct-to-IF clearances when a fix has a dual purpose and is published as an IAF/IF. He used the Boise, ID RNAV (GPS) RWY 10R as an example. The Jeppesen chart identifies the WONIT waypoint as "IAF/IF" whereas the FAA chart identifies it only as an IAF. This could create pilot/controller confusion as to whether a course reversal is required when an aircraft is cleared direct to WONIT and cleared for the approach. In the example used, a direct-to-WONIT clearance as an IAF would require the pilot to make a course reversal under Part 91.175(j) since it is not a radar vector to the final approach course, not a timed approach from a holding fix, or a specified "NoPT" route. Bill Hammett stated that the inclusion of the phrase "straight-in" in the approach clearance as noted in Order 7110.65 eliminates this confusion. Paul Ewing, AJWR-37 (AMTI) took an IOU to clarify the AIM guidance in paragraph 5-4-9 to better help pilots understand direct-to clearances. Danny Hamilton, NFPG, noted that the source -3 for the Boise RNAV approach does identify WONIT as an IAF/IF; however, at the time the chart was produced, charting specifications did not require the "IF" designation. He has coordinated with NACG and the chart will be amended to current specs to add "IAF/IF" at WONIT. Danny further recommended that when a user discovers any other procedure such as this, they notify the NFPG or NACG so the chart may be brought up to date. A copy of Rich slides are included in the minutes. ACTION: AJR-37.

MEETING 07-01: Paul Ewing, AJWR-37 (AMTI) took an IOU at the last meeting to clarify the AIM guidance in paragraph 5-4-9 to better help pilots understand direct-to clearances. Paul briefed that upon further review of the AIM, he sees no reason for further editing as the AIM is in concert with 14 CFR Part 91.175(j). Wally Roberts, NBAA, re-stated that there is confusion on the part of controllers on what fix is the IF. For example, the RNAV (GPS) RWY 16L at Seattle-Tacoma has three waypoints fixes published between the IAF and FAF. Prior to KENMO being identified as the "IF", a controller or pilot would have no idea from the chart which waypoint serves as the IF (See attached charts). Paul advised that he would prepare an ATC Bulletin article advising controllers that, if the IF was in doubt, to question the facility procedures specialist. Janet Myers, AJW-3532, advised that any time a chart is put into work for any revision (procedural or non-procedural), NACO is checking the source 8260 form and charting the "IF" when the intermediate fix has been identified. Since no AIM change is required, Paul recommended the issue be closed and the group agreed. ITEM CLOSED.

APP CRS	Rwy Idg	11901
161°	TDZE	432
	Apt Elev	433

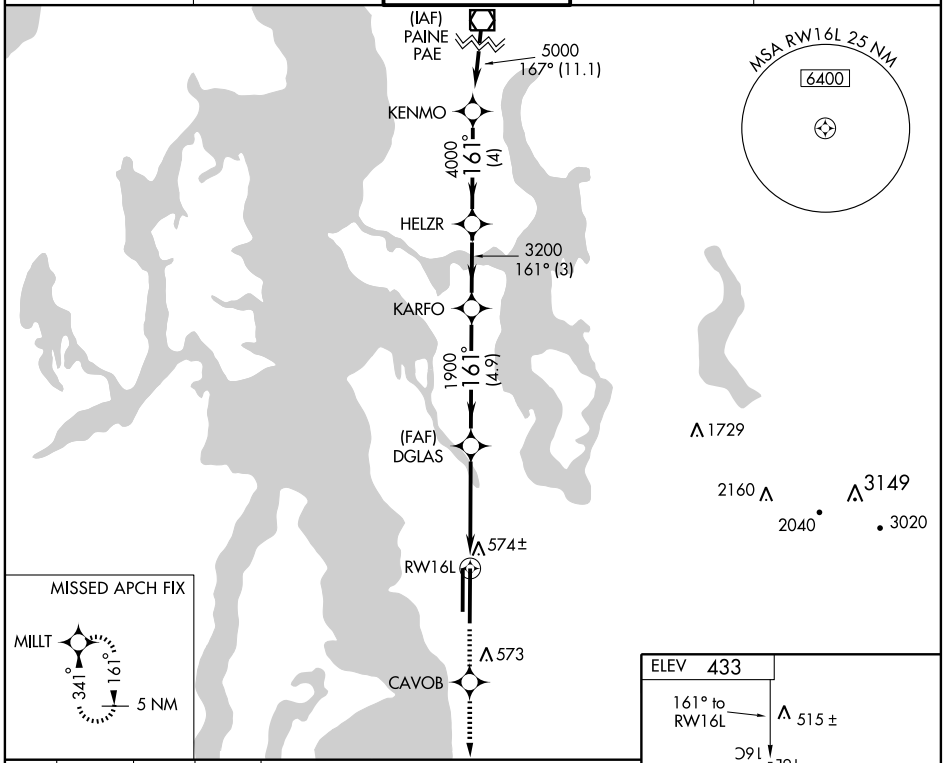
RNAV (GPS) RWY 16L
SEATTLE-TACOMA INTL (SEA)

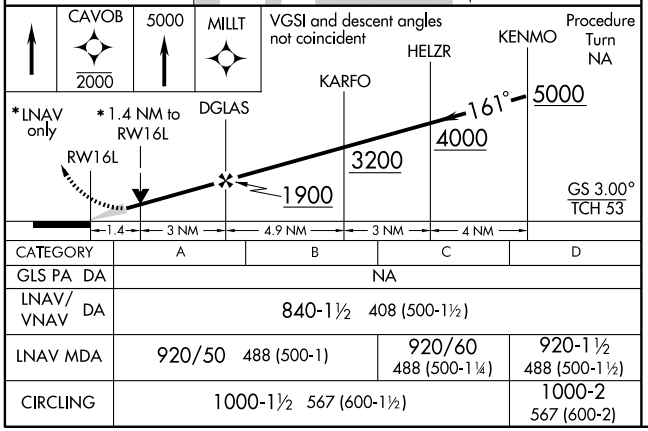
Baro-VNAV not authorized below -15°C (5°F).
GPS or RNP-0.3 required. DME/DME RNP-0.3 NA.

ALSF-2

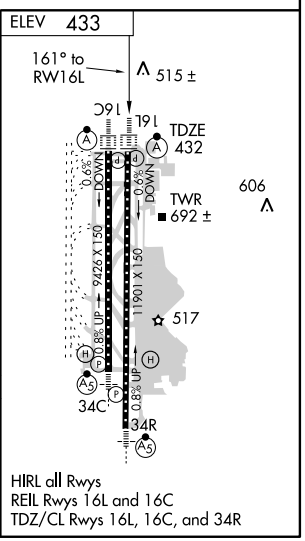
MISSED APPROACH: Climb direct CAVOB WP cross at or below 2000, then climb to 5000 direct MILLT WP and hold.

ATIS	SEATTLE APP CON	SEATTLE TOWER	GND CON	CLNC DEL
118.0	119.2 284.7	119.9 239.3	121.7	128.0





CATEGORY	A	B	C	D
GLS PA DA	NA			
LNAV/VNAV DA	840-1½ 408 (500-1½)			
LNAV MDA	920/50 488 (500-1)		920/60 488 (500-1¼)	920-1½ 488 (500-1½)
CIRCLING	1000-1½ 567 (600-1½)			1000-2 567 (600-2)



NW-1, 23 NOV 2006 to 21 DEC 2006
NW-1, 23 NOV 2006 to 21 DEC 2006

RNAV (GPS) RWY 16L
SEATTLE-TACOMA INTL (SEA)

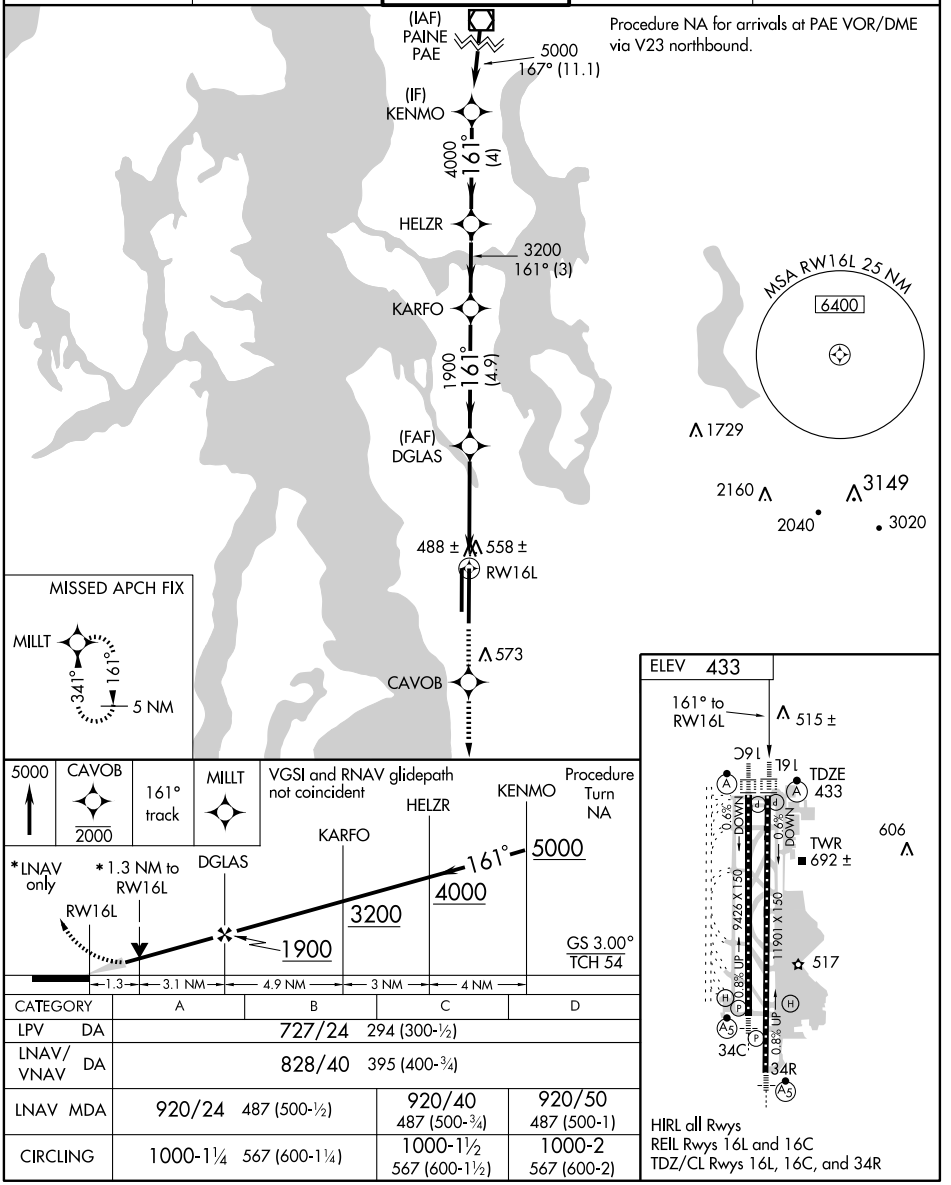
WAAS	APP CRS	Rwy Idg	11901
CH 63202	161°	TDZE	433
W16A		Apt Elev	433

For inoperative ALSF, increase LPV all Cats visibility to 1. For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -15°C (5°F) or above 47°C (118°F). DME/DME RNP- 0.3 NA.

ALSF-2

MISSED APPROACH: Climb to 5000 direct CAVOB, cross CAVOB at or below 2000, then via 161° track to MILLT and hold, continue climb-in-hold to 5000.

ATIS	SEATTLE APP CON	SEATTLE TOWER	GND CON	CLNC DEL
118.0	119.2 284.7	119.9 239.3	121.7	128.0



CATEGORY	A	B	C	D
LPV DA	727/24	294 (300-½)		
LNAV/VNAV DA	828/40	395 (400-¾)		
LNAV MDA	920/24 487 (500-½)		920/40 487 (500-¾)	920/50 487 (500-1)
CIRCLING	1000-1¼ 567 (600-1¼)		1000-1½ 567 (600-1½)	1000-2 567 (600-2)

HIRL all Rwys
REIL Rwys 16L and 16C
TDZ/CL Rwys 16L, 16C, and 34R

NW-1, 10 MAY 2007 to 07 JUN 2007