November 10, 2003

Dear Forum Participant

Attached are the minutes of the Aeronautical Charting Forum, Instrument Procedures Group, (ACF-IPG) held October 20, 2003. The National Aeronautical Charting Office (NACO), AVN-500, Silver Spring, MD sponsored the meeting. Attached to the minutes are an office of primary responsibility (OPR) action listing, and an attendance listing.

Please review the minutes and attachments for accuracy and forward any comments to the following:

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The AFS-420 web site that contains information relating to ongoing activities including the ACF-IPG. The home page is located at http://av-info.faa.gov/terps/ACF-IPG.htm. This site contains copies of past meeting minutes as well as a chronological history of open and closed issues to include the original submission, a brief synopsis of the discussion at each meeting, the current status, required action, and OPR. We encourage participants to use this site for reference in preparation for future meetings.

ACF Meeting 04-01 is scheduled for **April 26-29**, 2004 with the Air Line Pilots Association (ALPA), Herndon, VA as host. Meeting 04-02 is scheduled for **October 25-28** with host TBD.

Please note that **meetings begin promptly at 9:00 AM on Monday**. Please forward new issue items for the 04-01 Instrument Procedures Group meeting to the above addressees not later than April 9th. A reminder notice will be sent.

We look forward to your continued participation.

Thomas E. Schneider, AFS-420
Co-Chairman, Aeronautical Charting Forum,
Chairman Instrument Procedures Group

Attachment: ACF minutes

GOVERNMENT/INDUSTRY AERONAUTICAL CHARTING FORUM
INSTRUMENT PROCEDURES GROUP
Meeting 03-02 Silver Spring, MD
October 20, 2003

1. Opening Remarks:

Mr. Bill Hammett, AFS-420 (ISI), filling in for Tom Schneider, Flight Standards co-chair of the Aeronautical Charting Forum (ACF) and chair of the Instrument Procedures Group (IPG) opened the meeting at 9:00 AM on October 20, 2003. The FAA's Aeronautical Charting Office (NACO), AVN-500, Silver Spring, MD Spring hosted the meeting. Mr. John Moore, AVN-503, made welcoming and administrative comments on behalf of NACO. FAA attendance was down slightly due to conflicting meetings. A listing of attendees is included as attachment 2.

2. Review of Minutes of Last Meeting:

The minutes of ACF-IPG 03-01, which was held on April 28-29, were electronically distributed on May 22. A minor change was made to the discussion for issue 97-01-175 to acknowledge comments received from AFFSA. The revised minutes were posted on the ACF-IPG web site, distributed at the meeting, and accepted as revised.

3. Briefings:

a. Procedure Identification.

Jim Terpstra, Jeppesen, provided an update briefing on progress of the procedure identification standardization effort through the ICAO Obstacle Clearance Panel (OCP). The basic concept is that approach procedures will be named according to the NAVAID providing the lateral navigational guidance required to fly the final approach segment. Other equipment requirements will be specified on the procedure chart. Jim's briefing slides with OCP approved representative procedure titles and a sampling of associated equipment notes are included as Attachment 3.

Jim briefed that the "LOC" vs. "LLZ" acronym for localizer is still a point of concern at the OCP. Therefore, the U.S. has dropped this change from the current effort and submitted a separate paper to have "LOC" as the international standard. There is strong support for this effort among OCP members since all avionics system displays use "LOC". The "LDA" acronym will be retained as currently used in the U.S.

The only exception currently in place for U.S. procedures is the retention of "PRM" where required. This is a direct result of prior ACF discussion and consensus on this issue.

4. Old Business (Open Issues):

a. 92-02-104: TERPS paragraph 323a, Precipitous Terrain Additives.

Bill Hammett, AFS 420 (ISI) briefed a report from Alan Jones and Larry Schwartzcopf, AFS-420. AFS-420 is in the process of validating the algorithms used and results provided by the IAPA software. This validation should be complete not later than November 2003 and the IAPA program will be available for operational use by January 2004. Per ALPA's request at the last meeting, AFS-420 ran the automated software against several approaches to provide a sample impact. The following results were recorded:

1. Windsor Locks/Bradley Intl, CT: RNAV (GPS) RWY 6, RNAV (GPS) RWY 15, and VOR or TACAN RWY 15 - No adjustment required.
2. ASPEN, CO: VOR/DME-C - 161 ft adjustment required.
3. Medford, OR: RNAV (GPS)-D - 54 ft adjustment required.
   VOR/DME-C: 67 ft adjustment required.

Editorial Note: *Bill also briefed the following tentative TERPS change schedule emphasizing that change numbers, contents, and dates are subject to revision:*

(1) Change 20. Precipitous terrain; new Chapter 10; revised Chapter 11; "Q" Routes added to Chapter 15; new circling criteria.
(2) Change 21. New Chapter 3, visibility & landing minima.
(3) Change 22. New Volume 2, non-precision approach criteria.
(4) Change XX. Order 8260.44 criteria added to Volume 4.
(5) *Change XX. New Volume 5, revised helicopter criteria*.

Status: AFS-420 will continue tracking the program and report at the next meeting. Item Open (AFS-420).

b. 92-02-105: Review Adequacy of TERPS Circling Approach Maneuvering Areas and Circling at Airports with High Heights Above Airports (HAAs).

Bill Hammett, AFS-420 (ISI), briefed that a revision to TERPS Volume 1, paragraph 260, Circling Approach Area, has been prepared for inclusion in Change 20. The change is scheduled to enter formal coordination NLT October 30th, and signature is expected in the first week of January, 2004.

Status: AFS-420 will continue to track publication of the new criteria. Item Open (AFS-420).

c. 92-02-110: Cold Station Altimeter Settings.

Bill Hammett, AFS-420 (ISI), briefed that this issue has been transferred to AFS-410 for action. All past AFS-420 studies have been forwarded and AFS-410 has been advised of ALPA's willingness to assist in resolving the issue. Mark Steinbecker is the appointed staff specialist assigned to work the issue. He is currently reviewing the background to determine what operational procedural options exist. TAOARC and RNAV Task Force coordination is also planned.

Status: 1) AFS-410 will work the issue and report. Item Open (AFS-410).

d. 93-01-121: Provision of Current IAP Procedural Directive Guidance to the Aviation Community [FAA-H-8261-1, Instrument Procedures Guide (IPG)]".

Bill Hammett, AFS-420 (ISI), briefed a report by Steve Winter, AFS-420. ASAC/Jeppesen has delivered a printer's draft of the Instrument Procedures Handbook FAA-H-8261-1 to AFS-420. This draft has been reviewed within AFS-400 and all comments addressed with appropriate changes made by Jeppesen. These changes have been posted to the printer's draft and forwarded to AFS-200, 600, and 800 for further review and comment with a suspense date of November 1st. Any further required changes will be forward to Jeppesen. A camera ready document and disk should then be available. A completed product is hoped to be available for the next ACF meeting.

Status: AFS-420 will continue to monitor contractual support and report. Item Open (AFS-420).

e. 96-01-166: Determining Descent Point on Flyby Waypoints (Originally: Definition of "On Course").

Bill Hammett, AFS-420 (ISI), briefed the group that AFS-410 had developed AIM material to resolve this issue based on previous ACF discussions. However, as a result of an internal AFS-400 non-concur, the material did not make the August 7th cutoff for publication in the February 19, 2004 AIM. Work to resolve the non-concur is on-going and it is expected to be complete in time for submission on February 19th for the August 04 AIM.

Status: AFS-410 to monitor AIM publication. Item Open (AFS-410).

f. 97-01-175: Pilot Duties to Confirm GPS Database.

Bill Hammett, AFS-420 (ISI), briefed that the AFS-410 developed information was published in the AIM on August 7th. Bill also noted that the paper developed by Jack Befus of Smiths Aerospace FMS Navigation Database Group on database handling was forwarded to the ACF master mailing list as requested by ALPA at the last meeting. Ted Thompson, Jeppesen, provided an update on various industry database comparison tools. He noted that JAA has established database certification requirements and that FAA has agreed to accept the JAA requirements. Ted also briefed that the FAA National Flight Database (NFD) was discussed at the last ATA FMS Task Force meeting and that FAA (ANM-111) is currently developing an Advisory Circular to explain NFD use.

Status: Item Closed.

g. 98-01-197: Air Carrier Compliance with FAA-specified Climb Gradients.

There is no change in status. An AFS-200 representative was not present to discuss the isue, nor did AFS-200 provide a response for an update to the ACF-IPG chair. Mark Ingram, ALPA, noted that ALPA did not send a follow up letter to AGC as recommended at the last meeting. Bill Hammett, AFS-420 (ISI), stated that it is apparent that the ACF is powerless to get response from AGC and AFS—200. The issue has been on the table for over 5 years without action. Bill again requested that ALPA review the importance of the issue. If deemed important, then ALPA should re-send their letter to AGC. Bill also agreed to draft a letter for the ACF-IPG chair to send to AFS-1 requesting that AFS-200 participate in ACG meetings on a full time basis.

Status: 1) ACF-IPG chair to send letter to AFS-1 requesting AFS-200 participation. 2) ALPA to follow up their 1998 letter to AGC. Item Open (ACF-IPG Chair & ALPA).

h. 98-01-199: RVR Accuracy and Conflict with Flight Visibility.

Bill Hammett, AFS-420 (ISI), briefed that AFS-410 has reported no progress on this issue. Final action is dependent on resolution of the RNAV rulemaking effort. It is likely that TAOARC participation will be required. Ted Thompson, Jeppesen, noted that this issue is also related to the ATA FMS Task Force consideration of approaches where the LNAV/VNAV minimums are higher than LNAV-only minimums. Randy Kenagy, AOPA stated that he hopes the FMS Task Force realizes the impact a review of all RNAV procedures will have on FAA procedure development resources

Status: AFS-410 will: 1) Continue necessary rule change efforts; 2) Expand the RVR conversion table; 3) Develop AIM, TERPS, and TPP changes. Item Open (AFS-410).

i. 98-01-206: Washington DC P-56 Airspace and KDCA IFR Departures.

Bill Hammett, AFS-420 (ISI), briefed a status report received from Brad Rush, AVN-101, indicating that the WENKO and KNAWS departures were completed and on the schedule to be published. However all RNAV SIDs and STARs were all put on hold pending resolution of numerous problems arising from these type of operations. STAR development has begun anew, but none are being processed for publication at this time. SIDs are still being held in abeyance pending changes in criteria. ATP-500 has the IOU to provide updates on time frames for release of RNAV STARs and SIDs. Brad will monitor the status and advise the ACF of any changes.

Status: AVN-101 will continue to track procedure processing. Item Open (AVN-101).

j. 99-01-215: Radar Required SIAPs.

Bill Hammett, AFS-420 (ISI), briefed that Brad Rush, AVN-101, provided ALPA the bi-annual spreadsheet indicating progress. The spreadsheet, which is primarily of interest to ALPA, is not attached. Anyone desiring a copy may contact Brad or Kevin Comstock, ALPA. Work has been completed on all identified procedures with the final three currently awaiting flight inspection. Bill suggested that the issue could be closed; however, Mark Ingram, ALPA, requested it remain open until totally complete.

Status: AVN-101 will continue to provide progress updates at each meeting per ALPA's request until all work is complete. Item Open (AVN-101).

k. 99-02-216: Elimination of Excess Verbiage on DP's and STARs.

Bill Hammett, AFS-420 (ISI), briefed that the revision to Order 8260.46B has been completed. Expanded guidance as well as revised 8260-15 series forms have been included in the revision to satisfy this issue for DPs. Gary Powell, ATP-500, briefed that the STAR order (7100.9) is awaiting signature. The revision contains similar guidance for STARs and when published, should resolve the issue for STARs also.

Status: 1) ATP-500 to monitor revision of associated STAR forms and Order 7100.9. Item Open (ATP-500).

l. 00-02-229: Turbine Powered Holding

Marty Walker, ATP-120, briefed that coordination through various air traffic offices indicate that no one is aware where 175 KIAS holding is required above FL 180. At the chair's suggestion, Marty agreed to formally advise AFS-420 that this requirement is no longer needed. When received, AFS-420 will revise Order 7130.3 accordingly.

Status: 1.) ATP-120 to formally notify AFS-420 that the requirement for 175 holding above FL 180 is no longer needed. 2) AFS-420 to change Order 7130.3 when notification received. Item Open (ATP-120 & AFS-420).

m. 01-01-234: Designation of Maximum Altitudes in the Final Approach Segment

Bill Hammett, AFS-420 (ISI), briefed that an AFS-400 Procedure Review Board (PRB) was held on June 26th to discuss the Orlando Executive procedures and the proposed NBAA recommendations. The board consisted of representatives from FAA HQ (AFS-420, AFS 410, and ATP-120), FAA Southern Region participants from Flight Standards, AVN, and Air Traffic,

the NFPO, the Orlando ATC facility, and industry. As a result, procedure amendments have been forwarded for publication on October 30. The amendments add a cautionary note to the missed approach text and revise all final and missed approach altitude restrictions to 1200'. The ACF attendees are asked to review the amended procedures when published and comment at the next meeting. Bill also noted that after reviewing the August 7 AIM change, it appeared that no action had been taken to resolve the contradictions in missed approach guidance (AIM paragraph 5-4-19b), the Pilot/Controller Glossary (definition of "Missed Approach"), and the Instrument Flying Handbook (page 10-22). Marty Walker assured the group that the Pilot/Controller Glossary revision was forwarded for publication. He did not know why it was not in the August 7 change, but assured the group that it would be in the February 19, 2004 issue.

Status: 1) All attendees to review adequacy of amended procedures at Orlando Executive. 2) ATP-120 to monitor AIM & Pilot/Controller Glossary changes. Item Open (All attendees & ATP-120).

n. 01-02-235: Harmonization of RNAV DPs

Bill Hammett, AFS-420 (ISI), briefed that AFS-410 has revised AIM paragraph 5-2-6f to explain the two levels of RNAV departure. The change was published on August 7th. AFS-410 believes that this should close the issue and suggested that the ground pre-departure GPS system check be worked within the RNAV Action Team (RAT). Steve Bergner, NBAA, non-concurred with closing the issue. Steve emphasized that the pre-departure GPS availability check is vital to prevent aircraft from departing when GPS integrity may not be acceptable for at least the first 30 NM of flight. Steve recommended that AFS-410 remain the focal point for this issue for the ACF regardless of which other groups are involved in resolution.

Status: AFS-410 will coordinate this issue through the RAT and provide a status report at the next meeting. Item Open (AFS-410).

o. 02-01-237: Intermediate Fix (IF) Charting**.**

John Moore, AVN-503 briefed that the IACC requirement document (RD-544) has been agreed to by the Member Points of Contact (MPOCs); however, there was pushback from the military FLIP Coordinating Committee (FCC). "IF" charting is widely supported as a chart/database harmonization issue; however, the IACC charting specifications cannot be changed without agreement of all three IACC agencies (NIMA, ATA-100 and AVN-500. Jim Terpstra, Jeppesen, provided Mike Riley strong rationale for the RD; however, it did not arrive in time for the FCC meeting. Steve Bergner re-stated that this "IF" charting initiative is an excellent tool for pilot/controller use in radar vectoring and issuing approach clearances. He added that "IF" charting will also aid in the resolution of Issue 02-02-246. Mike Riley, NIMA, agreed to take the issue back to the FCC and provide the additional supporting rationale. There were no comments from the military representatives at the meeting. Valerie Watson, ATA-130 will continue to monitor the status of the RD and keep the ACF updated.

Status: 1) NIMA will brief the military FCC on the additional rationale to support the specification change. 2) ATA-130 will monitor IACC action and report. Item Open (NIMA and ATA-130).

p. 02-01-238: Part 97 "Basic" Minima; ATC DP Minima, and DP NOTAMs.

Bill Hammett, AFS-420 (ISI), briefed that this issue was addressed at the last Aeronautical Information Services Working Group (AISWG). Although it is desired to have DPs and STARs

use the same NOTAM format, ATP-320 is willing to accept and coordinate using FDC NOTAMs for DPs only. Since all DPs are under the policy purview of AFS, AFS-420 is agreeable to providing the Document Change proposal (DCP) information to ATP-320 for processing. However, STARs are still under the purview of ATP-500. Gary Powell, ATP-500, will coordinate STAR NOTAM inclusion under the FDC process. This change will require revision to Orders 7930.2 *Notices to Airmen (NOTAMs)* and 7210.3, *Facility Operation and Administration*. Changes to AT publications are accomplished bi-annually with a 6-month lead-time; therefore, all work must be completed NLT February 19, 2004 for an effective date in August.

Status: 1) AFS-420 to provide DCP information to ATP-320. 2) ATP-500 to address STAR NOTAMs. Item Open (AFS-420 & ATP-500).

q. 02-01-239: Minimum Vectoring Altitude (MVA) Obstacle Accountability; Lack of Diverse Vector Area (DVA) Criteria.

Bill Hammett, AFS-420 (ISI), briefed that as a result of this issue, a meeting between interested government/industry parties was held in Oklahoma City on August 14th. Discussion items included the public availability of MVA/MIA charts, the fidelity of the charts in use, the criteria and policy under which charts are developed, and the legal requirements of Parts 91.175 and 91.177 as they relate to MVA/MIA charts. Howard Swancy, AFS-4, who took the IOU to respond to the NBAA meeting's action items, updated the ACF on actions thus far. AFS-420 has developed new criteria for MVA chart development that will be included in TERPS change 20. The criterion has been coordinated through the TERPS Working Group (TWG) and is targeted to be released for public comment in early November. Howard briefed that internal FAA discussions have validated that AVN-100 is the approval authority for MVA/MIA charts. AVN-100 has increased scrutiny of the charts and is advising air traffic facilities when corrections are required. FAA will continue to assess the feasibility of an automation program for MVA/MIA chart development, review, and approval. Thus far, FAA will continue to allow required obstacle clearance (ROC) reductions in designated mountainous terrain areas; however, the application of the reductions will also receive an increased level of scrutiny. Howard briefed that he has received information from AVN-500 regarding personnel and financial impact on AVN-500 to release the MVA shape files. He is currently coordinating an AT position on the release of the data. FAA must also consider certification requirements for avionics displays as well as pilot procedures for interpretation and use of the MVA/MIA data. Realizing the industry sense of urgency for the data, FAA will continue to study its release. Howard further briefed that AGC-2 has not responded thus far to the questions forwarded as a result of the August meeting. There are also legal liability questions surrounding whether FAA provides the data to industry. In closing, Howard briefed that the ongoing work is at the same level that would be achieved as if the Administrator was personally involved. He hopes to have the issue totally assessed and a response on the above issues to NBAA in November. Bill Hammett requested that Howard emphasize the automation effort at higher levels. At the August meeting, it was briefed that the FAA/AVN-41 automation effort was currently suspended. Also, at the August meeting, the USAF provided a demonstration of an automation tool that they have under development that appeared to be usable for both development and review of MVA/MIA charts. A good automation tool is a key item in more accurate, safer, MVA/MIA charts. Howard agreed to provide further updates on this issue to the ACF.

Status: 1) AFS-4 will continue to track the issue and report progress. Item Open (AFS-4).

r. 02-01-241: Non Radar Level and Climbing Holding Patterns.

Bill Hammett, AFS-420 (ISI), briefed that AFS-420 has reviewed the AIM guidance on this matter and it is satisfactory. Bill also noted that ATP-120 has an IOU from previous meeting to issue an AT Bulletin article to ensure that controllers are aware of which holding patterns have been

evaluated for a climb-in hold (CIH). This information is currently only available on the Form 8260-2 supporting for the fix/NAVAID. Marty Walker, ATP-120, stated that he is still researching background for the article.

Status: ATP-120 will prepare an ATC Bulletin article to ensure controller awareness of holding patterns that are satisfactory assigning an impromptu CIH clearance. Item Open (ATP-120).

s. 02-01-243: Holding Pattern Definition.

Bill Hammett, AFS-420 (ISI) briefed that the August 7 issue of the AIM was revised to include RNAV holding examples. However, post-publication review indicates that the text is satisfactory; however, Figures 5-3-5 and 5-3-6 are incorrect. The figures will be corrected ASAP. Steve Bergner noted that some FMS systems calculate the total distance around the holding pattern, vice using an ATD to determine the outbound leg termination point. Bill responded that the examples were generic to explain manual pilot-controlled holding patterns.

Status: AFS-420 to monitor AIM revisions. Item Open (AFS-420).

t. 02-01-244: Cancellation of GPS Overlay Approaches.

Lynn Boniface, AFS-420 briefed that FAA is trying to eliminate some GPS overlay approaches where a stand-alone has been published to the airport. At the last ACF, AOPA was provided three lists of procedures for consideration. Hal Becker, AOPA, explained that AOPA has formally responded to FAA, recommending the following conditions as its policy for canceling GPS overlay approaches:

1. The airport must have an existing stand-alone GPS approach to the same runway as the "or GPS" procedure, or a stand-alone approach must be developed and effective on the date of the cancellation, and,
2. The cancellation of the "or GPS" procedure must not result in an increase in minimums for the straight-in or the circling procedure.

AOPA believes the above stipulations will provide clear, simple guidance to the RAPT, preserve the existing access to the airports in question, and allow users to utilize their investment in GPS technology to the maximum extent possible. Lynn stated that the FAA would like to first pursue elimination of all circling-only “or GPS” approaches where a straight-in approach with circling minima (no lower than what is currently published) is published. Randy Kenagy, AOPA, stated that this might have an operational impact. For example, an aircraft may have to fly considerable distance to get to the straight-in IAF when the IAF for the circling only approach may be closer, or in some cases overflown. He further stated that any cancellations must be coordinated with air traffic so as to ensure there is no degradation of ATC services to the airport. Lynn agreed that all cancellations would be fully coordinated. Eric Secretan brought up the issue of no-FAF procedures that appeared “uncodable” due to descent gradient violations. Bill Hammett, AFS-420 (ISI) responded that it appeared that the descent gradients on list of “uncodable” approaches had been improperly calculated (from pseudo FAF to threshold vice the MAP). Bill also noted that the coding problems arose from charting agencies attempting to put a vertical descent angle (VDA) on approaches where it was not allowed by policy or criteria. Eric agreed to further research this area. Lynn re-emphasized that the GPS overlay program was only to be temporary in nature. He re-stated that FAA would continue to pursue “or GPS” eliminations, especially circling only and no-FAF approaches. All "or GPS" procedure eliminations would be publicly coordinated.

Status: AFS-420 to continue to work the issue in concert with AVN-100 and report. Item Open (AFS-420 and AVN-100).

u. 02-02-246: Turn Angle Limits for RNAV Approaches Without TAAs.

Gary Powell, ATP-500, briefed that this issue is being worked through ATPAC. An Air Traffic Document Change Proposal (DCP) based on Air Traffic, Flight Standards, and industry input had been circulated for comment. In the interim, ATC Notice 7110.329 has been published to provide guidance for controllers. Steve Bergner, NBAA, criticized that the notice does not solve the problem and does not provide examples to clarify the guidance. He also provided several examples where charts are misleading, e.g., there are differences in "IAF" and "IAF/IF" labeling between government and Jeppesen charts, there are charts where there is no course reversal at an IAF, etc. Steve noted that the examples provided in his presentation also provide strong support for charting the "IF" (See 02-01-237). Lastly, Steve noted that on October 1, Kevin Comstock, ALPA, had forwarded a detailed e-mail message to ATP-500 detailing what has been accomplished and what remains to be done to resolve this issue. Steve's power point slides and Kevin's e-mail synopsis are included as Attachments 4 and 5 respectively. Gary agreed to take the issue for further work considering the ALPA and NBAA concerns.

Status: ATP-500 will continue to work the issue and report. Item Open (AFS-420/410).

v. 03-01-247: Holding Pattern Criteria Selection and Holding Pattern Climb-in-Hold Issues.

Bill Hammett, AFS-420 (ISI), briefed that this issue went awry within AFS-420 and a study was initiated on helicopter/STOL holding. The issue has been re-focused to conduct an Airspace Simulation and Analysis for TERPS (ASAT) evaluation for holding pattern selection as requested in the original issue paper.

Editors Note: *On November 3rd, AFS-420 was re-organized into two branches. AFS-420 will retain TERPS criteria and policy. AFS-440 will assume all ASAT and simulator functions.*

Status: AFS-440 to conduct ASAT/simulator analysis and report. Item Open (AFS-440).

5. New Business:

a. 03-02-248 Substitution of GPS for Missed Approach Operations.

Steve Bergner, NBAA, presented this new issue. The issue was initiated when a NBAA member, in a GPS equipped aircraft, was refused an ILS approach because the missed approach instructions required the aircraft to proceed to a VOR and hold. The VOR was out of service and there were no alternate missed approach instructions available. The missed approach in question required a climb to an altitude via a dead reckoning heading followed by a turn direct to the VOR, all maneuvers within GPS navigation capability. NBAA is asking the FAA to consider allowing GPS to be substituted for VORs as is allowed for NDBs and DMEs. Bill Hammett, AFS-420 (ISI) agreed to forward the issue to AFS-410 for consideration.
Status: AFS-410 will research the issue and report. Item Open (AFS-410).

6. Next Meeting: ACF Meeting 04-01 is scheduled for **April 26-29, 2004** with the Air Line Pilots Association (ALPA), Herndon, VA as host. Meeting 04-02 is scheduled for **October 25-28, 2004** with host to be determined.

7. Attachments (5):

1. OPR/Action Listing.
2. Attendance Listing.
3. Jim Terpstra (Jeppesen) Procedure Identification Slides.
4. Steve Bergner (NBAA) Slides re. Issue 02-02-24622222.
5. Kevin Comstock (ALPA) Status Paper re. Issue 02-02-246

Please note the attached Office of Primary Responsibility (OPR) listing (attachment 1) for action items. It is requested that all OPRs provide the Chair, Tom Schneider, (with an information copy to Bill Hammett) a written status update on open issues not later than April 9, 2004 - a reminder notice will be provided.

AERONAUTICAL CHARTING FORUM
INSTRUMENT PROCEDURES GROUP
OPEN AGENDA ITEMS FROM MEETING 03-02

OPR	AGENDA ITEM (ISSUE)	REQUIRED ACTION
AFS-420	**92-02-104** (Precipitous terrain adjustments)	AFS-420: Track program and report.
AFS-420	**92-02-105** (Circling areas)	Track status of new criteria.
AFS-410	**92-02-110** (Cold weather altimetry)	Work issue and report.
AFS-420	**93-01-121** (FAA-H-8261-1, Instrument Procedures Guide (IPG))	Monitor contractual support and report.
AFS-410	**96-01-166** (Descent point of flyby waypoints. Originally "on course")	Develop AIM language to resolve the issue and report.
ALPA ACF-IPG Chair	**98-01-197** (Air carrier compliance w/climb gradients)	ALPA: Follow up on letter to AGC. ACF-IPG Chair: Prepare memo to AFS-1 regarding AFS-200 support.
AFS-410	**98-01-199** (RVR accuracy vs. flight visibility. Also use of RVR minima)	Expand RVR conversion table. Develop AIM & TPP change. Initiate necessary rule change.
AVN-101	**98-01-206** (P-56 airspace vs. KDCA IFR departures)	Track processing/publication & report procedure status.
AVN-101	**99-01-215** (Radar required SIAP's	Provide procedure status list to ALPA.
ATP-500	**99-02-216** (Excess verbiage on DP's & STAR's)	ATP-500: Revise Order 7100.9 and associated STAR forms.
ATP-120 AFS-420	**00-02-229** (Turbine powered holding)	ATP-120: Provide written ATP position to AFS. AFS-420: Revise Order 7130.3.
All Attendees ATP-120	**01-01-234** (Designation of maximum altitudes in the final approach segment)	All Attendees: review KORL SIAP amendments. ATP-120: Revise AIM and Pilot/Controller Glossary
AFS-410	**01-02-235** (Harmonization of DP's)	Coordinate NBAA concerns through the RNAV Action Team and report.
NIMA ATA-130	**02-01-237** (Intermediate Fix Charting)	NIMA: Provide ACF rationale to FCC. ATA-130: Monitor IACC actions & report.
AFS-420 ATP-500	**02-01-238** (Departure Minimums and DP NOTAMs)	Provide DCP material to ATP-320 for DP NOTAMs. ATP-500: Coordinate FDC STAR NOTAMs within AAT.
AFS-4	**02-01-239** (MVA Obstacle Accountability and Lack of DVA Criteria)	Track issue and report.

ATP-120	**02-01-241** (Non-radar Level and Climbing Holding Patterns)	Develop controller education material on the issue.
AFS-420	**02-01-243** (RNAV Holding Pattern Definition)	Develop new AIM figures for RNAV holding.
AFS-420 & AVN-100	**02-01-244** (Cancellation of GPS Overlay Approaches)	Jointly work the issue and report.
ATP-500 & ATP-120	**02-02-246** (Turn Angle Limits for RNAV SIAPs Without TAAs)	Develop controller procedures.
AFS-440	**03-01-247** (Holding Pattern Criteria Selection)	Conduct ASAT/simulator analysis and report.
AFS-410	**03-01-248** (Substitution of GPS for Missed Approach Operations)	Research issue and report

AERONAUTICAL CHARTING FORUM
INSTRUMENT PROCEDURES GROUP
ATTENDANCE LISTING - MEETING 03-02

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Approach Procedure Title Standardization

FAA/Industry Aeronautical Charting Forum
Silver Spring, Maryland
20 - 21 October 2003

Jim Terpstra

Current ICAO Standard

- Procedure title should be named according to the navaid(s) to be used.
- Causes many, many variations from State to State
- Causes pilots to hear different clearances from State to State
- Causes different expectations for equipment requirements

Procedure Title Standard approved by OCP

- Title of approach procedure will be the same as the type of radio navigation aid providing the final approach lateral guidance.
- Equipment requirements will be specified on approach procedure
- Different transitions will be labeled on approach procedure chart (but only when impossible to place different transitions on same chart)

Procedure Titles Approved by OCP

ILS or LLZ Rwy 25 - localizer required and glide slope available - When glide slope available, clearance from controller would be for ILS Rwy 25. When glide slope not available, clearance from controller would be for LLZ Rwy 25.

ILS Rwy 25 - localizer and glide slope required (There are cases where the glide slope must be used because of final approach segment obstacles. LLZ minimums not published.)

ILS or LLZ Rwy 07L - localizer and DME required and glide slope available – Procedure Note on chart for DME required. ILS and LLZ minimums published.

ILS Rwy 08L CAT II & III - category II and III minimums on same chart.

ILS Rwy 08L CAT II - category II minimums published only.

Procedure Titles Approved by OCP

- **LLZ Rwy 09** - localizer required and glide slope not available
- **LLZ Rwy 19** - localizer and DME required and glide slope not available – Procedure Note on chart for DME required
- **LDA Rwy 05R** - used for localizer based approach when the localizer final course is greater than three degrees offset from the runway centerline (If a glide slope is available with the LDA, a note stating “With Glide Slope” will be displayed in a prominent position in the plan view.) (OCP suggested using LLZ instead of LDA.)
- Note: The letters LOC are used as the abbreviation for localizer on all avionics systems displays. A proposal has been submitted in OCP that the letters LOC be used for localizer instead of LLZ.

Procedure Titles Approved by OCP

VOR Rwy 04 - only VOR required - also used when DME available for lower minimums or stepdown fixes, etc. If DME is used to define stepdown fixes in the final segment, additional lower minimums will be provided for the benefit of DME-equipped aircraft.

VOR Rwy 11 - VOR and DME required – Note on chart for DME required

VOR Rwy 35 - used when an approach procedure is designed for a limited number of aircraft categories – approach category limitation to appear on the chart in a location other than the title.

VOR Z Rwy 29 - for first VOR approach requiring only a VOR and when a second VOR approach to the same runway exists. (This title is also an example where there are multiple approach procedures with different transitions that are placed on separate pages.)

VOR Y Rwy 29 - for second VOR approach to a runway and requiring only a VOR (This title is also an example where there are multiple approach procedures with different transitions that are placed on separate pages.)

VOR Z Rwy 35 - used when same approach procedure for different aircraft categories is published as separate approach procedure on separate page – approach category limitation to appear on the chart in a location other than the title.

Procedure Titles Approved by OCP

NDB Rwy 32 - NDB or locator required - this should be used for approaches based on NDBs and locators and should be used when one or more of these facilities are required for the final approach segment. Note on chart for Dual ADF Required.

NDB Rwy 17R - NDB (or locator) and DME required – Note on chart for DME Required

LLZ or NDB Rwy 26 - When two or three procedures are depicted on the same chart, their titles should be separated by the word “or.”

VOR Rwy 26L/R - Used when approach qualifies for straight-in landing minimums on two runways. Note: In these cases, the approach procedure title will appear as **VOR Rwy 26** on airborne navigation systems.

VOR-A - VOR required but straight-in landing minimums criteria not met.

NDB-B - Second procedure at an airport where straight-in landing minimums criteria not met.

Procedure Titles Approved by OCP

RNAV (GNSS) Rwy 13R - used to describe the primary sensor required for the procedure. Note: The avionics systems will not include the letters in parentheses on the display.)

RNAV (GNSS) Rwy 25L - Used for SBAS (WAAS, EGNOS) approaches.

RNAV (DME/DME) Rwy 05R - Used for RNAV approach based on DME/DME.

RNAV (VORDME) Rwy 30 - Used for RNAV approach based on VORDME.

GLS Rwy 27R – Being considered for GBAS (LAAS) procedures.

Procedure Titles Approved by OCP

RNAV Rwy 19L - Used when type of navigation equipment not specified

Currently used in US:

VOR or GPS Rwy 09 - Used when air traffic control will give clearance for either VOR Rwy 09 or GPS Rwy 09 approach on GPS overlay approach procedures.

Currently used in Canada:

(GPS) VOR Rwy 09 - Used when air traffic control will only give clearance for VOR Rwy 09 approach and approach is authorized as a GNSS overlay procedure.

Some Procedure Notes

Located on Chart to indicate requirement for procedure entry

- ADF required
- Radar required
- DME required.

Located on Chart to alert the pilot of a special characteristic of the procedure

- CONVERGING
- With Glide Slope
- PRM (was originally intended to be a note, but pilot input revised the placement to be in the title)

Some Procedure Notes

Displayed as a procedure note to indicate equipment requirement for execution of procedure

- DME required
- Radar or DME required
- VOR and Localizer required
- Dual VOR or VOR and DME required
- Dual ADF required
- ADF required for missed approach (used on LLZ and VOR approaches)
- When inbound from XXX NDB change over to YYY NDB at midpoint.
- XXX VOR Transition (to be used when different transitions on separate pages)
- YYY VOR Transition (to be used when different transitions on separate pages)
- BOROM Transition (to be used when different transitions on separate pages)
- Special aircraft and aircrew certification required
- Dual VHF communications required
- Caution: Simultaneous close parallel operations
- GPS or RNP-0.3 required
- GPS or RNP-0.3 required. DME/DME RNP-0.3 not authorized

“Direct-to” IF / IAF Confusion

Guidance for ATC’s
Guidance for Pilots
Charting Considerations
RNAV Procedure Criteria

New Air Traffic Notice Issued

NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

N 7110.329

Cancellation
Date: 2/19/04

SUBJ: APPROACH CLEARANCE

1. PURPOSE. This notice amends Order 7110.65, Air Traffic Control, Paragraph 4-8-1, Approach Clearance.

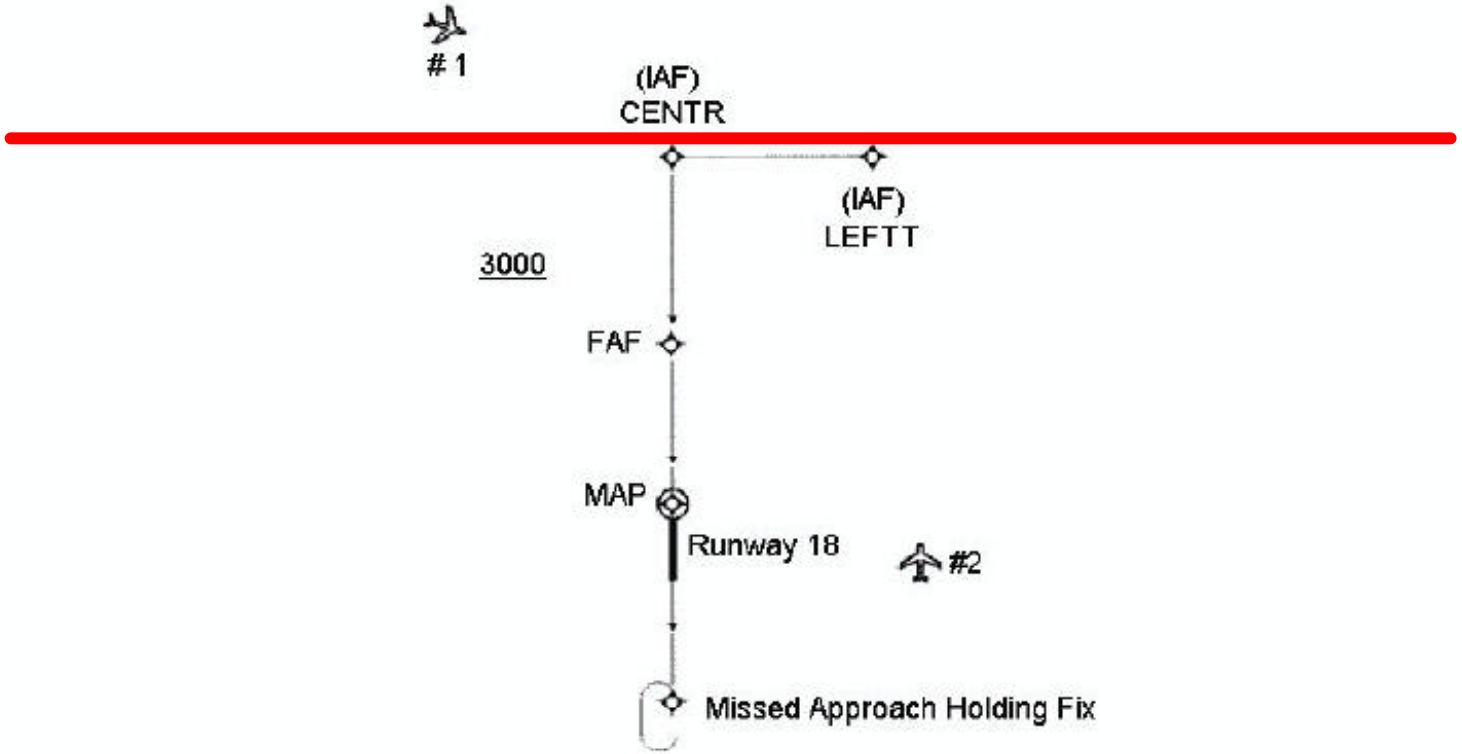
2. DISTRIBUTION. This notice is distributed to select offices in Washington headquarters, regional offices, the David J. Hurley Air Traffic Control System Command Center, William J. Hughes Technical Center, Mike Monroney Aeronautical Center, and all air traffic field facilities.

3. EFFECTIVE DATE. August 7, 2003.

"90-Degree Rule" for ATC's

3. Established on a heading or course that will intercept the initial segment at the initial approach fix, or intermediate segment at the intermediate fix when no initial approach fix is published, for a GPS or RNAV instrument approach procedure at an angle not greater than 90 degrees. Angles greater than 90 degrees may be used when a hold in lieu of procedure turn pattern is depicted at the fix for the instrument approach procedure (see figure 4-8-2).

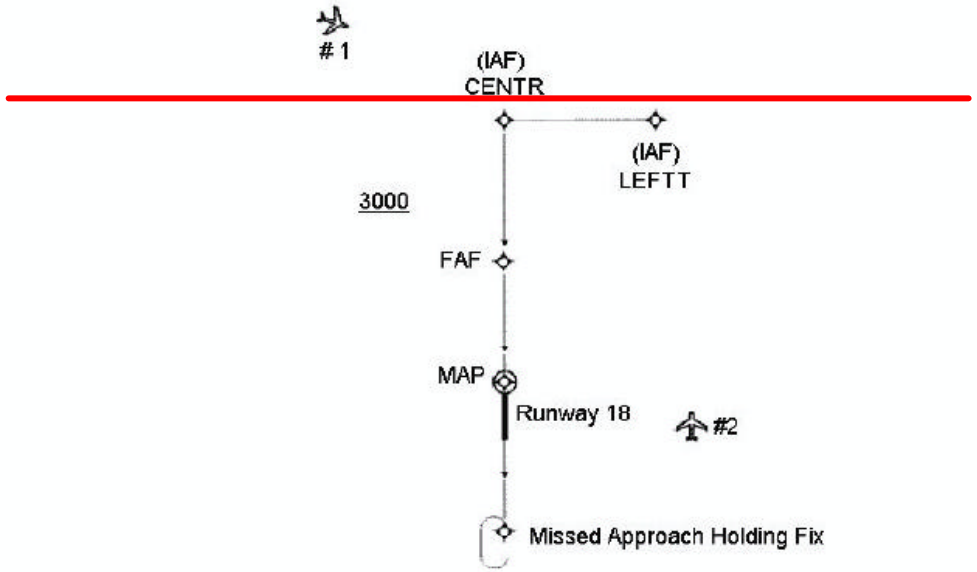
FIG 4-8-2
Approach Clearance Example
For RNAV Aircraft



Equivalent Guidance Required for AIM

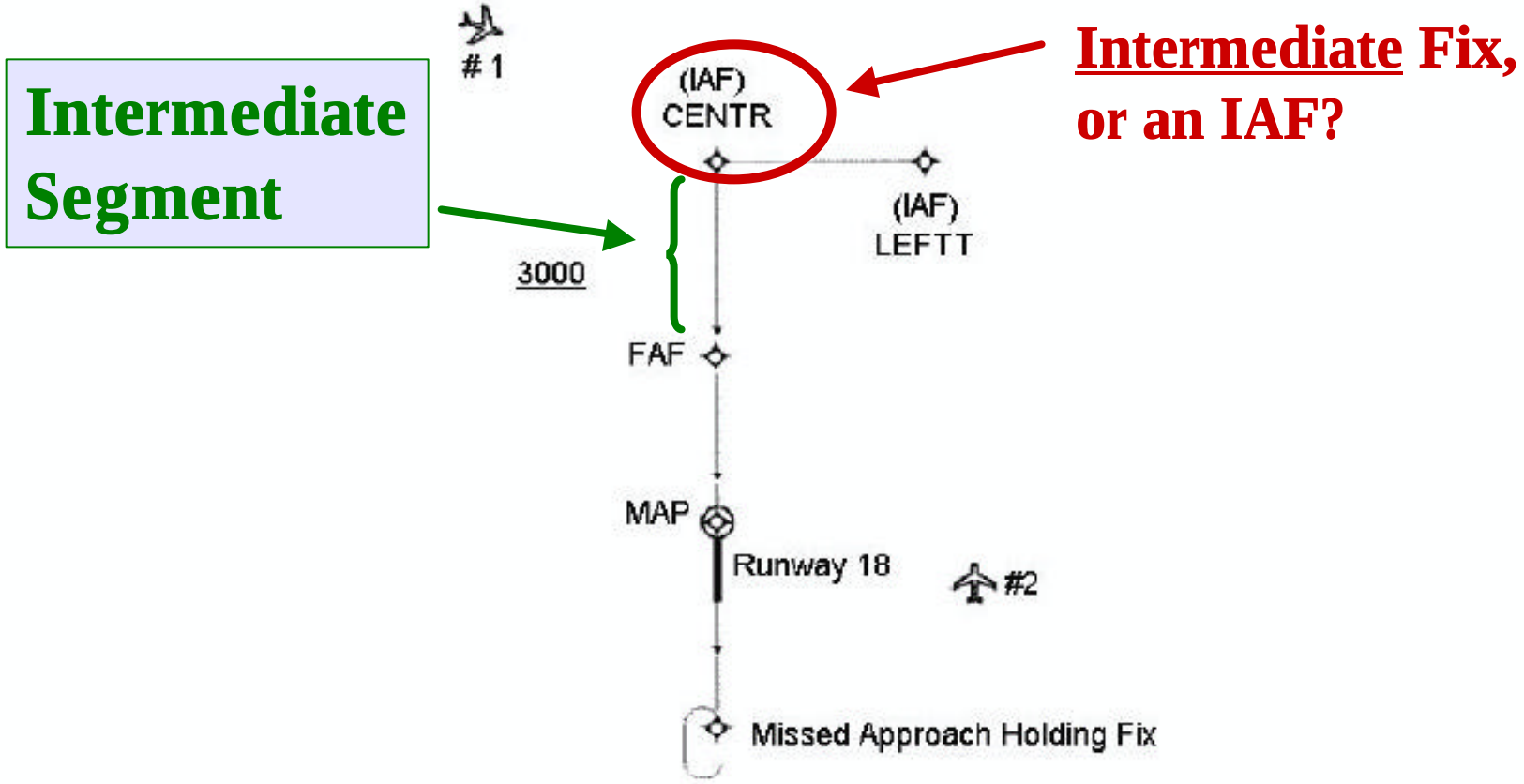
3. Established on a heading or course that will intercept the initial segment at the initial approach fix, or intermediate segment at the intermediate fix when no initial approach fix is published, for a GPS or RNAV instrument approach procedure at an angle not greater than 90 degrees. Angles greater than 90 degrees may be used when a hold in lieu of procedure turn pattern is depicted at the fix for the instrument approach procedure (see figure 4-8-2).

FIG 4-8-2
Approach Clearance Example
For RNAV Aircraft



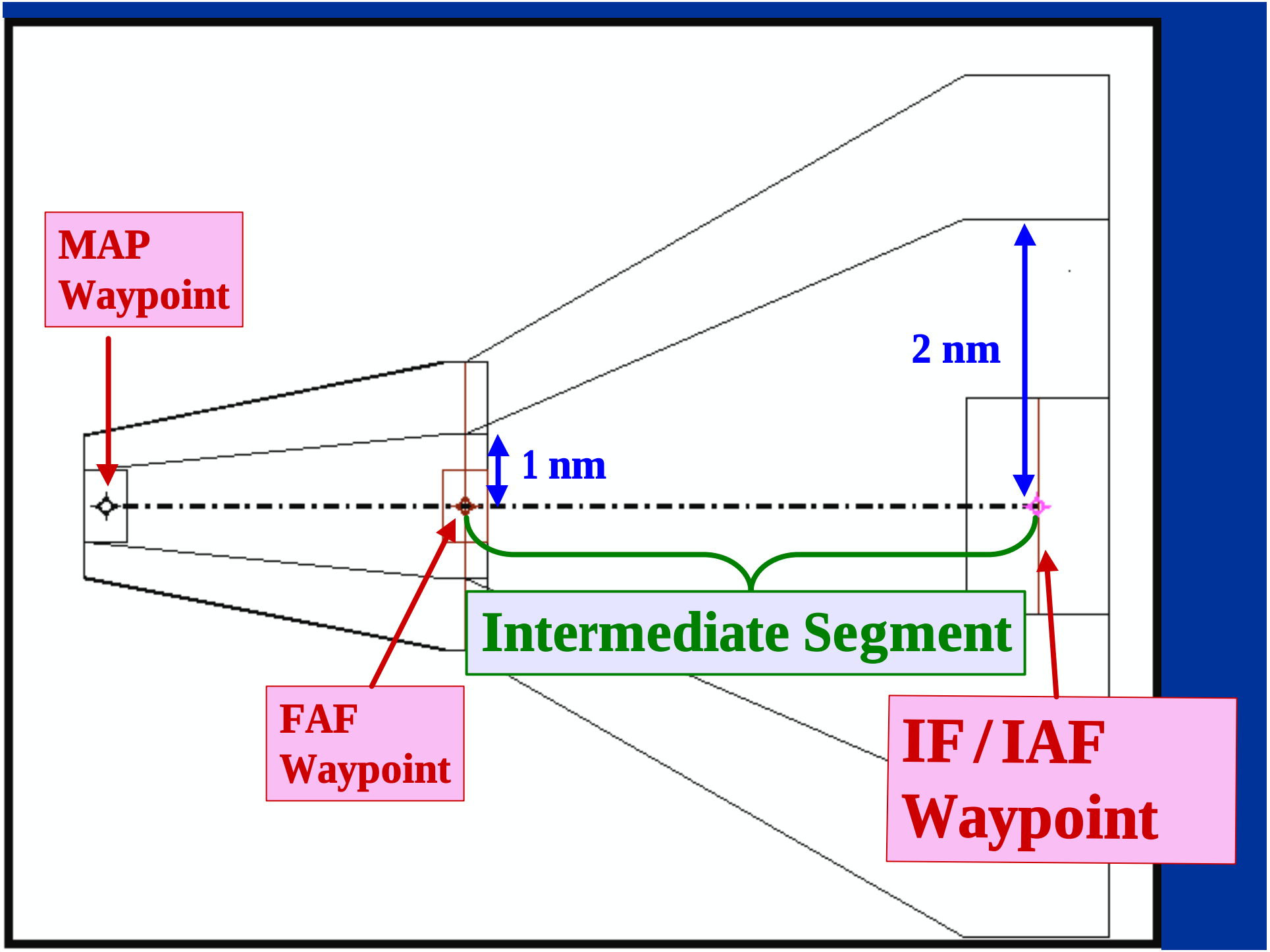
3. Established on a heading or course that will intercept the initial segment at the initial approach fix, or intermediate segment at the intermediate fix when no initial approach fix is published, for a GPS or RNAV instrument approach procedure at an angle not greater than 90 degrees. Angles greater than 90 degrees may be used when a hold in lieu of procedure turn pattern is depicted at the fix for the instrument approach procedure (see figure 4-8-2).

FIG 4-8-2
Approach Clearance Example
For RNAV Aircraft

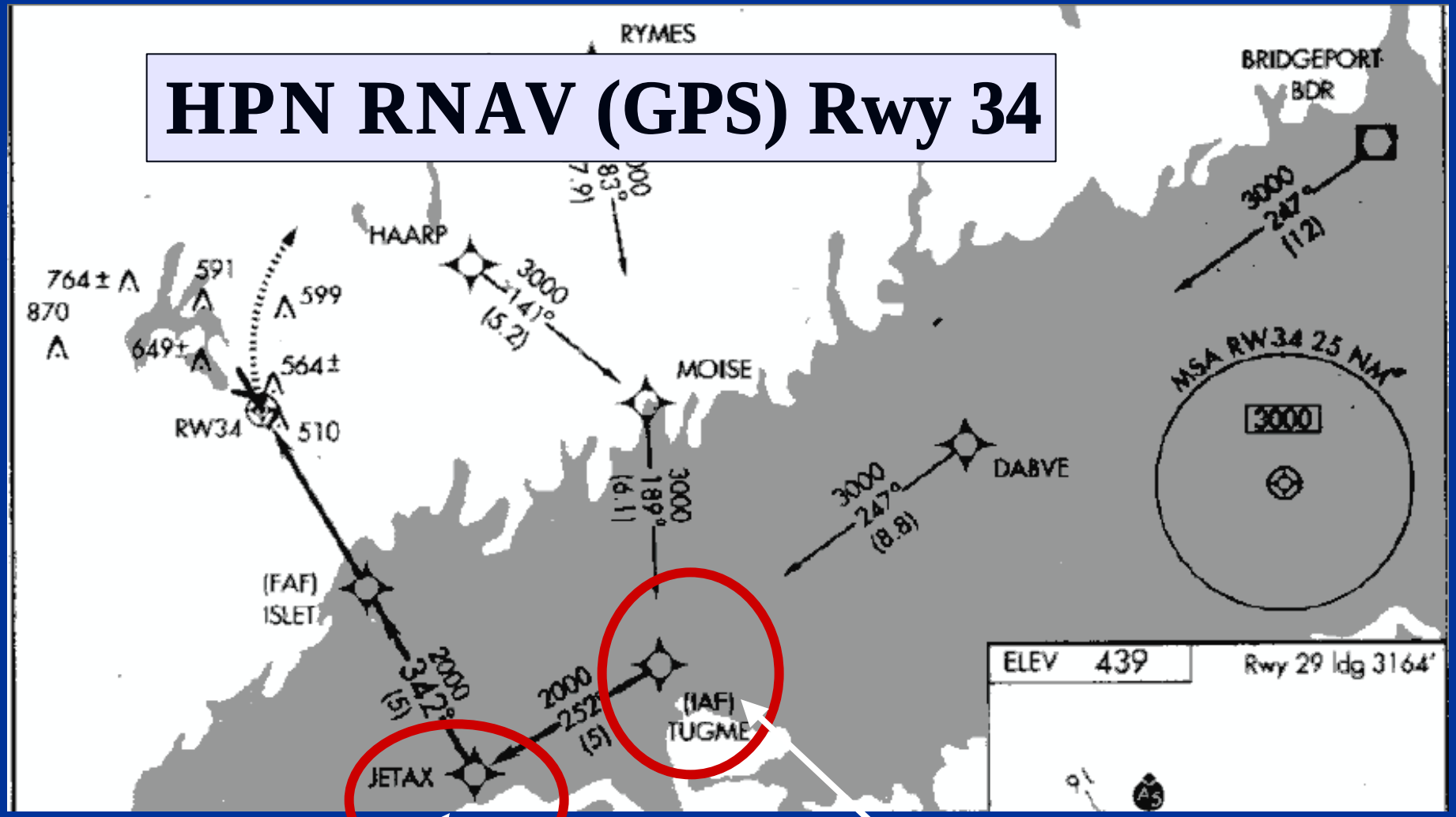


Intermediate Segment

Is "CENTR" an Intermediate Fix, or an IAF?

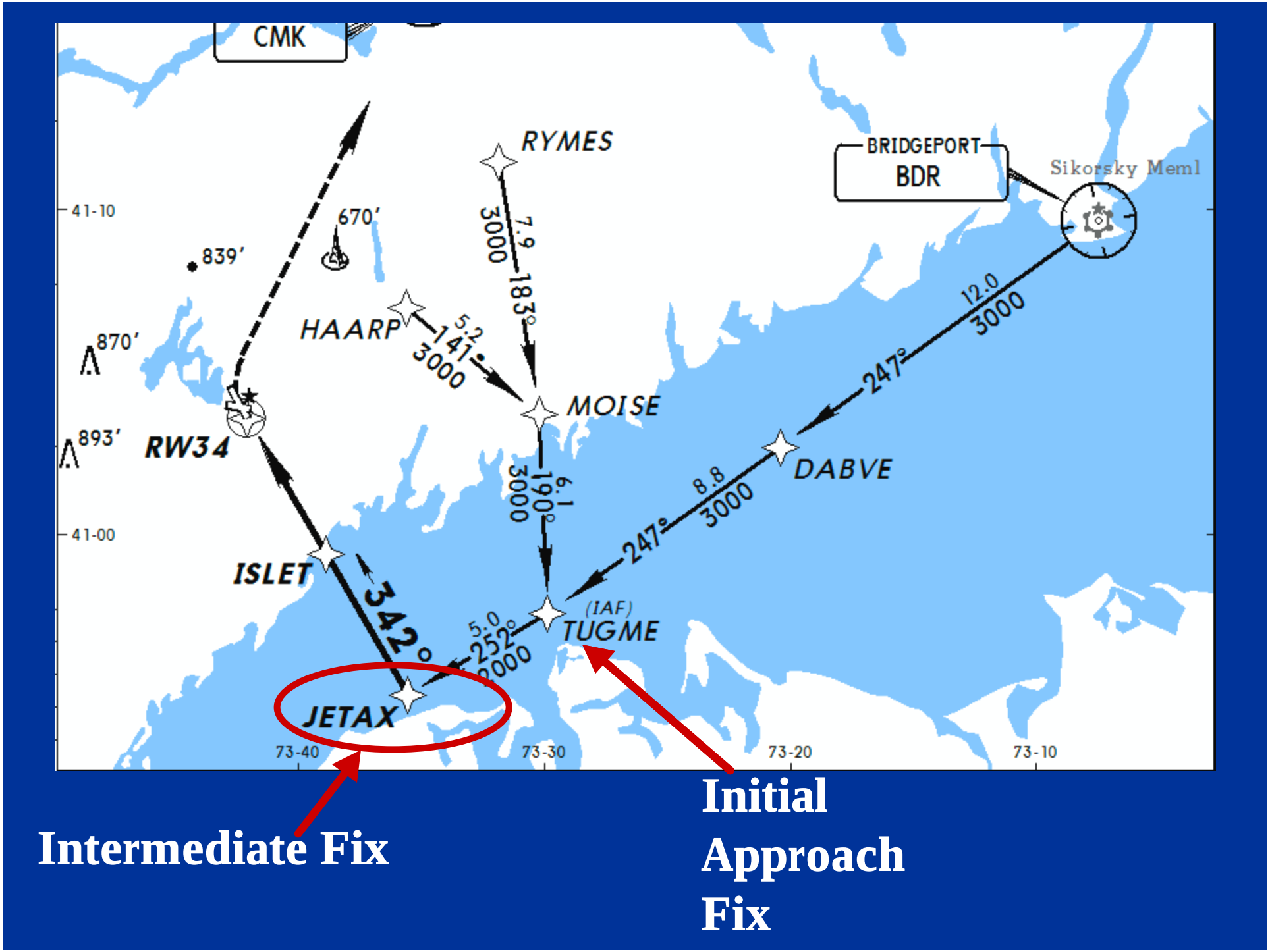

MAP
Waypoint
2 nm
1 nm
Intermediate Segment
FAF
Waypoint
IF / IAF
Waypoint

HPN RNAV (GPS) Rwy 34



Intermediate Fix

Initial Approach Fix


CMK
RYMES
BRIDGEPORT
BDR
Sikorsky Meml
41-10
670'
839'
870'
893'
HAARP
MOISE
DABVE
RW34
ISLET
JETAX
TUGME
(IAF)
41-00
73-40
73-30
73-20
73-10
3000
7.9
183°
5.2
141
12.0
247°
6.1
190°
8.8
342°
5.0
252°
Intermediate Fix
Initial Approach Fix

APP CRS 093° | RWY TDZE 7 | Apt Elev 9

RNAV (GPS) RWY 9L

FORT LAUDERDALE-HOLLYWOOD INTL (FLL)

NA

Baro-VNAV NA below -15°C (5°F).
GPS or RNP-0.3 Required.
DME/DME RNP-0.3 NA.
For inoperative MA
A and B visibility to

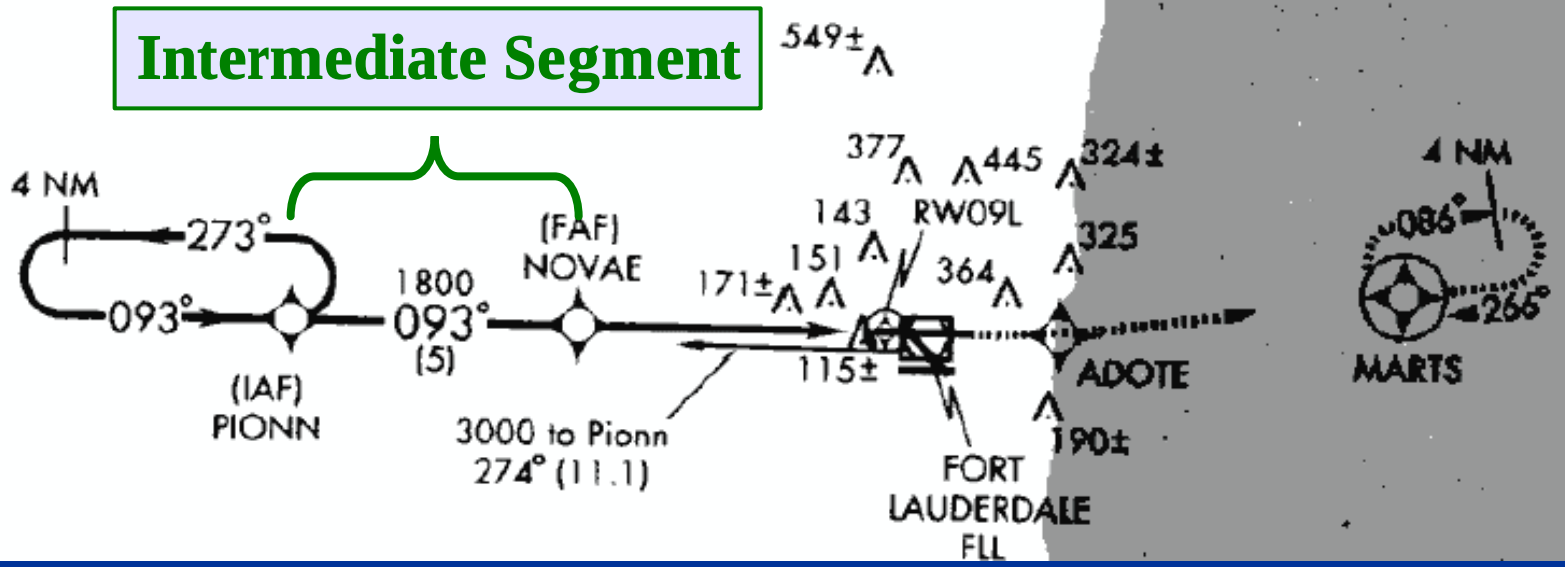
MALSR

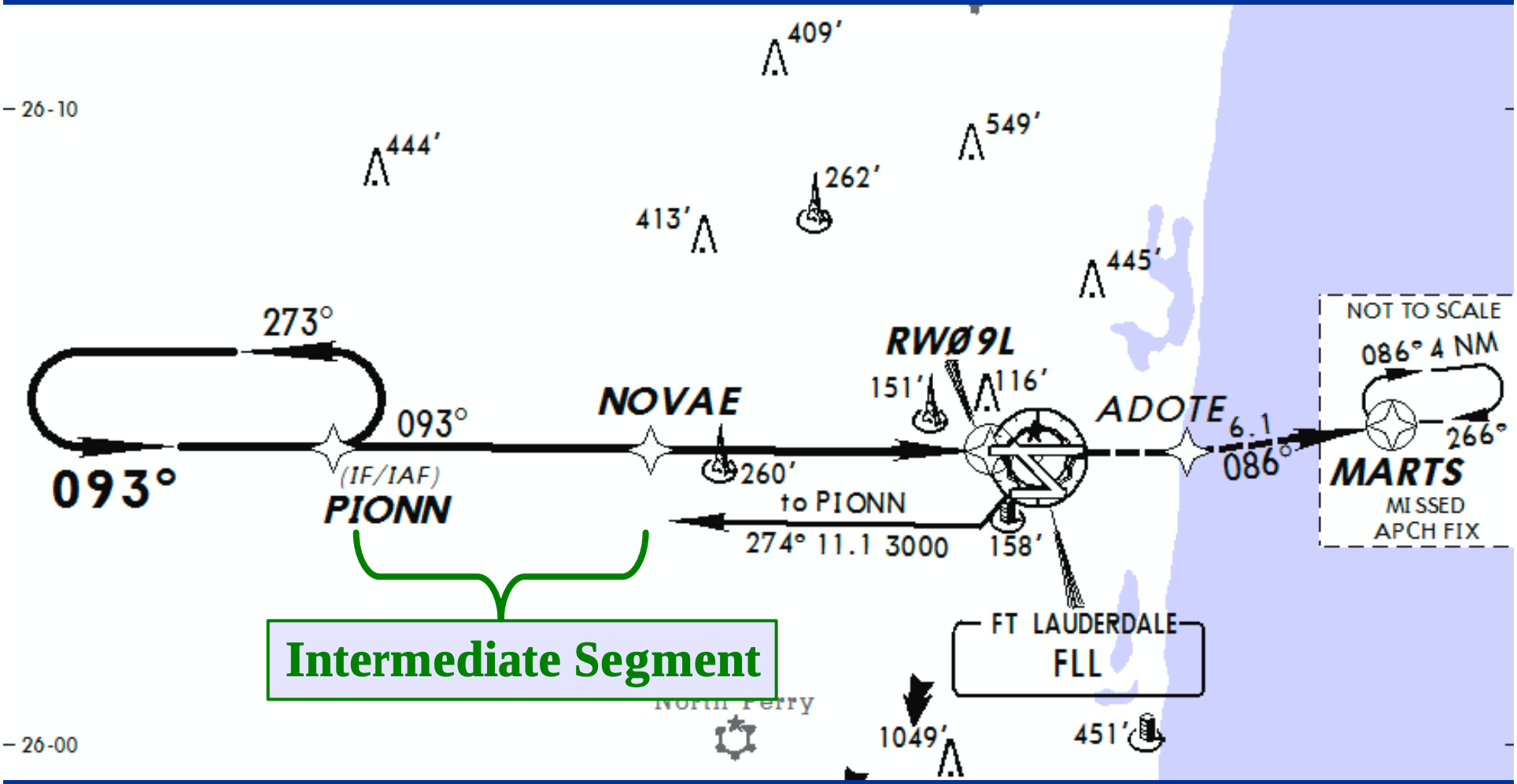
MISSED APPROACH: Climb to 4000 via course 093° to ADOTE WP then via 086° course to MARTS
d hold.

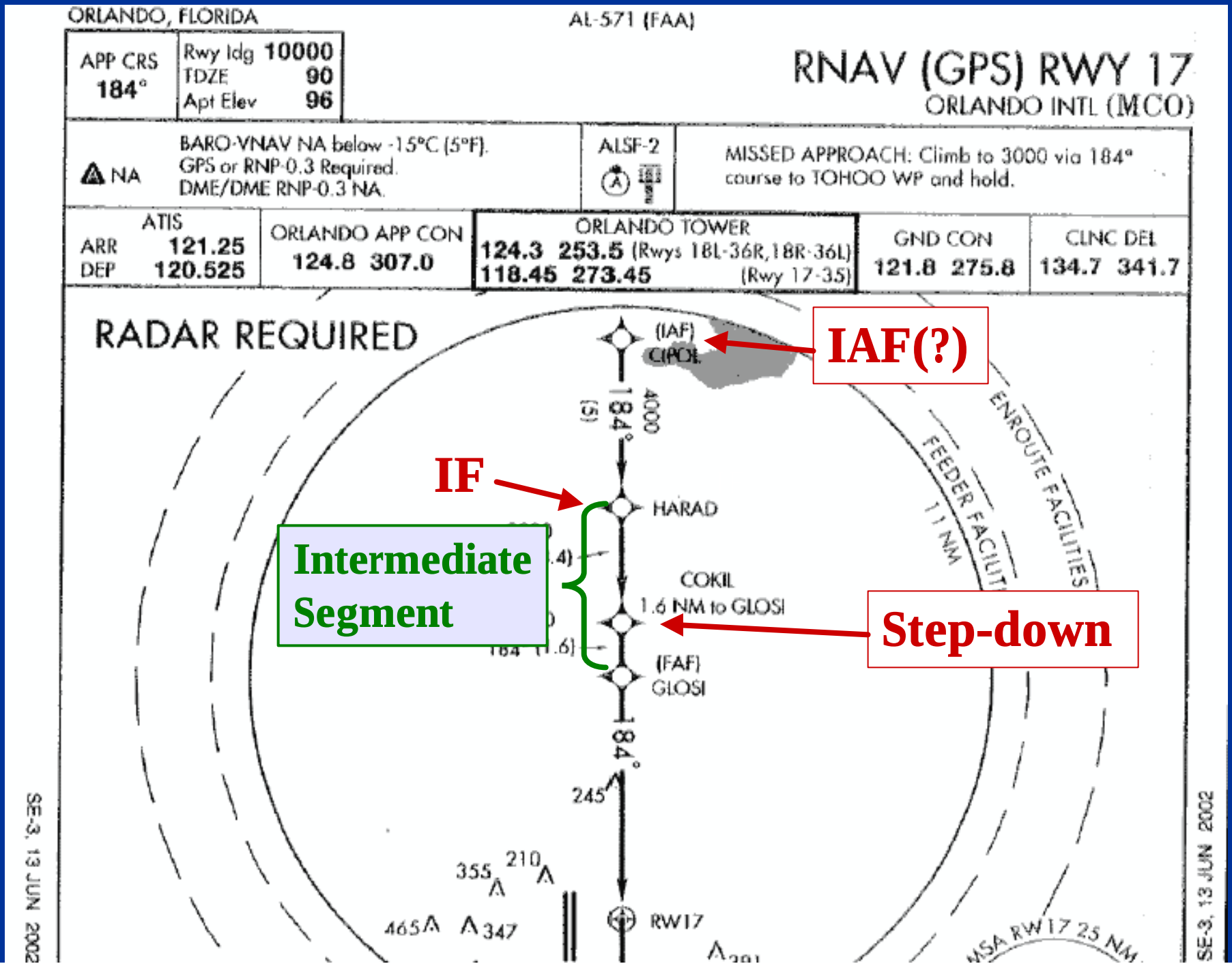
ATIS	MIAMI A	GND CON	CLNC DEL
135.0	133.775	121.4	128.4

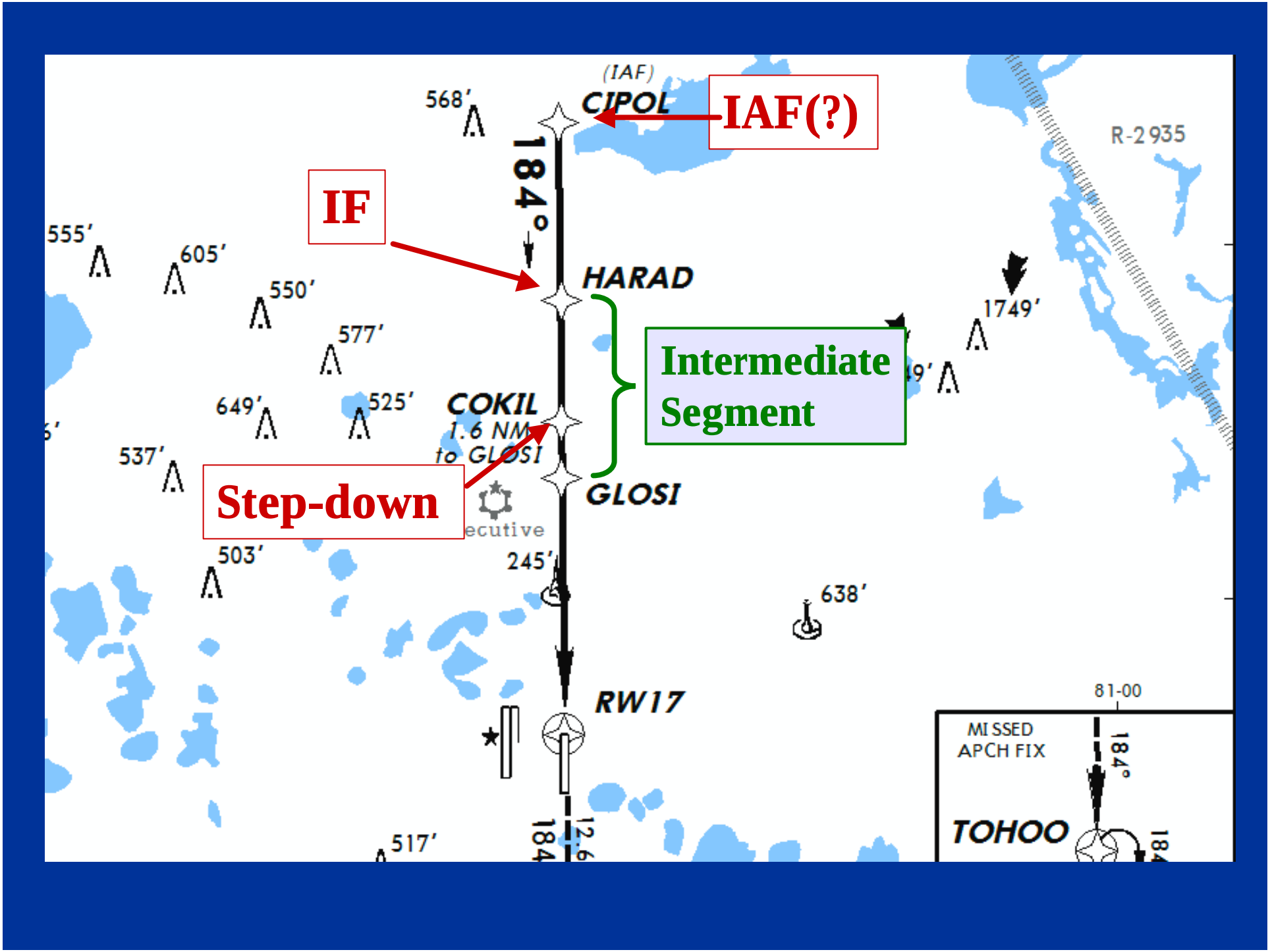
Is "PIONN" an Intermediate Fix, or an IAF?

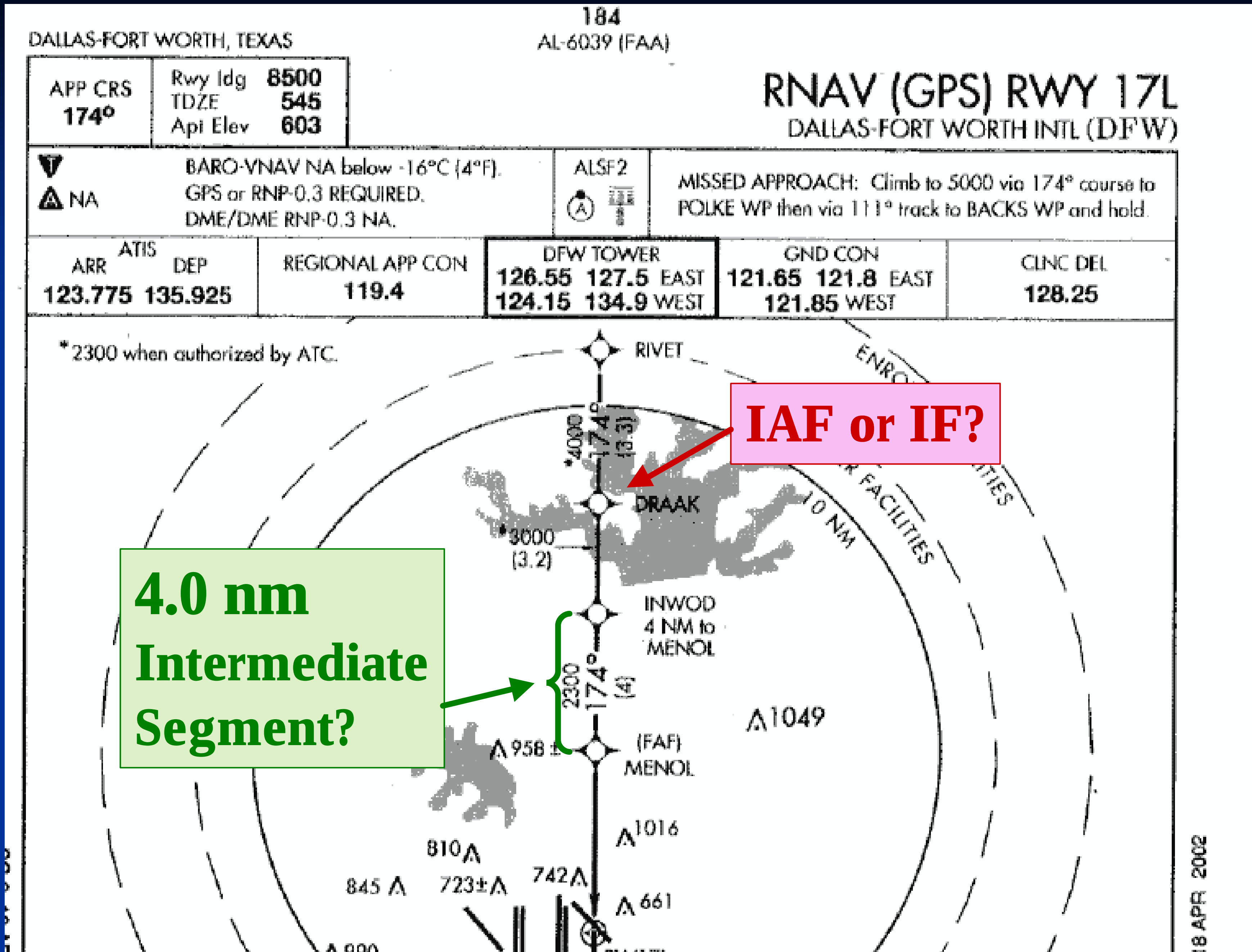
Intermediate Segment

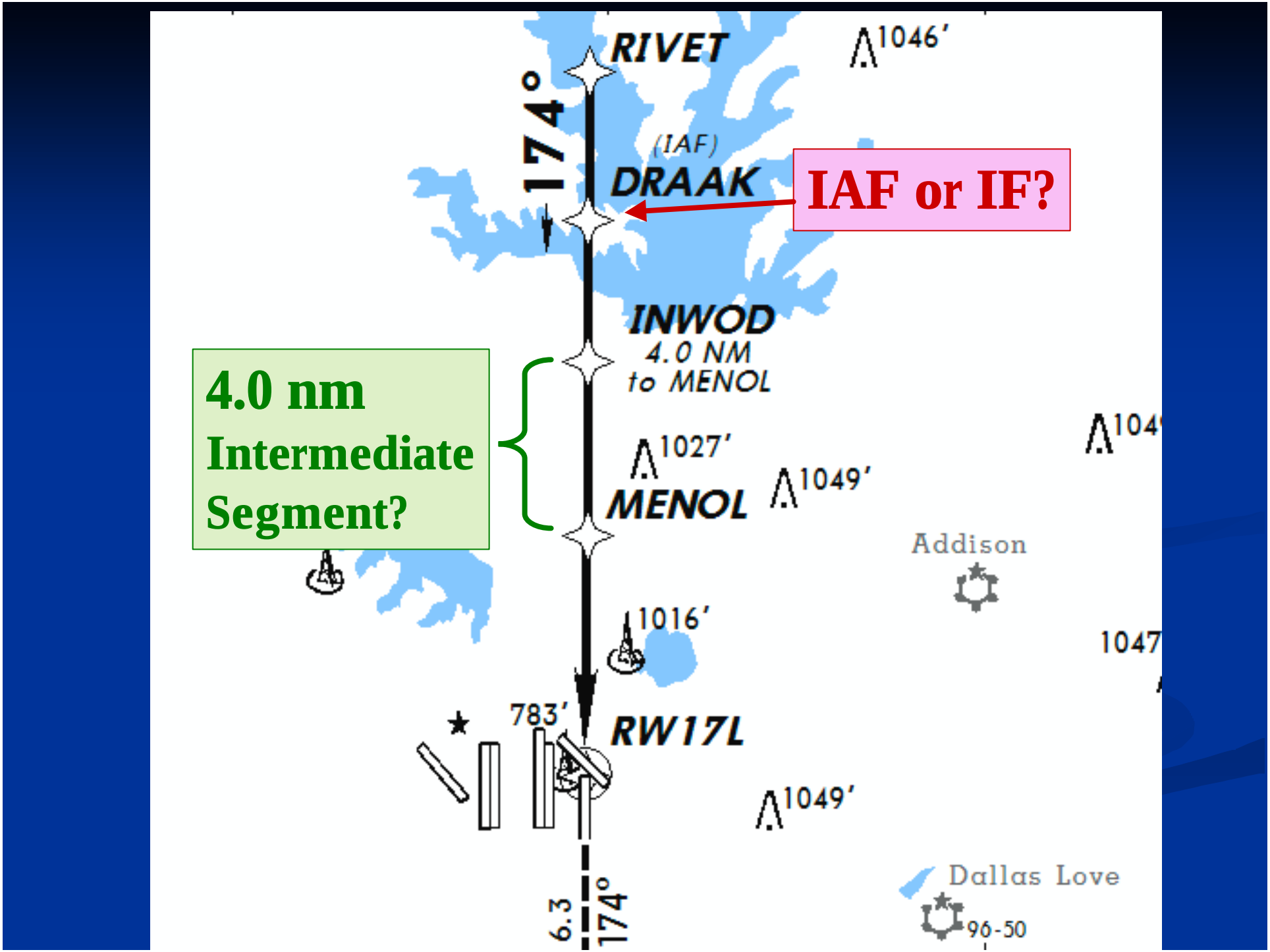



26-10
409'
444'
549'
262'
413'
445'
273°
093°
093°
(IF/IAF)
PIONN
NOVAE
260'
RWØ9L
151'
116'
ADOTE
6.1
086°
to PIONN
274° 11.1 3000
158'
NOT TO SCALE
086° 4 NM
266°
MARTS
MISSED
APCH FIX
FT LAUDERDALE
FLL
North Perry
1049'
451'
26-00
Intermediate Segment


ORLANDO, FLORIDA
AL-571 (FAA)
RNAV (GPS) RWY 17
ORLANDO INTL (MCO)
APP CRS 184°
Rwy Idg 10000
TDZE 90
Apt Elev 96
NA
BARO-VNAV NA below -15°C (5°F).
GPS or RNP-0.3 Required.
DME/DME RNP-0.3 NA.
ALSF-2
MISSED APPROACH: Climb to 3000 via 184° course to TOHOO WP and hold.
ATIS
ARR 121.25
DEP 120.525
ORLANDO APP CON
124.8 307.0
ORLANDO TOWER
124.3 253.5 (Rwys 18L-36R,18R-36L)
118.45 273.45 (Rwy 17-35)
GND CON
121.8 275.8
CLNC DEL
134.7 341.7
RADAR REQUIRED
(IAF)
CIPOL
4000
(5)
184°
HARAD
COKIL
1.6 NM to GLOSI
(FAF)
GLOSI
184°
245
355
210
465
347
RW17
ENROUTE FACILITIES
FEEDER FACILITIES
11 NM
MSA RW17 25 NM
IAF(?)
IF
Intermediate Segment
Step-down
SE-3, 13 JUN 2002
SE-3, 13 JUN 2002


(IAF)
CIPOL
IAF(?)
R-2935
IF
184°
HARAD
Intermediate Segment
COKIL
1.6 NM to GLOSI
GLOSI
Step-down
RW17
MISSED APCH FIX
184°
TOHOO
81-00
568′
555′
605′
550′
577′
649′
525′
537′
503′
245′
638′
1749′
517′


184
DALLAS-FORT WORTH, TEXAS
AL-6039 (FAA)
RNAV (GPS) RWY 17L
DALLAS-FORT WORTH INTL (DFW)
APP CRS 174°
Rwy ldg 8500
TDZE 545
Apt Elev 603
NA
BARO-VNAV NA below -16°C (4°F).
GPS or RNP-0.3 REQUIRED.
DME/DME RNP-0.3 NA.
ALSF2
MISSED APPROACH: Climb to 5000 via 174° course to POLKE WP then via 111° track to BACKS WP and hold.
ATIS ARR 123.775 DEP 135.925
REGIONAL APP CON 119.4
DFW TOWER 126.55 127.5 EAST 124.15 134.9 WEST
GND CON 121.65 121.8 EAST 121.85 WEST
CLNC DEL 128.25
*2300 when authorized by ATC.
RIVET
*4000
174°
(3.3)
DRAAK
*3000
(3.2)
INWOD
4 NM to MENOL
2300
174°
(4)
(FAF) MENOL
10 NM
1049
958±
1016
810
845
723±
742
661
990
18 APR 2002
IAF or IF?
4.0 nm Intermediate Segment?


RIVET
1046'
174°
(IAF)
DRAAK
IAF or IF?
INWOD
4.0 NM
to MENOL
4.0 nm
Intermediate
Segment?
1027'
MENOL
1049'
Addison
1016'
1047
783'
RW17L
1049'
6.3
174°
Dallas Love
96-50

Status of ACF Issue 02-02-246 & ATPAC AOC 102-2:

Note: If we can reach consensus that IFs should be on charts and radar screens then the text in the tables needs to be changed from "IAF (or IF when there is no IAF)" to "IAFs (or IFs where they are depicted)."

#	Issue:	Status: Unresolved or Resolved: If resolved, how?
1.	ATC guidance on maximum intercept angles for joining RNAV approaches with a direct-to-IAF/IF clearance.	Partially resolved by: a. The angle of intercept to join RNAV IAPs, not conventional IAPs, for direct-to clearances is adequately addressed in the DCP 5B-4-8-1 & Notice 7110.329. Since the DCP & Notice are both for ATC guidance regarding the intercept limit, these only complete the portion of providing this information to ATC, it still needs to be provided to pilots. b. The 90-degree intercept limit needs to be made applicable for direct-to clearances to conventional approaches in addition to the DCP & Notice making it applicable to RNAV approaches. See item # 4. c. The ATC guidance in .65 diagram should be changed. See issue # 3.
2.	AIM needs to educate pilots on the 90-degree intercept angle limitation for direct-to clearances to an IAF on an approach so that they don't request one greater than that limit. AIM 5-4-6c may be where this clarification would fit best. 10/3/03 Bergner (NBAA) suggests: "May I suggest that Issue number 2 could be revised to read, 'AIM needs to educate pilots on the 90-degree intercept angle limitation for direct-to clearances to an IF on an approach so that they don't request one greater than that limit. AIM 5-4-6c may be where this clarification would fit best.'" Steve would like direct-to clearances authorized to IAF or IF. I imagine no stepdown fixes within either segment however.	Partially resolved: a. 10/2/03 G Powell Draft AIM text for 5-4-6e informs pilots of 90-degree limit but it is only applicable to RNAV and GPS approaches. b. AIM 5-4-6e needs to be made applicable to conventional procedures as well. See item #4.

3.	The .65 diagram contained in 7110.326 should change or add another diagram including an example with "CENTR" being an IF. (Steve Bergner (NBAA) I brought a similar recommendation to ACF 03-01 in graphical form suggesting a diagram and example with "CENTR" having a HIL depicted.	Unresolved.
4.	All this information regarding direct-to-clearances should be made applicable to joining a conventional procedure and so specified both in .65 and AIM (If Mark Ingram and Steve Bergner pilots currently flying the system have seen this to be a problem on joining conventional procedures). Currently, my understanding since the DCP and notice only apply to RNAV approaches, there is no limit on direct-to clearances to join a conventional approach, so the angle of intercept could be completely incompatible with procedure design and jeopardize the safety of flight. My personal opinion is that even if there are no known cases of pilots requesting or ATC issuing direct-to clearances to join conventional procedures, as RNAV becomes more and more the normal method of operation, ATC could start issuing and pilots could start requesting these direct-to clearances to conventional approaches.	Unresolved.
5.	AIM 5-4-8b should be cleaned up to educate the pilot on the difference between a direct-to clearance and radar vectors to the final approach course, by specifically distinguishing the differences and similarities between the two operations. Pilots need to know that if they are radar vectored to the extended centerline of the final approach course, as compared to receiving a direct-to-IAF (IF when no IAF) clearance, that upon after joining the final approach course and subsequently reaching the IAF/IF with a procedure turn/HIL depicted, the pilot is not authorized to do a procedure turn/HIL entry turn, without seeking approval from ATC first. On the other hand, if given a direct-to clearance, which is not considered "radar vectors" and thus 5-4-8b does not apply, a procedure turn/HIL is required upon reaching the IAF/IF because none of the conditions in 91.175j	Partially resolved: a. 10/2/03 G Powell Draft AIM text for 5-4-6e, 5-4-8a and 5-4-8b with edits help resolve this issue. b. However, AIM 5-4-3 needs to be cleaned up as well. Currently it only discusses radar vectors and not direct-to clearances, both made possible by radar approach control through radar coverage. For instance: 1. 5-4-3b.1. should state something regarding direct-to clearances. Perhaps how radar is used for ATC to assume obstacle protection responsibility on off-route vectors and random route direct-to-IAF (or IF on approaches with no IAF) clearances. 2. 5-4-3b.1.(b) should include direct-to clearances along with its

	have been met, unless the ATC clearance used the phrase "straight-in" in the approach clearance. AIM 5-4-3 and 5-4-6c should receive text on this as well 5-4-8b. 10/3/03 Steve Bergner (NBAA) wrote: "the second paragraph of Issue number 5 could be revised to read, 'Pilots need to know that when they receive a direct-to-IF clearance, that upon reaching an IF/IAF with a procedure turn/HIL depicted, the pilot is not authorized to do a procedure turn/HIL entry turn, without seeking approval from ATC first.'" As with Steve's comment to issue # 2, it appears he is attempting to get language that allows vectors to an IF as well as to an IAF.	information on vectors to join an approach. 3. 5-4-3b.3. needs to reference off published route (random route) direct-to clearances along with its guidance regarding vectors and flight on published routes of an approach. (a) These changes need to be made applicable to conventional procedures in addition to RNAV and GPS. (b) It would require a 91.175j rule change, but it would simplify matters if the "straight-in approach" phrase applied to both radar vectors and direct-to clearances for when to do a procedure turn/HIL or not. Perhaps we should make this rule change part of the completion of the issue. Without the rule change it is very confusing for both ATC and the pilot. If on Radar Vectors never do procedure turn/HIL, whereas when given a direct-to clearance sometimes do the procedure turn/HIL (when "straight-in approach" is not part of the clearance) and sometimes don't do the procedure turn/HIL (when "straight-in approach" is part of the clearance). ✝ 91.175j reads "*Limitation on procedure turns*. In the case of a radar vector to a final approach course or fix, a timed approach from a holding fix, or an approach for which the procedure specifies "No PT," no pilot may make a procedure turn unless cleared to do so by ATC."
6.	As Gary Powell pointed out in his email dated 10/1/03, specific text needs to be added to .65 for when the "straight-in" clearance should be issued by ATC. Currently the only guidance to ATC on the use of the words "straight-in" in .65 is contained in a note/example. The guidance in .65 on issuing the words "straight-in" should be put into the binding text for phraseology to be used in issuing clearances to supplement the current non-binding note/example.	Almost resolved by: 10/2/03 G Powell Draft DCP 52-4-8-1 with some minor edits offered by Kevin and shown with track changes sent back to Gary 10/2/03 adequately resolves this issue of ATC guidance on the use of the phrase "straight-in approach." However, the DCP is not complete (needs background) and had a proposed effective date in 2005. So until the DCP is published with appropriate edits the ACF and ATPAC issues should remain open.

7.	Also as Gary Powell pointed out in his 10/1/03 email, AIM needs info on the proper use of "straight-in" so that the pilot and controller are on the same page. The AIM text on "straight-in" should explain that when ATC does not expect a procedure turn/HIL to be flown by the pilot during a direct-to clearance, that the words "straight-in" will be part of the clearance. Any time ATC does not use these words in a direct-to clearance to join an approach the pilot should fly a procedure turn or a HIL entry. This information may be best placed in 5-4-6c and referenced in 5-4-8a &/or b.	Partially resolved: a. As with item # 5, the 10/2/03 Gary Powell Draft AIM text for 5-4-6e, 5-4-8a and 5-4-8b with edits help resolve this issue. b. These changes need to be made applicable to conventional procedures in addition to RNAV and GPS.
8.	Related to all this is the fact that ATC has obstacle clearance responsibility for the aircraft when being radar vectored and when clearing an aircraft for an off-published-route vector or an off-published-route direct-to a fix clearance. This information should be included in AIM, probably 5-4-3 to avoid any concerns over compliance with 91.177. (7110.65, 4-8-1b, Note 1)	Unresolved. This could be resolved by incorporating my suggestion for issue 5, item b.1.
9.	Pilot guidance that HIL is equivalent to procedure turn.	Resolved by: Hold-In-Lieu (HIL) is shown to be the equivalent of a procedure turn adequately in the AIM procedure turn section (5-4-8).