November 12, 2002

Dear Forum Participant

Attached are the minutes of the Aeronautical Charting Forum (ACF), Instrument Procedures Group, held October 21-22 at the Air Line Pilots Association (ALPA), Herndon, VA. 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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AFS-420 has developed a new web site that contains information on ongoing activities including the Aeronautical Charting Forum, Instrument Procedures Group. The home page is located at http://av-info.faa.gov/terps/ then click on ACF-IPG for Instrument Procedures Group (IPG) information. This page 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 tool for reference in preparation for future meetings.

ACF Meeting 03-01 is scheduled for **April 28-May 1, 2003** with the Aircraft Owners and Pilots Association (AOPA), in Frederick, MD as host. Meeting 03-02 is scheduled for **October 20-24** with the FAA's National Aeronautical Charting Office (NACO), in Silver Spring, MD as host.

Please note that the **meetings begin on Monday**. Please forward new issue items for the 03-01 Instrument Procedures Group meeting to the above addressees not later than April 2nd. 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 w/atch.

GOVERNMENT/INDUSTRY AERONAUTICAL CHARTING FORUM
INSTRUMENT PROCEDURES GROUP
MEETING 02-02 Herndon, VA
October 21-22, 2002

1. Opening Remarks:

Mr. Tom Schneider, AFS-420, Flight Standards co-chair of the Aeronautical Charting Forum (ACF) and chair of the Instrument Procedures Group (IPG) opened the meeting at 8:30 AM on October 21, 2002. The meeting was held at the Air Line Pilots Association, Herndon, VA facility. Mr. Kevin Comstock made welcoming and administrative comments on behalf of ALPA. A listing of attendees is attached.

2. Review of Minutes of Last Meeting:

The minutes ACF 02-01, which was held on April 29-30, were electronically distributed on June 3. One comment was received; the status of issue 97-01-175 should reflect "Open" vice "Closed". This change will be noted and the minutes were accepted.

3. Briefings:

a. Status Report on ACF SID Letter.

Bill Hammett, AFS-420 (ISI), briefed the Flight Standards progress thus far. Order 8260.46, *Departure procedure (DP) Program* has been re-written and has completed the formal coordination process. AFS-420 is currently resolving comments received and anticipates no delay in the Order being published by the February deadline. AFS-420 has also re-written the pertinent AIM material and definitions for the Pilot/Controller Glossary. This material was forwarded to ATP-120 for processing. Marty Walker, ATP-120, stated that the information was forwarded for AIM publication and should be published on the February 20, 2003 targeted implementation date. In short, everything is on track thus far.

During the briefing, Bill queried the group on whether or not a "(SID)" designator should be placed after the procedure identification for SIDs as is done with the "(OBSTACLE)" identifier for graphic obstacle departures (ODPs). The general consensus of the group was that "SID" is not necessary provided adequate explanatory information is provided in the AIM and TPP legend. Brad Alberts, ALPA, recommended that the ODP always be published first. Representatives from both Jeppesen and NACO disagreed with this recommendation stating the alphabetized methodology is the industry standard. There should be no confusion considering the "(OBSTACLE)" designation on the graphic and the cross-reference in the take-off minimums/departure procedures section of the charts.

b. RNP Briefing.

Tom Schneider, AFS-420, presented a briefing on RNP progress within Flight Standards. RNP implementation is a priority within Flight Standards and is on the fast track for development and approval. A target date of October 31st has been established to start the formal coordination process with a goal to have the criteria signed by December 31st. Tom

provided a sample RNP approach chart for review (See Attachment 2). He noted that RNP charts will also include Special Aircrew and Aircraft Authorization Required (SAAAR) minima lines. Reference to RNP on the current RNAV (GPS) chart may be removed. Current RNAV (GPS) charts will include LPV, LNAV/VNAV, LNAV and circling lines of minima. It is also planned that there will be a separate publication for RNP procedures. This statement caused considerable comment. Kevin Comstock, ALPA, asked if this plan had been discussed with the ATA FMS Task Force as it seemed contrary to what was stated at their last meeting. Jim Terpstra, Jeppesen, stated that it appears that we are unnecessarily adding to the number of procedures. Steve Bergner, NBAA, supported this position, especially if DME/DME is removed from the RNP concept. John Moore, AVN-503, stated that this policy should have been discussed in-house prior to being presented at a public forum. Tom agreed to take the discussion comments back to AFS-420 for consideration.

c. Errant Vector Presentation.

Mark Ingram, ALPA, presented a briefing that ALPA had prepared for their Operations Committee at the ALPA Air Safety Week in August. The power point presentation, developed by Wally Roberts, ALPA, demonstrated the usefulness in having the ATC facility Minimum Vectoring Altitude Chart (MVAC) overlaid on a moving-map display in the cockpit. ALPA believes this enhancement would be a great asset in preventing CFIT incidents. The presentation also identified serious concerns in the current development, review, and approval process for MVACs. Several MVACs were displayed showing improper vertical and lateral obstruction clearance, possible unnecessary ROC reductions in designated mountainous terrain areas, and sector design deficiencies. ALPA is also planning to seek that MVAs and MIAs be incorporated under PART 95 or 97. See issue 02-01-239 for further information.

4. <u>Old Business</u> (Open Issues):

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

Tom Schneider, AFS-420, briefed that the FAA's automated precipitous terrain program development is complete and is ready to be installed in IAPA. Implementation of the program (where and how to apply the software) is still under study. Revised precipitous terrain criteria will be included in TERPS change 20 and will include an automation module.

Editorial Note: *Tom briefed the following proposed TERPS change schedule noting that change numbers, contents, and dates are subject to revision:*

<u>Change 20</u>. Precipitous terrain; new circling criteria; new Chapter 10 (estimated March 03)
<u>Change 21</u>. New Volume 2, non-precision criteria; inclusion of 8260.38 criteria.
<u>Change XX</u>. 8260.44 criteria added to Volume 4.
<u>Change XX</u>. New Chapter 3, visibility & landing minima criteria.
<u>Change XX</u>. New Volume 5, copter criteria.

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

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

Tom Schneider, AFS-420, briefed the status of this issue as provided by Jack Corman, AFS-420. The new circling areas have been modified to accommodate comments from various industry respondents. The revised criteria were reviewed by the TERPS Working Group (TWG) and approved for inclusion in TERPS change 20. It is planned to have Change 20 in formal coordination this winter; however, the exact timeframe is dependent on priority taskings. Bill Hammett, AFS-420 (ISI), briefed that the overshoot area concerns expressed at the last meeting by ALPA and NBAA were re-evaluated and revised to taper toward the runway. AFS-420 also evaluated the request to expand the Category D area to allow for 180 Knots and this is not considered feasible. Airspeeds and categories are defined in Part 97.3(b). A general discussion ensued regarding whether airspace requirements would be addressed to ensure that the increase in circling area size does not cause procedures to be outside controlled airspace. Tom did not know offhand whether airspace increases have been addressed. Brad Alberts, ALPA, stated that no procedure should be developed outside controlled airspace. Steve Bergner, NBAA, reminded the group that many currently published procedures are outside controlled airspace; e.g., those at uncontrolled airports with only a 700' Class E surface area. Tom asked if the circling diagram could be removed from the AIM. The consensus, led by Jim Terpstra, Jeppesen, was that the diagram should remain. Aircrews need to know that there are limitations. Discussion as to whether or not charts need to be annotated denoting whether new or old criteria is applied reached no conclusion. Tom also stated that AFS-420 has not taken any action on early criteria implementation for CATs CD.

Status: AFS-420 to track publication of the new criteria and consider early implementation for CATs C and D. Item Open (AFS-420).

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

Tom Schneider, AFS-420 briefed that after the last meeting, AFS-420 wrote AFS-400 requesting that the National Resource Specialist (NRS) for weather related issues lead this effort. Pre-ACF conversation with Clyde Jones, who is currently filling the NRS position, indicated that he had not been directed to work the issue. Subsequent conversation between AFS-420 and AFS-400 clarified that Clyde would work this issue. As a result of the miscommunications, no progress has been made since the last meeting. Tom agreed to ensure that Clyde is forwarded all relevant ACF material as well as background from Carl Moore, AFS-420, the previous OPR. Kevin Comstock, ALPA, reaffirmed industry's concern over lack of progress on the issue and noted that currently, only the inner surface of the final segment has cold temperature adjustments included in draft 8260.RNP.

Status: 1) AFS-420 will ensure that all pertinent data is forwarded to the NRS for weather issues. 2) the Weather NRS will report progress at the next meeting.
Item Open (AFS-420 & AFS-400 Weather NRS).

d. 93-01-121: Provision of Current IAP Procedural Directive Guidance to the Aviation Community (AC90-XX).

Tom Schneider, AFS-420, briefed that Steve Winter has been recently assigned as the AFS-420 OPR for this project since the departure of Norm LeFevre. Thus far, the contractor (Jeppesen) has provided drafts of Chapters 1 (IFR Operation In The NAS), 2 (Takeoff And Departure), and Appendix A (Airborne Navigation Databases) for review. The drafts are currently under review within AFS-420, the Regional AWOs, and AVN-100. AFS-420 response is due Jeppesen by mid November. The goal remains to have the project completed by the end of the year. Steve is still getting up to speed on the issue and will provide a more complete update at the next Forum.

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

e. 96-01-155: Operational Status for OROCA Use.

Bill Hammett, AFS-420, researched all past available files regarding the OROCA and briefed a history of the issue since it's inception for the group (see attachment 3). Bill also briefed that on September 13, the Chair of the Instrument Procedures Group forwarded a letter to FAA/AGC-200 requesting a legal position on OROCA use. If recommended for use by AGC, Bill recommended that a group with representation from the lines of business involved must address this issue. He suggested possibly the ATSOIT or SPIT. Gary Powell, ATP-104, stated that the ATSOIT would be disbanded with the formation of a new RNP Program Office, ATP-500, and that the SPIT only addresses approach and departure procedures. This new ATP-500 office would have AIR, AAT, and AFS staffing expertise. Bill also noted that the issue could not be pursued unless ATA-400 included the OROCA in the obstacle evaluation (OE) process under Order 7400.2 (this was requested but not done at the last re-write of the order). Hal Becker, AOPA, stated that RTCA SC-192 has recently also recommended to ATA-400 that OROCA be included under the OE process. The consensus is that no action can be pursued until a response is received from AGC-200.

Status: AFS-420 will track an AGC-200 response and take appropriate action when received. Item Open (ATP-104).

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

Hooper Harris, AFS-410, briefed that the agreements discussed at the last ACF remain valid; however, no action has been taken yet. The necessary AIM information is still planned for submission NLT February 20, 2003 for publication in Change 3 on August 7th.

Status: AFS-410 to prepare AIM guidance in concert with ALPA for submission prior to the February 20 cutoff date. Item Open (AFS-410).

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

Hooper Harris, AFS-410, advised the group that this issue status should remain open until the necessary AIM information is published. He stated that no action has been taken since the last meeting; however, AFS-410 is committed to developing AIM literature to address

the issue for publication in Change 3 on August 7th. Material will be submitted for publication NLT February 20, 2003 to meet this goal.

Status: AFS-410 to develop AIM guidance for submission prior to the February 20 cutoff date. Item Open (AFS-410).

h. 97-01-177: Non-collocated DME Use at/inside FAF.

Kevin Comstock, ALPA, reported he would continue to monitor progress through the CAST initiative. He stated that nothing else could be done on the issue through the ACF and that the issue may be closed. The group concurred.

Status: Item Closed.

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

Dave Kountz, a newly assigned specialist on detail from the Pittsburgh FSDO to AFS-220, stated that he will pursue the issue. He will attempt to prod AGC for a response to the ALPA letter of 1998. Dave is also an assistant POI for US Airways and will use this position to also try to determine the actual impact on air carriers. It is recommended that ALPA continue to follow up their AGC letter for response.

Status: 1) AFS-220 to pursue AGC position and assess air carrier impact. 2) ALPA to follow up their 1998 letter to AGC. Item Open (AFS-220 & ALPA).

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

Hooper Harris (AFS-410) briefed that the agreements reached at the last ACF are valid. The flight visibility requirement concept will remain the standard. AFS-410 has entered into a rule making change to revise 91.175c(2) as well as 91.175h to reflect flight visibility vs. both ground visibility and RVR conversions. Hooper also stated that his office would work a revision of Section A of the Terminal procedures Publication (TPP) and develop necessary AIM material. Tom Schneider, AFS-420, stated that proposed visibility changes have been prepared for TERPS Chapter 3.

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

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

Brad Rush, AVN-160, briefed that there is no change in status. The ATC procedure priority listing has the new DPs scheduled for publication on December 25, 2003. Brad will monitor the status and advise the ACF of any changes.

Status: AVN-160 will continue to track procedure processing. Item Open (AVN-160).

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

Brad Rush, AVN-160, 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.

Status: AVN-160 will continue to provide progress updates at each meeting per ALPA's request until work is complete. Item Open (AVN-160).

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

Bill Hammett, AFS-420 (ISI), briefed that Order 8260.46B is being revised to address this issue for DPs. Expanded guidance as well as revised 8260-15 series forms have been included in the revision. The revised order is targeted for publication in February. Gary Powell, ATP-104, advised that the issue was not addressed in the last revision of Order 7100-9; however it would be considered during the current revision. The group again recommended that Air Traffic standardize STAR terms; e.g. "South Flow", "Landing South", etc., during revision of the STAR order. Mary Walker, ATP-120, stated that he has forwarded the change to align AIM paragraphs 5-4-1c and 5-2-6e8 for publication.

Status: 1) AFS-420 continue revision of associated DP forms and Order 8260.46.
2) ATP-104 continue revision of associated STAR forms and Order 7100.9; and,
3) ATP-120 track AIM change. Item Open (AFS-420, ATP-104 & ATP-120).

n. 00-02-225: TERPS Paragraph 251b(2)(c) – Visual Area Obstacle Clearance

Tom Schneider briefed that TERPS Change 19 was published on May 15, 2002. The issue may be closed. The group concurred.

Status: Item Closed.

o. 00-02-229: Turbine Powered Holding

Tom Schneider, AFS-420, briefed the status of the issue. Carl Moore, who is the AFS-420 staff specialist for holding issues, stated general agreement that 175 KIAS holding could be reasonably restricted to a maximum of 18,000'. However, before any changes would be made to Order 7130.3 or the AIM, Air Traffic must determine if there is a need for 175 KIAS patterns at altitudes above 18,000'. Valerie Watson, ATA-130, took the IOU to review the NFDC database to determine the exact number of restricted 175 KIAS patterns and their use. Marty Walker, ATP-120 will coordinate whether air traffic has a need for 175 KIAS holding at altitudes above FL 180. Marty also briefed that, as requested at the last ACF, he has published a briefing article in the Air Traffic Bulletin to sensitize ATC to the fact that 175-Knot holding may cause problems for some aircraft. Kevin Comstock, ALPA, requested the status of problems with the Helena, MT SIAPs. Bran Rush, AVN-160, stated that amended procedure amendments were in the development process and that NOTAMs were in place to address the current 175 knot turbojet holding concerns. Tom stated that the AFS-420 IOU to amend AIM paragraph 5-3-7j2(b)(2) to eliminate the CAT A&B reference has not been accomplished.

Status: 1) ATA-100 to check the NASR database for 175 holding requirements; 2) ATP-120 to assess air traffic need for 175 holding above FL 180; and 3) AFS-420 to revise AIM paragraph 5-3-7j2(b)(2). Item Open (ATA-100, ATP-120, and AFS-420).

p. 00-02-230: SIAP Deceleration Segment and High Bypass Fan Engines

Tom Schneider, AFS-420, briefed that Jack Corman of his office and chairman of the TERPS Working Group (TWG) stated that deceleration criteria were published in FAA Order 8260.50. These criteria were briefed at the last TWG and approved for inclusion in TERPS Change 20. Jim Terpstra, Jeppesen, briefed that this issue is still in work at other meetings and there is no consensus to date. Database coding problems occur when there is a stepdown fix involved that requires two descent gradients. There were also questions regarding the 160-to-260 ft/NM descent gradient required in LPV criteria. Tom stated that all new criteria would be formally coordinated prior to inclusion in TERPS. All comments received must be resolved prior to adoption. Tom recommended the issue be closed and the group concurred.

Status: Item Closed.

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

Tom Schneider, AFS-420, briefed that AFS-410/420 convened a technical review board (TRB) to discuss the Orlando Executive (KORL) approaches as agreed at the last ACF. The TRB reviewed all published KORL procedures and made specific recommendations for consideration (See attachment 4). These recommendations will be the source of an action memorandum to be developed by AFS-410 and forwarded to AVN-100 and ATP-120 for consideration by the Atlanta FPO and Orlando ATC. Marty Walker, ATP-120, stated that he has forwarded guidance to resolve the contradiction in pilot actions published in AIM 5-4-5b, FAAH 8083-15, page 10-22, and the PCG definition of “Missed Approach”. Brad Alberts, ALPA, stated again that this type altitude restriction goes against all pilot techniques when a missed approach is required. Steve Bergner, NBAA, recommended a note similar to that published on the Teterboro, NJ (KTEB) ILS RWY 19 approach might be a good safety enhancement. Brad Rush, AVN-160, questioned whether the currently published missed approach restrictions to both runways at KORL provided appropriate IFR vertical separation for traffic arriving Orlando Int’l. Marty recommended that another TRB be considered to include ATP-100 and AVN-100 participation.

Status: 1) AFS-410 will forward a memorandum denoting corrective actions recommended by the TRB. 2) ATP-100 may request another TRB after reviewing the memorandum. Item Open (AFS-410 & ATP-100).

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

Tom Schneider, AFS-420, briefed that his office believes this is primarily an AVR (certification) and AFS-410 (operations) issue. Vince Chirasello addressed the issue on behalf of AFS-410 and presented a briefing on recent situations regarding aircraft not flying repeatable tracks due to different avionics and actions taken thus far to address these problems. The problems mainly involve airlines using inertial navigation and DME/DME RNAV. There is no current requirement for a DME assessment before flying the

procedures, ergo, DME aircraft could not be guaranteed containment. Initial proposals to establish "quick alignment" waypoints proved unsuccessful. Analysis revealed that inertial systems could be as much as .8 NM in error after 5 minutes of update and up to 4 NM in error after 30 minutes of update. A temporary solution was to use radar vectors initially, then RNAV. As a result, Air Traffic has suspended publication of all new RNAV DPs and STARs and is currently re-assessing currently published procedures. A lengthy NOTAM has been issued; the text of which was discussed at length. Vince briefed that 8 current procedures are NOTAMed "NA", 42 procedures are covered by other NOTAM restrictions, and 32 procedures are specified for GPS only. The wording of "XXX CRITICAL DME" or "XXX DME REQUIRED" was also discussed and it was the group consensus that the use of "REQUIRED DME" was the more appropriate term as this annotation is currently in use on procedure charts. Brad Alberts, ALPA, questioned how aircrews could be held responsible for verifying information they don't have and can't get; e.g., must crews continually monitor DME Identifications, etc. As a result of the discussion, Hooper Harris, AFS-410, agreed to further address the issue.

Status: AFS-410 will: 1) edit the NTAP entry as soon as possible; 2) issue clarification to POIs through regional AWOs; and, 3) continue to develop AIM resolution of the issue. Item Open (AFS-410).

s. 01-02-236: Vertical Descent Angle (VDA) Charting

Jim Terpstra, Jeppesen, briefed that this issue could not be resolved unless FAA agreed to assist in relocating the sensor FAFs. The VDA presents a problem when the sensor FAF-to-threshold descent gradient exceeds 400 Ft/NM (3.77 degrees). Bill Hammett, AFS-420 (ISI), suggested that an alternate solution is for Jeppesen to cease putting VDAs on no-FAF procedures. There is no government source for these VDAs as FAA only publishes VDAs on with-FAF procedures. Jim stated that Jeppesen has added the VDAs at the request of their users; however, they would have no problem supporting cancellation of all no-FAF overlay procedures. This position is unacceptable to AOPA (issue 02-01-244). After discussion, Jim agreed that Jeppesen would cease publishing VDAs on no-FAF procedures where the VDA exceeded 3.77 degrees. Jeppesen will make this update to the database ASAP and on charts as they are revised. Brad Rush, AVN-160, noted that the FAA does not plan on coding no-FAF overlay procedures in the government database. The group agreed that the issue may be closed.

Status: Item Closed.

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

Tom Schneider, AFS-420, briefed that his office supports the recommendation. The Requirements Letter for IACC consideration was not forwarded due to higher priority taskings and staffing constraints within AFS-420. It is planned to have the letter out by the end of November. Change 3 to Order 8260.19 establishes new paragraphs 805j(4) and 851a(2), which provides guidance on 8260-series form completion to identify the IF for charting agencies.

Status: AFS-420 to: 1) prepare requirements letter for IACC consideration; and, 2) track change 3 to Order 8260.19. Item Open (AFS-420).

u. 02-01-238: Part 97 “Basic” Minima; ATC DP Minima, and DP NOTAMs.

Bill Hammett, AFS-420 (ISI), briefed that ATP-320 is agreeable to using the FDC process for DP and STAR NOTAMs; however, both will have to be changed simultaneously. AFS-420 forwarded document change proposal (DCP) information for using the FDC process for all DPs to ATP-320 on May 20, 2002. However, ATP-104 required additional time to coordinate the STAR conversion. It is hoped that this change will be incorporated in Change 3 to Order 7930.2H which is effective August 7, 2003 (cutoff for submission is February 20, 2003). Policy to ensure all DPs for a given airport are concurrently reviewed anytime one DP is revised under new standards has been included in Order 8260.46B, paragraph 12e(8).

Status: 1) AFS-420 monitor progress for DPs under the FDC process; 2) ATP-104 to forward recommended changes to include STARs under the FDC process to ATP-320; and, 3) AFS-420 track revision to Order 8260.46. Item Open (AFS-420 & ATP-104).

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

Mark Ingram, ALPA, briefed that ALPA has had success in obtaining the Minimum Vectoring Altitude Chart (MVAC) files it requested through a FOIA. Earlier in the meeting, Mark provided an “Errant Vector” briefing (see item 3c) that demonstrated the use of MVACs in the cockpit as a CFIT preventative measure. The presentation also highlighted ALPA concerns in the current development, review, and approval process for MVACs. Specific examples of MVACs were displayed showing charts with improper vertical and lateral obstruction clearance, possible unnecessary ROC reductions in designated mountainous terrain areas, and sector design deficiencies. Mark stated that ALPA is also planning to seek that MVAs and MIAs be incorporated under PART 95 or 97. Bill Hammett, AFS-420 (ISI), stated that the rulemaking process may not be a good idea for MVACs. If public availability is the primary goal, then that could be accommodated via other means. However, he agreed that there needed to be a cross-reference to radar vectors in Part 91.177. Bill further briefed that both AVN-160 and AFS-420 have begun looking at the issue of MVAC errors. AFS-420 has drafted new criteria for MVAC development for inclusion in TERPS. The new criteria will provide more comprehensive, standardized guidance for MVACs. The draft criteria were presented to the TERPS signatories on October 2nd, 2002 at the bi-annual TWG meeting. The draft criteria will be revised to accommodate comments received and then begin internal FAA coordination with AAT and AVN. It is planned to include these criteria in TERPS Change 20. AVN-500 has been tasked to look at developing an automated tool to assist air traffic facilities in developing MVACs and to aid AVN-100 in the review approval process. The Sectional Chart, which is currently specified by policy as the map source for MVACs, came under much criticism. Charles Branch, AVN-510, responded that the Sectional Chart is an excellent tool for which it was developed, VFR flight. It was not intended to be a detailed terrain and obstacle source for TERPS work. Bill stated that Sectional Charts were originally specified, as they are the only chart that depicts the floor of controlled airspace. More detailed topographic charts such as Joint Operations Graphics (JOG) are scaled 1:250,000 are better suited to evaluate terrain over large areas, and even more detailed maps should be used when needed. Chart scale will be considered as policy is revised.

Status: 1) AFS-420 to develop MVAC criteria for TERPS; 2) AVN-160 to increase QC of MVACs; and 3) AVN-500 to continue work on an automated tool for MVAC development. Item Open (AFS-420, AVN-160, & AVN-500).

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

Tom Schneider, AFS-420, briefed a report on the issue provided by Carl Moore, also of AFS-420. Carl reported that several years ago, the FAA considered changing the climb-in-hold (CIH) evaluation airspeed from 310 to 265 KIAS. FAA determined that some large aircraft such as the B747 need to climb at speeds in excess of 265. Therefore the CIH speed was kept at 310. If consensus can be reached that 265 will handle CIHs then FAA could make a change to 7130.3. After discussion, the ACF consensus is that there are many aircraft that require climbing speeds in excess of 265 Knots; therefore, the current airspeeds should not be changed. Carl agrees with the concept that holding patterns that have been assessed for a CIH should be annotated with the applicable CIH speed. AFS-420 will take this issue for further study and determination whether development of charting specifications and associated AIM material is required. In the interim, it was suggested that controllers must be aware which holding patterns have/have not been assessed for CIH. Marty Walker will address this in an ATC Bulletin article. Brad Rush, AVN-160, stated that CIH information is documented on the form 8260-2 supporting the fix.

Status: 1) AFS-420 to review the issue for charting determination; and, 2) ATP-120 prepare an ATC Bulletin ensuring controllers are aware of which holding patterns are satisfactory for issuing an impromptu CIH clearance. Item Open (AFS-420 & ATP-120).

x. 02-01-242: LPV Minima Charting.

Tom Schneider, AFS-420, briefed that LPV minimums' charting was discussed at the AISWG and the FAA position is that LPV minima will replace the current GLS minima line on approach charts. Order 8260.50 has been signed and specifies criteria for LPV minima determination. Change 3 to Order 8260.19, which is currently in coordination, will contain instructions for completing the 8260-series forms. RNP minima will be included on the RNP chart – see Item 3b above

Status: Item Closed.

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

Tom Schneider, AFS-420, briefed that Flight Standards agrees with the consensus reached at the last ACF. Tom circulated a proposed AIM change, prepared by Steve Jackson, AFS-420, which will be forwarded for publication in AIM Change 3, effective August 7, 2003. The change will revise paragraph 5-3-7j5 as well as the note below Figure 5-3-5 to reflect that GPS and DME holding procedures are identical. The issue will remain open pending AIM publication.

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

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

Tom Schneider, AFS-420, briefed that there is no way of circulating a list of "or GPS" approaches proposed for cancellation as requested by AOPA at the last ACF unless a manual search of the TPPs is accomplished. AFS-420 does not have the resources to conduct such a search. Mike Brown, AOPA, stated that if that was the case, then his organization is opposed to removal of overlay approaches unless a stand-alone procedure is published concurrent with the cancellation.

Status: Item Closed.

aa. 02-01-245: Along-Track-Distance (ATD) Stepdown Fixes for RNAV with LNAV and LVAN/VNAV Minima

Tom Schneider, AFS-420, led the discussion on this issue. The group consensus was that stepdown fixes should be developed for LVAN/VNAV procedures with LNAV minima when lower LNAV minimums may be achieved. All agreed that publishing a single procedure with stepdown fix is preferable to publishing two procedures with alphabetical suffixes. Steve Bergner supported publishing these fixes as ATD only without names. Jim Terpstra, Jeppesen, recommended the fixes be named. Bill Hammett, AFS-420 (ISI), suggested that CNFs be used in lieu of pronounceable names. Jim agreed that this would be acceptable. Jim also stated that LNAV/VNAV users could ask database developers to strip the stepdown fix from the string. He also stated that stepdown fix altitudes must specify at-or-above altitudes and not provide steeper descent gradients inside the stepdown fix wherever possible. Kevin Comstock, ALPA, questioned if VNAV would be impacted; Jim assured him it would not. AFS-420 and AVN-160 will jointly work policy issues for Order 8260.19. The consensus was that the issue could be closed.

Status: Item Closed.

5. New Business:

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

New issue presented by Steve Bergner, NBAA. Steve briefed that his organization is concerned that controllers are clearing aircraft direct to IAFs and sometimes IFs on RNAV approaches without TAAs. In many cases, this direct clearance causes confusion as to whether or not a course reversal is required and in some cases violates TERPS procedure design criteria; e.g., requiring a turn greater than 120 degrees at the IAF, intermediate segment too short for the amount of turn, etc. This is especially noted when the IAF is on an airway and the turn is acceptable for one direction of flight, but not the other. NBAA believes the issue is readily resolved by applying the TAA concept. Steve stated that TAAs resolve ambiguity and facilitate operations. Brad Rush, AVN-160, stated that his office has increased QC of these procedures. He further stated that AVN-100 has issued internal policy to ensure that all RNAV approaches have a TAA, a course reversal, or a restricted procedure entry note that conforms to TERPS. Tom Schneider, AFS-420, stated that guidance has been included in Change 3 to Order 8260.19 that should help resolve the issue for future procedures. Bill Hammett, AFS-420 (ISI), commented that this issue was previously discussed at the ACF and taken to ATPAC by ALPA. As a result of the ATPAC Area of Concern, AFS-420, on July 17th, 2002, forwarded recommendations to ATP-100 for inclusion in Order

7110.65 that would help resolve the issue. AFS-420 will ascertain the status of the ATP-100 response. Steve suggested that the plan view of the chart could depict entry areas where a course reversal is/is not required. This methodology would require an IACC specification change and may not be necessary if the AFS-420 controller guidance is adopted by ATP-100.

Status: AFS-420 to: 1) follow up the memorandum to ATP-100; and, 2) coordinate with AFS-410 to jointly work the issue and report. Item Open (AFS-420/410).

6. Next Meeting: ACF Meeting 03-01 is scheduled for **April 28-May 1, 2003** with the Aircraft Owners and Pilots Association (AOPA), in Frederick, MD as host. Meeting 03-02 is scheduled for **October 20-24** with the FAA's National Aeronautical Charting Office (NACO), in Silver Spring, MD as host.

7. Attachments (5):

1. OPR/Action Listing.
2. RNP Chart.
3. OROCA History
4. Orlando Executive TRB Minutes
5. Attendance Listing.

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 2, 2003 - a reminder notice will be provided.

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

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. Consider early implementation for CAT C&D.
AFS-420 AFS-400 (NRS)	**92-02-110** (Cold weather altimetry)	AFS-420: Forward history to AFS 400 NRS. AFS-400 NRS: Track effort & report.
AFS-420	**93-01-121** (AC 90-XX)	Monitor contractual support and report.
AFS-420	**96-01-155** (OROCA use)	Track AGC-200 response for action.
AFS-410	**96-01-166** (Descent point of flyby waypoints. Originally "on course")	Develop AIM language in concert with ALPA to resolve the issue and report.
AFS-410	**97-01-175** (Pilot duties to confirm GPS database)	Develop applicable AIM material.
ALPA AFS-220	**98-01-197** (Air carrier compliance w/climb gradients)	ALPA: Follow up on letter to AGC. AFS-200: Work issue and report.
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 and report.
AVN-160	**98-01-206** (P-56 airspace vs. KDCA IFR departures)	Track processing/publication & report procedure status.
AVN-160	**99-01-215** (Radar required SIAP's	Provide procedure status list to ALPA.
AFS-420 ATP-104 ATP-120	**99-02-216** (Excess verbiage on DP's & STAR's)	AFS-420: Revise Order 8260.46. ATP-104: Revise Order 7100.9. ATP-120: Track AIM change.
ATA-130 AFS-420 ATP-120	**00-02-229** (Turbine powered holding)	ATA-130: Check NASR database for 175 KIAS patterns. ATP-120: Assess ATC need for 175 patterns. AFS-420: Revise AIM paragraph 5-3-j2(b)(2).
AFS-410	**01-01-234** (Designation of maximum altitudes in the final approach segment)	Forward action memorandum to ATP-120 & AVN-100.
AFS-410	**01-02-235** (Harmonization of DP's)	Edit NTAP entry ASAP. Issue clarification to POIs through AWOs. Develop AIM material.

AFS-420	**02-01-237** (Intermediate Fix Charting)	Prepare requirements letter for IACC and develop 8260.19 guidance.
AFS-420 ATP-104	**02-01-238** (Departure Minimums and DP NOTAMs)	AFS-420: Monitor DP FDC progress & 8260.46 revision. ATP-104: Forward STAR FDC info for DCP to ATP-320.
AFS-420 AVN-160 AVN-500	**02-01-239** (MVA Obstacle Accountability and Lack of DVA Criteria)	AFS-420: Develop MVAC criteria for TERPS. AVN-160: Enhance MVAC QC process. AVN-500: Develop MVAC software tool.
AFS-420	**02-01-241** (Non-radar Level and Climbing Holding Patterns)	AFS-420: Review issue for charting Icon. ATP-120: Controller education on issue.
AFS-420	**02-01-243** (RNAV Holding Pattern Definition)	Develop AIM change.
AFS-420	**02-02-246** (Turn Angle Limits for RNAV SIAPs Without TAAs	Follow up memorandum to ATP-100. Work issue and report.

APP CRS	Rwy ldg	10600
281°	TDZE	13
	Apt Elev	13

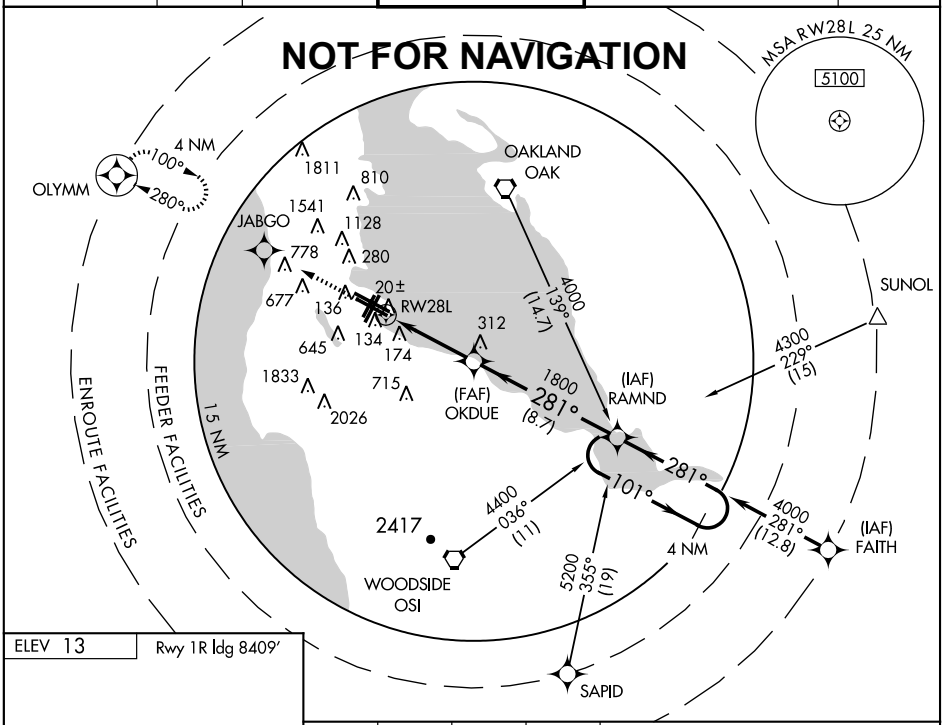
RNAV RWY 28L
SAN FRANCISCO INTL (SFO)

Baro-VNAV NA below -15°C (5°F).
NA

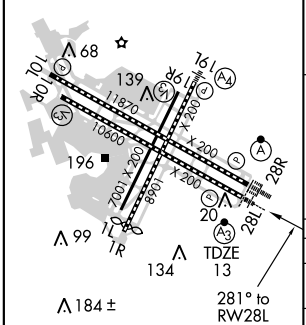
SSALR

MISSED APPROACH: Climb to 3000 via 281° course to JABGO WP and right turn via 280° track to OLYMM WP and hold.

ATIS	AWOS-1	BAY APP CON	SAN FRANCISCO TOWER	GND CON	CLNC DEL
113.7 115.8 118.85 135.45	118.05	134.5 338.2	120.5 269.1	124.25 (EAST) 121.8 (WEST)	118.2

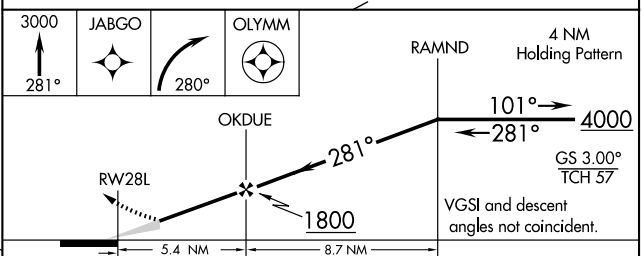


ELEV 13 Rwy 1R ldg 8409′



TDZ/CL Rwys 19L and 28R
REIL Rwys 1L, 1R and 10L
HIRL all Rwys

3000	JABGO		OLYMM
281°		280°	



CATEGORY	A	B	C	D
RNP 0.3 DA	740-3 727 (800-3)			740-3 727 (800-3)
SPECIAL AIRCREW AND AIRCRAFT AUTHORIZATION REQUIRED				
RNP 0.15 DA	380-1 1/4 367 (400-1 1/4)			
RNP 0.3 DA	600-2 587 (600-2)			

OROCA HISTORY

On April 19, 1991, the DoD submitted an Interagency Air Cartographic Committee (IACC) requirements document (RD #442) to publish a military minimum instrument altitude (MMIA) on US low altitude enroute IFR charts.

The FAA (AFS and AAT) non-concurred with RD 442 for several reasons:
1. MMIA could be confused with MIA
2. IFR low charts are intended for use in instrument flight rules flight and altitudes are established by air traffic control.
3. The GPS system is not certified for IFR flight (now a moot point).
4. Random RNAV routes may only be approved in a radar environment.

On January 10, 1993 FAA, NOAA, and DoD met to discuss the non-concurrence. DoD is pushing for MMIA publication as the Army is scheduled to receive aircraft in its inventory that will only be GPS /INS equipped. The USAF is supporting publication as an emergency IFR lost communications altitude. The minutes reflect significant FAA concern over the differences in size of the proposed MMIA area and the MIA areas used by ARTCC controllers. MIAs are in many smaller, irregular sectors and only provide obstruction clearance; they do not reflect radar coverage. There was no resolution at this meeting.

On April 14, 1993, a working group meeting was held to discuss and resolve the issue. Participants at this meeting included representatives of FAA ATP-100/200, AFS-420/800, AGC-230; NOS and DoD charting organizations; as well as several industry pilot and charting groups. Several conclusions were agreed:

1. The term “MMIA” would be changed to “OROCA” to eliminate confusion with MIA.
2. OROCAs may be artificially high due to the large 1 degree x 1degree area.
3. The group agreed that some type of RNAV altitude will be needed in the future, whether or not the OROCA is a viable option was not decided.
4. FAA/AGC-230 voiced concern regarding legality and liability issues, stating at one point “the more we differentiate from MOCA, MIA, etc., the better. We want to make clear this is not an instrument altitude. We should minimize risks by examining alternatives.”
5. The group agreed to publish the OROCA on the IFR Enroute Low Charts.
6. The group agreed that the reason for providing this altitude was for obstruction clearance only and the chart should be annotated clearly with this proviso.

On March 9, 1994, based on the results of the April 1993 meeting, DoD again re-submitted RD #442 for consideration. The RD was approved on July 12 1994.

However, the RD did not include IACC specifications on how the OROCA was to be determined and does not clearly specify the proviso to add the annotation agreed to at the April 1993 meeting. IACC Specifications for the OROCA were drafted; similar to those contained in IACC-2 for the maximum elevation figure (MEF) published on Sectional Charts. The draft OROCA IACC specifications for OROCA determination and charting were originally used in-house by NOAA and are now currently used by AVN-500 (NACO). The specifications include that the following explanatory note, which was agreed to at the April 1993 meeting, to be charted:

Attachment 3 (Page 1)

This chart contains off route obstruction clearance altitudes (OROCA). The off-route obstruction clearance altitudes shown in quadrangles bounded by ticked lines of latitude and longitude are represented in THOUSANDS and HUNDREDS of feet above mean sea level. The OROCA is based on information available concerning the highest known features in each quadrangle, including terrain and obstructions. OROCA provides obstruction clearance with a 1000-foot buffer in designated non-mountainous areas and a 2000-foot buffer in designated mountainous areas within the United States. This altitude is provided for obstruction clearance only, it does not provide for NAVAID signal coverage, communication coverage, and it would not be consistent with altitudes assigned by air traffic control.

Example…….12[5]

Editor's Note: This note was originally published on the charts and is still in the draft specifications as of June 2002; however, it has been removed from the charts by AVN-500. Formal specifications for OROCA determination have yet to be published in IACC-1.

On March 20, 1996, ATP-20 wrote AFS-420 requesting approval to use the OROCA as an IFR altitude. After review, AFS-400 responded on July 26th that Flight Standards concurred that the OROCA, rounded to the next higher cardinal altitude could be used to satisfy obstruction clearance requirements for off-route minimum IFR altitudes. However, this approval was contingent on Air Traffic ensuring that the OROCA is included for evaluation in the Obstacle Evaluation process under Order 7400.2 and initiate NOTAM policy to promulgate changes when necessary during charting cycles.

On May 22, 1996, ATA-100 sent a memo to AGC-230 requesting to revise the published OROCA note on the chart by changing the last sentence to read: "Flight plan filing of an altitude equal to or greater than the OROCA complies with Federal Aviation Regulations (FARs) for the minimum altitude necessary for off airway IFR flight, but may not guarantee NAVAID signal or communications coverage." The memo was returned annotated "We cannot concur with this change. The highlighted text (in quotes above) presents certain legal problems. We will be happy to work with you in developing other options." Signed Patrica R. Lane and Timothy P. Melcher, AGC-230

On June 27, 1996, AOPA supported Air Traffic's request to use the OROCA for off-route GPS routings. AFS-400 responded that this issue was being worked by the Satellite Procedures Implementation Team (SPIT).

OROCA use has been an Aeronautical Charting Forum (ACF) agenda issue since April 30, 1996. Despite many discussions, no progress has been made in resolving the issue. A complete history of the ACF discussions may be seen at http://av-info.faa.gov/terps/ click on the ACF-IPG page, then click on open issues # 96-01-155.

On September 13, 2002, the chairperson of the ACF, Instrument Procedures Group wrote a memorandum to AGC-200 for further interpretation of the feasibility of using the OROCA as an IFR altitude for off-route navigation.

<u>Attachment 3 (Page 2)</u>

TECHNICAL REVIEW BOARD (TRB)
ORLANDO EXECUTIVE INSTRUMENT APPROACH PROCEDURES

A TRB was held on 9/20/2002 to discuss Aeronautical Charting Forum Agenda Item 01-01-234*, Designation of Maximum Altitudes in the Final Approach Segment*. Participants included the following representatives of AFS-410 and AFS-420:

Hooper Harris	Ernie Skiver	Tom Schneider	Steve Jackson
Jack Corman	Mike Werner	Bill Hammett	Rich Gastrich

Issue Synopsis: Orlando ATC has directed "mandatory" or "at-or-below" altitudes be published either at the final approach fix (FAF), between the FAF and the missed approach point (MAP), and within in the Intermediate Segment, on the approaches to Orlando Executive (KORL) in order to procedurally separate aircraft operating at Orlando International (KMCO). NBAA has raised the issue that in the event of a go-around after the FAF, but prior to the restriction fix, a pilot is expected to descend. NBAA alleges that this design is confusing and potentially unsafe. This missed approach descent scenario is also true of an aircraft executing a missed approach above 1200' on the NDB RWY 7 and ILS RWY 7 approaches (the initial missed approach altitude is 1200 to MARYB).

The TRB agrees that this type restriction is not conducive to good procedure design; however, it is accepted that rules cannot be made to cover all contingencies. Hooper Harris, AFS-410, is very familiar with operations at KORL and provided background on the need to restrict the altitudes on the procedures in question. After lengthy discussion, the following actions are recommended:

1. AIM/AIP guidance will be drafted to make it clear to the pilot that, when executing a missed approach prior to the missed approach point (MAP), the pilot must track the lateral course and adhere to all vertical restrictions within the final approach segment unless authorized otherwise by ATC.

Action:

a. AIM Paragraph 5-4-5b Note (AFS-420 is OPI): Steve Jackson, AFS-420 to revise.
b. AIM Paragraph 5-4-19 (ATP-120 is OPI): Steve Jackson and Ernie Skiver, AFS-410 to draft language and forward to ATP-120 for publication.
c. Pilot/Controller Glossary (ATP-120 is OPI): Marty Walker, ATP-120 has an IOU from the ACF to resolve the contradiction between the PCG and AIM.
d. Steve Jackson, AFS-420, will forward a copy of final revisions to AFS-630 for inclusion in the Instrument Flying Handbook, FAA-H-8083-15.

2. The TRB recommends that the Orlando ATC facility establish internal guidance that requires ATC to issue appropriate missed approach instructions/restrictions to the pilot when either ATC initiates the missed approach OR when first being notified by the pilot that a missed approach is being initiated. This should be spelled out in an Action Memorandum from AFS-410. ATP-120 will be notified of our recommendation.

Action: AFS-410 will prepare a memorandum to ATP-120 addressing this requirement.

Attachment 4 (page 1)

3. The consensus of the TRB was that "RADAR REQUIRED" should be placed on ALL KORL instrument procedures. Adding RADAR REQUIRED for this purpose is not standard policy as specified in FAA Order 8260.19C, but because of the intricacy of the procedural separation applied to allow for simultaneous operations at KMCO and KORL, it was deemed necessary in this situation. Several procedures already have RADAR REQUIRED because they do not contain an IAF.

Action: AFS-410 will include this requirement in the Action Memorandum in paragraph 2 above.

4. It was noted that on the ILS RWY 7 approach, an at-or-below altitude of 1160 has been established between the FAF and MAP for the Localizer procedure. (NOTE: This restriction is not applicable for aircraft conducting an ILS approach or executing an ILS missed approach.) The TRB suggested that possibly this fix could be adjusted by moving the LOC FAF to accommodate the procedural separation being attempted here. An intermediate stepdown fix could be added if necessary or possibly the establishment of a separate Localizer approach that emulated the ground track and profile of the VOR/DME RWY 7 procedure would be a better option.

Action: AFS-410 will include review of this IAP in the Action Memorandum noted in paragraph 2.

5. The TRB noted that ATC has invoked some creative altitude restrictions on all of the RWY 25 instrument procedures. It first appeared to require either the FAF or Intermediate stepdown fix altitude be maintained throughout the segment length. These restrictions are defined with plan view notes in addition to the same altitudes defined in the profile view. However, the way these notes in the plan view were placed, these "mandatory" altitudes appeared to require compliance prior to the mandatory fix altitudes in the profile view and would be impossible to accomplish. Following the TRB, AFS-420 and ATA-130 jointly reviewed IACC Specifications against the applicable 8260 series forms supporting the procedures. It was determined that the “mandatory” altitude indications on the plan view should not have been charted. This will be corrected at the next available charting cycle.

Action: Completed

6. Proposed policy for Change 3 to Order 8260.19, *Flight Procedures and Airspace,* will require that “at-or-below” and “mandatory” altitude restrictions in the final segment be avoided where ever possible and, where required, must be coordinated through AFS-420 for approval. AFS-410 agreed that this guidance is acceptable.

Action: Tom Schneider, AFS-420, has placed this guidance in the Order 8260.19, Change 3 draft scheduled to go out for formal coordination this week.

The results of the TRB will be briefed at the upcoming ACF and forwarded through AVN-100 to the Atlanta FPO for coordination and action.

<u>Attachment 4 (page 2)</u>

AERONAUTICAL CHARTING FORUM
INSTRUMENT PROCEDURES GROUP
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AERONAUTICAL CHARTING FORUM
INSTRUMENT PROCEDURES GROUP
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**** = Tuesday Only**				