

**GOVERNMENT / INDUSTRY AERONAUTICAL CHARTING FORUM**  
**INSTRUMENT PROCEDURES GROUP**  
**Meeting 96-02 October 7-8, 1996**  
**ALPA Headquarters/Washington, DC**  
**(Transcribed/Reformatted)**

1. **Opening Remarks:** Dick Powell, ATA-100 Co-chair of the ACF, Instrument Procedures Subgroup, opened the meeting at 1300 October 7, 1996. Lyle Wink, AFS-440 served as Co-chair for Paul Best, AFS-420 who was unable to attend. The meeting was held at the Air line Pilots Association (ALPA) Headquarters and welcoming comments were made by Capt. Tom Young (ALPA). A listing of attendees is attached.

2. **Briefings:** None

3. **Review of Minutes of Last Meeting:** Minutes of the last meeting, which was held on April 29-30, 1996, were mailed on May 14. Two comments were received and the minutes revised accordingly. The corrected minutes were accepted.

4. **Old Business (Open Issues):**

a. **92-02-102** IFR Departure Procedures and Standard Instrument Departures (SIDs)

(1) At the last meeting, it was agreed that AFS-440 would lead an ad-hoc group, made up of representatives of ATO-110/120, AFS-420/440, AVN-100 and ALPA to resolve SID development issues. Jack Corman, AFS-440 circulated various proposals thru e-mail. The consensus is that AVN-100 procedure specialists will take over SID development in concert with Air Traffic design input. This should ensure that the least onerous route is assessed by AVN and the final design conforms with desired Air Traffic routings. Adoption of this concept will require changes to several Orders, including 7100.8 and 8260.19. AFS-440 will put the proposal on paper for circulation

(2) The original issue paper was prompted by the fact that there were different take off minimums for SIDs vs. standard IFR departure procedures at some airports; notably Santa Barbara, Monterey, and San Francisco. All agreed that the same take off minimums should apply regardless of departure type. C.R. Bramble, ATO-120 and Terry Depolis, AVN-160 agreed to jointly coordinate with LAX FPO and AWP-530 to resolve specific ALPA concerns at the aforementioned airports. Wally Roberts, ALPA will provide necessary input. AFS-440 will circulate draft SID processing procedures for review. ATO-120 and AVN-160 will work jointly to resolve specific ALPA concerns. **Action: Item Open: (AFS440, ATO-120 & AVN-160).**

b. **92-02-103** Minimum Crossing Altitude (MCA) on Obstacle Clearance SIDs.

There is still no consensus on this issue. C.R. Bramble, ATO-120 emphasized that when ATC vectors an aircraft off of a SID, then ATC is responsible for terrain separation. He also stated

that ATC continues this responsibility in a radar environment when vectors are terminated. He requested that ALPA show him where the problem specifically exists. Wally Roberts, ALPA stated that it is ALPA's position that any time there is a climb gradient on a SID they want a MOCA specified on the chart. They also want more terrain data available so the pilots have better situational awareness whenever vectored off/returned to assigned routes. Tom Young, ALPA offered to research the NASA ASRS data base for ground proximity warnings related to IFR departures and report at the next meeting. **Action: Item Open (ATO-110).**

**c. 92-02-104 TERPS Paragraph 323a, Precipitous Terrain Additives**

Don Pate, AFS-450, presented a briefing on the FAA's on-going study of this issue. During the study, it was discovered that the National Center for Atmospheric Research (NCAR) had developed a computerized program to evaluate weather predictions. This model is adaptable for precipitous terrain modeling; however, the process would be labor intensive and cost approximately \$80K-\$100K per runway. Since there is no FAA funding available, follow on efforts are being coordinated with NASA Ames and the USAF to determine if alternate resources are available to address this issue. In the interim, the current process of soliciting user comments must be continued. ALPA noted that a specific request for a precipitous terrain additive on approaches to runway 15 at Windsor Locks, CT was denied by AVN-100; their rationale being that precipitous terrain additives must be applied to all approaches at a specific airport, not to a single runway. Jim Nixon, AFS-440, took an IOU to research and standardize policy. **Action: Item Open (AFS-440, AFS-450, and AVN-160).**

**d. 92-02-105 Review of Adequacy of TERPS Circling Approach Maneuvering Areas and Circling at Airports With High Heights Above Airports (HAA's)**

Don Pate, AFS-450, provided an update on progress thus far. The ASAT testing was delayed due to other projects, but is now progressing. Don emphasized again that, in order for this effort to be successful and provide realistic data, it is necessary that the parameters used for testing be agreeable to all. No inputs were received from the last meeting. Don provided a listing of factors to be considered and requested the group review the factors and forward recommended parameters to Steve Jackson, AFS-450, as soon as possible. AFS-450 hopes to have the ASAT testing complete prior to the next meeting. **Action: Item Open (AFS-450)**

**e. 92-02-110 Cold Station Altimeter Settings**

Lyle Wink, AFS-440, briefed that the initial criteria they had developed was too broad in its application and needs further refinement. Don Pate, AFS-450, noted that he had recently attended an ICAO Obstacle Clearance Panel (OCP) meeting where this issue was discussed. To date, there is no international consensus on this issue. **Action: Item Open (AFS-440).**

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

Bill Hammett, AFS-420, briefed that funding was available to complete publication of AC90-XX and that AFS-420 is working with the contractor to resolve comments from the previously circulated draft. (**Editorial Note:** *It was noted after the meeting that funding did not include the TAA concept/procedures. AFS-420 is working through the GPS Program Office to obtain additional funding to add TAA procedures to the AC. TAA procedures will probably be published as Change 1).* During the discussion, the group also requested the status of the re-write of the Instrument Flying Handbook (AC61-27), noting that it was so outdated as to be a safety of flight issue. Jim Nixon, AFS-440, took an IOU to coordinate the re-write status within AFS and perhaps have an AFS-600 representative at the next ACF. Industry representatives volunteered to assist in the re-write and provided the following points of contact: ALPA-Tom Young or Dave English, APA/AA-Pat Gallagher, AA-Dick McKinney. **Action: Item Open (AFS-420 & AFS-440)**

**g. 94-02-133** SIAP Optimum Final Approach Segment Descent Gradient for Categories C and D Aircraft

Bill Thomas, ATA, led the discussion with a report from ATA's Chart and Display Working Group. There had been rumors circulating that this group was advocating using VNAV to convert non-precision IAPs to precision approaches, which are false. ATA is advocating using VNAV as a tool to provide constant angle descent non-precision approaches. After the AA accident at Windsor Locks, CT it was noted that domestic U.S. carriers fly relatively few non-precision IAPs per year, therefore, proficiency is at a low level. Simulator tests indicate that flying non-precision IAPs with a published descent angle and with VNAV guidance is a tremendous asset. Jim Terpstra, Jeppesen, presented a comprehensive briefing on VNAV path construction, descent angle computation and charting options. There was further discussion over the possibility of using a MDA as a DA(H) and making the point at which the pilot reaches the MDA the missed approach point (MAP) for non-precision approaches. Jim Enias, AFS-410, favors this philosophy provided there is an underlying ILS, VDP, or VASI indicating a visual segment obstruction analysis has been conducted. Wally Roberts, ALPA, stated that allowing descent below the MDA without the proper visual cues is a violation of the Code of Federal Regulations. Additionally, if the DA (H) point is to be used as the MAP, visibility minimums will have to be assessed and in most cases increased significantly. Pat Gallagher, APA/AA, commented that the increase in the visibility is worth the added safety. Wally also noted that having a published ILS approach does not necessarily guarantee a clean visibility surface when the DH has been adjusted for obstacles. Lyle Wink, AFS-440 stated that the criteria for visual surface obstacle evaluation is being finalized and should be available for circulation within 2-3 months. ATA will address this item at next meeting. **Action: Item Open (ATA).**

**h. 95-01-140** Sector Arrival Zones for GPS SIAPs and Turning Protection Over Such Fixes

Lyle Wink, AFS-440, led a discussion on the TAA concept. Jim Nixon, AFS-440, stated that a timeline had been developed by the Satellite Procedures Implementation Team (SPIT) and that a draft of TAA procedures would soon be ready for coordination outside the FAA. Bill Mosley, ATO-120, stated that guidance will be published in the controller handbook, FAA Order 7110.65, in January 1997. He noted that 1200' class E airspace is being considered for 15 western states at the suggestion of AOPA's Safety Foundation. The intent of the airspace action is to reduce Sectional Chart clutter by not having to publish MSL values for the floor of controlled airspace. Doug Helton, AOPA, suggested that airspace changes should be addressed on a case by case basis. Tom Young, ALPA, suggested that Doug canvas the Safety Foundation and solidify

AOPS's position. Hopefully, this will expedite TAA implementation. Bill noted that if the local community is not in agreement with a standard "T" approach design with an associated TAA, then a standard "I" approach design with conventional transitions from the en route structure would be the order of the day. Doug requested some approaches with the "T" design in the AOPA headquarters area for the use and feedback by AOPA users. Terry Deplois, AVN-160 agreed to attempt to accommodate this request if Doug would identify specific airports. Terry also noted that they could possibly develop "VFR Only" procedures for testing. AFS-440 will continue to track the TAA program and provide status reports until implemented. Doug will provide a consolidated AOPA position on the TAA controlled airspace issues. **Action: Item Open (AFS-440/AOPA).**

**i. 95-01-141 Multiple DME ARC IAFs**

Jim Nixon, AFS-440 briefed that criteria is approximately 40% completed. When finalized, it will be circulated to all interested parties for comment. Tom Young, ALPA requested the issue be worked more vigorously. AFS-440 will continue working the issue and provide an update at the next meeting. **Action: Item Open (AFS-440).**

**j. 95-01-143 Establish and Publish Procedural Maximum Speeds for Terminal Instrument Procedures**

Don Pate, AFS-450, presented a briefing demonstrating the ASAT test results for specific PT entry maneuvers at Livingston, MT. The test results, using different aircraft speeds/altitudes and varying 60 kt wind directions, indicate that there are instances where an aircraft will depart the TERPS obstacle clearance area (Note: A T-NOTAM raising the IAF altitude has been issued to correct the Livingston problem). Additional testing is required to develop new criteria and/or flight procedures that will assure obstacle clearance in all instances. Discussion prompted several possible solutions, including using holding pattern vice PT criteria, limiting airspeed, etc. AFS-440/450 took an IOU to prepare an AIM item which will outline the conditions under which the current TERPS protected airspace is exceeded. AFS-440/450 will continue testing and criteria/procedural development and report progress at the next meeting. Additionally, AFS-440/450 will jointly prepare an item for the AIM. **Action: Item Open (AFS-440/450).**

**k. 96-01-154 Requirement to Show Descent Angle on Approach**

The group agreed that the briefing by Jim Terpstra during the discussion of ACF issue #94-02-133 satisfied the issue. **Status: Item Closed**

**l. 96-01-155 Operational Status for OROCAs and Implementation of GPS TAAs.**

Tom Young, ALPA presented the issue on behalf of ALPA. Bill Mosley, ATO-110 stated that his office has already started work on this issue and that they have sent a letter to AFS-400 requesting approval to use the OROCA for IFR obstruction clearance. Air Traffic is still studying the "radar required" for off-route RNAV issue. Tom questioned whether the OROCA can guarantee communications (required for MIA). This subject will be discussed at the next Implementation Team (SPIT) meeting. The GPS TAA issue is being addressed separately in item 95-01-140. **Action: Item Open (AFS-420 and ATO-110).**

**a. 96-01-156 Along Track Distance (ATD) Error Assumption in GPS SIAP Criteria**

Don Pate, AFS-450, presented a briefing paper on this issue. Research and discussions were undertaken to arrive at a more representative number for the GPS FIX displacement error (FDE) to include accuracy, integrity, availability and continuity. There has been coordination with Dr. Young Lee, MITRE Corp., who is a recognized expert on RAIM and GPS integrity. The conclusion thus far is that the FDE is not a problem in the en route arena; however, further study is necessary to reach a final conclusion. It was suggested that, in the interim, ATC provide radar monitoring until aircraft are in approach phase. AFS-450 will continue discussion with Dr. Lee to ascertain accuracy and integrity values as they apply to use of GPS for en route navigation. **Action: Item Open (AFS-450).**

**b. 96-01-159 Specified Ceiling Requirement for High HAA/HAT MDAs**

A discussion on this issue was deferred until the next meeting. All participants are to review the issue for discussion. **Action: Item Open (All Parties).**

**c. 96-01-162 GPS NoPT Terminal Routes and PT Required Terminal Routes**

Bill Hammett, AFS-420 stated that he believes that the issue is not valid. The AIM clearly provides guidance that pilots will perform a PT maneuver unless the procedure is annotated NoPT or ATC provides radar vectors. This policy has been reinforced by FAA's General Counsel interpretation of Part 91.175. Wally Roberts, ALPA, stated that ALPA sent AFS-420 an additional letter requesting policy guidance but had not received an answer. AFS-420 took the IOU to answer ALPA's letter and address this issue at the next meeting. **Action: Item Open (AFS-420).**

**d. 96-01-163 Purpose of ILS Fix Inside the Precision FAF**

Bill Hammett, AFS-420 briefed that coordination with AFS-200 indicated that a gross error check of the glide slope is not required to fly a precision approach. The glide slope altitude at the OM (or non-precision FAF) is provided for reference only. It was further decided that an ILS approach could still be flown if the non-precision FAF was inoperable. Wally Roberts, ALPA emphasized that if this is true, then 14 CFR, Part 91.175(k) defining components of an ILS system requires updating. It is suspected that this process is in progress. AFS-420 will ascertain the status of the CFR change and brief at the next meeting. **Action: Item Open (AFS-420).**

**e. 96-01-165 Radar or DME Fixes on SIAPs**

IAP revisions at BWI prompted this issue. CR Bramble, ATO-120 researched the approaches in question and as a result, the approaches were amended. All fixes on the SIAPs are now capable of multi-sensor reception. Terry Deplois, AVN-160, stated that his shop will pay close attention to radar fix use on SIAPs during QC review. Jim Nixon, AFS-440 stated that they will review the guidance in Order 8260.19 and TERPS paragraph 161 to determine if changes are required. AFS-440, will review applicable criteria/guidance and report at the next meeting. **Action: Item Open (AFS-440).**

**f. 96-01-166** Determining Descent Point of Flyby Waypoints (Originally Submitted as Definition of “On Course” – title changed at ACF 97-01)

Wally Roberts, ALPA, led the discussion noting that the current definition of “on course” does not support GPS navigation. Don Pate, AFS-450, noted that further discussion of the issue must include resolution of changing sensitivities and the capabilities of receivers to put the pilot on course. RTCA is also addressing the issue as to how it relates to descent points using GPS/FMS systems. A Telcon will be held to discuss this at a later date - interested parties are: ALPA, APA, Jeppesen and AFS-420/440/450. AFS-450 will take the lead in establishing the Telcon. **Action: Item Open (AFS-450).**

**5. New Business:**

**a. 96-02-169** Published RNAV Descent Angles on Non-Precision GPS SIAPs

Discussion was led by Wally Roberts, ALPA. All agreed with the issue paper and that this issue is being addressed in conjunction with ACF agenda item # 94-02-133. **Status: Item Closed**

**b. 96-02-170** Visibility/RVR Issues in VNAV/RNAV IAPs

The position paper was presented by Wally Roberts, ALPA. The paper was prompted by concern that the FAA was considering making the computed intercept point of the published VNAV slope with the published MDA [DA/ (H)] the missed approach point on non-precision approaches. This creates contradictions with table 6 visibility values because, in most cases, the distance of the calculated point to the threshold will increase above Table 6 values (see discussion in ACF agenda issue # 94-02-133). Several concepts were discussed. Jim Enias, AFS-410, advocates the DA (H) concept provided that an obstacle analysis has been conducted. AFS-440 is currently developing criteria for a visual segment obstacle analysis that will hopefully be included in TERPS change 17. Pat Gallagher, APA/AA, advocates retaining the current visibility minimums, yet requiring a missed approach upon reaching the MAP/DA (H) point. Alternatively, the increase in visibility is an acceptable trade-off to allow the concept. Pat then suggested an evaluation of the DA (H) concept at 10-15 sites that are highly used by several air carriers and high performance general aviation aircraft. Results of the testing would be reported back the ACF. Wally again noted any change in concept would require changes to the CFRs. APA/AA will report on concept test results at the next meeting. **Action: Item Open (APA/AA)**

**c. 96-02-171** Temporary vs. Permanent FDC NOTAMs

Discussion led by Tom Young, ALPA, noting that, although there has been an improvement in cleaning up T-NOTAMs, there are still many cases where T-NOTAMs are used for permanent SIAP changes. A better methodology would be to use CCP NOTAMs which will authorize charting agents to change approach charts. The problem is exacerbated when AVN-100 does not have staffing/time to formally amend procedures. Lyle Wink (AFS-440) briefed that his office has been developing better policy guidance to facilitate SIAP amendments. AFS-440 will brief progress at next meeting. **Action: Item Open (AFS-440).**

**d. 96-02-172 Lack of Seamless Transition From STARs to SIAPs**

Bill Mosley, ATO-120, briefed on several initiatives at Seattle and Las Vegas. All agreed that the seamless arrival concept of STARs to corner posts or IAFs is the best methodology and the intent of the STAR Order. The issue is also being addressed in ACF agenda item # 92-02-102. **Status:** Item Closed

**ACF 96-02  
Attendance Roster**

| <b>Attendees</b> | <b>Organization</b> |
|------------------|---------------------|
| Dick Powell      | ATA-100             |
| Lyle G. Wink     | AFS-440             |
| Bill Hammett     | AFS-420             |
| Lynn Boniface    | AFS-420             |
| Don Pate         | AFS-450             |
| Carl Moore       | AFS-450             |
| Jim Nixon        | AFS-440             |
| Terry Deplois    | AVN-160             |
| Jim Terpstra     | Jeppesen            |
| Rudy Ruana       | Jeppesen            |
| Rob Bowen        | APA                 |
| Pat Gallagher    | APA/AA              |
| George Lutz      | EAA                 |
| Bill Mosley      | ATO-120             |
| C.R.Bramble      | ATO-120             |
| Tom Young        | ALPA                |
| Wally Roberts    | ALPA                |
| Dave English     | ALPA                |
| Bob Hall         | ALPA                |
| Kevin Comstock   | ALPA                |
| Charles Guy      | ASAP                |
| Dick Johnson     | NAVFIG              |
| Doug Helton      | AOPA                |
| Charles Branch   | NOS/ACD             |
| Dalia L. Marin   | NOS                 |
| Dick McKinney    | AAL                 |
| Jim Enias        | AFS-410             |
| David Catey      | AFS-200             |
| Bill Thomas      | ATA                 |
| Larry Imrich     | ATA-110             |