

Government/Industry
Aeronautical Charting Forum (ACF) 98-01
May 4 – 7, 1998

1. Opening Remarks

The forum was held at the offices of NOS/Aeronautical Charting and Cartography in Silver Spring, MD. Mr. Paul Best, FAA/AFS-420, chaired the Instrument Procedures portion of the Charting Forum on May 4 – 5, 1998. Separate minutes of that meeting are being generated and will be sent to those participants.

Mr. Dick Powell, FAA/ATA-100, Co-Chair of the ACF, opened the Charting Forum on May 6, 1998 with thanks to Mr. Terry Laydon, Director AC&C, for hosting the forum. Mr. Powell asked participants to fill out the Attendee List and include their e-mail address. Minutes of ACF 97-02 were accepted. ACF 98-01 attendees are at Attachment 1.

2. ICAO AIS/MAP Divisional Meeting

Mr. Dave Lewtas, ICAO, briefed the ICAO AIS/MAP Divisional meeting held in March and April 1998. Three members of the ACF attended the meeting and represented the U.S. position: Mr. Dick Powell, FAA, Mr. Terry Laydon, AC&C, and Maj Tim Duerson, NIMA. The cartographic recommendations (now going through the ICAO approval process) included: development of Annex 4 specifications to include provisions for electronic aeronautical chart display; development of additional Annex 4 specifications to support GNSS-based operations; development of Standards and Recommended Practices (SARPs) to support computer navigation fixes on charts; development of an amendment to Annex 4 for electronic terrain data; review of Annex 4 specifications relating to Aerodrome Obstacle Charts and development of specifications for the use of digital terrain and obstacle data; and, development of SARPs for the depiction of airspace classes. Additionally, ICAO will form a Study Group to examine the Standard ICAO Conceptual Data Model and other models (from FAA and EuroControl) to determine the best international data model for use by State aviation authorities when exchanging aeronautical data. The ICAO Study Group will address other issues related to this standardization effort (distribution, format, etc.). Mr. Dick Powell, FAA, noted that the resolution of this issue is extremely important to a future DataLink environment and that the organizations attending the ACF will be asked to become involved in this discussion. Mr. Powell also thanked those who prepared presentation papers for the ICAO Divisional meeting. Mr. Jim Terpstra, Jeppesen, noted that the ICAO Study Group had made strides in numerous areas but that a lot of coordination work remains. He asked that each ICAO recommendation be met with critical review and comment and not be 'rubber-stamped.' The ICAO recommendations were distributed to ACF attendees.

Action: All ACF attendees, review ICAO recommendations and provide comments as appropriate.

3. National Airspace Redesign

Mr. John Walker, FAA/ATA-1, briefed on the National Airspace Review for the redesign of the National Airspace System to address capacity issues. He spoke about the FAA Administrator's priority for implementation of Free Flight 2000, and the importance of a standard conceptual data model as discussed at the recent ICAO AIS/MAP Divisional meeting. The Airspace Liaison Team (FAA) has been formed to work the redesign effort and produce a report to the Administrator by June 1998. However, Mr. Walker noted that the process of redesign will probably never end. Mr. Jim Terpstra, Jeppesen, asked when the redesign effort would result in 'lines on the chart.' Mr. Walker answered that it would probably be 3 – 5 years before any changes would be made and reflected on the charts. Mr. Powell thanked Mr. Walker for participating and informing the attendees of FAA issues and efforts. Mr. Powell noted that the FAA would continue this informative approach so that ACF attendees could comment and influence.

Action: None, for information only.

4. Free Flight

Mr. Jeff Griffith, FAA/ATO-1, briefed on the implementation of and discussions relating to Free Flight. The FAA

Administrator tasked the Select Committee to achieve a consensus between government and industry so that they could present a common front to Congress – and they have reached this consensus through the RTCA Task Force 3 process. The RTCA Task Force 3 (Free Flight Select Committee) has made several (44) recommendations/action items, including: 3D user preferred trajectory flight trials; elimination of 77 published Preferred IFR Routes (currently 1957 of these routes – intent is to eliminate all); decrease 200 nm radius restriction for NRP filing; Collaborative Decision Making (CDM) testing and operational use; digital ATIS automated taxi clearance; and, 250 knots below 10,000 feet restriction testing/evaluation. Free Flight Phase 1 is looking at six key programs: Traffic Management Advisor (TMA); Passive Final Approach Spacing Tool (pFast); User-Request Evaluation Tool (URET); Collaborative Decision Making (CDM); Controller Pilot Data Link Communications (CPDLC); and, Surface Movement Advisor (SMA). Descriptions of these programs are included in the Free Flight briefing slides which were distributed at the meeting. A GPS risk assessment should be completed by October 1998 to determine the obstacles, costs, and solutions for GPS-based sole-means navigation operations. Based on that risk assessment, the Wide Area Augmentation System (WAAS) program will be modified as needed. FFP1 implementation time frame is 1998 to 2002, and will focus on core capabilities and limited deployment. The NAS Modernization Task Force plans to have an achievable plan for revising the NAS by 2005.

Action: None, for information only.

5. IFR Gulf of Mexico, Vertical Flight Reference Chart

Mr. Allen Feldman, FAA/ATA-130, discussed the Helicopter Safety Conference recommendation to produce an IFR Gulf of Mexico Vertical Flight Reference Chart. Mr. Feldman noted that if drilling operations move further south in the Gulf, then another chart would be produced to meet that requirement. Mr. Powell noted that this was a Special Use chart produced to meet a specific requirement, that it was a prototype, and that comments are encouraged. Mr. Tom Young, ALPA, asked if the identifiers were 'harmonized' to work with databases.

Action: None, for information only.

6. Constant Angle Descent Study

Mr. Dave Osbourne, Volpe NTSC, briefed their 'Non-Precision Approach with Constant Angle Descent Chart Study' that was conducted for the ATA Charting and Data Display Committee. Delta, United and American Airlines participated in the study, using charts supplied by Jeppesen. Two constant angle descent (CAD) chart formats were compared to the current standard NDB chart format and, in all cases, aircraft flying either of the two CAD formats remained further above the ground for a longer period of time than those aircraft using the current dive and drive format. Additionally, the workload for the CAD 'ribbon' format chart was significantly higher than the other charts. Both CAD chart formats led to a significantly larger number of early turns prior to the MAP than the current chart format. One corrective action for this problem would be to rewrite the MAP instructions to require the pilot to 'fly straight ahead to . . .' Pilots in the study felt that the CAD approach was more demanding but also that they were less likely to fly below MDA. The goal of the ATA was to determine if charting would increase the utility of CAD approaches, thereby decreasing CFIT potential. Volpe's concerns, raised by the study, were that the CAD approaches: increased visual workload; caused early turns prior to the MAP; and, caused early descents at the FAF during post-FAF descent approaches. Additionally, Volpe was concerned that the increased workload could decrease the crew's situational awareness. Mr. Ben Rich, APA, and Mr. Jim Terpstra, Jeppesen, questioned the study's conclusions that seemed to indicate that the CAD should not be used. While the study pointed out several concerns with the CAD approach, it does not indict the CAD philosophy.

Action: None, for information only.

7. IACC Task Group 31, IAP Chart Issues (93-01-030, 96-02-078, ICAO identifiers on GPS approaches, magnetic versus true orientation, contours, Volpe reformat, division of TPPs)

Ms. Dalia Marin, AC&C, briefed that the original Volpe format and two AC&C variations to it had been sent to Mr. Powell, FAA, for forwarding to the Volpe NTSC for human factors evaluation of all three charts. Terrain depiction and the Volpe format variations will be evaluated. The IACC TG concluded that a 'template' chart could not be used for the new format.

Action: Ms. Dalia Marin, AC&C, will report on the status at the next meeting.

8. FMS/GPS/RNAV/Free Flight Chart

Ms. Pat Fair, FAA/ATA-130, distributed a prototype of the IACC TG 33 Chart for review and comment. She also noted that a questionnaire would be sent out requesting further comment. Mr. Tom Young, ALPA, asked how this effort compared to the SAE effort on the same subject. Mr. Dave Dudish, AC&C, replied that the IACC TG had considered the SAE comments and recommendations and some had been accepted. Mr. Jim Terpstra, Jeppesen, asked for a comparison between the SAE recommendations and the IACC specifications. Ms. Pat Fair said she would brief the differences at the next SAE meeting in July. Mr. Howard Stewart will provide an IACC Working Specs sheet to Mr. Young and Mr. Terpstra for initial comparison.

Action: Ms. Pat Fair, FAA/ATA-130, will arrange for the SAE G-10 Committee to be briefed on the differences and report on the status at the next meeting.

9. Prohibited Area P-56 Charting

Cdr Eric Secretan, AC&C, briefed that larger graphics had been published in the AFD and larger warning boxes on the IAP, among other actions. The TERPs part of the ACF is exploring redesign of the departure procedure to preclude further problems.

Action: Cdr Eric Secretan, AC&C, will report on the status at the next meeting.

10. Ugly Baby Project (92-01-006/011/012/013/014/015, 94-01-039, 95-01-065, 96-02-084)

Mr. Jim Terpstra, Jeppesen, and Mr. Art Dodds, AC&C, passed out prototypes developed by their respective organizations. These prototypes depicted new information on the IAPs, to include: complex TAAs; terrain contours, terminal routes, the approved basic Volpe format, multiple minima boxes, and distance from MAP. Cdr Eric Secretan, AC&C, briefed on the rationale behind the development of the Ugly Baby chart and asked for ACF comments and recommendations on the maximum number of TAA sectors and step downs to be charted for any approach. Mr. Dodds briefed the AC&C-developed variations and the challenges they faced in charting a complex issue in an understandable manner. Mr. Dave Lewtas, ICAO, noted that the ICAO Study Group had made recommendations on terrain depiction on IAPs. Mr. Jim Terpstra briefed the Jeppesen charts' TAA variations and other modifications (i.e., minima boxes, GPS/WAAS/LAAS Channel information, VNAV angle, scale, boxed data, etc). One major difference between the Jeppesen and AC&C TAA depictions is that Jeppesen's TAA examples were a single large symbol, while AC&C's were divided into multiple 'pie-shaped' icons positioned relative to the applicable arrival sector. Mr. Powell encouraged all to work these issues prior to the flight check stage so as to save dollars and have a workable product. Implementation of the TAA Order is on hold, even though the Order has been published.

Action: Cdr Eric Secretan, AC&C, will report on the status of the Ad Hoc Committee at the next meeting.

11. Terrain Database/Release of Digital Terrain Elevation Data (DTED)(93-01-028)

Mr. Terry Laydon, Director of AC&C, briefed on the Airport Safety Modeling Data (ASMD) produced by AC&C. The ASMD covers all of the ACF-submitted/approved U.S. airports and 102 of the international airports. The U.S. airports will be released in June 1998 on CD-ROM and cost \$3,500. The international airports will cost the same and be produced at a later date. The cost includes a six-month update with any new airports that have been approved and added. Requirements to add airports to the ASMD need to be sent to Air Transport Association (ATA). Mr. Tom Young, ALPA, asked about the foreign airports that have not been included because the country refuses to release their data. Mr. Dave Lewtas, ICAO, indicated that ICAO may be able to help in this effort. Mr. Dick Powell, FAA, noted that this product was developed to meet an ACF requirement, and that all should be pleased with their contribution to worldwide aviation safety.

Action: Closed

12. ATA Chart, Database and Avionics Harmonization Committee

Mr. Jim Terpstra, Jeppesen, briefed the ATA committee recommendations on harmonization issues between charts and automated systems in the cockpit which display information from airborne aeronautical databases. There are several chart/database differences that exist that must be resolved. The Master Issues Document was distributed to ACF attendees. The single largest difference that needs resolution is the airport identifier. Issues were grouped into: waypoints; airways; IFR Approach Procedures; Final Approach Course; Missed Approaches; Departure and Arrivals; Electronic Library Content; Fly Over versus Fly By Fixes; Charts; Avionics; Training; Effective Dates; and, Procedural and Miscellaneous. This Master Issues Document will be briefed to the NTSB.

Action: Mr. Jim Terpstra, Jeppesen, will report on the status of the committee at the next meeting.

13. Parachute Jumping Areas on VFR Charts (94-01-040)

Mr. Hal Becker, AOPA, reported progress on obtaining the frequencies for Parachute Jumping Areas. frequencies are not being put on the chart because the frequencies are not dedicated. Mr. Hal Becker, AOPA Consultant, asked that this topic remain open. AOPA will coordinate with Mr. Dave Thompson, FAA/ATA-100, and Mr. Ed Scott, Air Sports Council, to get these frequencies published on the visual charts.

Action: Mr. Hal Becker, AOPA Consultant, will report on their efforts at the next ACF meeting.

14. Unnamed Fixes on Enroute Charts (95-01-066)

Ms. Pat Fair, FAA/ATA-130 reported that the waypoints had been provided to AC&C for charting and that this closes out the issue.

Action: Closed

15. Redundant Verbiage on SIDs/STARs (95-02-068)

Mr. Bill Hammet recommended that the OPI for the appropriate paragraph in the AIM be contacted. This individual should be brought up to speed on the issue by Mr. Powell, Mr. Paul Best, Mr. Rudy Ruana, Jeppesen, and Mr. Glen Martin, FAA/ATO-110.

Action: Mr. Dick Powell, FAA/ATA-100, will coordinate the conference call and report on the status at the next meeting.

16. STAR (Standard Terminal Arrival Routes) (97-02-094/095/096/097/098/099/100/101)

These topics were transferred to the TERPs portion of the ACF

Action: Transferred

17. Adding GPS Waypoints to Charts (96-02-078)

Cdr Eric Secretan, AC&C, reported that this had been submitted to the IACC as a Requirement Document and is being staffed by the IACC.

Action: Cdr Eric Secretan, will report the status at the next meeting.

18. No Military Landing Rights Available (97-01-088)

Mr. David Thompson, FAA/ATA-130, reported that a listing of 1300 airports with No Military Landing Rights is being verified within the FAA. As soon as this is completed, it will be forwarded to Mr. Charles Branch, AC&C, for inclusion in the A/VD. Possibly these will also be charted on the Sectional charts for military helicopter pilots' usage.

Action: Mr. David Thompson, FAA/ATA-130, will provide Mr. Charles Branch with a list of civil airports that have no military landing rights and report on the status at the next ACF meeting.

19. Marking/Symbology for the Non-Towered Airports with Non-Standard Traffic Patterns (97-01-089)

Mr. Dave Thompson, FAA/ATA-130, reported that the IACC had approved adding a notation to the airport data block on the Sectionals and TACs that indicates a non-standard traffic pattern ('RP31' – Right Pattern, Runway 31). They will start appearing on the visual charts later this year.

Action: Closed

20. Depiction of GPS Database Points on IAPs (97-01-91)

The IACC has already approved the charting of these Computer Navigation Fixes (CNFs) on 'or GPS' approach charts and AC&C is ready to chart them as soon as they are received from the FAA. This will have to be a phased in program for both AC&C and Jeppesen charts. The 4400 five-letter names have been provided to Mr. Carl Moore, FAA/AFS-450, for accuracy verification. This process is ongoing. Ideally, these names would be added to 8260s for chart revision.

Action: Closed

21. Depiction of Class B Airspace on LAX Visual Charts (97-02-102)

Ms. Donna Gallant, AC&C, briefed that the Los Angeles Sectional and TAC charts had been reformatted so that a pilot can view both the navigational side and the flyway graphic at the same time (by folding it back over). This required no shifting of insets nor additional tabs. AOPA is satisfied with this, but still would like to have the radial/DME points around the perimeter of the Class B airspace.

Action: Ms. Melissa Bailey, AOPA, will coordinate this remaining AOPA requirement and report on the status at the next meeting.

22. ARTCC Frequencies Charted for Lost Comm (97-02-103)

Maj Tim Duerson, NIMA, reported that DoD did not have a requirement for these frequencies. The FAA Fort Worth ARTC Center had requested that ARTCC frequencies be published on the IFR Enroute High Altitude charts, in the form of a tabulation listing. There is no user requirement for these frequencies. Mr. Dick Powell, FAA, will coordinate with Mr. Glen Martin, FAA/ATO-110 and Mr. Paul Smith, NBAA to confirm the requirement. Ms. Janet Myers, AC&C, provided a list of lat/long coordinates for the RCO serving each ARTCC, as requested at the last meeting by Mr. Jim Terpstra, Jeppesen. Mr. Powell noted that these coordinates would be added to the A/FD on a routine basis.

Action: Mr. Dick Powell, FAA/ATA-100, will confirm original user requirements and report the status at the next meeting.

23. AOPA Requirement for a GPS Database (97-02-104)

Mr. Powell, FAA/ATA-100 reported that the requirement has been discussed within FAA and funded by the SATNAV Office. The FAA has asked AC&C to provide their comments on producing this database. Mr. Powell expects that a decision and report will be made by August 1998. Mr. Jim Terpstra, Jeppesen, reported that they will be going on-line on the Internet this September with their database. They expect the cost of their database to be reduced by at least half. Jeppesen feels that this satisfies the AOPA requirement for a low cost GPS database. Ms. Melissa Bailey, AOPA, indicated that this reduction in cost would be significant factor in meeting AOPA's requirements, but that there were other AOPA requirements still to be met. Ms. Bailey will provide Mr. Powell more specific information on AOPA requirements.

Action: Ms. Melissa Bailey, AOPA, will provide the more specific database requirements to Mr. Powell, FAA. Mr. Dick Powell, FAA/ATA-100, will report on the status of this at the next meeting.

24. Charting ATCAAs (97-02-105)

Ms. Pat Fair, FAA/ATA-130, showed a prototype U.S. High Altitude Controller Chart with all ATCAAs depicted. Ms. Fair will coordinate with ATO to determine what will meet their requirements. If they want to proceed with it, then an IACC Requirement Document will be submitted by the FAA.

Action: Ms. Pat Fair, FAA/ATA-130, will coordinate with ATO and report to the ACF at the next meeting.

25. Retained Receipts For Sales (98-01-107)

Mr. Charles Guy, ASAP, recommended that a letter be sent from the ACF to the appropriate legislative bodies to modify the existing legislation to allow AC&C to retain receipts from the sale of their products. Mr. Terry Laydon reported that language is being coordinated and will hopefully soon be inserted into a proposed bill to allow retention of revenues from the sale of new products. Mr. Kevin Comstock, ALPA, reported that ALPA wholeheartedly supports this initiative. Ms. Melissa Bailey, AOPA, expressed support but was concerned that prices not be raised as a result of this initiative.

Action: Mr. Terry Laydon, AC&C, will report on the status at the next meeting.

26. Airport Names (98-01-108)

Mr. Hal Becker, AOPA, discussed the need for consistency in airport names between Sectional Charts, TACs, WACs, IAPs and the A/FD. This causes significant confusion and clutter problems. Currently, the IAPs and A/FDs agree and the Enroute Charts are abbreviated versions of the names in the IAP and A/FD. The main difference is between the visual charts and this other group of publications (IAPs, A/FDs, and Enroute Charts). The main problem is that when you are flying with a visual chart, you may spend an inordinate amount of time looking in the A/FD for the information on that airport. The proposed fix is to change the A/FD spec, but there may be unintended consequences by doing this. The IAP spec would have to allow for a larger cross-reference listing in the front matter. Mr. Dick Powell, FAA, recommended that Mr. Becker and Mr. Ron Bolton, AC&C, coordinate on possible solutions.

Action: Mr. Hal Becker, AOPA, will coordinate with Mr. Ron Bolton, AC&C, and report on the status at the next meeting.

27. Color on Sectional Charts (98-01-109)

Ms. Melissa Bailey, AOPA, requested that the FAA modify the blue hue of VFR airways on visual charts so that it could be distinguished from Class B airspace boundaries. Mr. Dave Thompson, FAA/ATA-130, reported that the LA Sectional (which originated the suggestion) would be published with the new IACC TG 25 changes on July 16th. This could improve the distinction between the VFR airways and Class B airspace boundaries. If it does, then the issue will be closed. If not improved, then Ms. Bailey will coordinate with Mr. Dave Thompson, FAA/ATA-130, on other solutions.

Action: Ms. Melissa Bailey, AOPA, will coordinate as needed with Mr. Thompson and report on the status at the next meeting.

28. VFR Waypoints (98-01-110)

Mr. Hal Becker, AOPA, briefed an AOPA requirement for an FAA-provided 'VFR Waypoint' to be charted as well as provided in airborne databases. Additionally, numerous unnamed waypoints are being charted for use by pilots under VFR but are not in GPS databases. AOPA suggested a naming convention to preclude confusion between IFR and VFR waypoints. Numerous comments and potential requirements supported the addition of these points. Mr. Powell, FAA, suggested an Ad Hoc Committee with AOPA as the Chair. The ACF concurred. The Committee members are at Attachment 3.

Action: Mr. Hal Becker, AOPA, will coordinate the first Ad Hoc Committee meeting and report on the status at the next meeting.

29. **Closing Comments**

The next meeting will be October 27 - 30, 1998 at AC&C offices in Silver Spring, MD. The Instrument Procedures Group will begin their two day meeting at 0900 on October 27th. The Charting Group will begin their two day meeting at 0900 on October 29th.

Attachment

Aeronautical Charting Forum 98-01 Attendees

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Attachment 1

Ugly Baby Project

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Attachment 3