

Minutes
Government/Industry Charting Forum 92-1
May 27, 1992
Washington, DC

1. Opening Comments

Mr. Dick Powell, FAA/ATP-220, opened the meeting and welcomed the attendees to Washington and the first forum of 1992. He explained the FAA philosophy of the forum as serving as a vehicle for aviation associations and industry to represent their users' and clients' aeronautical charting requirements. These requirements would be coordinated with the other forum members to reach a consensus. The FAA would take this consensus position as a requirement to the Interagency Air Cartographic Committee (IACC) for DoD and NOAA coordination and, if approved, implementation.

Mr. Tom Quinlan, acting for Mr. Paul Best, FAA/AFS-420, discussed the joint effort of his and Mr. Powell's offices to co-chair the forum and work the resulting aeronautical charting issues. He noted that all issues related to TERPs had been referred to AFS-420 for evaluation by the TERPs Working Group.

Mr. Steve Lucchesi, FAA/ATP-220, was introduced as the IACC Member Point of Contact for the FAA and a technical expert for the forum.

Mr. John Moore, NOS/Aeronautical Charting Division, was introduced as an advisor to the FAA and the Recording Secretary for the forum.

2. Forum discussion topics submitted to the FAA had been previously assigned agenda item numbers and titles. The topic originators briefed the forum on their issue and provided rationale and justification as needed. Agenda items follow.

3. Agenda Item 92-1-001 Chart Metrication (NASAO)

Ed Scott (NASAO) requested that FAA comment on their intention to convert to metric measurements on aeronautical charts. Dick Powell said that changes to aeronautical charts are not likely in the foreseeable future, and that the FAA would most likely follow the ICAO position. Rudy Ruana (Jeppesen Sanderson) read from an ICAO position paper that basically recommended the status quo (Rudy will provide Dick with a copy of the ICAO paper). Ron Bolton (NOAA) brought up the possible legal problems that would occur with dual presentation (U.S./metric) on charts.

Action: Closed

4. Agenda Item 92-1-002 State-produced Aeronautical Charts (NASAO)

Ed Scott requested that FAA comment on what it will take to make State-produced aeronautical charts legal. He noted that FAA's check pilots hold that these state charts are not legal for flight, but that there is no background data or criteria for what is or is not legal. If the criteria is known, then states may opt to bring their charts into compliance. Ed recommended an Advisory Circular on VFR charts to lay out the ground rules and criteria.

Ed Scott also recommended coordination of charting standards between federal and state charts. This could result in reduced costs and enhance flight safety. Ron Bolton noted that it would be easier to help the states and exchange digital data with them if the states adopted IACC standards for their charts. He also stated that aeronautical data by state could not be extracted automatically yet; that it would have to be done manually until NOAA/NOS/ACD had an automated digital database. Vic Friend (ALPA) strongly supported the use of standardized chart symbology. EAA held the position that state charts contain a lot of data useful to the pilot that is not on the NOAA charts; and they support the NASAO position that there are differing positions within the FAA concerning the legality of state charts. They also commented that many state charts are free and that pilots are more likely to use them than to pay for NOAA charts.

Ed Scott stated that NASAO was not recommending that the NOAA Sectional Chart boundaries be changed to better meet the state charting needs. Steve Lucchesi said that Sectional boundaries had been laid out to conform with DoD world-wide charting boundaries, and that to change them would require DoD concurrence as well as a requirement to do so.

Dick Powell recommended that he and John Moore meet with NASAO and discuss the possible formation of a NASAO-sponsored state aeronautical chart working group.

Action:

Tom Quinlan will check on internal FAA policy differences with respect to state chart legality and give the FAA position at the next forum.

Dick Powell and John Moore will meet with NASAO to discuss the state aeronautical chart working group concept and possible contributions.

5. Agenda Item 92-1-003 Obstruction Data to Support Take-off Performance Calculation (Jeppesen Sanderson)

Roy Maxwell (Delta) said that obstacle data is collected and provided based on FAA-established approach criteria (2.4%) and not on takeoff clearance criteria (1.2%). Federal regulations require that air carriers conform to an engine out takeoff performance calculation. NOAA Obstruction Charts (OCs) meet the approach criteria but do not meet the takeoff performance criteria. Roy recommended that ICAO criteria be used as a basis for the Obstruction Charts. Roy also recommended that when airports are surveyed, obstacles out to the current chart boundary limits (about 10 nm) that meet the 1.2% slope be reported. Which criteria will be used is a policy issue that must be addressed first. To this end, an Obstruction Chart - Engine Out Working Group was established with Wes Te Winkle (FAA) as the Chair.

Action:

Wes Te Winkle, as Chair of the Obstruction Chart - Engine Out Working Group, will report on policy decisions at the next forum.

6. Agenda Item 92-1-004 U.S. Terminal Procedures in Loose-leaf Format (AOPA)

Henry Bergen (AOPA) recommended that the U.S. TPPs be published as individual charts in a looseleaf format, suitable for a 3-ring binder.

Ron Bolton stated that the IACC had authorized NOAA to begin producing, in early 1993, the U.S. TPPs in a single sheet, shrink wrapped, four hole, top-punched format. Ron also commented that the individual pages will not be available separately because of legal concerns. Ron also noted that it had not yet been determined if the 28-day Change Notice should be in looseleaf or bound format and that the forum should develop a position on this issue. Dick Powell said that prototype CNS (looseleaf and bound) would be provided at the next forum for evaluation.

Action:

Ron Bolton will provide CN prototypes to forum members for evaluation at the next meeting.

7. Agenda Item 92-1-005 Depicting Fix Information on SID Charts (AOPA)

Henry Bergen recommended depicting the fix data currently on the Pilot-Nav SID charts also on Vector SID charts. The Navaid, its radial and DME, provide essential information regardless of the type of SID. The rationale for not depicting this data on Vector SIDs is that it is not essential since the pilot is being vectored by ATC. If this data was included on Vector SIDs, then clutter could become a problem. The possibility of having to redesign the charts, as well as bringing them to scale, was discussed by Charles Branch (NOAA) and Pat Malone (Delta).

FAA personnel were concerned that the procedural aspects of this issue be ironed out before it became a charting issue.

Action:

Tom Quinlan and Dick Powell will address the procedural aspects of this issue and report back to the next forum.

If FAA agreement is reached on procedures, then Ron Bolton will provide a prototype to forum members for evaluation at the next meeting.

8. Agenda Item 92-1-006 Depiciting Communication Frequencies on IAP Charts (DOT/VNTSC)

Steve Huntley (DOT/VNTSC) presented research results on and a recommendation to change the format for depiction of communication frequencies on IAP charts. The proposes format would depict comm freqs layed out horizontally across the top of the IAP chart, between the IAP identification and the planview. Research has validated the significantly increased readability of frequencies formatted in this manner.

Charles Branch expressed his concern that planviews with concentric rings (for enroute/feeder fixes) would be distorted; he recommended that several examples of this be prototyped by VNTSC.

Pat Malone said that the Air Transport Association's Chart and Data Display Working Group was working with the VNTSC on IAP reformatting and she would provide the results of their efforts and evaluations to the forum.

Steve recommended that a comparison of reformat prototypes be accomplished at the next forum meeting. He was asked to develop prototypes based on both NOAA and Jeppesen IAP formats.

Action:

Ron Bolton will provide Steve Huntley with IAPs that reflect NOAA concern with planview distortion.

Steve Huntley will provide the forum, at the next meeting, with prototype IAPs based on both NOAA and Jeppesen formats. These prototypes will depict not only the frequency reformatting, but also VNTSC recommendations for reformatting based on Human Factors Engineering concerns.

9. Agenda Item 92-1-007 Depicting Wind Indicator on Aerodrome Sketches (FAA)

An FAA employee recommended that the wind indicator be charted on the Aerodrome Sketch portion of the IAP chart. Forum members stated that this information was 'nice-to-have' and not 'need-to-have' and therefore disapproved the recommendation.

Action: Closed

10. Agenda Item 92-1-008 Electronic Charting - Standardization of Symbology (ALPA)

Vic Friend (ALPA) recommended that human factors studies be the foundation on which electronic symbology is based. Comparability between vendors/manufacturers and verification testing in simulators and actual flight are two important areas that need emphasis. Vic recommended that the FAA solicit data and techniques from vendors for the purpose of evaluation and either obtain a consensus from vendors and users or mediate a solution which favors the safest position. Vic also recommended a single publication on electronic charting standards that draws together symbology, hardware, and software.

Dick Powell commented on the FAA's Advanced Automation System effort to provide ATC with an automated duplicate of the current controller charts (beginning in 1993). The symbology used for this effort will be eventually used by NOAA to automate the charting process for their charts.

Jim Nixon (FAA) noted that the RTCA is working on standards for color and symbology for electronic charts and that the forum ought to consider their efforts.

Action:

Dick Powell will coordinate with the RTCA on their efforts to address color and symbology for electronic charts.

11. Agenda Item 92-1-009 Electronic Charting - Standardization of Color (ALPA)

Vic Friend (ALPA) recommended that the use of color in electronic charting be standardized. The same colors should be used to convey the same meaning on paper as well as electronic charts. Only those standards that have been tested and proven effective (in simulators and actual flight) should be implemented. Vic recommended that the FAA review SAE G-10 recommendations for implementation of color in electronic charting as well as conventional paper charting. He noted that only those airports in designated mountainous terrain would have color coded IAPs and that on NOAA IAPs, only terrain inside the 'to

scale' ring would be color contoured. This would be similar to the ICAO and UK IAPs.

Action:

The FAA will initiate a review of SAE G-10 recommendations on the use of color in paper and electronic charting and report on this subject at the next forum.

12. Agenda Item 92-1-010 Electronic Charting - Security (ALPA)

Vic Friend (ALPA) indicated that there are two primary security concerns with electronic charting: preventing the use of obsolete data, and preventing the purposeful introduction of incorrect information into the system. A formalized system to insure that both the data in memory and the data transmitted to the aircraft are correct and up-to-date is necessary for the safety of the crew and passengers.

Vic recommended that the FAA establish a technical committee with the knowledge and capability to deal with these two security problems.

Action:

The FAA will investigate this issue and report on it at the next meeting.

13. Agenda Item 92-1-011 Use of Color on IAPs (ALPA)

Vic Friend (ALPA) recommended that NOAA and Jeppesen consider adding color to their IAP charts, such as used in some ICAO and UK AERAD charts. This would be especially critical when IAPs cover an area considered to be mountainous terrain. He noted that cost would be a factor, but that color has proven its value in safety engineering studies and many foreign carriers have already converted to color.

Dick Powell proposed that this issue be discussed first by the Air Traffic Procedures Advisory Committee (ATPAC), before the forum considers it.

Action:

Vic Friend will submit this to the ATPAC for consideration and report on their efforts at the next meeting.

14. Agenda Item 92-1-012 Warning and Caution Notes (ALPA)

Vic Friend (ALPA) recommended that warning and caution notes be printed in bold face type, with some outlining scheme and an indicator/annunciator to draw the pilot's attention to the fact it is there, and in a consistent location. Warning and caution notes should be differentiated graphically.

Steve Huntley indicated that the ATA was interested in this issue also and that the IAP prototypes he would provide at the next forum meeting would have this recommendation incorporated.

Action:

Steve Huntley will incorporate this recommendation into the IAP prototypes that he will provide to the forum at the next meeting.

15. Agenda Item 92-1-013 Print Size and Readability (ALPA)

Vic Friend (ALPA) recommended that the FAA review studies and evaluations to determine if print size versus readability has been specifically documented. If it has, then the document should be used as a standard; and if it has not, then a study should be commissioned to examine and document this issue.

Steve Huntley indicated that VNTSC was addressing this issue in the prototype IAP they were developing and evaluating.

Action:

Steve Huntley will incorporate this into his presentation of IAP reformatting at the next meeting.

16. Agenda Item 92-1-014 Use of Icons (ALPA)

Vic Friend (ALPA) noted that some studies have been made on the uses of icons for aeronautical procedures such as air traffic clearances, but that a more general study is needed to define symbols that can be used now and also with electronic charts and libraries. Vic recommended that the FAA form a technical group with the specific mandate of coordinating the development of aeronautical symbology, with a view towards future requirements in ELS and charting icons.

Steve Huntley said that VNTSC had done some work in this field and that he would include some icons in the prototype IAPs.

Action:

Steve Huntley will incorporate this into his presentation of IAP reformatting at the next meeting.

17. Agenda Item 92-1-015 Obstacle and Terrain Contour Depiction (ALPA)

Vic Friend (ALPA) recommended that the FAA and NOAA review their position on depiction of terrain and obstructions with a view towards use of color and smoothed contour envelopes (AMAs and ACEs) for improved pilot awareness of these hazards. ALPA feels that the use of color and smoothed contours aids in the correlation of aircraft position and terrain, i.e., situational awareness.

Dick Powell proposed that this issue be discussed first by the Air Traffic Procedures Advisory Committee (ATPAC), before the forum considers it.

Action:

Vic Friend will submit this to the ATPAC for consideration and report on their efforts at the next meeting.

18. Closing Comments

Lane Speck, FAA/ATP Service Director and Hal Becker, FAA/ATP-200, attended the meeting for several hours. Lane Speck stated that he and his organization supported the charting forum completely. Recognizing FAA budget constraints, the forum should look at inventive, creative, different ways of continuing to progress on aeronautical charting improvements. He encouraged the forum to focus not on the difficulties, but on the possibilities. In these difficult budgetary times, the goal is to spend every dollar wisely, and to do that the forum input is needed and its requirements need to be well articulated. He pledged that if a requirement is turned down by the

FAA, that it will not be because of whimsy, but because of budget constraints and priorities.

Dick Powell and Tom Quinlan thanked everyone for their time and their inputs to the discussions, and encouraged all to continue their support of the forum.

19. The next meeting will be held on December 8, 1992. If the number of agenda items warrant, the next forum will be extended to a second day (Dec 9). The call for agenda topics will be made in mid-October for submission at the end of October. A decision on extending the conference will be made then and all prospective attendees informed.

92-1 Attendees

<u>Name</u>	<u>Organization</u>	<u>Phone/Fax</u>
Patricia W. Malone	Delta Air Lines Flt Opns	P 404-715-1025
	F 404-715-1165	
Vic Friend	ALPA Charting Comm	P 901-753-5066
George Lutz	EAA	P 703-256-7873
Timothy D. Killebrew	DMA FLIP Rqmts	P 703-285-9339
Steve Lucchesi	FAA/ATP-220	P 202-267-9304
Tom Quinlan	FAA/AFS-420	P 202-267-3738
Charlie Schuck	EAA Wash Staff	P 703-281-2169
		F 703-242-8682
Robert Warner	EAA Hq OSH	P 414-426-4862
		F 414-426-4873
Cecil W. Teets	Compuflight, Inc.	P 516-625-0202
		F 516-625-0266
Ed Scott	NASAO	P 301-588-0587
		F 301-588-1288
Terry Jessup	NASAO	P 301-495-2848
Allen Feldman	FAA/ATP-220	P 202-267-9302
Howard L. Swancy	USA Aero Svcs Agency	P 703-274-7773
		F 703-274-7338
Henry Bergen	AOPA	P 301-695-2212
		F 301-695-2375
David A. Carter	HAI	P 703-683-4646
		F 703-683-4745
Paul H. Smith	NBAA	P 202-783-9000
		F 202-331-8364
Denis Metherell	Northwest Airlines	P 612-726-7041
		F 612-726-4087
Roy Maxwell	Delta Air Lines	P 404-714-3214
		F 404-714-6058
Wes Te Winkle	FAA/AFS-420	P 202-267-3728
		F 202-267-5086
Ronald M. Bolton	NOS/ACD/ACB	P 301-443-8075
		F 301-443-5071
William T. McLemore	NOS/NCD/Photogrammetry	P 301-443-8370
		F 301-443-1009
Charles T. Branch	NOS/ACD/ACB	P 301-443-8770
		F 301-443-5071
Charles K. Guy	ALPA Staff	P 703-689-4321
		F 703-689-4370
Robert C. Beatty	USAF IFC/AI	P 512-652-5071
		F 512-652-4904
Steve Huntley	DOT/VNTSC	P 617-494-2339
		F 617-494-2336
James A. Nixon	FAA/AVN-220	P 405-680-3382
		F 405-680-5904
Rudy Ruana	Jeppesen Sanderson	P 202-331-7727
		F 202-296-0278
Bill Whiteside	Aviation Mgt Assoc	P 703-644-4465
		F 703-569-1577
Dennis Newport	FAA/AFS-420	P 202-267-3745
Teshome Seyoum	American Int'l Airways	P 313-484-0088
		F 313-484-9812
Lt Col Harry Hodges	USAF IFC/IP	P 512-652-4674

John Moore

NOS/ACD/R&T

F 512-652-4904

P 301-443-8323

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Dick Powell

FAA/ATP-220

P 202-267-9244

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AUG 3 1992

Carol -

This is to update the actions in these minutes, as two months have gone by since I provided them to the FAA for publication.

page 1, para 4: Agenda Item 92-1-002, State-produced Aeronautical Charts (NASAO). I have talked several times to the NASAO representative (T. Jessup) concerning the meeting referenced in the Action section. Each time I am told that they want to get together but that they are very busy and will call us. In mid-July I asked Dick Powell to try to set up the meeting. So far, he has run into the same answer. We have made a good effort, but this is a NASAO issue.

page 2, para 6: Agenda Item 92-1-004, U.S. Terminal Procedures in Loose-leaf Format (AOPA). In mid-September, Dick Powell will send us a letter asking us to produce a Change Notice in bound and loose-leaf formats (no \$\$ this year).

page 3, para 7: Agenda Item 92-1-005, Depicting Fix Information on SID Charts (AOPA). The FAA is a long way from addressing the procedural aspects of this issue. Tasking for prototypes, if any, will come from Dick Powell through you to R&T.

page 3, para 8: Agenda Item 92-1-006, Depicting Communication Frequencies on IAP Charts (DOT/VNTSC). Bob Cushing sent Dick Powell examples of the IAPs that we believe will cause problems in the proposed frequency format. Dick will be sending these to Steve Huntley (DOT/VNTSC) this month.

page 4, para 9 & 10: Agenda Items 92-1-00⁹~~8~~ and 00¹⁰~~9~~, Electronic Charting - Standardization of Symbology and Color (ALPA). Chris McNerney and I will be monitoring these two issues from technology and SAE viewpoints, respectively.



John Moore



U.S. Department
of Transportation

800 Independence Ave., S.W.
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**Federal Aviation
Administration**

JUL 29 1992

John Moore
National Ocean Service
WSC-5
Room 1011

Dear Forum Participant,

We appreciate your attendance and participation in our recent Government/Industry Aeronautical Charting Forum. Attached are the minutes of that forum.

Also attached is a survey feedback form. Please take a few minutes and fill it out to give us your thoughts on the recent forum and ways to improve future ones. Your comments on the forum minutes and the feedback form may be faxed to us on (202) 267-5809 or mailed to:

Federal Aviation Administration
Attn: Steve Lucchesi, ATP-223
Room 411
800 Independence Ave. SW
Washington, DC 20591

We look forward to seeing you at the next forum, tentatively scheduled for December 8, 1992.

Sincerely,

Richard V. Powell
Co-chairman, Aeronautical
Charting Forum

Attachments