

GOVERNMENT/INDUSTRY AERONAUTICAL CHARTING FORUM
Instrument Procedures Group
April 7-8, 1997
HISTORY RECORD

FAA Control # 97-01-175

SUBJECT: Pilot Duties to Confirm GPS Data Base.

BACKGROUND/DISCUSSION: TSO-C129 requires that the approach string for an IFR GPS approach, whether overlay or standalone, be contained in the database of an IFR-approach-approved airborne avionics device. Yet, the database itself does not seem to enjoy the same level of certification as does the associated approach chart and source documents. There appears to be an emerging body of opinion that the pilot is responsible for assuring the correctness of each and every GPS approach database string prior to flying an approach. This is an impossible task for the pilot to perform both from a human-factors standpoint and because of the fact that neither GPS overlay nor standalone approach charts contain the LAT/LON for the applicable waypoints.

RECOMMENDATION: The FAA needs to define the division of responsibilities between the FAA, the pilot, and the providers of TSO-C129-compliant databases. Information should be disseminated to pilots in an effective and permanent manner, such as a detailed advisory circular with permanent follow-up in the AIM.

COMMENTS: This recommendation affects GPS instrument approach operations information provided to pilots by the FAA, and charting and database vendors. It also affects the AIM.

Submitted by Captain Tom Young, Chairman
Charting and Instrument Procedures Committee

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INITIAL DISCUSSION (Meeting 97-01): Discussion was led by Wally Roberts on behalf of ALPA. ALPA believes that the FAA needs to clearly define the responsibility of the pilot in flying GPS IAP's from a manufactured database. Jim Enias, AFS-410, stated that there is an AFS-200 bulletin stating that flight crews are responsible for verifying databases. The intent was for the crew to accomplish a reasonableness check to validate that charted points match databases, not to verify geographic coordinates. Database integrity is not an issue due to checks and balances in the ARINC and RTCA documentation. AFS-410 took the IOU to create a FSIB through AFS-200 on this issue. Jim Terpstra, Jeppesen, agreed to publish the FSIB as a Jeppesen briefing bulletin when completed. **ACTION: AFS-410.**

MEETING 97-02: Wally Roberts, ALPA, restated the ALPA concern that the FAA needs to clearly define the responsibility of the pilot in flying GPS SIAP's from a manufactured database. The intent was for the crew to accomplish a reasonableness check to validate that charted points match databases, not to verify geographic coordinates. Database integrity is not an issue due to checks and balances in the ARINC and RTCA documentation. AFS-410 was assigned as OPI for this issue with responsibility to develop a FSIB for AFS-200 dissemination. **ACTION: AFS-410.**

MEETING 98-01: No action taken since last meeting. AFS-410 was not available to provide a briefing. **ACTION: AFS-410.**

MEETING 98-02: AFS-410 has an IOU through AFS-200 to develop a FSIB to address this issue. Neither office was represented at the meeting. Howard Swancy, AFS-420, briefed that he had coordinated with AFS-410 and AFS-200 and they stated that they were still working on the FSIB. Issue continued to the next meeting. **ACTION: AFS-410.**

MEETING 99-01: Pete Dula, Manager, AFS-410, has agreed to assign a POC to work with and provide information to AFS-200 for a FSIB addressing this issue. Once in agreement, AFS-200 will create and circulate the FSIB. AFS-410 requested to provide updated status at the next meeting. **ACTION: AFS-410.**

MEETING 99-02: AFS-200 is to prepare a FSIB on input from AFS-410; however, a representative of AFS-410 was not available to address this issue. Howard Swancy, AFS-420, agreed to request that AFS-410 prepare a status update for inclusion with the minutes; however, the update was never received. Issue deferred to the next meeting. **ACTION: AFS-410.**

MEETING 00-01: AFS-200 is to prepare a FSIB on input from AFS-410; however, a representative of AFS-410 was not available to address this issue. The subgroup requested that Howard Swancy, AFS-4, address the non-participation of AFS-410 on issues that they are responsible for. Howard agreed to do so and promised that AFS-410 would participate in the next meeting. **ACTION: AFS-4 and AFS-410.**

MEETING 00-02: AFS-4 had no success in ensuring an AFS-410 representative was available to report on the issue. AFS-200 cannot take any action until AFS-410 responds to the issue. Discussion continued to the next meeting. **ACTION: AFS-410.**

MEETING 01-01: Hooper Harris, AFS-410, briefed that the FAA goal is to set a standard for satellite navigation similar to that required for ground based NAVAID's. The reasonableness check is that the waypoint name in the approach string or airway is the same as that published on the appropriate chart. It was never intended that the pilot verify coordinates. He noted that this issue should also be coordinated with AFS-200/800. Bill Hammett, AFS-420 (ISI), noted that there has been an extensive re-write of paragraphs 1-1-21b regarding VFR

use of GPS and 5-4-5d regarding TAA procedures in the January 25 AIM change. Simon Lawrence, ALPA, commented that there was no AIM educational material regarding the IFR SIAP waypoint string, nor was there policy to not use VFR GPS databases for IFR flight. Hooper agreed to develop AIM material for IFR GPS use. **ACTION: AFS-410.**

MEETING 01-02: An AFS-410 representative was not in attendance. Issue continued to the next meeting. **ACTION: AFS-410.**

MEETING 02-01: Hooper Harris, AFS-410, addressed this issue. He noted that databases do not receive the same level of review as the corresponding chart. The database logic is certified but not the actual data. He provided a concept for a FSIB and information to be added to AIM paragraph 1-1-21o that included the following pilot responsibilities: 1) Check the currency of the database, 2) Check NOTAMs, 3) Verify that the correct procedure was retrieved, 4) Verify the waypoint string (names and altitudes), and 5) perform a reasonableness check. Steve Bergner, NBAA, asked if database NOTAMs should be required of database providers. The consensus was yes. Brad Rush, AVN-160, asked if there was a conflict between the printed chart and the database, which has precedence. The group consensus was the paper chart. The requirement for database NOTAMs must be addressed by the NOTAM Working Group, chaired by ATP-300. The ACF concurred with Hooper's recommendations and agreement to prepare a FSIB and corresponding AIM material. **ACTION: AFS-410.**

MEETING 02-02: 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 AIM Change 3 on August 7th. Material will be submitted for publication NLT February 20, 2003 to meet this goal. **ACTION: AFS-410.**

MEETING 03-01: Rick Gastrich, AFS-410, briefed that the necessary AIM material did not get forwarded prior to the Feb 20 suspense for publication on August 7th. Rich assured the group that the information would be forwarded for publication on February 19, 2004. Bill Hammett, AFS-420 (ISI) offered to circulate the draft AIM change through the ACF membership for comment if desired by AFS-410. Larry Wiseman, AFFSA, briefed a problem the USAF had with chart/database harmonization. A procedure had been developed using all flyover waypoints; however, it was coded using flyby waypoints. The group consensus was that the procedure was incorrectly designed. Tom Schneider, AFS-420, re-capped the concept that was briefed by AFS-410 at the last meeting. If any agency has problems with this approach, they should contact AFS-410 directly with their concern. Mark Ingram, ALPA, briefed a paper developed by Jack Befus of Smiths Aerospace FMS Navigation Database Group on database handling. Bill agreed to distribute the paper to the ACF Master mailing list for informational review. **ACTION: AFS-410.**

MEETING 03-02: Bill Hammett, AFS-420 (ISI), briefed that the AFS-410 developed information was published in the AIM on August 7th. Bill also noted that the paper developed by Jack Befus of Smiths Aerospace FMS Navigation Database Group on database handling was forwarded to the ACF master mailing list as requested by ALPA at the last meeting. Ted Thompson, Jeppesen, provided an update on various industry database comparison tools. He noted that JAA has established database certification requirements and that FAA has agreed to accept the JAA requirements. Ted also briefed that the FAA National Flight Database (NFD) was discussed at the last ATA FMS Task Force meeting and that FAA (ANM-111) is currently developing an Advisory Circular to explain NFD use. **Item Closed**.
