

AERONAUTICAL CHARTING MEETING
Charting Group
Meeting 22-01 – April 26 - 28, 2022

RECOMMENDATION DOCUMENT

FAA Control #22-01-371

Subject: Enroute Chart References and Geographic Coordinates on SIDs and STARs

Background/Discussion:

In the early 1980s, RD244 and RD251 introduced adding Enroute chart designations to fixes and NAVAIDs on SIDs and STARs along with their geographic coordinates to support advanced navigational systems. Over the last 40 years there has been significant advancement in FMS and moving map displays. NAVAIDs and fixes in the NAS are now part of downloaded FMS systems, and data, such as coordinates, no longer need to be manually added. However, with the advancements in technology the charting specifications remain for the most part unchanged. Current specifications require the depiction of the applicable Enroute Chart(s) (Low and High Altitude) required for en-route operations to be positioned beneath the identification box of each terminating NAVAID or fix on SIDs and for the transition entry points or the commencement NAVAID or fix of the basic STAR where no transitions exist. In addition, geographic coordinates are shown within the box for those NAVAIDs used to execute the procedure.

Considering the growing use of digital applications and advances in FMS, Terminal Charting would like to gauge if having Enroute Chart designations and NAVAID or fix geographic coordinates on SIDs and STARs is still a critical chart element required for the safety of flight.

Recommendations:

Recommendation is to remove all applicable Enroute Chart references and geographic coordinates from SIDs and STARs. See attachments: Kingdom (Current), Kingdom (Without Chart References or Coordinates)

Comments:

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Krystle Kime, FAA/AJV-A222, presented the new recommendation. She said in the 1980s there were two Requirement Documents (RDs) that updated the specifications for Standard Instrument Departures (SIDs) and Standard Terminal Arrival (STARs) charts that added the requirement to chart geographic coordinates and enroute chart references on fixes and NAVAIDs. At the time, this information was needed because pilots had to manually enter this information. Since Flight Management System (FMS) technology has made this no longer necessary, Terminal Charting would like to update the specifications and remove this unnecessary information from the charts. She showed [sample charts](#) to demonstrate the reduction in chart clutter and asked if there is ACM support for this recommendation.

Rich Boll, NBAA, said that the inclusion of the geographic coordinates was intended to facilitate systems that relied exclusively on pilot-entered data to fly the procedures. This need has become increasingly rare, however, before this change moves forward, he recommends reaching out to MITRE to see how many Inertial Navigation System (INS) aircraft are still flying in the National Airspace System (NAS). He also pointed out that if the FMS goes down, a pilot flying a non-RNAV SID could possibly need the coordinates. He does not agree with taking the coordinates off the Enroute charts. He does support taking the coordinates and enroute references from SIDs and STARs depending upon the number of INS aircraft currently existing in the NAS. Valerie Watson, FAA/AJV-A250, said she will contact MITRE regarding remaining INS aircraft.

John Collins, ForeFlight, said he is opposed to removing the coordinates because they are used to confirm that the FMS database is up to date. He said he does support the removal of the Enroute chart references. John Barry, FAA/AIR-622, agreed with John and thinks the coordinates are still needed as a means to verify that what is in the database hasn't changed. Cameron Korrekt, NGA, pointed out that the currency of the FMS data can be verified by using the procedure effective date that is published on the chart. Rich Boll agreed and explained that procedure effective dates were added to charts for this very reason. John Collins then agreed that the procedure amendment date can be used for verification and the coordinates and chart reference identifier aren't needed.

Dan Wacker, FAA/AFS-420, asked about the history of why this information was originally added to the charts. Valerie said it was because in the '80s pilots had to manually enter the information, which is no longer the case. Dan also questioned if the military would be in support of the recommendation. Valerie stated that if the specification change to remove the coordinates were to be proposed, it would be fully vetted through the military for their concurrence.

Sheri Ehrenborg, IPA/UPS, agrees with taking off the coordinates and chart references. She said she recently polled the military and they did not identify any aircraft not using GPS. Gary Fiske, FAA/AJV-P310, said he also supports elimination the coordinates and chart references, as did Mike Crim, GA pilot, and John Moore, Jeppesen.

Bill Tuccio, Garmin, suggested removing the items from the charts, but creating a new publication that contains the geographic coordinates for all the fixes and NAVAIDs in the U.S. NAS. John Collins voiced he also thinks a separate document containing the coordinates would be useful. Steve Madigan, Garmin, said this data is readily available and if needed, such a

document could be easily parsed from the National Airspace System Resource (NASR) fix subscriber file.

Mark Mentovai, Manhattan Flight Club, said the electronic flight bag (EFB) should make it easy for a pilot to verify a procedure even if the FMS database is out of date. Mike Crim agreed and said pilots can easily look up the latitude/longitude during preflight, plus the coordinates are already available on the FAA website. He thinks a separate file is excessive. Valerie agreed and thinks the procedure effective date can be used to verify whether their database is up to date or not. There seemed to be consensus.

Aaron Jacobson, Jeppesen, said Jeppesen removed the geographic coordinates a while back and have received no complaints.

Valerie summarized that since the charts contain a procedure effective date to allow pilots to confirm their database is up to date, there is no disagreement from the ACM audience for removal of the coordinates. There also is consensus agreement for removal of enroute references. She confirmed that she will first reach out to MITRE to see how many aircraft still need the geographic coordinates and will report the numbers to Rich and to Flight Standards. If Flight Standards approves, she will then draft an Interagency Air Committee (IAC) specification change.

ACTION: Valerie Watson, FAA/AJV-A250, will reach out to MITRE to determine the number of aircraft that are still dependent on the charting of geographic coordinates on SIDs and STARs.

ACTION: Krystle Kime, FAA/AJV-A222, will draft an Interagency Air Committee (IAC) specification change to remove geographic coordinates and enroute references from SIDs and STARs after the above step has been accomplished and the results are acceptable to Flight Standards.

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Valerie Watson, FAA/AJV-A250, reviewed the issue. She said at the last ACM, there was audience consensus for removal of enroute chart references and coordinates from Departures and Arrivals. She had taken an action to first reach out to MITRE to see how many aircraft still need the geographic coordinates and report the numbers to Rich Boll, NBAA, and to Flight Standards before proceeding with a specification change. She said she did get the information from MITRE and has passed that along. Dan Wacker, FAA/AFS-420, said the Flight Procedures and Airspace Group is still discussing this issue internally and are considering a safety review.

Rich Boll, NBAA, reported that latitudes/longitudes were added to conventional Standard Instrument Departures (SIDs) and Standard Instrument Arrivals (STARs) in the 1980s to support the use of Inertial Navigation Systems (INS). He said MITRE determined that there are approximately 45 aircraft still using the INs in the National Airspace System (NAS). He said removing the coordinates will not be a change to navigating in the NAS, only a change to the charts. Additionally, these are conventional procedures and can still be flown using conventional ground-based navigation for which they were designed.

Dan Wacker, FAA/AFS-420, agreed and said his office will need to evaluate and document that. Valerie clarified this is only a specification change and will not be a change to procedure design criteria. Dan agreed and said he would get an answer back quickly.

ACTION: Dan Wacker, FAA/AFS-420, will report on the Flight Procedures and Airspace Group (FPAG) investigation of this issue and consideration of a safety review.

ACTION: Krystle Kime, FAA/AJV-A222, will draft an Interagency Air Committee (IAC) specification change to remove geographic coordinates and enroute references from DPs and STARs after the above action has been accomplished.

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Dan Wacker, FAA/AFS-420, reported that Flight Standards determined no safety review is required and this proposal can proceed.

Jennifer Hendi, FAA/AJV-A250, reported that the Interagency Air Committee Requirement Document (RD) 859 for these changes is in process. She will report the status at the next meeting.

STATUS: OPEN

ACTION: Jennifer Hendi, FAA/AJV-A250, will report on the implementation of the IAC specification change to remove geographic coordinates and enroute references from DPs and STARs.