AERONAUTICAL CHARTING MEETING
Instrument Procedures Group
Meeting 20-02 – October 27, 2020

RECOMMENDATION DOCUMENT

FAA Control #20-02-355

Subject: Minimum Enroute Altitudes (MEAs) Published on Standard Instrument Departures (SIDs) and Standard Terminal Arrivals (STARs)

Background/Discussion:

Ref: ACF-CG RD 14-02-280:
https://www.faa.gov/air_traffic/flight_info/aeronav/acf/media/RDs/14-02-280-ACF_MEA_Usage_on_SID.pdf

In response to the referenced ACF-CG agenda item, FAA Order 8260.46F, Departure Procedures was amended to restrict the publication of MEAs on SID transitions for ATC operational purposes. This guidance is in paragraph 2-1-1 e (1), which states:

> (d) When ATC requests an altitude restriction for a fix located on a transition route, it must be at or above the specified minimum en route altitude (MEA) for the route [see note in paragraph 2-1-1.e(1)(b)]. Do not raise an MEA to support ATC operational requirements; use fix crossing altitudes where operationally needed.

A similar restriction applicable to STARs is furnished in FAA Joint Order 8260.3D TERPS in paragraph 2-2-7 d (4).:

> 4) Do not raise an MEA to support ATC operational requirements. An altitude restriction must be used if ATC has an operational requirement for an altitude higher than the MEA.

However, these changes to the 8260 Orders have failed to prevent the publication of ATC operational MEAs on SIDs and STARs. NBAA's research reveals that this failure is the direct result of conflicting guidance published in an Air Traffic Order used by the Flight Procedures Teams when assessing DME/DME coverage on SIDs and STARs that appears to be used in priority over the guidance furnished in the 8260 Orders.

Specifically, the conflicting guidance is found in the Air Traffic Order JO7470.1A, Distance Measuring Equipment (DME)/DME Infrastructure Evaluation for Area Navigation (RNAV) Routes and Procedures, in paragraph 10 b(2)(b)(i) and (ii):

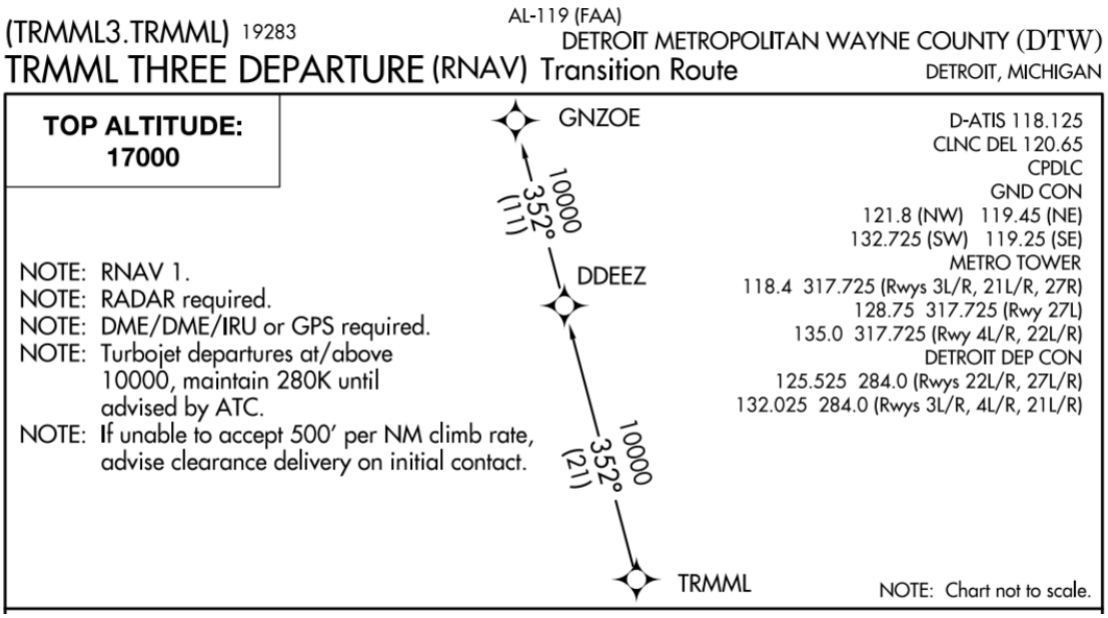
> (i) For STAR and en route procedures, input an altitude for each waypoint, route, or route segment. Use the lowest realistic operational ATC altitude. The altitude evaluated at a waypoint will be charted as the minimum en route altitude (MEA) for the segment immediately preceding the waypoint, and is entered as the MEA on the FAA Form 7400-4, STAR-Standard Terminal Arrival.

(ii) For SID procedures, no altitude input is required except:

(aa) ATC crossing restriction altitudes.

(bb) The normal (lowest) operational en route altitude when reached before the end of the procedure. This should be the handoff altitude and must be input for all waypoints after it is reached. This is to preclude screening at unrealistically high altitudes.

Unfortunately, the guidance provided above in this Air Traffic Order is resulting in higher than required MEA altitudes to support ATC purposes contrary to the 8260 guidance and expressed desires of the ACM. As result, we are still seeing higher than necessary MEAs being published on SIDs and STARs because of this conflict between FAA Orders. An example is shown below on this recently published SID at Detroit (DTW):



Recommendations:

Amend Joint Order 7470.1A, Distance Measuring Equipment (DME)/DME Infrastructure Evaluation for Area Navigation (RNAV) Routes and Procedures to bring the MEA restrictions on SIDs and STARs in conformance with the guidance furnished in the applicable 8260 Orders.

If necessary, update the TARGETS automation program and the RNAV Pro DME/DME assessment procedures to conform with the requirements for MEA altitudes in the applicable FAA 8260 Orders.

Comments:

The recommendation affects:

1. Joint Order 7470.1A, Distance Measuring Equipment (DME)/DME Infrastructure Evaluation for Area Navigation (RNAV) Routes and Procedures.

2. TARGETS and/or RNAV Pro flight procedure development programs.

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Date: September 4, 2020

Initial meeting 20-02: Rich Boll, NBAA, briefed the issue from His slides, discussing original Aeronautical Charting Forum climb gradient issue and the changes made at that time. Rich said Air Traffic Order JO 7470.1A should be changed, rather than changing an 8260-series order. Gary Fiske, FAA ATC Procedures (Terminal) Team, said there is an effort to cancel this order and assign it to Flight Standards as an 8000-series order, or assign it to AJV-A. The associated evaluations are done in TARGETS, and AJV-A has assumed responsibility for that system. The original OPR for JO 7470.1 was the PBN policy office, which was realigned to other areas of Mission Support during a recent reorganization. Gary agrees the order is obsolete in its current form and needs to be addressed. Dan Wacker, FAA Flight Procedures and Airspace Group, said there is a draft order change to 7470.1B on the subject, adding he had received a copy from Don McGough, Flight Inspection, and had forwarded it to Gary to look at. There was movement to update this revise language, and Don had been sent a copy for coordination. Gary recalled the message from Dan, but does not know who initiated the work on this. Dan said the point of contact for Order 7470.1B is Mike Stewart. Bennie Hutto, NATCA, asked Rich to clarify the intent of the RD on MEAs, and Rich said the MEAs should be based on the requirements of the 8260-series Orders (see slide #3). John Collins, GA pilot pointed out these are on conventional procedures also, adding the MEA has a legal description. Dan pointed out SIDs and STARs are not Part 95 procedures and asked John his perspective about adding MEAs on these. John thought they would be useful for the pilot. John Moore, Jeppesen, disagreed, saying MEAs are not in PANS-OPS and thought they should be designed as procedural altitudes. Dan added the US has longer transitions and legs than procedures outside the US. Rich and Dan said the Departure Working Group is suggesting the position that there be no MEAs on SIDs and STARs.

Action Items:

- Flight Procedures and Airspace Group will identify the new office of primary responsibility (OPR) for JO 7470.1A, determine the status of the order, and

- formulate, or work with the OPR to help formulate a path forward for any necessary revisions.

Status: Item accepted and open

Meeting 21-01: Jeff Rawdon, FAA Flight Procedures and Airspace Group (FPAG), briefed the issue summary and current status from the slide. John Collins, Foreflight, asked if DME/DME only applies to MEA on a STAR, and Jeff said this assessment would only be performed where required. Rich Boll, NBAA, inquired about the status and timeline for revision of Order 7470.1. Gary Fiske, FAA ATC Procedures (Terminal) Team (AJV-P310), said the order is in coordination but was not aware of the specific timeline.

Action Items:

- Flight Procedures and Airspace Group will report status of the MEA/MOCA working group, and ensure clear language exists in all associated publications

Status: Item open

Meeting 21-02: Jeff Rawdon, FAA Flight Procedures and Airspace Group (FPAG), briefed the issue summary and current status from the slide. The working group is continuing to work the issue, but no specific updates to report at this time.

Actions: The Agency will continue to work the issue and report status at the next ACM**.**

Status: Item open

Meeting 22-01: Jeff Rawdon, FAA Flight Procedures and Airspace Group (FPAG), briefed the issue (slide). There was an MEA/MOCA working group formed, and the work is complete. Jeff is finalizing the report, but said there would be no significant changes to determination or application of MEAs and MOCAs as a result of that effort. Most of the changes will be to provide consistency across the various orders. The item will remain open.

Actions: FPAG will report the results of the MEA/MOCA Working Group report at ACM 22-02.

Status: Item open.

Meeting 22-02: Jeff Rawdon, FAA Flight Procedures and Airspace Group (FPAG), briefed the issue (slide). An MEA/MOCA working group was formed, and that work is now complete. The working group did not feel any broad redefinitions of MEA or MOCA were necessary. There will be some minor editorial changes in the applicable orders for clarification, but there are no changes in the definition or expectation of usage. The work is completed, and although the recommendation could be closed, the proponent (Rich Boll, NBAA) was not present so it will remain open until Rich has a chance to comment. Bill Tuccio, Garmin, asked if unnecessarily high MEAs will be removed, and Jeff said those MEAs should be revised as procedures with those MEAs are amended.

Actions: FPAG will discuss the planned changes with Rich Boll prior to ACM 23-01 to reach concurrence for closure and will provide an update on that discussion at ACM 23-01.

Status: Item open

Meeting 23-01: Jeff Rawdon, FAA Flight Procedures and Airspace Group (FPAG), briefed the summary, actions, and status from the (slide). Closure of the RD was discussed at ACM 22-02 but was deferred pending concurrence with Rich Boll, NBAA, as the submitter. Since then, Rich had requested the issue remain open for discussion at this meeting.

Rich said criteria changes clarifying that MEAs should not be used in lieu of procedural altitudes, but yet many procedures still have inflated MEAs and was curious about guidance within ATO for development of SIDs and STARs. Gary Fiske, FAA ATC Procedures (Terminal) Team (AJV-P310), said Order 7470.1 is out and clarifies for DME/DME assessment that MEAs should be based on the lowest feasible altitude. Rich wants to ensure the policy guidance for Flight Procedures Team has been issued, that application of MEAs are consistent with the intent, and that TARGETS evaluations are consistent as well. Pat Mulqueen, FAA Instrument Flight Procedures Group (AJV-400), said the issue has been discussed and acknowledged, but with roughly 4000 procedures in the inventory it will be some time before all necessary corrections have been implemented. Those procedures not in compliance will be addressed through the normal revision process. Rich is concerned about MEAs developed from this point forward, and Pat confirmed MEAs should be applied correctly going forward and that MEAs higher than those required by the definition would require a waiver.

Gary confirmed the order requires use of the lowest suitable/usable altitude. Bennie Hutto, NATCA, believes DME/DME assessments are now being done correctly. John Collins, Foreflight/Boeing, pointed out that some departures at KCLT do not comply with the current MEA requirements and mentioned that some published MEAs are higher than what a pilot may file for shorter flights.

Pat brought discussion back to MEAs on procedures, advised that the current requirements are clear that the lowest usable MEAs are to be published, and that non-compliant procedures would be changed over time. Rich restated the main concern is forward-looking and asked if the developers of new or amended procedures had been made aware of the MEA requirements. Jeff reiterated the information is available and stated that any deficiencies should be reported via the Instrument Flight Procedures (IFP) Gateway website. Dan Wacker, FPAG, confirmed with Pat that if Flight Procedures Team Quality Control identifies a high MEA, it will be sent back for corrections. Pat also pointed out the QC checklist has been modified to bring attention to this issue.

Based on the discussion, Rich concurred with closure at this time.

Status: Item closed