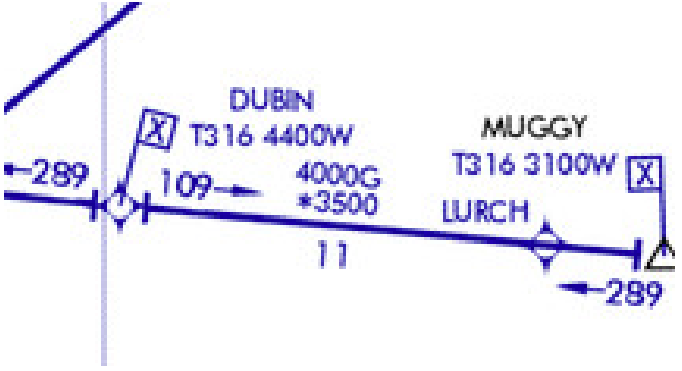
MEA and MOCA on T-routes

- Students are taught the 22nm rule for VORs at MOCA.
- Navigation by ground-based navaids may be impossible at MOCA, and a higher MEA guarantees signal coverage.
- But … why would any of this matter for an RNAV T-route using space-based navigation? Why are there T-route MOCAs?



What is a MOCA?

The lowest published altitude in effect between radio fixes on VOR airways, off-airway routes, or route segments which meets obstacle clearance requirements for the entire route segment and which assures acceptable navigational signal coverage only within 25 statute (22 nautical) miles of a VOR. *(AIM Pilot/Controller Glossary)*

Note that, as expected, it's just based on obstacle clearance.

How about the MEA?

The lowest published altitude between radio fixes which assures acceptable navigational signal coverage and meets obstacle clearance requirements between those fixes. The MEA prescribed for a Federal airway or segment thereof, area navigation low or high route, or other direct route applies to the entire width of the airway, segment, or route between the radio fixes defining the airway, segment, or route.

(AIM Pilot/Controller Glossary)

The MEA adds in navigation coverage, but we already knew that.

What does TERPS say for MEA?

The lowest published altitude between radio fixes which assures acceptable navigational signal coverage, air-to-ground communications, and which meets obstacle clearance requirements. The MEA prescribed for a Federal airway or segment thereof, area navigation low or high route, or other direct route applies to the entire width of the airway, segment, or route between the radio fixes defining the airway, segment, or route. *(Order 8260 Appendix B "Definitions" and 15-1-9.)*

MEA includes communications as needed and a 300 buffer above the floor of controlled airspace for segments that are entirely in controlled airspace.

There’s more: Required Climb

MCAs are established in all cases where obstacles intervene to prevent pilots from maintaining obstacle clearance during a normal climb to a higher MEA after passing a point beyond which the higher MEA applies.
(Instrument Procedures Handbook FAA-H-8083-16B)

Note here that MOCA is left out. This implies that the required climb from one MOCA to another along an airway may exceed the usual minimums.

Summary

- MOCA doesn’t provide protection for the climb to a higher MOCA along an airway. MEA does with standard climbs and MCAs as needed.
- MOCA doesn’t provide communications coverage with ATC. MEA does.
- MOCA may be in uncontrolled airspace. MEA is above controlled airspace floor.