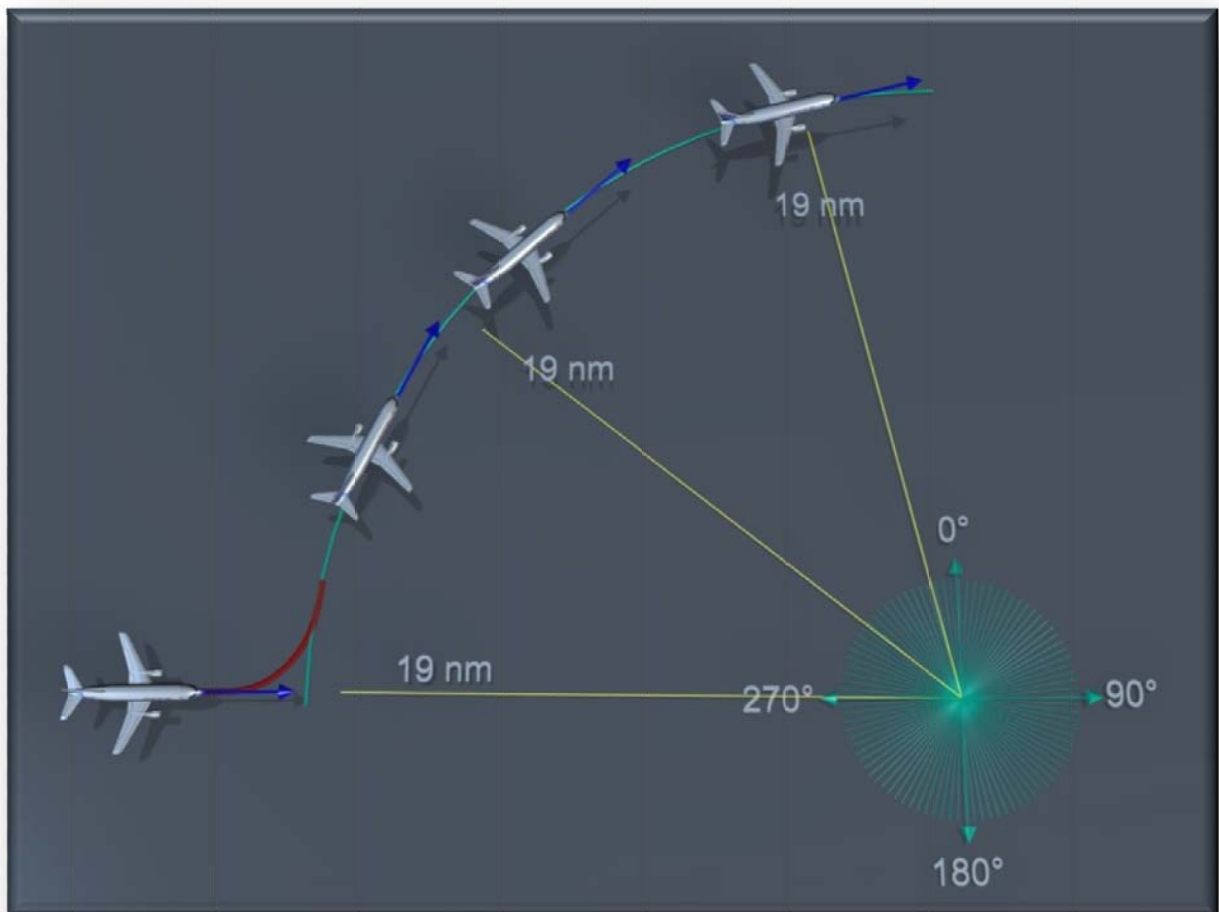


The DME ARC

The DME arc is a procedure used to transition from the enroute environment to an instrument approach (IAF). As the name implies, we'll need DME, so if your aircraft is not equipped with DME, this won't apply to you.

An arc is simply a segment of a circle and you'll see on the chart that the plotted arc is exactly that, a segment of an imaginary circle whose radius is defined by a DME distance from the VOR. Arcs can come in all sizes and don't necessarily have to be based on the facility which is the Navaid for the approach.



19 DME ARC clockwise

Flying the DME ARC

There are 3 ways of flying the DME ARC:

- 1- monitoring DME only
- 2- using the Fix page
- 3- using LNAV

The first two procedures are performed manually and the last one fully automatic when using LNAV in combination with VNAV.

For good understanding of the DME ARC we prefer pilots to fly manually on the needles and not always depend on their FMC !

DME ARC using DME only



In the example above we see from the FMC that our last waypoint is ODORU. From there we will navigate on the needles.

The distance is 26.6nm inbound the CND VOR. When we need to enter the 19nm DME ARC clockwise of CND VOR we will closely monitor our distance to the ARC. When it's time to enter the DME ARC (turning to the left) we continuously adjust our heading to maintain equal distance to the VOR.



DME ARC using The FIX page



Program the Fix page of your FMC with the QDR (Outbound radial) of the VOR and the distance. In your MFD an ARC or 19 nm will appear around the VOR. This will give you a good visual reference.

We will closely monitor our distance to the ARC. When it's time to enter the DME ARC (turning to the left) we continuously adjust our heading to maintain equal distance to the VOR.

From the MFD above can be seen that we are approx 8 nm away from the ARC.

DME ARC using LNAV



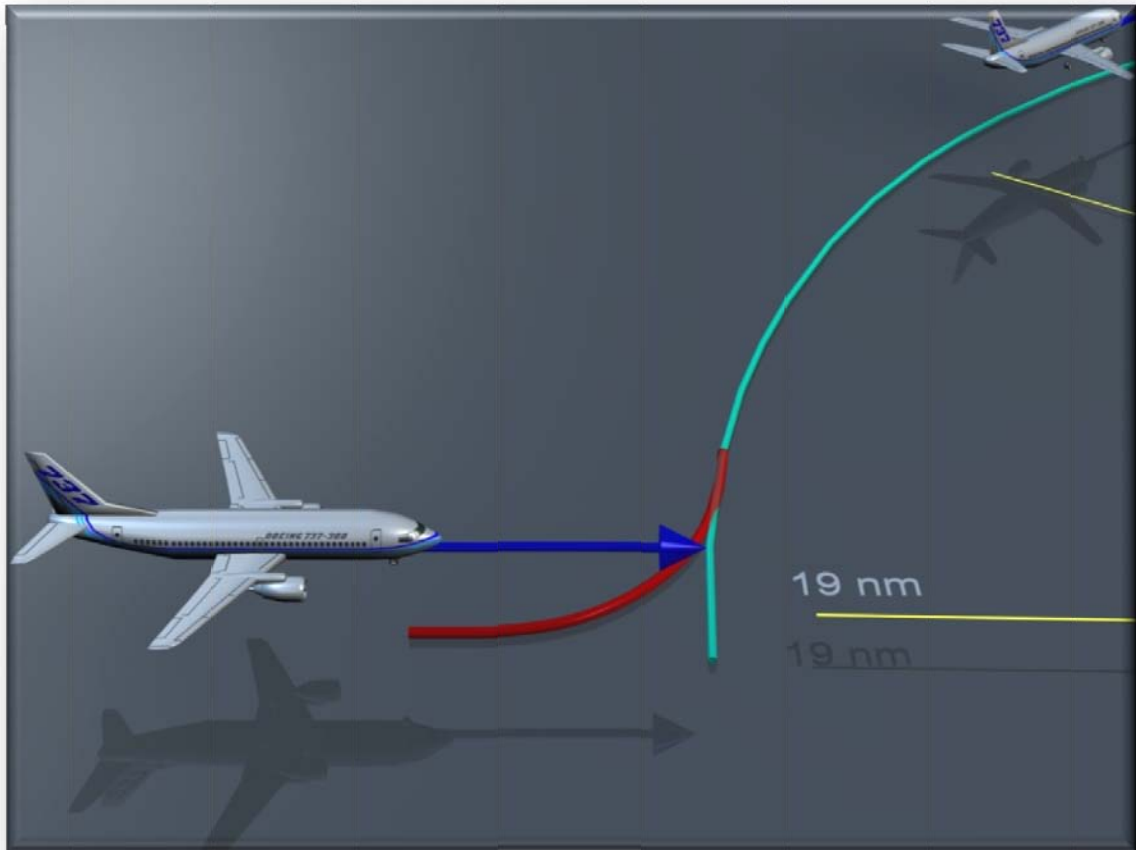
The STAR (containing the DME ARC procedure) is programmed into your FMC.



When flying on autopilot and LNAV mode your aircraft will follow the programmed DME ARC procedure.

The 0,5% GS rule

When approaching the arc, how to decide when to make the turn to get on the Arc ? (Arc entry)



ARC entry (depicted in RED)

There is a rule of thumb as follows: 🙌

Start the turn when reaching a rounded up distance of 0,5% of your Ground Speed.

For instance:

- 1- Your groundspeed equals 280 knots.
- 2- 0,5 % of 280 equals 1,4
- 3- roundup 1,4 to nearest decimal = 2
- 4 -start your turn 19+**2 nm** = 21 nm from the VOR

Make your turn with a standard bank angle of 25 degrees and compensate for crosswind components to get perfectly aligned on the ARC.



Once on the ARC monitor your distance and keep it equidistant throughout the procedure by making small corrections on your heading and keep compensating for crosswinds if there are any.

Summary:

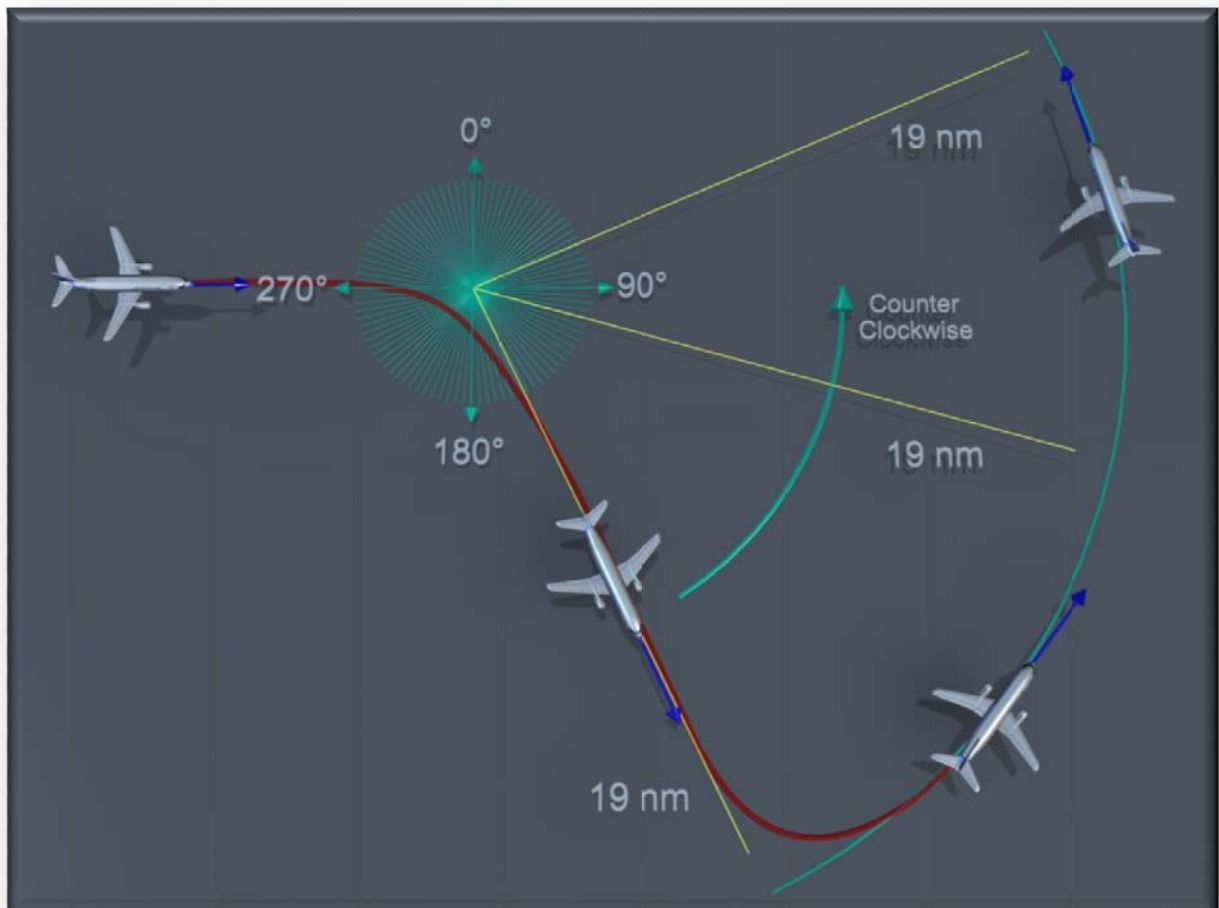
A: Like we said before: Arcs can come in all sizes and don't necessarily have to be based on the facility which is the navaid for the approach.

B: There are 3 ways of flying the DME ARC:

- 4- monitoring DME only
- 5- using the Fix page
- 6- using LNAV

C: ARCs can be approached from the outside or the inside

In the picture below you'll find a 19nm DME ARC counter clockwise from the VOR and entered from the inside



Step 1: Flying an inbound radial

Step 2: Flying an outbound radial

Step 3: Start your turn 19-2 nm = 17 nm from the VOR to get on the ARC

STEP 4: Flying a 19nm DME ARC counter clockwise entered from the inside of the ARC

