

The Flight, KOQU to KORH

This flight, from Quonset State Airport, KOQU, in North Kingstown, R.I. to Worcester, Mass., KORH, gathers together many of the lessons learned so far relating to both NDB and VOR Navigation. It's an interesting flight because the navigation requirements of each leg are different. There are five legs labeled A to E on the KOQU-KORH Route Map. Your cruise speed will be 110 kts, and climb should be 90 kts. Total distance is 50 nm. Your cruise altitude will be 3000 ft. Turn on all aircraft lights for the departure, and switch off the landing and taxi lights after takeoff. The flight is about 30 minutes.

Before you begin your flight, tune your ADF receiver to 241 kHz, your Nav-1 receiver to 115.6 MHz and your Nav-2 receiver to 110.90 Mhz. Also tune your Standby Nav-1 receiver to 117.4 MHz. Set the OBS of VOR-2 to 289°. You will set VOR-1 OBS during the flight. Turn off the MKR Receiver. It is highly recommended that you print the Route Map from the link in the main text. It is also recommended that you assemble a flight log, with the times for each leg calculated. There is no wind in this flight so the time calculations are quite simple.

This will be a VFR flight, but a Night Flight (Alt-W-T and click on "Night"). Many aviation professionals believe that night flights should exclusively be IFR.

1. Depart from Rwy 34, Quonset State Airport, KOQU, just south of Providence.
2. Leg A, 7 nm ... Fly inbound to PVD VOR, 115.6 MHz, climbing to 3000 ft. Center the VOR-1 needle with your OBS on takeoff, verifying that the TO flag is showing. That will be your course to PVD.
3. Leg B, 12 nm ... At PVD VOR you will continue on Leg B via NDB navigation. Your ADF needle will indicate the course to fly direct to SFZ NDB, 241 kHz.
4. Leg C, 18.5 nm ... At SFZ NDB turn to a course of 358° and fly outbound still relying on NDB Navigation. Your ADF will point behind you, to 178°. Swap the Active and Standby frequencies on Nav-1 so 117.4 Mhz is active. Set the VOR-1 OBS to 049°. When the VOR-1 needle centers you are at the waypoint for the left turn to intercept the approach path to Worcester's Rwy 29. Nav-2 should already be tuned to 110.9. That is the ILS frequency for Runway 29 into Worcester, but we are not going to fly the ILS, but rather track it in as if it were a VOR signal.
5. Leg D, 4.3 nm ... At the waypoint just identified when the VOR-1 needle centered, turn left to 320° and descend to 2600 ft. Leg D is very short, only 4.3 nm, so be alert for the centering of the VOR-2 needle which will indicate that you are on the approach path for Runway 29 of Worcester. You should begin your left turn to the runway approach path before the needle is centered.
6. Leg E, 8 nm ... Once you have made your turn onto the final approach path to Runway 29 slow your aircraft and make a normal landing, keeping the VOR-2 needle centered. Don't forget to turn your landing and taxi lights, too. Be alert, Worcester field elevation is 1009 ft.
7. NOTE: The OBS knob does not affect needle position when flying with an ILS signal. However, it is wise to rotate the OBS to your desired Approach course, 289°, as you did at the beginning as a reminder of the final approach course.