

Marthas Vineyard, Mass. to Nantucket, Mass.

The flight route looks weird, doesn't it? Well, it was chosen for a reason. You just completed a flight with a procedure turn followed by the usual 45° intercept of the localizer inbound. As you have undoubtedly discovered by now, a 45° intercept is not all that simple. One either overshoots or undershoots when turning back onto final course, interspersed with the occasional nice roll-out on final to keep you trying harder. The only person who consistently does well intercepting at 45° is called an autopilot.

Your performance substantially improves, though, as the intercept angle is made smaller. It's amazing how much better an intercept is at 30°, for example, than 45°. ATC knows this as well as pilots, which is why they vector aircraft under radar control to a position for a 30° localizer intercept.

That is the intent of this unusual route from Marthas Vineyard to Nantucket, to put you on a flight path for a 30° localizer intercept, as if under radar control.

This final flight in the Localizer section is a nice relief from the previous flight. It is a simple departure from Marthas Vineyard, KMVY, with a turn at an intersection to put us on course to intercept the back-course localizer to Nantucket's Runway 6, KACK. The flight-information package is in mvvy-ack.zip.

The zip-file includes the IFR chart, the approach plate for LOC BC Rwy 6 at Nantucket, and this text description of the flight.

We proceed south-bound from Marthas Vineyard airport after intercepting the 159° radial from Martha Vineyard's VOR. Fly 21 NM to an intersection, turn left to 091° to intercept Nantucket's Back-Course localizer to Runway 6, and land. That's it! Of course, we have to be constantly aware that we are flying the back course localizer and that the needle senses in the reverse: one must turn *away* from the needle to return to course.

As usual, do nothing until you have gone through the step-by-step details of the flight with this text and your charts. Only by doing this will you both understand the purpose of each step, but you will visualize them in your mind, a critical part of instrument flight.

NOTE: Fly the Instrument Approach portion with your Nav-2 Receiver for better needle visibility.

You will also use the DME during this approach.

- Set the flight simulator weather conditions to 600 ft overcast, cloud tops at 10,000 ft., and two miles visibility. The wind is calm.
- Move the aircraft to Marthas Vineyard's Runway 15, airport KMVY, and retract the flaps to 0°.

- Tune the Nav-2 receiver to Marthas Vineyard VOR, 114.5 MHz., ident MVY.
- Set the VOR-2 OBS to 159°.
- Tune the Nav-1 receiver to the Nantucket VOR, 116.2 MHz., ident ACK.
- Set the VOR-1 OBS to 249°.
- Reset the timer to zero.
- Fly Nav-2. Takeoff from Runway 15, climbing out on a 135° heading. Be prepared to intercept the very near 159° radial of MVY.
- Intercept and track the MVY 159° radial southbound. The Nav-2 VOR should show a FROM flag. Ident MVY.
- ATC has cleared you to 5000 ft. Climb at 90 kts. and cruise at 110 kts.
- After the "off" flags disappear from the Nav-1 VOR, ident the VOR, ACK.
- Fly Nav-1. Keep the Nav-1 VOR in your scan. When that needle centers, turn left to a 091° heading.
- Begin your descent to 1700 ft.
- Slow to 75 kts.
- Retune your Nav-2 Radio to Nantucket's Localizer, 109.1 MHz.,
- Ident the Localizer, I-ACK.
- Retune your Nav-1 Radio to Marthas Vineyard VOR, 114.5 MHz., ident MVY.
- Keep track of the Nav-2 VOR for an intercept of Marthas Vineyard Localizer when the needle centers.
- Fly Nav-2. On intercept of the localizer, turn left to 061°.
- Drop one notch of flaps. You should be level at 1700 ft.

It's vital to stabilize the approach well before beginning your descent to the MDA.

- Stay on course with minor heading adjustments away from the needle. You are on the localizer Back Course.
- When the Nav-1 VOR needle centers, at the FAF, descend to 380 ft.
- At 75 kts., 3 min., 36 secs. will elapse to cover the 4.5 NM from the FAF to the MAP.

- You should spot Runway 6 after 2 min. 30 secs. with two1 miles visibility.
- Continue your approach to Runway 6 and land normally.
- Not so bad, was it? It will probably be your best landing after doing the others. A back-course approach is a nice alternative to what might otherwise be a circling approach, nobody's favorite.
- Flight time: About 25 minutes.