

Portland Int'l Jetport, Portland, Maine

to

Littlebrook Air Park, Eliot, Maine

The flight begins at Portland International Jetport, KPWM, Portland, Maine, with Littlebrook Air Park, 3B4, in Eliot, Maine the destination. The flight-information package is pwm-eliot.zip.

This flight requires a circling approach to Littlebrook's Runway 30, and includes a wind condition to keep the challenge up. There is also a VOR intersection to contend with. The flight proceeds from Portland to Kennebunk VOR to Pease VOR, PSM, then outbound for a left procedure turn, return to PSM and track outbound to Littlebrook with a circling approach into the left traffic pattern for Runway 30.

A longer flight was allotted than previous flights to provide time to stabilize the Wind Correction Angles.

As usual, do nothing until you have gone through the step-by-step details of the flight with this text and your charts.

- Set the flight simulator weather conditions to 750 ft overcast, cloud tops at 10,000 ft., and one mile visibility. Set the wind at 29 kts., from 315° (**which will be 300° for the wind calculations**).
- Recall that winds in Flight Simulator are Magnetic Direction, not True Direction, so enter your Magnetic Course into the Virtual E6-B Computer when calculating Wind Correction Angles, WCA, and Ground speeds.
- Move the aircraft to Portland's Runway 29, and retract the flaps to 0°.
- Tune the Nav.1 receiver to the Kennebunk VOR, 117.1 MHz., ident ENE and the Nav 2 receiver to Pease VOR, 116.5 MHz, ident PSM.
- Set VOR-1 OBS to 242° and VOR-2 OBS to 200°. Reset the timer to zero.
- Takeoff from Runway 29 with a climbing left turn to intercept V93, the 242° radial to ENE VOR.
- Climb at 90 kts. to your cruise altitude of 4000 ft. The WCA will be 16° Right for climb.
- Plan a 110 kt. cruise speed. With a 29 kt. wind from 300° the WCA will be 13° Right.
- Set the proper Wind Correction Angle based on air speed, then activate the autopilot heading control for that heading.

- On station passage of ENE, when the FROM flag appears, **continue outbound on same course**, but the airway becomes V106.
- Intercept YUKES intersection of V106 and V3, indicated by centering of the **VOR-2** needle with a TO flag showing.

How do you know whether you have passed an intersection? It's easy. When the needle is on the same side of the gauge as the station is to the aircraft, you have not arrived at the intersection.

But remember, intersections are determined by FROM radials. The radial FROM PSM to establish YUKES intersection is 020°. With the VOR tuned to PSM, and with the OBS set to 020° we have not reached the intersection as long as the needle is deflected to the left, which is the side of the aircraft that the station is on.

But we have set the OBS for PSM to 200°, the reciprocal of the radial, the TO direction because we are going to intercept that radial and fly to the station. Setting the OBS to the reciprocal of the radial, and with the TO flag showing, reverses the rule. We have not reached the intersection as long as the needle is deflected *away* from the side of the aircraft that the station is located, or to the right in this case.

- Turn left at YUKES and track inbound to the PSM VOR, magnetic course of 200°. The Wind Correction Angle will be 15° Right. Set the autopilot heading control on if desired.

NOTE: From this point on fly the rest of the route using VOR-2. This VOR is easier to read with no Glideslope needle.

- Descend to 3000 ft. during this southbound leg.
- At station passage of PSM, when the FROM flag appears, turn right to 232°, set the OBS to 232°, start the timer and fly outbound for two minutes. The WCA will be 14° Right.
- At two minutes, turn left to 187° into the procedure turn. Reset and restart the timer. The WCA will still be 14° Right.
- At one minute turn right to 007° The WCA should be 14° Left. Set the OBS to 052° the inbound heading to PSM VOR and to Littlebrook Airport.
- On intercepting the 052° radial turn right to track to the PSM VOR. Start the timer and descend to 1500 ft.
- After two minutes or so expect station passage. The WCA inbound will be 14° Left at 110 kts.
- Slow to 75 kts, and drop one notch of flaps. Readjust the WCA to 21° Left at 75 kts. to keep the needle centered at this reduced speed. Use the autopilot heading hold, if desired, inbound to the VOR, but at station passage of PSM VOR switch the autopilot off and manually fly the remaining portion of the approach and landing.

At this point your approach should be stabilized, especially your compensation for the strong wind from the left.

- At station passage, when the FROM flag appears, reset and restart the timer and descend to the MDA of 720 ft. Your ground speed will be 81 kts. Time to cover the 4.3 nm to the field at 81 kts. will be 3 min., 11 secs.
- With one-mile visibility, expect to sight the field at 2 min., 27 secs. after station passage of PSM VOR. Field elevation is 130 ft.
- On spotting the field, enter a left downwind leg of 125° (WCA of 2° Right). The left base leg will be 035° with a WCA of 23° Left. Be aware that your ground speed on final approach will only be 46 kts. into the teeth of the wind, so moderate your rate of descent to avoid an embarrassing last-minute burst of speed to prevent an early landing.
- Note that the landing threshold of Runway 30 is displaced 86 ft. Don't touchdown early.

After the flight reward yourself with a cup of coffee for a job well done. Instrument approaches don't get much tougher than this one