Runway 33 straight-in approach

Flying into Paro Runway 33 is a little bit straight forward. In case of choosing RNAV-X or RNAV-Y cloud-break procedure, you'll flying along Wang Chhu and then Paro Chhu, descend to about 9500ft when you reach PR710. You will see another landmark "Runway 33 Base Leg" (to be explained later), disengage AP and turn right for the final.

You will see a spur on final, fly close above the slope and you will see the runway, the remaining is all about your landing skills.

For home entertainment ONLY. Do NOT follow this in real life

Runway 15 approach with instrument cloud-break procedure

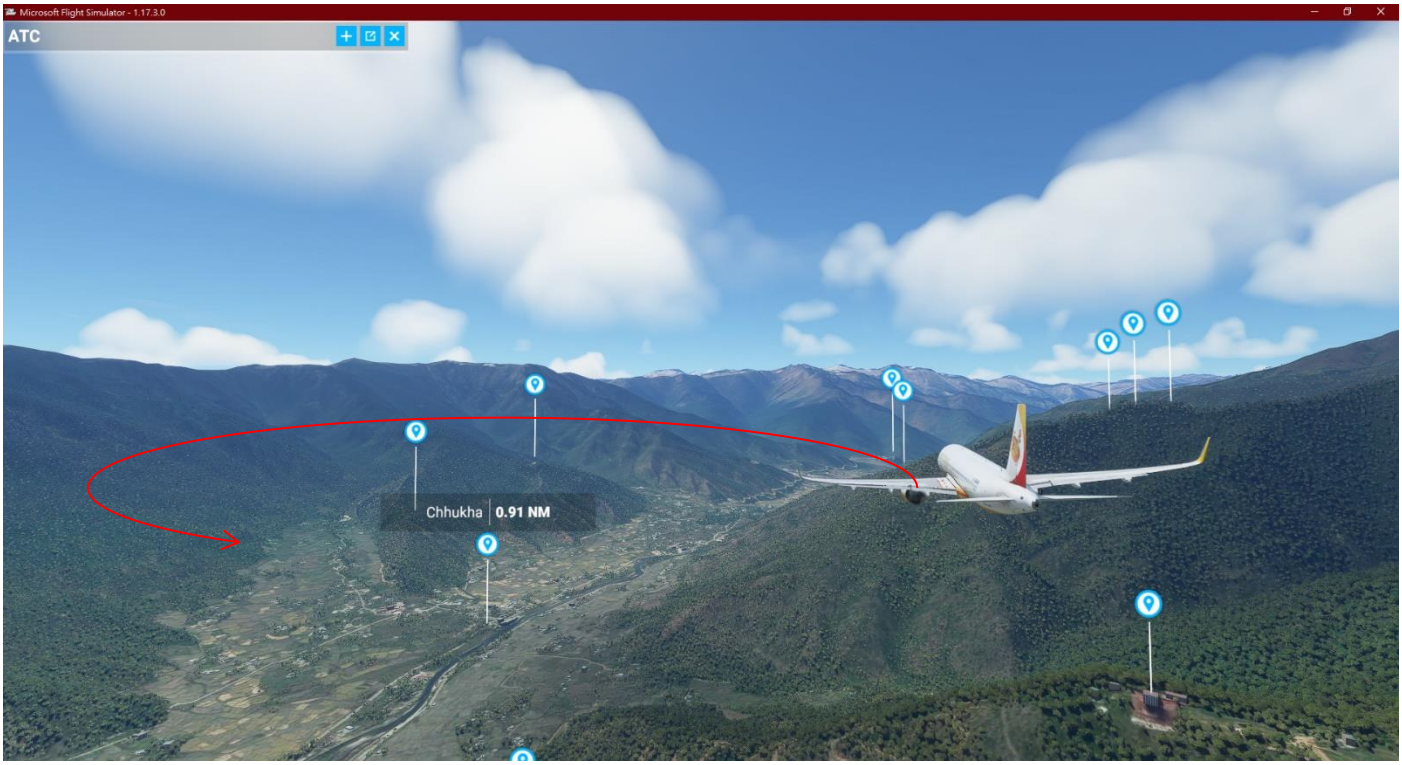
There is no straight-in procedures for landing on runway 15. You can arrive into the VFR circuit by using the RNAV-X or RNAV-Y cloud-break procedure (RNAV-Z is not recommended as you will still fly pretty high above the runway when you reach it except doing a “tactical alike” manoeuvre). The approach procedure of RNAV-X or RNAV-Y are virtually the same, except that the missed approach procedures are different, while the route of RNAV-X is longer than RNAV-Y but less performance demanding, and vice versa. If the weather is good without broken clouds, you can just simply travel a complete visual circuit, which is quickest to do the next approach attempt. Apart from the RNAV procedures, you can also get into the circuit area by VOR cloud-break approach. The corresponding charts is absent in Bhutan AIP, but you can find it easily by asking Google Search. Even if you couldn’t find it, the procedure is simple and you may specify it either in Flight Planner or program into MCDU. Start from TAKTI intersection at 16000ft, pass through the “PRO” DVOR at 13500ft, and then descend and fly over the airport at 11000ft if you see it. Otherwise, proceed on course 328° from “PRO” DVOR and descend to 12500ft. If you still can’t see the airport over D5.0 from “PRO” DVOR, you need to execute missed approach. Although I will descend to 11000ft, I know I’m wrong. It is the best choice if the weather is good without broken clouds as it takes the shortest route down to Paro Valley.

For home entertainment ONLY. Do NOT follow this in real life

When you fly over the airport, you will see the valley split into two ways. The left one is Pa Chhu, fly close to the right hand side of this valley at about 10000-11000ft.

For home entertainment ONLY. Do NOT follow this in real life

When you get close to the hillside, make a gentle left turn when you see the “Sangchen Chokhor Monastery” landmark ahead, or you are about to hit the mountain if you continue to fly straight ahead. Then make the turn more steep and start to descend. You may see the landmark “Chhukha” on your left hand side, and keep it on your left hand side. From the document of the Boeing demonstration flight, it made a lefthand U-turn here, but the pilots in Bhutan would like making a righthand U-turn when looking at real world videos so it is up to you to choose a lefthand or righthand turn if you are familiar with the landscape already.



For home entertainment ONLY. Do NOT follow this in real life

You will then see another landmark “Runway 15 Base Leg”, keep the steep turn and descend to about 9000ft, at no more than 150KIAS, until you see the river again. Then make a right turn to follow the river.

For home entertainment ONLY. Do NOT follow this in real life

Keep turning right when you see Paro Dzong ahead, and you will see the runway. You need to fly very close over the hillside during short final, then the remaining is all about your landing skills.

For home entertainment ONLY. Do NOT follow this in real life

Runway 33 approach with instrument cloud-break procedure

Assuming you have a rough idea about the normal procedures for landing on both runway 15 and 33, now we talk about landing on runway 33 in case you need to travel through a complete VFR circuit. It is not often practiced, but you may need it sometimes.

The initial procedures are similar to runway 15 approach, but keeping the altitude at about 10000-11000ft without descending. Turn left after you pass through the airport, and you will see the landmark “Runway 33 Circling Start”, then turn right at your 3 o’clock. It is also the starting point of the final approach when you choose RNAV-Z procedures.

For home entertainment ONLY. Do NOT follow this in real life

You will see another landmark “Silung Nang”, pass through it and then keep making a sharp left turn and descend to 9000ft, at no more than 150KIAS, passing through the next landmark “Runway 33 Base Leg”

For home entertainment ONLY. Do NOT follow this in real life

Keep your sharp turn until you see the landmark “Runway 33 Circling Start” again, and the remaining is the same as straight-in approach.

Runway 33 approach with VOR cloud-break procedure

From real world videos, it is not often for Bhutanese pilots to use the RNP procedures, while they would still prefer the conventional VOR cloud-break procedures. However, if we follow the whole procedures, which means you'll pass the "PRO" DVOR at 13500ft, you won't have enough distance to execute a straight-in approach within reasonable descend rate if you've assigned to land on Runway 33. From observations to real world videos, that's how it could be done:

Assume you know the VOR cloud-break procedures already, when we have passed through waypoint "TAKTI", tune to receive "PRO" DVOR and set the course to be 100°. Watch the distance remaining from "PRO" DVOR, switch to "TRK/FPA" mode, select the track to be 10° and set the target altitude to be 11000ft for the autopilot just before 8.0NM from "PRO" DVOR if you have the terrain in sight. Also start to lower the speed to 145KIAS, since the aircraft will just do a very shallow descend when the aircraft is slowing down in case of an Airbus (again, I don't know the case with a Boeing), you can force the FPA to be about -2.0 to have a balance between losing altitude and speed at the same time:

For home entertainment ONLY. Do NOT follow this in real life

When the autopilot has been set, switch ROSE to VOR mode, and watch until the aircraft just “penetrate” through the 100° radial line of “PRO” DVOR. That’s the point where you have to turn left and fly into Paro Valley, then go back to Page 1 of this tutorial for the remaining manoeuvres. You are highly advised to slow the aircraft to below 145KIAS to prevent high bank angle when you are flying through the narrow S-curve.

Additional tips

1. The maximum take-off weight allowed for an A320neo from Paro in general is about 64000kg(141100lbs), don’t be greedy on payload.
2. In order to maximize climb performance during take-off or go-around, start the APU on final during approach, and keep it turning on during initial climb after taking off.

The above procedures are concluded from an article about the demonstration flight by Boeing, and watching numerous cockpit videos. I hope it helps you to enjoy flying into Paro Airport. Trust me, you will never get bored of it.

For home entertainment ONLY. Do NOT follow this in real life