

S2 – Tower Controller

Benazir Bhutto Int'l Airport – Islamabad (OPRN)

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Pakistan vACC



Introduction:

The first stage in your controlling at Islamabad as a tower controller is S2 rating.

There is no Ground controller in Islamabad, so Tower controller is responsible for all the aerodrome movements.

You are also responsible for VFR traffic, whether they are entering, leaving or transiting your airspace, or whether they are performing circuits.

Your airspace as Islamabad Tower goes from 0 feet to 4000 feet. 3500ft is the height at which the VFR traffic will fly at.

Like how we talked about the runway selection in S1 training, when tower is online they will decide what runway is in use.

Runway 30 Operations:

If the wind is between 210 and 030 degrees and wind is greater than 7 knots, then RWY 30 will be in use.

Runway 12 Operations:

If the wind is between 030 and 210 degrees and wind is greater than 7 knots, then RWY 12 will be in use.

Single Runway Ops:

The **preferred runway at Islamabad is RWY 30**, as it features a CAT II ILS Approach

1. Backtrack, Lineup & Takeoff:

As Islamabad Airport doesn't feature a taxiway that is linked to any end of the runway, an aircraft will need to enter, backtrack and lineup for departure. The call is as follows:

"Pakistan 319, from taxiway A, enter, backtrack and lineup RWY 30, report ready for departure."

Once the aircraft has reported to be ready for departure, you simply need to clear an aircraft for takeoff. This is simply as saying:

"PIA319, Surface Winds 340/05kts, RWY 30, Cleared for takeoff"

2. Cruising Altitudes:

Within VATSIM, we have a system of clearing the aircraft to a certain destination.

If, any aircraft is heading west of Islamabad Airport, they will need an even flight level.

e.g. PIA785 going to EGLL (Heathrow Int'l) will need an even flight level of FL300 etc. Anything even is perfect.

If, any aircraft is heading east of Islamabad Airport, they will need an odd flight level.

e.g. PIA651 going to OPLA (Lahore Int'l) will need an odd flight level of FL130 etc. Anything odd is perfect.

However, if they are going north, you will give them an odd flight level.

Similarly, if they are going south, you will give them an even flight level.

To correct an incorrectly filed flight level, use the following call:

“PIA 785, Flight Level [330] is unavailable due to semi-circular rule, will you take Flight level 340 or Flight level 360.

3. Departure Separations:

As tower controller, we are responsible for separation between two aircrafts on departure. So if one departs, we inform the next one to hold at the holding point of the runway to avoid any conflicts. When the departing traffic is at a good height/distance, we give the takeoff clearance to the next aircraft.

We need to learn “**Wake Turbulence Separation Minima**”.

What is Wake Turbulence?

Ans. Wake turbulence is a turbulence that forms behind an aircraft as it passes through the air, causing wingtip vortices.

Radar Wake Turbulence Minima:

We need to see the following distance based wake turbulence minima and it shall be applied to aircraft being provided with takeoff or landing phases of the flight.

Succeeding Aircraft	Behind	Preceding Aircraft	Separation Minima
Heavy	Behind	Heavy	4 NM
Medium	Behind	Heavy	5 NM
Light	Behind	Heavy	6 NM
Light	Behind	Medium	5 NM

These separation minima shall be applied when an aircraft is operating directly behind another aircraft during departure phase, or when both aircraft are using the same runways for departure.

3. Conditionals for departures:

We do not use any conditional lineups at Islamabad due to the complexity in single runway Ops and backtrack procedures.

Make sure the runway is clear of any **conflicting traffic** before you allow any aircraft to enter the runway.

4. SIDS & Squawks:

At Islamabad Tower, you will have the responsibility of clearing the aircraft on a correct SID. You can easily justify the correct SID by checking the flight plan of the pilot when he files it. You can always identify the SID by the first waypoint in the route.

All SID's at Islamabad have an initial climb (CFL on Euroscope) from 11,500ft to FL150 depending upon where that aircraft is heading, or according to semi - circular rule.

VFR Circuit traffic also have a altitude of 3500ft AGL. VFR traffic have a maximum Flight Level of FL140

However, if a pilot hasn't filed a correct routing, you can use the following website to get a new routing for the pilot.

Link: <http://rfinder.asalink.net/free/>

However, do not expect such pilots to fly the airway. They can fly direct specific waypoints if they can't take the airway etc. If they can't take a certain route, it may be the best choice to give them an Omnidirectional departure which we will discuss next.

You then have to assign them a SQUAWK Code on Euroscope. That is simply done by right clicking the ASSR part of the aircraft TAG and clicking on "auto assign". Once the Squawk has been assigned, you are ready to give the clearance to the aircraft. But expect them to call first requesting for the IFR clearance.

Squawk Range for Islamabad: 2340 – 2367.

RWY 30 SID's: "BATAL2A", "HANGU1D", "KALGA1A", "PESHAWAR1A", "POMUR1A".

RWY 12 SID's: "BATAL2B", "HANGU1E", "KALGA1B", "PESHAWAR1B", "POMUR1B", "POMUR1C".

5. Clearances:

You will now need to know the phraseology to give a clearance.

It goes as following:

Call-sign, Cleared to destination, SID, Initial climb, Squawk code.

e.g. "PIA306, Cleared to OPLA (Lahore) via POMUR1A departure, initially climb 7000ft, Squawk 2340".

Once he read-backs the correct clearance, you would say the following:

"PIA306, Read-back correct , Report ready for Pushback & Startup."

6. Omnidirectional Departures/Clearances:

Within the VATSIM Network, some of the pilots may not be able to take a SID due to limits of their aircraft.

What we do to make life easier for us and the pilots is to give them an Omnidirectional Clearance.

A general Omnidirectional clearance would be to send the aircraft on the runway heading after departure with the squawk code. We need to make sure he turns left on a heading 240 passing 3,500ft, to avoid terrain north of the airfield.

e.g. "PIA306, Cleared to OPLA as filed, After departure fly runway heading, until 3,500ft, then turn left heading 240, climb initially FL150, Squawk 2340".

The same read-back correct phraseology would be in use as mentioned in the previous section. However, coordination is needed with the tower controller about the Omnidirectional departure clearances so that he can inform other stations.

7. Pushback Clearances:

The pushback procedure at Islamabad is not that tricky and is very simple. It all depends on where the aircraft are parked and what piers/stands they are on.

Commercial Apron: 1-11.

VIP Stands: 13-17.

Departing aircraft shall contact Islamabad Ground for push-back/startup clearance 5 minutes before ready. You can also give the departure clearance with startup approval by saying following phraseology:

e.g. "PIA223, Expect Departure/IFR clearance upon pushback/startup".

Startup/Pushback approval will remain valid for 5 minutes. In case of delay, new approval shall be obtained by the pilot.

When aircraft will be ready for taxi clearance, they will contact you after completing pushback for taxi instructions.

Pushbacks at Islamabad can face either taxiway A or taxiway B, towards RWY 12/30. Make sure all heavy aircraft pushback towards taxiway A, as taxiway B is restricted to Medium category aircraft only.

8. Taxi Clearance:

The next step is taxiing aircraft. The pushback direction of the aircraft has a huge effect on the taxi routings.

e.g. "PIA785, Taxi holding point RWY 30, via taxiway A, QNH 1001"

"PIA369, Taxi holding point RWY 12, via taxiway B, QNH 1001"

"AP-PAL, Taxi holding point RWY 30 via taxiway C, QNH 1001"

Remember: Give taxi instructions according to the active departure RWY in use.

9. Landing Clearances:

As a tower controller, you have control of the live runway, you have to clear aircraft to land at runway and depart from the runway.

Phraseology is as follows:

“PIA300, Surface winds 340/12kts, Runway 30, Cleared to land”

However, if there are a few arrivals on the ILS, you will have to say the following:

“UAE631, Surface winds 280/12kts, Continue approach Runway 30, you’re number 2”

10. Landing Separations:

Separation arrival traffic is different to the separation of departing traffic.

Different aircraft have a different category, which is the referral to their size. The sizes of the aircraft will appear on the aircraft's tag as:

H = Heavy

M = Medium

S = Small

L = Light

S = Super

Just to take into account that, minimum radar separation below FL200 will be 5 NM.

11. VFR (Visual Flight Rules):

As mentioned in the introduction, as a Tower controller , you will be responsible for VFR traffic.
The VFR Squawk Range at Lahore is 2340-2367.

- **Entering The Zone:**

So, for the aircraft to enter the zone, you will clear them as follows:

“AP-BJG, Cleared to enter Islamabad controlled zone, not above 3500ft, VFR, Squawk 1200”

Once they read-back correct:

“AP-BJG, Read-back correct, Islamabad QNH 1003, report when entering zone”

Once they have reported:

“AP-BJG, enter left hand downwind for runway 30”

- **Leaving The Zone:**

So, now you need to know the phraseology to leave the control zone. It is as follows:

“AP-BJG, Cleared to leave Lahore controlled zone to the (north) or (west) not above 3500ft , Squawk 1200”

- **VFR Circuits:**

VFR Circuit is when the pilot in general aviation wants to perform circuits aerodrome, known as circuit or a pattern.

The circuit pattern is left hand only (for RWY 30) and right hand (for RWY 12), due to high terrain east of the airfield.

12. VFR – Circuit Clearance:

For circuit clearance, you would give the clearance to the pilot when the aircraft is at the holding point of the active runway. The clearance is as follows:

“AP-BJG, cleared left hand circuit Runway 30, climb and maintain circuit altitude, Squawk [2340]”

Once read-back is correct:

“AP-BJG, read-back correct, Islamabad QNH 1003, report ready for departure”

VFR Circuits Downwind & Finals:

Once the aircraft is in the circuits, the two things you have to worry about is the aircraft reporting downwind with their intentions (Touch and go, Full stop, etc.) and when they are about to turn finals for sequencing.

Once they state their intentions, you would say:

“AP-BJG, report finals Runway 30, you’re number 1”

If there is some runway on finals already:

“AP-BJG, Roger, Report finals Runway 12, you’re number 2 to a Emirates B77W on 6 miles final”

When they turn onto finals, you clear them for touch and go:

“AP-BJG, Surface winds 350/7kts , Runway 30, Cleared for touch and go”

If they request for a final full stop landing, you clear them accordingly:

“AP-BJG, Surface winds 350/7kts , Runway 30, Cleared to land”

13. VFR – Circuit Orbits:

Circuit orbits will be helpful if there are aircraft on the ILS and you can't fit the VFR traffic aircraft onto the sequence, then you would put them in a 360 degree orbit (right or left) depending upon the active runway in use until spacing becomes available.

Phraseology is as follows:

“AP-BJG, Enter left hand orbit until advised” - RWY 30

“AP-BJG, Enter right hand orbit until advised” - RWY 12

Once there is space, then you can say:

“AP-BJG, continue circuit, report finals for Runway 30, you're number 1”

Or

“AP-BJG, continue circuit, are you visual with Pakistani A320 on 6 miles final?”

If they are:

“AP-BJG, Roger, Report finals Runway 30, you're number 2 to Pakistani Alpha 320 on a 6 miles final”

14. VFR Traffic Information:

Something that we use to notify VFR aircraft to be aware of the other aircraft is called Traffic Information.

We only use traffic information if they could become a conflict with other traffic.

We only use it in two scenarios. When there are aircraft in VFR pattern, or if there are VFR or IFR traffic departing simultaneously.

Phraseology is as follows:

VFR Pattern Traffic Information: "PIA102, Traffic information is a Cessna 172 at 3500ft, operating in the circuit, report insight"

Once they have the traffic insight:

"PIA102, Thank you, Maintain visual separation"

Simultaneous departures:

"AP-BJG, traffic information is a Pakistani A320 taking off Runway (in use), Maintain visual separation"

And that covers VFR.

15. Coordination with APP or CTR:

Tower: "Islamabad Approach, Islamabad Tower?"

Approach/Control: "Go Ahead"

Tower: "AP-BJG, has left my zone, Aircraft has been sent to you. He wants to land at Sialkot"

Approach/Control: "Roger"

Tower: "Coordinated"

16. Handoff:

Once the aircraft has taken off or gone around or left your zone, you need to hand off the aircraft to the appropriate controller/stations.

Phraseology is as follows:

After Departure: "PIA224, Airborne [TIME], Contact Islamabad Approach 124.900"

After Aircraft vacated Runway (after landing): "PIA102, Backtrack, vacate via taxiway Alpha, stand 7".

If aircraft is doing a go around due to some reason:

"PIA306, Climb 9500ft, follow missed approach, contact Lahore Approach 124.900"

or

That's all which is included in S2.