AIRSIDE

AIR TRAFFIC CONTROL · VOICE

# RADIO MANUAL

Everything you can say to the aircraft in Airside, what they do with it, and what they say back.

Airside puts you in the tower of one airport. In Voice mode you work the traffic with your microphone, the way a controller does. The crews understand standard ICAO phraseology and the ordinary ways controllers actually say it, read every instruction back, and tell you when they cannot do something and why.

You do not have to learn this manual before your first shift. Pick an aircraft and the deck prints the exact sentence for whatever it is waiting for. This manual is for when you want to know everything the crews understand.

In the examples, **You** is what you say into the microphone and **Crew** is the answer. Flight numbers, runway numbers and squawks are said digit by digit, so Speedbird 123 is said “Speedbird one two three”.

**AIRSIDE** FOR MICROSOFT FLIGHT SIMULATOR 2024 16 SECTIONS SEPTEMBER 2026

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## 01 SETTING UP

**Voice or Click.** The **VOICE | CLICK** switch in the top bar says how you work the desk. In **Voice** you speak the clearances. In **Click** every clearance is a button. Voice takes most of the buttons off the deck, because the microphone does their job. You can change it at any moment of a shift, and the desk opens the way you left it.

**Your microphone.** In Settings, Audio, under Your microphone, pick the microphone and press **Test microphone**. Speak, and the bars should move with your voice. Left on Automatic, Airside tries each microphone in turn and uses the first that opens.

**Your speakers or headset.** In Settings, Audio, pick where Airside plays the radio and press **Test speakers**. Windows default follows whatever Windows is playing sound through.

**The microphone key.** Hold the key, speak, then let go. The key is **Right Ctrl** unless you change it in Settings, Keys, and it works while the simulator has focus. You can also hold the **TALK** button on the bar.

**What to say.** New to the phraseology? In Settings, Speech, **What to say** puts the shortest words for the instruction the selected aircraft is waiting for on its panel, while you talk to the crews. Say them in your own words. It is off unless you switch it on.

**Voices.** In Settings, Audio, you choose whether you hear the pilots. The radio log shows every transmission either way. If the voice cannot play, Airside says why on the screen.

**Altimeter setting.** Settings, Crews has the unit Airside uses when it gives the setting itself: hectopascals, "QNH 1013", or inches of mercury, "altimeter 2992". On the radio you can say it either way.

**The ground radar.** Taxiways are drawn at their real width with a centre line. A free stand is a ring: green, blue where it takes a widebody, white where it takes an A380. A stand with an aircraft on it is dimmed. A key under the field's name says so, with the marks this field has. The stand an aircraft is going to is on its strip and ringed on the map. Each flight is a small aircraft pointing the way it is heading. Settings, Display has the classic look, the triangle in place of the small aircraft, and larger taxiway names.

**Signing out.** Signed in with the wrong e-mail address? Settings, Account has SIGN OUT. Airside closes, and its launcher opens and asks for your e-mail address again. Your settings stay on the computer.

## 02 HOW A TRANSMISSION WORKS

1. Wait until nobody is talking. One station transmits at a time, you included.
2. Press the microphone key first, then speak: the microphone opens when the key goes down, so a word you begin before that is cut off. Say the whole transmission and let go after the last word.
3. The crew reads the instruction back and then does it. A takeoff roll starts once the readback is finished.

**What was heard is on the radio log.** Every transmission appears on the log exactly as Airside heard it, before the crew answers. If a word came out wrong, you can see it.

**If the readback is wrong, say it again.** The readback is how you check you were understood. The newest instruction is the one the crew follows. If the readback is right you can say "readback correct", or nothing at all.

**Blocked transmissions.** If you key the microphone while a crew is still talking, your transmission is blocked and the desk tells you "blocked transmission, say again". Wait for the crew to finish.

**Very short and very long presses.** A tap on the key is ignored. If the key is held for more than 30 seconds, the microphone is released and nothing is sent.

**Crews wait for you.** A crew does not start talking while your microphone key is down. It answers as soon as you let go.

**One crew at a time.** A crew that has called you is owed an answer, and its strip says AWAITING YOUR ANSWER. Until you answer, no other crew starts a call of its own. Anything you say or click to that aircraft is an answer, and so is your next word or click to any other aircraft: the next crew may then call, and the crew you left unanswered asks again after three minutes. When you give an aircraft an instruction, its crew reads it back before anybody else calls. A readback and a go-around are never held back.

**Stand by.** "Stand by" is an answer too. Say it, or working by clicks press STAND BY in the aircraft's quick actions. The crew answers "standing by" and leaves you five minutes before it asks again, and the next crew may call.

With Reminders switched off (section 11), a call you have left unanswered for three minutes no longer holds the others back.

## 03 CALLSIGNS

Every instruction starts with the callsign of the aircraft it is for. The instruction goes to that aircraft and to no other.

**Airlines.** Say the airline's callsign, then the flight number digit by digit.

```
YOU     Speedbird one two three, hold position.
```

The strip shows the airline's radio callsign, for example Speedbird for British Airways, Lufthansa for Lufthansa and Swiss for Swiss.

**Heavy and super.** A widebody says "heavy" after its callsign on its first call to each position, and an A380 says "super". You may say it too: "Speedbird one two three heavy" reaches the same aircraft. The strip writes the wake category after the type, B77W/H or A388/J, which tells you at a glance which aircraft needs a big stand.

**The name on the tail.** A few airlines have a radio callsign that is not the name people know: Ryanair UK is Blue Max, Pegasus is Sunturk and Jet2 is Channex. Their crews answer to the airline's own name as well, so you can say "Ryanair", "Pegasus" or "Jet2" with the flight number.

**Light aircraft.** Say the registration letter by letter, or the first letter and the last two, the ICAO abbreviation. Once you have called it by the short form, the crew uses that form too.

```
YOU     Delta Echo Tango Uniform Papa, hold position.
```

```
YOU     Delta Uniform Papa, hold position.
```

**When the name does not get through.** You can always spell the three letters on the strip in the alphabet instead of saying the airline's name. After two transmissions in a row that reached nobody, the desk reminds you.

```
YOU     Bravo Alfa Whiskey one two three, hold position.
```

**Correcting yourself.** If you start a flight number wrong, just say it again. The last callsign you say is the one that counts, as long as it names only one aircraft on the frequency.

```
YOU     Speedbird one two four, Speedbird one two three, hold position.
```

**Without a callsign.** If you leave the callsign out and exactly one aircraft is waiting for that instruction, it goes to that aircraft. “Pushback approved” with a single aircraft asking to push reaches that aircraft. If two are waiting, nobody answers and the desk asks you to say again the callsign.

**A callsign that is not on your frequency.** The desk tells you so, for example “Swiss 789 is not on this frequency”.

## 04 NUMBERS, LETTERS, RUNWAYS, TAXIWAYS AND STANDS

**Digits.** Say numbers one digit at a time. The crews accept the ICAO words and the ordinary ones: tree or three, fower or four, fife or five, niner or nine.

**Letters.** Use the ICAO alphabet: Alfa, Bravo, Charlie, Delta, Echo, Foxtrot, Golf, Hotel, India, Juliett, Kilo, Lima, Mike, November, Oscar, Papa, Quebec, Romeo, Sierra, Tango, Uniform, Victor, Whiskey, X-ray, Yankee, Zulu. Alpha and Juliet work too.

**Runways.** Say the runway digit by digit with its side: “runway two four left”, “runway zero six”, “runway six”. The word runway may be left out when you say a side, as in “two four left”.

- A runway that does not exist at this airport is not accepted. The crew asks you to say again.
- A runway that exists but is not the one the flight is expecting is queried:

```
CREW    Negative, we are expecting runway 24L.
```

- A departure can be given another runway until it reaches its holding point, before its pushback or after it. Say it in the taxi clearance, “taxi to holding point runway two four right”, as “expect runway two four right”, or with the pushback, “pushback approved, expect runway two four right”. A parallel runway the same way, 24R for 24L, is taken and read back at once, with the departure that goes with it; the readback is your check. A runway another way, 06R for 24L or a runway that crosses it, is asked back: “confirm runway 06R?”. Answer

"affirm" and it is taken; answer "negative" and nothing changes. While the tug is still pushing, the answer is "unable, still on pushback". Where the new runway lies behind the aircraft, it drives on and comes round by the next taxiways that let it, as a crew would; only where there is no way round at all is the answer "unable, no route to 24R from here".

- A runway being crossed can be named by either end. Runway 06L is also runway 24R, and the crew reads back the name you used.

**Taxiways.** Say taxiway letters in the alphabet and taxiways with names as words: "via Alfa Bravo", "via Kilo One Zero", "via Base". Taxiways are checked against the airport's own names.

**Stands.** Say the stand number digit by digit: "stand two one one". A stand with a letter is said with its letter, "stand two zero two Alfa". Where one number exists on two aprons, the apron letter picks one ("stand Echo five three"). Say only the figures and the crew takes the stand that suits the aircraft, the passenger stand for an airliner and the cargo ramp for a freighter. A stand the airport does not have is queried.

# 05 THE INSTRUCTIONS

## 5.1 IFR CLEARANCE

The strip prints the clearance for a departure that is due one. Read it out, or say just the part that matters to you.

```
YOU     Speedbird one two three, cleared to Zurich via India Bravo Lima Alfa One Zulu
        departure, runway two four left, climb five thousand feet, squawk three zero
        two one.

CREW    Cleared to Zurich via IBLA1Z departure, runway 24L, climb 5000 feet, squawk
        3021, QNH 1013, Speedbird 123.
```

```
YOU     Speedbird one two three, cleared to Zurich.
```

- **The destination, departure and squawk** come from Airside. The crew reads back what was filed, even if the departure name was not clear on the radio.
- **The squawk you read out must be the one on the strip.** One wrong digit is taken as a slip of the radio. Two or more and the crew asks: "unable, say again the squawk, we copied 7061". The same holds for a squawk said on its own, before or after the clearance: the crew reads back the code on the strip.
- **The level is yours to give.** Say it in feet ("climb six thousand feet", "climb one two thousand feet") or as a flight level ("climb flight level one two zero"). Say nothing and the standard climb on the strip applies. The crew accepts an initial climb from a few thousand feet up to flight level 240, in 500 foot steps, and asks you to say again a level it cannot use: "unable, say again the level, we copied 25500 feet".
- **When a clearance is not needed.** A VFR flight answers "unable, VFR, no IFR clearance required".

- **At an airport in the United States** the clearance is the FAA's: the destination airport, the departure, "then as filed", the altitude to maintain, the departure frequency and the squawk, with no runway and no altimeter setting, which the ATIS gives there. Both ways of saying it are understood at every airport.

```
YOU     United two four five, cleared to Atlanta airport via the PADRZ five
        departure, then as filed, maintain five thousand, departure frequency one two
        five point one five, squawk four five two one.
```

## 5.2 PUSHBACK AND START UP

```
YOU     Lufthansa four five six, pushback approved.

CREW    Pushback approved, Lufthansa 456.
```

Also understood: "push back approved", "pushback", "push back". "Pushback and start up approved" is a pushback. The engines start while the aircraft is on the tug, so "start up approved" on its own is simply acknowledged.

- An airliner waits for a tug and the crew tells you it is on the way. A light aircraft pushes itself.
- "Pushback approved, expect runway two four left" is read back with the runway to expect.

**Out under its own power.** At a stand with a way out ahead, "taxi" sends the aircraft out forward with no tug, and "pushback approved" still pushes it. A light propeller aircraft on a stand wide enough turns round on the stand by itself. In Settings, Crews, **Stands left nose first** has the crews at those stands ask you for taxi instead of a pushback. Where Airside works Ground, crews there still ask for their pushback and get it.

**Which way the nose ends up.** Add the direction the aircraft should face when the push is finished, or the direction of its tail.

```
YOU     Lufthansa four five six, pushback approved, facing west.

CREW    Pushback approved, facing west, Lufthansa 456.
```

"Tail east" is the same push. Most stands have one way out, so the crew checks your direction against it. If the push from that stand ends the other way, the crew says where the nose will be and stays on the stand:

```
CREW    Unable, the push from this stand leaves us facing south west, Lufthansa 456.
```

Where the stand's lead out line meets a taxiway that carries on both ways, and the runway can be reached from either, the aircraft can be pushed to face either way along it, and your direction picks one.

You can also give the push by a side of the aircraft as it stands on its stand, seen from its own flight deck: "tail right", "tail left", "nose left". Tail right swings the tail to the aircraft's right, so the nose ends to its left. Where the stand's push goes the other way, the crew says which way its tail will swing and stays on the stand:

```
CREW    Unable, the push from this stand ends with our tail to the left, Lufthansa
        456.
```

**Onto a taxiway.** Name the taxiway the push should end on, with or without a direction.

```
YOU     Lufthansa four five six, pushback approved onto taxiway Bravo, facing north.
CREW    Pushback approved, onto taxiway B, facing north, Lufthansa 456.
```

"Push onto Bravo" works too. If the push from that stand does not end on that taxiway, the crew names the one it does end on and stays on the stand:

```
CREW    Unable, the push from this stand ends on taxiway A, Lufthansa 456.
```

## 5.3 TAXI

**To the holding point.** Name the runway, and the taxiways if you want to give the route.

```
YOU     Speedbird one two three, taxi to holding point runway two four left via Alfa
        Bravo.
CREW    Taxi to holding point runway 24L via A, B, Speedbird 123.
```

- **The route is a constraint, not a list of every turn.** Name the taxiways that matter, in order, and the aircraft finds its way between them. If the route cannot be flown from where the aircraft is, the crew says so.
- "Taxi via Alfa Bravo" works too. With no route named, the aircraft takes its own, drawn on the ground radar, and the crew reads back no taxiways: a crew reads back what it was told.
- Where a field names only the pieces of a taxiway, B1, B2 and B3, "via Bravo" covers them and the crew reads back "B".
- A route that would take the aircraft back onto a taxiway it has already left is refused in words: "unable, that routing takes us back onto A". Say that taxiway twice in the route and it is driven.
- A departure must push back before it can taxi. Asked early, the crew answers "unable, require pushback first".
- **A new route on the way.** Say "taxi via Papa" or "continue taxi via Papa" to an aircraft that is already taxiing and it takes that route from where it is.

**Departing from an intersection.** With no holding point named, a departure taxis to where its runway begins and takes off with the full length. Name another holding point by its taxiway and the aircraft taxis there instead, lines up there and takes off with the runway that is left ahead of it, counted from where it lines up. The crew weighs that against what its aircraft needs: where it is too little, it asks for full length and keeps its route ("unable, intersection B2, request full length"). Where the only way onto that taxiway is a turn no aircraft makes, such as a high-speed exit angled the other way, the crew says it cannot reach it and keeps its route.

```
YOU     Speedbird one two three, taxi to holding point Bravo Two runway two four
        left.

CREW    Taxi to holding point B2 runway 24L, Speedbird 123.
```

By clicks, Depart from... in the aircraft's menu lists the intersections it can use, each with the runway left from there.

**Hold short of a taxiway.** The aircraft taxis on and stops before it reaches that taxiway, clear of anything passing along it, and waits there until you say “continue taxi”.

```
YOU     Speedbird one two three, hold short of Bravo.

CREW    Holding short of B, Speedbird 123.
```

It works on its own or inside a taxi clearance:

```
YOU     Speedbird one two three, taxi to holding point runway two four left via Alfa,
        hold short of Bravo.

CREW    Taxi to holding point runway 24L via A, holding short of B, Speedbird 123.
```

If the aircraft's route never comes to that taxiway, the crew says so: “unable, B is not on our route”.

**Pick the route on the map.** By voice or by clicks, you can give the way an aircraft taxis by clicking the taxiways. Press TAXI VIA... in the aircraft's quick actions (it is also in its menu, “Taxi via... (pick on map)”). The taxiway names stand out on the ground radar. Click the taxiways in the order the aircraft should take them, on the pavement or on a name, and then click where it is going. As you click, one line shows the route the aircraft will take. If no route can be made from what you picked, the line at the top of the map says why.

- **An arrival:** click a stand. The aircraft is given that stand and the way to it. A stand clicked with no taxiway picked sends it there the shortest way.
- **A departure:** click the end of its runway, the one with the ring. It taxis to the holding point by the taxiways you picked.
- Click a picked taxiway again to take it out. Drag to move the map. A right-click leaves the mode.
- You do not have to pick every taxiway. Pick the ones that matter and the aircraft finds its way between them. By voice it is the same: “via Alfa, Echo” is enough where Bravo and Charlie lie between them anyway.
- The taxiway the aircraft is standing on can be the first one you pick, or say.
- A route never runs through the same place twice. Where the taxiways you picked or said would make it, the aircraft takes its own way through them, and if there is none the crew says “unable, we cannot make that routing”.
- The taxiway names can be made larger in Settings, Display.
- At an airport that publishes no taxiway names there is nothing to click. There you draw the route: hold the left button and drag along the taxiways, and end the drag on a stand to send an arrival to it.

| THE CREW SAYS | MEANING |
|---|---|
| taxi to stand 35 via A, B, E | the stand, and the way to it |
| taxi to holding point runway 24L via A, B | a departure, by the taxiways you picked |
| unable, B does not connect to E | no way joins those two in that order |
| unable, we cannot get onto that route from here | the first taxiway is behind the aircraft |

**Stopping and starting.**

| YOU SAY | THE AIRCRAFT | CREW |
|---|---|---|
| `hold position` | stops where it is | `Holding position` |
| `continue taxi` | moves again, whatever stopped it | `Continuing` |

"Continue taxi" also releases an aircraft that stopped for traffic, one you told to give way, and one holding short of a taxiway.

"Hold for" with a reason is the same hold: "hold for the Embraer crossing left to right", "hold for wake turbulence". The aircraft stops where it is and waits for your "continue taxi".

**Pace.**

| YOU SAY | ALSO UNDERSTOOD | CREW |
|---|---|---|
| `expedite taxi` | `taxi faster` | `Expediting` |
| `taxi slower` | `slow taxi, slow down, reduce taxi speed, reduce speed` | `Slowing down` |

## 5.4 RUNWAY CROSSINGS AND HOLD SHORT

Aircraft never cross a runway on their own. They stop at the holding point and ask:

```
CREW    Holding short of 24R, request crossing, Swiss 78.
```

```
YOU     Swiss seven eight, cross runway two four right.
CREW    Cross runway 24R, Swiss 78.
```

"Cleared to cross runway two four right" is understood too. The runway may be named by either end: "cross runway zero six left" crosses the same strip.

```
YOU     Swiss seven eight, cleared to cross runway two four right.
```

**Hold short** of a runway sends the aircraft on to the painted line and stops it there. It is also how you take a crossing clearance back.

```
YOU     Swiss seven eight, hold short of runway two four right.
CREW    Holding short of runway 24R, Swiss 78.
```

- You can give a crossing before the aircraft gets there, in the taxi clearance. See section 6.
- If you gave a crossing further along the route, "hold short" of that runway takes it back before the aircraft reaches it.
- "Hold short of runway ..." is a runway. "Hold short of Bravo" is a taxiway, see 5.3.
- Working Ground with Airside on Tower, a crossing you hold short by word is yours to give. Send the aircraft to Tower with it and the crossing is Tower's: Airside's Tower crosses it when the runway is free.

```
YOU     Swiss seven eight, hold short of runway two four right, contact tower.
CREW    Holding short of runway 24R, contact tower, Swiss 78.
```

## 5.5 TRAFFIC ON THE TAXIWAYS

**Give way.**

```
YOU     Speedbird one two three, give way to Lufthansa four five six.
CREW    Giving way to DLH456, Speedbird 123.
```

The aircraft stops for the other one and carries on when it has passed. "Continue taxi" ends a give way early. Told to hold short as well ("hold short of Bravo, give way to ..."), it stays short of Bravo when the other has passed, and says so.

**Follow.** The same instruction, said the other way round: let the other aircraft go first, then taxi behind it.

```
YOU     Speedbird one two three, follow Lufthansa four five six.
CREW    Following DLH456, Speedbird 123.
```

Say "follow company" and the crew follows the aircraft of its own airline that is taxiing near it. With none there, the crew tells you it has none in sight.

You can also name the other aircraft by what it is: its type, its airline, or both. "Follow the A320", "give way to the Ryanair", "give way to the Delta seven three seven". Say where it is as well and the crew looks there ("... from your right", "... ahead"). The crew takes the nearest aircraft on the move that fits and reads back its callsign, so you hear which one it took:

| | |
|---|---|
| YOU | Speedbird one two three, give way to the A320 passing left to right. |
| CREW | Giving way to DLH456, Speedbird 123. |

If nothing near it fits, it says so and does nothing:

| | |
|---|---|
| CREW | Negative, that traffic is not in sight, Speedbird 123. |

**A taxiway two aircraft need from opposite ends.** Where the routes of two aircraft run along the same taxiway in opposite directions, they do not drive into it nose to nose. One goes first and the other waits short of that taxiway, where it has room to stand, and carries on when the first has passed. The strip of the one that waits reads "waiting for (callsign) to pass", and nothing is said on the frequency. You do not have to do anything. To have it the other way round, say "continue taxi" to the one that waits: it goes on, and keeping the two apart is yours from then on.

**When two aircraft are stuck nose to nose.** An aircraft stopped for traffic can be taken out of the way:

| YOU SAY | ALSO UNDERSTOOD | WHAT HAPPENS |
|---|---|---|
| tug back | reverse | a tug backs the aircraft up and it looks for another way round |
| turn one eighty | one eighty, turn around, make a one eighty | the aircraft turns round where the taxiway is wide enough |

The crew tells you when these are not possible, for example "unable, this taxiway is not wide enough to turn on".

**Turning an aircraft round.** By voice you can turn round any aircraft that is taxiing, stuck or not: "turn around", "turn one eighty" or "make a one eighty". Said to one on the move, it stops first and then comes round. It needs room: an aircraft turns round only where the taxiway is wide enough for its type, about four fifths of its own length (30 m for an A320). Most taxiways are narrower than that for an airliner, and the crew then says "unable, this taxiway is not wide enough to turn on". Smaller aircraft turn round almost anywhere.

Say where it goes next in the same transmission, and it does that once it has come round:

| | |
|---|---|
| YOU | Speedbird one two three, turn around and taxi to holding point runway zero six right via Bravo. |
| CREW | Turning around, then taxi to holding point runway 06R via B, Speedbird 123. |

When it has come round the crew tells you the way it is taking: "turned around, taxi to holding point runway 06R via B, A". Another runway is asked back first, like any change of runway ("confirm runway 06R?"). "Turn around and continue taxi" sends it on to where it was going, by the way from there, and "turn around and hold position" leaves it standing. Said alone, the aircraft looks for its own way once it has come round. If it cannot go where you said from there, the crew says so and holds position.

## 5.6 LINE UP AND TAKEOFF

```
YOU     Speedbird one two three, runway two four left, line up and wait.

CREW    Runway 24L, line up and wait, Speedbird 123.
```

```
YOU     Speedbird one two three, runway two four left, cleared for takeoff.

CREW    Runway 24L, cleared for takeoff, Speedbird 123.
```

- The wind is optional. “Wind two five zero degrees eight knots, runway two four left, cleared for takeoff” works too.
- The wind on the weather panel is the one a tower gives: against magnetic north and to the nearest ten degrees, so it reads against the runway numbers. A METAR gives the same wind against true north, and the two differ by the field's magnetic variation: a degree at London, thirteen at New York. The row's caption says which north it is, WIND MAG, or WIND TRUE at the few fields whose runways are numbered true.
- The wind is an average, as a real one is: the ATIS gives the mean of the last ten minutes, and the wind written in a takeoff or landing clearance the mean of the last two. Where the strongest gust of the last ten minutes is 10 knots or more above the mean, it is given too: “surface wind two four zero degrees one two knots gusting two six knots”, and 240° / 12G26 kt on the weather panel.
- “Cleared for takeoff” from the holding point lines the aircraft up and rolls in one go.
- At airports where the only way onto the runway is to taxi along it, say “backtrack and line up”.
- “Line up” and “cleared takeoff” are understood too, and so are “position and hold” and “taxi into position and hold”, the FAA's words until 2010, when it adopted the ICAO “line up and wait”. The crew always reads back “line up and wait”.

```
YOU     Speedbird one two three, taxi into position and hold runway two four left.
```

**Immediate takeoff.** The crew reads the word back and rolls without stopping on the runway. Given while it is still on the taxiway, it lines up first and rolls from the runway.

```
YOU     Speedbird one two three, runway two four left, cleared for immediate takeoff.

CREW    Runway 24L, cleared for immediate takeoff, Speedbird 123.
```

**From an intersection.** Say the intersection, and the crew checks it against the holding point it is at. The wrong one is refused and nothing moves. To go from another one, send the aircraft there with a taxi clearance first.

```
YOU     Speedbird one two three, via intersection Bravo Two, line up and wait runway
        two four left.
```

**Taking a takeoff back.**

| WHEN | YOU SAY | WHAT HAPPENS |
|---|---|---|
| before the roll | `cancel takeoff` | the aircraft stays where it is and waits |
| on the roll, before V1 | `stop immediately` | the takeoff is rejected |

Say the wrong one at the wrong moment and the crew tells you which: “unable, we are rolling, say stop immediately”. Past V1 the takeoff continues.

## 5.7 ARRIVALS

An arrival checks in when it is handed to you, about 10 miles out: “established on final, runway 24L”. Clear it to land whenever the runway allows.

| YOU SAY | CREW |
|---|---|
| `continue approach runway two four left` | `Continue approach, runway 24L` |
| `(wind), runway two four left, cleared to land` | `Runway 24L, cleared to land` |
| `reduce to minimum approach speed` | `Reducing to minimum approach speed` |
| `go around` | `Going around` |

An arrival still without a landing clearance asks for one at about 1,200 feet, and goes around at 300 feet if it still has none. “Continue approach” is optional: it tells the crew the clearance is coming, and they still ask for it.

**Minimum approach speed.** To open the gap behind an arrival, or to slow one that is catching the aircraft ahead, tell it to fly its minimum approach speed: the slowest it flies the approach at, with gear and flaps out. It slows down at once, about a knot a second, and flies the rest of the approach at that speed. “Final approach speed” is the same instruction, and you can give it together with “continue approach” or “cleared to land”. The aircraft behind slows down too, to keep the arrival spacing; one that cannot fly that slowly goes around before it comes too close. After a go-around the instruction no longer applies. By clicks it is Minimum Approach Speed in the aircraft's menu.

```
YOU     United two four five, reduce to minimum approach speed.
CREW    Reducing to minimum approach speed, United 245.
```

**Arrival spacing.** Airside keeps 6 nautical miles between one arrival and the next to the same runway, which lands about 25 aircraft an hour on one runway and leaves room for one departure between two landings where a runway is used for both. Settings, Traffic has the figure: 4, 5, 6, 8 or 10. Choose a smaller one where the hold stack keeps growing, for example at a large airport with only some of its runways open for arrivals. In fog, under low visibility procedures, it is 8 at the least (section 15).

**Arrival rate.** Settings, Traffic also sets the most arrivals Airside sends in an hour, all runways together, as a busy airport sets its arrival rate for the runways it has open and the weather: no limit, 40, 30, 20, 15 or 10. They come evenly spaced through the hour, and the rest wait in the hold stack, where the flight board says ARRIVAL RATE.

**No arrivals for a while.** In the runway roster, take ARR off every runway and leave DEP on at least one. No new arrival comes until you put ARR back, and those already on their approach still land.

**Stands.** Give an arrival its stand whenever you like: on final, during the landing roll or after it has vacated. Name the stand, and the taxiways if you want to give the route. With none named, the aircraft takes its own way, drawn on the ground radar, and the crew reads back only what you said.

```
YOU     United two four five, taxi to stand two one one.
CREW    Taxi to stand 211, United 245.
```

**Working Ground yourself.** A stand given on final or during the landing roll without the word taxi, "stand two one one", "expect stand two one one" or a stand typed on the strip, is the stand alone, as at a real airport: the crew notes it, vacates, stops clear of the runway and calls you for its taxi.

```
YOU     United two four five, expect stand two one one.
CREW    Expect stand 211, United 245.
```

After the landing the crew calls "runway vacated, request taxi to stand 211". Give the taxi then: "taxi to stand two one one", "taxi via Alfa, Bravo" or "continue taxi". "Taxi to stand two one one" said on final is the stand and the taxi together, and so is a stand picked on the map. While Airside works Ground, its Ground gives the taxi.

"Stand two one one" and "gate two one one" do the same. On final the crew reads back "stand 211"; during the landing roll the stand is noted and the route follows once the aircraft has vacated. Say "taxi to stand" with no number, or just "taxi", to an arrival that is waiting for one, and it goes to the stand planned for it or to a free one that fits it, and names it in the readback.

**Taxi with no stand.** To move an arrival that has no stand yet, give it the taxiways and where to stop. It drives them, stops short of the taxiway you named and waits there for its stand. With no place to stop, the crew asks for the stand.

```
YOU     United two four five, taxi via Alfa, Bravo, hold short of Kilo.
CREW    Taxi via A, B, hold short of K, United 245.
```

**Turn onto a taxiway.** "Turn left on Kilo, hold short of Bravo two" sends an aircraft on the ground onto Kilo, turning to the side you said, and stops it short of Bravo two. If it cannot turn that way onto Kilo from where it is, the crew tells you: "unable, we cannot turn left onto K from here". During the landing roll "turn left" is still the way off the runway.

| | |
|---|---|
| YOU | United two four five, turn left on Kilo, hold short of Bravo two. |
| CREW | Turn left onto K, hold short of B2, United 245. |

**Vacate via.** Tell an arrival which exit to leave the runway by, on final or during the landing roll.

| | |
|---|---|
| YOU | United two four five, vacate via Kilo. |
| CREW | Vacate via K, United 245. |

"Vacate left via Kilo" and "exit at Kilo" are understood too, and so is the runway named first: "vacate runway two six left via Kilo" or "vacate the runway on Kilo". The crew only takes an exit it can make at a normal braking rate, and otherwise tells you why and keeps its own:

| CREW | MEANING |
|---|---|
| unable, K is too early for us | on final: the landing cannot slow down in time for that exit |
| unable, we cannot make K | on the landing roll: too fast for it now |
| unable, K is behind us | the aircraft has passed it |
| unable, K does not join runway 24L | that taxiway does not meet this runway |

**With the landing clearance.** "Runway two four left, cleared to land, vacate left" is read back whole, or the crew says why it cannot take that turn-off. Said to a crew already cleared to land, the turn-off alone is taken.

**By clicks.** Vacate via... in a landing aircraft's menu lists the exits it can still make, first to last. Working Ground while Airside works Tower, the same list is Ask Tower: vacate via...: you pick the exit, Airside's Tower tells the crew, and the readback is on Tower's frequency, as a real Ground controller would ask Tower to do it.

## 06 TWO INSTRUCTIONS IN ONE TRANSMISSION

Say them together the way controllers do. The crew reads both back in one transmission, and each instruction keeps its own runway.

| | |
|---|---|
| YOU | Speedbird one two three, taxi to holding point runway two four left via Alfa, hold short of runway two four right. |
| CREW | Taxi to holding point runway 24L via A, holding short of runway 24R, Speedbird 123. |

YOU Speedbird one two three, taxi to holding point runway two four left, cross runway two four right.

CREW Taxi to holding point runway 24L, cross runway 24R, Speedbird 123.

YOU United two four five, cross runway two four right, then taxi to stand two one one.

YOU Speedbird one two three, cross runway two four right, hold short of runway zero six left.

YOU Speedbird one two three, continue taxi, give way to Lufthansa four five six.

YOU Speedbird one two three, taxi to holding point runway two four left, give way to Lufthansa four five six.

YOU Speedbird one two three, taxi to holding point runway two four left via Alfa, follow Lufthansa four five six.

YOU Speedbird one two three, taxi via Alfa Bravo, expedite taxi.

YOU Speedbird one two three, make a one eighty and continue taxi.

**What can be combined:**

- A taxi instruction (taxi, taxi to stand, continue taxi) with runway crossings, hold shorts of runways or taxiways, a give way or follow, and one pace instruction.
- A half turn (turn around, turn one eighty, make a one eighty) with a taxi instruction or with hold position. The turn is made first: see 5.5.
- A crossing with hold shorts of other runways.
- Hold position or continue taxi with a give way.

**How the crew handles it:**

- A crossing given in a taxi clearance is used when the aircraft gets there, so it crosses without stopping. The crossing starts once the crew has read it back.
- A hold short and a give way act straight away.
- If one part cannot be done, the part that can is still done. “Continue taxi, cross runway two four right” to an aircraft already waiting at the 24R holding point is a crossing.

- "Cross runway two four right, hold short of runway two four right" contradicts itself, and the crew asks you to say again.
- A crossing must name its runway.

Other combinations are taken as one instruction, so give those one at a time.

## 07 CONDITIONAL CLEARANCES

Clear an aircraft to line up or to cross **behind** traffic. Say the condition first and "behind" again at the end, as ICAO does.

```
YOU     Speedbird one two three, behind the landing A320, runway two four left, line
        up and wait behind.

CREW    Behind the landing United 245, runway 24L, line up and wait behind, Speedbird
        123.
```

```
YOU     Speedbird one two three, behind the landing United two four five, cross
        runway two four right behind.
```

```
YOU     Speedbird one two three, after the departing traffic, line up runway two four
        left.
```

```
YOU     Speedbird one two three, after Lufthansa four five six, cross runway two four
        right.
```

**Naming the traffic.** Say its callsign, or what it is and what it is doing: "the landing A320", "the landing Airbus", "the departing seven three seven", "the landing triple seven". With "after", the callsign or the type is enough: "after Lufthansa four five six", "after the Airbus". "After company" is traffic of the aircraft's own airline. The crew reads back the callsign of the aircraft it is waiting for, so you can hear it picked the right one. Say nothing about it ("line up and wait behind", or "after the traffic, line up and wait") and the crew waits for whoever will be clear of the runway first. Say a landing word anywhere in it ("behind next landing aircraft") and the crew waits for the landing. A bare "behind" that would put the aircraft in front of one about to land is asked back, and nothing moves until you answer:

```
CREW    Confirm behind the landing United 245?
```

**What the crew does.** It reads the clearance back and waits. It lines up or crosses once the traffic has passed it, or has left the runway. A crew waiting for traffic does not ask you again.

- At an airport where lining up means taxiing along the runway, the aircraft waits until the traffic is off the runway, not just past.

- If nobody on that runway matches what you said, for example a 777 when only an A320 is landing, the crew asks:

```
CREW    Say again the traffic, Speedbird 123.
```

- Any new instruction to that aircraft replaces the conditional one.

Conditional clearances are for lining up and for crossing a runway. On a taxiway, “after” or “behind” said with **continue taxi** is a give way: the crew waits for that aircraft and goes on after it.

```
YOU     Speedbird one two three, after the crossing Lufthansa, continue taxi.
CREW    Giving way to Lufthansa 456, continuing, Speedbird 123.
```

## 08 CORRECTING A TRANSMISSION

Say “correction” and then the right version. What follows the correction replaces what it corrects: a runway replaces the runway, a route replaces the route, a number replaces the number, and a whole new instruction replaces the whole transmission.

```
YOU     United two four five, cleared to land runway two four left, correction,
        runway two four right.
CREW    Runway 24R, cleared to land, United 245.
```

```
YOU     Speedbird one two three, taxi to holding point runway two four left via Alfa,
        correction, via Bravo.
```

In a taxi clearance a runway put right in the same breath is taken too, with no “correction”: “taxi to runway three one right, three one left” is a taxi to 31L when 31L is the flight's own runway. A runway you say something about, “three one left is closed”, is not a correction.

## 09 ANSWERS WITHOUT AN INSTRUCTION

Not every transmission is an instruction. These get the answer a real crew gives.

| YOU SAY | CREW |
|---|---|
| roger | nothing |
| readback correct | nothing |

| YOU SAY | CREW |
|---|---|
| affirm, affirmative, yes, correct | does what it asked you to confirm, or nothing if it asked nothing |
| negative, no | forgets what it asked you to confirm |
| stand by | Standing by |
| say again | repeats its last call, word for word |
| disregard, never mind, scratch that | nothing: what you said before it in that call is not done, and said on its own before the crew has answered, your last call is not done either |
| go ahead | says its request again |
| (the callsign alone) | Go ahead |
| report ready, report runway vacated | Wilco |
| expect runway two four left | Expect runway 24L |
| contact ground one two one decimal niner | Ground 121.9 |
| monitor tower | Wilco |
| QNH one zero one three | QNH 1013 |
| squawk three zero two one | Squawk 3021, the code on the strip |
| wind two four zero degrees one zero knots | Roger |
| traffic, caution, information, visibility, wake turbulence | Roger |

When the crew asks you to confirm a runway, “affirm, two eight left” answers it, and so does saying the instruction again.

YOU Speedbird one two three, readback correct.

YOU Speedbird one two three.

CREW Go ahead, Speedbird 123.

- Any “report …” is answered with a wilco, whatever it asks the crew to report.
- Airside works the whole field on one frequency, so an aircraft told to contact another station reads the frequency back and stays with you. With spoken handoffs switched on (see Positions), the same words to an aircraft that is due to be handed off are its handoff.
- A departure told to contact or monitor Tower on its taxi out counts as having called: it does not call again on its way to the holding point or at it.
- “Expect runway” is checked like any runway you say. To a departure that has not reached its holding point it is a change of runway: a parallel the same way is taken and read back, any other the crew asks you to confirm (see section 4); from any other flight the wrong runway is queried.
- “Report” or “expect” riding on an instruction is read back with it: “Taxi to holding point runway 24L, wilco”.

## 10 BEING POLITE

The crews answer pleasantries, and a pleasantry never costs you the instruction it rides on.

| | |
|---|---|
| YOU | United two four five, cleared to land runway two four left, have a good day. |
| CREW | Runway 24L, cleared to land, thank you, you too, United 245. |

| YOU SAY | CREW |
|---|---|
| good morning, good afternoon, good evening, good day | the same back |
| good night | good night |
| hello | hello |
| have a good day, have a nice day, have a good flight, have a nice flight, have a good one | thank you, you too |
| all the best | thank you, you too |
| enjoy your flight, happy landings, safe landing | thank you |
| safe flight, safe travels | thanks, bye bye |
| see you, see you next time, bye bye | bye bye |
| goodbye | good day |
| welcome, welcome to (city), welcome back | thank you |
| thank you, thanks, many thanks, much appreciated | you are welcome |

| YOU SAY | CREW |
|---|---|
| nice job, well done | thank you |
| sorry, sorry for the delay, apologies | no problem at all |

Anything else polite is answered with silence, the way it is on a real frequency.

## 11 WHAT THE CREWS SAY TO YOU

**Requests.** Crews call you when they need something, in phraseology:

- "Request IFR clearance" when a departure is boarding and due its clearance.
- "Stand 12, ready for pushback" when it is ready to leave the stand, naming the stand; its strip shows it too, while it stands there. Asked again later, "request pushback".
- "Request taxi" when the push is finished. At an American airport, "ready to taxi".
- "Holding short of 24R, request crossing" at a runway crossing.
- "Holding short of B" if you left it holding short of a taxiway for a while.
- "Ready for departure" at the holding point.
- Arrivals call on final, report the runway vacated and ask for a stand if they do not have one. One you gave a stand without a taxi while you work Ground asks for its taxi instead: "runway vacated, request taxi to stand 211".

If a request goes unanswered, the crew asks again with how long it has been waiting. **Reminders**, in Settings, Crews, switches that off: a crew then asks once and waits for you, and its strip still shows that it is waiting.

**When an instruction cannot be done.** The crew says "unable" and why. The most common:

| CREW | MEANING |
|---|---|
| unable, require pushback first | the aircraft is still on the stand |
| unable, no IFR clearance, obtain your clearance first | give the clearance before the push |
| unable, the push from this stand leaves us facing south west | this stand cannot push the way you asked |
| unable, the push from this stand leaves us facing north or south | this stand pushes two ways, and neither is the one you asked |
| unable, the push from this stand ends on taxiway A | this stand does not push onto the taxiway you named |

| CREW | MEANING |
| --- | --- |
| `unable, still on pushback` | wait until the push is finished |
| `unable, no route to 24R from here` | there is no way to that runway from where the aircraft is, even driving on and coming round |
| `unable, already taxiing` | it is already moving; use continue taxi or a crossing |
| `unable, B is not on our route` | its route never comes to that taxiway |
| `unable, we cannot turn left onto K from here` | the aircraft cannot turn that way onto K; the other side, or another way, can |
| `unable, B does not meet K that way` | the taxiways you named never come to the one you said to hold short of |
| `unable, not at the hold short` | lining up needs the aircraft at the holding point |
| `unable, intersection B2, request full length` | the runway left from B2 is too little for this aircraft, or it is at the full length holding point and you named B2 to line up or take off |
| `unable, we cannot reach intersection B2 from here` | there is no way onto B2 from where the aircraft is that it can turn into |
| `unable, intersection B2 is not on runway 24L` | B2 does not join that runway |
| `unable, not lined up` | a takeoff needs the aircraft at the holding point or on the runway |
| `unable, not holding` | continue taxi is for an aircraft that has stopped |
| `unable, not holding short of a crossing` | there is no crossing ahead to clear |
| `unable, no runway ahead of us` | there is nothing to hold short of |
| `unable, we are rolling, say stop immediately` | use stop immediately during the takeoff roll |
| `unable, past V1, continuing the takeoff` | too late to stop |
| `unable, not on final` | landing instructions are for arrivals on final |
| `unable, in the flare` | the aircraft is landing; try once it has landed |
| `unable, we are clear of the runway` | vacate via is for an arrival still on final or on the landing roll |
| `unable, stand 211 is occupied` | pick another stand |
| `unable, say again the stand` | the stand number was missing |

**When the crew needs you to say it again.**

| CREW | MEANING |
|---|---|
| `say again` | the instruction was not understood, or named a runway, taxiway or stand this airport does not have |
| `negative, we are expecting runway 24L` | the runway you said is not this flight's runway |
| `confirm cleared for takeoff runway 24L?` | you said "runway two four" where there is a 24L and a 24R; say affirm |
| `say again the traffic` | nobody on that runway matches the traffic you named |
| `confirm, cross or hold short of runway 24R` | the transmission said both |
| `unable, say again the squawk, we copied 7061` | the squawk did not match the strip |
| `unable, say again the level, we copied 25500 feet` | the level was not one the crew can use |

**Words that need more.** "Continue", "cleared" and "expedite" on their own each mean more than one thing, so the crew asks you to say again. Say "continue taxi" or "continue approach", and the rest of the clearance. "Hold" on its own is read as "hold position": said alone, stopping is the only thing it can mean.

**Notices from the desk.** When a transmission reached no aircraft, the desk writes a short notice on the radio log: "say again the callsign", "Swiss 789 is not on this frequency", "blocked transmission, say again".

## 12 TALKING WITH THE CREWS

The crews have a few words of their own. They never give or change an instruction: every instruction, readback and request is still the one this manual teaches.

**They add a few words.** A crew never keys up just to chat. When it is on the air anyway, making a call or reading back a clearance, it may add a few words: "holding short of 24L, no rush", "runway 24L, cleared for takeoff, good day", "runway 16, cleared to land, bit of a workout today". How often is yours to choose in Settings, Crews: Off, Very rare, Rare, Normal, Often or Very often. At Normal about three calls in ten carry a few words more, and never more than one from the same crew in five minutes. Ask a crew how it is doing and it answers at once.

**They answer you.** Ask a crew how it is doing, "Speedbird one two three, how are you doing?", and it may answer "Doing well, thanks". Thanks, greetings and goodbyes get the answers in the table above. Anything else that is not an instruction gets "say again".

**They ask when they did not catch it.** When the speech recogniser wrote your words wrong, the crew works out what you most likely said. What it does next depends on the instruction:

- A takeoff, landing, line up or runway crossing is always asked back first: “confirm cleared for takeoff runway 24L?”
- A stop, such as hold position or go around, is done at once.
- Anything else is done and read back, and the readback is your check.

**Answering a question.** Say “affirm” and the crew does what it asked you to confirm. Say “negative” and it forgets the question; then give the instruction again. Plain words work too: yes, correct or right, and no or wrong. “Roger” is a yes only with the callsign, because on its own it is what you say to another pilot's report. If only one crew is waiting for an answer, “affirm” on its own is enough. If two are, say the callsign. A question is forgotten after 20 seconds, and any new instruction to that aircraft replaces it.

```
CREW    Confirm cleared for takeoff runway 24L, Speedbird 123?

YOU     Speedbird one two three, affirm.
```

## 13 POSITIONS

The desk has three positions: **Delivery** gives the airways clearances, **Ground** runs the apron and the taxiways, and **Tower** runs the runways. You work all three unless you choose otherwise. On a busy field you can hand one or two of them to Airside and work the rest yourself.

**Choosing.** The POS chips in the top bar, beside the runways, are DEL, GND and TWR. A bright chip is yours; click it to hand that position to Airside, and click a dim one to take it back. You can change them at any time in a shift. The tutorial always has all three.

**All of it on one list.** Working more than one position, or a quiet airport, the ALL tab of the flight strips shows every aircraft at the airport. Whatever is waiting for you comes first, an arrival on final asking to land included; the traffic on the move follows in the order of the other tabs, and the aircraft quiet on their stands come last.

**Which list an aircraft is on.** Each tab holds the aircraft on that position's frequency. A departure moves to GND when it is handed to Ground, still on its stand, and to TWR for the last 400 m to its holding point, where it becomes Tower's; with spoken handoffs, once you have handed it to Tower. An aircraft crossing a runway in use is on TWR while it crosses. The POS on its strip says the same.

**Airport spotter mode.** Hand all three to Airside and the bar says SPOTTER: the airport runs itself, and you watch it, follow the aircraft with the cameras and take your pictures. Click any position to take it back.

**Watching an aircraft.** Double-click it, or choose Track from here in its CAM menu: the camera stays where you are, follows it and frames it. Plus and minus zoom in and out, and so does the mouse wheel over the simulator. Inside the simulator, hold Ctrl+Alt with the keys.

**The view from the tower.** Opening the shift leaves the camera where it is. TOWER, beside FREE CAM on the selected aircraft panel, takes it to the tower to look out over the airport, and so does Ctrl+Alt+T. Where the airport's scenery does not say where its tower is, the view stands beside the apron, clear of the runways. Hold the right mouse button over the simulator and move the mouse to look around; the wheel zooms. RUNWAY, beside it,

puts the same camera beside a runway in use, where arrivals touch down; press it again for the next runway. Double-click an aircraft from either and the camera follows it from there; double-click it again and you are back where you were.

**Your own views.** The simulator gives one tower for each airport, at some airports an old one or none at all, and it never says how tall the tower is, so a view can start beside its tower, over it or inside it. Camera up and Camera down put the height right for your time at that airport, and you can keep a tower of your own: fly the free camera to where you want it, hold Shift and click TOWER. Airside keeps that place as a tower of this airport and takes you into it. TOWER then goes through your towers first and the airport's own after them, one each press. Shift and a click on RUNWAY does the same for a runway view. In one of your own views, Shift and the click save it again with its height and where it looks. Settings, Keys shows how many you have at this airport and forgets them.

**Camera keys.** In Settings, Keys, you can give a key to the tower view, the runway view, the free camera, and the aircraft waiting for you: one key looks at it from the tower, another walks around it, and each press moves on to the next aircraft waiting. Camera up and Camera down raise and lower the tower and runway views while you hold them, for a tower drawn too low or too high; the height stays for the rest of your time at that airport. Two more keys save the view as a tower or as a runway view, as Shift and a click on TOWER or RUNWAY do.

**Whose aircraft is whose.**

| AIRCRAFT | POSITION |
|---|---|
| At its stand, waiting for its airways clearance | Delivery |
| Pushing back, taxiing, on the apron, taxiing in after landing | Ground |
| About 400 m from its departure holding point, and from there onto the runway | Tower |
| On the approach, landing, rolling out until it has left the runway | Tower |
| Holding short of a runway it has to cross, until it is across | Tower |

**Airside's positions.** Airside answers each of its aircraft a few seconds after it asks, with the same instructions you would give.

Its Tower clears a departure at its holding point for takeoff when the runway is empty and no arrival is within 4 NM, further out than that where the way from the holding point onto the runway is long. Between two arrivals that are closer together it lines the departure up behind the one that has just landed, as soon as that one is past it, and clears it for takeoff once the runway is empty and it can be off the ground before the next arrival. It gives the next departure the runway behind one that is rolling, unless an aircraft is waiting to cross that runway: that one goes first, and the departure stays at its holding point until it is across. It lets an aircraft waiting to cross go behind the aircraft that has landed, once that one has rolled past the crossing, when it can be across before the next arrival, about 2 NM. A departure and a crossing are never given the same runway together. It sends an arrival around if the runway is still occupied at 500 ft.

Its Ground gives a pushback when no traffic is coming up the taxiway behind the stand, and gives an arrival its stand once it has left the runway. Airside's radio shows on the log in grey and is not spoken, and its aircraft are dimmed on the strips with no buttons but Remove: they are not on your frequency. Call one and the desk tells you

so.

**A runway still occupied.** Whoever works Tower, nothing on the ground sends an arrival around while it is above 400 ft, about 1.25 NM on a normal approach. An aircraft still on the runway when the arrival reaches 400 ft sends it around. The one exception is a departure rolling towards it from the other end of the same runway: that sends it around from 2 NM.

**Handing over.** When an aircraft moves from one of Airside's positions to one of yours, it calls you as it would anyway: “stand 12, ready for pushback” after Airside's Delivery, “approaching holding point runway 24L, ready for departure” after Airside's Ground, and “runway vacated” after Airside's Tower.

**Spoken handoffs.** In Settings, Crews; on unless you switch it off. With it on, an aircraft that leaves one of your positions waits for you to hand it to the next one, and you say where it goes:

| THE AIRCRAFT | YOU SAY |
|---|---|
| has read back its airways clearance | “contact Ground” |
| is about 400 m from its departure holding point, or holds short of a runway in use that it has to cross | “contact Tower” |
| has reported the runway vacated, or is across the runway it had to cross | “contact Ground” |

Add the frequency or leave it out: the crew reads back this airport's own, “contact Tower 118.1”, and no number at an airport that publishes none. On the strip the same handoff is the HAND OFF button, and while one is due the strip shows where the aircraft goes: HAND OFF TWR 118.100. The crew then calls on the new position by name: “Tower, Turkish 1234, approaching holding point runway 24L, ready for departure”. **The handoff is yours to give.** The aircraft taxis on while it waits, and it never changes by itself. Forget one and the crew reminds you on your frequency, as a crew would: a departure from its holding point, “holding short runway 24L, ready”; an arrival once it is clear of the runway, “shall we contact ground?”; an aircraft cleared at its stand, “ready for push and start, shall we contact ground?”. The first reminder comes after twenty seconds you could have spoken in (they pause while you or another crew are talking, and for an arrival they start when its “runway vacated” is heard), or after sixty seconds in any case, and it comes again every ninety seconds until you hand the aircraft off. A yes to “shall we contact ground?” is the handoff: “affirm”, or “affirm, over to Ground”. So is “contact Ground” said with another instruction, “pushback approved, contact Ground”. Go to the spotter mode, or hand the position the aircraft is leaving to Airside, and the handoff is Airside's: nobody asks you for it. Handed to a position Airside works, the aircraft's call there is not heard on your frequency. An arrival with no stand reports “runway vacated” to Tower and asks Ground for its stand after the handoff. An aircraft coming from one of Airside's positions calls you without a handoff, as above, and the tutorial runs without them.

**Hold short, where Airside works Tower.** Tell an aircraft to hold short of a runway and that crossing is yours to give, even where Airside works Tower: Airside's Tower does not let it across, and the aircraft asks you. Say “cross runway two four right” when you want it across. An aircraft you told nothing is let across by Airside's Tower as before.

**Ready for departure, before the line.** A departure calls Tower about 200 m before its holding point. From that call you can already line it up or clear it for takeoff: it goes through the hold without stopping. Cancel the takeoff before it reaches the line and it stops at the hold. You can also give either one earlier, anywhere on its taxi out, once no runway is left to cross on its way: the crew keeps it. With a runway still to cross, the crossing comes first.

**Ready calls.** In Settings, Crews. Switched off, a departure does not call on its way to the holding point or once it has lined up; it still reports holding short when it stops at the holding point.

## 14 TIPS

- Key the microphone, wait a moment, then speak. Let go after your last word.
- Say digits one at a time: “two four left”, not “twenty four left”.
- Speak at your normal pace. You do not need to be slow, only clear.
- Watch the readback. It is your check that you were understood.
- If an airline's name keeps getting lost, spell the three letters on the strip.
- If an aircraft has been waiting three minutes, the deck puts back the one button that answers it, so a misunderstood word never leaves an aircraft stuck.

## 15 GOOD TO KNOW

- Airside works the whole field on one frequency. There are no handovers; aircraft stay with you until they leave.
- Arrivals reach you established on final. Approach control is not part of the desk.
- The departure procedure, the squawk and the QNH come from Airside. The level and the route are yours.
- Each departure is routed to one holding point: where its runway begins, or the one you name in a taxi clearance. An intersection you name to line up or take off is checked against it, and the crew asks for its own when they differ.
- Two instructions can be combined as described in section 6. Conditional clearances are for line up and runway crossings.
- A few desk actions are not radio calls: removing an aircraft, and sending or hurrying the ground crews. Their buttons stay on the deck in Voice.
- Under the radio log, AVG DELAY is the average delay of the landings and departures finished this shift: for each, the time its crew waited for you beyond the first two minutes of each wait, and any wait for a ground vehicle. WAITING NOW is how many crews are waiting for you at this moment, with the longest wait in minutes. Hover over it for the minutes crews have waited for you this shift.
- **Weather.** When the visibility drops below 550 metres the airport works under low visibility procedures until it is back to 800: arrivals at least 8 miles apart, aircraft taxi no faster than 12 knots, and the ATIS says so. In rain the ATIS reads the runway wet; in snow it reads snow on it, and aircraft taxi no faster than 10 knots.

- **Text size.** Settings, Display, Text size draws the whole desk larger: 115, 130 or 150 percent.
- **Strips in your order.** Drag a strip to where you want it in its list. It stays there while the aircraft is on that list, and the others keep the list's own order.
- Where an airport has a paved runway, the ones the simulator lists as grass, dirt, sand or water are left out: they are not drawn, offered or used. An airport with no paved runway keeps the ones it has.
- While another add-on holds the simulator's camera, Airside's camera views cannot run: the desk says so when you ask for one. Switch that add-on's camera off to use them.
- A conditional crossing waits until the landing traffic has passed the crossing or left the runway. If that traffic turns off onto the taxiway where your aircraft is waiting, both will wait. Give the crossing again once the runway is clear, or give it without a condition.

# 16 QUICK REFERENCE, A TO Z

| YOU SAY | WHAT IT DOES |
|---|---|
| affirm, affirmative | acknowledged, no answer |
| after the departing (traffic), line up … | conditional line up |
| backtrack and line up | line up where the runway has to be taxied along first |
| behind the landing (traffic), line up and wait behind | conditional line up |
| behind the landing (traffic), cross runway … behind | conditional crossing |
| cancel takeoff | stops a takeoff before the roll |
| cleared for immediate takeoff | takeoff without stopping on the runway |
| cleared for takeoff | takeoff clearance |
| cleared to (destination) | IFR clearance |
| cleared to cross runway … | runway crossing |
| cleared to land | landing clearance |
| contact / monitor (station) (frequency) | read back, the aircraft stays with you; with spoken handoffs on, the handoff where one is due |
| continue approach | lets an arrival continue without landing clearance yet |
| continue taxi | moves a stopped aircraft again |
| (instruction), correction, (the right version) | the corrected version counts |
| cross runway … | runway crossing |
| exit at (taxiway) | same as vacate via |
| expect runway … | read back, checked against the flight's runway |
| expedite taxi, taxi faster | quicker taxi |
| follow (callsign) | let the other aircraft go first, then taxi behind it |
| gate … | same as stand |

| YOU SAY | WHAT IT DOES |
| --- | --- |
| give way to (callsign) | stop for the other aircraft, then carry on |
| go ahead | the crew says its request again |
| (callsign) alone | the crew answers “go ahead” |
| go around | missed approach |
| hold position | stop where you are |
| hold short of runway … | stop at the runway holding point, or take a crossing back |
| hold short of (taxiway) | stop before that taxiway until continue taxi |
| taxi via …, hold short of … | to an arrival with no stand: drive those taxiways and wait short of the last one for a stand |
| turn left / right on (taxiway) | onto that taxiway, to that side, on the ground |
| line up and wait | line up on the runway and wait |
| position and hold, taxi into position and hold | line up and wait |
| push onto (taxiway), pushback approved onto (taxiway) | pushback that ends on that taxiway |
| pushback approved | pushback |
| pushback approved, facing (direction), tail (direction) | pushback that ends facing that way |
| QNH … | read back |
| readback correct | acknowledged, no answer |
| reduce to minimum approach speed, final approach speed | an arrival flies the rest of its approach at its slowest speed |
| reduce taxi speed, slow down, slow taxi, taxi slower | slower taxi |
| report … | wilco |
| roger | acknowledged, no answer |
| say again | the crew repeats its last call |
| stand … | stand for an arrival |

| YOU SAY | WHAT IT DOES |
| --- | --- |
| stand by | wait: the crew answers “standing by” |
| start up approved | acknowledged |
| stop immediately | rejected takeoff |
| taxi to holding point (taxiway) runway … | taxi to a named holding point |
| taxi to holding point runway … via … | taxi clearance |
| taxi to stand … | stand and taxi in for an arrival |
| tug back | back up out of a jam |
| turn around and taxi … | turn round, then taxi as said |
| turn one eighty, turn around | turn round, where the taxiway is wide enough |
| vacate via (taxiway) | the exit an arrival leaves the runway by |
| vacate runway (runway) via (taxiway),<br>vacate the runway on (taxiway) | same as vacate via |
| via intersection (taxiway), line up … | line up from a named intersection |
| wind, traffic, caution, information | roger |