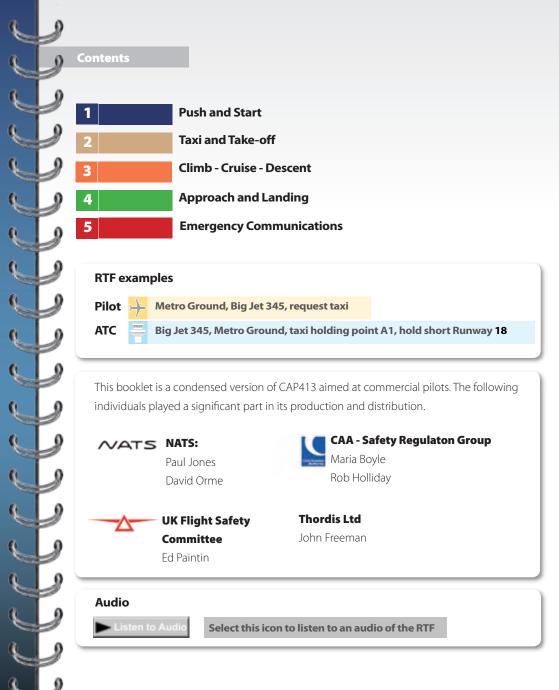


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A Quick Reference Guide to UK Phraseology For Commercial Air Transport Pilots

A Supplement to CAP413 Radiotelephony Manual

Introduction

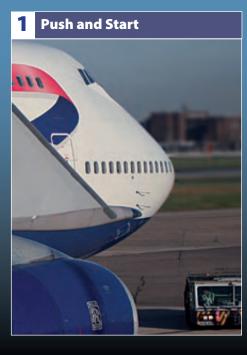
Communication error is a significant contributory factor in both level busts and runway incursions in the UK. This document aims to provide Commercial Air Transport (CAT) pilots and other pilots flying IFR within controlled airspace with a quick reference guide to the most commonly used radiotelephony (RTF) phrases encountered during a routine CAT flight in the UK. It also explains some of the rationale behind the use of certain words and phrases to aid understanding and reinforce the need for compliance with standard phraseology. **The goal is to improve safety by raising RTF standards.**

The need for clear and unambiguous communication between pilots and Air Traffic Control (ATC) is vital in assisting the safe and expeditious operation of aircraft. It is important, therefore, that due regard is given to the use of standard words and phrases and that all involved ensure that they maintain the highest professional standards when using RTF.

This is especially important when operating within busy sectors with congested frequencies where any time wasted with verbosity and non-standard, ambiguous phrases could lead to flight safety incidents.

Phraseology has evolved over time and has been carefully developed to provide maximum clarity and brevity in communications while ensuring that phrases are unambiguous. However, while standard phraseology is available to cover most routine situations, not every conceivable scenario will be catered for and RTF users should be prepared to use plain language when necessary following the principle of keeping phrases clear and concise.





Push and Start

A Conditional Push Back Clearance

Conditional clearances expedite traffic flow, but there are risks. Read-back must be in full and in the same sequence as given. A conditional push back clearance, shown below, allows push back after another action has first taken place ie. the condition of the clearance. Where there may be ambiguity as to the subject of the condition, additional details such as livery and/or colour are given to aid identification.

Conditional Push Back Clearance

- Metro Delivery, Big Jet 345, Stand Bravo 1, Boeing 737 with information Q, ONH1006, request clearance
- Big Jet 345, Metro Delivery, Cleared to Smallville, T1A departure, **Squawk 3456, slot time 1905**
- Cleared to Smallville, T1A, Squawk 3456, Big Jet 345
- Big Jet 345, request start
- Big Jet 345, start approved, contact Metro Ground 118.750 for push
- Start approved, contact Metro Ground 118.750 for push, Big Jet 345
- Metro Ground, Big Jet 345 Stand B1, request push
- Big Jet 345, Metro Ground, after the red and white Airbus 321 passing behind, push approved
- After the red and white Airbus 321 passing behind, push approved, Big Jet 345

Top tips for avoiding communication error

Communication error is a significant contributory factor in both level busts and runway incursions in the United Kingdom.

The following tips for pilots will help improve RTF standards in UK airspace:

- Use standard phraseology at all times.
- Maintain RTF discipline use clear and unambiguous phraseology at all times.

Avoid unnecessary RTF.

- Both pilots should monitor the frequency whenever possible.
- **Do not** read back a clearance as a question and avoid merely asking confirmatory questions on the flight-deck (eg. "He did say flight level 110 didn't he?"). Much better to use 'say again.'
- Ensure you pass all information relevant to your phase of flight. For example: on initial call only on departure, pass callsign, SID, passing level, cleared level or first step altitude.
- On frequency changes, wait and listen before transmitting.
- Take particular care when issued with a conditional clearance. When reading back a conditional clearance, make sure you state the condition first.
- **Check** RTF if there is a prolonged break in activity on the frequency.
- Set the clearance given, **not** the clearance expected.
- Note down ATC instructions when possible.
- If you are unsure, always check.



Push and

Start

Taxi and Take-off



Taxi and Take-off

▶ Taxiing - A Safety Critical Activity

The use of standard phraseology is crucial to the safety of the flight during taxiing. Any mistake that causes the aircraft to enter a runway in error could be catastrophic.

▶ Taxi Clearance Limit

All taxi clearances will contain a clearance limit, which is the point at which the aircraft must stop unless further permission to proceed is given.

▶ Noting Down Taxi Clearances

Complex or lengthy taxi clearances should be noted down by crews.

Taxi Instructions To Hold Short Of Departure Runway

- Metro Ground, Big Jet 345, request taxi
- Big Jet 345, Metro Ground, taxi holding point C, Runway 27
- Taxi holding point C, Runway 27, Big Jet 345
- Big Jet 345, contact Metro Tower 119.2
- Contact Metro Tower 119.2, Big Jet 345

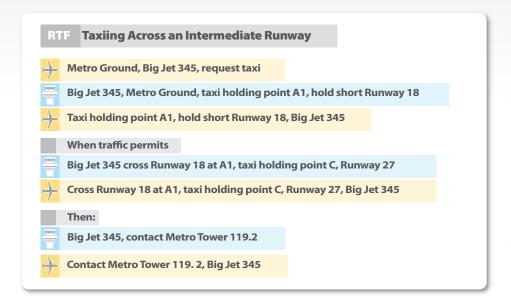


▶ Crossing an Intermediate Runway

If a taxi route involves crossing a runway, whether active or not, specific clearance to cross that runway is required.

Departure Delay Information

Departure sequence information such as 'number 5 to depart' or 'expect departure in ...' is NOT a take-off clearance.







▶ Conditional Taxi Clearance

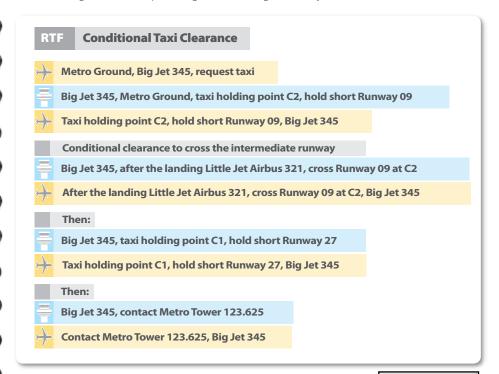
A conditional taxi clearance allows the aircraft to taxi only **after** another action has taken place. The structure and order of conditional clearances is essential to their safe execution. Conditional clearances always consist of:

1 Call sign 2 Condition 3 Identity of the subject of the condition 4 Instruction The condition will relate to one movement only and, in the case of landing traffic, will always be the next aircraft to land.

■ Correct read-back of a conditional clearance is vital. The condition must be the first item read back so that the controller is aware that the pilot has heard the condition on which the clearance is based.

► After (UK Only)

The UK uses 'After' in conditional clearances because 'Behind' (ICAO) has been misinterpreted as an instruction to 'get close to' the preceding aircraft, leading to serious jet blast incidents.



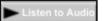
Descent

▶ Take-off

'Take-off' shall only be used when issuing a clearance to take-off.

■ If the controller uses 'after departure' or 'follow', this is NOT a clearance to take-off. In the airport environment, the word 'cleared' shall only be used in connection with a clearance to take-off or land. For any other RTF exchanges, words such as 'cross' and 'approved' will be used. To aid clarity, a take-off clearance will always be issued separately. Revised departure instructions shall be prefixed with an instruction to 'hold position' and 'after departure' shall be used when issuing airways or route clearances.

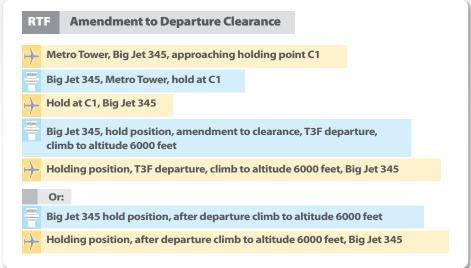
Metro Tower, Big Jet 345, approaching holding point C1 Big Jet 345, Metro Tower, line up Runway 27 Line up Runway 27, Big Jet 345 Big Jet 345, cleared for take-off Runway 27 Cleared for take-off Runway 27, Big Jet 345 Once airborne: Big Jet 345, contact Metro Radar 124.6 Contact Metro Radar on 124.6, Big Jet 345





▶ Amendment to Departure Clearance

Amendments to departure clearances are known to contribute to runway incursion incidents. The phraseology for amendments to departure clearances where the aircraft is approaching the runway will begin with 'hold position'.

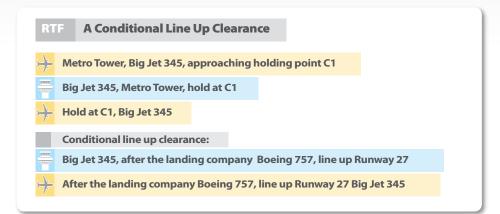




▶ Conditional Line-Up Clearance

Important points involving the active runway:

- The condition is always given first.
- Conditional clearances must be read back in full and in exactly the same sequence as given.
- The aircraft that is the subject of the condition **must** be visible to the flight crew and the controller.
- In the case of landing traffic, the subject of the condition will be the next aircraft to land.
- The condition must relate to only one movement.
- Always clarify if unsure.







▶ Cancelling Take-off Clearance

If take-off clearance has to be cancelled before the take-off run has commenced, the flight crew shall be instructed to hold position and to acknowledge the instruction.

• If it is necessary to cancel take-off clearance after the aircraft has commenced the take-off run, the flight crew shall be instructed to stop immediately **and** to acknowledge the instruction.











▶ Read-back

Correct read-back is vital as it enables mutual understanding between the pilot and the controller of the intended plan for that aircraft.

- Following correct read-back the flight crew must ensure that they carry out the correct action. Statistics show that the most common cause of a level bust in the UK is correct read-back followed by **incorrect** action.
- Strategies to prevent the above error include noting down the clearance prior to read-back and ensuring that both flight crew members listen to all clearances, including taxi clearance. If in doubt check!

Messages Containing The Following Must Be Read Back

- Taxi instructions
- Level instructions
- Heading instructions
- Speed instructions
- Airways/route clearances
- Approach clearances
- Runway in use

- Any runway clearance
- SSR operating instructions
- Altimeter settings
- VDF information
- Frequency changes
- Type of radar service
- Transition levels

Checking the accuracy of a read-back is far easier if the information is read back in the same order as given. The missing elements of incomplete read-backs are more difficult to detect and correct than an error in a read-back.

■ When a read-back is required ensure it is complete and in the order given.







Climb - Cruise - Descent

Initial Calls

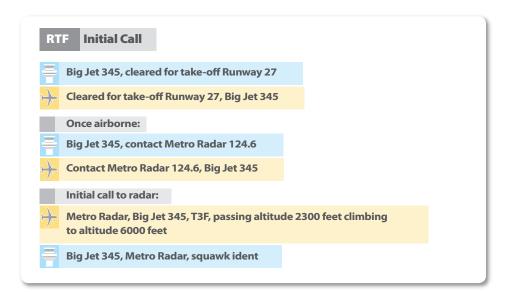
Studies show that an initial call which does not contain all the required information can lead to a loss of separation. On first contact after departure include:

- Callsign
- SID
- Current or passing level (to allow Mode C to be verified) plus cleared level.

The information in the initial call is essential for the safety of the aircraft by ensuring mutual understanding between the crew and the controller of the intended plan for the aircraft. Omissions will require an additional call for clarification which may lead to frequency congestion.

On first contact with subsequent frequencies include callsign and:

- **■** Current level
- Cleared level (or if not in level flight, cleared level only)
- If assigned by ATC, speed or a heading.





▶ Degrees

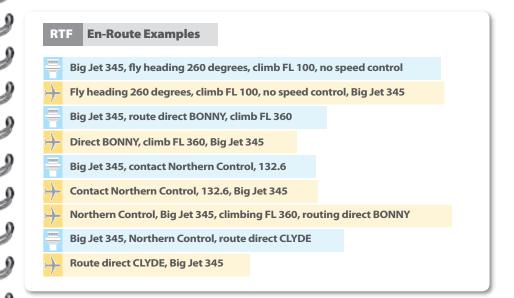
'Degrees' shall be appended to any heading ending in zero to prevent headings being confused with flight levels.

▶ Flight Levels

In the UK, flight levels of whole hundreds are transmitted as **flight level one hundred/two hundred** etc as mitigation against level busts. The ICAO phrase flight level one zero zero is not used.

■ Flight levels below FL100 are referred to as two digit numbers e.g. *Climb flight level eight zero* to reduce the risk of confusion with a heading instruction e.g. *heading zero eight zero*.

► En-Route RTF



Reduced Vertical Separation Minima

- Flight crew indicate RVSM status with 'Negative RVSM' or 'Affirm RVSM'.
- Flight crew refusing RVSM should state the reason, for example 'Unable RVSM due turbulence' or 'Unable RVSM due equipment'.
- Flight crew now able to accept RVSM with 'Ready to resume RVSM'.
- ATC should be informed when a non-RVSM approved aircraft is requesting climb into RVSM airspace thus '... Request FL320, Negative RVSM'.

If able, ATC will give the clearance as follows... 'Big Jet 345 climb FL 320, Negative RVSM'. Notice that the term 'Negative RVSM' is used in the clearance and the read back, thus 'Climb FL 320, Negative RVSM Big Jet 345...' Otherwise ATC will state that they are unable to issue the clearance into RVSM airspace.

Descending in the Hold

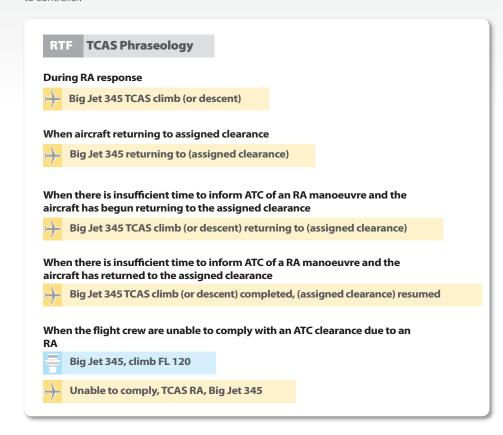
Pilots should exercise caution when reporting leaving a level, particularly when established in a holding pattern. Controllers may descend the aircraft above you when you report vacating a level. You should advise ATC that you have left a level only when the aircraft's altimeter indicates that the aircraft has actually departed that level and is maintaining a positive rate of climb or descent in accordance with published procedures.





RTF for TCAS

When a TCAS RA requires deviation from an ATC clearance, pilots should report the direction of the RA to the controller as soon as practicable. Responsibility for separation of aircraft directly affected by the manoeuvre is transferred from controller to pilot and, at the completion of the manoeuvre, from pilot back to controller



'Pass Your Message' (UK Only)

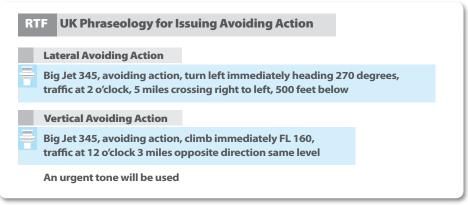
In the UK, the term 'Go Ahead' is replaced by 'Pass Your Message'.



Conditional Clearances in a TMA

Conditional clearances can be issued in the TMA e.g. 'After passing altitude 4000 feet, fly heading...' These must treated with great care and read back in exactly the same format in which they are given. If in doubt - check!

▶UK Phraseology for Issuing Avoiding Action





RTF for VHF frequencies – Use of Six Digits

Use six digits except where the final two digits of the frequency are both zero, in which case, only the first four digits need to be transmitted.

▶ Millibars

'Millibars' is appended to pressure values of less than 1000 millibars to help ensure that pilots who routinely use inches do not confuse a millibar setting with a setting in inches e.g. 992 'millibars' could be confused with 29.92 inches (which equates to 1013 millibars). 'Millibars' may be omitted for values greater than 999 'millibars'.

▶ Simultaneous or Continuous Transmissions

Direct controller – pilot communication can be adversely affected by simultaneous or continuous transmissions. There are times when the controller is not aware of a blocked transmission, but a pilot is. On hearing a simultaneous transmission it can be helpful for the pilot to transmit the word **blocked** to ensure that the controller is aware.



Transmission blocked, Big Jet 345

▶**To** (UK Only)

In the UK, the word 'to' shall not be used when issuing climb and descent instructions to flight levels as it can be confused with the number 'two'. This confusion has resulted in level busts.

- Climbs or descents to a flight level will be phrased as 'Climb FL 120', for example whereas:
- 'To' shall be used in climb and descent instructions relating to a height or an altitude and shall be followed by the word 'height' or 'altitude'.

Wake Vortex Separation

Do not ask for reduced vortex wake separation; controllers do not have discretion to grant this.

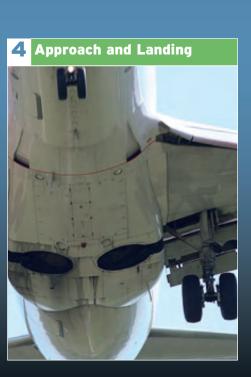




Approach and Landing

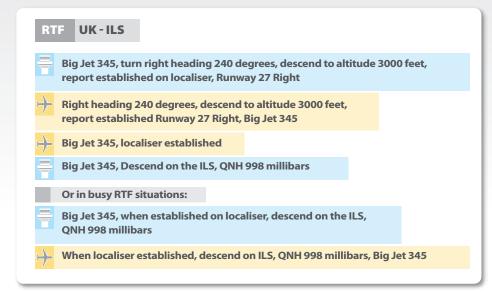
ILS Phraseology (UK only)

Due to procedure design, airspace complexity and traffic density, along with lessons learned from flight safety related incidents and occurrences, the ICAO phrase 'Cleared ILS approach' is not routinely used in the UK. Instead, the UK has enhanced safety by adopting unambiguous phraseology that includes a positive descent instruction to ensure that descent is initiated only when it is safe to do so. 'Cleared ILS approach' may introduce an element of uncertainty as to when descent will be initiated because the pilot may descend to the final approach point altitude (platform height) at any time after receiving this clearance. To ensure that descent will only commence when the aircraft is clear of other traffic patterns, such as helicopter routes and adjacent aerodromes' procedures, radar controllers will normally use the UK phrase: 'Report established on the localiser.' Once established, you will then be given clearance to 'Descend on the ILS.' In busy RTF environments, the phraseology may be combined to: 'When established on the localiser, descend on the ILS.'





UK (ILS)





Continue Approach

'Continue Approach' is **NOT** a clearance to land. If the runway is obstructed when the aircraft reports 'final', but it is expected to be available in good time for the aircraft to make a safe landing, the controller will delay landing clearance by issuing an instruction to 'continue approach'. The controller may explain why the landing clearance has been delayed.





▶ 'Land After' Clearance

A landing aircraft may be permitted to touch down before a preceding landing aircraft, which has landed, has vacated the runway provided that:

- The runway is long enough to allow safe separation between the two aircraft and there is no evidence to indicate that braking may be adversely affected;
- It is during daylight hours;
- The preceding landing aircraft is not required to backtrack in order to vacate the
- The controller is satisfied that the flight crew of the landing aircraft will be able to see the preceding aircraft which has landed, clearly and continuously, until it has vacated the runway; and
- The flight crew of the following aircraft is warned.

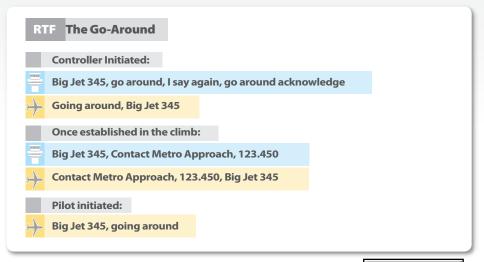
Responsibility for separation rests with the following aircraft.



▶The Go-Around

Instructions to carry out a missed approach may be given to avert an unsafe situation. When a missed approach is initiated cockpit workload is inevitably high.

- Any transmissions to aircraft going around shall be brief and kept to a minimum.
- In the event of a missed approach being initiated by the pilot, the phrase 'going around' should be used.







Emergency Communications

▶ RTF Emergency Communications

As soon as there is any doubt as to the safe conduct of a flight, immediately request assistance from ATC. Flight crews should declare the emergency situation early; it can always be cancelled.

- A distress call (situation where the aircraft requires immediate assistance) is prefixed: MAYDAY, MAYDAY, MAYDAY.
- An urgency message (situation not requiring immediate assistance) is prefixed: PAN-PAN, PAN-PAN, PAN-PAN.
- Make the initial call on the frequency in use, but if that is not possible squawk 7700 and contact 121.5.
- The distress/urgency message shall contain the nature of the emergency, fuel endurance and persons on board.

RTF Emergency Communications MAYDAY, MAYDAY, MAYDAY, Big Jet 345, Boeing 737, uncontrolled engine fire, request immediate landing at Metro, 150 persons on board, endurance three hours Big Jet 345, Roger MAYDAY, turn left heading 090 degrees, radar vectors ILS Runway 27 Left heading 090 degrees, request Runway 09, Big Jet 345 Big Jet 345, roger, continue left turn heading 055, descend to altitude 3000 feet, QNH 1002, report established on localiser Runway 09 Heading 055, descend to altitude 3000 feet, QNH 1002, report established Runway 09, Big Jet 345

RTF for Aircraft Inbound to the UK with Fuel Reserves



▶ Approaching Minimum

No delay expected means holding will be less than 20 minutes before commencing an approach.

■ Fuel Emergency or fuel priority are not recognised terms. Flight crews short of fuel must declare a **PAN or MAYDAY** to be sure of being given the appropriate priority.

Radio Failure

- The number of reported radio failure incidents in UK airspace is increasing. With the heightened awareness in airborne security, ATC's inability to contact an aircraft experiencing a radio failure could lead to that aircraft's interception by military aircraft. To ensure the safety of aircraft experiencing radio failure within the London and Scottish FIRs, pilots and operators can use the following satellite telephone numbers to contact ATC:
- Shanwick Radio **425002** To be used for aircraft communications failure.
- London D & D **423202**
- Scottish D & D **423203**

The following telephone numbers connect directly to the appropriate UK Distress and Diversion Cells (D&D) who then alert the appropriate ATC unit and UK Air Defence Authority confirming your radio failure:

- London D&D Tel: **01895-426150**
- Scottish D&D Tel: 01292-692380



Descent