

AIR TRAFFIC MANAGEMENT (DOC 4444)

12 PHRASEOLOGIES

12.2 GENERAL

12.2.1 Most phraseologies contained in Section 12.3 of this Chapter show the text of a complete message without call signs. They are not intended to be exhaustive, and when circumstances differ, pilots, ATS personnel and other ground personnel will be expected to use plain language which should be as clear and concise as possible, to the level specified in the ICAO language proficiency requirements contained in Annex 1—*Personnel Licensing* (not published herein), in order to avoid possible confusion by those persons using a language other than one of their national languages.

12.2.2 The phraseologies are grouped according to types of air traffic service for convenience of reference. However, users shall be familiar with, and use as necessary, phraseologies from groups other than those referring specifically to the type of air traffic service being provided. All phraseologies shall be used in conjunction with call signs (aircraft, ground vehicle, ATC or other) as appropriate. In order that the phraseologies listed should be readily discernible in Section 12.3, call signs have been omitted. Provisions for the compilation of RTF messages, call signs and procedures are contained in Annex 10, Volume II, Chapter 5.

12.2.3 Section 12.3 includes phrases for use by pilots, ATS personnel and other ground personnel.

12.2.4 During operations in or vertical transit through reduced vertical separation minimum (RVSM) airspace with aircraft not approved for RVSM operations, pilots shall report non-approved status in accordance with 12.3.1.12 c) as follows:

- a. at initial call on any channel within RVSM airspace;
- b. in all requests for level changes; and
- c. in all read-backs of level clearances.

12.2.5 Air traffic controllers shall explicitly acknowledge receipt of messages from aircraft reporting RVSM non-approved status.

12.2.6 Phraseologies for the movement of vehicles, other than tow-tractors, on the manoeuvring area shall be the same as those used for the move-

ment of aircraft, with the exception of taxi instructions, in which case the word "PROCEED" shall be substituted for the word "TAXI" when communicating with vehicles.

12.2.7 Conditional phrases, such as "behind landing aircraft" or "after departing aircraft", shall not be used for movements affecting the active runway(s), except when the aircraft or vehicles concerned are seen by the appropriate controller and pilot. The aircraft or vehicle causing the condition in the clearance issued shall be the first aircraft/vehicle to pass in front of the other aircraft concerned. In all cases a conditional clearance shall be given in the following order and consist of:

- a. identification;
- b. the condition;
- c. the clearance; and
- d. brief reiteration of the condition,

For Example: "SAS 941, BEHIND DC9 ON SHORT FINAL, LINE UP BEHIND".

NOTE: This implies the need for the aircraft receiving the conditional clearance to identify the aircraft or vehicle causing the conditional clearance.

12.2.8 The phraseology in Section 12.3 does not include phrases and regular radiotelephony procedure words contained in Annex 10, Volume II.

12.2.9 Words in parentheses indicate that specific information, such as a level, a place or a time, etc., must be inserted to complete the phrase, or alternatively that optional phrases may be used. Words in square parentheses indicate optional additional words or information that may be necessary in specific instances.

12.2.10 Examples of the application of the phraseologies may be found in the *Manual of Radiotelephony* (Doc 9432).

12.3 ATC PHRASEOLOGIES

12.3.1 General

CIRCUMSTANCES	PHRASEOLOGIES (Pilot Transmission in Bold Type)
12.3.1.1 <i>Description of Levels [subsequently referred to as "(level)"]</i>	a. FLIGHT LEVEL (number); or b. (number) METRES; or c. (number) FEET.
12.3.1.2 <i>Level Changes, Reports and Rates</i>	

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... instruction that a climb (or descent) to a level within the vertical range defined is to commence	a. CLIMB (or DESCEND); followed as necessary by: <ul style="list-style-type: none"> 1. TO (level); 2. TO AND MAINTAIN BLOCK (level) TO (level); 3. TO REACH (level) AT (or BY) (time or significant point); 4. REPORT LEAVING (or REACHING, or PASSING) (level); 5. AT (number) METRES PER SECOND (or FEET PER MINUTE) [OR GREATER (or OR LESS)]; 6. REPORT STARTING ACCELERATION (or DECELERATION).
... for SST aircraft only	b. MAINTAIN AT LEAST (number) METRES (or FEET) ABOVE (or BELOW) (aircraft call sign); c. REQUEST LEVEL (or FLIGHT LEVEL or ALTITUDE) CHANGE FROM (name of unit) AT (time or significant point); d. STOP CLIMB (or DESCENT) AT (level); e. CONTINUE CLIMB (or DESCENT) TO (level); f. EXPEDITE CLIMB (or DESCENT) [UNTIL PASSING (level)]; g. WHEN READY CLIMB (or DESCEND) TO (level); h. EXPECT CLIMB (or DESCENT) AT (time or significant point); i. REQUEST DESCENT AT (time); j. IMMEDIATELY; k. AFTER PASSING (significant point); l. AT (time or significant point); m. WHEN READY (instruction); n. MAINTAIN OWN SEPARATION AND VMC [FROM (level)] [TO (level)]; o. MAINTAIN OWN SEPARATION AND VMC ABOVE (or BELOW, or TO) (level); p. IF UNABLE (alternative instructions) AND ADVISE; q. UNABLE; r. TCAS RA s. ROGER;
... to require action at a specific time or place	t. CLEAR OF CONFLICT, RETURNING TO (assigned clearance); u. ROGER (or alternative instructions);
... to require action when convenient	
... to require an aircraft to climb or descend maintaining own separation and VMC	
... when there is doubt that an aircraft can comply with a clearance or instruction	
... when a pilot is unable to comply with a clearance or instruction	
... after a flight crew starts to deviate from any ATC clearance or instruction to comply with an ACAS resolution advisory (pilot and controller interchange)	
... after the response to an ACAS RA is completed and a return to the ATC clearance or instruction is initiated (pilot and controller interchange)	

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<p>... after the response to an ACAS RA is completed and the assigned ATC clearance or instruction has been resumed (Pilot and controller interchange)</p> <p>... after an ATC clearance or instruction contradictory to the ACAS RA is received, the flight crew will follow the RA and inform ATC directly (Pilot and controller interchange)</p> <p>... clearance to cancel level restriction(s) of the vertical profile of a SID during climb</p> <p>... clearance to cancel level restriction(s) of the vertical profile of a STAR during descent</p>	<p>v. CLEAR OF CONFLICT(<i>assigned clearance</i>), RESUMED;</p> <p>w. ROGER (<i>or alternative instructions</i>);</p> <p>x. UNABLE, TCAS RA;</p> <p>y. ROGER;</p> <p>z. CLIMB TO (<i>level</i>) [LEVEL RESTRICTION(S) (<i>SID designator</i>) CANCELLED (<i>or</i>) LEVEL RESTRICTION(S) (<i>SID designator</i>) AT (<i>point</i>) CANCELLED];</p> <p>aa. DESCEND TO (<i>level</i>) [LEVEL RESTRICTION(S) (<i>STAR designator</i>) CANCELLED (<i>or</i>) LEVEL RESTRICTION(S) (<i>STAR designator</i>) AT (<i>point</i>) CANCELLED].</p>
<p>12.3.1.3 Transfer of Control and/or Frequency Change</p> <p><i>NOTE: An aircraft may be requested to "STAND BY" on a frequency when it is intended that the ATS unit will initiate communications soon and to "MONITOR" a frequency when information is being broadcast thereon.</i></p>	<p>a. CONTACT (<i>unit call sign</i>) (<i>frequency</i>) [NOW];</p> <p>b. AT (<i>or OVER</i>) (<i>time or place</i>) [<i>or WHEN</i>] [PASSING/LEAVING/REACHING (<i>level</i>)] CONTACT (<i>unit call sign</i>) (<i>frequency</i>);</p> <p>c. IF NO CONTACT (<i>instructions</i>);</p> <p>d. STAND-BY FOR (<i>unit call sign</i>) (<i>frequency</i>);</p> <p>e. REQUEST CHANGE TO (<i>frequency</i>);</p> <p>f. FREQUENCY CHANGE APPROVED;</p> <p>g. MONITOR (<i>unit call sign</i>) (<i>frequency</i>);</p> <p>h. MONITORING (<i>frequency</i>);</p> <p>i. WHEN READY CONTACT (<i>unit call sign</i>) (<i>frequency</i>);</p> <p>j. REMAIN THIS FREQUENCY.</p>
<p>12.3.1.4 8.33 kHz Channel Spacing</p> <p><i>NOTE: In this paragraph, the term "point" is used only in the context of naming the 8.33 kHz channel spacing concept and does not constitute any change to existing ICAO provisions or phraseology regarding the use of the term "decimal."</i></p> <p>... to request confirmation of 8.33 kHz capability</p> <p>... to indicate 8.33 kHz capability</p> <p>... to indicate lack of 8.33 kHz capability</p> <p>... to request UHF capability</p> <p>... to indicate UHF capability</p> <p>... to indicate lack of UHF capability</p> <p>... to request status in respect of 8.33 kHz exemption</p> <p>... to indicate 8.33 kHz exempted status</p> <p>... to indicate 8.33 kHz non-exempted status</p>	<p>a. CONFIRM EIGHT POINT THREE THREE;</p> <p>b. AFFIRM EIGHT POINT THREE THREE;</p> <p>c. NEGATIVE EIGHT POINT THREE THREE;</p> <p>d. CONFIRM UHF;</p> <p>e. AFFIRM UHF;</p> <p>f. NEGATIVE UHF;</p> <p>g. CONFIRM EIGHT POINT THREE THREE EXEMPTED;</p> <p>h. AFFIRM EIGHT POINT THREE THREE EXEMPTED;</p> <p>i. NEGATIVE EIGHT POINT THREE THREE EXEMPTED.</p>

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<p>... to indicate that a certain clearance is given because otherwise a non-equipped and/or non-exempted aircraft would enter airspace of mandatory carriage</p>	<p>j. DUE EIGHT POINT THREE THREE REQUIREMENT.</p>
<p>12.3.1.5 Change of Call Sign</p> <p>... to instruct an aircraft to change its type of call sign</p> <p>... to advise an aircraft to revert to the call sign indicated in the flight plan</p>	<p>a. CHANGE YOUR CALL SIGN TO (<i>new call sign</i>) [UNTIL FURTHER ADVISED];</p> <p>b. REVERT TO FLIGHT PLAN CALL SIGN (<i>call sign</i>) [AT (<i>significant point</i>)].</p>
<p>12.3.1.6 Traffic Information</p> <p>... to pass traffic information</p> <p>... to acknowledge traffic information</p>	<p>a. TRAFFIC (<i>information</i>);</p> <p>b. NO REPORTED TRAFFIC;</p> <p>c. LOOKING OUT;</p> <p>d. TRAFFIC IN SIGHT;</p> <p>e. NEGATIVE CONTACT [<i>reasons</i>];</p> <p>f. [ADDITIONAL] TRAFFIC (<i>direction</i>) BOUND (<i>type of aircraft</i>) (<i>level</i>) ESTIMATED (<i>or OVER</i>) (<i>significant point</i>) AT (<i>time</i>);</p> <p>g. TRAFFIC IS (<i>classification</i>) UNMANNED FREE BALLOON(S) WAS [<i>or ESTIMATED</i>] OVER (<i>place</i>) AT (<i>time</i>) REPORTED (<i>level(s)</i>) [<i>or LEVEL UNKNOWN</i>] MOVING (<i>direction</i>) (<i>other pertinent information, if any</i>).</p>
<p>12.3.1.7 Meteorological Conditions</p>	<p>a. [SURFACE] WIND (<i>number</i>) DEGREES (<i>speed</i>) (<i>units</i>);</p> <p>b. WIND AT (<i>level</i>) (<i>number</i>) DEGREES (<i>number</i>) KILOMETRES PER HOUR (<i>or KNOTS</i>);</p> <p><i>NOTE: Wind is always expressed by giving the mean direction and speed and any significant variations thereof.</i></p> <p>c. VISIBILITY (<i>distance</i>) (<i>units</i>) [<i>direction</i>];</p> <p>d. RUNWAY VISUAL RANGE (<i>or RVR</i>) [RUNWAY (<i>number</i>)] (<i>distance</i>) (<i>units</i>);</p> <p>e. RUNWAY VISUAL RANGE (<i>or RVR</i>) [RUNWAY (<i>number</i>)] NOT AVAILABLE (<i>or NOT REPORTED</i>);</p> <p>f. RUNWAY VISUAL RANGE (<i>or RVR</i>) [RUNWAY (<i>number</i>)] (<i>first position</i>) (<i>distance</i>) (<i>units</i>), (<i>second position</i>) (<i>distance</i>) (<i>units</i>), (<i>third position</i>) (<i>distance</i>) (<i>units</i>);</p> <p><i>NOTE 1: Multiple RVR observations are always representative of the touchdown zone, midpoint zone and the roll-out / stop end zone respectively.</i></p> <p><i>NOTE 2: Where reports for three locations are given, the indication of these locations may be omitted, provided that the reports are passed in the order of touchdown zone, followed by the midpoint zone and ending with the roll-out/stop end zone report.</i></p>

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<p>... in the event that RVR information on any one position is not available this information will be included in the appropriate sequence</p>	<p>g. RUNWAY VISUAL RANGE (or RVR) [RUNWAY (number)] (first position) (distance) (units), (second position) NOT AVAILABLE, (third position) (distance) (units);</p> <p>h. PRESENT WEATHER (details);</p> <p>i. CLOUD (amount, [(type)] and height of base) (units) (or SKY CLEAR); NOTE: Details of the means to describe the amount and type of cloud are in Chapter 11, 11.4.3.2.3.</p> <p>j. CAVOK; NOTE: CAVOK pronounced CAV-O-KAY.</p> <p>k. TEMPERATURE [MINUS] (number) (and/or DEW-POINT [MINUS] (number));</p> <p>l. QNH (number) [(units)];</p> <p>m. QFE (number) [(units)];</p> <p>n. (aircraft type) REPORTED (description) ICING (or TURBULENCE) [IN CLOUD] (area) (time);</p> <p>o. REPORT FLIGHT CONDITIONS.</p>
<p>12.3.1.8 Position Reporting</p> <p>... to omit position reports until a specified position</p>	<p>a. NEXT REPORT AT (significant point);</p> <p>b. OMIT POSITION REPORTS [UNTIL (specify)];</p> <p>c. RESUME POSITION REPORTING.</p>
<p>12.3.1.9 Additional Reports</p> <p>... to request a report at a specified place or distance</p> <p>... to report at a specified place or distance</p> <p>... to request a report of present position</p>	<p>a. REPORT PASSING (significant point);</p> <p>b. REPORT (distance) MILES (GNSS or DME) FROM (name of DME station) (or significant point);</p> <p>c. (distance) MILES (GNSS or DME) FROM (name of DME station) (or significant point);</p> <p>d. REPORT PASSING (three digits) RADIAL (name of VOR) VOR;</p> <p>e. REPORT (GNSS or DME) DISTANCE FROM (significant point) or (name of DME station);</p>
<p>... to report present position</p>	<p>f. (distance) MILES (GNSS or DME) FROM (name of DME station) (or significant point).</p>

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<p>12.3.1.10 Aerodrome Information</p>	<p>a. [(location)] RUNWAY SURFACE CONDITION RUNWAY (number) (condition);</p> <p>b. [(location)] RUNWAY SURFACE CONDITION RUNWAY (number) NOT CURRENT;</p> <p>c. LANDING SURFACE (condition);</p> <p>d. CAUTION CONSTRUCTION WORK (location);</p> <p>e. CAUTION (specify reasons) RIGHT (or LEFT), (or BOTH SIDES) OF RUNWAY [number];</p> <p>f. CAUTION WORK IN PROGRESS (or OBSTRUCTION) (position and any necessary advice);</p> <p>g. RUNWAY REPORT AT (observation time) RUNWAY (number) (type of precipitant) UP TO (depth of deposit) MILLIMETERS. BRAKING ACTION GOOD (or MEDIUM TO GOOD, or MEDIUM, or MEDIUM TO POOR, or POOR or UNRELIABLE) [and/or BRAKING COEFFICIENT (equipment and number)];</p> <p>h. BRAKING ACTION REPORTED BY (aircraft type) AT (time) GOOD (or MEDIUM, or POOR);</p> <p>i. BRAKING ACTION [(location)] (measuring equipment used), RUNWAY (number), TEMPERATURE [MINUS] (number), WAS (reading) AT (time);</p> <p>j. RUNWAY (or TAXIWAY) (number) WET [or DAMP, WATER PATCHES, FLOODED (depth), or SNOW REMOVED (length and width as applicable), or TREATED, or COVERED WITH PATCHES OF DRY SNOW (or WET SNOW, or COMPACTED SNOW, or SLUSH, or FROZEN SLUSH, or ICE, or ICE UNDERNEATH, or ICE AND SNOW, or SNOWDRIFTS or FROZEN RUTS AND RIDGES)];</p> <p>k. TOWER OBSERVES (weather information);</p> <p>l. PILOT REPORTS (weather information);</p>
<p>12.3.1.11 Operational Status of Visual and Non-Visual Aids</p>	<p>a. (specify visual or non-visual aid) RUNWAY (number) (description of deficiency);</p> <p>b. (type) LIGHTING (unserviceability)</p> <p>c. GBAS/SBAS/MLS/ILS CATEGORY (category) (serviceability state);</p> <p>d. TAXIWAY LIGHTING (description of deficiency);</p> <p>e. (type of visual approach slope indicator) RUNWAY (number) (description of deficiency);</p>
<p>12.3.1.12 Reduced Vertical Separation Minimum (RVSM) Operations</p>	

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CIRCUMSTANCES	PHRASEOLOGIES (Pilot Transmission in Bold Type)
<p>... to ascertain RVSM approval status of an aircraft</p> <p>... to report RVSM approved status</p> <p>... to report RVSM non-approved status followed by supplementary information</p> <p><i>NOTE: See 12.2.4 and 12.2.5 for procedures relating to operations in RVSM airspace by aircraft with non-approved status.</i></p>	<p>a. CONFIRM RVSM APPROVED;</p> <p>b. AFFIRM RVSM;</p> <p>c. NEGATIVE RVSM [(supplementary information, e.g. State Aircraft)];</p>
<p>... to deny ATC clearance into RVSM airspace</p> <p>... to report when severe turbulence affects the capability of an aircraft to maintain height-keeping requirements for RVSM</p> <p>... to report that the equipment of an aircraft has degraded below minimum aviation system performance standards</p> <p>... to request an aircraft to provide information as soon as RVSM-approved status has been regained or the pilot is ready to resume RVSM operations</p> <p>... to request confirmation that an aircraft has regained RVSM-approved status or a pilot is ready to resume RVSM operations</p> <p>... to report ability to resume RVSM operations after an equipment or weather-related contingency</p>	<p>d. UNABLE ISSUE CLEARANCE INTO RVSM AIRSPACE, MAINTAIN [or DESCEND TO, or CLIMB TO] (level);</p> <p>e. UNABLE RVSM DUE TURBULENCE;</p> <p>f. UNABLE RVSM DUE EQUIPMENT;</p> <p>g. REPORT WHEN ABLE TO RESUME RVSM;</p> <p>h. CONFIRM ABLE TO RESUME RVSM;</p> <p>i. READY TO RESUME RVSM.</p>
<p>12.3.1.13 GNSS Service Status</p>	<p>a. GNSS REPORTED UNRELIABLE (or GNSS MAY NOT BE AVAILABLE [DUE TO INTERFERENCE]);</p> <ol style="list-style-type: none"> 1. IN THE VICINITY OF (location) (radius) [BETWEEN (levels)]; or 2. IN THE AREA OF (description) (or IN (name) FIR) [BETWEEN (levels)]; <p>b. BASIC GNSS (or SBAS, or GBAS) UNAVAILABLE FOR (specify operation) [FROM (time) TO (time)] (or UNTIL FURTHER NOTICE);</p> <p>c. BASIC GNSS UNAVAILABLE [DUE TO (reason e.g. LOSS OF RAIM or RAIM ALERT)];</p> <p>d. GBAS (or SBAS) UNAVAILABLE.</p>
<p>12.3.1.14 Degradation of Aircraft Navigation Performance</p>	<p>UNABLE RNP (specify type) (or RNAV) [DUE TO (reason e.g. LOSS OF RAIM or RAIM ALERT)].</p>

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12.3.2 Area Control Services

CIRCUMSTANCES	PHRASEOLOGIES (Pilot Transmissions in Bold Type)
<p>12.3.2.1 Issuance of a Clearance</p>	<p>a. (name of unit) CLEARS (aircraft call sign);</p> <p>b. (aircraft call sign) CLEARED TO;</p> <p>c. RECLEARED (amended clearance details) [REST OF CLEARANCE UNCHANGED];</p> <p>d. RECLEARED (amended route portion) TO (significant point of original route) [REST OF CLEARANCE UNCHANGED];</p> <p>e. ENTER CONTROLLED AIRSPACE (or CONTROL ZONE) [VIA (significant point or route)] AT (level) [AT (time)];</p> <p>f. LEAVE CONTROLLED AIRSPACE (or CONTROL ZONE) [VIA (significant point or route)] AT (level) (or CLIMBING, or DESCENDING);</p> <p>g. JOIN (specify) AT (significant point) AT (level) [AT (time)].</p>
<p>12.3.2.2 Indication of Route and Clearance Limit</p>	<p>a. FROM (location) TO (location);</p> <p>b. TO (location), followed as necessary by:</p> <ol style="list-style-type: none"> 1. DIRECT; 2. VIA (route and/or significant points); 3. VIA FLIGHT PLANNED ROUTE; <p><i>NOTE: Conditions associated with the use of this phrase are in Chapter 4, 4.5.7.2.</i></p> <p>4. VIA (distance) DME ARC (direction) OF (name of DME station);</p> <p>c. (route) NOT AVAILABLE DUE (reason) ALTERNATIVE[S] IS/ARE (routes) ADVISE.</p>
<p>12.3.2.3 Maintenance of Specified Levels</p>	<p>a. MAINTAIN (level) [TO (significant point)];</p> <p>b. MAINTAIN (level) UNTIL PASSING (significant point);</p> <p>c. MAINTAIN (level) UNTIL (minutes) AFTER PASSING (significant point);</p> <p>d. MAINTAIN (level) UNTIL (time);</p> <p>e. MAINTAIN (level) UNTIL ADVISED BY (name of unit);</p> <p>f. MAINTAIN (level) UNTIL FURTHER ADVISED;</p> <p>g. MAINTAIN (level) WHILE IN CONTROLLED AIRSPACE;</p> <p>h. MAINTAIN BLOCK (level) TO (level).</p> <p><i>NOTE: The term "MAINTAIN" is not to be used in lieu of "DESCEND" or "CLIMB" when instructing an aircraft to change level.</i></p>
<p>12.3.2.4 Specification of Cruising Levels</p>	<p>a. CROSS (significant point) AT (or ABOVE, or BELOW) (level);</p> <p>b. CROSS (significant point) AT (time) OR LATER (or BEFORE) AT (level);</p> <p>c. CRUISE CLIMB BETWEEN (levels) (or ABOVE) (level);</p> <p>d. CROSS (distance) MILES, (GNSS or DME)[(direction)] OF (name of DME station) (or (distance) [(direction)] OF (significant point) AT (or ABOVE or BELOW) (level).</p>

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12.3.2.5 <i>Emergency Descent</i>	a. EMERGENCY DESCENT (<i>intentions</i>); b. ATTENTION ALL AIRCRAFT IN THE VICINITY OF [or AT] (<i>significant point or location</i>) EMERGENCY DESCENT IN PROGRESS FROM (<i>level</i>) (followed as necessary by specific instructions, clearances, traffic information, etc.).
12.3.2.6 <i>If Clearance Cannot be Issued Immediately upon Request</i>	EXPECT CLEARANCE (<i>or type of clearance</i>) AT (<i>time</i>).
12.3.2.7 <i>When Clearance for Deviation Cannot be Issued</i>	UNABLE, TRAFFIC (<i>direction</i>) BOUND (<i>type of aircraft</i>) (<i>level</i>) ESTIMATED (<i>or OVER</i>) (<i>significant point</i>) AT (<i>time</i>) CALL SIGN (<i>call sign</i>) ADVISE INTENTIONS .
12.3.2.8 <i>Separation Instructions</i>	a. CROSS (<i>significant point</i>) AT (<i>time</i>) [OR LATER (<i>or OR BEFORE</i>)]; b. ADVISE IF ABLE TO CROSS (<i>significant point</i>) AT (<i>time</i>); c. MAINTAIN MACH (<i>number</i>) [OR GREATER (<i>or OR LESS</i>)] [UNTIL (<i>significant point</i>)]; d. DO NOT EXCEED MACH (<i>number</i>).
12.3.2.9 <i>Instructions Associated with Flying a Track (Offset), Parallel to the Cleared Route</i>	a. ADVISE IF ABLE TO PROCEED PARALLEL OFFSET ; b. PROCEED OFFSET (<i>distance</i>) RIGHT/LEFT OF (<i>route</i>) (<i>track</i>) [CENTRE LINE] [AT (<i>significant point or time</i>)] [UNTIL (<i>significant point or time</i>)]; c. CANCEL OFFSET (<i>instructions to rejoin cleared flight route or other information</i>).

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12.3.3 Approach Control Service

CIRCUMSTANCES	PHRASEOLOGIES (Pilot Transmissions in Bold Type)
12.3.3.1 <i>Departure Instructions</i>	a. [AFTER DEPARTURE] TURN RIGHT (<i>or LEFT</i>) HEADING (<i>three digits</i>) (<i>or CONTINUE RUNWAY HEADING</i>) (<i>or TRACK EXTENDED CENTRE LINE</i>) TO (<i>level or significant point</i>) [<i>other instructions as required</i>]; b. AFTER REACHING (<i>or PASSING</i>) (<i>level or significant point</i>) (<i>instructions</i>); c. TURN RIGHT (<i>or LEFT</i>) HEADING (<i>three digits</i>) TO (<i>level</i>) [TO INTERCEPT (<i>track, route, airway, etc.</i>)]; d. (<i>standard departure name and number</i>) DEPARTURE ; e. TRACK (<i>three digits</i>) DEGREES [MAGNETIC (<i>or TRUE</i>)] TO (<i>or FROM</i>) (<i>significant point</i>) UNTIL (<i>time, or REACHING</i> (<i>fix or significant point or level</i>)) [BEFORE PROCEEDING ON COURSE]; f. CLEARED VIA (<i>designation</i>). <i>NOTE: Conditions associated with the use of this phrase are in Chapter 4, 4.5.7.2.</i>
12.3.3.2 <i>Approach Instructions</i>	a. CLEARED (<i>or PROCEED</i>) VIA (<i>designation</i>); b. CLEARED TO (<i>clearance limit</i>) VIA (<i>designation</i>); c. CLEARED (<i>or PROCEED</i>) VIA (<i>details of route to be followed</i>); d. CLEARED (<i>type of approach</i>) APPROACH [RUNWAY (<i>number</i>)]; e. CLEARED (<i>type of approach</i>) RUNWAY (<i>number</i>) FOLLOWED BY CIRCLING TO RUNWAY (<i>number</i>); f. CLEARED APPROACH [RUNWAY (<i>number</i>)]; g. COMMENCE APPROACH AT (<i>time</i>); h. REQUEST STRAIGHT-IN [(<i>type of approach</i>)] APPROACH [RUNWAY (<i>number</i>)]; i. CLEARED STRAIGHT-IN [(<i>type of approach</i>)] APPROACH [RUNWAY (<i>number</i>)]; j. REPORT VISUAL ; k. REPORT RUNWAY [LIGHTS] IN SIGHT ; l. REQUEST VISUAL APPROACH ; m. CLEARED VISUAL APPROACH RUNWAY (<i>number</i>); n. ADVISE ABLE TO ACCEPT VISUAL APPROACH RUNWAY (<i>number</i>); ... when a pilot requests a visual approach ... to request if a pilot is able to accept a visual approach <i>NOTE: See 6.5.3 for provisions relating to visual approach procedures.</i>

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CIRCUMSTANCES	PHRASEOLOGIES (Pilot Transmissions in Bold Type)
<p>... in case of successive visual approaches when the pilot of a succeeding aircraft has reported having the preceding aircraft in sight</p>	<p>o. CLEARED VISUAL APPROACH RUNWAY (<i>number</i>), MAINTAIN OWN SEPARATION FROM PRECEDING (<i>aircraft type and wake turbulence category as appropriate</i>) [CAUTION WAKE TURBULENCE];</p> <p>p. REPORT (<i>significant point</i>); [OUTBOUND, or INBOUND];</p> <p>q. REPORT COMMENCING PROCEDURE TURN;</p> <p>r. REQUEST VMC DESCENT;</p> <p>s. MAINTAIN OWN SEPARATION;</p> <p>t. MAINTAIN VMC;</p> <p>u. ARE YOU FAMILIAR WITH (<i>name</i>) APPROACH PROCEDURE;</p> <p>v. REQUEST (<i>type of approach</i>) APPROACH [RUNWAY (<i>number</i>)];</p> <p>w. REQUEST (MLS/RNAV plain-language designator);</p> <p>x. CLEARED (<i>MLS/RNAV plain-language designator</i>).</p>
<p>12.3.3.3 Holding Clearances</p> <p>... visual</p> <p>... published holding procedures over a facility or fix</p> <p>... when a detailed holding clearance is required</p>	<p>a. HOLD VISUAL [OVER] (<i>position</i>), (or BETWEEN (<i>two prominent landmarks</i>));</p> <p>b. CLEARED (or PROCEED) TO (<i>significant point, name of facility or fix</i>) [MAINTAIN (or CLIMB or DESCEND TO) (<i>level</i>)] HOLD [(<i>direction</i>)] AS PUBLISHED EXPECT APPROACH CLEARANCE (or FURTHER CLEARANCE) AT (<i>time</i>);</p> <p>c. REQUEST HOLDING INSTRUCTIONS;</p> <p>d. CLEARED (or PROCEED) TO (<i>significant point, name of facility or fix</i>) [(MAINTAIN (or CLIMB or DESCEND TO) (<i>level</i>))] HOLD [(<i>direction</i>)] [(<i>specified</i>) RADIAL, COURSE, INBOUND TRACK (<i>three digits</i>) DEGREES] [RIGHT (or LEFT) HAND PATTERN] [OUTBOUND TIME (<i>number</i>) MINUTES] EXPECT APPROACH CLEARANCE (or FURTHER CLEARANCE) AT (<i>time</i>) (<i>additional instructions, if necessary</i>);</p> <p>e. CLEARED TO THE (<i>three digits</i>) RADIAL OF THE (<i>name</i>) VOR AT (<i>distance</i>) DME FIX [MAINTAIN (or CLIMB or DESCEND TO) (<i>level</i>)] HOLD [(<i>direction</i>)] [RIGHT (or LEFT) HAND PATTERN] [OUTBOUND TIME (<i>number</i>) MINUTES] EXPECT APPROACH CLEARANCE (or FURTHER CLEARANCE) AT (<i>time</i>) (<i>additional instructions, if necessary</i>);</p> <p>f. CLEARED TO THE (<i>three digits</i>) RADIAL OF THE (<i>name</i>) VOR AT (<i>distance</i>) DME FIX [MAINTAIN (or CLIMB or DESCEND TO) (<i>level</i>)] HOLD BETWEEN (<i>distance</i>) AND (<i>distance</i>) DME [RIGHT (or LEFT) HAND PATTERN] EXPECT APPROACH CLEARANCE (or FURTHER CLEARANCE) AT (<i>time</i>) (<i>additional instructions, if necessary</i>);</p>
<p>12.3.3.4 Expected Approach Time</p>	<p>a. NO DELAY EXPECTED;</p> <p>b. EXPECTED APPROACH TIME (<i>time</i>);</p> <p>c. REVISED EXPECTED APPROACH TIME (<i>time</i>);</p> <p>d. DELAY NOT DETERMINED (<i>reasons</i>).</p>

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12.3.4 Phraseologies for use on and in the Vicinity of the Aerodrome

CIRCUMSTANCES	PHRASEOLOGIES (Pilot Transmissions in Bold Type)
<p>12.3.4.1 Identification of Aircraft</p>	<p>SHOW LANDING LIGHT.</p>
<p>12.3.4.2 Acknowledgment by Visual Means</p>	<p>a. ACKNOWLEDGE BY MOVING AILERONS (or RUDDER);</p> <p>b. ACKNOWLEDGE BY ROCKING WINGS;</p> <p>c. ACKNOWLEDGE BY FLASHING LANDING LIGHTS.</p>
<p>12.3.4.3 Starting Procedures</p> <p>... to request permission to start engines</p> <p>... ATC replies</p>	<p>a. [<i>aircraft location</i>] REQUEST START UP;</p> <p>b. [<i>aircraft location</i>] REQUEST START UP, INFORMATION (ATIS Identification);</p> <p>c. START UP APPROVED;</p> <p>d. START UP AT (<i>time</i>);</p> <p>e. EXPECT START UP AT (<i>time</i>);</p> <p>f. START UP AT OWN DISCRETION;</p> <p>g. EXPECT DEPARTURE (<i>time</i>) START UP AT OWN DISCRETION.</p>
<p>12.3.4.4 Push Back Procedures</p> <p>NOTE: When local procedures so prescribe, authorization for push back should be obtained from the control tower.</p> <p>... aircraft/ATC</p>	<p>a. [<i>aircraft location</i>] REQUEST PUSHBACK;</p> <p>b. PUSHBACK APPROVED;</p> <p>c. STANDBY;</p> <p>d. PUSHBACK AT OWN DISCRETION;</p> <p>e. EXPECT (<i>number</i>) MINUTES DELAY DUE (<i>reason</i>);</p>
<p>12.3.4.5 Towing Procedures</p> <p>... ATC response</p>	<p>a. * REQUEST TOW [company name] (aircraft type) FROM (location) TO (location);</p> <p>b. TOW APPROVED VIA (<i>specific routing to be followed</i>);</p> <p>c. HOLD POSITION;</p> <p>d. STANDBY.</p> <p>* Denotes Transmission from Aircraft/Tow Vehicle Combination</p>
<p>12.3.4.6 To Request Time Check and/or Aerodrome Data for Departure</p> <p>... when no ATIS broadcast is available</p>	<p>a. REQUEST TIME CHECK;</p> <p>b. TIME (<i>time</i>)</p> <p>c. REQUEST DEPARTURE INFORMATION;</p> <p>d. RUNWAY (<i>number</i>), WIND (<i>direction and speed</i>) (<i>units</i>), QNH (or QFE) (<i>number</i>) [(<i>units</i>)] TEMPERATURE [MINUS] (<i>number</i>), [VISIBILITY (<i>distance</i>) (<i>units</i>) (or RUNWAY VISUAL RANGE (or RVR) (<i>distance</i>) (<i>units</i>))] [(TIME) (<i>time</i>)].</p> <p>NOTE: If multiple visibility and RVR observations are available, those that represent the roll-out/stop end zone should be used for take-off.</p>
<p>12.3.4.7 Taxi Procedures</p>	

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CIRCUMSTANCES	PHRASEOLOGIES (Pilot Transmissions in Bold Type)
... for departure	<p>a. [aircraft type] [wake turbulence category if "heavy"] [aircraft location] REQUEST TAXI (Intentions);</p> <p>b. [aircraft type] [wake turbulence category if "heavy"] [aircraft location] (flight rules) TO (aerodrome of destination) REQUEST TAXI (Intentions);</p> <p>c. TAXI TO HOLDING POINT [number] [RUNWAY (number)] [HOLD SHORT OF RUNWAY (number) (or CROSS RUNWAY (number))] [TIME (time)];</p>
... where detailed taxi instructions are required	<p>d. [aircraft type] [wake turbulence category if "heavy"] REQUEST DETAILED TAXI INSTRUCTIONS;</p> <p>e. TAXI TO HOLDING POINT [(number)] [RUNWAY (number)] VIA (specific route to be followed) [TIME (time)] [HOLD SHORT OF RUNWAY (number) (or CROSS RUNWAY (number))];</p>
... where aerodrome information is not available from an alternative source such as ATIS	<p>f. TAXI TO HOLDING POINT [(number)] (followed by aerodrome information as applicable) [TIME (minutes)];</p> <p>g. TAKE (or TURN) FIRST (or SECOND) LEFT (or RIGHT);</p> <p>h. TAXI VIA (identification of taxiway);</p> <p>i. TAXI VIA RUNWAY (number);</p> <p>j. TAXI TO TERMINAL (or other location, e.g. GENERAL AVIATION AREA) [STAND (number)];</p>
... for helicopter operations	<p>k. REQUEST AIR-TAXIING FROM (or VIA) TO (location or routing as appropriate);</p> <p>l. AIR-TAXI TO (or VIA) (location or routing as appropriate) [CAUTION (dust, blowing snow, loose debris, taxiing light aircraft, personnel, etc.)];</p> <p>m. AIR-TAXI VIA (direct, as requested, or specified route) TO (location, heliport, operating or movement area, active or inactive runway). AVOID (aircraft or vehicles or personnel);</p>
... after landing	<p>n. REQUEST BACKTRACK;</p> <p>o. BACKTRACK APPROVED;</p> <p>p. BACKTRACK RUNWAY (number);</p>
... general	<p>q. [aircraft location] REQUEST TAXI TO (destination on aerodrome);</p> <p>r. TAXI STRAIGHT AHEAD;</p> <p>s. TAXI WITH CAUTION;</p> <p>t. GIVE WAY TO (description and position of other aircraft);</p> <p>u. GIVING WAY TO (traffic);</p> <p>v. TRAFFIC (or type of aircraft) IN SIGHT;</p> <p>w. TAXI INTO HOLDING BAY;</p> <p>x. FOLLOW (description of other aircraft or vehicle);</p> <p>y. VACATE RUNWAY;</p> <p>z. RUNWAY VACATED;</p> <p>aa. EXPEDITE TAXI [reason];</p> <p>bb. EXPEDITING;</p> <p>cc. [CAUTION] TAXI SLOWER [reason];</p> <p>dd. SLOWING DOWN.</p>

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CIRCUMSTANCES	PHRASEOLOGIES (Pilot Transmissions in Bold Type)
<p>12.3.4.8 Holding</p> <p>... to hold not closer to a runway than specified in Chapter 7, 7.6.3.1.3.1.</p>	<p>a. *HOLD (direction) OF (position, runway number, etc.);</p> <p>b. HOLD POSITION;</p> <p>c. *HOLD (distance) FROM (position);</p> <p>d. *HOLD SHORT OF (position);</p> <p>e. **HOLDING</p> <p>f. **HOLDING SHORT.</p> <p>* Requires specific acknowledgment from the pilot. ** The procedure words ROGER and WILCO are insufficient acknowledgment of the instructions HOLD, HOLD POSITION and HOLD SHORT OF (position). In each case the acknowledgment shall be by the phraseology HOLDING or HOLDING SHORT, as appropriate.</p>
<p>12.3.4.9 To Cross a Runway</p> <p>NOTE: The pilot will, when requested, report "RUNWAY VACATED" when the entire aircraft is beyond the relevant runway-holding position.</p>	<p>a. REQUEST CROSS RUNWAY (number);</p> <p>NOTE: If the control tower is unable to see the crossing aircraft (e.g., night, low visibility, etc.), the instruction should always be accompanied by a request to report when the aircraft has vacated the runway.</p> <p>b. CROSS RUNWAY (number) [REPORT VACATED];</p> <p>c. EXPEDITE CROSSING RUNWAY (number) TRAFFIC (aircraft type) (distance) KILOMETERS (or MILES) FINAL;</p> <p>d. TAXI TO HOLDING POSITION [number] [RUNWAY (number)] VIA (specific route to be followed), [HOLD SHORT OF RUNWAY (number)] or [CROSS RUNWAY (number)];</p> <p>e. RUNWAY VACATED.</p>
<p>12.3.4.10 Preparation for Take-Off</p> <p>... if unable to issue take-off clearance</p> <p>... clearance to enter runway and await take-off clearance</p> <p>... conditional clearances</p> <p>... acknowledgment of a conditional clearance</p> <p>... confirmation or otherwise of the readback of conditional clearance</p>	<p>a. UNABLE TO ISSUE (designator) DEPARTURE (reasons);</p> <p>b. REPORT WHEN READY [FOR DEPARTURE];</p> <p>c. ARE YOU READY [FOR DEPARTURE]?;</p> <p>d. ARE YOU READY FOR IMMEDIATE DEPARTURE?;</p> <p>e. READY;</p> <p>f. WAIT [reason];</p> <p>g. LINE UP [AND WAIT];</p> <p>h. *LINE UP RUNWAY (number);</p> <p>i. LINE UP. BE READY FOR IMMEDIATE DEPARTURE;</p> <p>j. (condition) LINE UP (brief reiteration of the condition); Provisions concerning the use of conditional clearances are contained in 12.2.7</p> <p>k. (condition) LINING UP (brief reiteration of the condition);</p> <p>l. [THAT IS] CORRECT (or NEGATIVE) [I SAY AGAIN]... (as appropriate). *When there is the possibility of confusion during multiple runway operations.</p>
<p>12.3.4.11 Take-off Clearance</p> <p>... when reduced runway separation is used</p>	<p>a. RUNWAY (number) CLEARED FOR TAKE-OFF [REPORT AIRBORNE];</p> <p>b. (traffic information) RUNWAY (number) CLEARED FOR TAKE-OFF;</p>

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CIRCUMSTANCES	PHRASEOLOGIES (Pilot Transmissions in Bold Type)
<p>... when take-off clearance has not been complied with</p> <p>... to cancel a take-off clearance</p> <p>... to stop a take-off after an aircraft has commenced take-off roll</p> <p>... for helicopter operations</p>	<p>c. TAKE OFF IMMEDIATELY OR VACATE RUNWAY [(instructions)];</p> <p>d. TAKE OFF IMMEDIATELY OR HOLD SHORT OF RUNWAY;</p> <p>e. HOLD POSITION, CANCEL TAKE-OFF I SAY AGAIN CANCEL TAKE-OFF (reasons);</p> <p>f. *HOLDING;</p> <p>g. STOP IMMEDIATELY (repeat aircraft call sign) STOP IMMEDIATELY;</p> <p>h. *STOPPING;</p> <p>i. CLEARED FOR TAKE-OFF [FROM (location) (present position, taxiway, final approach and take-off area, runway and number)];</p> <p>j. REQUEST DEPARTURE INSTRUCTIONS;</p> <p>k. AFTER DEPARTURE TURN RIGHT (or LEFT, or CLIMB) (instructions as appropriate).</p> <p>* HOLDING and STOPPING are the procedural responses to e. and g respectively.</p>
<p>12.3.4.12 Turn or Climb Instructions After Take-Off</p> <p>... to request airborne time</p> <p>... heading to be followed</p> <p>... when a specific track is to be followed</p>	<p>a. REQUEST RIGHT (or LEFT) TURN;</p> <p>b. RIGHT (or LEFT) TURN APPROVED;</p> <p>c. WILL ADVISE LATER FOR RIGHT (or LEFT) TURN;</p> <p>d. REPORT AIRBORNE;</p> <p>e. AIRBORNE (time);</p> <p>f. AFTER PASSING (level) (instructions);</p> <p>g. CONTINUE RUNWAY HEADING (instructions);</p> <p>h. TRACK EXTENDED CENTRE LINE (instructions);</p> <p>i. CLIMB STRAIGHT AHEAD (instructions).</p>
<p>12.3.4.13 Entering an Aerodrome Traffic Circuit</p> <p>... when ATIS information is available</p>	<p>a. [aircraft type] (position) (level) FOR LANDING;</p> <p>b. JOIN (direction of circuit) (position in circuit) (runway number) [SURFACE] WIND (direction and speed) (units) [TEMPERATURE [MINUS] (number)] QNH (or QFE) (number) [(units)] [TRAFFIC (detail)];</p> <p>c. MAKE STRAIGHT-IN APPROACH, RUNWAY (number) [SURFACE] WIND (direction and speed) (units) [TEMPERATURE [MINUS] (number)] QNH (or QFE) (number) [(units)] [TRAFFIC (detail)];</p> <p>d. (aircraft type) (position) (level) INFORMATION (ATIS Identification) FOR LANDING;</p> <p>e. JOIN (position in circuit) [RUNWAY (number) QNH (or QFE) (number) [(units)] [TRAFFIC (detail)].</p>
<p>12.3.4.14 In the Circuit</p>	<p>a. (position in circuit, e.g. DOWNWIND/FINAL);</p> <p>b. NUMBER ... FOLLOW (aircraft type and position) [additional instructions if required].</p>
<p>12.3.4.15 Approach Instructions</p> <p>NOTE: The report "LONG FINAL" is made when aircraft turn on to final approach at a distance greater than 7km (4 NM) from touchdown or when an aircraft on a straight-in approach is 15km (8 NM) from touchdown. In both cases a report "FINAL" is required at 7km (4 NM) from touchdown.</p>	<p>a. MAKE SHORT APPROACH;</p> <p>b. MAKE LONG APPROACH (or EXTEND DOWNWIND);</p> <p>c. REPORT BASE (or FINAL, or LONG FINAL);</p> <p>d. CONTINUE APPROACH [PREPARE FOR POSSIBLE GO AROUND].</p>
<p>12.3.4.16 Landing Clearance</p>	<p>a. RUNWAY (number) CLEARED TO LAND;</p>

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CIRCUMSTANCES	PHRASEOLOGIES (Pilot Transmissions in Bold Type)
<p>... when reduced runway separation is used</p> <p>... special operations</p> <p>... to make an approach along, or parallel to a runway, descending to an agreed minimum level</p> <p>... to fly past the control tower or other observation point for the purpose of visual inspection by persons on the ground</p> <p>... for helicopter operations</p>	<p>b. (traffic information) RUNWAY (number) CLEARED TO LAND;</p> <p>c. CLEARED TOUCH AND GO;</p> <p>d. MAKE FULL STOP;</p> <p>e. REQUEST LOW APPROACH (reasons);</p> <p>f. CLEARED LOW APPROACH [RUNWAY (number)] [(altitude restriction if required) (go around instructions)];</p> <p>g. REQUEST LOW PASS (reasons);</p> <p>h. CLEARED LOW PASS [as in f.];</p> <p>i. REQUEST STRAIGHT-IN (or CIRCLING APPROACH, LEFT (or RIGHT) TURN TO (location));</p> <p>j. MAKE STRAIGHT-IN (or CIRCLING APPROACH, LEFT (or RIGHT) TURN TO (location, runway, taxiway, final approach and take-off area) [ARRIVAL (or ARRIVAL ROUTE) (number, name or code)]. [HOLD SHORT OF (active runway, extended runway centre line, other)]. [REMAIN (direction or distance) FROM (runway, runway centre line, other helicopter or aircraft)]. [CAUTION (power lines, unlighted obstructions, wake turbulence, etc.)]. CLEARED TO LAND.</p>
<p>12.3.4.17 Delaying Aircraft</p>	<p>a. CIRCLE THE AERODROME;</p> <p>b. ORBIT (RIGHT, or LEFT) [FROM PRESENT POSITION];</p> <p>c. MAKE ANOTHER CIRCUIT.</p>
<p>12.3.4.18 Missed Approach</p>	<p>a. GO AROUND;</p> <p>b. GOING AROUND.</p>
<p>12.3.4.19 Information to Aircraft</p> <p>... when pilot requested visual inspection of landing gear</p> <p>... wake turbulence</p> <p>... jet blast on apron or taxiway</p>	<p>a. LANDING GEAR APPEARS DOWN;</p> <p>b. RIGHT (or LEFT, or NOSE) WHEEL APPEARS UP (or DOWN);</p> <p>c. WHEELS APPEAR UP;</p> <p>d. RIGHT (or LEFT, or NOSE) WHEEL DOES NOT APPEAR UP (or DOWN);</p> <p>e. CAUTION WAKE TURBULENCE [FROM ARRIVING (OR DEPARTING) (type of aircraft)] [(additional information as required)];</p> <p>f. CAUTION JET BLAST;</p>

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CIRCUMSTANCES	PHRASEOLOGIES (Pilot Transmissions in Bold Type)
. . . propeller-driven aircraft slipstream	g. CAUTION SLIPSTREAM.
12.3.4.20 Runway Vacating and Communications After Landing	a. CONTACT GROUND (frequency); b. WHEN VACATED CONTACT GROUND (frequency); c. EXPEDITE VACATING; d. YOUR STAND (or GATE) (designation); e. TAKE (or TURN) FIRST (or SECOND, or CONVENIENT) LEFT (or RIGHT) AND CONTACT GROUND (frequency). f. AIR-TAXI TO HELICOPTER STAND (or) HELICOPTER PARKING POSITION (area); g. AIR-TAXI TO (or VIA) (location or routing as appropriate) [CAUTION (dust, blowing snow, loose debris, taxiing light aircraft, personnel, etc.); h. AIR TAXI VIA (direct, as requested, or specified route) TO (location, heliport, operating or movement area, active or inactive runway). AVOID (aircraft or vehicles or personnel).
. . . for helicopter operations	

12.4 ATS SURVEILLANCE SERVICE PHRASEOLOGIES

12.4.3 Secondary Surveillance Radar (SSR) and ADS-B Phraseologies

CIRCUMSTANCES	PHRASEOLOGIES (Pilot Transmissions in Bold Type)
12.4.3.1 To Request the Capability of the SSR Equipment	a. ADVISE TRANSPONDER CAPABILITY; b. TRANSPONDER (as shown in the flight plan); c. NEGATIVE TRANSPONDER.
12.4.3.2 To Request the Capability of the ADS-B Equipment	a. ADVISE ADS-B CAPABILITY; b. ADS-B TRANSMITTER (data link); c. ADS-B RECEIVER (data link); d. NEGATIVE ADS-B.
12.4.3.3 To Instruct Setting of Transponder	a. FOR DEPARTURE SQUAWK (code); b. SQUAWK (code).
12.4.3.4 To Request the Pilot to Reselect the Assigned Mode and Code	a. RESET SQUAWK [(mode)] (code); b. RESETTING (mode) (code).
12.4.3.5 To Request Reselection of Aircraft Identification	RE-ENTER [ADS-B or MODE S] AIRCRAFT IDENTIFICATION.
12.4.3.6 To Request the Pilot to Confirm the Code Selected on the Aircraft's Transponder	a. CONFIRM SQUAWK (code); b. SQUAWKING (code).
12.4.3.7 To Request the Operation of the IDENT Feature	a. SQUAWK [(code)] [AND] IDENT; b. SQUAWK LOW; c. SQUAWK NORMAL; d. TRANSMIT ADS-B IDENT.
12.4.3.8 To Request Temporary Suspension of Transponder Operation	SQUAWK STANDBY.
12.4.3.9 To Request Emergency Code	SQUAWK MAYDAY [CODE SEVEN-SEVEN-ZERO-ZERO].
12.4.3.10* To Request Termination of Transponder and/or ADS-B Transmitter Operation	a. STOP SQUAWK [TRANSMIT ADS-B ONLY]; b. STOP ADS-B TRANSMISSION [SQUAWK (code) ONLY].

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CIRCUMSTANCES	PHRASEOLOGIES (Pilot Transmissions in Bold Type)
12.4.3.11 To Request Transmission of Pressure-Altitude	a. SQUAWK CHARLIE; b. TRANSMIT ADS-B ALTITUDE.
12.4.3.12 To Request Pressure Setting Check and Confirmation of Level	CHECK ALTIMETER SETTING AND CONFIRM (level).
12.4.3.13* To Request Termination of Pressure-Altitude Transmission Because of Faulty Operation	a. STOP SQUAWK CHARLIE WRONG INDICATION; b. STOP ADS-B ALTITUDE TRANSMISSION [(WRONG INDICATION, or reason)].
12.4.3.14 To Request Altitude Check	CONFIRM (level)
*NOTE: Independent operations of Mode S transponder and ADS-B may not be possible in all aircraft (e.g. where ADS-B is solely provided by 1 090 MHz extended squitter emitted from the transponder). In such cases, aircraft may not be able to comply with ATC instructions related to ADS-B operation.	

13 AUTOMATIC DEPENDENT-SURVEILLANCE CONTRACT (ADS-C) SERVICES

13.1 GENERAL

The provision of air traffic services to aircraft, based on information received from aircraft via ADS-C, is generally referred to as the provision of ADS-C services.

13.2 ADS-C GROUND SYSTEM CAPABILITIES

13.2.3 Several significant functional requirements are necessary to permit the effective implementation of an ADS-C service in a CNS/ATM environment. Ground systems shall provide for:

- a. the transmitting, receiving, processing and displaying of ADS-C messages related to flights equipped for and operating within environments where ADS-C services are being provided;
- b. the display of safety-related alerts and warnings;
- c. position monitoring (the aircraft's current position as derived from ADS-C reports is displayed to the controller for air traffic situation monitoring);
- d. conformance monitoring (the ADS-C reported current position or projected profile is compared to the expected aircraft position, which is based on the current flight plan. Along track, lateral and vertical deviations that exceed a pre-defined tolerance limit will permit an out-of-conformance alert to be issued to the controller);
- e. flight plan update (e.g. longitudinal variations that exceed pre-defined tolerance limits will be used to adjust expected arrival times at subsequent fixes);
- f. intent validation (intent data contained in ADS-C reports, such as extended projected profile, are compared with the current clearance and discrepancies are identified);
- g. conflict detection (the ADS-C data can be used by the ADS-C ground system automation to identify violations of separation minima);

- h. conflict prediction (the ADS-C position data can be used by the ADS-C ground system automation to identify potential violations of separation minima);
- i. tracking (the tracking function is intended to extrapolate the current position of the aircraft based on ADS-C reports);
- j. wind estimation (ADS-C reports containing wind data may be used to update wind forecasts and hence expected arrival times at waypoints); and
- k. flight management (ADS-C reports may assist automation in generating optimum conflict-free clearances to support possible fuel-saving techniques, such as cruise climbs, requested by the operators).

NOTE: The use of ADS-C does not relieve the controller of the obligation to continuously monitor the traffic situation.

13.4 USE OF ADS-C IN THE PROVISION OF AIR TRAFFIC CONTROL SERVICE

13.4.1 General

13.4.1.1 ADS-C may be used in the provision of an air traffic control service, provided identification of the aircraft is unambiguously established.

13.4.1.2 Flight data processing of ADS-C data may be used in the provision of an air traffic control service, provided the correlation between the ADS-C data downlinked by that aircraft and the flight plan details held for the aircraft has been accomplished.

NOTE: A combination of information received from the aircraft may be necessary to ensure unambiguous correlation, e.g. departure aerodrome, estimated off-block time (EOBT), and destination aerodrome might be used.

13.4.2 Presentation of ADS-C Data

13.4.2.3 ADS information available to the controller on a situation display shall, as a minimum, include ADS position indications and map information.

13.4.2.3.1 When applicable, distinct symbols should be used for presentation of such items as:

- a. ADS-C position reports; or
- b. combinations of ADS-C with information derived from other surveillance sources, e.g. PSR, SSR, ADS-B; or
- c. ADS-C extrapolations.

13.4.2.3.2 Labels used to provide ADS-C derived information and any other information that may be available shall, as a minimum, be displayed in alphanumeric form.

13.5 USE OF ADS-C IN THE APPLICATION OF SEPARATION MINIMA

13.5.2 Determination of Level Occupancy

13.5.2.1 The tolerance value which shall be used to determine that the ADS-C level information displayed to the controller is accurate shall be +/- 60m (+/- 200 ft) in RVSM airspace. In other airspace, it shall be +/- 90m (+/- 300 ft), except that appropriate ATS authorities may specify a smaller criterion, but not less than +/- 60m (+/- 200 ft), if this is found to be more practical.

13.5.2.2 If the ADS-C level information is not within the approved tolerance value, the information must be validated by voice or CPDLC. Where it has been established that the ADS-C level information is incorrect, the appropriate ATS authority shall determine the action to be taken regarding the display and use of this information.

13.5.2.3 An aircraft cleared to leave a level is considered to have commenced its manoeuvre and vacated the previously occupied level when the ADS-C level information indicates a change of more than 90m (300 ft) in the anticipated direction from its previously assigned level, or verification has been made by receipt of a CPDLC or voice report from the pilot.

13.5.2.4 An aircraft that is climbing or descending is considered to have crossed a level when the ADS-C level information indicates that it has passed this level in the required direction by more than 90m (300 ft) or that verification has been made by receipt of a CPDLC or voice report from the pilot.

13.5.2.5 An aircraft that is climbing or descending is considered to have reached the level to which it has been cleared when verification has been made by receipt of the assigned level by CPDLC or a voice report from the pilot. The aircraft may then be considered to be maintaining this level for as long as the ADS-C level information remains within the appropriate tolerance values as specified in 13.5.2.1.

NOTE: A level range deviation event contract may be used to monitor the continued compliance of the aircraft with the appropriate level tolerance values.

14 CONTROLLER-PILOT DATA LINK COMMUNICATIONS (CPDLC)

14.1 GENERAL

14.1.1 The CPDLC application provides a means of communication between the controller and pilot, using data link for ATC communication.

14.1.2 This application includes a set of clearance/information/request message elements which correspond to the phraseologies used in the radiotelephony environment.

14.1.2.1 The controller shall be provided with the capability to respond to messages, including emergencies, to issue clearances, instructions and advisories, and to request and provide information, as appropriate..

14.1.2.2 The pilot shall be provided with the capability to respond to messages, to request clearances and information, to report information, and to declare or cancel an emergency.

14.1.2.3 The pilot and controller shall be provided with the capability to exchange messages which do not conform to defined formats (i.e., free text messages).

14.1.3 Ground and airborne systems shall allow for messages to be appropriately displayed, printed when required and stored in a manner that permits timely and convenient retrieval should such action be necessary.

14.1.4 Whenever textual presentation is required, the English language shall be displayed as a minimum.

14.2 ESTABLISHMENT OF CPDLC

14.2.1 CPDLC shall be established in sufficient time to ensure that the aircraft is communicating with the appropriate ATC unit. Information concerning when and, where applicable, where, the air or ground systems should establish CPDLC, shall be published in Aeronautical Information Publications.

14.2.2 Airborne-Initiated CPDLC

14.2.2.1 When an ATC unit receives an unexpected request for CPDLC from an aircraft, the circumstances leading to the request shall be obtained from the aircraft to determine further action.

14.2.2.2 When the ATC unit rejects a request for CPDLC, it shall provide the pilot with the reason for the rejection using an appropriate CPDLC message

14.2.3 ATC Unit-Initiated CPDLC

14.2.3.1 An ATC unit shall only establish CPDLC with an aircraft if the aircraft has no CPDLC link established, or when authorized by the ATC unit currently having CPDLC established with the aircraft.

14.2.3.2 When a request for CPDLC is rejected by an aircraft, the reason for the rejection shall be provided using CPDLC downlink message element NOT CURRENT DATA AUTHORITY or message element NOT AUTHORIZED NEXT DATA AUTHORITY, as appropriate. Local procedures shall dictate whether the reason for rejection is presented to the controller. No other reasons for airborne rejection of ATC unit-initiation of CPDLC shall be permitted.

15 PROCEDURES RELATED TO EMERGENCIES, COMMUNICATION FAILURE AND CONTINGENCIES

[See EMERGENCY Section for related information]

15.1 EMERGENCY PROCEDURES

15.1.1 General

15.1.1.1 The various circumstances surrounding each emergency situation preclude the establishment of exact detailed procedures to be followed. The procedures outlined herein are intended as a general guide to air traffic services personnel. Air traffic control units shall maintain full and complete co-ordination, and personnel shall use their best in handling emergency situations.

15.1.2 Priority

An aircraft known or believed to be in a state of emergency, including being subjected to unlawful interference, shall be given priority over other aircraft.

15.1.3 Unlawful Interference and Aircraft Bomb Threat

15.1.3.1 Air traffic services personnel shall be prepared to recognize any indication of the occurrence of unlawful interference with an aircraft.

15.1.3.2 Whenever unlawful interference with an aircraft is suspected, and where automatic distinct display of SSR Mode A Code 7500 and Code 7700 is not provided, the radar controller shall attempt to verify his/her suspicion by setting the SSR decoder to Mode A Code 7500 and thereafter to Code 7700.

NOTE: An aircraft equipped with an SSR transponder is expected to operate the transponder on Mode A Code 7500 to indicate specifically that it is the subject of unlawful interference. The aircraft may operate the transponder on Mode A Code 7700, to indicate that it is threatened by grave and imminent danger and requires immediate assistance. An aircraft equipped with other surveillance system transmitters, including ADS-B and ADS-C, might send the emergency and/or urgency signal by all of the available means.

15.1.3.3 Whenever unlawful interference with an aircraft is known or suspected or a bomb threat warning has been received, ATS units shall promptly attend to requests by, or to anticipated needs of, the aircraft, including requests for relevant information relating to air navigation facilities, procedures and services along the route of flight and at any aerodrome of intended landing, and shall take such action as is necessary to expedite the conduct of all phases of the flight.

15.1.3.3.1 ATS units shall also:

- a. transmit, and continue to transmit, information pertinent to the safe conduct of the flight, without expecting a reply from the aircraft;
- b. monitor and plot the progress of the flight with the means available and coordinate transfer of control with adjacent ATS units without requiring transmissions or other responses from the aircraft, unless communication with the aircraft remains normal;

- c. inform, and continue to keep informed, appropriate ATS units, including those in adjacent FIRs, which may be concerned with the progress of the flight;

NOTE: In applying this provision, account must be taken of all the factors which may affect the progress of the flight, including fuel endurance and the possibility of sudden changes in route and destination. The objective is to provide, as far in advance as is practicable in the circumstances, each ATS unit with appropriate information as to the expected or possible penetration of the aircraft into its area of responsibility.

d. notify:

- 1. the operator or its designated representative;
- 2. the appropriate rescue coordination centre in accordance with appropriate alerting procedures;
- 3. the appropriate authority designated by the State;

NOTE: It is assumed that the designated security authority and/or the operator will in turn notify other parties concerned in accordance with pre-established procedures.

- e. relay appropriate messages, relating to the circumstances associated with the unlawful interference, between the aircraft and designated authorities.

15.1.4 Emergency Descent

[See Emergency Section]

15.2 SPECIAL PROCEDURES FOR IN-FLIGHT CONTINGENCIES IN OCEANIC AIRSPACE

15.2.1 Introduction

15.2.1.1 Although all possible contingencies cannot be covered, the procedures in 15.2.2 and 15.2.3 provide for the more frequent cases such as:

- a. inability to maintain assigned flight level due to meteorological conditions, aircraft performance or pressurization failure;
- b. en route diversion across the prevailing traffic flow; and
- c. loss of, or significant reduction in, the required navigation capability when operating in an airspace where the navigation performance accuracy is a prerequisite to the safe conduct of flight operations.

15.2.1.2 With regard to 15.2.1.1 a) and b), the procedures are applicable primarily when rapid descent and/or turnback or diversion is required. The pilot's judgement shall determine the sequence of actions to be taken, having regard to the prevailing circumstances. Air traffic control shall render all possible assistance.