

090

COMMUNICATIONS

**COMMERCIAL PILOT LICENCE (A)
(COMMUNICATIONS)**

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
091 00 00 00	<u>COMMUNICATIONS</u> <u>(VFR COMMUNICATIONS)</u>	
091 01 00 00	<u>DEFINITIONS</u>	
091 01 01 00	<u>Explain the meanings and significance of associated terms:</u> <ul style="list-style-type: none"> - Stations - Communication methods 	Annex 10 V2 Ch 1 Doc 4444 Doc 9432 Ch 1
091 01 02 00	<u>Air traffic control abbreviations</u> <ul style="list-style-type: none"> - Define commonly used Air Traffic Control abbreviations: <ul style="list-style-type: none"> - Flight conditions - Airspace - Services - Time - Miscellaneous 	Doc 9432 1.2
091 01 03 00	<u>Q-code groups commonly used in R/T air ground communications</u> <ul style="list-style-type: none"> - Define the Q-code groups commonly used in RTF air to ground communications: <ul style="list-style-type: none"> - Pressure settings - Directions and bearings - State the procedure for obtaining bearing information in flight 	Annex 10 V2 Ch 6
091 01 04 00	<u>Categories of messages</u>	Annex 10 V2 5.1.8

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	<ul style="list-style-type: none"> - List the categories of messages in order of priority: - Identify the types of messages appropriate to each category: - List the priority of a message (given examples of messages to compare) 	
091 02 00 00	<u>GENERAL OPERATING PROCEDURES</u>	Annex10 V2
091 02 01 00	<u>Transmission of letters</u> <ul style="list-style-type: none"> - State the phonetic alphabet used in radiotelephony: - Identify the occasions when words should be spelt 	Fig 5-1 5.2.1.2 5.2.1.4
091 02 02 00	<u>Transmission of numbers</u> <ul style="list-style-type: none"> - Describe the method of transmission of numbers <ul style="list-style-type: none"> - Pronunciation: - Single digits, whole hundreds and whole thousands 	5.2.1.3.1 5.2.1.3.3 5.2.1.3.1.4
091 02 03 00	<u>Transmission of time</u> <ul style="list-style-type: none"> - Describe the ways of transmitting time <ul style="list-style-type: none"> - Standard time reference (UTC): - Minutes, minutes and hours, when required 	Annex 10 V2 5.2.1.4 Doc 9432 Ch2.2
091 02 04 00	<u>Transmission technique</u> <ul style="list-style-type: none"> - Explain the techniques used for making good R/T transmissions 	Recommend oral practice following typical flight
091 02 05 00	<u>Standard words and phrases (relevant R/T)</u>	Profiles (no JAA oral exam)

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091 02 06 00	<ul style="list-style-type: none"> - Define the meaning of standard words and phrases - Use correct phraseology for each phase of VFR flight <ul style="list-style-type: none"> - Aerodrome procedures <ul style="list-style-type: none"> - Departure information and engine start procedures - Taxi instructions - Aerodrome traffic and circuits - Final approach and landing - After landing - Essential aerodrome information - VFR Departure - VFR Arrival 	<p>Annex 10 V2 5.2.1.4.8 Doc 4444 Doc 9432 Ch 2 and 4</p> <p>Doc 9432 Ch 7 - 7.2 7.4</p>
	<p><u>Radiotelephony call signs for aeronautical (ground) stations including use of abbreviated call signs</u></p> <ul style="list-style-type: none"> - Name the two parts of the call sign of an aeronautical station - Identify the call sign suffixes for aeronautical stations (for example: Approach control – CONTROL) - Explain when the call sign may be omitted or abbreviated to the use of the suffix only 	<p>Annex 10 V2 5.2.1.6.1.1 5.2.1.6.1.2 5.2.1.6.1.2 Doc 9432 Ch2.7</p>
091 02 07 00	<p><u>Radiotelephony call signs for aircraft including use of abbreviated call signs</u></p> <ul style="list-style-type: none"> - List the three different ways to compose an aircraft call sign - Describe the abbreviated forms of aircraft call signs 	<p>Annex 10 V2 5.2.1.6.2.1 5.2.1.6.3.1</p>

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091 02 08 00	<ul style="list-style-type: none"> – Explain when aircraft call signs may be abbreviated <p><u>Transfer of communication</u></p> <ul style="list-style-type: none"> – Describe the procedure for transfer of communication – By ground station: – By aircraft 	<p>5.2.1.6.2.2 5.2.1.6.3.2.1 5.2.1.6.3.3.1 Doc 9432 2.7.2.4 Doc 4444 pX 3.1.4 Principles explained in Annex 10 V2 5.2.2.5 5.2.2.6</p>
091 02 09 00	<p><u>Test procedures including readability scale</u></p> <ul style="list-style-type: none"> – Explain how to test radio transmission and reception: – State the readability scale and explain its meaning 	<p>See examples in Doc 9432 Ch2.8 Annex 10 V2 5.2.1.7</p>
091 02 10 00	<p><u>Read back and acknowledgement requirements</u></p> <ul style="list-style-type: none"> – State the requirement to read back ATC route clearances – State the requirement to read back clearances related to runway in use – State the requirement to read back 'other clearances' including conditional clearances – State the requirement to read back data such as runway, SSR codes etc 	<p>Doc 9432 Ch2.8.4 Doc 4444 pIX 3.4 pX 2.5 – 2.8 Doc 9432 2.8.3 4.4 4.5</p>
091 02 11 00	<p><u>Radar procedural phraseology</u></p> <ul style="list-style-type: none"> – Use the correct phraseology for an aircraft receiving a radar service – Radar identification: – Radar vectoring: 	<p>Doc 9432 Ch 6 Recommend oral practise for typical flight situations</p>

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091 03 00 00	<ul style="list-style-type: none"> - Traffic information and avoidance: - SSR procedures <p><u>RELEVANT WEATHER INFORMATION TERMS</u></p>	
091 03 01 00	<p><u>Aerodrome weather</u></p> <ul style="list-style-type: none"> - List the contents of aerodrome weather reports and state the units of measurement used for each item - Wind direction and speed - Variation of wind direction and speed - Visibility - Present weather - Cloud amount and type (including the meaning of CAVOK) - Air temperature and dewpoint - Pressure values (QNH, QFE) - Supplementary information (aerodrome warnings, landing runway, runway condition, restrictions, obstructions, windshear warnings, etc): 	Annex 3 4.13 4.5 -4.12
091 03 02 00	<p><u>Weather broadcast</u></p> <ul style="list-style-type: none"> - List the sources of weather information available to aircraft in flight - Explain the meaning of the abbreviations:- ATIS,VOLMET 	Annex 3
091 04 00 00	<p><u>ACTION TO BE TAKEN IN CASE OF COMMUNICATION FAILURE</u></p> <p><u>State the action to be taken in case of communication failure on a controlled VFR flight</u></p>	Annex 10 V2 5.2.2.7

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	<ul style="list-style-type: none"> – Identify the frequencies to be used in an attempt to establish communication – State the additional information that should be transmitted, in the event of receiver failure – Identify the SSR code that may be used to indicate communication failure – Explain the action to be taken by a pilot with Com failure in the aerodrome traffic pattern at controlled aerodromes 	Annex 2 3
091 05 00 00	<u>DISTRESS AND URGENCY PROCEDURES</u>	Ref JAR-FCL 010 07 01 04
091 05 01 00	<u>State the DISTRESS procedures</u>	Annex 10 V2 5.3
	<ul style="list-style-type: none"> – Define DISTRESS – Identify the frequencies that should be used by aircraft in DISTRESS – Specify the emergency SSR codes that may be used by aircraft, and the meaning of the codes – Describe the action to be taken by the station which receives a DISTRESS message – Describe the action to be taken by all other stations when a DISTRESS procedure is in progress – List the content of a DISTRESS signal/message in the correct sequence 	Doc 9432 Ch 9 Annex 10 V2 5.3.1.1 5.3.1.5 Doc9432 9.2.1.2 Annex 10 V2 5.3.2.2.1 5.3.2.4
091 05 02 00	<u>State the URGENCY procedures</u>	5.3.2.1.1
	<ul style="list-style-type: none"> – Define URGENCY – Identify the frequencies that should be used by aircraft in URGENCY – Describe the action to be taken by the station which receives a URGENCY message 	5.3.1.1 5.3.1.5 5.3.3.2.1

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091 06 00 00	<ul style="list-style-type: none"> - Explain the action to be taken by all other stations when a URGENCY procedure is in progress - List the content of a URGENCY signal/message in the correct sequence <p><u>GENERAL PRINCIPLES OF VHF PROPAGATION AND ALLOCATION OF FREQUENCIES</u></p> <p><u>Describe the radio frequency spectrum with particular reference to VHF</u></p> <ul style="list-style-type: none"> - State the names of the bands into which the radio frequency spectrum is divided - Identify the frequency range of the VHF band - Name the band normally used for Aeronautical Mobile Service voice communications - State the frequency separation allocated between consecutive VHF frequencies - Describe the propagation characteristics of radio transmissions in the VHF band - Describe the factors which reduce the effective range and quality of radio transmissions - State which of these factors apply to the VHF band - Calculate the effective range of VHF transmissions assuming no attenuating factors 	<p style="text-align: right;">5.3.3.3.1</p> <p style="text-align: right;">5.3.3.1.1</p> <p>Ref JAR-FCL 062 00 00 00</p> <p>Using the simple formula: Range = ($\sqrt{\text{Flight Level}}$) x 12</p>