

090

COMMUNICATIONS

**INSTRUMENT RATING (A)
(COMMUNICATIONS)**

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
090 00 00 00	<u>COMMUNICATIONS</u>	
092 00 00 00	<u>IFR COMMUNICATIONS</u>	
092 01 00 00	<u>DEFINITIONS</u>	Ref JAR-FCL 091 01 00 00
092 01 01 00	<u>Meanings and significance of associated terms</u> <ul style="list-style-type: none"> - As for VFR Plus terms used in conjunction with approach and holding procedures: 	Doc 9432 1.1 Doc 4444 Ch1
092 01 02 00	<u>Air traffic control abbreviations:</u> <ul style="list-style-type: none"> - As for VFR Plus additional IFR related terms: 	Doc 9432 1.2
092 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
092 01 04 00	<u>Categories of messages</u> <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) 	Annex 10 V2 5.1.8
090 02 00 00	<u>GENERAL OPERATING PROCEDURES</u>	Annex 10 V2
092 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

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092 02 02 00	<p><u>Transmission of numbers</u></p> <ul style="list-style-type: none"> - Describe the method of transmission of numbers - Pronunciation - Single digits, whole hundreds and whole thousands 	5.2.1.4 5.2.1.3.1
092 02 03 00	<p><u>Transmission of time</u></p> <ul style="list-style-type: none"> - Describe the ways of transmitting time - Standard time reference (UTC) - Minutes, minutes and hours, when required 	Annex 10 V2 5.2.1.4 Doc 9432 Ch 2.2
092 02 04 00	<p><u>Transmission technique</u></p> <ul style="list-style-type: none"> - Explain the techniques used for making good R/T transmissions 	Recommend oral practice following typical flight Profiles (no JAA oral exam)
092 02 05 00	<p><u>Standard words and phrases (relevant R/T)</u></p> <ul style="list-style-type: none"> - Define the meaning of standard words and phrases - Use correct phraseology for each phase of IFR flight <ul style="list-style-type: none"> - Pushback - IFR departure - Airways clearances - Position reporting - Approach procedures - IFR arrivals 	Annex 10 v2 5.2.1.4.8 Doc 4444

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092 02 06 00	<p><u>Radiotelephony call signs for aeronautical (ground) stations including use of abbreviated call signs</u></p> <ul style="list-style-type: none"> - As for VFR - 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 abbreviated to the use of the suffix only 	Ref: JAR-FCL 091 02 06 00
092 02 07 00	<p><u>Radiotelephony call signs for aircraft including use of abbreviated call signs</u></p> <ul style="list-style-type: none"> - As for VFR - Explain when the suffix 'HEAVY' should be used with an aircraft call sign - Explain the use of the phrase 'Change your call sign to....' - Explain the use of the phrase 'Revert to flight plan call sign' 	Annes 10 v2 5.4.1.6.2.1 5.2.1.6.3.1 5.2.1.6.2.2 5.2.1.6.3.2.1 5.2.1.6.3.3.1 Doc 9432 .7.2.4 Doc 4444 3.1.4
092 02 08 00	<p><u>Transfer of communications</u></p> <ul style="list-style-type: none"> - Describe the procedure for transfer of communication <ul style="list-style-type: none"> - By ground station: - By aircraft 	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
092 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 	See examples in DOC 9432 Ch 2.8 Annex 10 V2 5.2.1.7

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092 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 4444 pX 2.5 2.6 2.7 2.8</p>
092 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 <ul style="list-style-type: none"> - Radar identification: - Radar vectoring: - Traffic information and avoidance: - SSR procedures 	<p>Doc 9432 Ch 6 Recommend oral practise for typical flight situations</p>
092 02 12 00	<p><u>Level changes and reports</u></p> <ul style="list-style-type: none"> - Use the correct term to describe vertical position <ul style="list-style-type: none"> - In relation to flight level (standard pressure setting SPS) - In relation to Altitude (metres/feet on QNH) - In relation to Height (metres/feet on QFE) 	<p>Doc 4444 px Doc 9432 2.4.3.2.3.3 Annex 10 v2 5.2.1</p>
092 03 00 00	<p><u>ACTION REQUIRED TO BE TAKEN IN CASE OF COMMUNICATION FAILURE</u></p> <ul style="list-style-type: none"> - Describe the action to be taken in case of communication failure on a IFR flight - Describe the action to be taken in case of communication failure on a IFR flight when flying in VMC and the the flight will be terminated in VMC - Describe the action to be taken in case of communication failure on a IFR flight when flying in IMC 	<p>Ref JAR-FCL 091 04 00 00 Annex 2 3.6.5.2.1 3.6.4.2.2 Annex 10 v2 5 Doc 4444 RAC</p>

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092 04 00 00	<u>DISTRESS AND URGENCY PROCEDURES</u>	Doc 7030/4 EUR
092 04 01 00	<u>State the PAN medical procedure</u> <ul style="list-style-type: none"> – Describe the type of flights to which PAN MEDICAL applies – List the content of a PAN MEDICAL message in the correct sequence 	Annex 10 V2 5.3.3.4
092 04 02 00	<u>State the DISTRESS procedure</u> <ul style="list-style-type: none"> – Define DISTRESS – Identify the frequencies that can be used by aircraft in DISTRESS – Describe the action to be taken by the station which receives a DISTRESS message – Describe the action by all other stations when a DISTRESS procedure is in progress – List the content of a DISTRESS signal/message in the correct sequence 	Ref JAR-FCL 091 05 01 00 Doc 4444 1 Annex 10 V2 5 Doc 9432 9.2
092 04 03 00	<u>State the URGENCY procedures</u> <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 – Describe the action to be taken by the station which receives a URGENCY message – Describe the action by all other stations when a URGENCY procedure is in progress – List the content of a URGENCY signal/message in the correct sequence 	Ref JAR-FCL 091 05 02 00 Doc 4444 1 Annex 10 v2 5
020 05 00 00	<u>RELEVANT WEATHER INFORMATION TERMS</u>	
092 05 01 00	<u>Aerodrome weather</u> <ul style="list-style-type: none"> – As for VFR – Runway visual range (RVR) 	Ref JAR-FCL 091 03 01 00

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092 05 02 00	<ul style="list-style-type: none"> – Braking action (friction coefficient) <p><u>Weather broadcast</u></p> <ul style="list-style-type: none"> – As for VFR plus the following <ul style="list-style-type: none"> – Explain when aircraft routine meteorological observations should be made – Explain when aircraft Special meteorological observations should be made 	<p>Ref JAR-FCL 091 03 02 00 Annex 3 5.5 5.6</p>
092 06 00 00	<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>Ref JAR-FCL 062 00 00 00</p> <p>Using the simple formula: Range= ($\sqrt{\text{Flight Level}}$) x 12</p>
092 07 00 00	<p><u>MORSE CODE</u></p> <ul style="list-style-type: none"> – Identify radio navigation aids (VOR, DME, NDB, ILS) from their morse code identifiers – SELCAL, TCAS, ACARS phraseology and procedures 	<p>Recommended training: given an aural test comprising groups of 3 letter codes sent at standard rates (approx. 5 seconds per code group, annex 10 Vol1</p>

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		Ch3/3.5.3.6.3b describes typical values) Annex 10 V2 5.2.4 These procedures are not included in the JAR-FCL syllabus, however this subject is appropriate to the training required by professional pilots and may be included in future exams