

AIRLINE TRANSPORT PILOTS LICENSE

(090 00 00 00 - COMMUNICATIONS)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<u>VFR COMMUNICATIONS</u>	
090 01 00 00	<u>DEFINITIONS</u>	
090 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
090 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
090 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

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JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
090 01 04 00	<p><u>Categories of messages</u></p> <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	<p><u>GENERAL OPERATING PROCEDURES</u></p>	Annex10 V2
090 02 01 00	<p><u>Transmission of letters</u></p> <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
090 02 02 00	<p><u>Transmission of numbers</u></p> <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
090 02 03 00	<p><u>Transmission of time</u></p> <ul style="list-style-type: none"> - Describe the ways of transmitting time <ul style="list-style-type: none"> - Standard time reference (UTC): 	Annex 10 V2 5.2.1.4 Doc 9432 Ch2.2

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JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none"> - Minutes, minutes and hours, when required 	
090 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)
090 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 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 	Annex 10 V2 5.2.1.4.8 Doc 4444 Doc 9432 Ch 2 and 4 Doc 9432 Ch 7 - 7.2 7.4
090 02 06 00	<p><u>Radiotelephony call signs for aeronautical (ground) stations including use of abbreviated call signs</u></p>	Annex 10 V2

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JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<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 	5.2.1.6.1.1 5.2.1.6.1.2 5.2.1.6.1.2 Doc 9432 Ch2.7
090 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 – Explain when aircraft call signs may be abbreviated 	Annex 10 V2 5.2.1.6.2.1 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
090 02 08 00	<p><u>Transfer of communication</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
090 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 Ch2.8
090 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 	Annex 10 V2 5.2.1.7 Doc 9432 Ch2.8.4 Doc 4444 pIX 3.4 pX 2.5 – 2.8

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JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none"> – 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 2.8.3</p> <p style="text-align: right;">4.4</p> <p style="text-align: right;">4.5</p>
090 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</p> <p>Recommend oral practise for typical flight situations</p>
090 03 00 00	<p><u>RELEVANT WEATHER INFORMATION TERMS</u></p>	
090 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 <ul style="list-style-type: none"> – Wind direction and speed – Variation of wind direction and speed – Visibility – Present weather 	<p>Annex 3 4.13</p> <p style="text-align: right;">4.5 – 4.12</p>

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JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none"> - 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): 	
090 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
090 04 00 00	<p><u>ACTION TO BE TAKEN IN CASE OF COMMUNICATION FAILURE</u></p>	
090 04 01 00	<p><u>State the action to be taken in case of communication failure on a controlled VFR flight</u></p> <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 10 V2 5.2.2.7 Annex 2 3
090 05 00 00	<p><u>DISTRESS AND URGENCY PROCEDURES</u></p>	Ref JAR-FCL010 07 01 04
090 05 01 00	<p><u>State the DISTRESS procedures</u></p> <ul style="list-style-type: none"> - Define DISTRESS 	Annex 10 V2 5.3 Doc 9432 Ch 9

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JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none"> – 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 	<p>Annex 10 V2 5.3.1.1</p> <p style="text-align: right;">5.3.1.5</p> <p>Doc9432 9.2.1.2</p> <p>Annex 10 V2 5.3.2.2.1</p> <p style="text-align: right;">5.3.2.4</p> <p style="text-align: right;">5.3.2.1.1</p>
090 05 02 00	<p><u>State the URGENCY procedures</u></p> <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 – 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 style="text-align: right;">5.3.1.1</p> <p style="text-align: right;">5.3.1.5</p> <p style="text-align: right;">5.3.3.2.1</p> <p style="text-align: right;">5.3.3.3.1</p> <p style="text-align: right;">5.3.3.1.1</p>
090 06 00 00	<p><u>GENERAL PRINCIPLES OF VHF PROPAGATION AND ALLOCATION OF FREQUENCIES</u></p>	
090 06 01 00	<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 	<p>Ref: JAR-FCL 062 00 00 00</p>

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	<ul style="list-style-type: none"> - 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 	Using the simple formula:- $\text{Range} = (\sqrt{\text{Flight Level}}) \times 12$
090 07 00 00	<u>IFR COMMUNICATIONS</u>	
090 07 01 00	<u>DEFINITIONS</u> <u>Meanings and significance of associated terms</u>	Ref: JAR-FCL 090 01 00 0
	<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
090 07 02 00	<u>Air traffic services abbreviations:</u>	Doc 9432 1.2
	<ul style="list-style-type: none"> - As for VFR Plus additional IFR related terms: 	
090 08 00 00	<u>GENERAL OPERATING PROCEDURES</u>	
090 08 01 00	<u>Standard words and phrases (relevant R/T)</u>	Annex 10 v2 5.2.1.4.8 Doc 4444
	<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 	

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	<ul style="list-style-type: none"> - Airways clearances - Position reporting - Approach procedures - IFR arrivals 	
090 08 02 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 090 02 06 00
090 08 03 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 Doc 4444 pX
090 08 04 00	<p><u>Read back and acknowledgement requirements</u></p>	

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	<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>2.5 2.6 2.7 2.8</p>
090 08 05 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>
090 09 00 00	<p><u>ACTION 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 090 04 00 00 Annex 2 3.6.5.2.1 3.6.4.2.2 Annex 10 v2 5 Doc 4444 RAC Doc 7030/4 EUR</p>
090 10 00 00	<p><u>DISTRESS AND URGENCY PROCEDURES</u></p>	
090 10 01 00	<p><u>State the PAN medical procedure</u></p> <ul style="list-style-type: none"> – Describe the type of flights to which PAN MEDICAL applies 	<p>Annex 10 V2 5.3.3.4</p>

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090 10 02 00	<ul style="list-style-type: none"> – List the content of a PAN MEDICAL message in the correct sequence <p><u>State the DISTRESS procedure</u></p> <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 	<p>Ref: JAR-FCL 090 05 01 00 Doc 4444 1 Annex 10 V2 5 Doc 9432 9.2</p>
090 10 03 00	<p><u>State the URGENCY procedures</u></p> <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 	<p>Ref: JAR-FCL 090 05 02 00 Doc 4444 1 Annex 10 v2 5</p>
090 11 00 00	<u>RELEVANT WEATHER INFORMATION TERMS</u>	
090 11 01 00	<p><u>Aerodrome weather</u></p> <ul style="list-style-type: none"> – As for VFR 	<p>Ref: JAR-FCL 090 03 01 00</p>

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090 11 02 00	<ul style="list-style-type: none"> - Runway visual range (RVR) - 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 090 03 02 00 Annex 3 5.5 5.6</p>
090 12 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 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</p>

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		professional pilots and may be included in future exams