

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO 071 01 01 00	LEARNING OBJECTIVES	REMARKS
	<p><u>Annex 6 parts I, II and III</u></p> <ul style="list-style-type: none"> – State the definitions contained in Chapter 1. – Explain the applicability of Annex 6. (Chapter 2). – Define the operator’s responsibilities. (Chapter 3). – State the pilot’s actions in the event of an emergency violation of local regulations or procedures. (Chapter 3). – Annex 6 Part 1 Chapter 4 – FLIGHT OPERATIONS <ul style="list-style-type: none"> – State the requirement to be satisfied for the issue of an Air Operator’s Certificate. – State the essential qualifications necessary for a person to legally taxi aircraft. – List the factors considered when establishing minimum flight altitude. – List the factors accounted for when establishing aerodrome operating minimum. – Detail the content of a passenger briefing in respect of emergency equipment and exits. (See Chapter 6 also) – State the flight preparation forms to be completed before flight. – Describe the requirements regarding the operational flight plan. – Specify the conditions to be satisfied in order for an aerodrome to be considered suitable as a take-off alternate aerodrome. – State that, when under IFR, it is unnecessary to specify a destination alternate. 	<p>Specific attention must be given to the definitions of:</p> <ul style="list-style-type: none"> a) Decision altitude/height b) Minimum descent altitude/height c) Obstacle clearance altitude/height

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none"> - Specify the weather conditions for VFR/IFR flights. - State the fuel and oil requirements for flight, for propeller-driven aeroplanes or turbo-jet aeroplanes, with and without a destination alternate nominated. - State the considerations accounted for in the fuel and oil calculation. - State the rules to be obeyed when refueling with passengers on board. - Detail the rules regarding the carriage and use of oxygen. (Also Chapter 6). - Annex 6 Part 1 Chapter 4 <ul style="list-style-type: none"> - State the rules for the compliance/non compliance with aerodrome operating minima. - State the rules applicable to operating flight-crew members. - State the rules regarding the changes to an ATS flight plan made in flight. - Define the duties of the pilot-in-command. - Define the duties of a flight operations officer. - Annex 6 Part 1 Chapter 5 – AEROPLANE PERFORMANCE & OPERATING LIMITATIONS <ul style="list-style-type: none"> - List the factors that may significantly affect the aeroplane performance. - State the limitations on take-off and landing mass. - State the aeroplane performance operating limitations (see attachment C) - Annex 6 Part 1 Chapter 6 – AEROPLANE INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS <ul style="list-style-type: none"> - List the contents of the aircraft operating manual. 	<p>See Performance – Aeroplanes 032</p>

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

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	<ul style="list-style-type: none"> – Describe the recommended minimum medical kits and fire extinguishers. – List the mandatory documents to be carried in flight. – Specify the colours and markings used to indicate break-in points. – List the parameters to be recorded by the flight data recorder. (<i>FDR</i>) – State the rules relative to the retention of data recorded by flight data recorders. – State the rules regarding the location, construction, installation and operation of flight data recorders. – State the objectives of the cockpit voice recorder. – List the minimum equipment required for VFR flight/IFR flight/night VFR flight. – State the maximum distance, from a suitable landing aerodrome, that an aircraft may operate over water without the carriage of additional life saving equipment. – Specify the life saving and survival equipment to be carried on over water flights, when necessary, and on flights over designated land areas. – Detail the external and internal light requirements for an aeroplane operating at night. – State the conditions that require the following equipment to be fitted <ul style="list-style-type: none"> – a. Weather Radar b. Radiation Indicator c. Machmeter d. GPWS – Define the function of the minimum equipment list (MEL) and the master minimum equipment list (MMEL) – Summarise the contents of attachment G (supplementary to Annex 6) – Annex 6 Part 1 Chapter 7 – Aeroplane Communication and Navigation equipment 	

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

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	<ul style="list-style-type: none"> – State the minimum requirements to be fulfilled by radio comms. equipment for an aeroplane. – State the minimum navigation equipment requirements for an aeroplane. – Annex 6 Part 1 Chapter 8 – aeroplane maintenance <ul style="list-style-type: none"> – Detail the items to be checked in the servicing record, by the pilot-in-command, before acceptance for flight. – Annex 6 Part 1 Chapter 9 – aeroplane flight crew <ul style="list-style-type: none"> – State the occasions on which a Flight Engineer/Flight Navigator must be included in the crew. – State the minimum recent experience necessary for a pilot to be assigned as pilot-in-command/co-pilot. – Specify the knowledge and experience of a route or route segment, required by a pilot, before assignment as pilot-in-command. – State the requirements for proficiency checks on a pilot. – Annex 6 Part 1 Chapter 11 – manuals, logs and records <ul style="list-style-type: none"> – List the contents of the operations manual. – List the contents of the journey logbook. – List the details of the safety and survival equipment on board which, in the event of an emergency, are to be transmitted to the rescue co-ordination centre. – Annex 6 Part 1 Chapter 13 – security <ul style="list-style-type: none"> – State the rules relevant to the security of the flight crew compartment. 	

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none"> – State the action of the pilot-in-command on landing after an act of unlawful interference. 	
	LEARNING OBJECTIVES	REMARKS
JAR-FCL REF NO		
071 01 02 00	<u>JAR –OPS Requirements</u>	
071 01 02 01	General Requirements	
	<ul style="list-style-type: none"> – State the operator’s requirements regarding a quality system 	JAR OPS 1.035
	<ul style="list-style-type: none"> – State the operator’s responsibility regarding the training requirements of crew members who are neither flight crew nor cabin crew 	JAR OPS 1.040
	<ul style="list-style-type: none"> – State the regulations concerning the carriage of persons on an aeroplane 	JAR OPS 1.075
	<ul style="list-style-type: none"> – State the operator’s and commander’s responsibilities regarding admission to the flight deck and the carriage of unauthorised persons or cargo 	JAR OPS 1.100
	<ul style="list-style-type: none"> – State the operators responsibility concerning portable electronic devices 	JAR OPS 1.110
	<ul style="list-style-type: none"> – State the regulations concerning endangering safety 	JAR OPS 1.120 To be checked with air law
	<ul style="list-style-type: none"> – List the documents to be carried on each flight 	JAR OPS 1.125
	<ul style="list-style-type: none"> – State the operator’s responsibility regarding manuals to be carried 	JAR OPS 1.130
	<ul style="list-style-type: none"> – List the additional information and forms to be carried on board 	JAR OPS 1.135
	<ul style="list-style-type: none"> – List the items of information to be retained on the ground by the operator 	JAR OPS 1.140 Relevant documents
	<ul style="list-style-type: none"> – State the operator’s responsibility regarding inspections 	JAR OPS 1.145

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none"> – State the responsibility of the operator and the commander regarding the production of and access to records and documents 	JAR OPS 1.150
	<ul style="list-style-type: none"> – State the operator's responsibility regarding the preservation of documentation and recordings 	JAR OPS 1.155
	<ul style="list-style-type: none"> – Define the terms used in leasing 	JAR OPS 1.165
	<ul style="list-style-type: none"> – State the responsibility and requirements of each party in various cases, e.g. <ul style="list-style-type: none"> – Between JAA operators – Between JAA and others 	
071 01 02 02	Operator certification and supervision requirements	
	<ul style="list-style-type: none"> – State the rules applicable to Air Operator Certification 	JAR OPS 1.175
	<ul style="list-style-type: none"> – State the conditions to be met for the issue or revalidation of an AOC 	JAR OPS 1.180
071 01 02 03	Operational procedures requirements	
	<ul style="list-style-type: none"> – State the operator's responsibilities concerning: <ul style="list-style-type: none"> – Operational control and supervision – Provision of an Operations Manual – Training of personnel – Establishing ground and aircrew standard procedures – Use of air traffic services – Use of instrument departure and approach procedures 	JAR OPS 1.195
		JAR OPS 1.200
		JAR OPS 1.205
		JAR OPS 1.210
		JAR OPS 1.215
		JAR OPS 1.230

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none"> – State the requirements for carrying Persons with Reduced Mobility (PRMs) – State the operator’s responsibilities for the carriage of inadmissible passengers, deportees or persons in custody – State the requirements for the stowage of baggage and cargo in the passenger cabin – State the requirements regarding passenger seating and emergency evacuation – State the requirements for the securing of passenger cabin and galley(s) 	<p>JAR OPS 1.265</p> <p>JAR OPS 1.270</p> <p>JAR OPS 1.280</p> <p>JAR OS 1.325</p>
JAR-FCL REF NO 071 01 02 04	<p style="text-align: center;">LEARNING OBJECTIVES</p> <p>All weather operations requirements: low visibility operations</p> <ul style="list-style-type: none"> – State the operator’s responsibility regarding the establishing of aerodrome operating minima – List the parameters to be considered in establishing the aerodrome operating minima – Define the criteria to be taken into consideration for the classification of aeroplanes – Define the following terms <ul style="list-style-type: none"> – Circling – Low visibility procedures – Low visibility take off – Flight control system 	<p style="text-align: center;">REMARKS</p> <p>JAR OPS 1.1430 and appendix 1 and 2 to JAR OPS 1.430</p> <p>JAR OPS 1.435</p>

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
071 01 02 05	<ul style="list-style-type: none"> – Fail-passive flight control system – Fail-operational flight control system – Fail-operational hybrid landing system – Visual approach 	
	<ul style="list-style-type: none"> – State the general rules for low visibility operations 	JAR OPS 1.1440 appendix
	<ul style="list-style-type: none"> – State the rules concerning the use of aerodromes for low visibility operations 	JAR OPS 1.445
	<ul style="list-style-type: none"> – State the qualification requirement for flight crew to conduct low visibility operations 	JAR OPS 1.450
	<ul style="list-style-type: none"> – State the operating procedures for low visibility operations 	JAR OPS 1.455
	<ul style="list-style-type: none"> – State the operator and commander's responsibilities regarding minimum equipment for low visibility operations 	JAR OPS 1.460
	<ul style="list-style-type: none"> – State the minimum visibility and separation from cloud for VFR in each class of airspace 	JAR OPS 1.465
	<ul style="list-style-type: none"> – State the requirements for Special VFR 	Appendix
	Instrument and equipment requirements	
	<ul style="list-style-type: none"> – State the requirements regarding circuit protection devices 	JAR OPS 1.635
	<ul style="list-style-type: none"> – State the requirements regarding windshield wipers 	JAR OPS 1.645
	<ul style="list-style-type: none"> – State the circumstances in which airborne weather radar equipment is not compulsory 	JAR OPS 1.670
	<ul style="list-style-type: none"> – State the conditions under which a crew member interphone system and public address system are mandatory 	JAR OPS 1.690
	<ul style="list-style-type: none"> – State the requirements regarding internal doors and curtains 	JAR OPS 1.735

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
071 01 02 06	<p>Communication and navigation equipment requirements</p> <ul style="list-style-type: none"> – State the requirements regarding the provision of an audio selector panel – List the requirements for radio equipment when flying under VFR by reference to visual landmarks – List the requirements for communications and navigation equipment when operating under IFR or under VFR over routes not navigated by reference to visual landmarks 	<p>JAR OPS 1.855 JAR OPS 1.860 JAR OPS 1.865</p>
JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
071 01 02 07	<p>Aeroplane maintenance</p> <ul style="list-style-type: none"> – Define the meanings of the terms: <ul style="list-style-type: none"> – Pre-flight inspection – Approved standard – Approved by the authority – State the general requirements for the approval of a maintenance system – State the general requirements for ensuring that maintenance is carried out to an appropriate standard – Describe the operation of a maintenance quality system – Describe the operator's responsibility regarding an operator's Maintenance Management exposition – Describe the operator's responsibility regarding an aeroplane maintenance programme – Describe the operator's responsibility regarding the continued validity of the AOC in respect of the maintenance system 	<p>JAR OPS 1.880</p> <p>JAR OPS 1.885 JAR OPS 1.895 JAR OPS 1.900 JAR OPS 1.905 JAR OPS 1.910 JAR OPS 1.930</p>

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none"> - Describe the procedure concerning the Equivalent Safety Case 	JAR OPS 1.935
	LEARNING OBJECTIVES	REMARKS
JAR-FCL REF NO		
071 01 03 00	<u>Navigation requirements for Long Range Flights</u>	
071 01 03 01	<p>Flight Management</p> <ul style="list-style-type: none"> - Navigation planning procedures <ul style="list-style-type: none"> - Describe the operator's responsibilities concerning routes and areas of operation - List the factors to be considered by the commander before commencing the flight - Completion of flight plans <ul style="list-style-type: none"> - Describe the commander's responsibilities concerning the operational flight plan - List the details to be included in the operational flight plan - State the normal time, in advance of departure, for filing an ATS flight plan on the ground <p>Choice of route, speed and altitude</p> <ul style="list-style-type: none"> - Selection of a route <ul style="list-style-type: none"> - List the factors to be considered - Describe the meaning of the term "adequate aerodrome" 	<p>JAR-OPS 1.240 See also 033 01 01 00 Annex 6 chap 4 para 4.3.1 and JAR OPS 1.290</p> <p>Annex 6 para 4.3.3.1</p> <p>Para 4.3.3.2</p> <p>Annex 2 para 3.3 (note an appropriate ATS authority may require other times)</p> <p>JAR-OPS IEMOPS 1.220</p>

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

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	<ul style="list-style-type: none"> – Describe the limitations imposed by JAR-OPS on extended range operations with two-engined aeroplanes with and without ETOPS approval 	JAR-OPS 1.245
	<ul style="list-style-type: none"> – Describe the limitation on conducting over water flights by aircraft that do not meet the ditching requirements prescribed in the applicable airworthiness code 	JAR-OPS 1.060
	<ul style="list-style-type: none"> – Describe the limitations imposed by JAR-OPS to Performance Class A aeroplanes <ul style="list-style-type: none"> – En-route – one engine inoperative – En-route – aeroplanes with three or more engines, two engines inoperative 	JAR-OPS 1.500 AMC OPS 1.500 Annex 6 para 5.2.9
	<ul style="list-style-type: none"> – Describe the limitations imposed by JAR-OPS to Performance Class B aeroplanes <ul style="list-style-type: none"> – En-route – multi engined aeroplanes – En-route – single engined aeroplanes 	JAR-OPS 1.505 Annex 6 para 5.2.10
	<ul style="list-style-type: none"> – Describe the limitations imposed by JAR-OPS to Performance Class C aeroplanes <ul style="list-style-type: none"> – En-route - all engines operating – En – route – one engine inoperative – En-route – aeroplanes with three or more engines, two engines inoperative 	JAR-OPS 1.540 JAR-OPS 1.542
	<ul style="list-style-type: none"> – Selection of cruising speed <ul style="list-style-type: none"> – Specify the correct cruising speed for the operational conditions pertaining; calculate the effect of using a different speed – Use table to calculate the cruising speed 	JAR-OPS 1.575 JAR-OPS 1.580 JAR-OPS 1.585

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none"> - Selection of cruising altitude <ul style="list-style-type: none"> - Specify appropriate cruising levels for normal long range IFR flights and for those operating on the North Atlantic Operational Track Structure - Specify the optimum cruising altitude for the aeroplane given a relevant input and state the effect of selecting a higher or lower altitude <ul style="list-style-type: none"> - Use table to calculate the optimum cruising altitude - Describe the JAR-OPS requirements relative to the establishment of minimum flight altitude - Selection of alternate aerodrome <ul style="list-style-type: none"> - State the circumstances in which a take-off alternate must be selected - State the maximum flight distance of a take-off alternate for: <ul style="list-style-type: none"> - Two-engined aeroplane - ETOPS approved aeroplane - A three or four engined aeroplane - State the factors to be considered in the selection of a take-off alternate - State when a destination alternate need not be selected - State when two destination alternates must be selected - State the factors to be considered in the selection of a destination alternate aerodrome - State the factors to be considered in the selection of an en-route alternate aerodrome 	<p>AMC OPS 1.500 AND 1.580</p> <p>JAR-OPS 1.295 Annex 6 para 4.3.4.1</p> <p>JAR-OPS 1.297 and 1.225 JAR-OPS 1.295</p> <p>JAR-OPS 1.297</p>

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

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071 01 03 02	<ul style="list-style-type: none"> - State the JAR-OPS requirement regarding the maximum percentage of the landing distance available that may be planned (or in flight replanned) to be used at the destination and any alternate aerodrome by: <ul style="list-style-type: none"> - A turbo-jet powered aeroplane performance class A - A turboprop aeroplane performance class A - A performance B aeroplane - A performance C aeroplane - Minimum time routes <ul style="list-style-type: none"> - Define, construct, interpret minimum time route <p>Transoceanic and polar flight (ICAO Doc 7030 – Regional Supplementary Procedures).</p> <ul style="list-style-type: none"> - Monitoring navigation system accuracy and subsequent actions <ul style="list-style-type: none"> - Describe the possible indications of navigation system degradation - Describe by what emergency means course and INS can be cross checked in the case of: <ul style="list-style-type: none"> - 3 navigation systems: comparison between outputs should reveal faulty system - 2 navigation systems - Interpret VOR, NDB, VOR/DME information to calculate aircraft position and aircraft course - Describe the general ICAO procedures applicable in North Atlantic airspace (NAT) if the aircraft is 	<p>JAR-OPS 1.515</p> <p>JAR-OPS 1.550</p> <p>JAR-OPS 1.595</p> <p>(The route giving the shortest flight time from departure to destination adhering to all ATC and airspace restrictions)</p> <p>ICAO SUPPS (Doc 7030/4)</p>

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<p>unable to continue the flight in accordance with its air traffic control clearance</p> <ul style="list-style-type: none"> - Describe the ICAO procedures applicable in North Atlantic Airspace (NAT) in case of radio communication failure - Describe the recommended initial action if an aircraft is unable to obtain a revised air traffic control clearance - Describe the subsequent action for: <ul style="list-style-type: none"> - aircraft able to maintain assigned flight level - aircraft unable to maintain assigned flight level - Describe the MNPS organised track system (OTS) organisation - Determination of tracks and courses for random routes in NAT (partially or wholly outside MNPS Organised Track System (OTS)) - Specify the method by which planned tracks are defined (by latitude and longitude) in the NAT region: <ul style="list-style-type: none"> - when operating predominately in an east-west direction south of 70°N - when operating predominately in an east-west direction north of 70°N - State the maximum flight time recommended between significant points - Terrestrial magnetism characteristics in polar zones <ul style="list-style-type: none"> - Explain why magnetic compasses become unreliable or useless in polar zones - State in which area VORs are referenced to true north 	<p>NAT/RAC 8) dated 5,2,97</p> <p>DOC 7030/4 NAT/RAC 9 dated 5.2.97</p> <p>DOC 7030/4 NAT/RAC 4 and North Atlantic MNPS Ops Man chap 5</p> <p>1. *(compass unreliability 2. Large values of variation</p>

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none"> – Specific problems of polar navigation <ul style="list-style-type: none"> – Describe the general problems of polar navigation* – Describe what precautions can be taken when operating in the area of compass unreliability as a contingency against INS failure – Describe how grid navigation can be used in conjunction with a Directional Gyro (DG) in polar areas and: <ul style="list-style-type: none"> – Use Polar Stereographic chart and grid co-ordinates to solve polar navigation problems – Use Polar Stereographic chart and grid co-ordinates to calculate navigation data – Use INS information to solve polar navigation problems – Define, calculate: Transport precession, earth rate (astronomic) precession, convergence factor – Describe the effect of using a free gyro to follow a given course – Describe the effect of using a gyro compass with hourly rate corrector unit to follow a given course – Convert grid navigation data into true navigation data, into magnetic navigation data, into compass navigation data – Justify the selection of a different "north" reference at a given position – Calculate the effects of gyro drift due to Earth rotation – Specify the method by which planned tracks are defined for flights operating predominantly in a north-south direction 	<ul style="list-style-type: none"> 3. Lack of short range ground based navigation aids 4. Limited communication (mainly restricted to HF with ATC via a non-ATC relay system) 5. Lack of en-route alternate airfields 6. High rates of gyro correction (for earth rate))

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
071 01 03 03	<ul style="list-style-type: none"> – Describe how the desired route must be specified in the air traffic control flight plan – Determination of tracks on polar routes <ul style="list-style-type: none"> – Describe the track structure used in polar areas – State whether adherence to the Polar Track Structure (PTS) is mandatory – Describe how a polar track should be entered in the air traffic control flight plan: <ul style="list-style-type: none"> when the aircraft is planned to operate along the whole length of the PTS track or, when joining or leaving a PTS track at some intermediate point – Identify the method used for defining cruising speed – Describe how desired initial cruising speed and level should be entered in the air traffic control flight plan 	<p>North Atlantic MNPS OPS Man chap 3</p>
	<p>MNPS Airspace (ICAO Doc. 7030 – Regional supplementary procedures)</p> <ul style="list-style-type: none"> – Definitions – Define the following abbreviations <ul style="list-style-type: none"> – MNPS – MNPSA – OCA – OTS – PRM 	<p>ICAO DOC 7030 (Regional Supplementary procedures) NAT DOC 001, T.13.5 (Consolidated guidance material North Atlantic Region)</p> <p>North Atlantic MNPS Airspace OPS MAN edn 7</p>

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

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	<ul style="list-style-type: none"> – PTS – RVSM, MASPS, WATRS – Geographical limits <ul style="list-style-type: none"> – State the lateral dimensions (in general terms) of MNPS airspace – Vertical limits <ul style="list-style-type: none"> – State the vertical limits of MNPS airspace (between FL 285 and FL 420) – Regulations and Procedures <ul style="list-style-type: none"> – State the regulation concerning the Flight Rules to operate in the NAT region – State the regulation concerning certification to operate in MNPS airspace – Describe the Organised Track System – State the hours of validity of westbound and eastbound tracks (based on times at 30°W) – State the procedure to be adopted by flights crossing 30°W when: <ul style="list-style-type: none"> – eastbound between 0930 and 1029 UTC and westbound between 2300 and 2359 UTC – eastbound at 1030 UTC or later, and westbound at 0000 UTC or later – Interpret correctly a NAT track message – Explain the purpose of the Preferred Route Message (PRM) and identify the latest time of submission of a PRM for the daytime and night-time OTS 	<p>DOC 7030 NAT RAC 3 dated 5.2.97</p> <p>(number of tracks, track lettering by direction, times of westbound and eastbound tracks)</p> <p>Recommended options either: 1. in accordance with</p>

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

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	<ul style="list-style-type: none"> – List the recommendations regarding the flight planning and selection of routes – State the possible limitations of selecting random routes across the OTS – Define the procedure regarding the selection of cruising levels for flights wholly or partly outside the OTS – Define the procedure regarding the selection of cruising levels for flights outside the hours of validity of the OTS – Define the procedure for the selection of significant points to be specified in the flight plan for: <ul style="list-style-type: none"> – east and westbound flights – northbound and southbound flights – State what type of track should be planned between significant points – Define the procedure for entering the route on the ATC flight plan when it is wholly or partially along the OTS – Identify what indication should be inserted on the ATC flight plan to show that the flight is certified as being in compliance with MNPS – Aircraft separation within MNPS <ul style="list-style-type: none"> – State the components of separation within MNPS airspace with and without RVSM – State what minimum lateral separation is used in MNPS – State what minimum longitudinal separation is used for aircraft following the same track when: <ul style="list-style-type: none"> – the preceding aircraft is flying at the same Mach number 	<p>OTS or</p> <ol style="list-style-type: none"> 2. route to join and leave an outer track of OTS, or 3. plan a random route to remain clear of OTS <p>(great circle)</p> <p>DOC 7030 NAT/RAC 14</p>

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none"> – the preceding aircraft is flying at a higher Mach number – Explain how longitudinal separation is maintained in MNPS airspace – Describe how cruising speed for turbojet aircraft should be entered in the ATC flight plan – Oceanic ATC clearance <ul style="list-style-type: none"> – State what minimum change in ETA at the Oceanic entry must be reported to ATC – Describe an "ATC system loop" error – Communications in MNPS airspace <ul style="list-style-type: none"> – State the primary method of air/ground communication in MNPS airspace – Describe the arrangements for passing messages through aeradio stations on HF and VHF – State where position reports should be made – Identify the methods of describing position – State when position reports should be copied to adjacent OCAs – Describe the procedures for making meteorological reports – Describe the correct use of SELCAL within MNPS airspace – Specify the frequency to be used for VHF air to air communication – Specify which additional frequency should be guarded in MNPS airspace – HF communications failure procedures <ul style="list-style-type: none"> – Describe the initial procedure to be adopted by the pilot in command in the event of HF failure en- 	NAT MNPS Airspace OPS Manual 7 th edition

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<p>route when out of range of VHF ground stations</p> <ul style="list-style-type: none"> - Specify the initial contact frequency for air-to-air use - Specify the agreed frequency for the relay of position reports - Specify what action should be adopted when <ul style="list-style-type: none"> - communications failure occurs before entry into NAT Oceanic airspace - communications failure occurs before leaving NAT Oceanic airspace - SSR <ul style="list-style-type: none"> - Identify what SSR transponder code is used and when this code is to be set on after initial entry into NAT Oceanic airspace - Miscellaneous procedures <ul style="list-style-type: none"> - Describe the procedures for: <ul style="list-style-type: none"> - step climb - changes of Mach number - use of FL 330 westbound and FL 350 eastbound - Navigation systems requirements and failure procedures <ul style="list-style-type: none"> - State the minimum navigation system requirements for unrestricted operation in MNPS airspace - List the possible options to be considered by the pilot when one system fails before entering MNPS airspace 	

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none"> - Describe the procedures to be adopted by the pilot when one system fails after entering MNPS airspace - List the actions required by the pilot if the remaining system fails (or when the systems are considered to be unreliable because of widely differing indications), whilst operating in MNPS airspace - Describe the type of procedure recommended in order to minimise the effect of a total in flight navigation computer system failure - Define a Gross Navigation Error (GNE) - Special procedures for in-flight contingencies <ul style="list-style-type: none"> - Describe - initial action - subsequent action - action to be adopted in the event of en-route diversion across the prevailing NAT traffic flow 	<p>(note for climb/descent considerations DOC 7030 NAT/RAC 11 applies)</p>
	LEARNING OBJECTIVES	REMARKS
071 02 00 00	<u>SPECIAL OPERATIONAL PROCEDURES AND HAZARDS (GENERAL ASPECTS)</u>	
071 02 01 00	<u>Minimum Equipment List (MEL)</u>	
	<ul style="list-style-type: none"> - State in which document the MEL can be found - Define the MEL and MMEL 	<p>JAR-OPS 1.030 (See also Annex 6 attachment G)</p>

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
071 02 02 00	<p style="text-align: center;"><u>Aeroplane De-icing/Anti-icing</u></p> <ul style="list-style-type: none"> – Identify the responsibilities of the Operator and the Authority with regard to the MEL and MMEL – State the responsibility of the commander with regard to MEL – Aeroplane Flight Manual <ul style="list-style-type: none"> – State the legal requirement concerning the AFM – List the items to be included in the AFM – Identify the atmospheric conditions resulting in ice, snow, slush or frost formation on aircraft surfaces whilst on the ground – State the difference between De-icing and Anti-icing – Describe the effects of ice formation on aircraft on the ground and in the air – Define the operator’s responsibilities with regard to ground and flight icing – Define the commander’s responsibilities with regard to ground and flight icing – Locate where a commander can find information on De-icing and Anti-icing – Define the types of De-icing/Anti-icing on the ground – Define and describe the different stages of a De-icing/Anti-icing procedure – Describe the procedure when the fluid protection time is exceeded – List the types of De-icing/Anti-icing fluids available – Describe the recommended procedure for ground De-icing/Anti-icing 	<p>Annex 8 para 9.5 JAR 25.1581 See also 050 09 01 01-3</p> <p>JAR-OPS 1.345 and 1.675</p> <p>JAR-OPS IEM OPS 1.1045 © para 8 Fluid, hot air, sweeping, taxi through</p> <p>Type I/II Cold/hot application Given temp and type of</p>

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none"> – Interpret the fluid holdover time tables – List the factors which can reduce the fluid protection on time – State when the aircraft must be free of anti-icing fluid 	contaminant
071 02 03 00	<p><u>Bird strike risk and avoidance</u></p> <ul style="list-style-type: none"> – List the sources of information on bird strike hazards: <ul style="list-style-type: none"> – ICAO information systems (IBIS) – Aeronautical charts – ATS messages – Define the commander’s responsibilities regarding the reporting of bird hazards and bird strikes – Identify where the highest risk of bird strike is to be encountered 	Annex 14 chap 9
071 02 04 00	<p><u>Noise Abatement</u></p> <ul style="list-style-type: none"> – Define the operator’s responsibilities regarding noise abatement procedures – Identify what equipment noise preferential runways should possess – Identify what runway conditions would preclude the selection of a noise preferential runway – State the minimum height for turns and obstacles clearance on noise preferential routes – Aeroplane operating procedures <ul style="list-style-type: none"> – Describe the purpose of the departure procedures A and B and, – State the safety limitations for departure procedures concerning 	JAR-OPS 1.235 PANS OPS DOC 8168.611 VOR 1 Sect 5

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none"> – Minimum steady climb speed – Maximum body angle – Power reduction (minimum height, minimum climb gradient, obstacle clearance after engine failure) – Approach Procedures <ul style="list-style-type: none"> – State the minimum range from the threshold from which final landing configuration takes precedence over noise abatement – Describe the limitation on turns for visual or instrument approaches – Explain how reduced power/reduced drag approaches are achieved – List the adverse operating conditions in which noise abatement approach procedures should not be required – Landing Procedures <ul style="list-style-type: none"> – State the rules regarding <ul style="list-style-type: none"> – Use of reverse thrust on landing – Use of displaced thresholds 	
071 02 05 00	<p><u>Fire/Smoke</u></p> <ul style="list-style-type: none"> – List the actions to be taken in the event of a carburettor fire – List the actions to be taken in the event of an engine fire and of smoke in the cockpit – Identify the different types of extinguishant and the type of fire on which each one may be used 	AMC OPS 1.790

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none"> – Describe the precautions to be considered in the application of fire extinguishant – Describe the different fire detection systems – Describe the effects and problems associated with smoke in the <ul style="list-style-type: none"> – Cockpit – Passenger cabin & toilets – cargo compartments – State the number of extinguishers to be on board an aircraft (JAR-OPS) – Identify the appropriate hand held extinguishers to use in <ul style="list-style-type: none"> – Cockpit – passenger cabin & toilets – cargo compartments – Specify the number of crash axes or crowbars to be on board an aircraft (JAR-OPS) – Describe the problems and safety precautions following overheated brakes after landing or an abandoned take-off 	<p>JAR 25.857</p> <p>Class of cargo compartment</p> <p>JAR-OPS 1.790</p>
071 02 06 00	<p><u>Decompression of pressurised cabin</u></p> <ul style="list-style-type: none"> – Describe the minimum requirements for supplementary oxygen to be supplied in pressurised aeroplanes during and following an emergency descent – Describe the differences between slow and rapid or explosive decompression 	

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
071 02 07 00	<p><u>Windshear and Microburst</u></p> <ul style="list-style-type: none"> – Indicate how to detect a slow decompression or an automatic pressurisation system failure – Describe the effects on aircraft occupants of <ul style="list-style-type: none"> – a slow decompression – a rapid or explosive decompression – Describe the actions required following <ul style="list-style-type: none"> – a slow decompression – a rapid or explosive decompression – Define the meaning of the term "low altitude windshear" – Describe: <ul style="list-style-type: none"> – Vertical windshear – Horizontal windshear – Up and down draught windshear – Identify the meteorological phenomena associated with windshear – Describe the most likely locations for windshear encounters associated with the aircraft in relation to: <ul style="list-style-type: none"> – Cb/Ts – Weather fronts – Inversions 	<p>See 050 09 03 00 – 03 and 050 09 04 04</p>

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
071 02 08 00	<ul style="list-style-type: none"> - Hills and structures - Describe the effects of and actions required following an abrupt decrease in headwind component, or increase in tailwind component whilst making an approach to land - Describe the effects of and actions required following an abrupt increase in headwind component or decrease in tailwind component during a departure - Describe the effects of and actions required following entry into a strong downdraught windshear - Describe a microburst and its effects 	<p>(energy loss situation)</p> <p>(energy gain situation)</p>
	<p><u>Wake Turbulence</u></p> <ul style="list-style-type: none"> - Describe the meaning of the term "wake turbulence" - Describe how wake turbulence is created - Describe tip vortices circulation - Explain when vortex generation begins and ends - Describe vortex circulation on the ground with and without crosswind - List the three main factors which combine to give the strongest vortices (heavy, clean, slow) - Describe the wind conditions which are worst for wake turbulence near the ground - Compare aeroplane and helicopter vortex generation (helicopter vortices more intense per kg of gross mass) - List the ICAO wake turbulence aircraft categories according to their maximum certificated take off mass 	<p>PANS RAC DOC 4444 Part V and Air Traffic Services Planning Manual (DOC 9426) Part II Sect 5</p>

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none">- Wake turbulence separation<ul style="list-style-type: none">- Landing- State the minimum separation for landing<ul style="list-style-type: none">- Medium behind a heavy- Light behind a medium or heavy- Full runway take off- State the minimum separation for take-off for a:<ul style="list-style-type: none">- Light or medium behind a heavy- Light behind a medium- Using:<ul style="list-style-type: none">- The same runway- Parallel runways separated by less than 760m- Crossing or parallel runways when the projected flight path of the second aircraft crossed the first at the same level or within 1000ft lower- Intermediate take off<ul style="list-style-type: none">- State the minimum separation to be applied when aircraft are using a runway with a displaced landing threshold for:<ul style="list-style-type: none">- A departing Light or Medium following a Heavy arrival and a departing Light following a Medium arrival	

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
071 02 09 00	<p><u>Security</u></p> <ul style="list-style-type: none"> - An arriving Light or Medium following a Heavy departure and an arriving Light following a medium departure if the projected flight paths cross - Opposite direction - State the minimum separation for <ul style="list-style-type: none"> - A Light or Medium taking off or landing after a Heavy which has made a low or missed approach in the opposite direction, or - A Light taking-off or landing after a Medium which has made a low or missed approach in the opposite direction (the same criteria apply on parallel runways separated by less than 760m) - Define the responsibilities of the operator concerning: <ul style="list-style-type: none"> - Training programmes - Reporting acts of unlawful interference - Aeroplane search procedures - Define the responsibility of the commander concerning reporting requirements following an act of unlawful interference - Unlawful interference (in flight procedures) <ul style="list-style-type: none"> - Describe the commander's responsibilities concerning: <ul style="list-style-type: none"> - notifying the appropriate ATS unit 	<p>JAR-OPS 1 Subpart 5 (see also 01 01 02 02)</p> <p>JAR-OPS 1.1245 ICAO Annex 17 (attachment)</p>

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
071 02 10 00	<p style="text-align: center;"><u>Emergency and precautionary landings</u></p> <ul style="list-style-type: none"> – operation of SSR – departing from assigned track and/or cruising level – selection of cruising level (if no applicable regional procedures have been established – action required on being requested by an ATS unit to confirm SSR code and ATS interpretation response – Describe the different measures to be taken by the State in which the unlawful interference occurs – Describe the flight-deck door characteristics of a transport passenger aeroplane (JAR-OPS) – State who is permitted to carry weapons on board an aircraft and in which circumstances – Describe the procedure to be followed in the case of a bomb on board an aircraft – Define an emergency landing/ditching – Describe a ditching procedure – Describe a precautionary landing – Describe the occasions that require an emergency landing/ditching – Explain the factors to be considered when deciding to make a precautionary/emergency landing or ditching – Describe the passenger briefing to be given before making a precautionary/emergency landing or ditching (including evacuation) 	

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
071 02 11 00	<ul style="list-style-type: none"> – Detail the aeroplane evacuation procedure – Describe the actions and responsibilities of crew members after landing <p><u>Fuel Jettisoning</u></p> <ul style="list-style-type: none"> – Describe the certification requirements for a fuel jettisoning system – State the legal requirements governing the jettisoning of fuel – Describe the safety precautions when jettisoning fuel concerning (smoking, HF radio, electrics, flight pattern, operation of flaps/slats/slats, weather conditions) – Describe basic fuel jettisoning procedures concerning, ATC, altitude/location, monitoring flow 	JAR 25 Annex 2 chap 3 para 3.1.4
071 02 12 00	<p><u>Transport of Dangerous Goods by Air</u></p> <ul style="list-style-type: none"> – State the requirement for aircraft operators to comply with the International Standards and Recommended Practices governing the safe transport of dangerous goods by air – List the definitions and define the terminology associated with the transport of dangerous goods – Identify the technical instructions and their applicability to the classification and safe transport of dangerous goods by air – Identify the items that would otherwise be classed as dangerous goods but which are excluded from the requirements – State the provisions relating to these exclusions – State the limitations on transport of dangerous goods by air 	ICAO Annex 18 JAR-OPS 1Subpart R Sections 1 and 2 Annex 18 chap 1 JAR-OPS 1.1170 JAR-OPS 1.1160 IEM OPS 1.11160 Annex 18 chap 4 JAR-OPS 1.1165 Annex 18 chap 5 and 6

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none"> – Describe the general requirements for packaging, labelling and marking – State the responsibility of the shipper and operator regarding the dangerous goods transport document – State the function of the acceptance checklist – Describe the restrictions on the carriage of dangerous goods – Describe the information to be provided by the operator to: <ul style="list-style-type: none"> – The pilot in command and flight crew – Passengers – Other persons – Describe the information to be provided by the pilot in command to aerodrome authorities – Describe the information to be provided by the operator in the event of an aircraft accident or incident – Describe the operators general responsibility regarding the training of personnel – State the requirements concerning accident and incident reporting 	<p>JAR-OPS 1.1175 Annex 18 chap 7 JAR-OPS 1.1185 Annex 18 Chap 8 JAR-OPS 1.1195 JAR-OPS 1.1210 Annex 18 chap 9 JAR-OPS1.1215 Annex 18 chap 9 JAR-OPS 1.1215 Annex 18 chap 9 JAR-OPS 1.1215 JAR-OPS 1.1220 Annex 18 chap 12 JAR-OPS 1.1225</p>
071 02 13 00	<p><u>Contaminated Runways</u></p> <ul style="list-style-type: none"> – Define a contaminated runway, a damp runway, a wet runway, a dry runway 	<p>JAR-OPS 1.480 (a) (2)</p>

AIRLINE TRANSPORT PILOTS LICENSE
(070 00 00 00 - OPERATIONAL PROCEDURES)

JAR-FCL REF NO	LEARNING OBJECTIVES	REMARKS
	<ul style="list-style-type: none"> – Describe the types of contamination (stating the minimum depth to be considered contaminated) – State the maximum depth of each contaminant that will preclude operations – Describe aquaplaning (hydroplaning) and its effect – Describe the different types of hydroplaning – Define and calculate the hydroplaning speed – List and describe the methods used to communicate braking action – Define braking co-efficient of friction and state that which is considered normal for a wet runway – Describe the effect that contamination and/or a low co-efficient of friction has on performance calculations – Describe the JAR-OPS requirements concerning landing on wet or contaminated runways – Describe the precautions to take when landing in heavy rain – Interpret from a snowtam the contamination and braking action on a runway 	<p>JAR 25x1592</p> <p>Annex 14 para 2.8, Annex 15 app 2</p> <p>See 032 03 01 04</p>