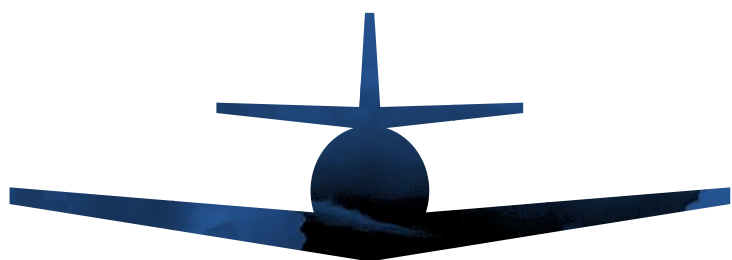




# **GUERNSEY AVIATION REQUIREMENTS (GARs)**



**PART 91  
PART 121  
and  
PART 135**

**GENERAL  
OPERATING  
INSTRUCTIONS  
and  
COMMERCIAL  
AIR TRANSPORT  
OPERATIONS**

**BAILIWICK OF GUERNSEY**

Director of Civil Aviation

© Published by the Director of Civil Aviation, Bailiwick of Guernsey

First Issue	March 2016
Second issue	August 2016

This second issue:

- incorporates amendments to ICAO Annex 6, Parts I and III that become effective in November 2016;
- introduces corrections and additions pursuant the April 2016 audit by the UK CAA against ICAO standards;
- deletes some requirements that are not based on a Standard but a Recommended Practice;
- contains editorial corrections and layout improvements.

ICAO compliance:

This second issue incorporates ICAO standards of:

- Annex 6, Part I at amendment 40-A;
- Annex 6, Part II at amendment 34-A;
- Annex 6, Part III at amendment 20-A.

The definitive version of GARs is on the States of Guernsey website <http://www.gov.gg/gars> which should be viewed to establish the latest issue of each Part.

Enquiries regarding the content of this publication should be addressed to the Director of Civil Aviation, Guernsey Airport, Airport Terminal Building, La Villiaze, Forest, Guernsey, GY8 0DS.

Processing of applications will be done by the Guernsey Aircraft Registry. For further information consult <http://www.2-reg.com/> or send a message to [info@2-reg.com](mailto:info@2-reg.com).

## Contents

<b>Subpart A - General</b>	<b>1</b>
<b>Subpart B - Operational Procedures</b>	<b>11</b>
<b>Subpart C - Operating Limitations</b>	<b>30</b>
<b>Subpart D - Mass and Balance</b>	<b>33</b>
<b>Subpart E - Performance</b>	<b>35</b>
<b>Subpart F - Instruments and Equipment</b>	<b>40</b>
<b>Subpart G - Continuing Airworthiness Management</b>	<b>63</b>
<b>Subpart H - Crew Requirements</b>	<b>64</b>
<b>Subpart I - Training</b>	<b>67</b>
<b>Subpart J - Crew Member Competency Requirements</b>	<b>76</b>
<b>Subpart K - Fatigue Management</b>	<b>83</b>
<b>Subpart L - Manuals Logs and Records</b>	<b>85</b>
<b>Subpart SPA - Specific Approvals</b>	<b>94</b>
Section I - General requirements	94
Section II - Operations in areas with specified navigational performance	94
Section III - Operations in airspace with reduced vertical separation minima	94
Section IV - Low visibility operations	95
Section V - Electronic flight bags (EFB)	101
<b>Appendix A - [reserved]</b>	<b>102</b>
<b>Appendix B - Emergency Equipment</b>	<b>105</b>
<b>Appendix C - Aerial work and specialised operations</b>	<b>105</b>
<b>Appendix D - Rules of the Air</b>	<b>105</b>
<b>Appendix E - Performance Classes</b>	<b>106</b>
<b>Appendix F - Fatigue Risk Management System Requirements</b>	<b>114</b>

## Revisions

GAR Issue	Subject
Issue 1	First issue
Issue 2	<ul style="list-style-type: none"> <li>• editorial and layout changes;</li> <li>• removal of the symbol • in various places.</li> <li>• substantive changes to:             <ul style="list-style-type: none"> <li>• .35 – aircraft operating on a Guernsey AOC to be registered in Guernsey;</li> <li>• .240 – aerodrome operating minima to be approved by the Director;</li> <li>• .610(b) – MEL required for Part 135 operations without exception;</li> <li>• .910(a) - allowing flight crew to hold licence validations;</li> <li>• Subpart K and Appendix F - requirements added for FRMS.</li> </ul> </li> <li>• incorporation of Amdt 40-A of ICAO Annex 6, Part I, affecting:             <ul style="list-style-type: none"> <li>• 91.670 Communication equipment;</li> <li>• 91.675 Navigation equipment (including deletion of requirement for approval for most PBN categories);</li> <li>• 91.677 Surveillance equipment;</li> <li>• 91.705 ELT;</li> <li>• 91.707 Location of aircraft in distress;</li> <li>• 121.760 CVR recording time;</li> <li>• 121.767 Flight recorder data recovery;</li> </ul> </li> <li>• removal of requirements that are based on ICAO recommended practices:             <ul style="list-style-type: none"> <li>• .620 Flight compartment door;</li> <li>• .770 GPWS</li> </ul> </li> <li>• references added to other jurisdictions for guidance on MEL compilation;</li> <li>• reference to acceptable fatigue management schemes added in .1200.</li> </ul>

Part 91			Requirement	Part 135			Requirement	Part 121			Requirement
Subpart A – General											
91.1			Purpose	135.1			Purpose	121.1			Purpose
							<i>Note: in this column presentation of GAR 91, GAR 135 and GAR 121, all GAR 91 paragraphs also apply to GAR 135, except when in the same row a different GAR 135 requirement appears in this column, which then applies and overrules the corresponding GAR 91 requirement, or where the symbol ● appears, in which case the corresponding GAR 91 requirement does not apply. Notes are not considered to be paragraphs.</i>				<i>Note: in this column presentation of GAR 91, GAR 135 and GAR 121, all GAR 91 paragraphs also apply to GAR 121, except when in the same row a different GAR 121 requirement appears in this column, which then applies and overrules the corresponding GAR 91 requirement, or where the symbol ● appears, in which case the corresponding GAR 91 requirement does not apply. Notes are not considered to be paragraphs.</i>
	a		The requirements of this Part cover operation and piloting of aircraft, the arrangements for the planning and preparation for flight, and the maintenance and equipment of aircraft.								
	b		These Requirements constitute instructions given by the Director under section 39 of the Air Navigation (Bailiwick of Guernsey) Law, 2012 ("the Law"). These Requirements are not in themselves Law. Failure to comply with these Instructions may constitute an offence under and in accordance with article 74 and the provisions of article 185(1) of the Law. These Requirements encompass and amplify many of the provisions of the Law, including the Rules of the Law set out in Schedule 4 to the Law. Therefore, failure to comply with these Requirements may:								
		1	constitute a breach of one or more provisions of the Law; and								
		2	result in proceedings for breaches of the Law; or								
		3	result in the refusal of an application for renewal of a certificate; or								
		4	result in action to suspend or revoke a certificate								
	c		The Law establishes the basic legal obligations governing the operation and piloting of aircraft, the planning and preparation for flight and the maintenance and equipment of aircraft but specifies these obligations in rather general terms. Therefore Section 135 of the Law requires the Director to publish Requirements to augment, amplify and detail more precisely the manner in which these obligations shall be met. The Requirements are the means by which the operator of an aircraft or the pilot will be able to satisfy the Director as to the fulfilment of the obligations in respect of the operation of an aircraft or their respective entitlement to hold a certificate.								
	d		The issue of a certificate indicates only that the holder is considered competent to secure the safe operation of aircraft. The possession of such a document does not relieve the operator of an aircraft, or the pilot-in-command, from the responsibility for compliance with the Law and any other legislation in force. Neither does it relieve them of their responsibility for the safe conduct of any particular flight, as the ultimate responsibility for the safety of flight operations always rests with the operator and the pilot-in-command.								
	e		Other GAR Parts may impinge upon activities conducted under this Part. In particular, Part 1 contains definitions which apply, unless otherwise stated, to all Parts. A full list of GAR Parts, a description of the legislative structure and the place of GARs and Guernsey Aviation Circulars (GACs) within it can be								

			viewed on the website <a href="http://www.gov.gg/gars">http://www.gov.gg/gars</a> .								
<b>91.5</b>			<b>Applicability</b>	<b>135.5</b>			<b>Applicability</b>	<b>121.5</b>			<b>Applicability</b>
							For commercial air transport operations using aircraft registered in Guernsey the operator shall:				For commercial air transport operations using aircraft registered in Guernsey the operator shall:
					a		hold an air operator certificate as described in Part 119; and		a		hold an air operator certificate as described in Part 119; and
					b		ensure that the requirements of Part 91 and this Part are applied to:		b		ensure that the requirements of Part 91 and this Part are applied to:
					1		an aeroplane having:		1		an aeroplane having a maximum approved passenger seating configuration of more than 19, or a MTOM of more than 5,700 kg.
					i		a maximum approved passenger seating configuration not exceeding 19; and				
					ii		a MTOM of 5,700 kg or less; or				
					2		a helicopter				
	a		Unless stated otherwise, this Part applies to:								
	1		the owner, the charterer by demise or where an aircraft is leased, the lessee of an aircraft registered in Guernsey, wherever such an aircraft may be; and								
	2		all aircraft operating or navigating within Guernsey; and								
	3		the crew of all such aircraft.								
			<i>Note 1: Additional requirements are applicable to General Aviation operations involving aircraft registered in Guernsey of the classes or used in the cases identified in GAR Part 125.</i>								
			<i>Note 2: Commercial air transport operations involving aircraft registered in Guernsey are subject to the additional requirements in GAR Parts 119, 121 and 135, as applicable.</i>								
			<i>Note 3: Commercial air transport operations involving foreign-registered aircraft are subject to permission from the Secretary of State.</i>								
<b>91.10</b>			<b>Use of English</b>								
			All documentation, written communications and data (electronic or otherwise) for submission to the Director in support of an application for a certificate shall be provided in English.								
<b>91.15</b>			<b>Laws, requirements and procedures</b>	<b>135.15</b>			<b>Laws, requirements and procedures</b>	<b>121.15</b>			<b>Laws, requirements and procedures</b>
	a		The holder of a certificate, licence, permit or approval shall take reasonable care to ensure that all persons employed, engaged, or contracted by the holder to perform safety-related activities, are familiar with and comply with the laws, regulations and procedures necessary to the performance of their duties.								
	b		The pilot-in-command shall comply with the laws, regulations and procedures of those States in which operations are conducted.								
	c		The pilot-in-command shall be familiar with the laws, regulations and procedures, pertinent to the performance of his or her duties, prescribed for the areas to be traversed, the aerodromes to be used and the air navigation facilities relating thereto. The pilot-in-command shall ensure that other members of the flight crew are familiar with such of these laws, regulations and procedures as are pertinent to the performance of their respective duties in the operation of the aircraft.								
							The operator shall ensure that all flight crew are familiar with and comply with the laws, regulations and procedures necessary to a flight, including but not limited to the following:				The operator shall ensure that all flight crew are familiar with and comply with the laws, regulations and procedures necessary to a flight, including but not limited to the following:
					a		the appropriate provisions of the Law; and		a		the appropriate provisions of the Law; and

				b	the relevant Guernsey Aviation Requirements; and		b	the relevant Guernsey Aviation Requirements; and	
				c	any applicable conditions on the operator's approval; and		c	any applicable conditions on the operator's approval; and	
				d	the procedures specified in the operator's required documentation; and		d	the procedures specified in the operator's required documentation; and	
				e	such laws, regulations and procedures that may be relevant in those States in which the operation is to be conducted, including in particular those flight procedures and obstacle clearance criteria that may differ from those established by PANS-OPS; and		e	such laws, regulations and procedures that may be relevant in those States in which the operation is to be conducted, including in particular those flight procedures and obstacle clearance criteria that may differ from those established by PANS-OPS; and	
				f	procedures required at any aerodrome planned to be used as a destination or as an alternate, and procedures for air navigation facilities relating to such aerodromes.		f	procedures required at any aerodrome planned to be used as a destination or as an alternate, and procedures for air navigation facilities relating to such aerodromes.	
91.20			More stringent requirements						
			The pilot-in-command of a Guernsey-registered aircraft operating in:						
	a		a foreign state; or						
	b		international airspace under the control of a foreign State,						
			shall comply with this Part unless the application of a more stringent operating and flight rule of that State or of that airspace is required.						
91.25			Power to inspect						
			The holder of a certificate, licence, permit or approval shall ensure that any person authorised by the Director is allowed to board an aircraft, unless in the reasonable opinion of the pilot-in-command, the safety of the aircraft would thereby be endangered.						
91.30			Production of documentation and records						
	a		The holder of a certificate, licence, permit or approval shall:						
		1	give any person authorised by the Director access to any documentation relating to aircraft operations and the safety of aircraft in flight; and						
		2	produce all such documentation and records, when requested to do so by an authorised person, within a reasonable period of time.						
	b		The pilot in command shall, within a reasonable period of time of being requested to do so by an authorised person, produce to that person the documentation required to be carried on board.						
91.35			Aircraft airworthiness	135.35		Aircraft airworthiness	121.35		Aircraft airworthiness
			Except as authorised by the Director, an aircraft shall not fly unless:			The operator shall ensure that each aircraft operated has a valid certificate of airworthiness issued by the Beilwick of Guernsey; and			The operator shall ensure that each aircraft operated has a valid certificate of airworthiness issued by the Bailiwick of Guernsey; and
	a		it has a valid Certificate of Airworthiness issued by the State of Registry; or			•			•
	b		it has a valid Permit to Fly in accordance with GAR Part 21 Subpart P; and			•			•
	c		the aircraft is operated in compliance with that document.		a	the aircraft is operated in compliance with that document.		a	the aircraft is operated in compliance with that document.
91.40			Aircraft flight manual						
			An aircraft shall be operated in compliance with the operating limitations specified in the aircraft flight manual, or an equivalent document approved by the Director.						
91.45			Documents to be carried	135.45		Documents to be carried	121.45		Documents to be carried
	a		A flight shall not be commenced unless the following documents are carried:		a	Notwithstanding 91.45, the operator shall ensure that the following documents are carried on each flight:		a	Notwithstanding 91.45, the operator shall ensure that the following documents are carried on each flight:
		1	the valid Certificate of Airworthiness; and		1	the valid Certificate of Airworthiness; and		1	the valid Certificate of Airworthiness; and
		2	the flight crew licences and validations, of each member of the flight crew; and		2	the flight crew licences and validations of each member of the flight crew; and		2	the flight crew licences and validations of each member of the flight crew; and
		3	the aircraft radio licence; and		3	the aircraft radio licence; and		3	the aircraft radio licence; and
		4	a noise certification document, if applicable; and		4	a noise certification document, if applicable; and		4	a noise certification document, if applicable; and



	5	a copy of any approvals, permissions, authorisations or exemptions relevant to the flight; and		5	a certified true copy of the Air Operator Certificate and the Operations Specifications; and		5	a certified true copy of the Air Operator Certificate and the Operations Specifications; and
	6	a certified true copy of any transfer agreement under Article 83 bis of the Chicago Convention; and		6	a certified true copy of any transfer agreement under Article 83 bis of the Chicago Convention; and		6	a certified true copy of any transfer agreement under Article 83 bis of the Chicago Convention; and
	7	Certificate of Registration; and		7	Certificate of Registration; and		7	Certificate of Registration; and
	8	the journey log book or equivalent record; and		8	the journey log book or equivalent record; and		8	the journey log book or equivalent record; and
	b	Where such documents as required by paragraphs (a)(1), (a)(4) and (a)(7) are written in a language other than English, an English translation shall be provided.		b	Where such documents as required by paragraphs (a)(1), (a)(4) and (a)(7) are written in a language other than English, an English translation shall be provided.		b	Where such documents as required by paragraphs (a)(1), (a)(4) and (a)(7) are written in a language other than English, an English translation shall be provided.
	c	Before any flight is commenced the pilot-in-command shall ensure that the documents listed in (a) are in force and will remain so for the duration of the flight.		c	Before any flight is commenced the pilot-in-command shall ensure that the documents listed in (a) are in force and will remain so for the duration of the flight.		c	Before any flight is commenced the pilot-in-command shall ensure that the documents listed in (a) are in force and will remain so for the duration of the flight.
	d	The documents required by (a) shall be carried on each flight except that:		d	The documents required by (a) shall be carried on each flight except that:		d	The documents required by (a) shall be carried on each flight except that:
	1	where the flight is intended to begin and end at the same aerodrome; and		1	where the flight is intended to begin and end at the same aerodrome; and		1	where the flight is intended to begin and end at the same aerodrome; and
	2	the aerodrome is located in the Bailiwick of Guernsey; and		2	the aerodrome is located in the Bailiwick of Guernsey; and		2	the aerodrome is located in the Bailiwick of Guernsey; and
	3	the planned flight does not include passage over any other State		3	the planned flight does not include passage over any other State		3	the planned flight does not include passage over any other State
		the documents listed at (a) may be kept at the aerodrome of departure instead of being carried in the aircraft.			the documents listed at (a) may be kept at the aerodrome of departure instead of being carried in the aircraft.			the documents listed at (a) may be kept at the aerodrome of departure instead of being carried in the aircraft.
<b>91.50</b>		<b>Manuals to be carried</b>	<b>135.50</b>			<b>121.50</b>		<b>Manuals to be carried</b>
	a	A flight shall not be commenced unless the following manuals are carried:		a	Notwithstanding 91.50, the operator shall ensure that the following manuals are carried on each flight:		a	Notwithstanding 91.50, the operator shall ensure that the following manuals are carried on each flight:
	1	the flight manual for the aircraft, or equivalent document.		1	the flight manual for the aircraft, or other documents containing approved performance data and any other information necessary for the operation of the aircraft within the terms of its certificate of airworthiness, unless these data are available in the operations manual; and		1	the flight manual for the aircraft, or other documents containing approved performance data and any other information necessary for the operation of the aircraft within the terms of its certificate of airworthiness, unless these data are available in the operations manual; and
				2	the operations manual, or those parts of it that pertain to flight operations.		2	the operations manual, or those parts of it that apply to flight operations.
<b>91.55</b>		<b>Additional information and forms to be carried</b>	<b>135.55</b>		<b>Additional information and forms to be carried</b>	<b>121.55</b>		<b>Additional information and forms to be carried</b>
	a	A flight shall not be commenced unless the following additional information or forms are carried:		a	Notwithstanding 91.55, the operator shall ensure that the following additional information or forms are carried on each flight:		a	Notwithstanding 91.55, the operator shall ensure that the following additional information or forms are carried on each flight:
	1	such documentation as will enable the pilot-in-command to record operational information; and		1	the operational flight plan; and		1	the operational flight plan; and
		<i>Note: This may include items such as the operational flight plan, aircraft technical log etc.</i>		2	the technical log; and		2	the technical log; and
				3	details of the filed ATS flight plan; and		3	details of the filed ATS flight plan; and
				4	NOTAM and AIS briefing information appropriate to the operation; and		4	NOTAM and AIS briefing information appropriate to the operation; and
				5	meteorological information appropriate to the operation; and		5	meteorological information appropriate to the operation; and
				6	mass and balance documentation; and		6	mass and balance documentation; and
	2	for an international flight, passenger and cargo manifests; and		7	passenger and cargo manifests; and		7	passenger and cargo manifests; and
	3	any specific approval issued by the State of Registry, if applicable, for the operation(s) to be conducted; and		8	notification of any dangerous goods; and		8	notification of any dangerous goods; and
	4	current and suitable charts to cover the route of the proposed flight and any route along which it is reasonable to expect that the flight may be diverted; and		9	current and suitable charts to cover the route of the proposed flight and any route along which it is reasonable to expect that the flight may be diverted; and		9	current and suitable charts to cover the route of the proposed flight and any route along which it is reasonable to expect that the flight may be diverted; and
		<i>Note: Charts may be any approved representation.</i>			<i>Note: Charts may be any approved representation.</i>			<i>Note: Charts may be any approved representation.</i>
	5	essential data relating to the search and rescue facilities in the areas in which the flight will be operated including the ground-air signal codes; and		10	essential data relating to the search and rescue facilities in the areas in which the flight will be operated including the ground-air signal codes; and		10	essential data relating to the search and rescue facilities in the areas in which the flight will be operated including the ground-air signal codes; and
	6	for an international flight, a copy of the notified procedures to be followed by the pilot-in-command of an intercepted aircraft, and the notified visual signals for use by intercepting and intercepted aircraft.		11	a copy of the notified procedures to be followed by the pilot-in-command of an intercepted aircraft, and the notified visual signals for use by intercepting and intercepted aircraft.		11	a copy of the notified procedures to be followed by the pilot-in-command of an intercepted aircraft, and the notified visual signals for use by intercepting and intercepted aircraft.



91.60		<b>Correcting lenses</b>							
		Any flight crew member assessed as fit to exercise the privileges of a licence subject to the use of suitable correcting lenses, shall have a spare set of spectacles readily available when exercising those privileges.							
91.65		<b>Radio licences</b>							
		Where an aircraft is fitted with radio transmitting equipment, such equipment shall be operated only by crew members who are appropriately qualified.							
91.70		<b>Ground operation of aircraft</b>							
	a	An aeroplane shall not be taxied on the movement area of an aerodrome unless the person at the controls is an appropriately qualified pilot or:							
	1	has been duly authorised and briefed by the operator;							
	2	is fully competent to taxi the aeroplane							
	3	is qualified to use the radio telephone if radio communications are required; and							
	4	has received instruction from a competent person in respect of aerodrome layout, and where appropriate, information on routes, signs, marking, lights, ATC signals and instructions, phraseology and procedures, and is able to conform to the operational standards required for safe aeroplane movement at the aerodrome.							
	b	A helicopter rotor shall not be turned under power, for the purpose of flight, without a qualified pilot at the controls.							
	c	A helicopter rotor shall not be turned under power, for other than purpose of flight unless the person at the controls:							
	1	has been duly authorised and briefed;							
	2	has been provided with training and procedures to be followed.							
91.75		<b>Portable electronic devices</b>							
	a	No person may operate on any aircraft any mobile or cell phone, computer or other electronic device that is designed to transmit or capable of transmitting electromagnetic energy otherwise than in accordance with the permission of the pilot-in-command of that aircraft.							
	b	Paragraph (a) shall not apply to							
	1	hearing aids; and							
	2	heart pacemakers; and							
	3	portable voice recorders; and							
	4	electric shavers; and							
	5	electronic watches; and							
	6	any other portable electronic device if the operator or pilot-in-command of the aircraft has determined that the said portable electronic device to be used will not cause interference with any aircraft system or equipment of the aircraft on which it is used							
91.80		<b>Flight instruction and testing</b>							
		No person shall give flight instruction in an aircraft, except a balloon, unless that aircraft is equipped with fully functioning dual controls.							
91.85		<b>Common language</b>	135.85		<b>Common language</b>	121.85		<b>Common language</b>	
		The pilot-in-command shall ensure that:			The operator shall ensure that:			The operator shall ensure that:	
		flight crew members demonstrate the ability to speak and understand the language used for aeronautical radiotelephony communications as specified in ICAO Annex 1.		a	all crew members can communicate in the English language.			all crew members can communicate in the English language.	
				b	all operations personnel are able to communicate in English.			all operations personnel are able to communicate in English.	
91.90		<b>Information on emergency and survival equipment carried</b>	135.90		<b>Information on emergency and survival equipment carried</b>	121.90		<b>Information on emergency and survival equipment carried</b>	
	a	The holder of a certificate shall have available, for immediate communication			The operator shall have available, for immediate communication to rescue co-			The operator shall have available, for immediate communication to rescue co-	

		to rescue co-ordination centres, information on the emergency and survival equipment carried on board each of its aircraft.			ordination centres, information on the emergency and survival equipment carried on board each of its aircraft.			ordination centres, information on the emergency and survival equipment carried on board each of its aircraft.
	b	For flights over-water the information shall, where such equipment is carried, include:						
	1	the number, colour, and type of life rafts; and						
	2	type of pyrotechnics carried; and						
	3	details of emergency medical supplies and water supplies; and						
	4	the type and operating frequencies of any emergency portable radio equipment.						
<b>91.95</b>		<b>Stowage of baggage and cargo</b>	<b>135.95</b>		<b>Stowage of baggage and cargo</b>	<b>121.95</b>		<b>Stowage of baggage and cargo</b>
	a	Baggage or cargo shall not be carried in an aircraft unless it is:			The operator shall specify procedures to ensure that all baggage carried onto an aircraft and taken into the passenger cabin is adequately and securely stowed.			The operator shall specify procedures to ensure that all baggage carried onto an aircraft and taken into the passenger cabin is adequately and securely stowed.
	1	stowed and restrained in accordance with any instructions given in the aircraft flight manual; and			•			•
	2	packaged to avoid injury to any person on board.			•			•
	b	The pilot-in-command shall not permit any baggage or cargo carried to:						
	1	exceed the load limitation for the seats, berths, or floor structure as prescribed by the aircraft flight manual, or by placards; or						
	2	be located in a position that restricts the access to or use of any required emergency exit; or						
	3	be located in a position where it may restrict access to any flight control or part of the aircraft cockpit, or may restrict visibility of any flight instrument.						
<b>91.100</b>		<b>Carriage of dangerous goods</b>	<b>135.100</b>		<b>Carriage of dangerous goods</b>	<b>121.100</b>		<b>Carriage of dangerous goods</b>
		Dangerous goods shall not be loaded on or carried in an aircraft unless:						
	a	such dangerous goods are carried in accordance with the approval in writing of the Director; and						
	b	the conditions of carriage of dangerous goods meet the requirements of the Air Navigation Law, Schedule 5.						
				c	The operator shall ensure that no dangerous goods are loaded or carried on an aircraft except in accordance with approved procedures.		c	The operator shall ensure that no dangerous goods are loaded or carried on an aircraft except in accordance with approved procedures.
<b>91.105</b>		<b>Carriage of weapons and munitions of war</b>	<b>135.105</b>		<b>Carriage of weapons and munitions of war</b>	<b>121.105</b>		<b>Carriage of weapons and munitions of war</b>
	a	A flight carrying weapons or munitions of war shall be commenced only:			The operator shall ensure that no weapons and munitions of war are carried on an aircraft except in accordance with approved procedures.			The operator shall ensure that no weapons and munitions of war are carried on an aircraft except in accordance with approved procedures.
	1	with the written permission of the Director and in accordance with any conditions contained in the permission; and			•			•
	2	provided that details in writing of the:			•			•
	i	type, mass or quantity of any such weapon or munitions; and			•			•
	ii	any conditions of the permission for carriage; and			•			•
	iii	the location of the weapons or munitions;			•			•
		are carried on board the aircraft.			•			•
<b>91.110</b>		<b>Carriage of sporting weapons and ammunition</b>	<b>135.110</b>		<b>Carriage of sporting weapons and ammunition</b>	<b>121.110</b>		<b>Carriage of sporting weapons and ammunition</b>
	a	A flight, with sporting weapons on board, shall not be commenced unless request for carriage has been made in advance.			The operator shall ensure that:			The operator shall ensure that:
	b	Sporting weapon accepted for carriage shall be:		a	written details of any sporting weapons and/or ammunition have been provided by the person requesting carriage of the item, before the item is taken on board the aircraft; and		a	written details of any sporting weapons and/or ammunition have been provided by the person requesting carriage of the item, before the item is taken on board the aircraft; and

		1	stowed in the aircraft in a place which is inaccessible to passengers during flight; unless the Director has determined that compliance is impractical and accepted that other procedures might apply; and		b	the pilot-in-command is informed in writing of the location, type, mass, and quantity of those items carried.		b	the pilot-in-command is informed in writing of the location, type, mass, and quantity of those items carried.
		2	unloaded in the case of firearms or other weapons that can contain ammunition.			•			•
			<i>Note: Ammunition for sporting weapons may be contained in baggage, subject to certain limitations, in accordance with the Air Navigation Law, Schedule 5.</i>						
				<b>135.115</b>		<b>Electronic navigation data management</b>	<b>121.115</b>		<b>Electronic navigation data management</b>
					a	The operator shall not use electronic navigation data products unless procedures have been approved by the Director to ensure that:		a	The operator shall not use electronic navigation data products unless procedures have been approved by the Director to ensure that:
					1	the process applied and the products delivered have met acceptable standards of integrity; and		1	the process applied and the products delivered have met acceptable standards of integrity; and
					2	the products are compatible with the intended function of the equipment that will use them.		2	the products are compatible with the intended function of the equipment that will use them.
						<i>Note: Guidance relating to the processes that data suppliers may follow is contained in RTCA DO200A/EUROCAE ED-76 and RTCA DO-201A/EUROCAE ED-77.</i>			<i>Note: Guidance relating to the processes that data suppliers may follow is contained in RTCA DO200A/EUROCAE ED-76 and RTCA DO-201A/EUROCAE ED-77.</i>
					b	The operator shall implement procedures to ensure the timely distribution and insertion of current and unaltered electronic navigation data to all aircraft requiring such data and shall continue to monitor both process and products.		b	The operator shall implement procedures to ensure the timely distribution and insertion of current and unaltered electronic navigation data to all aircraft requiring such data and shall continue to monitor both process and products.
<b>91.120</b>			<b>Responsibilities of pilot-in-command</b>						
	a		The responsibilities of the pilot-in-command shall include:						
		1	the safety and security of all persons on board the aircraft when the doors are closed;						
		2	the operation and safety of the aircraft from the moment the aircraft has started its engine(s) for the purpose of taking-off until the moment it finally comes to rest at the end of the flight and the engine(s) used as primary propulsion units are shut down and if applicable, the rotor blades stopped;						
		3	ensuring that a flight is not commenced if any flight crew member is prevented from performing his duties as a result of incapacitation by any cause such as injury, sickness, fatigue, or the effects of alcohol or drugs;						
		4	ensuring that a flight is not continued beyond the nearest suitable aerodrome or heliport when a required flight crew member's capacity to perform functions is significantly reduced by impairment of faculties from causes such as fatigue, sickness, or lack of oxygen;						
		5	reporting all known or suspected defects in the aircraft at the termination of the flight;						
		6	completion of the journey log book and any general declaration;						
		7	preservation of flight recorder records and if necessary the associated flight recorders if the aircraft has been involved in an accident or incident;						
		8	notifying the appropriate local authority in the event that an emergency situation that necessitates action in violation of local regulations or procedures. The report shall be made as soon as possible, but in any event, not later than 72 hours after the incident. A copy of the report shall be submitted to the Director;						
		9	the security of the aircraft during its operation; and						
		10	reporting any act of unlawful interference to the Director and to the designated local authority.						

			135.125		Passenger safety	121.135		Passenger safety
				a	The operator shall ensure that:		a	The operator shall ensure that:
				1	passengers are seated so that, in the event of an emergency evacuation, they will not hinder evacuation from the aircraft; and		1	passengers are seated so that, in the event of an emergency evacuation, they will not hinder evacuation from the aircraft; and
				2	any passenger who appears to be under the influence of alcohol or drugs or exhibits behavioural characteristics, to the extent where the safety of the aircraft or its occupants is likely to be endangered, is refused embarkation or, where appropriate, removed from the aircraft; and		2	any passenger who appears to be under the influence of alcohol or drugs or exhibits behavioural characteristics, to the extent where the safety of the aircraft or its occupants is likely to be endangered, is refused embarkation or, where appropriate, removed from the aircraft; and
				3	where carried, disabled passengers are appropriately cared for, including allocation of appropriate seating positions and handling assistance in the event of an emergency; and		3	where carried, disabled passengers are appropriately cared for, including allocation of appropriate seating positions and handling assistance in the event of an emergency; and
							4	passengers seated in any seat row next to an emergency exit are competent to operate the emergency exit, and have been briefed in their responsibilities; and
				4	escorted passengers do not constitute a safety hazard to other passengers or to the aircraft, and that prior arrangements for their carriage have been made in accordance with procedures specified in the operations manual; and		5	escorted passengers do not constitute a safety hazard to other passengers or to the aircraft, and that prior arrangements for their carriage have been made in accordance with procedures specified in the operations manual; and
							6	the senior cabin crew member, or the pilot-in-command, is notified when a disabled or escorted person is to be carried on board the aeroplane; and
				5	in the event of an emergency occurring in flight, passengers are instructed in such emergency action as may be appropriate to the circumstances.		7	in the event of an emergency occurring in flight, passengers are instructed in such emergency action as may be appropriate to the circumstances.
				b	Notwithstanding paragraph (a)(1), where an operation is conducted for the purpose of search and rescue or is an air ambulance operation, passengers may be carried who under other circumstances would not be permitted to be carried provided that reasonable action is taken by the operator to minimise the risk to the aircraft and its occupants from the carriage of such passengers.		b	Notwithstanding paragraph (a)(1), where an operation is conducted for the purpose of search and rescue or is an air ambulance operation, passengers may be carried who under other circumstances would not be permitted to be carried provided that reasonable action is taken by the operator to minimise the risk to the aircraft and its occupants from the carriage of such passengers.
91.128			Specific approvals					
			The pilot-in-command shall not conduct operations for which a specific approval is required unless such approval has been issued by the State of Registry.		The operator shall ensure that no operations for which a specific approval is required are conducted unless such approval has been issued by the State of Registry.			The operator shall ensure that no operations for which a specific approval is required are conducted unless such approval has been issued by the State of Registry.
91.130			Passenger briefing	135.130	Passenger briefing	121.130		Passenger briefing
	a		A flight shall not be commenced unless passengers are made familiar with the location and use of:		The operator shall ensure that, in addition to the passenger briefing requirements of 91.130:			The operator shall ensure that, in addition to the passenger briefing requirements of 91.130:
	1		seat belts or any other restraints;	a	passengers are instructed to fasten their seat belts:		a	passengers are instructed to fasten their seat belts:
	2		emergency exits;	1	while the aircraft is moving on the ground; and		1	while the aircraft is moving on the ground; and
	3		lifejackets if required to be carried;	2	for each take-off;		2	for each take-off;
	4		other emergency equipment provided for individual use, including passenger emergency briefing cards;	3	for each landing;		3	for each landing;
	5		flotation equipment, where carried; and	4	at any other time considered necessary by the pilot-in-command; and		4	at any other time considered necessary by the pilot-in-command; and
	6		oxygen dispensing equipment, if the use of oxygen is anticipated.	5	in the case of a helicopter, at any time that the rotors turn whilst on the ground.			
	b		All passengers shall be made aware of the conditions under which smoking may be permitted.	b	Passengers are informed, either by illuminated "No Smoking" signs or by approved "No Smoking" placards, when smoking is prohibited in the aircraft.		b	Passengers are informed, either by illuminated "No Smoking" signs or by approved "No Smoking" placards, when smoking is prohibited in the aircraft.
	c		All persons on board the aircraft shall be made aware of the location and general manner of use of the principal emergency equipment carried for use by passengers.	c	If illuminated "No Smoking" signs are installed in an aircraft, they shall be lit when smoking is prohibited.		c	If illuminated "No Smoking" signs are installed in an aircraft, they shall be lit when smoking is prohibited.

	d	During take off and landing and during such other times as may require it, all passengers on board the aircraft shall be secured in their seats by means of the seat belts or harnesses provided.		d	Where passenger emergency briefing cards are provided, these shall comply with Appendix 1 to 135.130.		d	Where passenger emergency briefing cards are provided, these shall comply with Appendix 1 to 121.130.
	e	In the event of an emergency occurring during flight, all persons on board shall be instructed in such emergency action as may be appropriate to the circumstances.						
			<b>135.135</b>		<b>Flight compartment</b>	<b>121.135</b>		<b>Flight compartment</b>
					The operator shall ensure that:			The operator shall ensure that:
						a		at least one forward-facing observer's seat is available in the flight compartment, that is suitable for use while conducting en-route inspections; and
				a	no person, other than the flight crew members assigned to the flight, is admitted to, or carried in, the flight compartment, or occupies a pilot seat, unless that person is permitted by the pilot-in-command, and is:	b		no person, other than the flight crew members assigned to the flight, is admitted to, or carried in, the flight compartment, or occupies a pilot seat, unless that person is permitted by the pilot-in-command, and is:
				1	an authorised representative of the Director; or	1		an authorised representative of the Director; or
				2	permitted by the holder of the air operator certificate in accordance with procedures specified in the operations manual.	2		permitted by the holder of the air operator certificate in accordance with procedures specified in the operations manual.
				b	all persons admitted to the flight compartment or occupying a pilot seat are familiarised with the appropriate safety procedures specified in the operations manual.	c		all persons admitted to the flight compartment or occupying a pilot seat are familiarised with the appropriate safety procedures specified in the operations manual.
<b>91.140</b>		<b>Use and preservation of flight recorders and records</b>	<b>135.140</b>		<b>Use and preservation of flight recorders and records</b>	<b>121.140</b>		<b>Use and preservation of flight recorders and records</b>
	a	On any flight on which one or more flight recorder systems is required to be carried:			The operator shall ensure, by use of appropriate procedures, that the requirements of 91.140 are met.			The operator shall ensure, by use of appropriate procedures, that the requirements of 91.140 are met.
	1	in an aeroplane:						
	i	flight recorders shall be operated continuously from the time the first engine is started for the purpose of making a flight until the time the last engine is shut down after landing; and						
	ii	operational checks and evaluations of recordings from the flight recorder systems shall be conducted in accordance with ICAO Annex 6 Part I Appendix 8 or Part II Appendix 2.3 (as applicable), to ensure the continued serviceability of the recorders.						
	2	in a helicopter:						
	i	flight recorders shall be operated continuously from the time the rotors first turn for the purpose of making a flight until the rotors are next stopped; and						
	ii	operational checks and evaluations of recordings from the flight recorder systems shall be conducted in accordance with ICAO Annex 6 Part III Appendix 4, to ensure the continued serviceability of the recorders.						
		<i>Note 1: The checks referred to in (1)(ii) and (2)(ii) include, prior to the first flight of the day, that the built-in test features for the flight recorders and flight data acquisition unit (FDAU), when installed, shall be monitored by manual and/or automatic checks.</i>						
	b	To preserve flight recorder records, flight recorders shall be de-activated upon completion of flight time following an accident or serious incident. The flight recorders shall not be re-activated before their disposition as determined in accordance with GAR Part 13.						
	c	In the event of a serious incident or accident, flight recorder records, and where possible the associated flight						



		recorders, shall be retained in safe custody.							
	d	Documentation concerning FDR and ADRS parameters that is provided to accident investigating authorities shall be in electronic format and take account of industry specifications.							
		<i>Note 2: Industry specification for documentation concerning flight recorder parameters may be found in the ARINC 647A, Flight Recorder Electronic Documentation, or equivalent document.</i>							
<b>91.145</b>		<b>Security</b>							
	a	The pilot-in-command shall be responsible for the security of the aircraft during its operation.							
	b	Following an act of unlawful interference, the pilot-in-command shall submit a report of such an act to the designated local authority.							
		<i>Note: In the context of this Chapter, the word “security” is used in the sense of prevention of acts of unlawful interference against civil aviation.</i>							

#### Appendix 1 to 121.130 / 135.130

		<b>Passenger emergency briefing cards</b>
		Passenger emergency briefing cards shall:
a		be relevant to the aircraft in question;
b		contain pictorial instructions on:
	1	the brace position to be adopted in the event of an emergency landing; and
	2	the method of use of the safety belts and safety harnesses as appropriate;
c		contain pictorial information as to where:
	1	emergency exits are to be found and instructions as to how they are to be used; and
	2	the lifejackets, escape slides, liferafts and oxygen masks (if required to be provided) are to be found and instructions as to how they are to be used.



Part 91	Requirement	Part 135	Requirement	Part 121	Requirement
<b>Subpart B - Operational Procedures</b>					
		<b>135.150</b>	<b>Operations manual</b>	<b>121.150</b>	<b>Operations manual</b>
			The operator shall:		The operator shall:
		a	provide an operations manual containing all the instructions and information necessary for operations personnel to perform their duties;	a	provide an operations manual containing all the instructions and information necessary for operations personnel to perform their duties;
		b	ensure that all staff members have ready access to the operations manual, or to those parts of the operations manual that relate to their duties; and	b	ensure that all staff members have ready access to the operations manual, or to those parts of the operations manual that relate to their duties; and
		c	ensure that the relevant parts of the operations manual are carried on each flight.	c	ensure that the relevant parts of the operations manual are carried on each flight.
			<i>Note: requirements for the contents of the Operations Manual are given in GAR 135.1250 and its Appendix.</i>		<i>Note: requirements for the contents of the Operations Manual are given in GAR 121.1250 and its Appendix.</i>
<b>91.155</b>	<b>Operational control</b>	<b>135.155</b>	<b>Operational control</b>	<b>121.155</b>	<b>Operational control</b>
	Except as otherwise specified by the operator, the pilot-in-command shall be responsible for operational control.		The operator shall:		The operator shall:
		a	establish and maintain a method of operational control;	a	establish and maintain a method of operational control;
		b	describe the system in the operations manual;	b	describe the system in the operations manual;
		c	ensure that operational control is exercised over every flight; and	c	ensure that operational control is exercised over every flight; and
		d	ensure that operational control is only delegated to a flight operations officer/flight dispatcher or the pilot-in-command.	d	ensure that operational control is only delegated to a flight operations officer/flight dispatcher or the pilot-in-command.
		<b>135.160</b>	<b>Duties of flight operations officer/flight dispatcher</b>	<b>121.160</b>	<b>Duties of flight operations officer/flight dispatcher</b>
		a	A flight operations officer/flight dispatcher employed in conjunction with a method of control and supervision of flight operations shall:	a	A flight operations officer/flight dispatcher employed in conjunction with a method of control and supervision of flight operations shall:
		1	assist the pilot-in-command in flight preparation and provide the relevant information;	1	assist the pilot-in-command in flight preparation and provide the relevant information;
		2	assist the pilot-in-command in preparing the operational and ATS flight plans (including identification of en-route alternates where appropriate), sign when applicable and file the ATS flight plan with the appropriate ATS unit, or designated representative; and	2	assist the pilot-in-command in preparing the operational and ATS flight plans (including identification of en-route alternates where appropriate), sign when applicable and file the ATS flight plan with the appropriate ATS unit, or designated representative; and
		3	furnish the pilot-in-command while in flight, by appropriate means, with information which may be necessary for the safe conduct of the flight.	3	furnish the pilot-in-command while in flight, by appropriate means, with information which may be necessary for the safe conduct of the flight.
		4	The information provided in (3) shall, for operations beyond 60 minutes from a point on a route to an en-route alternate aerodrome, include information on availability and meteorological conditions at such aerodromes for their expected time of use.	4	The information provided in (3) shall, for operations beyond 60 minutes from a point on a route to an en-route alternate aerodrome, include information on availability and meteorological conditions at such aerodromes for their expected time of use.
		5	In the event of an emergency:	5	In the event of an emergency:
		i	initiate such procedures as outlined in the operations manual while avoiding taking any action that would conflict with ATC procedures;	i	initiate such procedures as outlined in the operations manual while avoiding taking any action that would conflict with ATC procedures;
		ii	convey safety-related information to the pilot-in-command that may be necessary for the safe conduct of the flight, including information related to any amendments to the flight plan that become necessary in the course of the flight; and	ii	convey safety-related information to the pilot-in-command that may be necessary for the safe conduct of the flight, including information related to any amendments to the flight plan that become necessary in the course of the flight; and
		iii	if an emergency situation which endangers the safety of an aircraft or persons becomes known first to the flight operations officer/flight dispatcher, action by that person shall include, where necessary, notification to the appropriate authorities of the nature of the situation without delay, and requests for assistance if required.	iii	if an emergency situation which endangers the safety of an aircraft or persons becomes known first to the flight operations officer/flight dispatcher, action by that person shall include, where necessary, notification to the appropriate authorities of the nature of the situation without delay, and requests for assistance if required.
		<b>135.165</b>	<b>Competence of operations personnel</b>	<b>121.165</b>	<b>Competence of operations personnel</b>

					a		The operator shall ensure that:		a		The operator shall ensure that:
					1		all personnel assigned to, or directly involved in, ground and flight operations are properly instructed, have demonstrated their abilities in their particular duties and are aware of their responsibilities and the relationship of such duties to the operation as a whole.		1		all personnel assigned to, or directly involved in, ground and flight operations are properly instructed, have demonstrated their abilities in their particular duties and are aware of their responsibilities and the relationship of such duties to the operation as a whole.
					2		where contracted and sub-contracted staff are used by the operator to carry out functions that relate to the safety of aircraft, the operator shall ensure that the relevant duties and accountabilities of those staff are clearly defined by the operator. The operator shall also ensure that the responsibilities of any contracting organisation and their staff are clearly defined and confirmed within the contract or agreement.		2		where contracted and sub-contracted staff are used by the operator to carry out functions that relate to the safety of aircraft, the operator shall ensure that the relevant duties and accountabilities of those staff are clearly defined by the operator. The operator shall also ensure that the responsibilities of any contracting organisation and their staff are clearly defined and confirmed within the contract or agreement.
					3		where operations personnel prepare an operational flight plan, those personnel:		3		where operations personnel prepare an operational flight plan, those personnel:
					i		are trained and competent to perform the task; and		i		are trained and competent to perform the task; and
					ii		are notified as soon as practicable of relevant changes in equipment, operating procedures or facilities, including: changes to the use of navigation aids, aerodromes, ATC procedures and regulations, local aerodrome traffic control rules, and known hazards to flight including potentially hazardous meteorological conditions and irregularities in ground and navigation facilities; and		ii		are notified as soon as practicable of relevant changes in equipment, operating procedures or facilities, including: changes to the use of navigation aids, aerodromes, ATC procedures and regulations, local aerodrome traffic control rules, and known hazards to flight including potentially hazardous meteorological conditions and irregularities in ground and navigation facilities; and
					iii		have been provided, where necessary, with an aeroplane operating manual, for each aircraft type operated.		iii		have been provided, where necessary, with an aeroplane operating manual, for each aircraft type operated.
				135.170			<b>Standard operating procedures</b>	121.170			<b>Standard operating procedures</b>
					a		The operator shall provide and include in the operations manual, standard operating procedures for the use of aircraft crew and other operating staff for every aircraft type operated.		a		The operator shall provide and include in the operations manual, standard operating procedures for the use of aircraft crew and other operating staff for every aircraft type operated.
					b		The standard operating procedures shall contain the normal, abnormal and emergency procedures relating to the operation of aircraft.		b		The standard operating procedures shall contain the normal, abnormal and emergency procedures relating to the operation of aircraft.
				135.175			<b>Procedure compliance</b>	121.175			<b>Procedure compliance</b>
							All operational personnel shall conform with the applicable procedures specified in the operations manual.				All operational personnel shall conform with the applicable procedures specified in the operations manual.
				135.180			<b>Meteorological information</b>	121.180			<b>Meteorological information</b>
							The operator shall ensure that:				The operator shall plan, perform, and control flights using meteorological information provided for aviation purposes. The sources of such meteorological information shall be assessed by the operator for their accuracy and reliability.
					a		each person responsible for commercial air transport operations under VFR shall plan, perform, and control flights using meteorological information that is either:				
					1		provided for aviation purposes; or				
					2		provided from a source that has been assessed by the operator for its reliability and accuracy and considered acceptable for the purpose of the flight.				
					b		each person performing an IFR commercial air transport operation shall plan, perform, and control flights using meteorological information provided for aviation purposes.				
91.185			Pre-flight action	135.185			<b>Pre-flight action</b>	121.185			<b>Pre-flight action</b>
							The operator shall ensure that before each flight, information is available to the pilot-in-command to complete the preparation for the intended operation and to ensure the adequacy of the facilities.				The operator shall ensure that before each flight, information is available to the pilot-in-command to complete the preparation for the intended operation and to ensure the adequacy of the facilities.

		The pilot-in-command shall, before beginning a flight, obtain, become familiar with and act on all information concerning that flight including the following:							
	a	the current and forecast meteorological information; and							
	b	the fuel and oil requirements for that flight; and							
	c	all relevant details of the planned load; and							
	d	the alternatives available if the flight cannot be completed as planned; and							
	e	any known or likely traffic delays that have been notified by ATS; and							
	f	the status of the communication and navigation facilities intended to be used; and							
	g	the current conditions of the aerodrome or heliport and runway lengths at aerodromes of intended use; and							
	h	all airspace restrictions that may apply on or adjacent to the planned route and alternatives available; and							
	i	any volcanic activity within the vicinity of the planned route.							
<b>91.190</b>		<b>Flight preparation</b>	<b>135.190</b>		<b>Flight preparation</b>	<b>121.190</b>		<b>Flight preparation</b>	
					The operator shall ensure, by use of appropriate procedures, that no flight is commenced unless the requirements of 91.190 have been satisfied.			The operator shall ensure, by use of appropriate procedures, that no flight is commenced unless the requirements of 91.190 have been satisfied.	
		A flight shall not be commenced until the pilot in command is satisfied that:							
	a	the aircraft is airworthy and in a condition for safe flight;							
	b	the documents, manuals and additional documents specified are on board the aircraft;							
	c	the instruments and equipment installed on the aircraft are appropriate and in accordance with Subpart F, taking into account the expected flight conditions;							
	d	the instruments and equipment are in operable condition except as provided in the MEL;							
	e	any necessary maintenance has been carried out in accordance with Subpart G;							
	f	the correct quantity and type of fuel has been loaded on the aircraft;							
	g	the flight can be safely made in accordance with any given performance data for the aircraft being operated;							
	h	the mass of the aircraft and centre of gravity are such that the flight can be conducted safely, taking account of the expected flight conditions;							
	i	any load carried is properly distributed and safely secured;							
	j	the aircraft operating limitations, contained in the flight manual, or equivalent, will not be exceeded; and							
	k	those parts of the aircraft that are visible and accessible to him have been inspected and/or checked.							
			<b>135.195</b>		<b>Operational flight plan</b>	<b>121.195</b>		<b>Operational flight plan</b>	
					The operator shall ensure that:			The operator shall ensure that:	
				a	an operational flight plan is completed for each flight or series of flights;		a	an operational flight plan is completed for each flight or series of flights;	
				b	if the operational flight plan is prepared by a person other than the pilot-in-command:		b	if the operational flight plan is prepared by a person other than the pilot-in-command:	
				1	the person responsible has signed the operational flight plan document; and		1	the person responsible has signed the operational flight plan document; and	
				2	the pilot-in-command is advised of the contents of the operational flight plan.		2	the pilot-in-command is advised of the contents of the operational flight plan.	
				c	the pilot-in-command has approved the content and has signed the document; and		c	the pilot-in-command has approved the content and has signed the document; and	
				d	a certified copy of the operational flight plan is filed with the operator or designated agent, or left with the		d	a certified copy of the operational flight plan is filed with the operator or designated agent, or left with the	

						appropriate authority or on record in a suitable place at the point of departure.					appropriate authority or on record in a suitable place at the point of departure.
<b>91.200</b>			<b>ATS flight plan</b>	<b>135.200</b>		<b>ATS flight plan</b>	<b>121.200</b>				<b>ATS flight plan</b>
			A flight plan shall be submitted to an appropriate ATS unit, or its designated agent, prior to the start of each flight under VFR that proceeds over water more than 10 NM from shore, or is operating over any other remote or hazardous terrain.			An ATS flight plan shall be submitted to an appropriate ATS unit, or its designated agent, prior to each flight.					An ATS flight plan shall be submitted to an appropriate ATS unit, or its designated agent, prior to each flight.
			<i>Note: This is in addition to any requirement to file an ATS flight plan contained in the Rules of the Air.</i>								
				<b>135.205</b>		<b>Operational changes in flight</b>	<b>121.205</b>				<b>Operational changes in flight</b>
					a	The operator shall ensure that where there is a need to alter the operational flight plan of an aircraft in flight, and this alteration will require a change in the ATS flight plan, any changes shall be coordinated with the appropriate ATS unit before transmission to the pilot-in command of the aircraft.			a		The operator shall ensure that where there is a need to alter the operational flight plan of an aircraft in flight, and this alteration will require a change in the ATS flight plan, any changes shall be coordinated with the appropriate ATS unit before transmission to the pilot-in command of the aircraft.
					b	Notwithstanding paragraph (a) above, it remains the responsibility of the pilot-in-command to obtain any necessary ATC clearances before making operational changes to the aircraft's flight plan.			b		Notwithstanding paragraph (a) above, it remains the responsibility of the pilot-in command to obtain any necessary ATC clearances before making operational changes to the aircraft's flight plan.
<b>91.210</b>			<b>Operating in icing conditions - ground procedures</b>	<b>135.210</b>		<b>Operating in icing conditions - ground procedures</b>	<b>121.210</b>				<b>Operating in icing conditions - ground procedures</b>
			The pilot-in-command:			The operator shall ensure that a flight planned or expected to operate in suspected or known ground icing conditions shall not be commenced unless the aircraft has:					The operator shall ensure that a flight planned or expected to operate in suspected or known ground icing conditions shall not be commenced unless the aircraft has:
	a		shall not operate an aircraft in conditions where ground icing is known or suspected to be present, unless the aircraft has been inspected for icing and if necessary given such de-ice and anti-ice treatment as may be required;		a	been inspected for icing;			a		been inspected for icing;
	b		shall at no time perform a take-off in an aircraft that has snow, ice, or frost adhering to the wings, rotors, stabilisers, or control surfaces; and		b	where necessary, has been given appropriate de/anti-icing treatment; and			b		where necessary, has been given appropriate de/anti-icing treatment; and
	c		may only perform a take-off in an aircraft that has frost adhering to a propeller, windscreen, or powerplant installation if such action is specifically permitted by the aircraft flight manual and the takeoff is performed in accordance with the aircraft flight manual procedures.		c	details of any de/anti-icing treatment recorded in the aircraft technical log.			c		details of any de/anti-icing treatment recorded in the aircraft technical log.
<b>91.215</b>			<b>Operating in icing conditions - flight procedures</b>	<b>135.215</b>		<b>Operating in icing conditions - flight procedures</b>	<b>121.215</b>				<b>Operating in icing conditions - flight procedures</b>
			A flight shall not be commenced nor intentionally flown into expected or actual icing conditions unless the aircraft is certificated and equipped to cope with such conditions.			The operator shall establish procedures for flight in expected or actual icing conditions if the aircraft is certificated and equipped to cope with such conditions.					The operator shall establish procedures for flight in expected or actual icing conditions if the aircraft is certificated and equipped to cope with such conditions.
<b>91.220</b>			<b>Operating facilities</b>								
	a		A flight shall not be commenced unless it has been ascertained by every reasonable means available that the ground and/or water facilities including communication facilities and navigation aids available and directly required on such flight, for the safe operation of the aircraft, are adequate for the type of operation under which the flight is to be conducted.								
	b		Any inadequacy of facilities observed in the course of operations shall be reported to the authority responsible for them, without undue delay.								
<b>91.225</b>			<b>Use of aerodromes/operating sites</b>	<b>135.225</b>		<b>Use of aerodromes/operating sites</b>	<b>121.225</b>				<b>Use of aerodromes</b>
						The operator shall:					The operator shall:
	a		An aircraft shall not be operated at an aerodrome or operating site unless:		a	only authorise use of aerodromes that are adequate for the type(s) of aeroplane and operation(s) concerned;			a		only authorise use of aerodromes that are adequate for the type(s) of aeroplane and operation(s) concerned;



	1	the aerodrome or operating site is satisfactory, taking account of the physical characteristics of the place, the operating environment and the performance of the aircraft; and		b	as part of his safety management system, assess the level of rescue and fire fighting service (RFFS) protection available at any aerodrome intended to be specified in the operational flight plan in order to ensure that an acceptable level of protection is available for the aeroplane to be used;		b	as part of his safety management system, assess the level of rescue and fire fighting service (RFFS) protection available at any aerodrome intended to be specified in the operational flight plan in order to ensure that an acceptable level of protection is available for the aeroplane to be used;
	2	for operations at an aerodrome, at the expected time of use the aerodrome will be available and equipped with necessary ancillary services.		c	ensure that any aerodrome or landing site to be used in its operations is described in Part C of the operations manual;		c	ensure that any aerodrome to be used in its operations is described in Part C of the operations manual;
		<i>Note 1: Ancillary services include ATS, lighting, communications, weather reporting, navigation aids and emergency services, as appropriate to the circumstances.</i>		d	ensure that information related to the level of RFFS protection that is deemed acceptable by the operator shall be contained in the operations manual.		d	ensure that information related to the level of RFFS protection that is deemed acceptable by the operator shall be contained in the operations manual.
					<i>Note 1: ICAO Annex 6 Part I Attachment K contains guidance on assessing an acceptable level of RFFS protection at aerodromes.</i>			<i>Note 1: ICAO Annex 6 Part I Attachment K contains guidance on assessing an acceptable level of RFFS protection at aerodromes.</i>
					<i>Note 2: It is not intended that this guidance limits or regulates the operation of an aerodrome. The assessment performed by the operator does not in any way affect the RFFS requirements of ICAO Annex 14, Volume I, for aerodromes.</i>			<i>Note 2: It is not intended that this guidance limits or regulates the operation of an aerodrome. The assessment performed by the operator does not in any way affect the RFFS requirements of ICAO Annex 14, Volume I, for aerodromes.</i>
				e	for a helicopter flying at night, ensure that adequate lighting is in operation at any operating site where it is intended to take off or land.			
	b	A helicopter shall not be operated unless it is assured that:						•
	1	any place used as a heliport or landing site within a congested area of a city, town or settlement has physical characteristics, obstacle limitation surfaces and visual aids commensurate with the characteristics of the helicopter being operated and the ambient light conditions; and						•
	2	any place used as a heliport or as a place to hover that is outside a congested area of a city, town, or settlement:						•
	i	is suitable for the helicopter to hover clear of obstructions; and						•
	ii	for a heliport, has a surface area suitable for touchdown and lift-off; and						•
	3	any place used as a heliport or as a place to hover has approach and take-off paths such that, if the helicopter is not operating in Performance Class 1, an emergency landing can be conducted without causing undue risk to any persons or property on the ground; and						•
	4	any place in the Bailiwick of Guernsey to be used by a helicopter for the transport of passengers at night has lighting in operation to enable the pilot:						•
	i	in the case of landing, to identify the landing area in flight, to determine the landing direction and to make a safe approach and landing; and						•
	ii	in the case of taking off, to make a safe take-off.						•
	c	Only helicopters operating in Performance Class 1 shall be permitted to operate from elevated heliports in congested areas.						•
		<i>Note 2: Flights under (b)(1) and (c) are subject to obtaining Permission under Rule 5(3) of the Rules of the Air.</i>						•
91.230		<b>Certificated aerodromes — requirement to use</b>						
		No aircraft shall take off or land at a place in the Bailiwick of Guernsey other than an aerodrome licensed under section 96 of the Air Navigation (Bailiwick of Guernsey) Law, 2012, for the take-off and landing of such aircraft, unless the Director has given permission in writing to do so.						

<b>91.235</b>		<b>Aerodrome operating minima — applicability</b>							
	a	An aerodrome shall not be used as a departure, destination or alternate aerodrome, unless operating minima have been established by the pilot-in-command in accordance with criteria specified in 91.240(a).							
	b	The aerodrome operating minima for a specific type of approach and landing procedure shall be applicable if:							
	1	the ground equipment shown on the respective instrument approach and landing chart required for the intended procedure is operative; and							
	2	the aircraft systems required for the type of approach are operative; and							
	3	the required aircraft performance criteria are complied with; and							
	4	the flight deck crew is qualified to conduct the type of approach.							
<b>91.240</b>		<b>Aerodrome operating minima — determination</b>	<b>135.240</b>		<b>Aerodrome operating minima — determination</b>	<b>121.240</b>		<b>Aerodrome operating minima — determination</b>	
	a	The aerodrome operating minima for any aerodrome to be used shall be in accordance with Section 40 of the Air Navigation (Bailiwick of Guernsey) Law, 2012.		a	The operator shall establish aerodrome operating minima for each aerodrome to be used in operations.		a	The operator shall establish aerodrome operating minima for each aerodrome to be used in operations.	
	b	The minima determined in accordance with (a) shall not be lower than any that may be established for such aerodromes by the State in which the aerodrome is located, except when specifically approved by that State.		b	The minima determined in accordance with (a) shall not be lower than any that may be established for such aerodromes by the State in which the aerodrome is located, except when specifically approved by that State.		b	The minima determined in accordance with (a) shall not be lower than any that may be established for such aerodromes by the State in which the aerodrome is located, except when specifically approved by that State.	
	c	When establishing the aerodrome operating minima in accordance with (a) to any particular operation, the following shall be taken into account:		c	When establishing the aerodrome operating minima in accordance with (a) to any particular operation, the following shall be taken into account:		c	When establishing the aerodrome operating minima in accordance with (a) to any particular operation, the following shall be taken into account:	
	1	the type, performance and handling characteristics of the aircraft; and		1	the type, performance and handling characteristics of the aircraft; and		1	the type, performance and handling characteristics of the aircraft; and	
	2	the composition of the flight crew. their competence and experience; and		2	the composition of the flight crew. their competence and experience; and		2	the composition of the flight crew. their competence and experience; and	
	3	the dimensions and characteristics of the runways or touch-down areas which may be selected for use; and		3	the dimensions and characteristics of the runways or touch-down areas which may be selected for use; and		3	the dimensions and characteristics of the runways or touch-down areas which may be selected for use; and	
	4	the adequacy and performance of the available visual and non-visual ground aids; and		4	the adequacy and performance of the available visual and non-visual ground aids; and		4	the adequacy and performance of the available visual and non-visual ground aids; and	
	5	the equipment available in the aircraft for the purpose of navigation and/or control of the flight path during the approach to landing or missed approach; and		5	the equipment available in the aircraft for the purpose of navigation and/or control of the flight path during the approach to landing or missed approach; and		5	the equipment available in the aircraft for the purpose of navigation and/or control of the flight path during the approach to landing or missed approach; and	
	6	the obstacles in the approach and missed approach areas and the climb-out areas and necessary clearance; and		6	the obstacles in the approach and missed approach areas and the climb-out areas and necessary clearance; and		6	the obstacles in the approach and missed approach areas and the climb-out areas and necessary clearance; and	
	7	the obstacle clearance altitude/height for the instrument approach procedures;		7	the obstacle clearance altitude/height for the instrument approach procedures;		7	the obstacle clearance altitude/height for the instrument approach procedures;	
	8	the means to determine and report meteorological conditions; and		8	the means to determine and report meteorological conditions; and		8	the means to determine and report meteorological conditions; and	
	9	the flight technique to be used in the final approach.		9	the flight technique to be used in the final approach.		9	the flight technique to be used in the final approach.	
	d	The State of Registry may approve operational credit(s) for operations with aircraft with automatic landing systems, Head-up Displays (HUD) or equivalent displays, Enhanced vision system (EVS), Synthetic Vision Systems (SVS) or Combination Vision Systems (CVS). Such approvals shall not affect the classification of the instrument approach procedure.		d	The method of determining aerodrome operating minima shall be approved by the Director.		d	The method of determining aerodrome operating minima shall be approved by the Director.	
		<i>Note 1: Operational credit includes: a) for the purposes of an approach ban (2.6.3.2), minima below the heliport or landing location operating minima; b) reducing or satisfying the visibility requirements; or c) requiring fewer ground facilities as compensated for by airborne capabilities.</i>							
		<i>Note 2: Guidance for operational credits and use of HUDs, equivalent displays</i>							



			and vision systems is contained in Attachment I of ICAO Annex 6, Part I (for commercial air transport with aeroplanes), Attachment 2.B of ICAO Annex 6, Part II (for aeroplanes) and Attachment 1 to ICAO Annex 6, Part III (for helicopters).								
			Note 3: Information regarding a HUD or equivalent displays, including references to RTCA and EUROCAE documents, is contained in the Manual of All-Weather Operations (Doc 9365).								
			Note 4: Automatic landing system — helicopter is an automatic approach using airborne systems which provide automatic control of the flight path, to a point aligned with the landing surface, from which the pilot can transition to a safe landing by means of natural vision without the use of automatic control.								
	e		Aerodrome operating minima lower than Category I shall be used only in accordance with an approval issued by the State of Registry.								
	f		In the case of an aircraft registered in Guernsey, approval for the use of aerodrome operating minima lower than Category I may be issued by the Director in accordance with Subpart SPA.								
			Note 5: See 91.415 for IFR departure limitations and approval requirements.								
<b>91.245</b>			<b>Noise abatement procedures</b>	<b>135.245</b>			<b>Noise abatement procedures</b>	<b>121.245</b>			<b>Noise abatement procedures</b>
			Operating procedures shall take into account the need to minimise the effect of aircraft noise unless this would have a detrimental effect on aircraft safety.		a		The operator's noise abatement procedures for departure and arrival/approach for each aeroplane type, shall be designed to be simple and safe to operate with no significant increase in crew workload during critical phases of flight.		a		The operator's noise abatement procedures for departure and arrival/approach for each aeroplane type, shall be designed to be simple and safe to operate with no significant increase in crew workload during critical phases of flight.
					b		The pilot-in-command shall follow noise abatement procedures unless these would have a detrimental effect on flight safety.		b		The pilot-in-command shall follow noise abatement procedures unless these would have a detrimental effect on flight safety.
			Note: Guidance on noise abatement procedures is contained in PANS-OPS (ICAO Doc 8168) Volume I, Section 7.								
<b>91.250</b>			<b>Alternate aerodromes — general requirements</b>								
			An aerodrome shall not be nominated as an alternate unless:								
	a		it has a notified instrument approach procedure and weather forecasts indicate that at the estimated time of use the conditions will be at or above the applicable aerodrome operating minima; or								
	b		weather forecasts indicate that at the estimated time of use the cloud ceiling and visibility will be at or above the VFR minima prescribed in the Rules of the Air.								
				<b>125.255</b>			<b>Take-off alternate</b>	<b>121.255</b>			<b>Take-off alternate</b>
					a		The operator shall ensure that a take-off alternate aerodrome is selected and specified in the operational flight plan if either: the meteorological conditions at the aerodrome of departure are at or below the applicable aerodrome landing minima for that operation; or, it would not be possible to return to the aerodrome of departure for other reasons.		a		The operator shall ensure that a take-off alternate aerodrome is selected and specified in the operational flight plan if either: the meteorological conditions at the aerodrome of departure are at or below the applicable aerodrome landing minima for that operation; or, it would not be possible to return to the aerodrome of departure for other reasons.
					b		The take-off alternate aerodrome shall be located within the following flight time from the aerodrome of departure:		b		The take-off alternate aerodrome shall be located within the following flight time from the aerodrome of departure:
					1		for an aeroplane with two engines, one hour of flight time at a one-engine-inoperative cruising speed determined from the aircraft operating manual, calculated in ISA and still-air conditions using the actual take-off mass;		1		for an aeroplane with two engines, one hour of flight time at a one-engine-inoperative cruising speed determined from the aircraft operating manual, calculated in ISA and still-air conditions using the actual take-off mass;

					2	for an aeroplane with three or more engines, two hours of flight time at an all-engine operating cruising speed, determined from the aircraft operating manual, calculated in ISA and still-air conditions using the actual take-off mass.			2	for an aeroplane with three or more engines, two hours of flight time at an all-engine operating cruising speed, determined from the aircraft operating manual, calculated in ISA and still-air conditions using the actual take-off mass.
					3	for aeroplanes engaged in extended diversion time operations (EDTO) where an alternate aerodrome meeting the distance criteria of (b)(1) or (b)(2) is not available, the first available alternate aerodrome located within the distance of the operator's approved maximum diversion time considering the actual take-off mass.			3	for aeroplanes engaged in extended diversion time operations (EDTO) where an alternate aerodrome meeting the distance criteria of (b)(1) or (b)(2) is not available, the first available alternate aerodrome located within the distance of the operator's approved maximum diversion time considering the actual take-off mass.
				c		For an aerodrome to be selected as a take-off alternate the available information shall indicate that, at the estimated time of use, the conditions will be at or above the applicable aerodrome operating minima for that operation.		c		For an aerodrome to be selected as a take-off alternate the available information shall indicate that, at the estimated time of use, the conditions will be at or above the applicable aerodrome operating minima for that operation.
					<b>135.260</b>	<b>En-route alternate</b>			<b>121.260</b>	<b>En-route alternate</b>
						En-route alternate aerodromes, required for extended diversion time operations by aeroplanes with two turbine engines, shall be selected and specified in both the operational and ATS flight plans.				En-route alternate aerodromes, required for extended diversion time operations by aeroplanes with two turbine engines, shall be selected and specified in both the operational and ATS flight plans.
<b>91.265</b>			<b>Destination alternate</b>		<b>135.265</b>	<b>Destination alternate</b>			<b>121.265</b>	<b>Destination alternate</b>
			For any flight conducted under IFR, at least one destination alternate aerodrome shall be nominated and specified in the flight plan unless:			Notwithstanding GAR 91.265:				Notwithstanding GAR 91.265:
	a		For aeroplanes:		a	The operator shall ensure that for any flight conducted under IFR, at least one destination alternate aerodrome shall be selected and specified in both the operational and ATS flight plans, unless:		a		The operator shall ensure that for any flight conducted under IFR, at least one destination alternate aerodrome shall be selected and specified in both the operational and ATS flight plans, unless:
		1	separate runways are usable at the estimated time of use of the destination aerodrome, with at least one runway having an operational instrument approach procedure; or		1	for aeroplanes: two separate runways, each with an operational straight-in instrument approach procedure, are usable by the flight at the estimated time of use of the destination aerodrome; and		1		for aeroplanes: two separate runways, each with an operational straight-in instrument approach procedure, are usable by the flight at the estimated time of use of the destination aerodrome; and
		2	the duration of the flight from the departure aerodrome, or from the point of in-flight re-planning, to the destination aerodrome is such that, taking into account all meteorological conditions and operational information relevant to the flight a reasonable certainty exists that the approach and landing may be made under visual meteorological conditions; or		2	the duration of the flight from the departure aerodrome, or from the point of in-flight re-planning, to the destination aerodrome is such that, taking into account all meteorological conditions and operational information relevant to the flight a reasonable certainty exists that for a period of at least one hour before and one hour after the estimated time of arrival at the aerodrome of intended landing:		2		the duration of the flight from the departure aerodrome, or from the point of in-flight re-planning, to the destination aerodrome is such that, taking into account all meteorological conditions and operational information relevant to the flight a reasonable certainty exists that for a period of at least one hour before and one hour after the estimated time of arrival at the aerodrome of intended landing:
					i	the approach and landing may be made under visual meteorological conditions; and		i		the approach and landing may be made under visual meteorological conditions; and
					ii	separate runways are usable at the estimated time of use of the destination aerodrome with at least one runway having an operational instrument approach procedure; or		ii		separate runways are usable at the estimated time of use of the destination aerodrome with at least one runway having an operational instrument approach procedure; or
						<i>Note. — Separate runways are two or more runways at the same aerodrome configured such that if one runway is closed, operations to the other runway(s) can be conducted</i>				<i>Note. — Separate runways are two or more runways at the same aerodrome configured such that if one runway is closed, operations to the other runway(s) can be conducted</i>
		3	the aerodrome of intended landing is isolated; and		3	the aerodrome of intended landing is isolated and there is no suitable alternate aerodrome; and		3		the aerodrome of intended landing is isolated and there is no suitable alternate aerodrome; and
		i	a standard instrument approach procedure is prescribed for the aerodrome of intended landing; and		i	a standard instrument approach procedure is prescribed for the aerodrome of intended landing; and		i		a standard instrument approach procedure is prescribed for the aerodrome of intended landing; and
		ii	a point of no return (PNR) is determined; and		ii	a point of no return (PNR) is determined; and		ii		a point of no return (PNR) is determined; and
		iii	the flight shall not be continued past the PNR unless available current meteorological information indicates that the following meteorological conditions will exist from two hours		iii	the flight shall not be continued past the PNR unless a current assessment of meteorological conditions, traffic, and other operational conditions indicate		iii		the flight shall not be continued past the PNR unless a current assessment of meteorological conditions, traffic, and other operational conditions indicate

			before to two hours after the estimated time of arrival:				that a safe landing can be made at the estimated time of use.				that a safe landing can be made at the estimated time of use.
		A	a cloud base of at least 1,000 feet (300 m) above the minimum associated with the instrument approach procedure; and		b		Two destination alternate aerodromes shall be specified in the operational and ATS flight plans when, at the destination aerodrome:		b		Two destination alternate aerodromes shall be specified in the operational and ATS flight plans when, at the destination aerodrome:
		B	visibility of at least 5.5 km (3 NM) or of 4 km (2 NM) more than the minimum associated with the instrument approach procedure.		1		available meteorological aerodrome reports and forecasts for the destination indicate that the meteorological conditions at the estimated time of use will be below the applicable minima; or		1		available meteorological aerodrome reports and forecasts for the destination indicate that the meteorological conditions at the estimated time of use will be below the applicable minima; or
					2		meteorological information is not available		2		meteorological information is not available
		b	For helicopters; either 1. or 2. below:								•
		1	current meteorological information indicates that from two hours before to two hours after the estimated time of arrival, or from the actual time of departure to two hours after the estimated time of arrival, whichever is the shorter period, the following meteorological conditions will exist:								•
		i	a cloud base of at least 400 feet (120 m) above the minimum associated with the instrument approach procedure; and								•
		ii	visibility of at least 1.5 km more than the minimum associated with the procedure.								•
			or:								•
		2	the heliport of intended landing is isolated and no alternate heliport or landing location is available; and								•
		i	an instrument approach procedure is prescribed for the isolated heliport of intended landing; and								•
		ii	a point of no return (PNR) is determined in case of an offshore destination.								•
		c	For helicopters conducting offshore operations, offshore alternates may be specified subject to the following conditions:								•
		1	the offshore destination alternate shall be used only after a point of no return (PNR). Prior to PNR on-shore destination alternates shall be used; and								•
		2	mechanical reliability of critical systems and critical components shall be considered and taken into account when determining the suitability of the destination alternates; and								•
		3	one engine inoperative hover performance capability shall be attainable prior to arrival at the destination alternate; and								•
		4	to the extent possible, helideck availability shall be guaranteed at the destination alternate; and								•
		5	a landing forecast indicating the likelihood of visual meteorological conditions at the intended offshore destination and the offshore destination alternate based upon accredited meteorological information conforming to the standards in ICAO Annex 3, shall be required for the decision to go beyond PNR; and								•
		6	an offshore destination alternate shall not be used if fog is forecast or observed within 100 km of the destination; and								•
		7	offshore alternates should not be used when it is possible to carry enough fuel to have an onshore alternate; the use of offshore alternates shall be exceptional and shall not be used for the purposes of payload enhancement during adverse weather conditions.								•
				135.270			<b>Maximum distance to an en-route alternate aerodrome for aeroplanes without an EDTO approval</b>	121.270			<b>Maximum distance to an en-route alternate aerodrome for aeroplanes without an EDTO approval</b>
					a		The operator shall ensure that no aeroplane operates on a route where diversion time from any point on the route to an adequate en-route alternate		a		The operator shall ensure that no aeroplane operates on a route where diversion time from any point on the route to an adequate en-route alternate

						aerodrome exceeds the threshold time established by the Director in relation to the type of aeroplane, unless the operation is conducted in accordance with procedures for extended diversion time operations (EDTO) required by paragraph 135.275				aerodrome exceeds the threshold time established by the Director in relation to the type of aeroplane, unless the operation is conducted in accordance with procedures for extended diversion time operations (EDTO) required by paragraph 121.275
				b		Calculations of diversion times in (a) shall assume ISA in still air conditions and use:		b		Calculations of diversion times in (a) shall assume ISA in still air conditions and use:
				1		for aeroplanes with two turbine engines, the one-engine inoperative cruise speed; and		1		for aeroplanes with two turbine engines, the one-engine inoperative cruise speed; and
				2		for aeroplanes with more than two turbine engines, the all-engine operating cruise speed.		2		for aeroplanes with more than two turbine engines, the all-engine operating cruise speed.
					<b>135.275</b>	<b>EDTO limitations</b>		<b>121.275</b>		<b>EDTO limitations</b>
						The operator shall ensure that:				The operator shall ensure that:
				a		an EDTO flight is not commenced unless:		a		an EDTO flight is not commenced unless:
				1		EDTO operations are approved by the Director;		1		EDTO operations are approved by the Director;
				2		procedures for EDTO are specified in the operations manual;		2		procedures for EDTO are specified in the operations manual;
				3		the aeroplane is dispatched in accordance with those procedures specified in the operations manual; and		3		the aeroplane is dispatched in accordance with those procedures specified in the operations manual; and
				4		flight crew are appropriately trained.		4		flight crew are appropriately trained.
				b		A flight shall not proceed beyond the threshold time specified in the EDTO approval unless the identified en-route alternate aerodromes have been re-evaluated for availability and the most up-to-date information indicates that, during the estimated time of use, conditions at those aerodromes will be at or above the applicable aerodrome operating minima for the operation.		b		A flight shall not proceed beyond the threshold time specified in the EDTO approval unless the identified en-route alternate aerodromes have been re-evaluated for availability and the most up-to-date information indicates that, during the estimated time of use, conditions at those aerodromes will be at or above the applicable aerodrome operating minima for the operation.
				c		If any conditions are identified that would preclude a safe approach and landing at that aerodrome during the estimated time of use, an alternative course of action shall be determined.		c		If any conditions are identified that would preclude a safe approach and landing at that aerodrome during the estimated time of use, an alternative course of action shall be determined.
<b>91.280</b>			<b>Fuel requirements</b>		<b>135.280</b>	<b>Fuel requirements</b>		<b>121.280</b>		<b>Fuel requirements</b>
						Notwithstanding 91.280:				Notwithstanding 91.280:
	a		A flight shall not be commenced unless the aircraft carries sufficient fuel and oil, taking into account weather reports, forecasts and weather conditions, to complete the flight and to allow for contingencies, which shall be at least the amount sufficient to enable:		a	The operator shall establish a fuel and oil policy for the purpose of flight planning, and en-route replanning, to ensure that each aircraft carries sufficient fuel and oil for the planned flight, including reserve fuel to cover deviations from the planned flight.		a		The operator shall establish a fuel and oil policy for the purpose of flight planning, and en-route replanning, to ensure that each aircraft carries sufficient fuel and oil for the planned flight, including reserve fuel to cover deviations from the planned flight.
	1		For aeroplanes:		b	The fuel and oil policy shall ensure that the planning requirements are based upon:		b		The fuel and oil policy shall ensure that the planning requirements are based upon:
		i	when flying in accordance with the instrument flight rules and a destination alternate is not required in accordance with paragraph 91.265 or when flying to an isolated aerodrome, to complete the flight to the intended destination and thereafter have a final reserve fuel for 45 minutes at the normal cruising altitude; or		1	current aircraft-specific data derived from a fuel consumption monitoring system, if available; or if current aircraft-specific data is not available, data provided by the aircraft manufacturer; and		1		current aeroplane-specific data derived from a fuel consumption monitoring system, if available; or if current aeroplane-specific data is not available, data provided by the aircraft manufacturer; and
		ii	when flying in accordance with the instrument flight rules and a destination alternate is required in accordance with paragraph 91.265, or when flying to an isolated aerodrome, to complete the flight to the intended destination, thence to an alternate and thereafter have a final reserve fuel for 45 minutes at the normal cruising altitude; or		2	the operating conditions under which the planned flight is to be conducted, including but not limited to:		2		the operating conditions under which the planned flight is to be conducted, including but not limited to:
		iii	when flying in accordance with the visual flight rules by day to complete the flight to the intended destination and thereafter for 30 minutes at the normal cruising altitude.		i	anticipated aircraft mass;		i		anticipated aircraft mass;



		iv	when flying in accordance with the visual flight rules by night to complete the flight to the intended destination and thereafter for 45 minutes at the normal cruising altitude.			ii	Notices to Airmen; and			ii	Notices to Airmen; and
		2	For helicopters:			iii	current meteorological reports or a combination of current reports and forecasts; and			iii	current meteorological reports or a combination of current reports and forecasts; and
		i	when flying in accordance with the instrument flight rules and a destination alternate is not required in accordance with paragraph 91.265(b)(1), to complete the flight to the intended destination and thereafter for 30 minutes at holding speed at 450 m (1500 ft) above the destination heliport under standard temperature conditions and approach and land, and an additional amount of fuel to provide for the increased consumption on the occurrence of potential contingencies;			iv	air traffic services procedures, restrictions and anticipated delays; and			iv	air traffic services procedures, restrictions and anticipated delays; and
		ii	when flying in accordance with the instrument flight rules and a destination alternate is required, to complete the flight to the intended destination and execute an approach, and a missed approach, thence to an alternate and thereafter for 30 minutes at the normal holding speed at 450 m (1,500 ft) above the destination under standard temperature conditions and approach and land, and an additional amount of fuel to provide for the increased consumption on the occurrence of potential contingencies;			v	the effects of deferred aintenance items and/or configuration deviations.			v	the effects of deferred aintenance items and/or configuration deviations.
		iii	when flying in accordance with the visual flight rules, to complete the flight to the intended destination and thereafter for 20 minutes at best-range speed and an additional amount of fuel to provide for the increased consumption on the occurrence of potential contingencies.			c	The pre-flight calculation of usable fuel required shall include:			c	The pre-flight calculation of usable fuel required shall include:
	b		The use of fuel after flight commencement for purposes other than originally intended during pre-flight planning shall require a re-analysis and, if applicable, adjustment of the planned operation.			1	taxi fuel, which shall be the amount of fuel expected to be consumed before take-off, taking into account local conditions at the departure aerodrome and auxilliary power unit (APU) fuel consumption; and			1	taxi fuel, which shall be the amount of fuel expected to be consumed before take-off, taking into account local conditions at the departure aerodrome and auxilliary power unit (APU) fuel consumption; and
						2	trip fuel, which shall be the amount of fuel required to enable the aircraft to fly from take-off or the point of in-flight re-planning until landing at the destination aerodrome taking into account the operating conditions of 135.280(b)(2); and			2	trip fuel, which shall be the amount of fuel required to enable the aircraft to fly from take-off or the point of in-flight re-planning until landing at the destination aerodrome taking into account the operating conditions of 121.280(b)(2); and
						3	contingency fuel, which shall be the amount of fuel sufficient to compensate for unforeseen factors. It shall be 5 % of the planned trip fuel or 5 % of the fuel required from the point of in-flight re-planning based on the consumption rate used to plan the trip fuel but in any case not less than the amount required to fly for five minutes at holding speed at 1,500 ft (450m) above the destination aerodrome in standard conditions; and			3	contingency fuel, which shall be the amount of fuel sufficient to compensate for unforeseen factors. It shall be 5 % of the planned trip fuel or 5 % of the fuel required from the point of in-flight re-planning based on the consumption rate used to plan the trip fuel but in any case not less than the amount required to fly for five minutes at holding speed at 1,500 ft (450m) above the destination aerodrome in standard conditions; and
							<i>Note: Unforeseen factors are those which could have an influence on the fuel consumption to the destination aerodrome, such as deviations of an individual aircraft from the expected fuel consumption data, deviations from forecast meteorological conditions, extended taxi times before take-off, and deviations from planned routings and/or cruising levels.</i>				<i>Note: Unforeseen factors are those which could have an influence on the fuel consumption to the destination aerodrome, such as deviations of an individual aircraft from the expected fuel consumption data, deviations from forecast meteorological conditions, extended taxi times before take-off, and deviations from planned routings and/or cruising levels.</i>
						4	destination alternate fuel; which shall be:			4	destination alternate fuel; which shall be:
						i	if a destination alternate aerodrome is required, the amount of fuel required to enable the aircraft to perform a missed approach at the destination aerodrome, climb to the expected cruising altitude, fly the expected routing, descend to the			i	if a destination alternate aerodrome is required, the amount of fuel required to enable the aircraft to perform a missed approach at the destination aerodrome, climb to the expected cruising altitude, fly the expected routing, descend to the

							point where the expected approach is initiated, and conduct the approach and landing at the destination alternate aerodrome; or				point where the expected approach is initiated, and conduct the approach and landing at the destination alternate aerodrome; or
						ii	where two destination alternate aerodromes are required, the amount of fuel, as calculated in 135.280(c)(4)(i), required to enable the aircraft to proceed to the destination alternate aerodrome which requires the greater amount of alternate fuel; or			ii	where two destination alternate aerodromes are required, the amount of fuel, as calculated in 121.280(c)(4)(i), required to enable the aircraft to proceed to the destination alternate aerodrome which requires the greater amount of alternate fuel; or
						iii	when a flight is operated without a destination alternate aerodrome in accordance with 135.265(a)(2), an amount of fuel sufficient to enable an aircraft to hold for 15 minutes at 1,500 ft (450 m) above destination aerodrome elevation in standard conditions; or			iii	when a flight is operated without a destination alternate aerodrome in accordance with 121.265(a)(2), an amount of fuel sufficient to enable an aircraft to hold for 15 minutes at 1,500 ft (450 m) above destination aerodrome elevation in standard conditions; or
						iv	when a flight is operated without a destination alternate aerodrome in accordance with 135.265(a)(3), an amount of fuel sufficient to enable a turbine engine aeroplane to hold for 120 minutes; or a piston-engine aeroplane to fly for 45 minutes plus 15 % of the flight time planned to be spent at cruising level, including final reserve fuel, or two hours, whichever is less; and			iv	when a flight is operated without a destination alternate aerodrome in accordance with 121.265(a)(3), an amount of fuel sufficient to enable a turbine engine aeroplane to hold for 120 minutes; or a piston-engine aeroplane to fly for 45 minutes plus 15 % of the flight time planned to be spent at cruising level, including final reserve fuel, or two hours, whichever is less; and
						5	final reserve fuel,			5	final reserve fuel,
						i	which shall be the amount of fuel required to enable a helicopter or turbine-engine aeroplane to fly for 30 minutes, or a piston-engine aeroplane to fly for 45 minutes, at holding speed at 1,500 ft (450 m) above aerodrome elevation in standard conditions, calculated with the estimated mass on arrival at the destination alternate aerodrome or the destination alternate aerodrome, when no destination alternate aerodrome is required; and			i	which shall be the amount of fuel required to enable a turbine-engine aeroplane to fly for 30 minutes, or a piston-engine aeroplane to fly for 45 minutes, at holding speed at 1,500 ft (450 m) above aerodrome elevation in standard conditions, calculated with the estimated mass on arrival at the destination alternate aerodrome or the destination aerodrome, when no destination alternate aerodrome is required; and
						ii	the operator shall determine one final reserve fuel value for each aeroplane type and variant in their fleet rounded up to an easily recalled figure; and			ii	the operator shall determine one final reserve fuel value for each aeroplane type and variant in their fleet rounded up to an easily recalled figure; and
						6	additional fuel, which shall be a supplementary amount of fuel required if the minimum fuel calculated in accordance with 135.280(c)(2)(3)(4) and (5) is not sufficient to:			6	additional fuel, which shall be a supplementary amount of fuel required if the minimum fuel calculated in accordance with 121.280(c)(2)(3)(4) and (5) is not sufficient to:
						i	allow the aircraft to descend as necessary and proceed to an adequate alternate aerodrome in the event of engine failure or loss of pressurization, whichever requires the greater amount of fuel based on the assumption that such a failure occurs at the most critical point along the route; and			i	allow the aeroplane to descend as necessary and proceed to an adequate alternate aerodrome in the event of engine failure or loss of pressurization, whichever requires the greater amount of fuel based on the assumption that such a failure occurs at the most critical point along the route; and
						A	hold for 15 minutes at 1,500 ft (450m) above aerodrome elevation in standard conditions; and			A	hold for 15 minutes at 1,500 ft (450m) above aerodrome elevation in standard conditions; and
						B	make an approach and landing; and			B	make an approach and landing; and
						ii	allow an aeroplane engaged in extended diversion time operations (EDTO) to comply with the EDTO critical fuel scenario as established by the Director.			ii	allow an aeroplane engaged in extended diversion time operations (EDTO) to comply with the EDTO critical fuel scenario as established by the Director.
						iii	meet additional requirements not covered above; an			iii	meet additional requirements not covered above; an
						7	discretionary fuel, which shall be an amount of fuel to be carried at the discretion of the pilot-in-command.			7	discretionary fuel, which shall be an amount of fuel to be carried at the discretion of the pilot-in-command.
					d	1	Variations to the pre-flight calculation of taxi fuel, trip fuel, contingency fuel, destination alternate fuel and additional fuel specified in (c) shall be subject to the approval of the Director, on the basis of a risk assessment provided by the operator.		d	1	Variations to the pre-flight calculation of taxi fuel, trip fuel, contingency fuel, destination alternate fuel and additional fuel specified in (c) shall be subject to the approval of the Director, on the basis of a risk assessment provided by the operator.
						2	The risk assessment shall demonstrate how an equivalent level of safety will be maintained.			2	The risk assessment shall demonstrate how an equivalent level of safety will be maintained.
						3	The risk assessment shall include:			3	The risk assessment shall include:



					i	flight fuel calculations; and			i	flight fuel calculations; and
					ii	capabilities of the operator to include a data-driven method that includes a fuel consumption monitoring programme and/or the advanced use of alternate aerodromes; and			ii	capabilities of the operator to include a data-driven method that includes a fuel consumption monitoring programme and/or the advanced use of alternate aerodromes; and
					iii	specific mitigation measures.			iii	specific mitigation measures.
					e	A flight shall not be commenced nor continued beyond the point of in-flight re-planning unless the usable fuel on board meets the applicable requirements in 135.280(c) or (d).			e	A flight shall not be commenced nor continued beyond the point of in-flight re-planning unless the usable fuel on board meets the applicable requirements in 121.280(c) or (d).
					f	The use of fuel after flight commencement for purposes other than originally intended during pre-flight planning shall require a re-analysis and, if applicable, adjustment of the planned operation.			f	The use of fuel after flight commencement for purposes other than originally intended during pre-flight planning shall require a re-analysis and, if applicable, adjustment of the planned operation.
						<i>Note: Guidance on flight planning including the circumstances that may require re-analysis, adjustment and/or re-planning of the planned operation before take-off or en-route, is contained in the Flight Planning and fuel Management Manual (ICAO Doc 9976).</i>				<i>Note: Guidance on flight planning including the circumstances that may require re-analysis, adjustment and/or re-planning of the planned operation before take-off or en-route, is contained in the Flight Planning and fuel Management Manual (ICAO Doc 9976).</i>
<b>91.285</b>			<b>Checklists</b>	<b>135.285</b>		<b>Checklists</b>	<b>121.285</b>			<b>Checklists</b>
			The pilot-in-command shall ensure that, where a checklist is provided, it is used.		a	The operator shall ensure that flight crews are provided with checklists of normal, abnormal and emergency aircraft procedures.			a	The operator shall ensure that flight crews are provided with checklists of normal, abnormal and emergency aircraft procedures.
					b	The checklists provided to flight crews shall be designed in accordance with human factors principles and shall contain sufficient information to enable flight crews to comply with the operating procedures in the operations manual, the aircraft flight manual or such other documents as may be associated with the certificate of airworthiness.			b	The checklists provided to flight crews shall be designed in accordance with human factors principles and shall contain sufficient information to enable flight crews to comply with the operating procedures in the operations manual, the aircraft flight manual or such other documents as may be associated with the certificate of airworthiness.
					c	The operator shall ensure that flight crew operating procedures incorporate the use of checklists for all phases of aircraft operations and in emergency.			c	The operator shall ensure that flight crew operating procedures incorporate the use of checklists for all phases of aircraft operations and in emergency.
					d	The operator shall ensure that checklists are used by flight crews prior to, during and after all phases of aircraft operation.			d	The operator shall ensure that checklists are used by flight crews prior to, during and after all phases of aircraft operation.
				<b>125.290</b>		<b>In-flight simulation of emergency situations</b>	<b>121.290</b>			<b>In-flight simulation of emergency situations</b>
						The operator shall ensure that on a flight when passengers are being carried:				The operator shall ensure that on a flight when passengers are being carried:
					a	no emergency or abnormal situations are simulated; and			a	no emergency or abnormal situations are simulated; and
					b	no simulated instrument flight is conducted.			b	no simulated instrument flight is conducted.
<b>91.295</b>			<b>Use of airborne collision avoidance system (ACAS II)</b>							
	a		In an aircraft with airborne collision avoidance system (ACAS II) installed:							
		1	It shall be used in normal conditions during flight in a mode that enables Resolution Advisories (RAs) to be produced for the pilot flying when undue proximity to another aircraft is detected.							
		2	When an RA is produced by ACAS II, the pilot flying shall immediately take the corrective action indicated by the RA, even if this is in conflict with an Air Traffic Control (ATC) instruction. The aircraft shall be promptly returned to the terms of the ATC instructions or clearance when the situation is resolved.							
		3	Unless otherwise specified in an air traffic control instruction, pilots shall use appropriate procedures to ensure that a rate of climb or descent of less than 8 m/sec or 1,500 ft/min (depending on the instrumentation available) is achieved throughout the last 300 m (1,000 feet) of climb or descent to the assigned altitude or flight level.							

			<i>Note: This is to avoid unnecessary ACAS II RAs in aircraft at or approaching adjacent altitudes or flight levels.</i>								
<b>91.300</b>			<b>Crew members at stations</b>								
	a		The pilot-in-command shall ensure that each crew member on duty in an aircraft during take-off and landing or when he so directs:								
		1	be at their crew member station unless their absence is necessary to perform duties in connection with the operation of the aircraft; and								
		2	have their safety belt, or harness where so equipped, fastened while at the crew member station.								
	b		The pilot-in-command shall ensure that all flight crew members required to be on flight deck duty in an aircraft other than during take-off and landing shall remain at their stations with their safety belt fastened except when their absence is necessary for the performance of duties in connection with the operation of the aircraft or for physiological needs.								
	c		No crew member shall perform any activity during critical phases of flight except those required for the safe operation of the aircraft.								
		1	The critical phases of flight include:								
		i	for flight crew members, all operations involving push back, taxi, take-off, approach and landing; and								
		ii	for other crew members, all ground operations after leaving the apron area to join a main taxiway, takeoff until passing 1,000 feet on climb, and all flight below 5,000 feet on the landing approach phase of the flight.								
<b>91.305</b>			<b>In-flight fuel management</b>	<b>135.305</b>			<b>In-flight fuel management</b>	<b>121.305</b>			<b>In-flight fuel management</b>
	a		The pilot-in-command shall monitor the amount of usable fuel remaining on board to ensure it is not less than the fuel required to proceed to an aerodrome where a safe landing can be made with the planned final reserve fuel remaining.		a		The operator shall establish a procedure to ensure that in-flight fuel checks and fuel management are carried out.		a		The operator shall establish a procedure to ensure that in-flight fuel checks and fuel management are carried out.
					b		The pilot in command shall ensure that fuel checks are carried out at regular intervals to confirm that the amount of usable fuel remaining in flight is not less than the fuel required to proceed to an aerodrome/landing site where a safe landing can be made, with the planned final reserve fuel remaining.		b		The pilot in command shall ensure that fuel checks are carried out at regular intervals to confirm that the amount of usable fuel remaining in flight is not less than the fuel required to proceed to an aerodrome/landing site where a safe landing can be made, with the planned final reserve fuel remaining.
							<i>Note 1: The protection of final reserve fuel is intended to ensure a safe landing at any aerodrome when unforeseen occurrences may not permit safe completion of an operation as originally planned. Guidance on flight planning including the circumstances that may require re-analysis, adjustment and/or re-planning of the planned operation before take-off or en-route, is contained in the Flight Planning and Fuel Management Manual (ICAO Doc 9976).</i>				<i>Note 1: The protection of final reserve fuel is intended to ensure a safe landing at any aerodrome when unforeseen occurrences may not permit safe completion of an operation as originally planned. Guidance on flight planning including the circumstances that may require re-analysis, adjustment and/or re-planning of the planned operation before take-off or en-route, is contained in the Flight Planning and Fuel Management Manual (ICAO Doc 9976).</i>
					c		The pilot-in-command shall request delay information from ATC when unanticipated circumstances may result in landing at the destination aerodrome with less than the final reserve fuel plus any fuel required to proceed to an alternate aerodrome or the fuel required to operate to an isolated aerodrome.		c		The pilot-in-command shall request delay information from ATC when unanticipated circumstances may result in landing at the destination aerodrome with less than the final reserve fuel plus any fuel required to proceed to an alternate aerodrome or the fuel required to operate to an isolated aerodrome.
	b		The pilot-in-command shall advise ATC of a minimum fuel state by declaring MINIMUM FUEL when, having committed to land at a specific aerodrome, the pilot calculates that any change to the existing clearance to that aerodrome, or other air traffic delays, may result in landing with less than the planned final reserve fuel		d		The pilot-in-command shall advise ATC of a minimum fuel state by declaring MINIMUM FUEL when, having committed to land at a specific aerodrome, the pilot calculates that any change to the existing clearance to that aerodrome, or other air traffic delays, may result in landing with less than the planned final reserve fuel		d		The pilot-in-command shall advise ATC of a minimum fuel state by declaring MINIMUM FUEL when, having committed to land at a specific aerodrome, the pilot calculates that any change to the existing clearance to that aerodrome, or other air traffic delays, may result in landing with less than the planned final reserve fuel

			<i>Note 1: The declaration of MINIMUM FUEL informs ATC that all planned aerodrome options have been reduced to a specific aerodrome of intended landing and any change to the existing clearance, or air traffic delays, may result in landing with less than the planned final reserve fuel. This is not an emergency situation but an indication that an emergency situation is possible should any additional delay occur.</i>				<i>Note 1: The declaration of MINIMUM FUEL informs ATC that all planned aerodrome options have been reduced to a specific aerodrome of intended landing and any change to the existing clearance, or air traffic delays, may result in landing with less than the planned final reserve fuel. This is not an emergency situation but an indication that an emergency situation is possible should any additional delay occur.</i>				<i>Note 1: The declaration of MINIMUM FUEL informs ATC that all planned aerodrome options have been reduced to a specific aerodrome of intended landing and any change to the existing clearance, or air traffic delays, may result in landing with less than the planned final reserve fuel. This is not an emergency situation but an indication that an emergency situation is possible should any additional delay occur.</i>
							<i>Note 2: Guidance on declaring minimum fuel is contained in the Flight Planning and Fuel Management Manual (ICAO Doc 9976).</i>				<i>Note 2: Guidance on declaring minimum fuel is contained in the Flight Planning and Fuel Management Manual (ICAO Doc 9976).</i>
	c		The pilot-in-command shall declare a situation of fuel emergency by broadcasting MAYDAY MAYDAY MAYDAY FUEL, when the calculated usable fuel estimated to be available upon landing at the nearest aerodrome where a safe landing can be made is less than the planned final reserve fuel.		e		The pilot-in-command shall declare a situation of fuel emergency by broadcasting MAYDAY MAYDAY MAYDAY FUEL, when the calculated usable fuel estimated to be available upon landing at the nearest aerodrome where a safe landing can be made is less than the planned final reserve fuel.		e		The pilot-in-command shall declare a situation of fuel emergency by broadcasting MAYDAY MAYDAY MAYDAY FUEL, when the calculated usable fuel estimated to be available upon landing at the nearest aerodrome where a safe landing can be made is less than the planned final reserve fuel.
			<i>Note 2: The planned final reserve fuel refers to the value calculated in 91.280 and is the minimum amount of fuel required upon landing at any aerodrome.</i>				<i>Note 3: The planned final reserve fuel refers to the value calculated in 135.280 and is the minimum amount of fuel required upon landing at any aerodrome.</i>				<i>Note 3: The planned final reserve fuel refers to the value calculated in 121.280 and is the minimum amount of fuel required upon landing at any aerodrome.</i>
			<i>Note 3: The words "MAYDAY FUEL" describe the nature of the distress conditions as required in Annex 10, Volume II, 5.3.2.1, b) 3.</i>								
<b>91.310</b>			<b>Use of oxygen</b>	<b>135.310</b>			<b>Use of oxygen</b>	<b>121.310</b>			<b>Use of oxygen</b>
			The pilot-in-command of an aircraft with a non-pressurised cabin shall ensure that:				The operator shall ensure that:				The operator shall ensure that:
	a		before the aircraft reaches flight level 130 the method of use of the oxygen provided in the aircraft is demonstrated to all passengers; and		a		All flight crew members, engaged in performing duties essential to the safe operation of an aircraft in flight, use supplemental oxygen continuously whenever the cabin pressure altitude exceeds 10,000 feet.		a		All flight crew members, engaged in performing duties essential to the safe operation of an aircraft in flight, use supplemental oxygen continuously whenever the cabin pressure altitude exceeds 10,000 feet.
	b		when flying above flight level 130 all passengers and crew members are instructed to use oxygen; and								
	c		during any period when the aircraft is flying above flight level 100 up to and including flight level 130, oxygen is used by all the flight crew of the aircraft for that part of the flight at those altitudes that is of more than 30 minutes duration; and								
	d		during any period when the aircraft is flying above flight level 130 oxygen is used continuously by all the flight crew of the aircraft.								
	e		an aircraft with a non-pressurised cabin is not operated above flight level 250.								
				<b>135.315</b>			<b>Cosmic radiation</b>	<b>121.315</b>			<b>Cosmic radiation</b>
					a		The operator shall take appropriate measures to:		a		The operator shall take appropriate measures to:
					1		assess the exposure to cosmic radiation when in flight of all crew members who are liable to be subject to cosmic radiation in excess of 1 millisievert (mSv) in any period of 12 months;		1		assess the exposure to cosmic radiation when in flight of all crew members who are liable to be subject to cosmic radiation in excess of 1 millisievert (mSv) in any period of 12 months;
					2		take into account the assessed exposure when organising work schedules with a view to reducing the doses of highly exposed crew members;		2		take into account the assessed exposure when organising work schedules with a view to reducing the doses of highly exposed crew members;
					3		inform the crew members concerned of the health risks their work involves; and		3		inform the crew members concerned of the health risks their work involves; and
					4		retain assessments of exposure to cosmic radiation for the periods specified in 91.1265.		4		retain assessments of exposure to cosmic radiation for the periods specified in 91.1265.
							<i>Note: The exposure of crew in aircraft that do not generally operate above 26,000 feet is likely to result in an annual dose less than 1 mSv in any 12 month period.</i>				<i>Note: The exposure of crew in aircraft that do not generally operate above 26,000 feet is likely to result in an annual dose less than 1 mSv in any 12 month period.</i>
					b		The operator shall ensure that the working schedules for female crew members, once they have notified the operator that they are pregnant, keep		b		The operator shall ensure that the working schedules for female crew members, once they have notified the operator that they are pregnant, keep

							the equivalent dose to the foetus as low as can reasonably be achieved and in any case ensure that the dose does not exceed 1 mSv for the remainder of the pregnancy.					the equivalent dose to the foetus as low as can reasonably be achieved and in any case ensure that the dose does not exceed 1 mSv for the remainder of the pregnancy.
					c		The operator shall ensure that for any flight operated above 49,000 feet:		c			The operator shall ensure that for any flight operated above 49,000 feet:
					1		procedures for operating above 49,000 feet and for the use of monitoring equipment shall be specified in the operations manual;		1			procedures for operating above 49,000 feet and for the use of monitoring equipment shall be specified in the operations manual;
					2		a descent to 49,000 feet or lower is initiated as soon as practicable if the limit values of cosmic radiation dose rate specified in the operations manual are exceeded.		2			a descent to 49,000 feet or lower is initiated as soon as practicable if the limit values of cosmic radiation dose rate specified in the operations manual are exceeded.
						<b>135.320</b>	<b>Manipulation of controls</b>			<b>121.320</b>		<b>Manipulation of controls</b>
					a		The operator shall ensure that no person is permitted to manipulate the flight controls of an aircraft on a flight for the purpose of commercial air transport, unless the person is:		a			The operator shall ensure that no person is permitted to manipulate the flight controls of an aircraft on a flight for the purpose of commercial air transport, unless the person is:
					1		a flight crew member qualified in accordance with Subpart J and authorised by the operator; or		1			a flight crew member qualified in accordance with Subpart J and authorised by the operator; or
					2		an authorised representative of the Director, qualified in accordance with Subpart J who:		2			an authorised representative of the Director, qualified in accordance with Subpart J who:
					i		has the permission of the operator and the pilot-in-command; and		i			has the permission of the operator and the pilot-in-command; and
					ii		is performing a required duty.		ii			is performing a required duty.
					b		Where a passenger occupies a seat with access to flight controls the pilot-in-command shall brief that passenger to ensure no intentional or inadvertent manipulation of flight controls or instruments occurs.					
<b>91.325</b>			<b>Flight crew communication</b>	<b>135.325</b>			<b>Flight crew communication</b>	<b>121.325</b>				<b>Flight crew communication</b>
			When operating under IFR all flight crew members required to be on flight deck duty shall communicate through boom or throat microphones below the transition altitude.				The operator shall ensure that all flight crew members required to be on flight deck duty shall communicate through boom or throat microphones below the transition altitude.					The operator shall ensure that all flight crew members required to be on flight deck duty shall communicate through boom or throat microphones below the transition altitude.
				<b>135.330</b>			<b>Locking of flight-crew compartment door</b>	<b>121.330</b>				<b>Locking of flight-crew compartment door</b>
							The operator shall:					The operator shall:
					a		ensure that on all aeroplanes which are equipped with a flight crew compartment door, the door is closed and locked from the time all external doors are closed following embarkation until any such door is opened for disembarkation, except when necessary to permit access and egress by authorised persons; and		a			ensure that on all aeroplanes which are equipped with a flight crew compartment door, the door is closed and locked from the time all external doors are closed following embarkation until any such door is opened for disembarkation, except when necessary to permit access and egress by authorised persons; and
					b		establish procedures whereby cabin crew members are able to notify flight crew discreetly of any security situation which may arise in the aircraft cabin.		b			establish procedures whereby cabin crew members are able to notify flight crew discreetly of any security situation which may arise in the aircraft cabin.
<b>91.335</b>			<b>Fuelling operations</b>	<b>135.335</b>			<b>Fuelling operations</b>	<b>121.335</b>				<b>Fuelling operations</b>
			The pilot-in-command shall ensure that:		a		The operator shall ensure that an aircraft is not refuelled or defuelled when passengers are embarking, on board or disembarking unless:		a			The operator shall ensure that an aircraft is not refuelled or defuelled when passengers are embarking, on board or disembarking unless:
	a		no aircraft is refuelled or defuelled whilst passengers are embarking, on board or disembarking, or with a helicopter rotor turning; and		1		the aircraft is properly attended by qualified personnel ready to initiate and direct an evacuation by the most practical and expeditious means available; and		1			the aircraft is properly attended by qualified personnel ready to initiate and direct an evacuation by the most practical and expeditious means available; and
	b		appropriate precautions are taken, particularly when refuelling with fuels other than aviation kerosene, or when refuelling results in a mixture of aviation kerosene with other aviation turbine fuels, or when an open line is used.		2		two-way communication is maintained by use of the aeroplane inter-communication system or other suitable means between the ground crew supervising the refuelling or defuelling and the qualified personnel on board the aircraft.		2			two-way communication is maintained by use of the aeroplane inter-communication system or other suitable means between the ground crew supervising the refuelling or defuelling and the qualified personnel on board the aircraft.
					b		Nothing in this paragraph requires the deployment of integral airstairs or the opening of emergency exits as a prerequisite to refuelling or defuelling.		b			Nothing in this paragraph requires the deployment of integral airstairs or the opening of emergency exits as a prerequisite to refuelling or defuelling.
					c		The operator shall ensure that a helicopter is not refuelled when passengers are embarking, on board,					



						disembarking or when the rotor is turning unless the operator is granted specific authorisation by the Director specifying the conditions under which such refuelling may be carried out.				
<b>91.340</b>			<b>Fuel spillage</b>	<b>135.340</b>		<b>Fuel spillage</b>	<b>121.340</b>			<b>Fuel spillage</b>
	a		When refuelling or defuelling, if fuel is spilled and is likely to endanger persons or property:							
		1	refuelling or defuelling shall be stopped immediately and emergency services, where available, are summoned; and							
		2	immediate action shall be taken to cover the fuel with sand, sawdust, dry earth, or an agent such as foam or dry chemical extinguisher powder, to reduce the fire hazard; and							
		3	the aircraft shall be moved clear of the contaminated area, with the agreement of any attending emergency services, before any engine is started.							
					b	The operator shall have a system for dealing with fuel spillage.		b		The operator shall have a system for dealing with fuel spillage.
<b>91.345</b>			<b>Completion of journey log and recording of defects</b>							
	a		The pilot in command of an aircraft registered in Guernsey shall, on the completion of the flight, or series of flights:							
		1	complete the journey log book or equivalent record; and							
		2	complete the technical log, or other applicable maintenance records, and record any aircraft defects that have been identified during the flight.							
<b>91.350</b>			<b>Notification of accidents and occurrences</b>							
	a		The pilot-in-command shall be responsible for notifying the nearest appropriate authority by the quickest available means of any accident involving the aircraft resulting in serious injury or death of any person or substantial damage to the aircraft or property.							
	b		The pilot-in-command shall notify occurrences in accordance with GAR Part 13.							
<b>91.355</b>			<b>Occupation of seats and wearing of restraints</b>							
	a		The pilot-in-command of an aircraft shall require each person on the aircraft to occupy a seat or berth and to fasten his safety belt, or restraining belt, or if equipped, shoulder harness or single diagonal shoulder belt:							
		1	during each take-off and landing; and							
		2	when the aircraft is flying at a height of less than 1,000 feet above the surface unless operational requirements preclude such restraint and the procedures are approved by the Director; and							
		3	at other times when the pilot-in-command considers it necessary for his safety; and							
		4	during aerobatic flight; and							
		5	at all times in an open cockpit aircraft.							
	b		The pilot-in-command of an aircraft shall require each passenger to place his seat in the take-off and landing configuration during take-off and landing.							
	c		Paragraph (a)(1), (2), and (3) shall not apply to a child of less than 2 years of age if the child:							
		1	is held by an adult who is occupying a seat or berth, provided the child is securely restrained; or							
		2	occupies a seat equipped with an approved child restraint system, if the child does not exceed the specified mass limit for that system and is accompanied by a parent, guardian, or attendant							

Guernsey Aircraft Registry      Issue 2      Guernsey Aviation Requirements      August 2016



[illegible]

Part 91			Requirement			Part 135			Requirement			Part 121			Requirement		
Subpart C - Operating Limitations																	
91.400			Meteorological conditions — VFR flight	135.400			Meteorological conditions — VFR flight	121.400			Meteorological conditions — VFR flight						
			A flight to be conducted in accordance with the visual flight rules shall not be commenced unless current meteorological reports or a combination of current reports and forecasts indicate that the meteorological conditions along the route or that part of the route to be flown under the visual flight rules will, at the appropriate time, be such as to enable compliance with these rules.				The operator shall ensure that a commercial air transport operation is not carried out under VFR above more than scattered cloud unless:				The operator shall ensure that a commercial air transport operation is not carried out under VFR above more than scattered cloud unless:						
					a		the aircraft meets the requirements for IFR flight and the required minimum flight crew for IFR operation, holding current instrument rating qualifications, is performing the operation; and		a		the aircraft meets the requirements for IFR flight and the required minimum flight crew for IFR operation, holding current instrument rating qualifications, is performing the operation; and						
					b		the instruments and equipment, including radio navigation equipment, required for IFR flight are operative; and		b		the instruments and equipment, including radio navigation equipment, required for IFR flight are operative; and						
					c		the aircraft is multi-engine, and is capable, with one engine inoperative, of maintaining a net flight path that has a positive slope at 1,000 feet above the cloud; and		c		the aircraft is multi-engine, and is capable, with one engine inoperative, of maintaining a net flight path that has a positive slope at 1,000 feet above the cloud; and						
					d		the aircraft carries radio navigation equipment enabling it to be navigated by IFR to an aerodrome where an instrument approach procedure may be carried out for landing; and		d		the aircraft carries radio navigation equipment enabling it to be navigated by IFR to an aerodrome where an instrument approach procedure may be carried out for landing; and						
					e		the aircraft carries sufficient fuel and fuel reserves to proceed by IFR to an aerodrome where an instrument approach procedure may be carried out for landing.		e		the aircraft carries sufficient fuel and fuel reserves to proceed by IFR to an aerodrome where an instrument approach procedure may be carried out for landing.						
				135.405			Commercial air transport aeroplane operations at night or in IMC										
							A single-engine aeroplane, or a two-engine aeroplane that is unable to maintain a positive climb gradient in the event of an engine failure on take-off, shall not be flown for the purpose of commercial air transport at night or in instrument meteorological conditions unless it is flying on a special VFR flight in a control zone.										
							<i>Note: The additional operating limitations for aeroplanes described in 135.405 and operated under this Part are included in the aeroplane performance requirements applicable under 135.565</i>										
91.410			Meteorological conditions — IFR flight	135.410			Meteorological conditions — IFR flight	121.410			Meteorological conditions — IFR flight						
			A flight to be conducted in accordance with the instrument flight rules shall not:		a		Notwithstanding 91.410, the operator shall ensure that		a		Notwithstanding 91.410, the operator shall ensure that						
	a		take off from the departure aerodrome unless the meteorological conditions, at the time of use, are at or above the aerodrome operating minima for that operation; and		1		an IFR flight does not take off unless current meteorological reports, or a combination of current reports and forecasts indicate that the meteorological conditions will at the estimated time of use at the aerodrome of intended landing or at each nominated alternate aerodrome be at or above the applicable aerodrome operating minima; and		1		an IFR flight does not take off unless current meteorological reports, or a combination of current reports and forecasts indicate that the meteorological conditions will at the estimated time of use at the aerodrome of intended landing or at each nominated alternate aerodrome be at or above the applicable aerodrome operating minima; and						
	b		take off or continue beyond the point of in-flight re-planning unless at the aerodrome of intended landing or at each alternate aerodrome to be selected in compliance with GAR 91.265, current meteorological reports or a combination of current reports and forecasts indicate that the meteorological conditions one hour before and after the earliest and latest time of arrival will be at or above the aerodrome operating minima for that operation.		2		the margin of time established for planning the estimated time of use of an aerodrome shall be specified in the operations manual and approved by the Director.		2		the margin of time established for planning the estimated time of use of an aerodrome shall be specified in the operations manual and approved by the Director.						
91.415			IFR departure limitations	135.415			IFR departure limitations	121.415			IFR departure limitations						
	a		A departure under IFR shall not be commenced unless:		a		The operator shall ensure that:		a		The operator shall ensure that:						

	1	meteorological conditions are at or above the minima for IFR take-off determined in accordance with GAR 91.240; and		1	an IFR flight does not take off when meteorological conditions are below prescribed IFR landing minima unless meteorological reports and forecasts indicate that a successful approach and landing can be made at the take-off alternate; and		1	an IFR flight does not take off when meteorological conditions are below prescribed IFR landing minima unless meteorological reports and forecasts indicate that a successful approach and landing can be made at the take-off alternate; and
	2	the relevant RVR is at least 150 m RVR (Category A, B, C aeroplanes, and helicopters) or 200 m RVR (Category D aeroplanes), unless conducted in accordance with an approval issued by the State of Registry.		2	Low Visibility Take-off (LVTO) operations are conducted in accordance with Subpart SPA.		2	Low Visibility Take-off (LVTO) operations are conducted in accordance with Subpart SPA.
	b	In the case of an aircraft registered in Guernsey, approval for take-off below 150 m RVR (Category A, B, C aeroplanes, and helicopters) or 200 m RVR (Category D aeroplanes) may be issued by the Director in accordance with Subpart SPA.						
			<b>135.420</b>		<b>Minimum flight altitudes</b>	<b>121.420</b>		<b>Minimum flight altitudes</b>
					The operator shall ensure that:			The operator shall ensure that:
				a	When establishing minimum flight altitude for each route, the following factors shall be taken into account:		a	When establishing minimum flight altitude for each route, the following factors shall be taken into account:
				1	the accuracy and reliability with which the position of the aircraft can be determined; and		1	the accuracy and reliability with which the position of the aircraft can be determined; and
				2	the inaccuracies in the indications of the altimeters used; and		2	the inaccuracies in the indications of the altimeters used; and
				3	the characteristics of the terrain; and		3	the characteristics of the terrain; and
				4	the probability of encountering unfavourable meteorological conditions (e.g. severe turbulence and descending air currents); and		4	the probability of encountering unfavourable meteorological conditions (e.g. severe turbulence and descending air currents); and
				5	possible inaccuracies in aeronautical charts; and		5	possible inaccuracies in aeronautical charts; and
				6	all relevant airspace restrictions; and		6	all relevant airspace restrictions; and
				7	any minimum flight altitude established by the State in which the operation takes place.		7	any minimum flight altitude established by the State in which the operation takes place.
				b	The method used to establish minimum flight altitudes shall be specified in the operations manual and approved by the Director in accordance with any conditions specified therein.		b	The method used to establish minimum flight altitudes shall be specified in the operations manual and approved by the Director in accordance with any conditions specified therein.
<b>91.425</b>		<b>Approach and landing conditions</b>	<b>135.425</b>		<b>Approach and landing conditions</b>	<b>121.425</b>		<b>Approach and landing conditions</b>
					Notwithstanding 91.425, the operator shall ensure that:			Notwithstanding 91.425, the operator shall ensure that:
		A flight shall not be continued towards the aerodrome of intended landing, unless the latest available information indicates that at the expected time of arrival, a landing can be effected at that aerodrome or at least one destination alternate aerodrome, in compliance with the appropriate operating minima.			an IFR flight does not continue beyond the point of in-flight re-planning unless current meteorological reports, or a combination of current reports and forecasts indicate that the meteorological conditions will at the estimated time of use at the aerodrome of intended landing or at each nominated alternate aerodrome be at or above the applicable aerodrome operating minima.			an IFR flight does not continue beyond the point of in-flight re-planning unless current meteorological reports, or a combination of current reports and forecasts indicate that the meteorological conditions will at the estimated time of use at the aerodrome of intended landing or at each nominated alternate aerodrome be at or above the applicable aerodrome operating minima.
<b>91.430</b>		<b>Commencement and continuation of approach</b>						
	a	An approach may be commenced regardless of the reported visibility or RVR but shall not be continued below 1,000 feet (300 m) above the aerodrome/heliport or into the final approach segment, unless the reported visibility or controlling RVR is above the specified minimum.						
	b	If, after entering the final approach segment or after descending below 1,000 feet (300 m) above the aerodrome/heliport, the reported visibility or controlling RVR falls below the specified minimum, the approach may be continued to DA/H or MDA/H.						
	c	The approach shall not be continued below the DA/H or MDA/H unless the specified visual reference is established at DA/H or MDA/H and is maintained.						
			<b>135.435</b>		<b>Instrument approach procedures</b>	<b>121.435</b>		<b>Instrument approach procedures</b>

							The operator shall ensure that procedures for carrying out instrument approaches are specified as standard operating procedures and included within the operations manual.				The operator shall ensure that procedures for carrying out instrument approaches are specified as standard operating procedures and included within the operations manual.
--	--	--	--	--	--	--	--	--	--	--	--



Part 91	Requirement	Part 135	Requirement	Part 121	Requirement
<b>Subpart D - Mass and Balance</b>					
<b>91.450</b>	<b>Aircraft load limitations</b>				
	The holder of a certificate, licence, permit or approval shall ensure that the limitations contained in the aircraft flight manual, or other approved document, relating to the mass and balance of the aircraft are complied with.				
		<b>135.455</b>	<b>Mass and balance documentation</b>	<b>121.455</b>	<b>Mass and balance documentation</b>
			The operator shall ensure that		The operator shall ensure that
		a	mass and balance documentation is completed prior to each commercial air transport operation;	a	mass and balance documentation is completed prior to each commercial air transport operation;
		b	the mass and balance documentation enables the pilot-in command to determine that the load and its distribution is such that the mass and balance limits of the aircraft are not exceeded;	b	the mass and balance documentation enables the pilot-in command to determine that the load and its distribution is such that the mass and balance limits of the aircraft are not exceeded;
		c	the person preparing the mass and balance documentation is named on the document;	c	the person preparing the mass and balance documentation is named on the document;
		d	the person supervising the loading of the aircraft confirms by signature that the the load and its distribution are in accordance with mass and balance documentation;	d	the person supervising the loading of the aircraft confirms by signature that the the load and its distribution are in accordance with mass and balance documentation;
		e	the mass and balance document is acceptable to the pilot-in-command; acceptance being indicated by a countersignature or equivalent.	e	the mass and balance document is acceptable to the pilot-in-command; acceptance being indicated by a countersignature or equivalent.
		f	the mass and balance documentation must contain the following:	f	the mass and balance documentation must contain the following:
		1	name of pilot-in-command;	1	name of pilot-in-command;
		2	date of the operation;	2	date of the operation;
		3	aircraft type and registration; and	3	aircraft type and registration; and
		4	flight number or estimated time of departure;	4	flight number or estimated time of departure;
		5	the total of the aircraft empty mass, the mass of any removable equipment, consumables, unusable oil, unusable fuel, and the mass of crew;	5	the total of the aircraft empty mass, the mass of any removable equipment, consumables, unusable oil, unusable fuel, and the mass of crew;
		6	the mass of passengers, goods, baggage, usable oil, and usable fuel;	6	the mass of passengers, goods, baggage, usable oil, and usable fuel;
			<i>Note: Details of the passengers and descripton of any cargo carried will be contained in passenger and cargo manifest. The requirement for carriage of such manifests is contained in 135.55.</i>		<i>Note: Details of the passengers and descripton of any cargo carried will be contained in passenger and cargo manifest. The requirement for carriage of such manifests is contained in 121.55.</i>
		7	loaded aircraft mass;	7	loaded aircraft mass;
		8	evidence that the centre of gravity is within the specified limits, except where this is recorded by the operator in another document;	8	evidence that the centre of gravity is within the specified limits, except where this is recorded by the operator in another document;
		9	the maximum allowable mass for the operation, including zero fuel mass, take-off mass, and landing mass for the operation; and	9	the maximum allowable mass for the operation, including zero fuel mass, take-off mass, and landing mass for the operation; and
		10	the name of the person preparing the documentation.	10	the name of the person preparing the documentation.
		g	procedures and limitations have been established to deal with last minute changes to the load, and these procedures are described in the operations manual.	g	procedures and limitations have been established to deal with last minute changes to the load, and these procedures are described in the operations manual.
		h	Notwithstanding (a), where a multi-sector operation is being conducted, mass and balance documentation is not required for each sector if operations are conducted in accordance with procedures in the operations manual and:		
		1	mass and balance documentation is prepared for the first flight sector of each series flights;		
		2	all sectors are performed under VFR conditions;		
		3	all sectors depart from, remain within 25 NM of, and return to, the same aerodrome or heliport; and		



					4	loading and seating is completed in accordance with a standard load plan that ensures mass and balance remain within limits for every sector.			
				135.460		<b>Goods, passenger and baggage mass</b>	121.460		<b>Goods, passenger and baggage mass</b>
					a	The operator shall establish the actual mass of goods and checked baggage to be carried on each of their operations.		a	The operator shall establish the actual mass of goods and checked baggage to be carried on each of their operations.
					b	The operator shall establish the mass of passengers and, as appropriate, crew and their hand baggage on each of their operations by using one of the following:		b	The operator shall establish the mass of passengers and, as appropriate, crew and their hand baggage on each of their operations by using one of the following:
					1	actual mass;		1	actual mass;
					2	standard mass established in accordance with a programme specified in the operations manual and approved by the Director; or		2	standard mass established in accordance with a programme specified in the operations manual and approved by the Director; or
					3	passenger standard mass shown in Table 1; and		3	passenger standard mass shown in Tables 1 and 2; and
					4	crew standard mass shown in Table 3.		4	crew standard mass shown in Table 3.
					c	The mixing of actual and standard mass shall not occur on the same flight except where it appears to the person supervising the loading of the aircraft that any person and their baggage may exceed the standard mass used, in which case an actual mass shall be recorded on the mass and balance documentation.		c	The mixing of actual and standard mass shall not occur on the same flight except where it appears to the person supervising the loading of the aircraft that any person and their baggage may exceed the standard mass used, in which case an actual mass shall be recorded on the mass and balance documentation.
					d	The mass of cargo and hold baggage shall be established by weighing, with each piece of baggage, cargo or cargo container weighed separately.		d	The mass of cargo and hold baggage shall be established by weighing, with each piece of baggage, cargo or cargo container weighed separately.
					e	The method used to establish passenger and baggage mass shall be noted on the aircraft load sheet.		e	The method used to establish passenger and baggage mass shall be noted on the aircraft load sheet.

121.460/135.460 Table 1

Passenger Seats Available			
	1 - 5	6 - 9	10 -19
Male passengers	104 kg	96 kg	95 kg
Female passengers	86 kg	84 kg	84 kg
Children occupying a separate seat (up to 12 years of age)	38 kg	38 kg	38 kg
Infants under 2 years if sharing a seat with an adult	0 kg	0 kg	0 kg
Flight Crew	87 kg	87 kg	87 kg
Cabin crew	78 kg	78 kg	78 kg

121.460 Table 2

Passenger Seats Available			
	20 or more		30 or more
	Male	Female	All adult
Passengers on all flights	88 kg	82 kg	84 kg
Children (between 2-12 years) or Infants under 2 years if occupying a separate seat	38 kg	38 kg	38 kg
Infants under 2 years if sharing a seat with an adult	0 kg	0 kg	0 kg

135.460/121.460 Table 3

	Male	Female
Flight Crew	87 kg	85 kg
Cabin crew	82 kg	75 kg

Part 91	Requirement	Part 135	Requirement	Part 121	Requirement
<b>Subpart E - Performance</b>					
<b>91.500</b>	<b>Performance — general</b>				
	Before a flight is commenced, it shall be determined that, having regard to performance in the conditions to be expected on the intended flight, and to any obstructions at the places of departure and intended destination and on the intended route, the aircraft is capable of safely taking off, reaching and maintaining a safe height thereafter and making a safe landing at the place of intended destination.				
		<b>135.502</b>	<b>Performance planning – aeroplanes</b>	<b>121.502</b>	<b>Performance planning – aeroplanes</b>
			The operator shall ensure that:		The operator shall ensure that:
		a	when determining the performance of the aeroplane, account is taken of at least the following factors:	a	when determining the performance of the aeroplane, account is taken of at least the following factors:
		1	the mass of the aeroplane; and	1	the mass of the aeroplane; and
		2	the pressure altitude and temperature; and	2	the pressure altitude and temperature; and
		3	wind - not more than 50 % of the reported head-wind component, or if operations with a tail-wind are permitted and performance data is provided, not less than 150 % of the reported tail-wind component; and	3	wind - not more than 50 % of the reported head-wind component, or if operations with a tail-wind are permitted and performance data is provided, not less than 150 % of the reported tail-wind component; and
		4	aeroplane operating techniques; and	4	aeroplane operating techniques; and
		5	runway gradient; and	5	runway gradient; and
		6	condition of runway; and	6	condition of runway; and
		7	water surface state (where relevant).	7	water surface state (where relevant).
		b	due account is taken of aeroplane configuration, environmental conditions and the operation of systems which may have an adverse effect on performance.	b	due account is taken of aeroplane configuration, environmental conditions and the operation of systems which may have an adverse effect on performance.
		c	The development of procedures for obstacle avoidance during take-off, landing and balked landing takes into account aerodrome obstacle data.	c	The development of procedures for obstacle avoidance during take-off, landing and balked landing takes into account aerodrome obstacle data.
		<b>135.505</b>	<b>Performance planning – helicopters</b>		
			The operator shall ensure that when determining the performance of the helicopter:		
		a	due account is taken of helicopter operating technique.		
		b	due account is taken of helicopter configuration, environmental conditions and the operation of systems which may have an adverse effect on performance.		
		c	the mass of the helicopter at the start of the take-off; or in the event of in-flight replanning, at the point from which the revised operational flight plan applies, is not greater than the mass at which the requirements of the applicable Performance Class can be complied with for the planned flight. Allowance shall be made for expected reductions in mass as the flight proceeds, and for fuel jettisoning where applicable.		
		d	the mass of the helicopter at the time of take-off, or at the expected time of landing at the destination and at any planned alternate does not exceed the maximum mass at which the applicable noise certification has been granted unless otherwise authorised by the Director.		
		e	the development of procedures for obstacle avoidance during take-off, landing and balked landing takes into account aerodrome or heliport obstacle data.		
		<b>135.510</b>	<b>Accuracy of available data</b>	<b>121.510</b>	<b>Accuracy of available data</b>
			The operator shall take account of the accuracy of charts and other data used during performance planning, when assessing whether a flight can be safely operated.		The operator shall take account of the accuracy of charts and other data used during performance planning, when assessing whether a flight can be safely operated.
		<b>125.515</b>	<b>Performance data</b>	<b>121.515</b>	<b>Performance data</b>

						The operator shall ensure that for each aircraft it operates the performance data used is:					The operator shall ensure that for each aeroplane it operates the performance data used is:
					a	contained in the aircraft flight manual; or			a		contained in the aeroplane flight manual; or
					b	where provided by the aircraft manufacturer or other source, contained in an equivalent document; and			b		where provided by the aircraft manufacturer or other source, contained in an equivalent document; and
					c	available to all flight crew or other persons responsible for flight planning or aircraft dispatch.			c		available to all flight crew or other persons responsible for flight planning or aircraft dispatch.
					<b>135.520</b>	<b>Runway friction coefficient</b>			<b>121.520</b>		<b>Runway friction coefficient</b>
						The operator shall ensure that where performance data has been determined using measured coefficient of runway friction, the pilot-in-command complies with a procedure that correlates the measured coefficient of runway friction and the effective braking coefficient of friction of that aeroplane type, over the required speed range for the existing runway conditions.					The operator shall ensure that where performance data has been determined using measured coefficient of runway friction, the pilot-in-command complies with a procedure that correlates the measured coefficient of runway friction and the effective braking coefficient of friction of that aeroplane type, over the required speed range for the existing runway conditions.
					<b>135.525</b>	<b>Runway surface conditions</b>			<b>121.525</b>		<b>Runway surface conditions</b>
						The operator shall ensure that:					The operator shall ensure that:
					a	runway surface conditions have been taken account of in any performance calculations made; and			a		runway surface conditions have been taken account of in any performance calculations made; and
					b	runway surface conditions do not preclude a safe aircraft departure.			b		runway surface conditions do not preclude a safe aircraft departure.
					<b>135.530</b>	<b>Wet and contaminated runway surfaces</b>			<b>121.530</b>		<b>Wet and contaminated runway surfaces</b>
						The operator shall ensure that where it is necessary for a take-off to be made on a runway contaminated with water, slush, snow or ice account is taken of:					The operator shall ensure that where it is necessary for a take-off to be made on a runway contaminated with water, slush, snow or ice account is taken of:
					a	the runway overrun area; and			a		the runway overrun area; and
					b	local wind conditions, including any element of tailwind or crosswind; and			b		local wind conditions, including any element of tailwind or crosswind; and
					c	height of any snow banks adjacent to the runway.			c		height of any snow banks adjacent to the runway.
					<b>135.535</b>	<b>Runway factors</b>			<b>121.535</b>		<b>Runway factors</b>
						The operator shall ensure that where a runway is not a paved, dry, flat surface appropriate performance factors are applied to any calculation of distance required for take off or landing.					The operator shall ensure that where a runway is not a paved, dry, flat surface appropriate performance factors are applied to any calculation of distance required for take off or landing.
					<b>135.540</b>	<b>Grass runways</b>			<b>121.540</b>		<b>Grass runways</b>
						The operator shall ensure that:					The operator shall ensure that:
					a	only performance data provided for grass runways under the specified conditions for the surface is used. Where no specification is made, the performance data shall only be used if:			a		only performance data provided for grass runways under the specified conditions for the surface is used. Where no specification is made, the performance data shall only be used if:
					1	the grass is less than 8 inches (20 cm) high; and			1		the grass is less than 8 inches (20 cm) high; and
					2	soil conditions are firm, such that there may be wheel impressions in the soil but no rutting.			2		soil conditions are firm, such that there may be wheel impressions in the soil but no rutting.
					b	any damp grass surface is considered to be wet for the purpose of applying performance factors.			b		any damp grass surface is considered to be wet for the purpose of applying performance factors.
					<b>135.545</b>	<b>Loss of runway length</b>			<b>121.545</b>		<b>Loss of runway length</b>
						The operator shall, when calculating distance available for take off, take account of any length of the runway which will necessarily be used for lining up the aircraft in the direction of take-off.					The operator shall, when calculating distance available for take off, take account of any length of the runway which will necessarily be used for lining up the aircraft in the direction of take-off.
					<b>135.550</b>	<b>Short landings — aeroplanes</b>			<b>121.550</b>		<b>Short landings — aeroplanes</b>
						An operator needing to use Short Landing Operations (where the distance used for the calculation of permitted landing mass may include the usable length of the declared safe area) shall require an approval by the Director. (See Appendix 1 to 135.550)					An operator needing to use Short Landing Operations (where the distance used for the calculation of permitted landing mass may include the usable length of the declared safe area) shall require an approval by the Director. (See Appendix 1 to 121.550)
					<b>135.555</b>	<b>Steep approaches — aeroplanes</b>			<b>121.555</b>		<b>Steep approaches — aeroplanes</b>
						An operator requiring the use of steep approaches (using glideslope angles of 4.5° or more) shall require an approval by the Director. (See Appendix 1 to 135.555)					An operator requiring the use of steep approaches (using glideslope angles of 4.5° or more) shall require an approval by the Director. (See Appendix 1 to 121.555)

				135.560		Performance — mass limitation	121.560			Performance — mass limitation
						The operator shall ensure that:				The operator shall ensure that:
					a	the mass of the aeroplane at the start of the take-off; or in the event of in-flight replanning, at the point from which the revised operational flight plan applies, is not greater than the mass at which the requirements of the applicable Performance Class can be complied with for the planned flight. Allowance shall be made for expected reductions in mass as the flight proceeds, and for fuel jettisoning where applicable;		a		the mass of the aeroplane at the start of the take-off; or in the event of in-flight replanning, at the point from which the revised operational flight plan applies, is not greater than the mass at which the requirements of the applicable Performance Class can be complied with for the planned flight. Allowance shall be made for expected reductions in mass as the flight proceeds, and for fuel jettisoning where applicable;
					b	in no case shall the mass at the start of take off exceed the maximum take off mass specified in the flight manual for that pressure altitude appropriate to the aerodrome elevation and, if used as a parameter to determine the maximum take off mass any other local atmospheric condition;		b		in no case shall the mass at the start of take off exceed the maximum take off mass specified in the flight manual for that pressure altitude appropriate to the aerodrome elevation and, if used as a parameter to determine the maximum take off mass any other local atmospheric condition;
					c	in no case shall the estimated mass for the expected time of landing at the planned destination aerodrome and at any destination alternate aerodrome, exceed the maximum landing mass specified in the flight manual for the pressure altitude appropriate to the aerodrome elevation(s), and if used as a parameter to determine the maximum landing mass, any other local atmospheric condition; and		c		in no case shall the estimated mass for the expected time of landing at the planned destination aerodrome and at any destination alternate aerodrome, exceed the maximum landing mass specified in the flight manual for the pressure altitude appropriate to the aerodrome elevation(s), and if used as a parameter to determine the maximum landing mass, any other local atmospheric condition; and
					d	the mass of the aeroplane at the time of take-off, or at the expected time of landing at the destination and at any planned alternate does not exceed the maximum mass at which the applicable noise certification has been granted unless otherwise authorised by the Director.		d		the mass of the aeroplane at the time of take-off, or at the expected time of landing at the destination and at any planned alternate does not exceed the maximum mass at which the applicable noise certification has been granted unless otherwise authorised by the Director.
						<b>135.565</b>				<b>121.565</b>
						<b>Applicability of performance classes — aeroplanes</b>				<b>Applicability of performance classes — aeroplanes</b>
						<i>Note: The technical descriptions relevant to each performance class are contained in Appendix E.</i>				<i>Note: The technical descriptions relevant to each performance class are contained in Appendix E.</i>
						The operator shall ensure that:				The operator shall ensure that:
					a	multi-engine aeroplanes powered by turbo-propeller engines with a maximum approved passenger seating configuration of more than 9 and all multi-engine turbojet powered aeroplanes are operated in accordance with Performance Class A;		a		multi-engine aeroplanes powered by turbo-propeller engines with a maximum approved passenger seating configuration of more than 9 and all multi-engine turbojet powered aeroplanes are operated in accordance with Performance Class A;
					b	propeller driven aeroplanes with a maximum approved passenger seating configuration of 9 seats or fewer, and a MTOM of 5,700 kg or less are operated in accordance with Performance Class B;		b		aeroplanes powered by reciprocating engines with a maximum approved passenger seating configuration of more than 9 or a MTOM exceeding 5,700 kg are operated in accordance with Performance Class C; and
					c	where full compliance with these requirements cannot be shown due to specific design characteristics, the operator shall apply approved performance standards that ensure a level of safety equivalent to that of the appropriate Performance Class; and		c		where full compliance with these requirements cannot be shown due to specific design characteristics, the operator shall apply approved performance standards that ensure a level of safety equivalent to that of the appropriate Performance Class.
					d	unless it is flying on a special VFR flight in a control zone, a single-engine aeroplane, or a two-engine aeroplane which does not meet the climb performance of Appendix E2.040, shall not be operated:				
					1	in instrument meteorological conditions; or				
					2	at night.				
						<b>135.570</b>				
						<b>Applicability of performance classes — helicopters</b>				
						<i>Note: The technical descriptions relevant to each performance class are contained in Appendix E.</i>				
						The operator shall ensure that:				
					a	helicopters which have a maximum approved passenger seating configuration of more than 19, or				

						helicopters operating to or from heliports in a congested hostile environment are operated in Performance Class 1;				
					b	helicopters which have a maximum approved passenger seating configuration of 19 or less but more than 9 are operated in Performance Class 1 or 2;				
					c	helicopters which have a maximum approved passenger seating configuration of 9 or less are operated in Performance Class 1, 2 or 3;				
					d	helicopters operated in Performance Classes 1 or 2 are certificated in Category A;				
					e	helicopters operated in Performance Class 3 are certificated in Category B;				
					r	operations in Performance Class 2 without an assured safe forced landing capability during the take-off and landing phases shall only be conducted if the operator has been granted an approval by the Director in accordance with Appendix E4;				
					g	helicopters operated in Performance Class 3 are not operated:				
					1	when the surface is not in sight;				
					2	at night; or				
					3	when the cloud ceiling is less than 600 feet (180 m) or the visibility is less than 1500 m; or				
					4	over an open sea area:				
					i	north of 45°N or south of 45°S; and				
					ii	between 45°N or 45°S, when it is a hostile environment; and				
					iii	between 45°N or 45°S for more than 10 minutes on any one flight, provided that the operations manual contains procedures for coastal transit operations.				



**Appendix 1 to 121.550 / 125.550 / 135.550**

		<b>Short landing operations</b>
A		For the purpose of short landing operations, the distance used for the calculation of the permitted landing mass may consist of the usable length of the declared safe area plus the declared landing distance available. The Director may approve such operations in accordance with the following criteria:
	1	Demonstration of the need for short landing operations. There must be a clear public interest and operational necessity for the operation, either due to the remoteness of the airport or to physical limitations relating to extending the runway.
	2	Aeroplane and operational criteria:
	i	Short landing operations will only be approved for aeroplanes where the vertical distance between the path of the pilot's eye and the path of the lowest part of the wheels, with the aeroplane established on the normal glide path, does not exceed 3 m.
	ii	When establishing aerodrome operating minima the visibility/RVR must not be less than 1,500 m. In addition, wind limitations must be specified in the operations manual.
	ii	Minimum pilot experience, training requirements and special aerodrome familiarisation must be specified for such operations in the operations manual.
	3	It is assumed that the crossing height over the beginning of the usable length of the declared safe area shall not be less than 50 ft.
	4	Additional criteria: The Director may impose such additional conditions as are deemed necessary for a safe operation taking into account the aeroplane type characteristics, orographic characteristics in the approach area, available approach aids and missed approach/balked landing considerations. Such additional conditions may be, for instance, the requirement for VASI/PAPI -type visual slope indicator system.
B		Airfield criteria for short landing operations:
	1	The use of the safe area must be approved by the airport authority.
	2	The usable length of the declared safe area must not exceed 90 m.
	3	The width of the declared safe area shall not be less than twice the runway width or twice the wing span, whichever is the greater, centred on the extended runway centre line.
	4	The declared safe area must be clear of obstructions or depressions which would endanger an aeroplane undershooting the runway and no mobile object shall be permitted on the declared safe area while the runway is being used for short landing operations.
	5	The slope of the declared safe area must not exceed 5 % upward nor 2 % downward in the direction of landing.
	6	For the purpose of this operation, the bearing strength requirement of the landing distance available need not apply to the declared safe area.

**Appendix 1 to 121.555 / 125.555 / 135.555**

		<b>Steep approach procedures</b>
A		The Director may approve the application of steep approach procedures using glide slope angles of 4.5° or more, and with screen heights of less than 50 ft but not less than 35 ft, provided that the following criteria are met:
	1	the aeroplane flight manual must state the maximum approved glide slope angle, any other limitations, normal, abnormal or emergency procedures for the steep approach as well as amendments to the field length data when using steep approach criteria;
	2	a suitable glide path reference system, comprising at least a visual glide path indicating system, must be available at each aerodrome at which steep approach procedures are to be conducted; and
	3	weather minima must be specified and approved for each runway to be used with a steep approach. Consideration must be given to the following:
	i	the obstacle situation;
	ii	the type of glide path reference and runway guidance such as visual aids, MLS, 3D-NAV, ILS, LLZ, VOR, NDB;
	iii	the minimum visual reference to be required at DH and MDA;
	iv	available airborne equipment;
	v	pilot qualification and special aerodrome familiarisation;
	vi	aeroplane flight manual limitations and procedures; and
	vii	missed approach criteria.

Part 91			Requirement	Part 135			Requirement	Part 121			Requirement
Subpart F – Instruments and Equipment											
91.600			Applicability	135.600			Applicability	121.600			Applicability
			This Subpart prescribes the instrument and equipment required for aircraft operating under this Part.				This Subpart prescribes the instruments and equipment required for aircraft operating under this Part.				This Subpart prescribes the instruments and equipment required for aircraft operating under this Part.
91.605			General	135.605			General	121.605			General
	a		No person shall operate an aircraft unless it is equipped in compliance with the laws and regulations of the State in which it is registered.								
	b		For an aircraft registered in Guernsey the equipment to be provided is that required by this Subpart.								
	c		No person shall operate an aircraft to which this Subpart applies unless:				The operator shall ensure that an aircraft does not commence a flight unless:				The operator shall ensure that an aircraft does not commence a flight unless:
		1	the aircraft is equipped with the type and number of instruments and equipment required by this Subpart; and		a		the aircraft is equipped with the type and number of instruments and equipment required by this Subpart; and		a		the aircraft is equipped with the type and number of instruments and equipment required by this Subpart; and
		2	the instruments and equipment shall be of a type approved by the Director either generally or in relation to a class or type of aircraft or in relation to that aircraft; and		b		the instruments and equipment shall be of a type approved by the Director either generally or in relation to a class or type of aircraft or in relation to that aircraft; and		b		the instruments and equipment shall be of a type approved by the Director either generally or in relation to a class or type of aircraft or in relation to that aircraft; and
		3	the instruments and equipment have been installed in accordance with the Type Certificate holder’s instructions or other instructions acceptable to the Director, or are carried, as appropriate.		c		the instruments and equipment have been installed in accordance with the Type Certificate holder’s instructions or other instructions acceptable to the Director.		c		the instruments and equipment have been installed in accordance with the Type Certificate holder’s instructions or other instructions acceptable to the Director.
91.610			Inoperative instruments and equipment	135.610			Inoperative instruments and equipment	121.610			Inoperative instruments and equipment
	a		Except as provided in paragraph (b), an aircraft shall not commence a flight with inoperative instruments or equipment if it is legally required to carry that instrument or equipment, unless the following conditions are met:		a		An aircraft shall not commence a flight with inoperative instruments or equipment if it is legally required to carry that instrument or equipment, unless the following conditions are met:		a		An aircraft shall not commence a flight with inoperative instruments or equipment if it is legally required to carry that instrument or equipment, unless the following conditions are met:
		1	a minimum equipment list (MEL) has been approved by the Director for use with that aircraft; and			1	a minimum equipment list (MEL) has been approved by the Director for use with that aircraft; and			1	a minimum equipment list (MEL) has been approved by the Director for use with that aircraft; and
		2	the aircraft records available to the pilot include an entry describing the inoperative instruments and equipment; and			2	the aircraft records available to the pilot include an entry describing the inoperative instruments and equipment; and			2	the aeroplane records available to the pilot include an entry describing the inoperative instruments and equipment; and
		3	the aircraft is operated in accordance with all applicable conditions and limitations contained in the MEL.			3	the aircraft is operated in accordance with all applicable conditions and limitations contained in the MEL.			3	the aeroplane is operated in accordance with all applicable conditions and limitations contained in the MEL.
	b		An aircraft that is not required to hold an MEL may be operated under this Part with inoperative instruments and equipment provided the inoperative instruments and equipment:								
		1	are not:								
		i	part of the certification instruments and equipment prescribed in the applicable airworthiness requirements under which the aircraft was type certificated; or								
		ii	required by this Subpart for specific operations; or								
		iii	required by an airworthiness directive to be in operable condition; and								
		2	are placarded "Inoperative" and the required maintenance recorded in accordance with GAR Part 43.								
91.615			Minimum equipment list (MEL)	135.615			Minimum equipment list (MEL)	121.615			Minimum equipment list (MEL)
			Where a minimum equipment list is established in relation to an aircraft, the operator shall ensure:				The operator shall:				The operator shall:
	a		it is based upon, but no less restrictive than, the relevant master minimum equipment list (MMEL); and		a		establish, for each aircraft, a minimum equipment list (MEL) approved by the Director. This shall be based upon, but no less restrictive than, the relevant master minimum equipment list (MMEL); and		a		establish, for each aircraft, a minimum equipment list (MEL) approved by the Director. This shall be based upon, but no less restrictive than, the relevant master minimum equipment list (MMEL); and
	b		it has been approved by the Director.		b		ensure the MEL is contained in the operations manual; and		b		ensure the MEL is contained in the operations manual; and

				c	not operate an aircraft other than in accordance with the MEL unless permitted by the Director. Any such permission will in no circumstances permit operation outside the constraints of the MMEL.		c	not operate an aircraft other than in accordance with the MEL unless permitted by the Director. Any such permission will in no circumstances permit operation outside the constraints of the MMEL.
					<i>Note: detailed guidance for compiling an MEL is available from jurisdictions such as EASA, FAA and Transport Canada. A MEL meeting such guidance will be eligible for approval by the Director.</i>			<i>Note: detailed guidance for compiling an MEL is available from jurisdictions such as EASA, FAA and Transport Canada. A MEL meeting such guidance will be eligible for approval by the Director.</i>
			<b>135.620</b>		<b>Flight crew compartment door</b>	<b>121.620</b>		<b>Flight crew compartment door</b>
					An aeroplane that is equipped with a flight crew compartment door shall be equipped with a means of locking that door.		a	An aeroplane that is equipped with a flight crew compartment door shall be equipped with a means of locking that door.
							b	The operator shall ensure that:
							1	A passenger-carrying aeroplane of MTOM in excess of 45,500 kg or with a maximum approved passenger seating configuration of more than 60 shall be equipped with an approved flight crew compartment door that is designed to resist penetration by small arms fire and grenade shrapnel, and to resist forcible intrusions by unauthorised persons. This door shall be capable of being locked and unlocked from either pilot's station.
							2	An aeroplane equipped with a flight crew compartment door that is designed to resist penetration by small arms fire and grenade shrapnel, and to resist forcible intrusions by unauthorised persons, shall be provided with means for monitoring from either pilot's station the entire door area outside the flight crew compartment to identify persons requesting entry and to detect suspicious behaviour or potential threat.
<b>91.625</b>			<b>Location of instruments and equipment</b>					
			The operator shall ensure that:					
	a		any instruments and equipment to be operated or used by one pilot can be readily seen and operated from that pilot's normally seated position with the minimum practicable deviation from normal line of sight along the flight path; and					
	b		any single instrument or item of equipment to be operated or used by two pilots, is installed so that it can be readily seen and operated from each pilot's normally-seated position.					
<b>91.630</b>			<b>Markings and placards</b>	<b>135.630</b>		<b>Markings and placards</b>	<b>121.630</b>	<b>Markings and placards</b>
			The operator shall ensure that:					The operator shall ensure that:
	a		any placards, listings or instrument markings containing prescribed operating limitations shall be displayed in the aircraft. Each marking and placard shall be displayed in a conspicuous place and in such a manner to minimise the risk of erasure, disfigurement, obscuring, or removal; and					
	b		each unit of measure used on a marking or placard shall be the same as that on any related instrument or in the related flight manual; and					
	c		each fuel contents gauge shall be clearly marked to indicate the units to which the gauge is calibrated; and					
	d		an aircraft shall be placarded in the immediate vicinity of each fuel and oil filler with the specification and/or grade of fuel or oil, as appropriate.					
				e	for each door that separates a passenger compartment from another compartment that has emergency exit provisions, apart from the flight deck door, a placard indicates that the door shall be open during take off and landing.		e	for each door that separates a passenger compartment from another compartment that has emergency exit provisions, apart from the flight deck door, a placard indicates that the door shall be open during take off and landing.
<b>91.635</b>			<b>Seating and restraints</b>	<b>135.635</b>		<b>Seating and restraints</b>	<b>121.635</b>	<b>Seating and restraints</b>

	a	An aircraft shall be equipped with:							
	1	a seat or berth for each person on board; and							
	2	a safety belt for each seat and restraining belts for each berth; and							
	3	for each flight crew member seat: either a safety harness; or, if the aircraft type certificate allows, a seat belt with a diagonal shoulder strap.							
				b	The safety harness for each flight crew seat shall incorporate:		b	The safety harness for each flight crew seat shall incorporate:	
				1	a device to automatically restrain the occupant in the event of rapid deceleration; and		1	a device to automatically restrain the occupant in the event of rapid deceleration; and	
				2	where practicable, a device to prevent an incapacitated occupant from interfering with the controls.		2	where practicable, a device to prevent an incapacitated occupant from interfering with the controls.	
					<i>Note: Depending on the design, the lock on an inertia reel device may suffice for this purpose.</i>			<i>Note: Depending on the design, the lock on an inertia reel device may suffice for this purpose.</i>	
	c	Notwithstanding paragraph (a)(1) and (2), a seat, berth, safety belt or restraining belt is not required for:							
	1	a child being carried in accordance with paragraph 91.355(c)(1); or							
	2	a person being carried during parachute operations, unless parachutist restraints are required by the aircraft flight manual.							
				d	For each required cabin crew member:		d	For each required cabin crew member:	
				1	in aircraft with certificate of airworthiness first issued on or after 1 January 1981, a forward or rearward facing seat (within 15 degrees of the longitudinal axis of the aircraft), fitted with a safety harness.		1	in aircraft with certificate of airworthiness first issued on or after 1 January 1981, a forward or rearward facing seat (within 15 degrees of the longitudinal axis of the aircraft), fitted with a safety harness.	
				e	Cabin crew seats provided in accordance with paragraph (d) shall be located near floor level emergency exits.		e	Cabin crew seats provided in accordance with paragraph (d) shall be located near floor level emergency exits.	
<b>91.640</b>		<b>Aircraft operating under VFR</b>	<b>135.640</b>		<b>Aircraft operating under VFR</b>	<b>121.640</b>		<b>Aircraft operating under VFR</b>	
	a	An aircraft shall be equipped with a means of measuring and displaying:							
	1	magnetic heading;							
	2	the time in hours, minutes and seconds (permitted to be carried if aircraft is not equipped);							
	3	barometric altitude;							
	4	indicated airspeed;							
	5	mach number, if the speed limitation prescribed by the aircraft flight manual is expressed in terms of mach number; and							
	6	in a helicopter: slip.							
	b	An aircraft shall be equipped with spare fuses of appropriate ratings, where necessary, for all electrical circuits that can be changed in flight (at least 3 of each rating, or 10 % of the number for each rating, whichever is greater).							
	c	Paragraph (a) above shall not apply to non-power driven aircraft.			•			•	
<b>91.645</b>		<b>VFR flights operated as controlled flights</b>							
		An aircraft flying under the visual flight rules, but as a controlled flight shall be equipped in accordance with 91.655.							
<b>91.650</b>		<b>Equipment for flight in icing conditions</b>							
		An aircraft shall be certificated and equipped to operate in icing conditions, for flight in circumstances in which icing conditions are reported to exist or are expected to be encountered.							
<b>91.655</b>		<b>Aircraft operating at night or under IFR</b>	<b>135.655</b>		<b>Aircraft operating at night or under IFR</b>	<b>121.655</b>		<b>Aircraft operating at night or under IFR</b>	
		<i>Note: 'With the surface in sight' means with the flight crew being able to see sufficient surface features or surface illumination to enable the flight crew to maintain the aircraft in a desired</i>							

[illegible]



					1	a serviceable autopilot with at least altitude hold and heading select modes; and				
					2	a means of displaying charts that enables them to be readable in the available lighting.				
91.660			<b>Glass cockpit systems</b>							
			An aircraft with advanced cockpit automation systems (glass cockpit) shall have system redundancy that provides flight crew with attitude, heading, airspeed and altitude indications in case of failure of the primary system or display.							
				135.665		<b>Altitude alerting system</b>	121.665			<b>Altitude alerting system</b>
				a		An aeroplane powered by one or more turbine jets shall be equipped with an altitude alerting system or device.		a		A turbine-engined aeroplane of MTOM over 5,700 kg shall be equipped with an altitude alerting system or device.
				b		An altitude alerting system or device required by paragraph (a) shall:		b		An altitude alerting system or device required by paragraph (a) shall:
				1		be capable of alerting the pilot to an approaching preselected altitude by means of visual and aural signals, such that it is possible to establish level flight from climb or descent without exceeding the pre-selected altitude; and		1		be capable of alerting the pilot to an approaching preselected altitude by means of visual and aural signals, such that it is possible to establish level flight from climb or descent without exceeding the pre-selected altitude; and
				2		be able to be tested without special equipment to determine proper operation of alerting signals; and		2		be able to be tested without special equipment to determine proper operation of alerting signals; and
				3		accept barometric pressure settings if the device operates on barometric pressure; and		3		accept barometric pressure settings if the device operates on barometric pressure; and
				4		enable use of pre-selected altitudes in increments commensurate with the altitudes at which the aircraft is approved for use.		4		enable use of pre-selected altitudes in increments commensurate with the altitudes at which the aeroplane is approved for use.
				c		An aircraft that is operating under IFR but not required by paragraph (a) to carry an altitude alerting system or device shall be equipped with a means of indicating an altitude assigned by ATC.		c		An aircraft that is operating under IFR but not required by paragraph (a) to carry an altitude alerting system or device shall be equipped with a means of indicating an altitude assigned by ATC.
				d		The means of indicating assigned altitude as required by paragraph (c) shall:		d		The means of indicating assigned altitude as required by paragraph (c) shall:
				1		be located so that it may be readily adjustable from each pilot seat; and		1		be located so that it may be readily adjustable from each pilot seat; and
				2		display assigned altitude information that is clearly visible to all flight crew members whose duties involve monitoring altitude assignment; and		2		display assigned altitude information that is clearly visible to all flight crew members whose duties involve monitoring altitude assignment; and
				3		enable use of pre-selected altitudes in increments commensurate with the altitudes at which the aircraft is operated		3		enable use of pre-selected altitudes in increments commensurate with the altitudes at which the aeroplane is operated.
91.670			<b>Communication equipment</b>							
	a		An aircraft shall be equipped with:							
	1		radio communication equipment that is capable of providing continuous two-way communications with an appropriate ATS unit or aeronautical telecommunications facility, and for receiving meteorological information, at any time during flight; and							
	2		a headset with a boom or throat microphone.							
	b		The radio communication equipment shall provide for communication on the emergency frequency 121.5 MHz.							
	c		For operations where communication equipment is required to meet a Required Communications Performance (RCP) specification for performance-based communication (PBC), an aircraft shall, in addition:							
	1		be provided with communication equipment which will enable it to operate in accordance with the prescribed RCP specification(s); and							
	2		have information relevant to the aeroplane RCP specification capabilities listed in the flight manual or other aeroplane documentation							

		approved by the State of Design or State of Registry; and							
	3	have information relevant to the aeroplane RCP specification capabilities included in the MEL.							
	d	Communication equipment shall be installed such that failure of one unit will not result in the failure of another unit.							
<b>91.675</b>		<b>Navigation equipment</b>	<b>135.675</b>			<b>Navigation equipment</b>	<b>121.675</b>		<b>Navigation equipment</b>
	a	An aircraft shall be equipped with a navigation system which will enable the aircraft to proceed in accordance with:							
	1	the flight plan; and							
	2	the requirements of air traffic services;							
		except when navigation for flights under the visual flight rules is accomplished by visual reference to landmarks.			•			•	
	b	An aircraft shall be sufficiently provided with navigation equipment to ensure that, in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment will enable the aircraft to navigate in accordance with the applicable requirements.							
	c	For operations where a navigation specification for performance-based navigation (PBN) has been prescribed, an aeroplane shall, in addition,							
	1	be provided with navigation equipment which will enable it to operate in accordance with the prescribed navigation specification(s) and							
	2	have information relevant to the aeroplane navigation specification capabilities listed in the flight manual or other aeroplane documentation approved by the State of the Design or State of Registry; and							
	3	have information relevant to the aeroplane navigation specification capabilities included in the MEL.							
		<i>Note 1: except for PBN authorisation required (AR) navigation procedures, for which a specific approval by the Director is required in accordance with Part-SPN, the Director shall as part of its certification and surveillance programme, ensure that the operator has established and documented:</i> <i>a) normal and abnormal procedures including contingency procedures;</i> <i>b) flight crew qualification and proficiency requirements in accordance with the appropriate navigation specifications;</i> <i>c) a training programme for relevant personnel consistent with the intended operations; and</i> <i>d) appropriate maintenance procedures to ensure continued airworthiness in accordance with the appropriate navigation specifications.</i>							
		<i>Note 2: Guidance on safety risks and mitigations for PBN operations are contained in the Performance-based Navigation (PBN) Operational Approval Manual (Doc 9997).</i>							
	d	An aircraft operating in airspace where minimum navigation performance specifications (MNPS) are prescribed shall:							
	i	be equipped with navigation equipment capable of continuously and accurately indicating to the flight crew adherence to or departure from track; and							
	2	be approved in accordance with Subpart SPA.							

	e	An aircraft operating in RVSM airspace shall be:							
	1	provided with equipment capable of:							
	i	indicating to the flight crew the flight level being flown; and							
	ii	automatically maintaining a selected flight level to within $\pm 65$ feet; and							
	iii	providing an aural and visual alert to the flight crew when a deviation from the selected flight level occurs. The threshold for the alert shall not exceed 300 feet (90 metres); and							
	2	approved in accordance with Subpart SPA.							
	f	All required radio navigation equipment shall comply with the FM-immunity requirements of ICAO Annex 10 Volumes I and III.							
	g	Any radio navigation equipment fitted on the aircraft that does not comply with the FM-Immunity requirements of ICAO Annex 10 shall be placarded to alert flight crew to the potential for radio interference.							
91.677		<b>Surveillance equipment</b>							
	a	An aeroplane shall be provided with surveillance equipment which will enable it to operate in accordance with the requirements of air traffic services.							
	b	For operations where surveillance equipment is required to meet an RSP specification for performance-based surveillance (PBS), an aeroplane shall, in addition:							
	1	be provided with surveillance equipment which will enable it to operate in accordance with the prescribed RSP specification(s);							
	2	have information relevant to the aeroplane RSP specification capabilities listed in the flight manual or other aeroplane documentation approved by the State of Design or State of Registry; and							
	3	have information relevant to the aeroplane RSP specification capabilities included in the MEL.							
		<p><i>Note 1: the Director shall, for operations where an RSP specification for PBS has been prescribed, ensure that:</i></p> <p><i>1) the operator has established and documented:</i></p> <p><i>a) normal and abnormal procedures including contingency procedures;</i></p> <p><i>b) flight crew qualification and proficiency requirements in accordance with appropriate RSP specifications;</i></p> <p><i>c) a training programme for relevant personnel consistent with the intended operations; and</i></p> <p><i>d) appropriate maintenance procedures to ensure continuing airworthiness in accordance with appropriate RSP specification; and</i></p> <p><i>2) for aircraft mentioned in paragraph (b), adequate provisions exist for:</i></p> <p><i>a) receiving the reports of observed surveillance performance issued by monitoring programmes established in accordance with Annex 11, Chapter 3, 3.3.5.2; and</i></p> <p><i>b) taking immediate corrective action for individual aircraft, aircraft types or operators, identified in such reports as not complying with the RSP specification.</i></p>							
		<p><i>Note 2: Information on RSP specifications for performance-based surveillance is contained in the Performance-based Communication and</i></p>							

			<i>Surveillance (PBCS) Manual (Doc 9869).</i>							
91.680			<b>Landing in instrument meteorological conditions</b>							
			An aircraft that may require to land in instrument meteorological conditions shall be provided with radio equipment appropriate to the aids to be used. This equipment shall be capable of receiving signals to provide guidance to a point from which a visual landing can be made at any aerodrome used and for any designated alternate aerodrome.							
91.685			<b>Category II and III precision approach equipment</b>							
			An aircraft conducting a Category II, other than Standard Category II, or Category III operation shall be equipped and approved in accordance with Subpart SPA.							
				135.690			<b>Crew intercom and public address system</b>	121.690		<b>Crew intercom and public address system</b>
					a		The operator shall ensure that, other than for single pilot operations, an aircraft is equipped with:		a	The operator shall ensure that an aeroplane is equipped with:
					1		suitable means for conducting passenger briefings; and		1	a public address system; and
					2		a crew member intercom system.		2	a crew member intercom system.
									b	A public address system required by paragraph (a)(1) shall:
									1	except for handsets, headsets, microphones, selector switches, and signalling devices, be capable of operation independent of the crew member intercom system required by paragraph (a)(2); and
									2	be accessible for immediate use from each of two flight crew member stations in the flight crew compartment; and
									3	for each required floor-level passenger emergency exit that has an adjacent cabin crew seat, have a microphone which is readily accessible to the seated cabin crew member; and
									4	be capable of operation within 10 seconds by a cabin crew member at each of those stations in the passenger compartment from which its use is accessible; and
									5	be understandably audible at all times at all passenger seats, lavatories, cabin crew seats, and work stations; and
									6	for the purposes of paragraph (b)(3) one microphone may serve more than one exit, provided the proximity of the exits allows unassisted verbal communication between seated cabin crew.
									c	A crew member intercom system required by paragraph (a)(2) shall:
									1	except for handsets, headsets, microphones, selector switches, and signalling devices, be capable of operation independent of the public address system required by paragraph (a)(1); and
									2	provide a means of two-way communication between all members of the flight crew; and
									3	provide a means of two-way communication between the flight crew compartment and each passenger compartment; and
									4	be accessible for immediate use from each of two flight crew member stations in the flight crew compartment; and
									5	be accessible for use from at least one normal cabin crew member station in each passenger compartment; and
									6	be capable of operation within 10 seconds by a cabin crew member at each of those stations in each passenger compartment from which its use is accessible; and

								7	be accessible for use at enough cabin crew stations so that all floor-level emergency exits in each passenger compartment are observable from a station so equipped; and
								8	have an alerting system that:
								i	incorporates aural or visual signals for use by any crew member; and
								ii	has a means for the recipient of a call to determine whether it is a normal call or an emergency call; and
								iii	provide a means of two-way communication between ground personnel and any two flight crew members in the flight crew compartment when the aeroplane is on the ground.
			135.695			Emergency lighting	121.695		Emergency lighting
						A helicopter of MTOM exceeding 5,700 kg operating at night shall be equipped with:			An aeroplane of MTOM exceeding 5,700 kg operating at night shall be equipped with:
						an emergency lighting system in the passenger compartment to facilitate evacuation.		a	an emergency lighting system in the passenger compartment, to facilitate evacuation; and
								b	an emergency lighting system to provide illumination outside the aircraft to facilitate evacuation; and
								c	where the aeroplane has a maximum approved passenger seating configuration of more than 19, an emergency floor path lighting system in the passenger compartment, to facilitate the evacuation.
91.700			Medical and emergency equipment	135.700		Medical and emergency equipment	121.700		Medical and emergency equipment
	a		An aircraft shall be equipped with:		a	An aircraft shall be equipped with:		a	An aircraft shall be equipped with:
			one or more first aid kits, stowed in accessible places.			one or more first aid kits, stowed in accessible places.			one or more first aid kits, stowed in accessible places.
	b		Contents of first aid kits shall be appropriate to the nature of the flight, and suitable to treat minor injuries.		b 1	Contents of first aid kits shall be appropriate to the nature of the flight, and suitable to treat minor injuries; and		b 1	Contents of first aid kits shall be appropriate to the nature of the flight, and suitable to treat minor injuries; and.
								2	where passengers are carried, the number of first aid kits shall be as specified in Table 4; and
					2	for aircraft required to carry cabin crew as part of the operating crew, first aid kits shall be suitable for the use of cabin crew in managing incidents of ill health.		3	for aircraft required to carry cabin crew as part of the operating crew, first aid kits shall be suitable for the use of cabin crew in managing incidents of ill health.
					c	An aircraft required to carry cabin crew as part of the operating crew shall carry a universal precaution kit for the use of cabin crew members in managing incidents of ill health associated with a case of suspected communicable disease, or in the case of illness involving contact with body fluids.		c 1	An aircraft required to carry cabin crew as part of the operating crew shall carry a universal precaution kit for the use of cabin crew members in managing incidents of ill health associated with a case of suspected communicable disease, or in the case of illness involving contact with body fluids; and
								2	an aeroplane authorised to carry more than 250 passengers shall carry two universal precaution kits; and
								3	an aeroplane authorised to carry more than 100 passengers, on a sector length of more than two hours, shall carry a medical kit, for the use of medical doctors or other qualified persons in treating in-flight medical emergencies;
						Note: Appendix B contains information on medical supplies.			Note: Appendix B contains information on medical supplies.
	c		An aircraft shall be equipped with:		d	An aircraft shall be equipped with:		d	An aircraft shall be equipped with:
	1		at least one fire extinguisher, located in reach of a flight crew member and of a type that will not interfere with the proper functioning of essential aircraft equipment; and		1	at least one fire extinguisher, located in reach of a flight crew member and of a type that will not interfere with the proper functioning of essential aircraft equipment; and		1	at least one fire extinguisher, located in reach of a flight crew member and of a type that will not interfere with the proper functioning of essential aircraft equipment; and
	2		at least one fire extinguisher in each compartment that is separate from the pilots' compartment.		2	at least one fire extinguisher in each compartment that is separate from the pilots' compartment.		2	at least one fire extinguisher in each compartment that is separate from the pilots' compartment; and
								3	where passengers are carried the number of fire extinguishers shall be in accordance with Table 5.
								e	An aeroplane with a maximum approved passenger seating configuration of more than 19 passenger seats shall be equipped with an axe that is readily accessible to the crew; and



							f	An aeroplane with a maximum approved passenger seating configuration of 61 passenger seats or more shall, when carrying passengers, be equipped with portable battery-powered megaphones:
							1	readily accessible to a normal cabin crew seat for crew members assigned to direct emergency evacuation; and
							2	installed in accordance with Table 6.
	d	Any agent used in a built-in fire extinguisher for each lavatory disposal receptacle for towels, paper or waste in an aircraft for which the individual certificate of airworthiness is first issued on or after 31 December 2011 and any extinguishing agent used in a portable fire extinguisher in an aircraft for which the individual certificate of airworthiness is first issued on or after 31 December 2016 shall not be of a type listed in Annex A, Group II of the Montreal Protocol on Substances That Deplete the Ozone Layer, 8th Edition, 2009.		e	Any agent used in a built-in fire extinguisher for each lavatory disposal receptacle for towels, paper or waste in an aircraft for which the individual certificate of airworthiness is first issued on or after 31 December 2011 and any extinguishing agent used in a portable fire extinguisher in an aircraft for which the individual certificate of airworthiness is first issued on or after 31 December 2016 shall not be of a type listed in Annex A, Group II of the Montreal Protocol on Substances That Deplete the Ozone Layer, 8th Edition, 2009.		e	Any agent used in a built-in fire extinguisher for each lavatory disposal receptacle for towels, paper or waste in an aircraft for which the individual certificate of airworthiness is first issued on or after 31 December 2011 and any extinguishing agent used in a portable fire extinguisher in an aircraft for which the individual certificate of airworthiness is first issued on or after 31 December 2016 shall not be of a type listed in Annex A, Group II of the Montreal Protocol on Substances That Deplete the Ozone Layer, 8th Edition, 2009.
		<i>Note: Information concerning extinguishing agents is contained in the UNEP Halons Technical Options Committee Technical Note No. 1 - New Technology Halon Alternatives and FAA Report No. DOT/FAA/AR-99-63, Options to the Use of Halons for Aircraft Fire Suppression Systems.</i>			<i>Note: Information concerning extinguishing agents is contained in the UNEP Halons Technical Options Committee Technical Note No. 1 - New Technology Halon Alternatives and FAA Report No. DOT/FAA/AR-99-63, Options to the Use of Halons for Aircraft Fire Suppression Systems.</i>			<i>Note: Information concerning extinguishing agents is contained in the UNEP Halons Technical Options Committee Technical Note No. 1 - New Technology Halon Alternatives and FAA Report No. DOT/FAA/AR-99-63, Options to the Use of Halons for Aircraft Fire Suppression Systems.</i>
				f	Each item of equipment required by paragraph (a), (c) and (d) shall clearly indicate its method of operation.		f	Each item of equipment required by paragraph (a), (c) and (d) shall clearly indicate its method of operation.
				g	Each compartment or container that contains any item of equipment required by paragraph (a), (c) and (d) shall be marked to indicate its contents.		g	Each compartment or container that contains any item of equipment required by paragraph (a), (c) and (d) shall be marked to indicate its contents.
91.705		<b>Emergency locator transmitter</b>	135.705		<b>Emergency locator transmitter</b>	121.705		<b>Emergency locator transmitter</b>
	a	All required ELTs shall operate in accordance with the requirements of ICAO Annex 10, Volume III and be capable of transmitting on 121.5 MHz and 406 MHz.						
	b	All ELTs capable of transmitting on 406 MHz must be coded in accordance with ICAO Annex 10 and registered with the agency responsible for the maintenance of the aircraft register.						
	c	Notwithstanding the provisions of 91.705(d) through (h), the aircraft, when flying over water as described in 91.715(f) shall be equipped with at least one automatic ELT and one ELT(S) in a raft or life jacket.						
		<b>Aeroplanes —</b>						
	d	Except as provided in paragraph (e) and (f) an aeroplane shall carry at least one ELT of any type.						
	e	An aeroplane for which the individual certificate of airworthiness was first issued after 1 July 2008 shall be equipped with at least one automatic ELT.					e	All aeroplanes authorized to carry more than 19 passengers for which the individual certificate of airworthiness is first issued after 1 July 2008 shall be equipped with either:
							1	at least two ELTs, one of which shall be automatic; or
							2	at least one ELT and a capability that meets the requirements of 121.707.
	f	An aeroplane for which the individual certificate of airworthiness was first issued on or before 1 July 2008 and is certified for a maximum seating capacity of six or less shall be equipped with a survival ELT (ELT(S)) or a personal locator beacon (PLB) carried by a crew member or passenger.						
		<b>Helicopters —</b>						
		Performance Class 1 and 2 operations						
	g	A helicopter operating in performance Class 1 or 2 shall be equipped with at least one automatic ELT; and						
		Performance Class 3 operations —						

	h	A helicopter operating in performance Class 3 shall be equipped with at least one automatic ELT.							•
						121.707			<b>Location of an aeroplane in distress</b>
							a		All aeroplanes of a maximum certificated take-off mass of over 27,000 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2021, shall autonomously transmit information from which a position can be determined by the operator at least once every minute, when in distress, in accordance with Appendix 9 of ICAO Annex 6, Part I.
							b		The operator shall make position information of a flight in distress available to the appropriate organizations, as established by the Director.
<b>91.710</b>		<b>Survival equipment</b>	<b>135.710</b>		<b>Survival equipment</b>	<b>121.710</b>			<b>Survival equipment</b>
					The operator shall ensure that:				The operator shall ensure that:
	a	An aircraft shall carry survival equipment and signalling devices appropriate to the areas to be overflown.		a	An aircraft shall carry survival equipment and signalling devices appropriate to the areas to be overflown.		a		An aircraft shall carry survival equipment and signalling devices appropriate to the areas to be overflown.
	b	The decision on the equipment to be carried shall be made with regard to the circumstances of the flight.		b	The decision on the equipment to be carried shall be made with regard to the circumstances of the flight.		b		The decision on the equipment to be carried shall be made with regard to the circumstances of the flight.
	c	For an aircraft operating over water, consideration of the risks to survival of the occupants of the aircraft in the event of a ditching shall take into account, but not be limited to, the following:							
	1	the operating environment; and							
	2	conditions such as sea state, sea and air temperature; and							
	3	the distance from land suitable for making an emergency landing; and							
	4	the availability of search and rescue facilities.							
				d	A record of the risk assessment carried out under (c) shall be maintained and revised as necessary in accordance with the requirements of the operator's safety management system.		d		A record of the risk assessment carried out under (c) shall be maintained and revised as necessary in accordance with the requirements of the operator's safety management system.
	d	The equipment carried shall include, as appropriate, the equipment specified in paragraph 91.715.		e	The equipment carried shall include, as appropriate, the equipment specified in paragraph 135.715 and Appendix B.		c		The equipment carried shall include, as appropriate, the equipment specified in paragraph 121.715 and Appendix B.
<b>91.715</b>		<b>Flights over water</b>	<b>135.715</b>		<b>Flights over water</b>	<b>121.715</b>			<b>Flights over water</b>
					The operator shall ensure that:				The operator shall ensure that:
	a	Liferafts, lifejackets, and signalling devices required by this paragraph shall be installed in conspicuously identified locations and easily accessible in the event of a ditching.		a	Liferafts, lifejackets, and signalling devices required by this paragraph shall be installed in conspicuously identified locations and easily accessible in the event of a ditching.		a		Liferafts, lifejackets, and signalling devices required by this paragraph shall be installed in conspicuously identified locations and easily accessible in the event of a ditching.
	b	Each lifejacket required by this paragraph shall:		b	Each lifejacket required by this paragraph shall:		b		Each lifejacket required by this paragraph shall:
	i	be equipped with a whistle and a survivor locator light; and		1	be equipped with a whistle and a survivor locator light; and		1		be equipped with a whistle and a survivor locator light; and
	2	be stowed in a place which is easily accessible from the seat or berth of the person for whose use it is provided.		2	be stowed in a place which is easily accessible from the seat or berth of the person for whose use it is provided.		2		be stowed in a place which is easily accessible from the seat or berth of the person for whose use it is provided.
	c	An aircraft flying over water beyond gliding or autorotational distance from land shall be equipped with a lifejacket for every person on board.		c	1 An aircraft flying over water beyond gliding or autorotational distance from land shall be equipped with a lifejacket for every person on board.		c		An aircraft flying over water beyond gliding or autorotational distance from land shall be equipped with a lifejacket for every person on board.
				2	In a helicopter operating in Performance Class 1 or 2 when flying over water at a distance from land corresponding to more than 10 minutes at normal cruise speed (in accordance with paragraph (h)(3)) the lifejacket shall be worn constantly unless the occupant is wearing an integrated survival suit that includes the functionality of the lifejacket.				
	d	An aircraft when taking off or landing at an aerodrome or heliport where, in the opinion of the Director, the take-off or approach path is so disposed over water that in the event of a mishap there would be a likelihood of		d	An aircraft when taking off or landing at an aerodrome or heliport where, in the opinion of the Director, the take-off or approach path is so disposed over water that in the event of a mishap there would be a likelihood of a ditching, shall		d		An aircraft when taking off or landing at an aerodrome or heliport where, in the opinion of the Director, the take-off or approach path is so disposed over water that in the event of a mishap there would be a likelihood of a ditching, shall

		a ditching, shall be equipped with a lifejacket for every person on board.			be equipped with a lifejacket for every person on board.			be equipped with a lifejacket for every person on board.
	e	A seaplane or amphibian aeroplane operated on water, shall be equipped with:		e	A seaplane or amphibian aeroplane operated on water, shall be equipped with:			
	1	equipment for making sound signals, as prescribed by the International Regulations for Preventing Collisions at Sea; and		1	equipment for making sound signals, as prescribed by the International Regulations for Preventing Collisions at Sea; and			
	2	one sea anchor; and		2	one sea anchor; and			
	3	equipment necessary for mooring, anchoring or manoeuvring the aircraft on water, appropriate to the size, mass and handling characteristics of the aircraft.		3	equipment necessary for mooring, anchoring or manoeuvring the aircraft on water, appropriate to the size, mass and handling characteristics of the aircraft.			
		<b>Aeroplanes flying over water —</b>			<b>Aeroplanes flying over water —</b>			<b>Aeroplanes flying over water —</b>
	f	An aeroplane flying over water shall, where indicated by the assessment in 91.710(c), be equipped with:		f	A single-engine aeroplane, or multi-engine aeroplane that would be unable to maintain level flight above the minimum flight altitude in the event of an engine failure, if operating over water more than 30 minutes at cruise speed or 100 NM, whichever is lesser, from land suitable to make an emergency landing shall be equipped as follows:		f	A single-engine aeroplane, or multi-engine aeroplane that would be unable to maintain level flight above the minimum flight altitude in the event of an engine failure, if operating over water more than 30 minutes at cruise speed or 100 NM, whichever is lesser, from land suitable to make an emergency landing shall be equipped as follows:
	1	liferafts in sufficient numbers to carry all persons on board, stowed so as to facilitate their ready use in emergency, provided with such life-saving equipment, including means of sustaining life, as is appropriate to the flight to be undertaken; and		1	liferafts in sufficient numbers to carry all persons on board, stowed so as to facilitate their ready use in emergency, provided with such life-saving equipment, including means of sustaining life, as is appropriate to the flight to be undertaken; and		1	liferafts in sufficient numbers to carry all persons on board, stowed so as to facilitate their ready use in emergency, provided with such life-saving equipment, including means of sustaining life, as is appropriate to the flight to be undertaken; and
	2	equipment for making the distress signals described in the Rules of the Air.		2	equipment for making the distress signals described in the Rules of the Air.		2	equipment for making the distress signals described in the Rules of the Air.
	3	any additional equipment decided by reference to the assessment in 91.710(c).		3	liferafts shall be equipped in accordance with Appendix B.		3	liferafts shall be equipped in accordance with Appendix B.
							4	buoyancy and rated capacity shall be sufficient to accommodate all occupants of the aeroplane in the event of a loss of one raft of the largest rated capacity; and
				g	A multi-engine aeroplane capable of continuing flight without descending below the minimum flight altitude after an engine failure, if operating over water more than 90 minutes at cruising speed or 200 NM, whichever is less, from land suitable for making an emergency landing shall be equipped as follows:		g	A multi-engine aeroplane capable of continuing flight without descending below the minimum flight altitude after an engine failure, if operating over water more than 90 minutes at cruising speed or 200 NM, whichever is less, from land suitable for making an emergency landing shall be equipped as follows:
				1	liferafts in sufficient numbers to carry all persons on board, stowed so as to facilitate their ready use in emergency, provided with such life-saving equipment, including means of sustaining life, as is appropriate to the flight to be undertaken; and		1	liferafts in sufficient numbers to carry all persons on board, stowed so as to facilitate their ready use in emergency, provided with such life-saving equipment, including means of sustaining life, as is appropriate to the flight to be undertaken; and
				2	liferafts shall be equipped in accordance with Appendix B.		2	liferafts shall be equipped in accordance with Appendix B.
							3	buoyancy and rated capacity shall be sufficient to accommodate all occupants of the aeroplane in the event of a loss of one raft of the largest rated capacity; and
							h	An aeroplane with MTOM exceeding 27,000 kg shall be equipped with a securely attached underwater locating beacon (ULB), no later than 1 January 2018. The ULB shall be automatically activating, operate at a frequency of 8.8 kHz for a minimum of 30 days and shall not be installed in wings or empennage.
								<i>Note: Underwater Locator Beacon (ULB) performance requirements are as contained in the SAE AS6254, Minimum Performance Standard for Underwater Locating Devices (Acoustic) (Self Powered), or equivalent documents.</i>
		<b>Helicopters flying over water —</b>			<b>Helicopters flying over water —</b>			•
	g	A helicopter operating over water shall:		h	A helicopter operating over water shall:			•

	1	If required to carry more than one liferaft, have at least 50 per cent of the liferafts deployable by remote control. Rafts which are not deployable by remote control and which have a mass of more than 40 kg shall be equipped with some means of mechanically assisted deployment; and		1	If required to carry more than one liferaft, have at least 50 per cent of the liferafts deployable by remote control. Rafts which are not deployable by remote control and which have a mass of more than 40 kg shall be equipped with some means of mechanically assisted deployment; and			•
	2	When two life-rafts are fitted, each shall be able to carry all occupants in the overload state.		2	When two life-rafts are fitted, each shall be able to carry all occupants in the overload state.			•
		<i>Note: The overload state is a design safety margin of 1.5 times the maximum capacity.</i>			<i>Note: The overload state is a design safety margin of 1.5 times the maximum capacity.</i>			•
		<b>Performance Class 1 and 2 operations-</b>			<b>Performance Class 1 and 2 operations -</b>			•
	3	A helicopter operating in performance Class 1 or 2 when flying over water at a distance from land corresponding to more than 10 minutes at normal cruise speed, shall be equipped as follows:		3	A helicopter operating in performance Class 1 or 2 when flying over water at a distance from land corresponding to more than 10 minutes at normal cruise speed, shall be equipped as follows:			•
	i	certificated for ditching or, for coastal transit operations only, be fitted with a permanent or rapidly deployable means of flotation so as to ensure a safe ditching of the helicopter and		i	certificated for ditching or, for coastal transit operations only, be fitted with a permanent or rapidly deployable means of flotation so as to ensure a safe ditching of the helicopter and			•
	ii	liferaft(s) sufficient to carry all persons on board, suitably equipped to sustain life in the expected conditions; and		ii	liferaft(s) sufficient to carry all persons on board, suitably equipped to sustain life in the expected conditions; and			•
	iii	equipment for making the distress signals described in the Rules of the Air; and		iii	equipment for making the distress signals described in the Rules of the Air; and			•
	iv	any additional equipment decided by reference to the assessment in 91.710(c).		iv	any additional equipment decided by reference to the assessment in 91.710(c).			•
				v	a survival suit worn by each crew member if operating over water when the sea temperature is less than 10°C or when the estimated rescue time exceeds the calculated survival time; and			•
					<i>Note: Deviation from this requirement may be applied for when the elevation and strength of the sun results in a high temperature hazard on the flight deck.</i>			•
		<b>Performance Class 3 operations —</b>			<b>Performance Class 3 operations —</b>			•
	4	A helicopter operating in performance Class 3 when flying beyond auto-rotational or safe forced landing distance from land, shall be equipped as follows:		4	A helicopter operating in performance Class 3 when flying beyond auto-rotational or safe forced landing distance from land, shall be equipped as follows:			•
	i	be fitted with a permanent or rapidly deployable means of flotation so as to ensure a safe ditching of the helicopter; and		i	be fitted with a permanent or rapidly deployable means of flotation so as to ensure a safe ditching of the helicopter; and			•
	ii	when not precluded by consideration related to the type of helicopter used, life raft(s) sufficient to carry all persons on board, suitably equipped to sustain life in the expected conditions; and		ii	when not precluded by consideration related to the type of helicopter used, life raft(s) sufficient to carry all persons on board, suitably equipped to sustain life in the expected conditions; and			•
	iii	equipment for making the distress signals described in the Rules of the Air.		iii	equipment for making the distress signals described in the Rules of the Air.			•
	iv	any additional equipment decided by reference to the assessment in 91.710(c).		iv	any additional equipment decided by reference to the assessment in 135.710(c).			•
<b>91.720</b>		<b>Transponder</b>	<b>135.720</b>		<b>Transponder</b>	<b>121.720</b>		<b>Transponder</b>
	a	An aircraft shall be equipped with a pressure-altitude reporting transponder which operates in accordance with the provisions of Annex 10, Volume IV.						
				b	An aeroplane shall be equipped with a data source that provides pressure altitude information with a resolution of 25 ft (7.62 m) or better.		b	An aeroplane shall be equipped with a data source that provides pressure altitude information with a resolution of 25 ft (7.62 m) or better.
				c	A Mode S transponder shall be provided with the airborne/on-the-ground status where the aircraft is equipped with an automatic means of detecting such status.		c	A Mode S transponder shall be provided with the airborne/on-the-ground status where the aircraft is equipped with an automatic means of detecting such status.
			<b>135.725</b>		<b>Passenger safety instructions</b>	<b>121.725</b>		<b>Passenger safety instructions</b>
					An aircraft shall be equipped with a means of conveying the following			An aircraft shall be equipped with a means of conveying the following



						information and instructions to passengers:				information and instructions to passengers:
				a		when seat belts are to be fastened; and		a		when seat belts are to be fastened; and
				b		when and how any oxygen equipment that is required to be carried is to be used; and		b		when and how any oxygen equipment that is required to be carried is to be used; and
				c		restrictions on smoking; and		c		restrictions on smoking; and
				d		location and use of lifejackets, and lifecots if carried; and		d		location and use of lifejackets, and lifecots if carried; and
				e		location of emergency equipment; and		e		location of emergency equipment; and
				f		location and method of opening emergency exits.		f		location and method of opening emergency exits.
<b>91.730</b>			<b>Oxygen indicators</b>	<b>135.730</b>		<b>Oxygen indicators</b>	<b>121.730</b>			<b>Oxygen indicators</b>
			An aircraft operated at altitudes above flight level 130, or for more than 30 minutes between flight level 100 up to and including flight level 130, shall be equipped with a means of indicating:			An aircraft operated above flight level 100 shall be equipped with a means of indicating:				An aircraft operated above flight level 100 shall be equipped with a means of indicating:
	a		to the flight crew:		a	to the flight crew:		a		to the flight crew:
	1		the amount of breathing oxygen available in each source of supply and whether the oxygen is being delivered to the dispensing units; and		1	the amount of oxygen available in each source of supply and whether the oxygen is being delivered to the dispensing units; and		1		the amount of oxygen available in each source of supply and whether the oxygen is being delivered to the dispensing units; and
	2		in a pressurised aircraft, by visual or aural warning, when the cabin pressure altitude exceeds 10,000 feet; and		2	in a pressurised aircraft, by visual or aural warning, when the cabin pressure altitude exceeds 10,000 feet; and		2		in a pressurised aircraft, by visual or aural warning, when the cabin pressure altitude exceeds 10,000 feet; and
	b		to each user of an individual breathing oxygen dispensing unit, the amount of oxygen available and whether the oxygen is being delivered to the dispensing unit		b	to each user of an individual dispensing unit, the amount of oxygen available and whether the oxygen is being delivered to the dispensing unit.		b		to each user of an individual dispensing unit, the amount of oxygen available and whether the oxygen is being delivered to the dispensing unit.
<b>91.735</b>			<b>Oxygen equipment and supplies for non-pressurised aircraft</b>	<b>135.735</b>		<b>Non-pressurised aircraft</b>	<b>121.735</b>			<b>Non-pressurised aircraft</b>
						The operator shall ensure that an aircraft with a non-pressurised cabin is not operated above flight level 100, except in accordance with an approval granted by the Director.				The operator shall ensure that an aircraft with a non-pressurised cabin is not operated above flight level 100, except in accordance with an approval granted by the Director.
			An aircraft with a non-pressurised cabin that is operated at altitudes above flight level 100 shall be equipped with oxygen storage and dispensing equipment to supply the following:							
	1		at altitudes up to and including flight level 130 for any period in excess of 30 minutes:							
			stored breathing oxygen for continuous use by all crew members and 10 % of the passengers; and							
	2		at altitudes above flight level 130:							
			stored breathing oxygen for continuous use by all crew members and passengers.							
<b>91.740</b>			<b>Oxygen equipment and supplies for pressurised aircraft</b>	<b>135.740</b>		<b>Oxygen equipment and supplies for pressurised aircraft</b>	<b>121.740</b>			<b>Oxygen equipment and supplies for pressurised aeroplanes</b>
	a		An aircraft with a pressurised cabin that is to be operated at altitudes above flight level 100 shall be equipped with:		a	An aircraft with a pressurised cabin that is to be operated at altitudes above flight level 100 up to and including flight level 250 shall be equipped with:		a		An aeroplane with a pressurised cabin that is to be operated at altitudes above flight level 100 up to and including flight level 250 shall be equipped with:
	1		a crew member on-demand oxygen mask accessible to each flight crew member and capable of providing a continuous supply of stored breathing oxygen for that time following failure of the pressurisation system that the cabin pressure altitude would exceed 10,000 feet; and		1	a crew member on-demand oxygen mask accessible to each flight crew member and capable of providing a continuous supply of stored breathing oxygen for that time following failure of the pressurisation system that the cabin pressure altitude would exceed 10,000 feet; and		1		a crew member on-demand oxygen mask accessible to each flight crew member and capable of providing a continuous supply of stored breathing oxygen for that time following failure of the pressurisation system that the cabin pressure altitude would exceed 10,000 feet; and
					2	oxygen masks capable of providing supplemental oxygen to all passengers; and		2		oxygen masks capable of providing supplemental oxygen to all passengers; and
	2		the following equipment that is readily accessible to each crew member, other than flight crew, at their normally-seated position:		3	the following equipment that is readily accessible to each crew member, other than flight crew, at their normally-seated position:		3		the following equipment that is readily accessible to each crew member, other than flight crew, at their normally-seated position:
	i		a crew member on demand oxygen mask; or		i	a crew member on demand oxygen mask; or		i		a crew member on demand oxygen mask; or
	ii		a passenger oxygen mask; and		ii	a passenger oxygen mask; and		ii		a passenger oxygen mask; and
	iii		portable breathing equipment for immediate use containing the greater of 120 litres of oxygen or the quantity of oxygen required for continuous use		iii	portable breathing equipment for immediate use containing the greater of 120 litres of oxygen or the quantity of oxygen required for continuous use for		ii		portable breathing equipment for immediate use containing the greater of 120 litres of oxygen or the quantity of oxygen required for continuous use for



		for that time the cabin pressure altitude would exceed 10,000 feet.			that time the cabin pressure altitude would exceed 10,000 feet; and			that time the cabin pressure altitude would exceed 10,000 feet; and
				4	sufficient spare oxygen masks, or portable protective breathing equipment, distributed to provide immediate availability of oxygen to each crew member, regardless of location; and		4	sufficient spare oxygen masks, or portable protective breathing equipment, distributed to provide immediate availability of oxygen to each crew member, regardless of location; and
				5	a minimum quantity of supplemental oxygen that shall provide:		5	a minimum quantity of supplemental oxygen that shall provide:
				i	45 minutes supply for each flight crew member; or		i	45 minutes supply for each flight crew member; or
				ii	12 minutes supply for each crew member and passenger^and		ii	12 minutes supply for each crew member and passenger^and
				6	the greater of the quantities of supplemental or therapeutic oxygen required:		6	the greater of the quantities of supplemental or therapeutic oxygen required:
				i	if the aircraft is capable of descending from its flight altitude to below flight level 130 within four minutes, to provide oxygen to 10 % of the passengers for any time the cabin pressure altitude is above 10,000 feet; or		i	if the aircraft is capable of descending from its flight altitude to below flight level 130 within four minutes, to provide oxygen to 10 % of the passengers for any time the cabin pressure altitude is above 10,000 feet; or
				ii	if the aircraft cannot descend to below flight level 130, to provide oxygen to all passengers for the time the cabin pressure altitude is above 13,000 feet; or		ii	if the aircraft cannot descend to below flight level 130, to provide oxygen to all passengers for the time the cabin pressure altitude is above 13,000 feet; or
				iii	to provide 30 minutes supply for 10 % of the passengers; or		iii	to provide 30 minutes supply for 10 % of the passengers; or
				iv	to provide for continuous use by 1 % of the passengers.		iv	to provide for continuous use by 1 % of the passengers; and
	b	For the purposes of paragraph (a), the calculation of the oxygen requirements in the event of pressurisation failure is to take into account:		b	For the purposes of paragraph (a), the calculation of the oxygen requirements in the event of pressurisation failure is to take into account:		b	For the purposes of paragraph (a), the calculation of the oxygen requirements in the event of pressurisation failure is to take into account:
	i	the time necessary for an emergency descent and the recovery phase to level flight at a safe altitude; and		1	the time necessary for an emergency descent and the recovery phase to level flight at a safe altitude; and		1	the time necessary for an emergency descent and the recovery phase to level flight at a safe altitude; and
	2	any subsequent stage of the flight prior to landing when it may be necessary for the aircraft to be flown at an altitude above flight level 100.		2	any subsequent stage of the flight prior to landing when it may be necessary for the aircraft to be flown above flight level 100.		2	any subsequent stage of the flight prior to landing when it may be necessary for the aeroplane to be flown above flight level 100; and
	c	An aeroplane with a pressurised cabin that is to be operated at altitudes above flight level 250 shall carry the equipment and supplies in paragraph (a) and:		c	An aeroplane with a pressurised cabin that is to be operated at altitudes above flight level 250 shall carry the equipment and supplies in paragraph (a) and:		c	an aeroplane with a pressurised cabin that is to be operated at altitudes above flight level 250 shall carry the equipment and supplies in paragraph (a) and:
	1	a quick donning crew member on-demand mask readily accessible to each flight crew member at their normally seated position; and		1	a quick donning crew member on-demand mask readily accessible to each flight crew member at their normally seated position; and		1	a quick donning crew member on-demand mask readily accessible to each flight crew member at their normally seated position; and
				2	oxygen masks capable of providing supplemental oxygen:		2	oxygen masks capable of providing supplemental oxygen:
				i	to all passengers and crew members other than flight crew members; and		i	to all passengers and crew members other than flight crew members; and
				ii	in each washroom and each separate lavatory; and		ii	in each washroom and each separate lavatory; and
				iii	the total number of oxygen outlets and masks in the passenger compartments, including those in each washroom and lavatory, shall exceed the number of passenger seats by at least 10 %; and		iii	the total number of oxygen outlets and masks in the passenger compartments, including those in each washroom and lavatory, shall exceed the number of passenger seats by at least 10 %; and
	2	in no case less than 10 minutes' oxygen supply for all passengers carried.		3	in no case less than 10 minutes' oxygen supply for all passengers carried; and		3	in no case less than 10 minutes' oxygen supply for all passengers carried; and
				4	when a cabin crew member is required to be carried, therapeutic oxygen capable of providing not less than 45 minutes supply for 10 % of the passengers carried; and		4	when a cabin crew member is required to be carried, therapeutic oxygen capable of providing not less than 45 minutes supply for 10 % of the passengers carried; and
				5	the extra oxygen units shall be uniformly distributed throughout the aircraft; and		5	the extra oxygen units shall be uniformly distributed throughout the aeroplane; and
				6	oxygen masks shall be automatically presented to the passengers and crew members in the passenger compartment when the cabin pressure altitude exceeds 14,000 feet; and		6	oxygen masks shall be automatically presented to the passengers and crew members in the passenger compartment when the cabin pressure altitude exceeds 14,000 feet; and
				7	flight crew shall be provided with a manual means of making the passenger masks available in the event of failure of the automatic system.		7	flight crew shall be provided with a manual means of making the passenger masks available in the event of failure of the automatic system.

	d	An aircraft operated above flight level 100 up to and including flight level 250 that cannot descend safely within four minutes to an altitude equal or lower than flight level 130 shall carry a minimum of 10 minutes' oxygen supply for all passengers carried.							
						121.745			<b>Crew protective breathing equipment</b>
							a		An aeroplane shall be equipped with protective breathing equipment (PBE) for:
							1		each required flight crew member at their assigned duty station; accessible for immediate use; to protect the eyes, nose and mouth and to provide oxygen for a period of at least 15 minutes; and
							2		each required cabin crew member, adjacent to their duty station; to protect the eyes, nose and mouth and to provide oxygen for a period of at least 15 minutes.
							b		In addition, the aeroplane in (a) shall be equipped with an additional portable PBE located near the hand fire extinguishers required in 121.700.
							c		Notwithstanding (b), when the fire extinguisher is located inside a cargo compartment, the additional portable PBE required shall be stowed outside, but adjacent to the entrance to that compartment.
									<i>Note: The supply for PBE may be provided by the supplemental oxygen required by 121.735 or 121.740.</i>
91.750		<b>Flight recorders — construction and installation</b>	135.750		<b>Flight recorders — construction and installation</b>	121.750			<b>Flight recorders — construction and installation</b>
		Flight recorders shall be constructed, located and installed so as to:		a	The operator shall ensure that any required flight recorder:				
	a	provide maximum practical protection for the recordings in order that the recorded information may be preserved, recovered and transcribed; and		1	is constructed, located and installed so as to provide maximum practical protection for the recordings in order that the recorded information may be preserved, recovered and transcribed; and				
	b	meet the prescribed crashworthiness and fire protection specifications.		2	meets the prescribed crashworthiness and fire protection specifications.				
91.755		<b>Flight recorders — flight data recorder (FDR) and alternatives</b>	135.755		<b>Flight recorders — flight data recorder (FDR) and alternatives</b>	121.755			<b>Flight recorders — flight data recorder (FDR) and alternatives</b>
		<i>Note 1: For aeroplanes for which the application for type certification is submitted before 1 January 2016, specifications applicable to flight recorders may be found in EUROCAE ED-112, ED-56A, ED-55, Minimum Operational Performance Specifications (MOPS), or earlier equivalent documents.</i>							
		<i>Note 2: For aeroplanes for which the application for type certification is submitted on or after 1 January 2016, specifications applicable to flight recorders may be found in EUROCAE ED-112A, Minimum Operational Performance Specifications (MOPS), or equivalent documents.</i>							
		<i>Note 3: Specifications applicable to lightweight flight recorders may be found in EUROCAE ED-155, Minimum Operational Performance Specification (MOPS), or equivalent documents.</i>							
		<i>Note 4: Parameters to be recorded are listed in Appendix 2.3 to ICAO Annex 6 Part II (for aeroplanes), and Appendix 4 to Annex 6 Part III (for helicopters).</i>			<i>Note 4: Parameters to be recorded are listed in Appendix 8 to ICAO Annex 6 Part I (for aeroplanes), and Appendix 4 to Annex 6 Part III (for helicopters).</i>				<i>Note 4: Parameters to be recorded are listed in Appendix 8 to ICAO Annex 6 Part I.</i>
		<i>Note 5: For aeroplanes with control systems in which movement of a control surface will back drive the pilot's control, "or" applies. For aeroplanes with control systems in which movement of a control surface will not back drive the pilot's control, "and" applies. In aeroplanes with independent moveable surfaces, each surface needs to be recorded</i>							

		<i>separately. In aeroplanes with independent pilot input on primary controls, each pilot input on primary controls needs to be recorded separately.</i>						
		<i>Note 6: "The application for type certification is submitted to an ICAO Contracting State" refers to the date of application of the original "Type certificate" for the aeroplane type, not the date of certification of particular aeroplane variation or derivative models.</i>						
	a	Where an aircraft is required to be equipped with flight recorder systems, the requirements may be met singly or in combination, as follows:		a	Where an aircraft is required to be equipped with flight recorder systems, the requirements may be met singly or in combination, as follows:		a	An aeroplane with MTOM exceeding 5,700 kg, required to be equipped with a FDR and a CVR, may alternatively be equipped with two combination recorders (FDR/CVR); with the following exceptions:
							1	An aeroplane with MTOM exceeding 5,700 kg, for which the application for type certification is submitted to an ICAO Contracting State on or after 1 January 2016 and which is required to be equipped with both a CVR and an FDR, shall be equipped with two combination recorders (FDR/CVR); and
							2	An aeroplane with MTOM exceeding 15,000 kg for which the application for type certification is submitted to an ICAO Contracting State on or after 1 January 2016 and which is required to be equipped with both a CVR and an FDR, shall be equipped with two combination recorders (FDR/CVR). One recorder shall be located as close to the cockpit as practicable and the other recorder located as far aft as practicable.
	1	A multi-engined turbine-powered aeroplane with MTOM of 5,700 kg or less, required to be equipped with a FDR and/or a CVR, may alternatively be equipped with one combination recorder (FDR/CVR).		1	A multi-engined turbine-powered aeroplane with MTOM of 5,700 kg or less, required to be equipped with a FDR and/or a CVR, may alternatively be equipped with one combination recorder (FDR/CVR).			•
	2	Combination recorders (FDR/CVR) may be used to meet the flight recorder equipage requirements for helicopters.		2	Combination recorders (FDR/CVR) may be used to meet the flight recorder equipage requirements for helicopters.			•
	b	A turbine-engined aeroplane with a seating configuration of more than 5 passenger seats and a MTOM of 5,700 kg or less for which the individual certificate of airworthiness is first issued on or after 1 January 2016 shall be equipped with:		b	A turbine-engined aeroplane with MTOM of 5,700 kg or less for which the individual certificate of airworthiness is first issued on or after 1 January 2016 shall be equipped with:			•
	1	a Type II FDR; or		1	a Type II FDR; or			•
	2	a Class C AIR or AIRS capable of recording flight path and speed parameters displayed to the pilot(s); or		2	a Class C AIR or AIRS capable of recording flight path and speed parameters displayed to the pilot(s); or			•
	3	an ADRS capable of recording the essential parameters. (See Note 4 above, regarding the parameters to be recorded.)		3	an ADRS capable of recording the essential parameters. (See Note 4 above, regarding the parameters to be recorded.)			•
	c	An aeroplane for which the application for type certification is submitted to an ICAO Contracting State on or after 1 January 2016 and which is required to be fitted with an FDR, shall record the following parameters at a maximum recording interval of 0.125 seconds:						
	1	Pilot input and/or control surface position - primary controls (pitch, roll, yaw).						
				d	An aeroplane which is required to record normal acceleration, lateral acceleration and longitudinal acceleration for which the application for type certification is submitted to an ICAO Contracting State on or after 1 January 2016 and which is required to be fitted with an FDR shall record those parameters at a maximum sampling and recording interval of 0.0625 seconds.		d	An aeroplane which is required to record normal acceleration, lateral acceleration and longitudinal acceleration for which the application for type certification is submitted to an ICAO Contracting State on or after 1 January 2016 and which is required to be fitted with an FDR shall record those parameters at a maximum sampling and recording interval of 0.0625 seconds.

				e	An aeroplane which is required to record pilot input and/or control surface position of primary controls (pitch, roll, yaw) for which the application for type certification is submitted to an ICAO Contracting State on or after 1 January 2016 and which is required to be fitted with an FDR shall record those parameters at a maximum sampling and recording interval of 0.125 seconds.		e	An aeroplane which is required to record pilot input and/or control surface position of primary controls (pitch, roll, yaw) for which the application for type certification is submitted to an ICAO Contracting State on or after 1 January 2016 and which is required to be fitted with an FDR shall record those parameters at a maximum sampling and recording interval of 0.125 seconds.
				e	A multi-engined turbine-engined aeroplane with MTOM of 5,700 kg or less for which the individual certificate of airworthiness was first issued on or after 1 January 1990 shall be equipped with a Type IIA FDR.		f	An aeroplane with MTOM exceeding 5,700 kg for which the individual certificate of airworthiness was first issued after 1 January 2005 shall be equipped with a Type IA FDR.
				f	A turbine-engined helicopter with MTOM exceeding 2,250 kg, up to and including 3,180 kg for which the application for type certification was submitted to an ICAO Contracting State on or after 1 January 2018 shall be equipped with:		g	Flight data recorders - aeroplanes for which the individual certificate of airworthiness was first issued on or after 1 January 1989:
				1	a Type IV A FDR; or		1	An aeroplane with MTOM exceeding 27,000 kg shall be equipped with a Type I FDR.
				2	a Class C AIR capable of recording flight path and speed parameters displayed to the pilot(s); or		2	An aeroplane with MTOM exceeding 5,700 kg, up to and including 27,000 kg, shall be equipped with a Type II FDR.
				3	an ADRS capable of recording the essential parameters. (See Note 3 above, regarding the parameters to be recorded.)		h	Flight data recorders - aeroplanes for which the individual certificate of airworthiness was first issued on or after 1 January 1987 but before 1 January 1989:
				g	A helicopter with MTOM of 3,180 kg or less for which the individual certificate of airworthiness is first issued on or after 1 January 2018 shall be equipped with:		1	A turbine-engined aeroplane with MTOM exceeding 5,700 kg, except an aeroplane in (g)(2) below, shall be equipped with an FDR which shall record time, altitude, airspeed, normal acceleration, heading and such additional parameters as are necessary to determine pitch attitude, roll attitude, radio transmission keying and power on each engine.
				1	a Type IV A FDR; or		2	A turbine-engined aeroplane with MTOM exceeding 27,000 kg, of a type for which the prototype was certificated by the appropriate national authority after 30 September 1969, shall be equipped with a Type II FDR.
				2	a Class C AIR capable of recording flight path and speed parameters displayed to the pilot(s); or		i	Flight data recorders - aeroplanes for which the individual certificate of airworthiness was first issued before 1 January 1987:
				3	an ADRS capable of recording the essential parameters. (See Note 3 above, regarding the parameters to be recorded.)		1	A turbine-engined aeroplane with MTOM exceeding 5,700 kg shall be equipped with a FDR which shall record time, altitude, airspeed, normal acceleration and heading.
				h	A helicopter with MTOM exceeding 3,180 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2016 shall be equipped with a Type IVA FDR.		2	A turbine-engined aeroplane with MTOM exceeding 27,000 kg of a type for which the prototype was certificated by the appropriate national authority after 30 September 1969 shall be equipped with a FDR which shall record, in addition to time, altitude, airspeed, normal acceleration and heading, such additional parameters as are necessary to meet the objectives of determining:
				i	Flight data recorders - helicopters for which the individual certificate of airworthiness was first issued on or after 1 January 1989:		i	the attitude of the aeroplane in achieving its flight path; and
				1	A helicopter with MTOM exceeding 7,000 kg, or with a maximum approved passenger seating configuration of more than 19 shall be equipped with a Type IV FDR.		ii	the basic forces acting upon the aeroplane resulting in the achieved flight path and the origin of such basic forces.
				2	A helicopter with MTOM exceeding 3,180 kg, up to and including 7,000 kg, shall be equipped with a Type V FDR.			
				j	Types I and IA FDRs shall record the parameters required to determine accurately the aeroplane flight path,		j	Types I and IA FDRs shall record the parameters required to determine accurately the aeroplane flight path,



						speed, attitude, engine power, configuration and operation.				speed, attitude, engine power, configuration and operation.	
	d		Types II and IIA FDRs shall record the parameters required to determine accurately the aeroplane flight path, speed, attitude, engine power and configuration of lift and drag devices.		k	Types II and IIA FDRs shall record the parameters required to determine accurately the aeroplane flight path, speed, attitude, engine power and configuration of lift and drag devices.		k		Types II and IIA FDRs shall record the parameters required to determine accurately the aeroplane flight path, speed, attitude, engine power and configuration of lift and drag devices.	
					1	A Type IV FDR shall record the parameters required to determine accurately the helicopter flight path, speed, attitude, engine power and operation.					
					m	A Type IVA FDR shall record the parameters required to determine accurately the helicopter flight path, speed, attitude, engine power, operation and configuration.					
					n	A Type V FDR shall record the parameters required to determine accurately the helicopter flight path, speed, attitude and engine power.					
	e	1	FDRs shall be capable of retaining the information recorded during at least the last 25 hours of their operation; except		o	1	FDRs shall be capable of retaining the information recorded during at least the last 25 hours of their operation; except		l	1	FDRs shall be capable of retaining the information recorded during at least the last 25 hours of their operation;
		2	Type IV, IVA and V FDRs shall be capable of retaining the information recorded during at least the last 10 hours of their operation; and			2	Type IV, IVA and V FDRs shall be capable of retaining the information recorded during at least the last 10 hours of their operation; and				•
		3	Type IIA FDRs shall be capable of retaining the information recorded during the last 30 minutes of their operation.			3	Type IIA FDRs shall be capable of retaining the information recorded during the last 30 minutes of their operation.			2	Type IIA FDRs shall be capable of retaining the information recorded during the last 30 minutes of their operation.
	f		The use of the following FDRs shall be discontinued:		p	The use of the following FDRs shall be discontinued:		m			The use of the following FDRs shall be discontinued:
		1	Engraving metal foil FDRs.			1	Engraving metal foil FDRs.			1	Engraving metal foil FDRs.
		2	Photographic film FDRs.			2	Photographic film FDRs.			2	Photographic film FDRs.
		3	Analogue FDRs using frequency modulation (FM).			3	Analogue FDRs using frequency modulation (FM).			3	Analogue FDRs using frequency modulation (FM).
		4	Magnetic tape FDRs by 1 January 2016.			4	Magnetic tape FDRs by 1 January 2016.			4	Magnetic tape FDRs by 1 January 2016.
91.760			<b>Flight recorders — cockpit voice recorder (CVR) and cockpit audio recording system (CARS)</b>	135.760		<b>Flight recorders — cockpit voice recorder (CVR) and cockpit audio recording system (CARS)</b>	121.760				<b>Flight recorders — cockpit voice recorder (CVR) and cockpit audio recording system (CARS)</b>
					a	A turbine-engined aeroplane with MTOM exceeding 2,250 kg, up to and including 5,700 kg for which the application for a type certification is submitted to an ICAO Contracting State on or after 1 January 2016 and required to be operated by more than one pilot shall be equipped with a CVR or a CARS.					
	a		A turbine-engined aeroplane with a seating configuration of more than 5 passenger seats and a MTOM of 5,700 kg or less for which the individual certificate of airworthiness is first issued on or after 1 January 2016 and required to be operated by more than one pilot shall be equipped with either a CVR or a CARS.		b	A turbine-engined aeroplane with MTOM of 5,700 kg or less for which the individual certificate of airworthiness is first issued on or after 1 January 2016 and required to be operated by more than one pilot shall be equipped with either a CVR or a CARS.					•
					c	Cockpit voice recorders - helicopters for which the individual certificate of airworthiness was first issued on or after 1 January 1987:		a			Cockpit voice recorders - aeroplanes for which the individual certificate of airworthiness was first issued on or after 1 January 1987:
					1	A helicopter with MTOM exceeding 7,000 kg shall be equipped with a CVR. For helicopters not equipped with an FDR, at least main rotor speed shall be recorded on the CVR.			1		An aeroplane with MTOM exceeding 5,700 kg shall be equipped with a CVR.
					2	A helicopter with MTOM exceeding 3,180 kg shall be equipped with a CVR. For helicopters not equipped with an FDR, at least main rotor speed shall be recorded on the CVR.		b			Cockpit voice recorders - aeroplanes for which the individual certificate of airworthiness was first issued before 1 January 1987:
					d	Cockpit voice recorders - helicopters for which the individual certificate of airworthiness was first issued before 1 January 1987:			1		A turbine-engined aeroplane with MTOM exceeding 27,000 kg of a type for which the prototype was certificated by the appropriate national authority after 30 September 1969, shall be equipped with a CVR.
					i	A helicopter with MTOM exceeding 7,000 kg shall be equipped with a CVR. For helicopters not equipped with an			2		A turbine-engined aeroplane with MTOM exceeding 5,700 kg, up to and including 27,000 kg, of a type for which



						FDR, at least main rotor speed shall be recorded on the CVR.				the prototype was certificated by the appropriate national authority after 30 September 1969, shall be equipped with a CVR.
	b	All CVRs shall be capable of retaining the information recorded during at least the last 30 minutes of their operation; with the following exceptions:		e	All CVRs shall be capable of retaining the information recorded during at least the last 30 minutes of their operation; with the following exceptions:		c	All CVRs shall be capable of retaining the information recorded during at least the last 30 minutes of their operation; with the following exceptions:		
	1	From 1 January 2016, all required CVRs shall be capable of retaining the information recorded during at least the last two hours of their operation;		1	From 1 January 2016, all required CVRs shall be capable of retaining the information recorded during at least the last two hours of their operation;		1	From 1 January 2016, all required CVRs shall be capable of retaining the information recorded during at least the last two hours of their operation;		
							2	All aeroplanes of a maximum certificated take-off mass of over 27000 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2021 shall be equipped with a CVR capable of retaining the information recorded during at least the last twenty-five hours of its operation.		
							3	An aeroplane with MTOM exceeding 5,700 kg for which the individual certificate of airworthiness was first issued on or after 1 January 2003, shall be equipped with a CVR capable of retaining the information recorded during at least the last two hours of its operation; and		
	2	An aeroplane for which the individual certificate of airworthiness was first issued on or after 1 January 1990, and that is required to be equipped with a CVR, shall have a CVR capable of retaining the information recorded during at least the last two hours of its operation.		2	An aeroplane for which the individual certificate of airworthiness was first issued on or after 1 January 1990, and that is required to be equipped with a CVR, shall have a CVR capable of retaining the information recorded during at least the last two hours of its operation; and		4	An aeroplane for which the individual certificate of airworthiness was first issued on or after 1 January 1990, and that is required to be equipped with a CVR, shall have a CVR capable of retaining the information recorded during at least the last two hours of its operation.		
				3	A helicopter for which the individual certificate of airworthiness was first issued on or after 1 January 1990, and that is required to be equipped with a CVR, shall have a CVR capable of retaining the information recorded during at least the last two hours of its operation.					
	c	The use of magnetic tape and wire CVRs shall be discontinued by 1 January 2016.		f	The use of magnetic tape and wire CVRs shall be discontinued by 1 January 2016.		d	The use of magnetic tape and wire CVRs shall be discontinued by 1 January 2016.		
		<i>Note: Signals to be recorded are listed in Appendix 2.3 to ICAO Annex 6 Part II (for aeroplanes), and Appendix 4 to Annex 6 Part III (for helicopters).</i>			<i>Note: Signals to be recorded are listed in Appendix 8 to ICAO Annex 6 Part I (for aeroplanes), and Appendix 4 to Annex 6 Part III (for helicopters).</i>			<i>Note: Signals to be recorded are listed in Appendix 8 to ICAO Annex 6 Part I.</i>		
						121.762		<b>Cockpit voice recorder (CVR) — alternate power</b>		
							a	An aeroplane with MTOM exceeding 27,000 kg for which the application for type certification is submitted to an ICAO Contracting State on or after 1 January 2018 shall be provided with an alternate power source, that powers the forward CVR in the case of combination recorders.		
							b	An aeroplane with MTOM exceeding 27,000 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2018 shall be provided with an alternate power source that powers at least one CVR.		
							c	An alternate power source shall automatically engage and provide ten minutes, plus or minus one minute, of operation whenever aeroplane power to the recorder ceases, either by normal shutdown or by any other loss of power.		
							d	The alternate power source shall power the CVR and its associated cockpit area microphone components.		
							e	The CVR shall be located as close as practicable to the alternate power source.		
								<i>Note 1: "Alternate" means separate from the power source that normally provides power to the CVR. The use of aeroplane batteries or other power</i>		

										sources is acceptable provided that the requirements above are met and electrical power to essential and critical loads is not compromised.
										Note 2: When the CVR function is combined with other recording functions within the same unit, powering the other functions is allowed.
				135.765		Flight recorders — data link recorders	121.765			Flight recorders — data link recorders
						Note: Data link recorders performance requirements are as contained in the EUROCAE ED-112, Minimum Operational Performance Specification (MOPS) for Crash Protected Airborne Recorder Systems, or equivalent documents.				Note: Data link recorders performance requirements are as contained in the EUROCAE ED-112, Minimum Operational Performance Specification (MOPS) for Crash Protected Airborne Recorder Systems, or equivalent documents.
					a	An aeroplane for which the individual certificate of airworthiness is first issued on or after 1 January 2016, which utilizes any of the data link communications applications listed in 5.1.2 of Appendix 9 to ICAO Annex 6 Part I and is required to carry a CVR, shall record on a flight recorder the data link communications messages.		a		An aeroplane for which the individual certificate of airworthiness is first issued on or after 1 January 2016, which utilizes any of the data link communications applications listed in 5.1.2 of Appendix 9 to ICAO Annex 6 Part I and is required to carry a CVR, shall record on a flight recorder the data link communications messages.
					b	An aeroplane which is modified on or after 1 January 2016 to install and utilize any of the data link communications applications listed in 5.1.2 of Appendix 9 to ICAO Annex 6 Part I (aeroplanes) and is required to carry a CVR, shall record on a flight recorder the data link communications messages.		b		An aeroplane which is modified on or after 1 January 2016 to install and utilize any of the data link communications applications listed in 5.1.2 of Appendix 9 to ICAO Annex 6 Part I (aeroplanes) and is required to carry a CVR, shall record on a flight recorder the data link communications messages.
					c	A helicopter for which the individual certificate of airworthiness is first issued on or after 1 January 2016, which utilizes any of the data link communications applications listed in 5.1.2 of Appendix 5 to ICAO Annex 6 Part III and is required to carry a CVR, shall record on a flight recorder the data link communications messages.				
					d	A helicopter which is modified on or after 1 January 2016, to install and utilize any of the data link communications applications listed in 5.1.2 of Appendix 5 to ICAO Annex 6 Part III and is required to carry a CVR, shall record on a flight recorder the data link communications messages.				
						Note 1: Data link communications are currently conducted by either ATN-based or FANS 1/A-equipped aircraft.				Note 1: Data link communications are currently conducted by either ATN-based or FANS 1/A-equipped aircraft.
						Note 2: A Class B AIR could be a means for recording data link communications applications messages to and from the aeroplanes where it is not practical or is prohibitively expensive to record those data link communications applications messages on FDR or CVR.				Note 2: A Class B AIR could be a means for recording data link communications applications messages to and from the aeroplanes where it is not practical or is prohibitively expensive to record those data link communications applications messages on FDR or CVR.
					e	The minimum recording duration shall be equal to the duration of the CVR.		e		The minimum recording duration shall be equal to the duration of the CVR.
					f	Data link recording shall be able to be correlated to the recorded cockpit audio.		f		Data link recording shall be able to be correlated to the recorded cockpit audio.
							121.767			Flight recorder data recovery
										All aeroplanes of a maximum certificated take-off mass of over 27,000 kg and authorized to carry more than nineteen passengers for which the application for type certification is submitted to a Contracting State on or after 1 January 2021, shall be equipped with a means approved by the Director to recover flight recorder data and make it available in a timely manner.
										Note: In approving the means to make flight recorder data available in a timely manner, the Director shall take into account the following: a) the capabilities of the operator; b) overall capability of the aeroplane and its systems as certified by State of Design;

									<i>c) the reliability of the means to recover the appropriate CVR channels and appropriate FDR data; and d) specific mitigation measures.</i>
<b>91.770</b>		<b>Ground proximity warning system</b>	<b>135.770</b>		<b>Ground proximity warning system</b>	<b>121.770</b>		<b>Ground proximity warning system</b>	
	a	A turbine-engined aeroplane with MTOM exceeding 5,700 kg or with a maximum approved passenger seating configuration of more than 9 seats shall be equipped with a ground proximity warning system which has a forward looking terrain avoidance function.		a	A turbine-engined aeroplane with a maximum approved passenger seating configuration of more than 9 seats shall be equipped with a ground proximity warning system which has a forward looking terrain avoidance function.		a	A turbine-engined aeroplane with a maximum approved passenger seating configuration of more than 9 seats shall be equipped with a ground proximity warning system which has a forward looking terrain avoidance function.	
				b	A piston-engined aeroplane with a maximum approved passenger seating configuration of more than 9 seats shall be equipped with a ground proximity warning system which has a forward looking terrain avoidance function.		b	A piston-engined aeroplane with a maximum approved passenger seating configuration of more than 9 seats shall be equipped with a ground proximity warning system which has a forward looking terrain avoidance function.	
	b	A ground proximity warning system required to be carried in accordance with paragraph (a) shall provide an automatic and distinctive warning to the flight crew when the aeroplane is in potentially hazardous proximity to the earth's surface.		c	A ground proximity warning system required to be carried in accordance with paragraph (a) or (b) shall provide an automatic and distinctive warning to the flight crew when the aeroplane is in potentially hazardous proximity to the earth's surface.		c	A ground proximity warning system required to be carried in accordance with paragraph (a) or (b) shall provide an automatic and distinctive warning to the flight crew when the aeroplane is in potentially hazardous proximity to the earth's surface.	
	c	A ground proximity warning system required to be carried in accordance with paragraph (a) shall provide, as a minimum, warnings of at least the following circumstances:		d	A ground proximity warning system required to be carried in accordance with paragraph (b) shall provide, as a minimum, warnings of at least the following circumstances:		d	A ground proximity warning system required to be carried in accordance with paragraph (b) shall provide, as a minimum, warnings of at least the following circumstances:	
	1	excessive descent rate;		1	excessive descent rate;		1	excessive descent rate;	
	2	excessive altitude loss after take-off or go-around; and		2	excessive altitude loss after take-off or go-around; and		2	excessive altitude loss after take-off or go-around; and	
	3	unsafe terrain clearance.		3	unsafe terrain clearance.		3	unsafe terrain clearance.	
	d	The ground proximity warning system of a turbine-engined aeroplane with MTOM exceeding 5,700 kg or with a maximum approved passenger seating configuration of more than 9 seats for which the individual certificate of airworthiness was first issued after 1 January 2011 shall provide, as a minimum, warnings of at least the following circumstances:		e	The ground proximity warning system of required to be carried in accordance with paragraph (a) shall provide, as a minimum, warnings of at least the following circumstances:		e	The ground proximity warning system of required to be carried in accordance with paragraph (a) shall provide, as a minimum, warnings of at least the following circumstances:	
	1	excessive descent rate;		1	excessive descent rate;		1	excessive descent rate;	
	2	excessive terrain closure rate;		2	excessive terrain closure rate;		2	excessive terrain closure rate;	
	3	excessive altitude loss after take-off or go-around;		3	excessive altitude loss after take-off or go-around;		3	excessive altitude loss after take-off or go-around;	
	4	unsafe terrain clearance while not in the landing configuration;		4	unsafe terrain clearance while not in the landing configuration;		4	unsafe terrain clearance while not in the landing configuration;	
	i	gear not locked down;		i	gear not locked down;		i	gear not locked down;	
	ii	flaps not in a landing position; and		ii	flaps not in a landing position; and		ii	flaps not in a landing position; and	
	5	excessive descent below the instrument glide path.		5	excessive descent below the instrument glide path.		5	excessive descent below the instrument glide path.	
			<b>135.775</b>		<b>Significant weather detection</b>	<b>121.775</b>		<b>Significant weather detection</b>	
					A helicopter or pressurised aeroplane:			A pressurised aeroplane:	
					when carrying passengers shall be equipped with operative weather radar or other significant-weather detecting equipment capable of detecting thunderstorms whenever the aircraft is being operated in areas where such conditions may be expected to exist along the route in instrument meteorological conditions or at night.			when carrying passengers shall be equipped with operative weather radar or other significant-weather detecting equipment capable of detecting thunderstorms whenever the aircraft is being operated in areas where such conditions may be expected to exist along the route in instrument meteorological conditions or at night.	
						<b>121.780</b>		<b>Turbo-jet aeroplanes - forward-looking wind shear warning system</b>	
							a	A turbo-jet aeroplane with MTOM exceeding of 5,700 kg or with a maximum approved passenger seating configuration of more than 9 seats shall be equipped with a forward-looking wind shear warning system.	
							b	A forward-looking wind shear warning system shall be capable of providing the pilot with a timely aural and visual warning of wind shear ahead of the aircraft, and the information required to permit the pilot to safely commence and continue a missed approach or go-around or to execute an escape manoeuvre if necessary. The system should also provide an indication to the	

									pilot when the limits specified for the certification of automatic landing equipment are being approached, when such equipment is in use.
				135.785		<b>Airborne collision avoidance system (ACAS II)</b>	121.785		<b>Airborne collision avoidance system (ACAS II)</b>
					a	An airborne collision avoidance system shall operate in accordance with the relevant provisions of ICAO Annex 10, Volume IV.		a	An airborne collision avoidance system shall operate in accordance with the relevant provisions of ICAO Annex 10, Volume IV.
						<i>Note 1: TCAS II Version 7 is the only system which is compliant with ICAO ACAS II technical standards.</i>			<i>Note 1: TCAS II Version 7 is the only system which is compliant with ICAO ACAS II technical standards.</i>
						<i>Note 2: TCAS II Version 7.1 is required for compliance with ICAO ACAS II technical standards from 1 January 2017.</i>			<i>Note 2: TCAS II Version 7.1 is required for compliance with ICAO ACAS II technical standards from 1 January 2017.</i>
								b	A turbine-engined aeroplane with MTOM exceeding 5,700 kg, or with a maximum approved passenger seating configuration of more than 19 seats, shall be equipped with an airborne collision avoidance system (ACAS II).
				135.790		<b>Cosmic radiation detection equipment</b>	121.790		<b>Cosmic radiation detection equipment</b>
					a	An aeroplane flying above 49,000 feet shall carry equipment to measure and indicate continuously the dose rate of total cosmic radiation being received (i.e. the total of ionizing and neutron radiation of galactic and solar origin) and the cumulative dose on each flight.		a	An aeroplane flying above 49,000 feet shall carry equipment to measure and indicate continuously the dose rate of total cosmic radiation being received (i.e. the total of ionizing and neutron radiation of galactic and solar origin) and the cumulative dose on each flight.
					b	The display unit of the equipment shall be readily visible to a flight crew member.		b	The display unit of the equipment shall be readily visible to a flight crew member.
				135.795		<b>Vibration health monitoring system</b>			
						A helicopter with MTOM exceeding 3,175 kg or a maximum approved passenger seating configuration of more than 9 seats shall be equipped with a vibration health monitoring system.			

121.700 Table 4

Maximum approved passenger seating configuration	Total number of kits
0 to 100	1
101 to 200	2
201 to 300	3
301 to 400	4
401 to 500	5

121.700 Table 5

Location	Distribution
Accessible to the crew near the entrance to each Class A, B and E cargo compartment	1
On or near the flight deck, readily accessible from the flight crew station	1
A galley not in a passenger, crew or cargo compartment	1
Accessible to each galley in a passenger compartment	1
Maximum approved passenger seating configuration	
1 to 30	1
31 to 60	2
61 to 200	3
201 to 300	4
301 to 400	5
401 to 500	6

121.700 Table 6

Maximum approved passenger seating configuration	Distribution		
	Forward end	Mid section	Most rearward section
61 to 99			1
100 or more	1		1
199 or more	1	1	1

Part 91			Requirement	Part 135			Requirement	Part 121			Requirement
Subpart G – Continuing airworthiness management											
91.900			Continuing airworthiness management								
			The owner or lessee of an aircraft registered in Guernsey shall:								
	a		have continuing airworthiness management arrangements in compliance with GAR Part 39; and								
	b		have appointed a person or organisation, acceptable to the Director, who will ensure that appropriate arrangements are in place for continuing airworthiness management.								





Part 91			Requirement	Part 135			Requirement	Part 121			Requirement
Subpart H - Crew Requirements											
91.905			Composition of crew	135.905			Composition of crew	121.905			Composition of crew
	a		An aircraft shall not fly unless it carries a flight crew of the number and description required by the law of the country in which it is registered.				The operator shall ensure that:				The operator shall ensure that:
	b		An aircraft shall carry a flight crew adequate in number and description to ensure the safety of the aircraft but no fewer than that specified in the flight manual, or other documents associated with the certificate of airworthiness or permit to fly.		a		the number and composition of the flight crew shall not be less than that specified in the operations manual. The flight crew shall include flight crew members in addition to the minimum numbers specified in the flight manual or other documents associated with the certificate of airworthiness, when necessitated by considerations related to the type of aircraft used, the type of operation involved and the duration of flight between points where flight crews are changed.		a		the number and composition of the flight crew shall not be less than that specified in the operations manual. The flight crew shall include flight crew members in addition to the minimum numbers specified in the flight manual or other documents associated with the certificate of airworthiness, when necessitated by considerations related to the type of aeroplane used, the type of operation involved and the duration of flight between points where flight crews are changed.
					b		For operations under IFR or at night the minimum flight crew is two pilots when using:				
					1		an aeroplane powered by one or more turbine jets, except when otherwise authorised by the Director;				
					2		an aeroplane powered by one or more turbine propeller engines and with a maximum approved passenger seating configuration of more than 9; or				
					3		a helicopter with a maximum approved passenger seating configuration of more than 9.				
					c		For operations under IFR or at night using an aircraft not covered by (b) above, the aircraft may be operated by a single pilot provided that:				
					1		the requirements of (d) and (e) below are satisfied; or				
					2		it is a helicopter flying by day and remaining clear of cloud and with the surface jmsgHL				
							<i>Note: Flights in (c)(2) come under the visual reference provisions in Rule 33 of the instrument flight rules (IFR), i.e. when the flight visibility is less than 1500 metres but not less than 800 metres.</i>				
					d		For single pilot operations in accordance with paragraph (c)(1) above, the requirement of 135.655(f) is met and the pilot-in-command satisfies thefollowmg:				
					1		at least 50 hours flight time on the type or class of aircraft, of which at least 10 hours shall be as pilot-incommand;				
					2		at least 25 hours flight time under IFR on the type or class of aircraft;				
					3		for operations at night, at least 15 hours flight time at night;				
					4		minimum recent experience of:				
					i		at least five IFR flights, including three instrument approaches carried out during the preceding 90 days on the type or class of aircraft in the single pilot role; or				
					ii		an IFR instrument approach check carried out on the type or class of aircraft during the preceding 90 days;				
					5		for operations at night, at least three take-offs and landings at night on the type or class of aircraft in the single pilot role in the preceding 90 days.				
					6		has successfully completed training programmes, for the role, that include, passenger briefing with respect to emergency evacuation; autopilot management; and the use of simplified in-flight documentation; and				
					7		has successfully completed, in the single pilot role, the requirements of checking contained in 135.1110.				
					e		Use of a single pilot shall be approved by the Director.				
91.910			Flight crew qualification	135.910			Flight crew qualification	121.910			Flight crew qualification

			The pilot-in-command shall satisfy himself that:				The operator shall ensure that:				The operator shall ensure that:
		a	each flight crew member assigned to duty holds an appropriate licence issued or validated by the State of Registry of the aircraft; and		a		each flight crew member assigned to duty holds an appropriate licence issued or validated by the Bailiwick of Guernsey; and:		a		each flight crew member assigned to duty holds an appropriate licence issued or validated by the Bailiwick of Guernsey; and:
		b	flight crew members are properly rated in respect of their assigned duty; and		1		meets all requirements for the assigned flight-crew duty; and		1		meets all requirements for the assigned flight-crew duty; and
		c	the licence is current and includes the appropriate rating, and		2		meets all route and aerodrome qualification requirements for the operation intended.		2		meets all route and aerodrome qualification requirements for the operation intended.
		d	flight crew members are competent to carry out their assigned duties.		3		is currently qualified in accordance with the requirements of Subpart I.		3		is currently qualified in accordance with the requirements of Subpart I.
<b>91.915</b>			<b>Flight crew recency</b>	<b>135.915</b>			<b>Flight crew recency</b>	<b>121.915</b>			<b>Flight crew recency</b>
	a		No person shall act as pilot-in-command of an aircraft carrying passengers, unless:		a		The operator shall not assign a pilot-in-command or a co-pilot to operate at the flight controls of a type or variant of a type of aircraft during take-off and landing unless that pilot has operated the flight controls during at least three take-offs and landings within the preceding 90 days on the same type of aircraft or in a flight simulator approved for the purpose; and		a		The operator shall not assign a pilot-in-command or a co-pilot to operate at the flight controls of a type or variant of a type of aeroplane during take-off and landing unless that pilot has operated the flight controls during at least three take-offs and landings within the preceding 90 days on the same type of aeroplane or in a flight simulator approved for the purpose; and
	1		on the same type of aircraft within the immediately preceding 90 days, that pilot has made at least three take offs and three landings; or		b		if the aircraft is to be flown in accordance with the instrument flight rules, has flown a minimum of three instrument approaches in the previous 90 days or has otherwise demonstrated competence through a flight check with a flight examiner.		b		if the aeroplane is to be flown in accordance with the instrument flight rules, has flown a minimum of three instrument approaches in the previous 90 days or has otherwise demonstrated competence through a flight check with a flight examiner.
	2		has otherwise demonstrated competence on an approved synthetic flight training device approved for the purpose; or						c		The operator shall not assign a pilot to act in the capacity of cruise relief pilot unless, within the preceding 90 days, that pilot has either:
	3		has satisfactorily demonstrated to a flight examiner, continued proficiency in an aircraft of the same type.						1		operated as pilot-in-command, co-pilot or cruise relief pilot on the same type of aeroplane; or
									2		carried out flying skill refresher training including normal, abnormal and emergency procedures specific to cruise flight on the same type of aeroplane or in a flight simulator approved for the purpose, and has practiced approach and landing procedures, where the approach and landing procedure practice may be performed as the pilot who is not flying the aeroplane.
							<i>Note: See also 135.965 when a pilot is flying several variants of the same type of aircraft or different types of aircraft with similar characteristics in terms of operating procedures, systems and handling; credit may be approved for operation of similar types or variants.</i>				<i>Note: See also 121.965 when a pilot is flying several variants of the same type of aircraft or different types of aircraft with similar characteristics in terms of operating procedures, systems and handling; credit may be approved for operation of similar types or variants.</i>
				<b>135.920</b>			<b>Flight crew duty assignment</b>	<b>121.920</b>			<b>Flight crew duty assignment</b>
							The operator shall:				The operator shall:
					a		designate a pilot to act as pilot-in-command for each flight;		a		designate a pilot to act as pilot-in-command for each flight;
					b		designate any additional flight crew member that may be required by the type of aircraft operated, the type of operation to be performed and the duration of the flight to augment the minimum crew specified in the aircraft flight manual;		b		designate any additional flight crew member that may be required by the type of aeroplane operated, the type of operation to be performed and the duration of the flight to augment the minimum crew specified in the aeroplane flight manual;
					c		assign to each member of flight crew the functions to be carried out in the event of an aircraft emergency and of an emergency evacuation becoming necessary;		c		assign to each member of flight crew the functions to be carried out in the event of an aircraft emergency and of an emergency evacuation becoming necessary;
					d		ensure that whenever an aircraft includes a separate flight engineer's station the assigned flight crew includes at least one flight engineer especially assigned to that station, unless the duties associated with that station can adequately be performed by another flight crew member holding a flight engineer licence without interference with regular duties; and		d		ensure that whenever an aeroplane includes a separate flight engineer's station the assigned flight crew includes at least one flight engineer especially assigned to that station, unless the duties associated with that station can adequately be performed by another flight crew member holding a flight engineer licence without interference with regular duties; and
				<b>135.925</b>			<b>Pilot-in-command - experience requirements</b>	<b>121.925</b>			<b>Pilot-in-command - experience requirements</b>

							The operator shall ensure that each person designated as pilot-in-command of an aircraft has acquired, prior to commencing the training specified in Subpart I for pilot-in-command, at least the minimum flight time specified in the operations manual.					The operator shall ensure that each person designated as pilot-in-command of an aeroplane has acquired, prior to commencing the training specified in Subpart I for pilot-in-command, at least the minimum flight time specified in the operations manual.			
						135.930				Pilot experience	121.930				Pilot experience
										The operator shall ensure that any person operating as a pilot of a commercial air transport operation:					The operator shall ensure that any person operating as a pilot of a commercial air transport operation:
							a			is suitably trained and qualified on the aircraft type; and		a			is suitably trained and qualified on the aeroplane type and
							b			is capable, in the event of the pilot-in-command being incapacitated:		b			is capable, in the event of the pilot-in-command being incapacitated:
							1			of operating the aircraft safely under the prevailing and anticipated forecast weather conditions; and		1			of operating the aeroplane safely under the prevailing and anticipated forecast weather conditions; and
							2			of landing the aircraft at the intended destination or a suitable alternate.		2			of landing the aeroplane at the intended destination or a suitable alternate.
						135.935				Pilot operating limitations	121.935				Pilot operating limitations
										The operator shall specify any pilot operating limitations in the operations manual.					The operator shall specify any pilot operating limitations in the operations manual.
						135.940				Cabin crew duty assignment	121.940				Cabin crew duty assignment
										The operator shall ensure that:					The operator shall ensure that an aircraft with an MAPSC of more than 19 and on which at least one passenger is carried:
							a			unless otherwise authorised by the Director its aeroplanes are operated with at least the minimum number of cabin crew carried as crew members:		a			unless otherwise authorised by the Director shall carry no fewer than the number of cabin crew members:
							1			specified by the manufacturer's recommended emergency evacuation procedures for the aeroplane configuration being used^and		1			specified by the manufacturer's recommended emergency evacuation procedures for the aeroplane configuration being used;
							2			specified by the certified design criteria for the aeroplane.		2			specified by the certified design criteria for the aeroplane;
												3			that will ensure at least one cabin crew member is present in each occupied compartment; who has, wherever possible a direct view of the compartment; and
												4			in accordance with the formula of 1 cabin crew member for every 50 or fraction of 50 passenger seats installed in the aeroplane.
												b			there are designated for each flight:
												1			requiring two or more cabin crew, a senior cabin crew member responsible to the pilot-in-command for the operational and safety functions of each cabin crew member; and
												2			requiring six or more cabin crew, a deputy senior cabin crew member.
												c			notwithstanding the requirements of paragraph (a)(4), one fewer cabin crew member than that specified may be carried to allow the continuation of a flight in the event a required cabin crew member becomes unfit because of sickness or injury during their duty period, provided that:
												1			the requirements of paragraphs (a)(1), (2), and (3) can be met; and
												2			the remaining cabin crew are trained and competent to operate safely with the reduced number of cabin crew in accordance with the procedures specified in the operations manual; and
												3			numbers are restored to comply with the requirements of paragraph (a)(4) at the first aerodrome of landing where a replacement would normally be expected to be available.
						135.945				Task specialists — emergency functions	121.945				Task specialists — emergency functions
										The operator shall assign to any task specialist the functions to be carried out in the event of an aircraft emergency and of an emergency evacuation becoming necessary.					The operator shall assign to any task specialist the functions to be carried out in the event of an aircraft emergency and of an emergency evacuation becoming necessary.

Part 91	Requirement	Part 135	Requirement	Part 121	Requirement
<b>Subpart I – Training</b>					
		<b>135.950</b>	<b>Training programmes — general</b>	<b>121.950</b>	<b>Training programmes — general</b>
		a	The operator shall establish a ground and flight training programme, approved by the Director, to ensure that operating staff, including flight crew, cabin crew and other crew members are adequately trained and competent to perform their duties; as follows:	a	The operator shall establish a ground and flight training programme, approved by the Director, to ensure that operating staff, including flight crew, cabin crew and other crew members are adequately trained and competent to perform their duties; as follows:
		1	The training programme shall include skills in relation to human performance and awareness of the operator's safety management system (SMS) as appropriate to the area of work.	1	The training programme shall include skills in relation to human performance and awareness of the operator's safety management system (SMS) as appropriate to the area of work.
		2	The training programme shall be reviewed periodically to ensure that training elements are included with regard to significant safety risks, taking account of the nature of the operation.	2	The training programme shall be reviewed periodically to ensure that training elements are included with regard to significant safety risks, taking account of the nature of the operation.
		3	Training programmes for flight crew shall consist of ground and flight training on the type(s) of aircraft on which the flight crew member serves and shall include training in normal procedures and all types of emergency or abnormal situations.	3	Training programmes for flight crew shall consist of ground and flight training on the type(s) of aircraft on which the flight crew member serves and shall include training in normal procedures and all types of emergency or abnormal situations.
		4	Flight crew shall be trained in the use of the operator's standard operating procedures.	4	Flight crew shall be trained in the use of the operator's standard operating procedures.
		5	The training for each crew member, particularly that relating to abnormal or emergency procedures, shall ensure that all crew members know the functions for which they are responsible and the relation of these functions to the functions of other crew members.	5	The training for each crew member, particularly that relating to abnormal or emergency procedures, shall ensure that all crew members know the functions for which they are responsible and the relation of these functions to the functions of other crew members.
		6	The training programme shall be given on a recurrent basis, at least annually, and shall include an assessment of competence.	6	The training programme shall be given on a recurrent basis, at least annually, and shall include an assessment of competence.
		7	The training programme shall include the syllabus for each type of training to be conducted.	7	The training programme shall include the syllabus for each type of training to be conducted.
		b	The operator shall ensure that each crew member is trained in accordance with the training programme.	b	The operator shall ensure that each crew member is trained in accordance with the training programme.
		c	The operator shall ensure that details of the training programme form the operations manual, Part D.	c	The operator shall ensure that details of the training programme form the operations manual, Part D.
		d	The operator shall ensure that any person responsible for providing training is appropriately qualified to do so.	d	The operator shall ensure that any person responsible for providing training is appropriately qualified to do so.
		e	The operator shall ensure that the training programme is conducted safely and without unacceptable risk to the equipment and personnel or third parties.	e	The operator shall ensure that the training programme is conducted safely and without unacceptable risk to the equipment and personnel or third parties.
		g	The operator shall ensure that training in aircraft procedures is carried out in either an aircraft of the type to be used by that crew member or in an appropriate synthetic training device (STD).	g	The operator shall ensure that training in aircraft procedures is carried out in either an aircraft of the type to be used by that crew member or in an appropriate synthetic training device (STD).
		h	Training programmes for flight crew shall include knowledge and skills related to the operational use of head-up display (HUD) and/or enhanced vision systems (EVS) for those aircraft so equipped.	h	Training programmes for flight crew shall include knowledge and skills related to the operational use of head-up display (HUD) and/or enhanced vision systems (EVS) for those aircraft so equipped.
		<b>135.955</b>	<b>Security training programme</b>	<b>121.955</b>	<b>Security training programme</b>
		a	The operator shall establish and maintain a security training programme to ensure that any crew member is able to take appropriate action to prevent acts of unlawful interference and to minimise the consequences of such occurrences should they occur.	a	The operator shall establish and maintain a security training programme to ensure that any crew member is able to take appropriate action to prevent acts of unlawful interference and to minimise the consequences of such occurrences should they occur.
		b	The programme shall acquaint staff members with preventive measures in relation to passengers, baggage, cargo, equipment, stores and supplies intended	b	The programme shall acquaint staff members with preventive measures in relation to passengers, baggage, cargo, equipment, stores and supplies intended



						for carriage on an aircraft so that they can contribute to the prevention of acts of unlawful interference.				for carriage on an aircraft so that they can contribute to the prevention of acts of unlawful interference.
				c		The security training programme shall be appropriate to the size of aircraft operated and the type of air operations carried out by the operator.		c		The security training programme shall be appropriate to the size of aircraft operated and the type of air operations carried out by the operator.
				d		The programme shall include the following elements:		d		The programme shall include the following elements:
				1		Determination of the seriousness of any consequence; and		1		Determination of the seriousness of any consequence; and
				2		Crew communication and coordination; and		2		Crew communication and coordination; and
				3		Appropriate self defence responses; and		3		Appropriate self defence responses; and
				4		Use of non-lethal protective devices assigned to crew members, where specifically approved by the Director; and		4		Use of non-lethal protective devices assigned to crew members, where specifically approved by the Director; and
				5		Understanding of the behaviour of terrorists so as to facilitate the ability of crew members to cope with hijacker behaviour and passenger responses; and		5		Understanding of the behaviour of terrorists so as to facilitate the ability of crew members to cope with hijacker behaviour and passenger responses; and
				6		Live situational training exercises regarding various threat conditions; and		6		Live situational training exercises regarding various threat conditions; and
				7		Flight deck procedures to protect the aeroplane; and		7		Flight deck procedures to protect the aeroplane; and
				8		Aeroplane search procedures and guidance on least-risk bomb locations where practicable.		8		Aeroplane search procedures and guidance on least-risk bomb locations where practicable.
						<i>Note: Approval of the security training programme by the Director may be required under applicable security legislation.</i>				<i>Note: Approval of the security training programme by the Director may be required under applicable security legislation.</i>
					<b>135.960</b>	<b>Training equipment</b>		<b>121.960</b>		<b>Training equipment</b>
				a		The operator may, with the approval of the Director, utilise synthetic training devices (STDs) to complete part of the recurrent flight training required within its training programme. The operator shall ensure that each aircraft flight simulator or other synthetic training device used in its training programme is specified in the operations manual, and is of an appropriate type for the training being undertaken. STDs shall only be used for those parts of the checks for which their use has been specifically approved.		a		The operator may, with the approval of the Director, utilise synthetic training devices (STDs) to complete part of the recurrent flight training required within its training programme. The operator shall ensure that each aircraft flight simulator or other synthetic training device used in its training programme is specified in the operations manual, and is of an appropriate type for the training being undertaken. STDs shall only be used for those parts of the checks for which their use has been specifically approved.
				b		When conducting training that requires equipment or resources that are not used solely for training, the operator shall ensure that sufficient access is available to the equipment or resources to enable the training to be completed;		b		When conducting training that requires equipment or resources that are not used solely for training, the operator shall ensure that sufficient access is available to the equipment or resources to enable the training to be completed;
				1		without planned interruption, and		1		without planned interruption, and
				2		in an environment that is conducive to the objective and safety of the task.		2		in an environment that is conducive to the objective and safety of the task
					<b>135.965</b>	<b>Synthetic training devices</b>		<b>121.965</b>		<b>Synthetic training devices</b>
				a		The operator shall ensure that each synthetic training device (STD) on which flight-time credit may be accrued is specifically approved by the Director for:		a		The operator shall ensure that each synthetic training device (STD) on which flight-time credit may be accrued is specifically approved by the Director for:
				1		use by the operator; and		1		use by the operator; and
				2		the aircraft type and, if applicable, the particular variant within that type, for which the training or check is being conducted; and		2		the aeroplane type and, if applicable, the particular variant within that type, for which the training or check is being conducted; and
				3		the particular manoeuvre, procedure, or crew member function involved.		3		the particular manoeuvre, procedure, or crew member function involved.
				b		The operator shall ensure that each STD where flight time credit may be accrued:		b		The operator shall ensure that each STD where flight time credit may be accrued:
				1		maintains the performance, functional, and other characteristics that are required for approval; and		1		maintains the performance, functional, and other characteristics that are required for approval; and
				2		is modified to conform with any modification made to the aircraft being simulated that results in changes to performance, functional, or other characteristics required for approval; and		2		is modified to conform with any modification made to the aircraft being simulated that results in changes to performance, functional, or other characteristics required for approval; and
				3		is given a daily functional pre-flight check before being used and any discrepancy is logged by the appropriate flight crew		3		is given a daily functional pre-flight check before being used and any discrepancy is logged by the appropriate



						supervisor or instructor at the end of each training or check flight.				flight crew supervisor or instructor at the end of each training or check flight.
				c		An approved STD may be used by more than one operator provided it is specifically approved for use by each operator.		c		An approved STD may be used by more than one operator provided it is specifically approved for use by each operator.
					<b>135.970</b>	<b>Training instructors</b>		<b>121.970</b>		<b>Training instructors</b>
				a		The operator shall ensure that the training programme specifies:		a		The operator shall ensure that the training programme specifies:
				1		the minimum knowledge, qualifications and experience required of any training instructor or supervisor; and		1		the minimum knowledge, qualifications and experience required of any training instructor or supervisor; and
				2		the type of training, practice or supervision that each instructor is entitled to provide; and		2		the type of training, practice or supervision that each instructor is entitled to provide; and
				3		the aircraft type that each instructor is entitled to give instruction or supervision on.		3		the aircraft type that each instructor is entitled to give instruction or supervision on.
				b		Each training instructor shall be provided with a copy of the training programme, the competency assessment programme and such parts of the operations manual as may apply.		b		Each training instructor shall be provided with a copy of the training programme, the competency assessment programme and such parts of the operations manual as may apply.
					<b>135.975</b>	<b>Crew member training programme</b>		<b>121.975</b>		<b>Crew member training programme</b>
				a		The operator shall ensure that the training programme required under 135.950(a) includes initial and recurrent training, as applicable to the role of the crew member.		a		The operator shall ensure that the training programme required under 121.950(a) includes initial and recurrent training as applicable to the crew member
				b		The operator shall ensure the training programme contains segments for:		b		The operator shall ensure the training programme contains segments for:
				1		introduction training; and		1		introduction training; and
				2		transition training; and		2		transition training; and
				3		upgrade training; and		3		upgrade training; and
				4		recurrent training.		4		recurrent training.
				c		Throughout the training programme applicable to an aircraft type, the operator shall provide crew with an aircraft flight manual, or equivalent, containing the normal, abnormal and emergency procedures relating to the operation of the aircraft. The manual shall include details of the aircraft systems and of the checklists to be used. The design of the manual shall observe human factors principles. The aircraft flight manual shall remain available to crew members while they are assigned to operate that aircraft type.		c		Throughout the training programme applicable to an aeroplane type, the operator shall provide crew with an aeroplane flight manual containing the normal, abnormal and emergency procedures relating to the operation of the aeroplane. The manual shall include details of the aeroplane systems and of the checklists to be used. The design of the manual shall observe human factors principles. The aeroplane flight manual shall remain available to crew members while they are assigned to operate that aeroplane type.
				d		The operator may include in the crew member training programme for flight crew, the use of an aircraft for manoeuvres and training that are acceptable to the Director.		d		The operator may include in the crew member training programme for flight crew, the use of an aeroplane for manoeuvres and training that are acceptable to the Director.
					<b>135.980</b>	<b>Pilot training requirements</b>		<b>121.980</b>		<b>Pilot training requirements</b>
				a		The operator shall ensure that the training programme specifies the minimum standards of qualification and experience required of pilots for each type of flying operation conducted by the operator, including the requirements for entry into conversion or type training courses or other role specific training.		a		The operator shall ensure that the training programme specifies the minimum standards of qualification and experience required of pilots for each type of flying operation conducted by the operator, including the requirements for entry into conversion or type training courses or other role specific training.
				b		The operator shall ensure that when establishing pilot training requirements at least the following factors shall be taken into account:		b		The operator shall ensure that when establishing pilot training requirements at least the following factors shall be taken into account:
				1		the pilot's flying experience; and		1		the pilot's flying experience; and
				2		the availability and experience of other crew members; and		2		the availability and experience of other crew members; and
				3		the influence of terrain and obstructions on departure and approach procedures at the aerodromes and alternate aerodromes that may be used; and		3		the influence of terrain and obstructions on departure and approach procedures at the aerodromes and alternate aerodromes that may be used; and
				4		particular instrument approach procedures that may be required; and		4		particular instrument approach procedures that may be required; and
				5		the type and dimensions of runways that may be used, in relation to the performance characteristics of the aircraft; and		5		the type and dimensions of runways that may be used, in relation to the performance characteristics of the aeroplane; and
				6		seasonal meteorological conditions and the reliability of meteorological		6		seasonal meteorological conditions and the reliability of meteorological

						observations, reports and forecasts in the route network; and				observations, reports and forecasts in the route network; and
					7	the adequacy of any information that may be available regarding aerodrome conditions; and			7	the adequacy of any information that may be available regarding aerodrome conditions; and
					8	any likely air traffic procedures that may be encountered and in particular, those procedures that may be outside the pilot's previous experience; and			8	any likely air traffic procedures that may be encountered and in particular, those procedures that may be outside the pilot's previous experience; and
					9	influence of terrain and local geographic features on route conditions and the extent of assistance available from navigational aids and air-to-ground communication facilities; and			9	influence of terrain and local geographic features on route conditions and the extent of assistance available from navigational aids and air-to-ground communication facilities; and
					10	the extent to which it is possible for the pilot to become familiar with unusual aerodrome procedures and features of the route by means of ground instruction and training devices.			10	the extent to which it is possible for the pilot to become familiar with unusual aerodrome procedures and features of the route by means of ground instruction and training devices.
					c	Recurrent training shall be provided, at least annually, to ensure that pilots maintain knowledge of:			c	Recurrent training shall be provided, at least annually, to ensure that pilots maintain knowledge of:
					1	operational procedures; and			1	operational procedures; and
					2	aircraft systems and procedures.			2	aircraft systems and procedures.
					<b>135.985</b>	<b>Safety and emergency procedures training</b>			<b>121.985</b>	<b>Safety and emergency procedures training</b>
					a	The operator shall ensure each crew member completes training in safety and emergency procedures, as appropriate to the emergency equipment carried on the aircraft or worn by crew members, and the nature of the flying operations being carried out.			a	The operator shall ensure each crew member completes training in safety and emergency procedures, as appropriate to the emergency equipment carried on the aircraft or worn by crew members, and the nature of the flying operations being carried out.
					b	Initial training in all relevant safety and emergency procedures shall be completed prior to any flying operations or aircraft flying training being commenced.			b	Initial training in all relevant safety and emergency procedures shall be completed prior to any flying operations or aircraft flying training being commenced.
					c	Recurrent training in safety and emergency procedures shall be carried out on at least an annual basis, and shall include the following elements (where appropriate to the aircraft type or type of operation):			c	Recurrent training in safety and emergency procedures shall be carried out on at least an annual basis, and shall include the following elements (where appropriate to the aircraft type or type of operation):
					1	Annually:			1	Annually:
					i	actual donning of a lifejacket;			i	actual donning of a lifejacket;
					ii	actual donning of protective breathing equipment;			ii	actual donning of protective breathing equipment;
					iii	actual handling of fire extinguishers;			iii	actual handling of fire extinguishers;
					iv	instruction on the location and use of all emergency and safety; equipment carried on the aircraft, including first aid and universal precaution kits and automated external defibrillators;			iv	instruction on the location and use of all emergency and safety; equipment carried on the aircraft, including first aid and universal precaution kits and automated external defibrillators;
					v	operation of all types of exits;			v	operation of all types of exits;
					vi	security procedures;			vi	security procedures;
					2	Within any three year period:			2	Within any three year period:
					i	demonstration of the method used to operate a slide, where fitted;			i	demonstration of the method used to operate a slide, where fitted;
					ii	actual use of fire-fighting equipment;			ii	actual use of fire-fighting equipment;
					iii	effects of smoke in an enclosed area and use of any relevant equipment;			iii	effects of smoke in an enclosed area and use of any relevant equipment;
					iv	actual handling of flares (use of or simulated use of);			iv	actual handling of flares (use of or simulated use of);
					v	demonstration in use of liferaft, where fitted or carried;			v	demonstration in use of liferaft, where fitted or carried;
					vi	ditching procedures training, as appropriate.			vi	ditching procedures training, as appropriate.
					<b>135.990</b>	<b>Crew resource management requirements</b>			<b>121.990</b>	<b>Crew resource management training requirements</b>
					a	The operator shall ensure each crew member training segment includes:			a	The operator shall ensure each crew member training segment includes:
					1	crew resource management training applicable to each position for which training is provided; and			1	crew resource management training applicable to each position for which training is provided; and
					2	training in the use of each crew member's crew resource management skills; and			2	training in the use of each crew member's crew resource management skills; and
					3	crew resource management training for each crew member in accordance with the training programme required by paragraph 135.950 and an evaluation of			3	crew resource management training for each crew member in accordance with the training programme required by paragraph 121.950 and an evaluation of

							the skills and proficiency of each person being trained.				the skills and proficiency of each person being trained.
					b		for flight crew members this training and evaluation shall be conducted in a STD approved by the Director, where available.		b		for flight crew members this training and evaluation shall be conducted in a STD approved by the Director, where available.
				135.995			Threat and error management	121.995			Threat and error management
							The operator shall ensure each crew member training programme includes training in human performance and human factors, and includes the principles of threat and error management.				The operator shall ensure each crew member training programme includes training in human performance and human factors, and includes the principles of threat and error management.
				135.1000			Dangerous goods	121.1000			Dangerous goods
					a		The operator shall ensure each crew member training programme provides for training in the risks associated with the carriage of dangerous goods. This training should be carried out on a recurrent basis, at least every two years, and shall include at least the following elements (whether or not the operator holds an approval to carry dangerous goods):		a		The operator shall ensure each crew member training programme provides for training in the risks associated with the carriage of dangerous goods. This training should be carried out on a recurrent basis, at least every two years, and shall include at least the following elements (whether or not the operator holds an approval to carry dangerous goods):
					1		an understanding of the requirements that apply to the carriage of dangerous goods; and		1		an understanding of the requirements that apply to the carriage of dangerous goods; and
					2		an awareness of those items that are classified as dangerous_goodsand		2		an awareness of those items that are classified as dangerous_goodsand
					3		an awareness of those dangerous goods which are permitted on board the aircraft, whether in the cabin or as cargoland		3		an awareness of those dangerous goods which are permitted on board the aircraft, whether in the cabin or as cargoland
					4		an understanding of how dangerous goods should be labelled and marked; and		4		an understanding of how dangerous goods should be labelled and marked; and
					5		emergency procedures to be followed in the event of a dangerous goods incident.		5		emergency procedures to be followed in the event of a dangerous goods incident.
					b		Where the operator holds an approval for the carriage of dangerous goods, staff shall receive additional training, appropriate to their responsibilities, in order to ensure compliance with GAR Part 92.		b		Where the operator holds an approval for the carriage of dangerous goods, staff shall receive additional training, appropriate to their responsibilities, in order to ensure compliance with GAR Part 92.
								121.1005			Crew member introduction segment
									a		The operator shall ensure that each crew member who is not qualified and currently serving as a crew member in an operation authorised by the operator's certificate, completes the introduction segment of its training programme:
									1		in a structured manner; and
									2		in accordance with the syllabus required by paragraph 121.950.
									b		The operator may vary the syllabus for individual crew members if:
									1		the varied training is recorded in the crew member's record of training; and
									2		the operator certifies the variation made and the reasons for the variation in the crew member's record of training.
								121.1010			Crew member transition segment
									a		The operator shall ensure that personnel already qualified and serving as crew members on a commercial air transport operation authorised by the operator's certificate, completes the transition segment of its training programme in accordance with the syllabus required by paragraph 121.950 if:
									1		the crew member is changing from one aeroplane type or variant to another type or variant; or
									2		new procedures or equipment are introduced on an existing aeroplane type or variant.
									b		The transition segment shall address:
									1		the use of all safety and emergency equipment and procedures applicable to the aeroplane type or variant; and

								2	new procedures or equipment introduced on the existing aeroplane type or variant.
							121.1015		<b>Crew member upgrade segment</b>
								a	The operator shall ensure that each of its crew members completes the upgrade segment of its training programme in accordance with the syllabus required by paragraph 121.950, if the crew member is changing from one crew position to a more responsible crew position on the same aeroplane type or variant.
								b	The operator shall ensure its upgrade segment addresses the use of all safety and emergency equipment and procedures applicable to the crew position on the aeroplane for which the upgrade is sought and shall:
								1	include training on human factors, and crew resource management, with particular emphasis on the changes brought about by the different crew position; and
								2	include training in supervisory skills.
							121.1020		<b>Crew member recurrent segment</b>
								a	The operator shall ensure that each of its crew members is adequately trained, current and proficient for each aeroplane, crew member position and type of operation, in which the crew member serves.
								b	The operator shall ensure that each crew member completes the recurrent segment of its training programme:
								1	in a structured manner; and
								2	in accordance with the training programme required by paragraph 121.950:
							121.1025		<b>Consolidation</b>
									The operator shall ensure, after each crew member completes an introduction, transition or upgrade segment of its training programme the crew member undergoes consolidation by acquiring:
								a	the appropriate operating experience:
								1	for a pilot, required by paragraph 121.1030; and
								2	for cabin crew, required by paragraph 121.1060; and
								b	the appropriate line-operating flight time:
								1	for a pilot, required by paragraph 121.1035; and
								2	for a flight engineer, required by paragraph 121.1040.
							121.1030		<b>Pilot operating experience</b>
								a	The operator shall ensure that each person performing the functions of a pilot holds the licences and ratings required to be held under GAR Part 61 and has completed, on the type and variant of the aeroplane and in the crew member position that the person will serve in, the following minimum operating experience as applicable:
								1	for the introduction segment
								i	for multi-engine aeroplanes powered by turbopropeller engines - 20 hours and 10 take-offs and landings; and
								ii	for turbojet and turbofan powered aeroplanes - 25 hours and 10 take-offs and landings; and
								iii	for all aeroplanes, including those referred to in paragraphs (a)(1)(i) and (ii) - four operating cycles of which at least two shall be as the pilot flying; and
								2	for the transition or upgrade segment:
								i	for multi-engine aeroplanes powered by turbopropeller engines - 12 hours and 8 take-offs and landings^and



								ii	for turbojet and turbofan powered aeroplanes - 10 hours and 8 take-offs and landings, or 20 hours and 10 take-offs and landings for pilot-in-command; and
								iii	for all aeroplanes, including those referred to in paragraphs (a)(2)(i) and (ii) - four operating cycles of which at least two shall be as the pilot flying.
								b	The operating experience required by paragraph (a) shall be acquired on the appropriate aeroplane type as follows:
								1	After satisfactory completion of the appropriate ground and flight training for the aeroplane type and crew member position in accordance with GAR Part 61.
								2	Under the supervision of an instructor who meets the requirements in paragraph 121.970.
								3	Under commercial air transport operating conditions and:
								i	simulated in a flight simulator for the aeroplane type; or
								ii	conducted in the aeroplane type.
								c	For the purpose of paragraph (b)(3)(ii) the instructor shall:
								1	act as pilot-in-command at all times; and
								2	occupy a pilot station when supervising a pilot acquiring the experience necessary for a pilot-incommand position, until the qualifying pilot has:
								i	made at least two take-offs and landings in the aeroplane type for which the pilot-in-command qualification is required; and
								ii	demonstrated to the instructor the ability to perform the duties of a pilot-in-command for that aeroplane type; and
								iii	if the qualifying pilot-in-command is completing introduction or upgrade training, demonstrated to a flight examiner the ability to satisfactorily perform the prescribed duties during at least one complete operating cycle.
								d	The instructor may occupy the observer's seat upon the requirements of paragraph (c)(2) being met.
							121.1035		<b>Pilot line-operating flight time</b>
								a	The operator shall ensure that after each pilot completes an introduction or transition segment of its training programme, the pilot completes the line-operating flight time required by paragraph (b) under the supervision of a suitably qualified instructor.
								b	The combined total of line-operating flight time and the operating experience required by paragraph 121.1025 shall be as specified in the operations manual.
								c	The pilot shall operate exclusively on the appropriate aeroplane type while completing line-operating flight time experience unless refresher training that is acceptable to the Director is provided and satisfactorily passed.
							121.1040		<b>Flight engineer operating requirements</b>
								a	The operator shall ensure that each person performing the functions of a flight engineer, flight engineer instructor or flight engineer examiner holds licences and ratings in accordance with GAR Part 63.
								b	The operator shall ensure that each person performing the functions of a flight engineer, flight engineer instructor, or flight engineer examiner shall carry out appropriate training as approved by the Director.
								c	The operator shall ensure that a recently qualified flight engineer shall operate exclusively on the appropriate aeroplane



										type while completing line-operating flight time experience unless training that is acceptable to the Director is provided and satisfactorily passed.
					<b>135.1045</b>			<b>Cabin crew training</b>	<b>121.1045</b>	<b>Cabin crew training</b>
								The operator shall ensure that:		The operator shall ensure that:
					a			prior to performing the functions of cabin crew on a commercial air transport operation, each person has satisfactorily completed the appropriate ground and flight training for the aeroplane type and crew member position.	a	prior to performing the functions of cabin crew on a commercial air transport operation, each person has satisfactorily completed the appropriate ground and flight training for the aeroplane type and crew member position.
					b			the training for cabin crew shall address, as appropriate:	b	the training for cabin crew shall address, as appropriate:
					1			the authority structure of the aeroplane crew; and	1	the authority structure of the aeroplane crew; and
					2			crew member assignments, functions and responsibilities during emergencies; and	2	crew member assignments, functions and responsibilities during emergencies; and
					3			procedures for passenger handling, including emergency procedures and procedures to be followed in dealing with special classes of passengers according to the operations manual; and	3	procedures for passenger handling, including emergency procedures and procedures to be followed in dealing with special classes of passengers according to the operations manual; and
					4			briefing of passengers; and	4	briefing of passengers; and
					5			proper use of cabin equipment and controls; and	5	proper use of cabin equipment and controls; and
					6			location of safety and emergency equipment available for use by cabin or other crew members; and	6	location of safety and emergency equipment available for use by cabin or other crew members; and
					7			location and use of oxygen equipment; and	7	location and use of oxygen equipment; and
					8			location and use of all normal and emergency exits, including evacuation slides and escape ropes; and	8	location and use of all normal and emergency exits, including evacuation slides and escape ropes; and
					9			use of all safety and emergency equipment available on the aircraft, in accordance with 135.985; and	9	use of all safety and emergency equipment available on the aircraft, in accordance with 121.985; and
					10			awareness of dangerous goods in accordance with 135.1000; and	10	awareness of dangerous goods in accordance with 121.1000; and
					11			knowledge of human performance as related to passenger cabin safety duties, including flight crew/cabin crew co-ordination; and	11	knowledge of human performance as related to passenger cabin safety duties, including flight crew/cabin crew co-ordination; and
					12			GARs and supporting documentation; and	12	GARs and supporting documentation; and
					13			the operator's documentation and procedures.	13	the operator's documentation and procedures.
									<b>121.1060</b>	<b>Cabin crew operating experience</b>
									a	Following completion of the cabin crew training required under 121.1045, the operator shall ensure that each person performing the functions of a cabin crew member completes a minimum of 5 hours line-operating flight time including at least two operating cycles:
									1	on the type and variant of the aeroplane, and
									2	in the crew member position that the person will serve in, for the introduction or transition training segment of its training programme.
									b	For the purpose of paragraph (a), up to 2.5 hours of the required line-operating flight time may be conducted in a full scale, type-specific cabin training device, where available.
									c	The operating experience required by paragraph (a) shall be acquired under the supervision of an appropriately qualified trainer of cabin crew in accordance with 121.970.
					<b>135.1065</b>			<b>Manoeuvres requiring a synthetic training device</b>	<b>121.1065</b>	<b>Manoeuvres requiring a synthetic training device</b>
					a			The operator shall be required to carry out emergency and non-normal manoeuvres during flight crew training or competency checking. Where such manoeuvres:	a	The operator shall be required to carry out emergency and non-normal manoeuvres during flight crew training or competency checking. Where such manoeuvres:
					1			need to be carried out in close proximity to the surface; or	1	need to be carried out in close proximity to the surface; or

					2	involve the need to simulate failure of an aircraft system; or			2	involve the need to simulate failure of an aircraft system; or
					3	involve actions that cannot be realistically carried out in the aircraft; or			3	involve actions that cannot be realistically carried out in the aeroplane
					4	if mishandled, create an unacceptable risk to the aircraft, crew members or third parties;			4	if mishandled, create an unacceptable risk to the aeroplane, crew members or third parties;
						the operator shall specify, in detail, how such training or competency checking will be carried out.				the operator shall specify, in detail, how such training or competency checking will be carried out.
				b		Where a synthetic training device representative of the aircraft type is available, such training shall be carried out in that training device.		b		Where a synthetic training device representative of the aeroplane type is available, such training shall be carried out in that training device.
				c		Where a synthetic training device is not available, procedures shall be developed to simulate such manoeuvres in the aircraft to the defined limit past which the safety of the aircraft, crew members or third parties may be compromised. Continuation of the training in such manoeuvres past that defined limit shall be accomplished by ground briefing.		c		Where a synthetic training device is not available, procedures shall be developed to simulate such manoeuvres in the aeroplane to the defined limit past which the safety of the aeroplane, crew members or third parties may be compromised. Continuation of the training in such manoeuvres past that defined limit shall be accomplished by ground briefing.
					<b>135.1070</b>	<b>Training records</b>			<b>121.1070</b>	<b>Training records</b>
				a		The operator shall maintain accurate records of all required training undertaken by its operating staff, including all crew members.		a		The operator shall maintain accurate records of all required training undertaken by its operating staff, including all crew members.
				b		The training programme shall include specimen forms for recording any training undertaken.		b		The training programme shall include specimen forms for recording any training undertaken.
				c		The records shall include:		c		The records shall include:
				1		the date that the training was carried out; and		1		the date that the training was carried out; and
				2		details of the training conducted; and		2		details of the training conducted; and
				3		the name and qualifications of the instructor responsible for carrying out the training; and		3		the name and qualifications of the instructor responsible for carrying out the training; and
				4		the date and particulars of any decision to suspend or stop training a crew member.		4		the date and particulars of any decision to suspend or stop training a crew member.
				d		Training records shall be maintained for each crew member as long as they continue to be employed or engaged by the operator, and shall be retained for the periods specified in 91.1265.		d		Training records shall be maintained for each crew member as long as they continue to be employed or engaged by the operator, and shall be retained for the periods specified in 91.1265.

Part 91	Requirement	Part 135	Requirement	Part 121	Requirement
<b>Subpart J - Crew Member Competency Requirements</b>					
		<b>135.1100</b>	<b>Competency assessment programme</b>	<b>121.1100</b>	<b>Competency assessment programme</b>
		a	The operator shall establish and control a competency assessment programme in accordance with this Subpart.	a	The operator shall establish and control a competency assessment programme in accordance with this Subpart.
		b	Details of the competency assessment programme shall be contained in the operations manual and shall be approved by the Director.	b	Details of the competency assessment programme shall be contained in the operations manual and shall be approved by the Director.
		c	The operator shall ensure that each crew member that is subject to a competency assessment is assessed in accordance with the programme.	c	The operator shall ensure that each crew member that is subject to a competency assessment is assessed in accordance with the programme.
		d	The competency assessment programme shall take account of at least the following areas, as applicable to the responsibilities of the crew member:	d	The competency assessment programme shall take account of at least the following areas, as applicable to the responsibilities of the crew member:
		1	the provisions of the appropriate GARs and the operations specifications and operations manual; and	1	the provisions of the appropriate GARs and the operations specifications and operations manual; and
		2	technical details of each aeroplane type and variant operated, including aeroplane systems, performance and operating procedures, such as may apply; and	2	technical details of each aeroplane type and variant operated, including aeroplane systems, performance and operating procedures, such as may apply; and
		3	special flight operations as appropriate; and	3	special flight operations as appropriate; and
		4	new equipment, procedures, and techniques.	4	new equipment, procedures, and techniques.
		<b>135.1105</b>	<b>Flight crew competency checks</b>	<b>121.1105</b>	<b>Flight crew competency checks</b>
		a	The operator shall ensure that the competency assessment programme provides for at least the following assessments of flight crew competency:	a	The operator shall ensure that the competency assessment programme provides for at least the following assessments of flight crew competency:
		1	Operator proficiency check (OPC);	1	Operator proficiency check (OPC);
		2	Operator line check (OLC);	2	Operator line check (OLC);
		3	Safety and emergency equipment check;	3	Safety and emergency equipment check;
		4	Route and aerodrome competence; and	4	Route and aerodrome competence; and
		5	Such additional right hand seat/left hand seat checking as may be required.	5	Such additional right hand seat/left hand seat checking as may be required.
		b	Where it is intended to revalidate or renew the aircraft type or class rating at the same time as an operator proficiency check, additional elements of the check must be specified within the competency assessment programme.	b	Where it is intended to revalidate or renew the aircraft type or class rating at the same time as an operator proficiency check, additional elements of the check must be specified within the competency assessment programme.
		<b>135.1110</b>	<b>Competency checks for pilots operating in the single pilot role under instrument flight rules (IFR) or at night</b>		
			The competency checks required under 135.1115, 135.1120, 135.1125 and 135.1130 shall be completed in the single pilot role.		
		<b>135.1115</b>	<b>Operator proficiency check (OPC)</b>	<b>121.1115</b>	<b>Operator proficiency check (OPC)</b>
		a	The OPC shall be valid for a period of six calendar months in addition to the remainder of the month of issue; if the OPC is conducted within the final 3 calendar months of the previous OPC with the same operator, the OPC shall be valid from the date of issue until 6 calendar months from the expiry of the previous OPC.	a	The OPC shall be valid for a period of six calendar months in addition to the remainder of the month of issue; if the OPC is conducted within the final 3 calendar months of the previous OPC with the same operator, the OPC shall be valid from the date of issue until 6 calendar months from the expiry of the previous OPC.
		b	The OPC shall ensure that each flight crew member demonstrates competence in carrying out normal, abnormal and emergency manoeuvres.	b	The OPC shall ensure that each flight crew member demonstrates competence in carrying out normal, abnormal and emergency manoeuvres.
		c	The OPC for each flight crew member shall be conducted as part of a normal flight crew complement.	c	The OPC for each flight crew member shall be conducted as part of a normal flight crew complement.
		d	Where flight crew members are required to operate in accordance with the instrument flight rules, the OPC shall be conducted without external visual reference.	d	Where flight crew members are required to operate in accordance with the instrument flight rules, the OPC shall be conducted without external visual reference.
		e	The OPC for pilots of aeroplanes shall include the following elements unless such manoeuvres are not required by virtue of the aeroplane type:	e	The OPC shall include the following elements unless such manoeuvres are not required by virtue of the aeroplane type:

				1	Rejected take off (provided that where an approved flight simulator is not available, this shall be conducted by touch drills only); and			1	Rejected take off (provided that where an approved flight simulator is not available, this shall be conducted by touch drills only); and
				2	Take off with engine failure between V1 and V2, or as soon as can be safely made; and			2	Take off with engine failure between V1 and V2, or as soon as can be safely made; and
				3	Precision instrument approach to approved minima with, for multi engine aeroplanes, one engine inoperative; and			3	Precision instrument approach to approved minima with, for multi engine aeroplanes, one engine inoperative; and
				4	Non-precision approach to approved minima; and			4	Non-precision approach to approved minima; and
				5	Missed approach from minima, flown by reference to instruments only and with (for multi engine aeroplanes) one engine inoperative; and			5	Missed approach from minima, flown by reference to instruments only and with (for multi engine aeroplanes) one engine inoperative; and
				6	Landing with one engine inoperative (for multi engine aeroplanes);and			6	Landing with one engine inoperative (for multi engine aeroplanes).
				7	For single engine aeroplanes a practice forced landing.				
				8	In addition to the elements prescribed in subparagraphs (e)(1) to (7) above, every other check shall include the mandatory items of the proficiency checks contained in GAR Part 61.			7	In addition to the elements prescribed in subparagraphs (e)(1) to (6) above, every other check shall include the mandatory items of the proficiency checks contained in GAR Part 61.
				f	Where an approved flight simulator is not available and an OPC must be completed on the aircraft type, engine failures must be simulated and the conditions for simulating engine failure specified in the training and competency assessment programmes.			f	Where an approved flight simulator is not available and an OPC must be completed on the aircraft type, engine failures must be simulated and the conditions for simulating engine failure specified in the training and competency assessment programmes.
				g	Where there is no requirement for pilots to operate under the Instrument Flight Rules, an aeroplane OPC may be conducted without the elements listed at (e)(3) to (e)(5) above, but a visual approach and go-around must still be conducted and for a multiengine aeroplane that element shall be flown with one engine inoperative.				
				h	The OPC for pilots of helicopters who are required to conduct IFR operations shall include the following elements (unless such manoeuvres are not required by virtue of the helicopter type):				
				1	precision approach to approved minima with simulated failure of one engine (for multi-engine helicopters); and				
				2	Go-around from minima, flown by reference to instruments, and in the case of multi-engined helicopters with the simulated failure of one engine; and				
				3	Non precision approach to approved minima; and				
				4	Landing with a simulated failure of one or more engines; and				
				5	Where appropriate, approach with flight control system/flight director system malfunctions, and other flight instrument and navigation equipment failures.				
				i	The OPC for helicopter pilots shall include the following checks of abnormal and emergency procedures over a three year period, except where inappropriate by virtue of the helicopter type:				
				1	Engine fire;				
				2	Fuselage fire;				
				3	Emergency operation of undercarriage;				
				4	Fuel dumping;				
				5	Engine failure and restart;				
				6	Hydraulic failure;				
				7	Electrical failure;				
				8	Engine failure during take off, before decision point;				
				9	Engine failure after take off, before decision point;				
				10	Engine failure during landing, before decision point;				
				11	Engine failure during landing, after decision point;				
				12	Flight and engine control system malfunctions;				



					13	Recovery from unusual attitudes;				
					14	Landing with one or more engines inoperative;				
					15	IMC auto-rotative techniques;				
					16	Autorotation to a designated area;				
					17	Pilot incapacitation; and				
					18	Directional control malfunctions.				
				j		A helicopter pilot who requires to operate at night under visual meteorological conditions, but who does not hold a current instrument rating, shall be required to hold a current OPC that has been conducted at night.				
					<b>135.1120</b>	<b>Operator line check</b>		<b>121.1120</b>		<b>Operator line check</b>
				a		The operator line check (OLC) shall be valid for a period of twelve calendar months in addition to the remainder of the month of issue; if the OLC is conducted within the final 3 calendar months of the previous OLC with the same operator, the OLC shall be valid from the date of issue until 12 calendar months from the expiry of the previous OLC.		a		The operator line check (OLC) shall be valid for a period of twelve calendar months in addition to the remainder of the month of issue; if the OLC is conducted within the final 3 calendar months of the previous OLC with the same operator, the OLC shall be valid from the date of issue until 12 calendar months from the expiry of the previous OLC.
				b		The OLC shall ensure that each flight crew member demonstrates competence in carrying out normal line operations as specified in the operations manual.		b		The OLC shall ensure that each flight crew member demonstrates competence in carrying out normal line operations as specified in the operations manual.
				c		The OLC for each flight crew member shall be conducted on the aircraft, as part of a normal flight crew complement. The line check shall include preflight and post flight procedures and use of any equipment provided on the aircraft.		c		The OLC for each flight crew member shall be conducted on the aircraft, as part of a normal flight crew complement. The line check shall include preflight and post flight procedures and use of any equipment provided on the aircraft.
					<b>135.1125</b>	<b>Safety and emergency equipment checks</b>		<b>121.1125</b>		<b>Safety and emergency equipment checks</b>
				a		The safety and emergency equipment and procedures check (SEPC) shall be valid for a period of twelve calendar months in addition to the remainder of the month of issue; if the SEPC is conducted within the final 3 calendar months of the previous SEPC with the same operator, the SEPC shall be valid from the date of issue until 12 calendar months from the expiry of the previous SEPC.		a		The safety and emergency equipment and procedures check (SEPC) shall be valid for a period of twelve calendar months in addition to the remainder of the month of issue; if the SEPC is conducted within the final 3 calendar months of the previous SEPC with the same operator, the SEPC shall be valid from the date of issue until 12 calendar months from the expiry of the previous SEPC.
				b		The SEPC may be conducted at the same time as safety and emergency procedures (SEP) training.		b		The SEPC may be conducted at the same time as safety and emergency procedures (SEP) training.
				c		The SEPC shall cover those elements provided by SEP training, including those elements specified at 135.985.		c		The SEPC shall cover those elements provided by SEP training, including those elements specified at 121.985.
					<b>135.1130</b>	<b>Route and aerodrome competence</b>		<b>121.1130</b>		<b>Route and aerodrome competence</b>
				a		Route and aerodrome competence (RAEC) shall remain valid for a period of twelve calendar months in addition to the remainder of the month of issue or the month of the latest operation on the route or to the aerodrome/heliport. If RAEC is revalidated within the final 3 calendar months of the previous RAEC assessment, with the same operator, then RAEC shall be valid from the date of issue until 12 calendar months from the expiry of the previous RAEC.		a		Route and aerodrome competence (RAEC) shall remain valid for a period of twelve calendar months in addition to the remainder of the month of issue or the month of the latest operation on the route or to the aerodrome/heliport. If RAEC is revalidated within the final 3 calendar months of the previous RAEC assessment, with the same operator, then RAEC shall be valid from the date of issue until 12 calendar months from the expiry of the previous RAEC.
				b		RAEC shall ensure that a pilot has sufficient knowledge of the routes and aerodromes/heliports (including alternates) that may be required to be used, including those facilities and procedures that may apply.		b		RAEC shall ensure that a pilot has sufficient knowledge of the routes and aerodromes (including alternates) that may be required to be used, including those facilities and procedures that may apply.
				c		RAEC for a pilot-in-command shall include at least one flight over one route segment and one or more landings at aerodromes/heliports representative of the operations to be flown. Each pilot-in-command shall have made an actual approach into each aerodrome/heliport of landing on the route, accompanied by a pilot who is qualified for the aerodrome or heliport, as a member of the flight crew or as an observer on the flight deck, unless:		c		RAEC for a pilot-in-command shall include at least one flight over one route segment and one or more landings at aerodromes representative of the operations to be flown. Each pilot-in-command shall have made an actual approach into each aerodrome of landing on the route, accompanied by a pilot who is qualified for the aerodrome, as a member of the flight crew or as an observer on the flight deck, unless:
				1		the approach to the aerodrome is not over difficult terrain and the instrument approach procedures and aid available are similar to those with which the pilot is		1		the approach to the aerodrome is not over difficult terrain and the instrument approach procedures and aid available are similar to those with which the pilot is



						familiar, and a margin approved by the Director is added to the normal operating minima, or there is reasonable certainty that approach and landing can be made in visual meteorological conditions; or				familiar, and a margin approved by the Director is added to the normal operating minima, or there is reasonable certainty that approach and landing can be made in visual meteorological conditions; or
					2	the descent from the initial approach altitude can be made by day in visual meteorological conditions; or			2	the descent from the initial approach altitude can be made by day in visual meteorological conditions; or
					3	the operator qualifies the pilot-in-command to land at the aerodrome/heliport concerned by means of an adequate pictorial presentation.			3	the operator qualifies the pilot-in-command to land at the aerodrome concerned by means of an adequate pictorial presentation.
					d	RAEC shall include knowledge of the following elements:			d	RAEC shall include knowledge of the following elements:
					1	terrain and minimum safe altitudes; and			1	terrain and minimum safe altitudes; and
					2	seasonal meteorological conditions that may apply; and			2	seasonal meteorological conditions that may apply; and
					3	meteorological, communication and air traffic facilities, services and procedures; and			3	meteorological, communication and air traffic facilities, services and procedures; and
					4	search and rescue procedures; and			4	search and rescue procedures; and
					5	navigational facilities and procedures, including any long-range navigation procedures, associated with the route along which the flight is to take place; and			5	navigational facilities and procedures, including any long-range navigation procedures, associated with the route along which the flight is to take place; and
					6	procedures applicable to flight paths over heavily populated areas and areas of high air traffic density; and			6	procedures applicable to flight paths over heavily populated areas and areas of high air traffic density; and
					7	aerodrome/heliport obstructions, physical layout and lighting; and			7	aerodrome obstructions, physical layout and lighting; and
					8	approach aids associated with arrival, departure, holding and approach procedures and applicable operating minima.			8	approach aids associated with arrival, departure, holding and approach procedures and applicable operating minima.
					e	Revalidation of route and aerodrome competence shall be carried out by operating on the route or to the aerodrome within the period of validity described in (a). The operator shall not continue to utilise a pilot as a pilot-in-command on a route unless, within the preceding 12 months, the pilot has made at least one trip between the terminal points of that route as a pilot member of the flight crew, or as a check pilot, or as an observer on the flight deck. In the event that more than 12 months elapse in which a pilot has not made such a trip on a route in close proximity and over similar terrain, prior to again serving as a pilot-in-command on that route, that pilot shall re-qualify by means of an assessment provided by a flight examiner.			e	Revalidation of route and aerodrome competence shall be carried out by operating on the route or to the aerodrome within the period of validity described in (a). The operator shall not continue to utilise a pilot as a pilot-in-command on a route unless, within the preceding 12 months, the pilot has made at least one trip between the terminal points of that route as a pilot member of the flight crew, or as a check pilot, or as an observer on the flight deck. In the event that more than 12 months elapse in which a pilot has not made such a trip on a route in close proximity and over similar terrain, prior to again serving as a pilot-in-command on that route, that pilot shall re-qualify by means of an assessment provided by a flight examiner.
					<b>135.1135</b>	<b>Right hand seat / left hand seat checks</b>			<b>121.1135</b>	<b>Right hand seat / left hand seat checks</b>
					a	The competency assessment programme shall specify those pilots that may be required to operate in an alternate pilot seating position and will require left hand/right hand seat competency checks.			a	The competency assessment programme shall specify those pilots that may be required to operate in an alternate pilot seating position and will require left hand/right hand seat competency checks.
					b	Competency checks for alternate pilot seating positions (left hand or right hand seat checks) shall include at least the following elements:			b	Competency checks for alternate pilot seating positions (left hand or right hand seat checks) shall include at least the following elements:
					1	An engine failure during take off; and			1	An engine failure during take off; and
					2	An approach and go-around flown with one engine inoperative; and			2	An approach and go-around flown with one engine inoperative; and
					3	A landing with one engine inoperative.			3	A landing with one engine inoperative.
						When engine-out manoeuvres are carried out in an aircraft, the engine failure must be simulated.				When engine-out manoeuvres are carried out in an aircraft, the engine failure must be simulated.
					c	In addition to the elements specified in (b), each pilot shall also demonstrate knowledge of any procedures that would normally be assigned only to the left hand/right hand seat holder.			c	In addition to the elements specified in (b), each pilot shall also demonstrate knowledge of any procedures that would normally be assigned only to the left hand/right hand seat holder.
					d	When operating in an alternate pilot seating position those checks required for piloting in the normal seating position must be current.			d	When operating in an alternate pilot seating position those checks required for piloting in the normal seating position must be current.
					<b>135.1140</b>	<b>Competency checks for pilots operating more than one type or variant</b>			<b>121.1140</b>	<b>Competency checks for pilots operating more than one type or variant</b>
					a	Pilots operating more than one type or variant of aircraft shall comply with all of			a	Pilots operating more than one type or variant of aircraft shall comply with all of

						the requirements prescribed for each type or variant, unless credits related to the training, checking, and recent experience requirements are approved					the requirements prescribed for each type or variant, unless credits related to the training, checking, and recent experience requirements are approved
					b	Any reduction in checking because of similarities between variants or types must be approved by the Director.			b		Any reduction in checking because of similarities between variants or types must be approved by the Director.
					c	SEP checks must cover all SEP requirements for each type and variant operated.			c		SEP checks must cover all SEP requirements for each type and variant operated.
					<b>135.1145</b>	<b>Flight examiner qualifications</b>			<b>121.1145</b>		<b>Flight examiner qualifications</b>
					a	The operator shall ensure that, except as provided in paragraph (d), each person performing the functions of a flight examiner in its competency assessment programme established under this Part:			a		The operator shall ensure that, except as provided in paragraph (d), each person performing the functions of a flight examiner in its competency assessment programme established under this Part:
					1	is type rated or class rated, as appropriate, in the aircraft used to conduct the operation; and			1		is type rated or class rated, as appropriate, in the aircraft used to conduct the operation; and
					2	is familiar with the types of operations conducted by the operator; and			2		is familiar with the types of operations conducted by the operator; and
					3	is currently qualified to the level of testing being undertaken; and			3		is currently qualified to the level of testing being undertaken; and
					4	completes initial and recurrent training requirements applicable to the testing carried out.			4		completes initial and recurrent training requirements applicable to the testing carried out.
					b	Flight examiners conducting operator proficiency checks (OPC) shall be qualified as a Type Rating Examiner (TRE) or as a Class Rating Examiner (CRE), as appropriate.			b		Flight examiners conducting operator proficiency checks (OPC) shall be qualified as a Type Rating Examiner (TRE) or as a Class Rating Examiner (CRE), as appropriate.
					c	Flight examiners conducting operator line checks (OLC) shall be:			c		Flight examiners conducting operator line checks (OLC) shall be:
					1	nominated by the operator in accordance with the approved competency assessment programme; and			1		nominated by the operator in accordance with the approved competency assessment programme; and
					2	provided with suitable training, as specified within the approved training programme; and			2		provided with suitable training, as specified within the approved training programme; and
					3	acceptable to the Director.			3		acceptable to the Director.
					d	Where the competency assessment referred to in paragraph (a) above is carried out in a flight simulator, the person who is performing the functions of a flight examiner shall:			d		Where the competency assessment referred to in paragraph (a) above is carried out in a flight simulator, the person who is performing the functions of a flight examiner shall:
					1	have satisfactorily completed a competency check as pilot-in-command in a type of operation to which this GAR Part applies; and			1		have satisfactorily completed a competency check as pilot-in-command in a type of operation to which this GAR Part applies; and
					2	have an appropriate flight examiner rating (TRE or CRE); and			2		have an appropriate flight examiner rating (TRE or CRE); and
					3	complete initial and recurrent training requirements applicable to the testing carried out.			3		complete initial and recurrent training requirements applicable to the testing carried out.
					<b>135.1150</b>	<b>Flight instructor and flight examiner competency checks</b>			<b>121.1150</b>		<b>Flight instructor and flight examiner competency checks</b>
						The operator shall ensure that each supervisory flight instructor or flight examiner receives instruction and maintains proficiency as appropriate in:					The operator shall ensure that each supervisory flight instructor or flight examiner receives instruction and maintains proficiency as appropriate in:
					a	the methods of imparting instruction on how to operate, and how to ensure the safe operation of, a particular make and series aircraft, or variant; and			a		the methods of imparting instruction on how to operate, and how to ensure the safe operation of, a particular make and series aircraft, or variant; and
					b	the methods of recovery from mishandled, nonnormal, and emergency manoeuvres; and			b		the methods of recovery from mishandled, nonnormal, and emergency manoeuvres; and
					c	the operation of the aircraft, equipment, or flight simulator used and, in operational flight, procedures and manoeuvres under normal, non-normal, and emergency conditions; and			c		the operation of the aircraft, equipment, or flight simulator used and, in operational flight, procedures and manoeuvres under normal, non-normal, and emergency conditions; and
					d	CRM elements and methods of evaluating CRM skills.			d		CRM elements and methods of evaluating CRM skills.
					<b>135.1155</b>	<b>Cabin crew competency checks</b>			<b>121.1155</b>		<b>Cabin crew competency checks</b>
						The operator shall not use a cabin crew member unless, and a person shall not serve as a member of cabin crew unless, within the immediately preceding 12 months, the operator has determined by appropriate initial and recurrent assessment that the person has adequate knowledge and is competent in the					The operator shall not use a cabin crew member unless, and a person shall not serve as a member of cabin crew unless, within the immediately preceding 12 months, the operator has determined by appropriate initial and recurrent assessment that the person has adequate knowledge and is competent in the

						following areas as may be relevant to their duties:					following areas as may be relevant to their duties:
					a	authority of the pilot-in-command; and				a	authority of the pilot-in-command; and
					b	passenger handling, including procedures to be followed in handling persons whose conduct might jeopardise safety; and				b	passenger handling, including procedures to be followed in handling persons whose conduct might jeopardise safety; and
					c	crew member assignments, functions, and responsibilities during emergencies, including evacuation of persons who may need assistance; and				c	crew member assignments, functions, and responsibilities during emergencies, including evacuation of persons who may need assistance; and
					d	seating of persons who may need assistance; and				d	seating of persons who may need assistance; and
					e	briefing of passengers; and				e	briefing of passengers; and
					r	use of cabin equipment and controls; and				r	use of cabin equipment and controls; and
					g	location of emergency and life saving equipment, including lifejackets, life rafts and fire extinguishers; and				g	location of emergency and life saving equipment, including lifejackets, life rafts and fire extinguishers; and
					h	location and operation of oxygen equipment; and				h	location and operation of oxygen equipment; and
					i	knowledge of the effects of lack of oxygen and the physiological phenomena associated with a loss of pressurisation; and				i	knowledge of the effects of lack of oxygen and the physiological phenomena associated with a loss of pressurisation; and
					j	location and operation of all normal and emergency exits, including exits located on the flight deck				j	location and operation of all normal and emergency exits, including exits located on the flight deck
					k	use of all safety and emergency equipment carried; and				k	use of all safety and emergency equipment carried; and
					1	first aid equipment and practice; and				1	first aid equipment and practice; and
					m	awareness of dangerous goods; and				m	awareness of dangerous goods; and
					n	for senior cabin crew and their deputies, ability to supervise other cabin crew carrying out their duties.				n	for senior cabin crew and their deputies, ability to supervise other cabin crew carrying out their duties.
					<b>135.1160</b>	<b>Cabin crew examiners</b>				<b>121.1160</b>	<b>Cabin crew examiners</b>
						The operator shall ensure that each person performing the functions of a cabin crew examiner in its competency assessment programme established under this Part:					The operator shall ensure that each person performing the functions of a cabin crew examiner in its competency assessment programme established under this Part:
					a	has operational experience on the aircraft used to conduct the operation; and				a	has operational experience on the aircraft used to conduct the operation; and
					b	is familiar with the types of operations conducted by the operator; and				b	is familiar with the types of operations conducted by the operator; and
					c	has operated to the level of testing being undertaken; and				c	has operated to the level of testing being undertaken; and
					d	is acceptable to the Director.				d	is acceptable to the Director.
					<b>135.1165</b>	<b>Competency checks of other crew members</b>				<b>121.1165</b>	<b>Competency checks of other crew members</b>
					a	The operator shall establish the proficiency level required by other crew members and ensure that the competency assessment programme includes checks appropriate to ensuring the continued competency of the crew member.				a	The operator shall establish the proficiency level required by other crew members and ensure that the competency assessment programme includes checks appropriate to ensuring the continued competency of the crew member.
					b	Competency assessment checks conducted for other crew members shall include, as a minimum:				b	Competency assessment checks conducted for other crew members shall include, as a minimum:
					1	authority of the pilot-in-command; and				1	authority of the pilot-in-command; and
					2	crew member assignments, functions, and responsibilities during emergencies, including evacuation of persons who may need assistance; and				2	crew member assignments, functions, and responsibilities during emergencies, including evacuation of persons who may need assistance; and
					3	location and operation of items of emergency and life saving equipment, including lifejackets, life rafts and fire extinguishers^and				3	location and operation of items of emergency and life saving equipment, including lifejackets, life rafts and fire extinguishers_and
					4	knowledge of the effects of lack of oxygen and the physiological phenomena associated with a loss of pressurisation; and				4	knowledge of the effects of lack of oxygen and the physiological phenomena associated with a loss of pressurisation; and
					5	location and operation of any oxygen equipment; and				5	location and operation of any oxygen equipment; and
					6	location and operation of all normal and emergency exits, including any evacuation slides and escape ropes; and				6	location and operation of all normal and emergency exits, including any evacuation slides and escape ropes; and
					7	first aid equipment and practice; and				7	first aid equipment and practice; and
					8	awareness of dangerous goods;				8	awareness of dangerous goods;
					9	where the crew member is required to use radio equipment on the flight, a competency assessment of the required skills				9	where the crew member is required to use radio equipment on the flight, a competency assessment of the required skills

				<b>135.1170</b>		<b>Competency and testing records</b>	<b>121.1170</b>		<b>Competency and testing records</b>
					a	The operator shall maintain accurate records of all competency assessments and testing of its crew members.		a	The operator shall maintain accurate records of all competency assessments and testing of its crew members.
					b	The records shall include at least the following:		b	The records shall include at least the following:
					1	the date that the competency test or assessment was carried out; and		1	the date that the competency test or assessment was carried out; and
					2	details of the test or assessment, including the result; and		2	details of the test or assessment, including the result; and
					3	the name and qualifications of the examiner responsible for carrying out the test or assessment; and		3	the name and qualifications of the examiner responsible for carrying out the test or assessment; and
					4	the date and particulars of any decision to require the crew member to undertake further training, to retake a test or assessment or to cease acting as a crew member until such training, testing or assessment has been completed; and		4	the date and particulars of any decision to require the crew member to undertake further training, to retake a test or assessment or to cease acting as a crew member until such training, testing or assessment has been completed; and
					5	the date that the crew member last operated in the role for which the test or assessment is necessary; and		5	the date that the crew member last operated in the role for which the test or assessment is necessary; and
					6	a statement that the operator is satisfied that the crew member is competent to perform their duties.		6	a statement that the operator is satisfied that the crew member is competent to perform their duties.



Part 91	Requirement	Part 135	Requirement	Part 121	Requirement
<b>Subpart K - Fatigue Management</b>					
		<b>135.1200</b>	<b>Fatigue management scheme</b>	<b>121.1200</b>	<b>Fatigue management scheme</b>
		a	The operator shall establish and implement a fatigue management scheme to ensure that all personnel involved in the operation of aircraft do not carry out their duties when fatigued.	a	The operator shall establish and implement a fatigue management scheme to ensure that all personnel involved in the operation of aircraft do not carry out their duties when fatigued.
		b	The fatigue management scheme shall establish flight time, flight duty period, duty period and rest period limitations for aircraft crew members.	b	The fatigue management scheme shall establish flight time, flight duty period, duty period and rest period limitations for aircraft crew members.
		c	Details of the fatigue management scheme shall be recorded in the operations manual.	c	Details of the fatigue management scheme shall be recorded in the operations manual.
			<i>Note 1: acceptable prescriptive regulations to manage fatigue, which are based upon scientific principles, knowledge and operational experience with the aim of ensuring that flight and cabin crew are performing at an adequate level of alertness, have been developed by such jurisdictions as EASA, FAA, UK CAA and Transport Canada. Schemes based on these regulation are acceptable for use.</i>		<i>Note 1: acceptable prescriptive regulations to manage fatigue, which are based upon scientific principles, knowledge and operational experience with the aim of ensuring that flight and cabin crew are performing at an adequate level of alertness, have been developed by such jurisdictions as EASA, FAA, UK CAA and Transport Canada. Schemes based on these regulation are acceptable for use.</i>
			<i>Note 2: As an alternative to a prescriptive fatigue management scheme, an operator may establish a fatigue resource management system (FRMS), which then shall be integrated with the operator's SMS. GAR 135.1212 and Attachment F contain requirements for an FRMS.</i>		<i>Note 2: As an alternative to a prescriptive fatigue management scheme, an operator may establish a fatigue resource management system (FRMS), which then shall be integrated with the operator's SMS. GAR 121.1212 and Attachment F contain requirements for an FRMS.</i>
			<i>Note 3: Guidance on the development and implementation of fatigue management regulations is contained in ICAO Doc 9966 – Manual for the oversight of Fatigue Management Approaches.</i>		<i>Note 3: Guidance on the development and implementation of fatigue management regulations is contained in ICAO Doc 9966 – Manual for the oversight of Fatigue Management Approaches.</i>
		<b>135.1205</b>	<b>Fatigue management scheme — Variations</b>	<b>121.1205</b>	<b>Fatigue management scheme — Variations</b>
		a	Variations to the scheme shall be subject to the approval of the Director, on the basis of a risk assessment provided by the operator.	a	Variations to the scheme shall be subject to the approval of the Director, on the basis of a risk assessment provided by the operator.
		b	Approved variations shall include measures to provide an equivalent level of safety.	b	Approved variations shall include measures to provide an equivalent level of safety.
		<b>135.1210</b>	<b>Fatigue — Operator responsibilities</b>	<b>121.1210</b>	<b>Fatigue — Operator responsibilities</b>
		a	The operator shall not cause or permit any person to fly in an aircraft as a crew member if the operator knows or has reason to believe that the person is suffering from, or, having regard to the circumstances of the flight to be undertaken, is likely to suffer from, such fatigue while they are so flying as may endanger the safety of the aircraft or its occupants.	a	The operator shall not cause or permit any person to fly in an aircraft as a crew member if the operator knows or has reason to believe that the person is suffering from, or, having regard to the circumstances of the flight to be undertaken, is likely to suffer from, such fatigue while they are so flying as may endanger the safety of the aircraft or its occupants.
		b	The operator shall not cause or permit an aircraft to be operated on commercial air transport operations unless:	b	The operator shall not cause or permit an aircraft to be operated on commercial air transport operations unless:
		1	a scheme approved by the Director has been established for the regulation of flight and duty times for every person flying in that aircraft as a flight crew member or cabin crew member; and	1	a scheme approved by the Director has been established for the regulation of flight and duty times for every person flying in that aircraft as a flight crew member or cabin crew member; and
		2	the scheme addresses the following factors where appropriate to the operator's type of operation:	2	the scheme addresses the following factors where appropriate to the operator's type of operation:
		i	rest periods prior to flight;	i	rest periods prior to flight;
		ii	acclimatisation;	ii	acclimatisation;
		iii	time zones;	iii	time zones;
		iv	night operations;	iv	night operations;
		v	maximum number of sectors;	v	maximum number of sectors;
		vi	single pilot operations;		
		vii	two pilot operations;		
		viii	two pilots plus additional flight crew members;	vi	two pilots plus additional flight crew members;
				vii	single cabin crew operations;
				viii	multiple cabin crew operations;
		ix	flight crew members' qualifications;	ix	flight crew members' qualifications;
				x	cabin crew members' qualifications;



					x	mixed duties;			xi	mixed duties;
					xi	dead-head transportation;			xii	dead-head transportation;
					xii	reserve or standby periods;			xiii	reserve or standby periods;
					xiii	duty periods;			xiv	duty periods;
					xiv	flight duty period;			xv	flight duty period;
					xv	in-flight relief;			xvi	in-flight relief;
					xvi	type of operation;			xvii	type of operation;
					xvii	cumulative duty time;			xviii	cumulative duty time;
					xviii	cumulative flight time;			xix	cumulative flight time;
					xix	discretionary increases in flight time periods or flight duty periods or both;			xx	discretionary increases in flight time periods or flight duty periods or both;
					xx	circadian rhythm;			xxi	circadian rhythm;
					xxi	days off; and			xxii	days off; and
					xxii	record-keeping.			xxiii	record-keeping.
				c		Where the scheme in (b) allows discretionary increases of the specified flight and duty time limitations and/or reductions of rest periods, the operator shall establish the conditions under which such exceedances may take place and the procedures used to report these instances.		c		Where the scheme in (b) allows discretionary increases of the specified flight and duty time limitations and/or reductions of rest periods, the operator shall establish the conditions under which such exceedances may take place and the procedures used to report these instances.
				d		The operator shall:		d		The operator shall:
				1		keep an accurate record of the flight times, flight duty periods, duty periods and rest periods of each crew member; and		1		keep an accurate record of the flight times, flight duty periods, duty periods and rest period times of each crew member; and
				2		retain the record for the period specified in 91.1265.		2		retain the record for the period specified in 91.1265.
			135.1212			<b>Fatigue Risk Management System (FRMS)</b>	121.1212			<b>Fatigue Risk Management System (FRMS)</b>
				a		Where an operator implements an FRMS to manage fatigue-related safety risk, the operator shall, as a minimum:		a		Where an operator implements an FRMS to manage fatigue-related safety risk, the operator shall, as a minimum:
				1		incorporate scientific principles and knowledge within the FRMS;		1		incorporate scientific principles and knowledge within the FRMS;
				2		identify fatigue-related safety hazards and the resulting risks on an on-going basis;		2		identify fatigue-related safety hazards and the resulting risks on an on-going basis;
				3		ensure that remedial actions, necessary to effectively mitigate the risks associated with the hazards, are implemented promptly;		3		ensure that remedial actions, necessary to effectively mitigate the risks associated with the hazards, are implemented promptly;
				4		provide for continuous monitoring and regular assessment of the mitigation of fatigue risks achieved by such actions; and		4		provide for continuous monitoring and regular assessment of the mitigation of fatigue risks achieved by such actions; and
				5		provide for continuous improvement to the overall performance of the FRMS.		5		provide for continuous improvement to the overall performance of the FRMS.
						<i>Note: detailed requirements for an FRMS are in Appendix F.</i>				<i>Note: detailed requirements for an FRMS are in Appendix F.</i>
91.1215			<b>Fatigue — Crew member responsibilities</b>	135.1215		<b>Fatigue — Crew member responsibilities</b>	121.1215			<b>Fatigue — Crew member responsibilities</b>
			A person shall not act as a flight crew member of an aircraft registered in Guernsey if at the beginning of the flight the aggregate of all his previous flight times:	a		A person shall not act as a member of the crew of an aircraft if he knows or suspects that he is suffering from, or, having regard to the circumstances of the flight to be undertaken, is likely to suffer from, such fatigue as may endanger the safety of the aircraft or of its occupants.		a		A person shall not act as a member of the crew of an aircraft if he knows or suspects that he is suffering from, or, having regard to the circumstances of the flight to be undertaken, is likely to suffer from, such fatigue as may endanger the safety of the aircraft or of its occupants.
	a		during the period of 28 consecutive days expiring at the end of the day on which the flight begins exceeds 100 hours; or	b		A person shall not act as a member of the flight crew of an aircraft unless he has ensured that the operator of the aircraft is aware of all his flight times during the period of 28 days preceding the flight.		b		A person shall not act as a member of the flight crew of an aircraft unless he has ensured that the operator of the aircraft is aware of all his flight times during the period of 28 days preceding the flight.
	b		during the period of twelve months expiring at the end of the previous month exceeds 900 hours.							
			<i>Note: For private and non-commercial air transport flights some exceptions to this requirement are specified in the Air Navigation (Bailiwick of Guernsey) Law, 2012, Chapter IV.</i>							

Part 91	Requirement	Part 135	Requirement	Part 121	Requirement
<b>Subpart L - Manuals Logs and Records</b>					
		<b>135.1250</b>	<b>Operations manual</b>	<b>121.1250</b>	<b>Operations manual</b>
			The operator shall:		The operator shall:
		a	ensure that the operations manual is designed to observe human factor principles and provides all material specified in GAR Part 119.71 and listed at Appendix 1 to 135.1250.	a	ensure that the operations manual is designed to observe human factor principles and provides all material specified in GAR Part 119.71 and listed at Appendix 1 to 121.1250.
			<i>Note: The operations manual may consist of one or more volumes.</i>		<i>Note: The operations manual may consist of one or more volumes.</i>
		b	ensure that the operations manual shall be organised into parts, with the following structure:	b	ensure that the operations manual shall be organised into parts, with the following structure:
		1	Part A General/Basic;	1	Part A General/Basic;
		2	Part B Aircraft Operating Matters - type related;	2	Part B Aircraft Operating Matters - type related;
		3	Part C Routes and Aerodrome Instructions and Information; and	3	Part C Routes and Aerodrome Instructions and Information; and
		4	Part D Training.	4	Part D Training.
		c	be responsible for establishing procedures to ensure that the operations manual contains current information; and	c	be responsible for establishing procedures to ensure that the operations manual contains current information; and
		d	incorporate into the operations manual standard operating procedures and such other mandatory material as is required by the Director to be incorporated;	d	incorporate into the operations manual standard operating procedures and such other mandatory material as is required by the Director to be incorporated;
		e	ensure that the operations manual is kept up to date in a timely manner; and	e	ensure that the operations manual is kept up to date in a timely manner; and
		r	provide a copy of the operations manual and any amendments to the Director for review and acceptance.	r	provide a copy of the operations manual and any amendments to the Director for review and acceptance.
<b>91.1255</b>	<b>Journey log book or equivalent record</b>				
a	The owner or lessee of an aircraft shall keep accurate journey log book or equivalent records that contain for each flight or series of flights:				
1	aircraft nationality and registration;				
2	date;				
3	names of crew members;				
4	duty assignments of crew members;				
5	place of departure;				
6	place of arrival;				
7	time of departure;				
8	time of arrival;				
9	hours of flight;				
10	nature of flight (private, aerial work, scheduled or non-scheduled commercial air transport);				
11	incidents and observations (if any); and				
12	signature of person in charge.				
b	An aircraft journey log, or parts thereof, may not be required if the relevant information is available in other documentation.				
c	All entries shall be made concurrently and be permanent in nature.				
		<b>135.1260</b>	<b>Operational flight plan</b>	<b>121.1260</b>	<b>Operational flight plan</b>
		a	Subject to paragraph (b), the operator shall ensure that the operational flight plan used, and the entries made during flight, contain the following items:	a	Subject to paragraph (b), the operator shall ensure that the operational flight plan used, and the entries made during flight, contain the following items:
		1	Aircraft registration;	1	Aircraft registration;
		2	Aircraft type and variant;	2	Aircraft type and variant;
		3	Date of flight;	3	Date of flight;
		4	Flight identification;	4	Flight identification;
		5	Names of flight crew members;	5	Names of flight crew members;
		6	Duty assignment of flight crew members;	6	Duty assignment of flight crew members;
		7	Place of departure;	7	Place of departure;
		8	Time of departure;	8	Time of departure;
		9	Place of arrival (planned and actual);	9	Place of arrival (planned and actual);
		10	Time of arrival;	10	Time of arrival;

					11	Type of operation (EDTO, VFR, etc.);			11	Type of operation (EDTO, VFR, etc.);
					12	Route and route segments with checkpoints/waypoints, distances, time and tracks;			12	Route and route segments with checkpoints/waypoints, distances, time and tracks;
					13	Planned cruising speed and flying times between check-points/way-points. Estimated and actual times overhead;			13	Planned cruising speed and flying times between check-points/way-points. Estimated and actual times overhead;
					14	Safe altitudes and minimum levels;			14	Safe altitudes and minimum levels;
					15	Planned altitudes and flight levels;			15	Planned altitudes and flight levels;
					16	Fuel calculations (records of inflight fuel checks);			16	Fuel calculations (records of inflight fuel checks);
					17	Fuel on board when starting engines;			17	Fuel on board when starting engines;
					18	Alternate(s) for destination and, where applicable, take-off and en-route, including information required in subparagraphs (12), (13), (14), and (15) above;			18	Alternate(s) for destination and, where applicable, take-off and en-route, including information required in subparagraphs (12), (13), (14), and (15) above;
					19	Initial ATS Flight Plan clearance and subsequent reclearance;			19	Initial ATS Flight Plan clearance and subsequent reclearance;
					20	In-flight re-planning calculations; and			20	In-flight re-planning calculations; and
					21	Relevant meteorological information.			21	Relevant meteorological information.
				b		Items which are readily available in other documentation or from an acceptable source or are irrelevant to the type of operation may be omitted from the operational flight plan.			b	Items which are readily available in other documentation or from an acceptable source or are irrelevant to the type of operation may be omitted from the operational flight plan.
				c		The operator must ensure that the operational flight plan and its use is described in the operations manual.			c	The operator must ensure that the operational flight plan and its use is described in the operations manual.
				d		The operator shall ensure that all entries on the operational flight plan are made concurrently and that they are permanent in nature.			d	The operator shall ensure that all entries on the operational flight plan are made concurrently and that they are permanent in nature.
91.1265			<b>Document retention period</b>							
			When required for an aircraft registered in Guernsey: information for the preparation and execution of a flight; reports; flight crew records; cabin crew records; records for other operational personnel; and, other specified records, shall be stored for the periods prescribed in Appendix 1 to 91.1265.							
91.1275			<b>Aircraft flight manual</b>							
			The owner or lessee (where applicable) of an aircraft shall ensure that the aircraft flight manual is updated and amended to implement any change mandated by the State of Registry							
			<b>135.1280</b>			<b>Cosmic radiation records</b>			<b>121.1280</b>	<b>Cosmic radiation records</b>
				a		Where the operator assesses individual exposure to cosmic radiation, the records shall include:			a	Where the operator assesses individual exposure to cosmic radiation, the records shall include:
				1		the names of the crew member; and			1	the names of the crew member; and
				2		the detail of each assessment of exposure to cosmic radiation (mSv per year); and			2	the detail of each assessment of exposure to cosmic radiation (mSv per year); and
				3		the date of the assessment.			3	the date of the assessment.
				b		Where the operator does not assess individual exposure to cosmic radiation but instead assesses the exposure of groups of crew members, the records shall include:			b	Where the operator does not assess individual exposure to cosmic radiation but instead assesses the exposure of groups of crew members, the records shall include:
				1		the names of all crew members covered by the assessment; and			1	the names of all crew members covered by the assessment; and
				2		the maximum dose of cosmic radiation (mSv per year) to which those crew members are likely to be exposed; and			2	the maximum dose of cosmic radiation (mSv per year) to which those crew members are likely to be exposed; and
				3		how the dose has been calculated; and			3	how the dose has been calculated; and
				4		the period of time that the assessment is valid.			4	the period of time that the assessment is valid.

## Appendix 1 to 121.1250 / 135.1250

		<b>Operations manual — contents</b>
		The operator shall ensure that the operations manual contains an appropriate application of the following:
A		A GENERAL/BASIC
0		0 ADMINISTRATION AND CONTROL OF OPERATIONS MANUAL
0.1		Introduction
	a	A statement that the manual complies with all applicable regulations and with the terms and conditions of the applicable air operator's certificate.
	b	A statement that the manual contains operational instructions that are to be complied with by the relevant personnel.
	c	A list and brief description of the various parts, their contents, applicability and use.
	d	Explanations and definitions of terms and words needed for the use of the manual.
0.2		System of amendment and revision
	a	Details of the person(s) responsible for the issuance and insertion of amendments and revisions.
	b	A record of amendments and revisions with insertion dates and effective dates.
	c	A statement that handwritten amendments and revisions are not permitted except in situations requiring immediate amendment or revision in the interest of safety.
	d	A description of the system for the annotation of pages and their effective dates.
	e	A list of effective pages.
	f	Annotation of changes (on text pages and, as far as practicable, on charts and diagrams).
	g	Temporary revisions.
	h	A description of the procedure for staff to propose amendments to the Operations Manual.
	i	A description of the distribution system for the manuals, amendments and revisions.
1		ORGANISATION AND RESPONSIBILITIES
1.1		Organisational structure. A description of the organisational structure including the general company organigram and operations department organigram. The organigram must depict the relationship between the Operations Department and the other Departments of the company. In particular, the subordination and reporting lines of all Divisions, Departments etc., which pertain to the safety of flight operations, must be shown.
1.2		Nominated postholders. The name of each nominated postholder responsible for flight operations, the maintenance system, crew training and ground operations, as prescribed in Part 119. A description of their function and responsibilities must be included, including their responsibilities for SMS.
1.3		Responsibilities and duties of operations management personnel. A description of the duties, responsibilities and authority of operations management personnel pertaining to the safety of flight operations, including their responsibilities for SMS and the compliance with the applicable regulations.
1.4		Authority, duties and responsibilities of the pilot-in-command. A statement defining the authority, duties and responsibilities of the commander.
1.5		Duties and responsibilities of crew members other than the pilot-in-command.
2		OPERATIONAL CONTROL AND SUPERVISION
2.1		Supervision of the operation by the operator. A description of the system for supervision of the operation by the operator. This must show how the safety of flight operations and the qualifications of personnel are supervised. In particular, the procedures related to the following items must be described:
	a	Licence and qualification validity;
	b	Competence of operations personnel; and
	c	Control, analysis and storage of records, flight documents, additional information and data.
2.2		Supplementary flight safety documents. System of promulgation of additional operational instructions and information. A description of any system for promulgating information which may be of an operational nature but is supplementary to that in the operations manual. The applicability of this information and the responsibilities for its promulgation must be included.
2.3		Operational control. A description of the procedures and responsibilities necessary to exercise operational control with respect to flight safety.
2.4		Use of Standard Operating Procedures (SOP).
2.5		Powers of the Director. A description of the powers of the Director (ie his designated regulator) and guidance to staff on how to facilitate inspections by designated personnel
3		MANAGEMENT SYSTEMS
	a	A description of the safety management system (SMS) in accordance with the requirements in GAR Part 119.59; and
	b	Information regarding the quality assurance programme in accordance with GAR Part 119.67.
4		CREW COMPOSITION
4.1		Crew Composition. An explanation of the method for determining crew compositions taking account of the following:
	a	The type and variant of aircraft being used;
	b	The area and type of operation being undertaken;
	c	The phase of the flight;
	d	The minimum crew requirement and flight duty period planned;
	e	Experience (total and on type), recency and qualification of the crew members; and
	f	The designation of the pilot-in-command; the procedures for the relief of the pilot-in-command or other members of the flight crew; and
	g	The designation of the senior cabin crew member.
4.2		Designation of the pilot-in-command. The rules applicable to the designation of the pilot-in-command.
4.3		Flight crew incapacitation. Instructions on the succession of command in the event of flight crew incapacitation.
4.4		Operation on more than one type. A statement indicating which aircraft are considered as one type for the purpose of:
	a	Flight crew scheduling; and
	b	Cabin crew scheduling.
5		QUALIFICATION REQUIREMENTS
5.1		A description of the required licence, rating(s), qualification/competency (e.g. for routes and aerodromes), experience, training, checking and recency for operations personnel to conduct their duties. Consideration must be given to the aircraft type, kind of operation and composition of the crew.
5.2		Flight crew:
	a	Pilot-in-command.
	b	Pilot relieving the Pilot-in-command
	c	Co-pilot
	d	Pilot under supervision
	e	System panel operator
	f	Operation on more than one type or variant.
5.3		Cabin crew:
	a	Senior cabin crew member
	b	Cabin crew member
	i	Required cabin crew member
	ii	Additional cabin crew member and cabin crew member during familiarisation flights
	c	Operation on more than one type or variant



5.4		Training, checking and supervisory personnel:
	a	For flight crew
	b	For cabin crew
5.5		Other operations personnel
6		CREW HEALTH PRECAUTIONS
6.1		Crew health precautions. The relevant regulations and guidance to crew members concerning health including psychoactive substances including but not limited to:
	a	Alcohol and other intoxicating liquor
	b	Narcotics
	c	Drugs
	d	Sleeping tablets
	e	Pharmaceutical preparations
	r	Immunisation
	g	Diving, involving underwater pressure breathing devices
	h	Blood/bone marrow donation
	i	Meal precautions prior to and during flight
	i	Sleep and rest
	k	Surgical operations
	l	Incapacity due to injury or illness
	m	Pregnancy
7		FLIGHT TIME LIMITATIONS
7.1		Flight and Duty Time Limitations and Rest Requirements. The scheme developed by the operator in accordance with applicable requirements.
7.2		Exceedances of flight and duty time limitations and/or reductions of rest periods. Conditions under which flight and duty time may be exceeded or rest periods may be reduced and the procedures used to report these instances.
7.3		Management of fatigue in other operational staff.
8		OPERATING PROCEDURES
8.1		Flight Preparation Instructions. As applicable to the operation:
8.1.1		Minimum Flight Altitudes. A description of the method of determination and application of minimum altitudes including
	a	A procedure to establish the minimum altitudes/flight levels for VFR flights; and
	b	A procedure to establish the minimum altitudes/flight levels for IFR flights.
8.1.2		Criteria for determining the usability of aerodromes
8.1.3	a	Methods for the determination of aerodrome operating minima. The method for establishing aerodrome operating minima for IFR flights. Reference must be made to procedures for the determination of the visibility and/or runway visual range and for the applicability of the actual visibility observed by the pilots, the reported visibility and the reported runway visual range.
	b	The margin of time established for planning the estimated time of use of an aerodrome.
	c	Instructions for determining aerodrome operating minima for instrument approaches using head-up displays (HUD) and enhanced vision systems (EVS).
8.1.4		En-route Operating Minima for VFR Flights or VFR portions of a flight and, where single engine aircraft are used, instructions for route selection with respect to the availability of surfaces which permit a safe forced landing.
8.1.5		Presentation and Application of Aerodrome and En-route Operating Minima
8.1.6		Interpretation of meteorological information. Explanatory material on the decoding of MET forecasts and MET reports relevant to the area of operations, including the interpretation of conditional expressions.
8.1.7		Determination of the quantities of fuel, oil and water methanol carried. The methods by which the quantities of fuel, oil and water methanol to be carried are determined and monitored in flight. This section must also include instructions on the measurement and distribution of the fluid carried on board. Such instructions must take account of all circumstances likely to be encountered on the flight, including the possibility of in-flight replanning and of failure of one or more of the engines or systems. The system for maintaining fuel and oil records must also be described.
8.1.8		Mass and Centre of Gravity. The general principles of mass and centre of gravity including:
	a	Definitions;
	b	Methods, procedures and responsibilities for preparation and acceptance of mass and centre of gravity calculations;
	c	The policy for using either standard and/or actual masses;
	d	The method for determining the applicable passenger, baggage and cargo mass;
	e	The applicable passenger and baggage masses for various types of operations and aircraft type;
	f	General instruction and information necessary for verification of the various types of mass and balance documentation in use;
	g	Last Minute Changes (LMC) procedures;
	h	Specific gravity of fuel, oil and water methanol;
	i	Seating policy/procedures; and
	j	Standard load plans.
8.1.9		ATS Flight Plan. Procedures and responsibilities for the preparation and submission of the air traffic services flight plan. Factors to be considered include the means of submission for both individual and repetitive flight plans.
8.1.10		Operational Flight Plan. Procedures and responsibilities for the preparation and acceptance of the operational flight plan. The use of the operational flight plan must be described including samples of the operational flight plan formats in use.
8.1.11		Operator's Technical Log. The responsibilities and the use of the operator's Technical Log must be described, including samples of the format used.
8.1.12		List of documents, forms and additional information to be carried
8.2		Ground Handling Instructions
8.2.1		Fuelling procedures. A description of fuelling procedures including
	a	Safety precautions during refuelling and defuelling including rotors running, engine(s) running and when an APU is in operation;
	b	Refuelling and defuelling when passengers are embarking, on board or disembarking; and
	c	Precautions to be taken to avoid mixing fuels.
8.2.2		Aircraft, passengers and cargo handling procedures related to safety. A description of the handling procedures to be used when allocating seats and embarking and disembarking passengers and when loading and unloading the aircraft. Further procedures, aimed at achieving safety whilst the aircraft is on the ramp, must also be given. Handling procedures must include:
	a	Children/infants, sick passengers and persons with reduced mobility;
	b	Transportation of inadmissible passengers, deportees or persons in custody;
	c	Permissible size and mass of hand baggage;
	d	Loading and securing of items in the aircraft;
	e	Special loads (including dangerous goods) and classification of load compartments;
	f	Positioning of ground equipment;
	g	Operation of aircraft doors;
	h	Safety on the ramp, including fire prevention, blast and suction areas;
	i	Start-up, ramp departure and arrival procedures including push-back and towing operations;



	j	Servicing of aircraft and
	k	Documents and forms for aircraft handling;
	l	Multiple occupancy of aircraft seats.
8.2.3		Procedures for the refusal of embarkation. Procedures to ensure that persons who appear to be intoxicated or who demonstrate by manner or physical indications that they are under the influence of drugs, except medical patients under proper care, are refused embarkation.
8.2.4		De-icing and Anti-icing on the ground. A description of the de-icing and anti-icing policy and procedures for aircraft on the ground. These shall include descriptions of the types and effects of icing and other contaminants on aircraft whilst stationary, during ground movements and during take-off. In addition, a description of the fluid types used must be given including:
	a	Proprietary or commercial names;
	b	Characteristics;
	c	Effects on aircraft performance;
	d	Hold-over times;
	e	Precautions during usage; and
	f	Recording details in the technical log.
8.3		Flight Procedures
8.3.1		VFR/IFR Policy. A description of the policy for allowing flights to be made under VFR, or of requiring flights to be made under IFR, or of changing from one to the other.
8.3.2		Navigation Procedures. A description of all navigation procedures relevant to the type(s) and area(s) of operation. Consideration must be given to:
	a	Standard navigational procedures including policy for carrying out independent cross-checks of keyboard entries where these affect the flight path to be followed by the aircraft;
	b	MNPS and POLAR navigation and navigation in other designated areas;
	c	PBN. A description of the relevant PBN procedures specified in Part C;
	d	In-flight replanning;
	e	Procedures in the event of system degradation; and
	f	RVSM
8.3.3		Altimeter setting procedures including use, where appropriate, of
	a	metric altimetry and conversion table; and
	b	QFE operating procedures.
8.3.4		Altitude alerting system procedures
8.3.5		Ground proximity warning system/terrain avoidance warning system. Procedures and instructions required for the avoidance of controlled flight into terrain, including limitations on high rate of descent near the surface and a Policy for the use of GPWS (the related training requirements are covered in D.2.1).
8.3.6		Policy and procedures for the use of TCAS/ACAS
8.3.7		Policy and procedures for in-flight fuel management
8.3.8		Adverse and potentially hazardous atmospheric conditions. Procedures for operating in, and/or avoiding, potentially hazardous atmospheric conditions including:
	b	Icing conditions;
	c	Turbulence;
	d	Windshear;
	e	Jet stream;
	f	Volcanic ash clouds;
	g	Heavy precipitation;
	h	Sand storms;
	i	Mountain waves; and
	j	Significant temperature inversions.
8.3.9		Wake Turbulence and Rotor Downwash. Wake turbulence and rotor downwash separation, taking into account aircraft types, wind conditions and runway location.
8.3.10		Crew members at their stations. The requirements for crew members to occupy their assigned stations or seats during the different phases of flight or whenever deemed necessary in the interest of safety.
8.3.11		Use of safety belts for crew and passengers. The requirements for crew members and passengers to use safety belts and/or harnesses during the different phases of flight or whenever deemed necessary in the interest of safety.
8.3.12		Admission to flight compartment. The conditions for the admission to the flight compartment of persons other than the flight crew. The policy regarding the admission of Inspectors from the Director must also be included.
8.3.13		Use of vacant crew seats. The conditions and procedures for the use of vacant crew seats.
8.3.14		Incapacitation of crew members. Procedures to be followed in the event of incapacitation of crew members in flight. Examples of the types of incapacitation and the means for recognising them must be included.
8.3.15		Cabin Safety Requirements. Procedures covering:
	a	Cabin preparation for flight, in-flight requirements and preparation for landing including procedures for securing cabin and galleys;
	b	Procedures to ensure that passengers are seated where, in the event that an emergency evacuation is required, they may best assist and not hinder evacuation from the aircraft;
	c	Procedures to be followed during passenger embarkation and disembarkation;
	d	Procedures in the event of fuelling with passengers on board or embarking and disembarking; and
	e	Smoking on board.
8.3.16		Passenger briefing procedures. The contents, means and timing of passenger briefing in accordance with 135.130.
8.3.17		Procedures for aeroplanes operated whenever required cosmic or solar radiation detection equipment is carried. Procedures for the use of cosmic or solar radiation detection equipment and for recording its readings including actions to be taken in the event that limit values specified in the operations manual are exceeded. In addition, the procedures, including ATS procedures, to be followed in the event that a decision to descend or re-route is taken.
8.3.18		Policy on the use of autopilot and auto throttle.
8.4		All Weather Operations (AWO)
	a	A description of the operational procedures associated with all weather operations.
	b	Instructions for the use of head-up displays (HUD) and enhanced vision systems (EVS) equipment as applicable.
8.5		EDTO. A description of the EDTO operational procedures.
8.6		Use of the Minimum Equipment and Configuration Deviation List(s)
8.7		Non revenue flights. Procedures and limitations for:
	a	Training flights;
	b	Test flights;
	c	Delivery flights;
	d	Ferry flights;
	e	Demonstration flights; and
	f	Positioning flights, including the kind of persons who may be carried on such flights;
	g	Private flights
8.8		Oxygen Requirements

8.8.1		An explanation of the conditions under which oxygen must be provided and used.
8.8.2		The oxygen requirements specified for:
	a	Flight crew;
	b	Cabin crew; and
	c	Passengers.
9		DANGEROUS GOODS AND WEAPONS
9.1		Information, instructions and general guidance on the transport of dangerous goods including:
	a	Operator's policy on the transport of dangerous goods;
	b	Guidance on the requirements for acceptance, labelling, handling, stowage and segregation of dangerous goods;
	c	Special notification requirements in the event of an accident or occurrence when dangerous goods are being carried;
	d	Procedures for responding to emergency situations involving dangerous goods;
	e	Duties of all personnel involved; and
	f	Instructions on the carriage of the operator's employees.
9.2		The conditions under which weapons, munitions of war and sporting weapons may be carried.
10		SECURITY
10.1		Security instructions and guidance of a nonconfidential nature which must include the authority and responsibilities of operations personnel. Policies and procedures for handling and reporting crime on board such as unlawful interference, sabotage, bomb threats, and hijacking must also be included.
10.2		A description of preventive security measures and training, including search procedures and guidance on least-risk bomb locations where practicable. NOTE: Parts of the security instructions and guidance may be kept confidential.
11		HANDLING, NOTIFYING AND REPORTING OCCURRENCES
		Procedures for the handling, notifying and reporting occurrences. This section must include:
	a	Definitions of occurrences and of the relevant responsibilities of all persons involved;
	b	Emergency Response Plan;
	c	In the event of an accident, descriptions of which company departments, Authorities and other organizations that have to be notified, how this will be done and in what sequence;
	d	Procedures for verbal notification to air traffic service units of incidents involving ACAS RAs, bird hazards, dangerous goods and hazardous conditions;
	e	Procedures for submitting written reports on air traffic incidents, ACAS RAs, bird strikes, dangerous goods incidents or accidents, and unlawful interference;
	f	Reporting procedures. These procedures must include internal safety related reporting procedures to be followed by crew members, designed to ensure that the commander is informed immediately of any incident that has endangered, or may have endangered, safety during flight and that he is provided with all relevant information;
	g	Illustrations of forms used for reporting all types of occurrences (or copies of the forms themselves), instructions on how they are to be completed, the addresses to which they should be sent and the time allowed for this to be done.
12		RULES OF THE AIR
		Rules of the Air including:
	a	Visual and instrument flight rules;
	b	Territorial application of the Rules of the Air;
	c	Communication procedures including COM-failure procedures;
	d	Information and instructions relating to the interception of civil aircraft;
	e	The circumstances in which a radio listening watch is to be maintained;
	f	Signals;
	g	Time system used in operation;
	h	ATC clearances, adherence to flight plan and position reports;
	i	Visual signals used to warn an unauthorised aircraft flying in or about to enter a restricted, prohibited or danger area;
	j	Procedures for pilots observing an accident or receiving a distress transmission;
	k	The ground/air visual codes for use by survivors, description and use of signal aids; and
	l	Distress and urgency signals.
13		LEASING.
		A description of the operational arrangements for leasing, associated procedures and management responsibilities.
B		AIRCRAFT OPERATING MATTERS - TYPE RELATED
		Taking account of the differences between types, and variants of types, under the following headings:
0		GENERAL INFORMATION AND UNITS OF MEASUREMENT
0.1		General Information (e.g. aircraft dimensions), including a description of the units of measurement used for the operation of the aircraft type concerned and conversion tables.
1		LIMITATIONS
1.1		A description of the certified limitations and the applicable operational limitations including:
	a	Certification status (eg. JAR-23, JAR-25, FAR 23; FAR 25; EASA CS-23, EASA CS-25, etc);
	b	Maximum Approved Passenger Seating Configuration (MAPSC) for each aircraft type including a pictorial presentation;
	c	Types of operation that are approved (e.g. IFR/VFR, CAT II/III, flights in known icing conditions etc.);
	d	Crew composition;
	e	Mass and centre of gravity;
	f	Speed limitations;
	g	Flight envelope(s);
	h	Wind limits;
	i	Performance limitations for applicable configurations;
	j	Runway slope;
	k	Limitations on wet or contaminated runways;
	l	Airframe contamination;
	m	System limitations.
2		NORMAL PROCEDURES
2.1		The normal procedures and duties assigned to the crew, the appropriate check-lists, the system for use of the check-lists and a statement covering the necessary coordination procedures between flight and cabin crew. The following normal procedures and duties must be included:
	a	Pre-flight;
	b	Pre-departure;
	c	Altimeter setting and checking;
	d	Taxy, take-off and climb;
	e	Noise abatement;
	f	Cruise and descent;
	g	Approach, landing preparation and briefing;
	h	VFR approach, including stabilised approach parameters;
	i	Instrument approach, including stabilised approach parameters;

	j	Visual approach and circling;
	k	Missed approach;
	l	Normal landing;
	m	Post landing;
	n	Operation on wet and contaminated runways.
3		ABNORMAL AND EMERGENCY PROCEDURES
3.1		The emergency procedures and duties assigned to the crew, the appropriate checklists, the system for use of the checklists and a statement covering the necessary co-ordination procedures between flight and other crew members (the design and utilisation of which shall observe human factors and CRM principles). The following emergency procedures and duties must be included:
	a	Crew incapacitation;
	b	Fire and smoke drills;
	c	Unpressurised and partially pressurised flight;
	d	Exceeding structural limits such as overweight landing;
	e	Exceeding cosmic radiation limits;
	f	Lightning strikes;
	g	Distress communications and alerting ATC to emergencies;
	h	Engine failure;
	i	System failures;
	j	Guidance for diversion in case of serious technical failure;
	k	Ground proximity warning (GPWS/TAWS);
	l	TCAS alerts and advisories;
	m	Windshear;
	n	Emergency landing/ditching;
	o	Departure contingency procedures (one-engine inoperative procedures).
4		PERFORMANCE
4.1		Performance data must be provided in a form in which it can be used without difficulty.
4.2		Performance data. Performance material which provides the necessary data for compliance with the performance requirements must be included to allow the determination of:
	a	Take-off climb limits -mass, altitude, temperature;
	b	Take-off field length (dry, wet, contaminated);
	c	Net flight path data for obstacle clearance calculation or, where applicable, take-off flight path;
	d	The gradient losses for banked climb outs;
	e	En-route climb limits;
	f	Approach climb limits;
	g	Landing climb limits;
	h	Landing field length (dry, wet, contaminated) including the effects of an in-flight failure of a system or device, if it affects the landing distance;
	i	Brake energy limits; and
	j	Speeds applicable for the various flight stages (also considering wet or contaminated runways).
4.2.1		Supplementary data covering flights in icing conditions. Any certificated performance related to an allowable configuration, or configuration deviation, such as anti-skid inoperative, must be included.
4.2.2		If performance data, as required for the appropriate performance class, is not available in the aircraft flight manual, then other data acceptable to the Director must be included. Alternatively, the operations manual may contain cross-reference to the approved data contained in the aircraft flight manual where such data is not likely to be used often or in an emergency.
4.3		Additional performance data. Additional performance data where applicable including:
	a	All engine climb gradients;
	b	Drift-down data;
	c	Effect of de-icing/anti-icing fluids;
	d	Flight with landing gear down;
	e	For aeroplanes with three or more engines, one engine inoperative ferry flights.and
	f	Flights conducted under the provisions of the CDL.
5		FLIGHT PLANNING
5.1		Data and instructions necessary for pre-flight and inflight planning including factors such as speed schedules and power settings. Where applicable, procedures for engine(s)-out operations, EDTO (particularly the one-engine inoperative cruise speed / all-engine operating cruising speed and maximum diversion time) and flights to isolated aerodromes must be included.
5.2		The method for calculating fuel needed for the various stages of flight, in accordance with Part 135.280.
5.3		Performance Data for EDTO critical fuel and area of operation including sufficient data to support the critical fuel reserve and area of operation calculation based on Approved Aeroplane Performance Data. The following data^srequired;
	a	Detailed engine(s) inoperative performance data including fuel flow for standard and non-standard atmospheric conditions and as a function of airspeed and power setting, where appropriate, covering:
	i	drift down (includes net performance) - where applicable;
	ii	cruise altitude coverage including 10,000 feet;
	iii	holding;
	iv	altitude capability (includes net performance); and
	v	missed approach.
	b	Detailed all-engine-operating performance data, including nominal fuel flow data, for standard and non-standard atmospheric conditions and as a function of airspeed and power setting, where appropriate^covenng;
	i	cruise (altitude coverage including 10,000 feet); and
	ii	holding.
	c	Details of any other conditions relevant to EDTO operations which can cause significant deterioration of performance, such as ice accumulation on the unprotected surfaces of the aeroplane, ram air turbine (RAT) deployment, thrust-reverser deployment, etc.
	d	The altitudes, airspeeds, thrust settings, and fuel flow used in establishing the EDTO area of operation for each airframe-engine combination must be used in showing the corresponding terrain and obstruction clearances in accordance with this regulation.
6		MASS AND BALANCE
		Instructions and data for the calculation of the mass and balancejncludmg
	a	Calculation system (e.g. Index system);
	b	Information and instructions for completion of mass and balance documentation, including manual and computer generated types;
	c	Limiting masses and centre of gravity for the types, variants or individual aircraft used by the operator; and
	d	Dry operating mass and corresponding centre of gravity or index.

7		LOADING
		Procedures and provisions for loading and securing the load in the aircraft.
8		CONFIGURATION DEVIATION LIST
		The Configuration Deviation List(s) (CDL), if provided by the manufacturer, taking account of the aircraft types and variants operated including procedures to be followed when a aircraft is being dispatched under the terms of its CDL.
9		MINIMUM EQUIPMENT LIST
		The Minimum Equipment List (MEL) taking account of the aircraft types and variants operated and the type(s)/area(s) of operation. The MEL must include the navigational equipment and take into account the required navigation specification for the route and area of operation.
10		SURVIVAL AND EMERGENCY EQUIPMENT INCLUDING OXYGEN
10.1		A list of the survival equipment to be carried for the routes to be flown and the procedures for checking the serviceability of this equipment prior to take-off. Instructions regarding the location, accessibility and use of survival and emergency equipment and its associated check list(s) must also be included.
10.2		The procedure for determining the amount of oxygen required and the quantity that is available. The flight profile, number of occupants and possible cabin decompression must be considered. The information provided must be in a form in which it can be used without difficulty.
11		EMERGENCY EVACUATION PROCEDURES
11.1		Instructions for preparation for emergency evacuation including crew coordination and emergency station assignment.
11.2		Emergency evacuation procedures. A description of the duties of all members of the crew for the rapid evacuation of a aircraft and the handling of the passengers in the event of a forced landing, ditching or other emergency.
12		AIRCRAFT SYSTEMS
		A description of the aircraft systems, related controls and indications and operating instructions.
C		ROUTE AND AERODROME INSTRUCTIONS AND INFORMATION
1		Instructions and information relating to communications, navigation and aerodrome including minimum flight levels and altitudes for each route to be flown and operating minima for each aerodrome planned to be used, including:
	a	Minimum flight level/altitude;
	b	Operating minima for departure, destination and alternate aerodromes;
	c	Communication facilities and navigation aids;
	d	Runway data and aerodrome facilities;
	e	Approach, missed approach and departure procedures including noise abatement procedures;
	f	COM-failure procedures;
	g	Search and rescue facilities in the area over which the aircraft is to be flown;
	h	A description of the aeronautical charts that must be carried on board in relation to the type of flight and the route to be flown, including the method to check their validity;
	i	Availability of aeronautical information and MET services;
	j	En-route COM/NAV procedures.
	k	Aerodrome categorisation for flight crew competence qualification;
	l	Special aerodrome limitations (performance operating, etc.).
D		TRAINING
1		Training syllabi and checking programmes for all operations personnel assigned to operational duties in connection with the preparation and/or conduct of a flight.
2		Training syllabi and checking programmes must include:
2.1		For flight crew. All relevant items prescribed in Subparts H, I and J;
2.2		For cabin crew. All relevant items prescribed in Subparts H, I and J;
2.3		For operations personnel concerned, including crew members:
	a	All relevant items prescribed in Part 92 (Transport of Dangerous Goods by Air); and
	b	All other relevant items prescribed in GARs pertaining to their duties.
2.4		For operations personnel other than crew members (e.g. dispatcher, handling personnel etc.). All other relevant items prescribed in GARs pertaining to their duties.
3		Procedures
3.1		Procedures for training and competency checking.
3.2		Procedures to be applied in the event that personnel do not achieve or maintain the required standards.
3.3		Procedures to ensure that abnormal or emergency situations requiring the application of part or all of abnormal or emergency procedures and simulation of IMC by artificial means are not simulated during commercial air transportation flights.
3.4		Description of documentation to be stored and storage periods (see Appendix 1 to 91.1265).



**Appendix 1 to 91.1265****Document storage periods**

When any of the following information/documentation is required, it shall be stored in an acceptable form, accessible to the Director, for the periods shown in Tables 1 to 6 below.

*Note: Additional information relating to the retention of maintenance records is prescribed in GAR 39.*

**Table 1**

Information used for the preparation and execution of the flight	
Operational flight plan	3 months
Aircraft Technical Log	36 months after the date of the last entry
Route specific NOTAM/AIS briefing documentation if edited by the operator	3 months
Mass and Balance documentation	3 months
Notification of special loads including written information to the pilot-in-command about dangerous goods	3 months

**Table 2**

Reports	
Journey log	6 months
Flight report(s) for recording details of any occurrence, as prescribed in GAR 91.350, or any event which the pilot-in-command deems necessary to report/record	3 months
Reports on exceedance of duty and/or reducing rest periods	3 months

**Table 3**

Flight Crew Records	
Flight, Duty and Rest time	15 months
Licence	As long as the flight crew member is exercising the privileges of the licence for the operator
Conversion training and checking	3 years
Command course (including checking)	3 years
Recurrent training and checking	3 years
Training and checking to operate in either pilot's seat	3 years
Recent experience	15 months
Route and aerodrome competence	3 years
Training and qualification for specific operations (e.g. CAT II/III operations etc.)	3 years
Dangerous Goods training as appropriate	3 years

**Table 4**

Cabin Crew Records	
Flight, Duty and Rest time	15 months
Initial training, conversion and differences training (including checking)	As long as the cabin crew member is employed by the operator
Recurrent training and refresher (including checking)	Until 12 months after the cabin crew member has left the employ of the operator
Dangerous Goods training as appropriate	3 years

**Table 5**

Records for other Operational Personnel	
Training/qualification records of other personnel for whom an approved training programme is required by GARs	Last two training records

**Table 6**

Other Records	
Records on cosmic and solar radiation dosage	Until at least 12 months after the crew member has left the employ of the operator; and where a crew member has been exposed to more than 6 millisieverts (mSv) in any 12 month period, until the individual has or would have attained the age of 75 years, but in any case not less than 30 years from the termination of the work involving exposure.
RVSM monitoring data	3 years
Quality system records	3 years
Dangerous goods transport document	3 months after completion of the flight
Dangerous goods acceptance checklist	3 months after completion of the flight
Application for approvals under Subpart SPA	12 months



Subpart SPA - Specific Approvals			
Section I - General requirements			
SPA.005. GEN			<b>Scope</b>
			This Subpart establishes the requirements to be met by an operator to qualify for the issue or continuation of specific operational approvals.
SPA.020. GEN			<b>Application for a specific approval</b>
	a		Applicants for the initial issue of a specific approval shall provide the Director with the documentation required by the applicable subpart and the following information:
		1	The official name and business name, address and mailing address of the applicant; and
		2	A description of the intended operation.
	b		Applicants for a specific approval shall demonstrate to the Director that:
		1	they comply with the requirements of the applicable section;
		2	the aircraft and required equipment comply with the applicable airworthiness requirements/approvals;
		3	a training programme has been established for flight crew and, as applicable, personnel involved in these operations; and
		4	operating procedures in accordance with the applicable subpart have been specified in the operations manual.
	c		Records relating to the requirements of (a) and (b) above shall be retained by the operator in accordance with 91.1265.
SPA.025. GEN			<b>Privileges of an operator holding a specific approval</b>
			The scope of the activity that the operator is approved to conduct shall be specified in the operations manual and approval certificate or, for commercial operators, in the operations specifications to the air operator's certificate.
SPA.030. GEN			<b>Changes to operations subject to a specific approval</b>
	a		The operator shall notify the Director of any change on the items listed in SPA.020.GEN (a) and (b) and any of the requirements in the applicable section before such change takes place.
	b		The Director may prescribe the conditions under which the organisation may operate during such changes, unless the Director determines that the specific approval shall be suspended or revoked.
	c		In the case of a change to a specific approval, operators shall provide the Director with the relevant parts of the operations manual and all other relevant documentation.
SPA.035. GEN			<b>Continued validity of a specific approval</b>
			Specific approvals shall be issued for an unlimited duration. They shall remain valid subject to the operator remaining in compliance with this subpart.

Section II - Operations in areas with specified navigational performance			
SPA.001. SPN			<b>Operations in areas with specified performance based navigation</b>
	a		An aircraft shall only be operated in designated airspace, on routes or in accordance with procedures where authorization required (AR) navigation specifications are established, if the operator has been approved by the Director.
	b		An aircraft shall only be operated in designated airspace, based on ICAO Regional Air Navigation Agreement, where minimum navigation performance specifications are established, if the operator has been approved by the Director.
	c		To obtain such approval, the operator shall:
		1	demonstrate that the navigation equipment meets the required performance in terms of navigation functionality, accuracy, integrity, availability and continuity;
		2	establish and document flight crew qualification requirements in accordance with the appropriate navigation specifications;
		3	establish and maintain a training programme for relevant personnel consistent with the intended operations;
		4	establish operating procedures specifying:
		i	the equipment to be carried, including its operating limitations and appropriate entries in the Minimum Equipment List (MEL);
		ii	flight crew composition and experience requirements;
		iii	normal and abnormal procedures;
		iv	contingency procedures;
		v	incident reporting;
		vi	specific regional operating procedures, in case of MNPS; and
		vii	navigation database integrity, in case of PBN; and
		5	Establish and document appropriate maintenance procedures to ensure continuing airworthiness in accordance with the appropriate navigation specifications.
SPA.010. SPN			<b>Equipment requirements for operations in MNPS areas</b>
	a		An aircraft conducting MNPS operations shall be equipped with navigation equipment that complies with the ICAO Regional Air Navigation Agreement.
	b		Navigation equipment shall be visible and operable by either pilot seated at his/her duty station.
SPA.030. SPN			<b>Flight crew requirements for operations in PBN or MNPS areas</b>
			For commercial air transport operations the minimum flight crew shall consist of at least two pilots.

Section III - Operations in airspace with reduced vertical separation minima			
SPA.001. RVSM			<b>Operations in airspace with reduced vertical separation minima (RVSM)</b>
	a		An aircraft shall only be operated in designated airspace where a reduced vertical separation minimum of 300 m (1 000 ft) applies above flight level (FL) 290, if:
		1	the aircraft has been issued with an RVSM airworthiness approval in accordance with GAR Part 21; and
		2	the operator has been approved by the Director.
	b		To obtain an approval under (a)(2), the operator shall:
		1	establish and maintain a training programme for the flight crew involved in these operations; and
		2	establish operating procedures specifying:
		i	the equipment to be carried, including its operating limitations and appropriate entries in the Minimum Equipment List (MEL);
		ii	flight crew composition and experience requirements;
		iii	flight planning;
		iv	pre-flight procedures;
		v	procedures prior to RVSM airspace entry;

		vi	in-flight procedures;
		vii	post flight procedures;
		viii	maintenance programme;
		ix	incident reporting; and
		x	specific regional operating procedures.
	c		The operator shall ensure that:
		1	a minimum of two aeroplanes of each aircraft type grouping of the operator shall have their height-keeping performance monitored, at least once every two years or within intervals of 1,000 flight hours per aeroplane, whichever period is longer. If an operator aircraft type grouping consists of a single aeroplane, monitoring of that aeroplane shall be accomplished within the specified period; and
		2	records relating to the requirements of (1) above shall be retained by the operator in accordance with 91.1265.
			Note: Monitoring data from any regional monitoring programme established in accordance with ICAO Annex 11, Chapter 3, may be used to satisfy the requirement.
<b>SPA.010. RVSM</b>			<b>Equipment requirements for operations in RVSM airspace</b>
	a		In addition to the equipment required by Subpart F, aircraft used for operations in RVSM airspace shall be equipped with:
		1	two independent altitude measurement systems;
		2	an altitude alerting system;
		3	an automatic altitude control system; and
		4	a Secondary Surveillance Radar (SSR) transponder with altitude reporting system that can be connected to the altitude measurement system in use for altitude control.
<b>SPA.030. RVSM</b>			<b>Flight crew requirements for operations in RVSM airspace</b>
			For commercial air transport operations the minimum flight crew shall consist of at least two pilots.

Section IV - Low visibility operations			
<b>SPA.005. LVO</b>			<b>Low visibility operations — General operating rules</b>
	a		The operator shall not conduct Category II, other than Standard Category II or III operations unless:
		1	each aircraft concerned is certificated for operations with decision heights below 200 feet, or no decision height, and equipped in accordance with EASA CS-AWO on all weather operations or an equivalent accepted by the Director;
		2	a suitable system for recording approach and/or automatic landing success and failure is established and maintained to monitor the overall safety of the operation;
		3	the operations are approved by the Director;
		4	the flight crew consists of at least two pilots; and
		5	decision height is determined by means of a radio altimeter.
	b		The operator shall not conduct low visibility takeoffs in less than 150 m RVR (Category A, B, C aeroplanes, and helicopters) or 200 m RVR (Category D aeroplanes) unless approved by the Director.
	c		The operator shall not conduct lower than Standard Category I operations unless approved by the Director.
<b>SPA.010. LVO</b>			<b>Low visibility operations — Aerodrome considerations</b>
	a		The operator shall not use an aerodrome for Category II or III operations unless the aerodrome is approved for such operations by the State in which the aerodrome is located.
	b		The operator shall verify that low visibility procedures (LVP) have been established, and will be enforced, at those aerodromes where low visibility operations are to be conducted.
<b>SPA.015. LVO</b>			<b>Low visibility operations — Training and qualifications</b>
	a		The operator shall ensure that, prior to conducting low visibility take-off, lower than Standard Category I, other than Standard Category II, Category II and III operations or approaches utilising EVS:
		1	Each flight crew member:
		i	Completes the training and checking requirements prescribed in Appendix 1 including Flight simulator training in operating to the limiting values of RVR/CMV and Decision Height appropriate to the operator's approval; and
		ii	Is qualified in accordance with Appendix 1 to SPA.015.LVO;
		2	The training and checking is conducted in accordance with a detailed syllabus approved by the Director and included in the operations manual; and
		3	The flight crew qualification is specific to the operation and the aircraft type.
<b>SPA.020. LVO</b>			<b>Low visibility operations — Operating procedures</b>
	a		The operator shall establish procedures and instructions to be used for low visibility take-off, approaches utilising EVS, Lower than Standard Category I, other than Standard Category II, Category II and III operations. These procedures shall be included in the operations manual and contain the duties of flight crew members during taxiing, takeoff, approach, flare, landing, roll-out and missed approach as appropriate.
	b		The pilot in command shall be satisfied that:
		1	The status of the visual and non-visual facilities is sufficient prior to commencing a low visibility takeoff, an approach utilising EVS, a lower than Standard Category I, an other than Standard Category II, or a Category II or III approach;
		2	Appropriate LVPs are in force according to information received from Air Traffic Services, before commencing a low visibility take-off, a lower than Standard Category I, an other than Standard Category II, or a Category II or III approach; and
		3	The flight crew members are properly qualified prior to commencing a low visibility take-off in an RVR of less than 150 m (Category A, B, C aeroplanes, and helicopters) or 200 m (Cat D aeroplanes), an approach utilising EVS, a lower than Standard Category I, an other than Standard Category II or a Category II or III approach.
<b>SPA.025. LVO</b>			<b>Low visibility operations — Minimum equipment</b>
	a		The operator shall include in the operations manual the minimum equipment that has to be serviceable at the commencement of a low visibility take-off, a lower than Standard Category I approach, an Other than Standard Category II approach, an approach utilising EVS, or a Category II or III approach in accordance with the aircraft flight manual or other approved document.
	b		The pilot in command shall be satisfied that the status of the aircraft and of the relevant airborne systems is appropriate for the specific operation to be conducted.

Appendix I to SPA.005.LVO			
			<b>Low visibility operations — General operating rules</b>
	a		General. The following procedures apply to the introduction and approval of low visibility operations.
	b		Operational demonstration. The purpose of the operational demonstration is to determine or validate the use and effectiveness of the applicable aircraft flight guidance systems, including HUDLS if appropriate, training, flight crew procedures, maintenance programme, and manuals applicable to the Category II/III programme being approved.
		1	At least 30 approaches and landings must be accomplished in operations using the Category II/III systems installed in each aircraft type if the requested DH is 50 ft or higher. If the DH is less than 50 ft, at least 100 approaches and landings will need to be accomplished unless otherwise approved by the Director.
		2	If an operator has different variants of the same type of aircraft utilising the same basic flight control and display systems, or different basic flight control and display systems on the same type of aircraft, the operator must show that the various variants have satisfactory performance, but the operator need not conduct a full operational demonstration for each variant. The Director may also accept a reduction of the number of approach and landings based on credit given for the experience gained by another operator using the same aircraft type or variant and procedures.
		3	If the number of unsuccessful approaches exceeds 5 % of the total (e.g. unsatisfactory landings, system disconnects) the evaluation programme must be extended in steps of at least 10 approaches and landings until the overall failure rate does not exceed 5 %.
	c		Data collection for operational demonstrations. Each applicant must develop a data collection method (e.g. a form to be used by the flight crew) to record approach and landing performance. The resulting data and a summary of the demonstration data shall be made available to the Director for evaluation.
	d		Data analysis. Unsatisfactory approaches and/or automatic landings shall be documented and analysed.
	e		Continuous monitoring
		1	After obtaining the initial authorisation, the operations must be continuously monitored by the operator to detect any undesirable trends before they become hazardous. Flight crew reports may be used to achieve this.
		2	The following information must be retained for a period of 12 months:
		i	the total number of approaches, by aircraft type, where the airborne Category II or III equipment was utilised to make satisfactory, actual or practice, approaches to the applicable Category II or III minima; and
		ii	reports of unsatisfactory approaches and/or automatic landings, by aerodrome and aircraft registration, in the following categories:
		A	airborne equipment faults;
		B	ground facility difficulties;
		C	missed approaches because of ATC instructions; or
		D	other reasons.
		3	The operator must establish a procedure to monitor the performance of the automatic landing system or HUDLS to touchdown performance, as appropriate, of each aeroplane.
	f		Transitional periods
		1	Operators with no previous Category II or III experience
		i	The operator without previous Category II or III operational experience may be approved for Category II or IIIA operations, having gained a minimum experience of six months of Category I operations on the aircraft type.
		ii	On completing six months of Category II or IIIA operations on the aircraft type the operator may be approved for Category IIIB operations. When granting such an approval, the Director may impose higher minima than the lowest applicable for an additional period. The increase in minima will normally only refer to RVR and/or a restriction against operations with no decision height and must be selected such that they will not require any change of the operational procedures.
		2	Operators with previous Category II or III experience.
		i	The operator with previous Category II or III experience may obtain authorisation for a reduced transition period by application to the Director.
		ii	The operator authorised for Category II or III operations using auto-coupled approach procedures, with or without auto-land, and subsequently introducing manually flown Category II or III operations using a HUDLS shall be considered to be a "New Category II/III operator" for the purposes of the demonstration period provisions.
	g		Maintenance of Category II, Category III and LVTO equipment. Maintenance instructions for the onboard guidance systems must be established by the operator, in liaison with the manufacturer, and included in the operator's aircraft maintenance programme prescribed in GAR Part 39.
	h		Eligible aerodromes and runways
		1	Each aircraft type/runway combination must be verified by the successful completion of at least one approach and landing in Category II or better conditions, prior to commencing Category III operations.
		2	For runways with irregular pre-threshold terrain or other foreseeable or known deficiencies, each aircraft type/runway combination must be verified by operations in standard Category I or better conditions, prior to commencing Lower than Standard Category I, Category II, or other than Standard Category II or Category III operations.
		3	If an operator has different variants of the same type of aircraft in accordance with subparagraph 4 below, utilising the same basic flight control and display systems, or different basic flight control and display systems on the same type of aircraft in accordance with subparagraph 4 below, the operator must show that the variants have satisfactory operational performance, but the operator need not conduct a full operational demonstration for each variant/runway combination.
		4	For the purpose of paragraph (h), an aircraft type or variant of an aircraft type is deemed to be the same type/variant of aircraft if that type/variant has the same or similar:
		i	level of technology, including the:
		A	FGS and associated displays and controls;
		B	the FMS and level of integration with the FGS;
		C	use of HUDLS.
		ii	Operational procedures, including:
		A	alert height;
		B	manual landing/automatic landing;
		C	no decision height operations;
		D	use of HUD/HUDLS in hybrid operations.
		iii	Handling characteristics, including:
		A	manual landing from automatic or HUDLS guided approach;
		B	manual go-around from automatic approach;
		C	automatic/manual roll out.
		5	Operators using the same aircraft type/class or variant of a type in accordance with subparagraph 4 above may take credit from each others' experience and records in complying with this paragraph.
		6	Operators conducting Other than Standard Category II operations shall comply with this appendix..

## Appendix I to SPA.015.LVO

Appendix I to SPA.015.LVO			
			<b>Low visibility operations — Training and qualifications</b>
	a		General: The operator must ensure that flight crew member training programmes for low visibility operations include structured courses of ground, flight simulator and/or flight training. The operator may abbreviate the course content as prescribed by subparagraphs 2 and 3 below provided the content of the abbreviated course is acceptable to the Director.
		1	Flight crew members with no Category II or Category III experience must complete the full training programme prescribed in subparagraphs (b), (c) and (d) below.
		2	Flight crew members with Category II or Category III experience with a similar type of operation (autocoupled/ auto-land, HUDLS/hybrid HUDLS or EVS) or Category II with manual land if appropriate with another operator may undertake an:
		i	abbreviated ground training course if operating a different type/class from that on which the previous Category II or Category III experience was gained;
		ii	abbreviated ground, flight simulator and/or flight training course if operating the same type/class and variant of the same type or class on which the previous Category II or Category III experience was gained. The abbreviated course is to include at least the requirements of subparagraphs (d)1, (d)2(i) or (d)2(ii) as appropriate and (d)3(i). With the approval of the Director, the operator may reduce the number of approaches/landings required by subparagraph (d)2(i) if the type/class or the variant of the type or class has the same or similar:
		A	level of technology — flight control/guidance system (FGS); and
		B	operational procedures;
		C	handling characteristics (See paragraph 4 below);
			as the previously operated type or class, otherwise the requirement of (d)2(i) has to be met in full;
		D	use of HUDLS/hybrid HUDLS;
		E	use of EVS.
		3	Flight crew members with Category II or Category III experience with the operator may undertake an abbreviated ground, Flight simulator and/or flight training course when changing:
		i	aircraft type/class is to include at least the requirements of subparagraphs (d)1, (d)2(i) or (d)2(ii) as appropriate and (d)3(i);
		ii	to a different variant of aircraft within the same type or class rating that has the same or similar:
		A	level of technology — flight control/guidance system (FGS); and
		B	operational procedures — integrity;
		C	handling characteristics (See paragraph 4 below);
		D	use of HUDLS/hybrid HUDLS;
		E	use of EVS
			as the previously operated type or class, then a difference course or familiarisation appropriate to the change of variant fulfils the abbreviated course requirements;
		iii	to a different variant of aircraft within the same type or class rating that has a significantly different:
		A	level of technology — flight control/guidance system (FGS); and
		B	operational procedures — integrity;
		C	handling characteristics (See paragraph 4 below);
		D	use of HUDLS/hybrid HUDLS;
		E	use of EVS
			then the requirements of subparagraphs (d)1, (d)2(i) or (d)2(ii) as appropriate and (d)3(i) shall be fulfilled. With the approval of the Director the operator may reduce the number of approaches/ landings required by subparagraph (d)2(i).
		4	The operator must ensure when undertaking Category II or Category III operations with different variant(s) of aircraft within the same type or class rating that the differences and/or similarities of the aircraft concerned justify such operations, taking account at least the following:
		i	the level of technology, including the:
		A	FGS and associated displays and controls;
		B	the Flight Management System and its integration or not with the FGS;
		C	use of HUD/HUDLS with hybrid systems and/or EVS;
		ii	operational procedures, including:
		A	fail-passive/fail-operational, alert height;
		B	manual landing/automatic landing;
		C	no decision height operations;
		D	use of HUD/HUDLS with hybrid systems;
		iii	handling characteristics, including:
		A	manual landing from automatic HUDLS and/or EVS guided approach;
		B	manual go-around from automatic approach;
		C	automatic/manual roll out.
	b		Ground training. The operator must ensure that the initial ground training course for low visibility operations covers at least:
		1	the characteristics and limitations of the ILS and/or MLS;
		2	the characteristics of the visual aids;
		3	the characteristics of fog;
		4	the operational capabilities and limitations of the particular airborne system to include HUD symbology and EVS characteristics if appropriate;
		5	the effects of precipitation, ice accretion, low level wind shear and turbulence;
		6	the effect of specific aircraft/system malfunctions;
		7	the use and limitations of RVR assessment systems;
		8	the principles of obstacle clearance requirements;
		9	recognition of and action to be taken in the event of failure of ground equipment;
		10	the procedures and precautions to be followed with regard to surface movement during operations when the RVR is 400 m or less and any additional procedures required for take-off in conditions below 150 m (200 m for Category D aeroplanes);
		11	the significance of decision heights based upon radio altimeters and the effect of terrain profile in the approach area on radio altimeter readings and on the automatic approach/landing systems;
		12	the importance and significance of alert height if applicable and the action in the event of any failure above and below the alert height;
		13	the qualification requirements for pilots to obtain and retain approval to conduct low visibility take-offs and Category II or III operations; and
		14	the importance of correct seating and eye position.
	c		Flight simulator training and/or flight training
		1	The operator must ensure that flight simulator and/or flight training for low visibility operations includes:
		i	checks of satisfactory functioning of equipment, both on the ground and in flight;
		ii	effect on minima caused by changes in the status of ground installations;
		iii	monitoring of:



		A	automatic flight control systems and auto land status annunciators with emphasis on the action to be taken in the event of failures of such systems; and
		B	HUD/HUDLS/EVS guidance status and annunciators as appropriate, to include head down displays;
		iv	actions to be taken in the event of failures such as engines, electrical systems, hydraulics or flight control systems;
		v	the effect of known unserviceabilities and use of minimum equipment lists;
		vi	operating limitations resulting from airworthiness certification;
		vii	guidance on the visual cues required at decision height together with information on maximum deviation allowed from glide path or localiser; and
		viii	the importance and significance of alert height if applicable and the action in the event of any failure above and below the alert height.
		2	The operator must ensure that each flight crew member is trained to carry out his/her duties and instructed on the coordination required with other crew members. Maximum use should be made of flight simulators.
		3	Training must be divided into phases covering normal operation with no aircraft or equipment failures but including all weather conditions which may be encountered and detailed scenarios of aircraft and equipment failure which could affect Category II or III operations. If the aircraft system involves the use of hybrid or other special systems (such as HUD/HUDLS or enhanced vision equipment) then flight crew members must practise the use of these systems in normal and abnormal modes during the flight simulator phase of training.
		4	Incapacitation procedures appropriate to low visibility take-offs and Category II and III operations shall be practised.
		5	For aircraft with no flight simulator available to represent that specific aircraft operators must ensure that the flight training phase specific to the visual scenarios of Category II operations is conducted in a specifically approved flight simulator. Such training must include a minimum of four approaches. The training and procedures that are type specific shall be practised in the aircraft.
		6	Initial Category II and III training shall include at least the following exercises:
		i	approach using the appropriate flight guidance, autopilots and control systems installed in the aircraft, to the appropriate decision height and to include transition to visual flight and landing;
		ii	approach with all engines operating using the appropriate flight guidance systems, autopilots, HUDLS and/or EVS and control systems installed in the aircraft down to the appropriate decision height followed by missed approach; all without external visual reference;
		iii	where appropriate, approaches utilising automatic flight systems to provide automatic flare, landing and rollout; and
		iv	normal operation of the applicable system both with and without acquisition of visual cues at decision height.
		7	Subsequent phases of training must include at least:
		i	approaches with engine failure at various stages on the approach;
		ii	approaches with critical equipment failures (e.g. electrical systems, auto flight systems, ground and/or airborne ILS/MLS systems and status monitors);
		iii	approaches where failures of auto flight equipment and/or HUD/HUDLS/EVS at low level require either;
		A	reversion to manual flight to control flare, landing and roll out or missed approach; or
		B	reversion to manual flight or a downgraded automatic mode to control missed approaches from, at or below decision height including those which may result in a touchdown on the runway;
		iv	failures of the systems which will result in excessive localiser and/or glide slope deviation, both above and below decision height, in the minimum visual conditions authorised for the operation. In addition, a continuation to a manual landing must be practised if a head-up display forms a downgraded mode of the automatic system or the head-up display forms the only flare mode; and
		v	failures and procedures specific to aircraft type or variant.
		8	The training programme must provide practice in handling faults which require a reversion to higher minima.
		9	The training programme must include the handling of the aircraft when, during a fail passive Category III approach, the fault causes the autopilot to disconnect at or below decision height when the last reported RVR is 300 m or less.
		10	Where take-offs are conducted in RVRs of 400 m and below, training must be established to cover systems failures and engine failure resulting in continued as well as rejected take-offs.
		11	The training programme must include, where appropriate, approaches where failures of the HUDLS and/or EVS equipment at low level require either:
		i	reversion to head down displays to control missed approach; or
		ii	reversion to flight with no, or downgraded, HUDLS Guidance to control missed approaches from decision height or below, including those which may result in a touchdown on the runway.
		12	The operator shall ensure that when undertaking low visibility take-off, lower than Standard Category I, other than Standard Category II, and Category II and III Operations utilising a HUD/HUDLS or hybrid HUD/HUDLS or an EVS, that the training and checking programme includes, where appropriate, the use of the HUD/HUDLS in normal operations during all phases of flight.
	d		Conversion training requirements to conduct low visibility take-off, lower than Standard Category I, other than Standard Category II, approach utilising EVS and Category II and III Operations. The operator shall ensure that each flight crew member completes the following low visibility procedures training if converting to a new type/class or variant of aircraft in which low visibility take-off, lower than Standard Category I, Other than Standard Category II, Approach utilising EVS with an RVR of 800m or less and Category II and III Operations will be conducted. The flight crew member experience requirements to undertake an abbreviated course are prescribed in subparagraphs (a)2, (a)3 and (a)4, above:
		1	Ground Training. The appropriate requirements prescribed in subparagraph (b) above, taking into account the flight crew member's Category II and Category III training and experience.
		2	Flight simulator training and/or flight training.
		i	A minimum of six (eight for HUDLS with or without EVS) approaches and/or landings in a flight simulator. The requirements for eight HUDLS approaches may be reduced to six when conducting hybrid HUDLS operations. See subparagraph 4.(i) below.
		ii	Where no Flight simulator is available to represent that specific aircraft, a minimum of three (five for HUDLS and/or EVS) approaches including at least one go-around is required on the aircraft. For hybrid HUDLS operations a minimum of three approaches are required, including at least one go-around.
		ii	Appropriate additional training if any special equipment is required such as head-up displays or enhanced vision equipment. When approach operations utilising EVS are conducted with an RVR of less than 800m, a minimum of five approaches, including at least one go-around are required on the aircraft.
		3	Flight crew qualification. The flight crew qualification requirements are specific to the operator and the type of aircraft operated.
		i	The operator must ensure that each flight crew member completes a check before conducting Category II or III operations.
		ii	The check prescribed in subparagraph (i) above may be replaced by successful completion of the flight simulator and/or flight training prescribed in subparagraph (d)2. above.
		4	Line flying under supervision. The operator must ensure that each flight crew member undergoes the following line flying under supervision (LIFUS):
		i	for Category II when a manual landing or a HUDLS approach to touchdown is required, a minimum of:
		A	three landings from autopilot disconnect;
		B	four landings with HUDLS used to touchdown;
			except that only one manual landing (two using HUDLS to touchdown) is required when the training required in subparagraph (d)2 above has been carried out in a flight simulator qualified for zero flight time conversion.
		ii	For Category III, a minimum of two auto lands except that:
		A	only 1 autoland is required when the training required in subparagraph (d)2. above has been carried out in a flight simulator qualified for zero flight time conversion;



	B	no autoland is required during LIFUS when the training required in subparagraph (d)2 above has been carried out in a flight simulator qualified for zero flight time (ZFT) conversion and the flight crew member successfully completed the ZFT type rating conversion course;
	C	the flight crew member, trained and qualified in accordance with paragraph (B) above, is qualified to operate during the conduct of LIFUS to the lowest approved DA(H) and RVR as stipulated in the operations manual.
	iii	For Category III approaches using HUDLS to touchdown a minimum of four approaches.
e		Type and command experience.
	1	Before commencing Category II operations, the following additional requirements are applicable to pilot in command, or pilots to whom conduct of the flight may be delegated, who are new to the aircraft type/class:
	i	50 hours or 20 sectors on the type, including line flying under supervision; and
	ii	100 m must be added to the applicable Category II RVR minima when the operation requires a Category II manual landing or use of HUDLS to touchdown until:
	A	a total of 100 hours or 40 sectors, including LIFUS has been achieved on the type; or
	B	a total of 50 hours or 20 sectors, including LIFUS has been achieved on the type where the flight crew member has been previously qualified for Category II manual landing operations with another operator;
	C	for HUDLS operations the sector requirements in paragraphs (e) 1. and (e) 2. (i) shall always be applicable, the hours on type/class does not fulfil the requirement.
	2	Before commencing Category III operations, the following additional requirements are applicable to pilots in command, or pilots to whom conduct of the flight may be delegated, who are new to the aircraft type:
	i	50 hours or 20 sectors on the type, including line flying under supervision; and
	ii	100 m must be added to the applicable Category II or Category III RVR minima unless he has previously qualified for Category II or III operations with another operator, until a total of 100 hours or 40 sectors, including line flying under supervision, has been achieved on the type.
	3	The Director may authorise a reduction in the above command experience requirements for flight crew members who have Category II or Category III command experience.
f		Low visibility take-off with RVR less than 150/200 m
	1	The operator must ensure that prior to authorisation to conduct take-offs in RVRs below 150 m (below 200 m for Category D aeroplanes) the following training is carried out:
	i	normal take-off in minimum authorised RVR conditions;
	ii	take-off in minimum authorised RVR conditions with an engine failure between V1 and V2, or as soon as safety considerations permit; and
	iii	take-off in minimum authorised RVR conditions with an engine failure before V1 resulting in a rejected take-off.
	2	The operator must ensure that the training required by subparagraph 1 above is carried out in a flight simulator. This training must include the use of any special procedures and equipment. Where no flight simulator is available to represent that specific aircraft, the Director may approve such training in an aircraft without the requirement for minimum RVR conditions.
	3	The operator must ensure that a flight crew member has completed a check before conducting low visibility take-offs in RVRs of less than 150 m (less than 200 m for Category D aeroplanes) if applicable. The check may only be replaced by successful completion of the flight simulator and/or flight training prescribed in subparagraph (f)(1). on conversion to an aeroplane type.
g		Recurrent training and checking — Low visibility operations
	1	The operator must ensure that, in conjunction with the normal recurrent training and operator proficiency checks, a pilot's knowledge and ability to perform the tasks associated with the particular category of operation, for which he/she is authorised is checked. The required number of approaches to be undertaken in the flight simulator within the validity period of the operators proficiency check (as prescribed in 121.1115, 125.1115 and 135.1115) is to be a minimum of two, (four when HUDLS and/or EVS is utilised to touchdown) one of which must be a landing at the lowest approved RVR; in addition one (two for HUDLS and/or operations utilising EVS) of these approaches may be substituted by an approach and landing in the aircraft using approved Category II and III procedures. One missed approach shall be flown during the conduct of the operators proficiency check. If the operator is authorised to conduct take-off with RVR less than 150/200 m at least one LVTO to the lowest applicable minima shall be flown during the conduct of the operators proficiency check.
	2	For Category III operations an operator must use a flight simulator.
	3	The operator must ensure that, for Category III operations on aircraft with a fail passive flight control system, including HUDLS, a missed approach is completed at least once over the period of three consecutive operator proficiency checks as the result of an autopilot failure at or below decision height when the last reported RVR was 300 m or less.
	4	The Director may authorise recurrent training and checking for Category II and LVTO operations in an aircraft type where no flight simulator to represent that specific aircraft or an acceptable alternate is available.
		<i>Note: Recency for LVTO and Category II/III based upon automatic approaches and/or auto-lands is maintained by the recurrent training and checking as prescribed in this paragraph.</i>
h		Additional training requirements for operators conducting lower than Standard Category I, approaches utilising EVS and other than Standard Category II Operations.
	1	Operators conducting lower than Standard Category I operations shall comply with the requirements for low visibility operations — training and qualifications applicable to Category II operations to include the requirements applicable to HUDLS (if appropriate). The operator may combine these additional requirements where appropriate provided that the operational procedures are compatible. During conversion training the total number of approaches required shall not be an addition to the standard requirements provided the training is conducted utilising the lowest applicable RVR. During recurrent training and checking the operator may also combine the separate requirements provided the above operational procedure requirement is met, provided that at least one approach using lower than Standard Category I minima is conducted at least once every 18 months.
	2	Operators conducting other than Standard Category II operations shall comply with the requirements for low visibility operations — training and qualifications applicable to Category II operations to include the requirements applicable to HUDLS (if appropriate). The operator may combine these additional requirements where appropriate provided that the operational procedures are compatible. During conversion training the total number of approaches required shall not be less than that required to complete Category II training utilising a HUD/ HUDLS. During recurrent training and checking the operator may also combine the separate requirements provided the above operational procedure requirement is met, provided that at least one approach using other than Standard Category II minima is conducted at least once every 18 months.
	3	Operators conducting approach operations utilising EVS with RVR of 800 m or less shall comply with the requirements for Low Visibility Operations — Training and Qualifications applicable to Category II operations to include the requirements applicable to HUD (if appropriate). The operator may combine these additional requirements where appropriate provided that the operational procedures are compatible. During conversion training the total number of approaches required shall not be less than that required to complete Category II training utilising a HUD. During recurrent training and checking the operator may also combine the separate requirements provided the above operational procedure requirement is met, provided that at least one approach utilising EVS is conducted at least once every 12 months.

Appendix 1 to SPA.020.LVO			
			<b>Low visibility operations — Operating procedures</b>
	a		General. Low visibility operations include:
		1	manual take-off (with or without electronic guidance systems or HUDLS/hybrid HUD/HUDLS);
		2	auto-coupled approach to below DH, with manual flare, landing and roll-out;
		3	approach flown with the use of a HUDLS/hybrid HUD/HUDLS and/or EVS);
		4	auto-coupled approach followed by auto-flare, auto landing and manual roll-out; and
		5	auto-coupled approach followed by auto-flare, auto landing and auto-roll-out, when the applicable RVR is less than 400 m.
			<i>Note 1: A hybrid system may be used with any of these modes of operations.</i>
			<i>Note 2: Other forms of guidance systems or displays may be certificated and approved.</i>
	b		Procedures and operating instructions
		1	The precise nature and scope of procedures and instructions given depend upon the airborne equipment used and the flight deck procedures followed. The operator must clearly define flight crew member duties during take-off, approach, flare, roll-out and missed approach in the operations manual. Particular emphasis must be placed on flight crew responsibilities during transition from nonvisual conditions to visual conditions, and on the procedures to be used in deteriorating visibility or when failures occur. Special attention must be paid to the distribution of flight deck duties so as to ensure that the workload of the pilot making the decision to land or execute a missed approach enables him/her to devote himself/herself to supervision and the decision making process.
		2	The operator must specify the detailed operating procedures and instructions in the operations manual. The instructions must be compatible with the limitations and mandatory procedures contained in the flight manual and cover the following items in particular:
		i	checks for the satisfactory functioning of the aircraft equipment, both before departure and in flight;
		ii	effect on minima caused by changes in the status of the ground installations and airborne equipment;
		iii	procedures for the take-off, approach, flare, landing, roll-out and missed approach;
		iv	procedures to be followed in the event of failures, warnings to include HUD/HUDLS/EVS and other non-normal situations;
		v	the minimum visual reference required;
		vi	the importance of correct seating and eye position;
		vii	action which may be necessary arising from a deterioration of the visual reference;
		viii	allocation of crew duties in the carrying out of the procedures according to subparagraphs (i) to (iv) and (vi) above, to allow the pilot in command to devote himself/herself mainly to supervision and decision making;
		ix	the requirement for all height calls below 200 feet to be based on the radio altimeter and for one pilot to continue to monitor the aircraft instruments until the landing is completed;
		x	the requirement for the Localiser Sensitive Area to be protected;
		xi	the use of information relating to wind velocity, wind shear, turbulence, runway contamination and use of multiple RVR assessments;
		xii	procedures to be used for:
		A	lower than Standard Category I;
		B	other than Standard Category II;
		C	approaches utilising EVS; and
		D	practice approaches and landing on runways at which the full Category II or Category III aerodrome procedures are not in force;
		xiii	operating limitations resulting from airworthiness certification; and
		xiv	information on the maximum deviation allowed from the ILS glide path and/or localiser.

Section V – Electronic flight bags (EFBs)			
SPA.001.EFB			<b>EFB equipment</b>
			Where portable EFBs are used on board, the pilot-in-command and/or the operator/owner shall ensure that they do not affect the performance of the aeroplane systems, equipment or the ability to operate the aeroplane
			<i>Note: - Guidance on EFB equipment, functions and establishing criteria for the operational use is contained in ICAO Manual on Electronic Flight Bags (Doc 10020)</i>
SPA.005.EFB			<b>EFB functions</b>
	a		Where EFBs are used on board an aeroplane the pilot-in-command and/or the owner/operator shall:
		1	assess the safety risk(s) associated with each EFB function;
		2	establish the procedures for the use of, and training requirements for, the device and each EFB function; and
		3	ensure that, in the event of an EFB failure, sufficient information is readily available to the flight crew for the flight to be conducted safely.



## Appendix A — [reserved]

## Appendix B — Emergency Equipment

<b>B.1</b>			<b>Medical supplies</b>
	a		The following lists provide details of the contents of first-aid, universal precaution and medical kits.
		1	First-aid kit
			List of contents
			Antiseptic swabs (10/pack)
			Bandage: adhesive strips
			Bandage: gauze 7.5 cm x 4.5 m
			Bandage: triangular; safety pins
			Dressing: burn 10 cm x 10 cm
			Dressing: compress, sterile 7.5 cm x 12 cm
			Dressing: gauze, sterile 10.4 cm x 10.4 cm
			Tape: adhesive 2.5 cm (roll)
			Steri-strips (or equivalent adhesive strip)
			Hand cleanser or cleansing towelettes
			Pad with shield, or tape, for eye
			Scissors: 10 cm (if allowed by local regulations)
			Tape: adhesive, surgical 1.2 cm x 4.6 m
			Tweezers: splinter
			Disposable gloves (multiple pairs)
			Thermometers (non-mercury)
			Mouth-to-mouth resuscitation mask with one-way valve
			First-aid manual, current edition
			Incident record form
			The following medications can be included in the first-aid kits where permitted by local regulations:
			Mild to moderate analgesic
			Antiemetic
			Nasal decongestant
			Antacid
			Antihistamine
		2	Universal precaution kit
			Dry powder that can convert small liquid spill into a sterile granulated gel
			Germicidal disinfectant for surface cleaning
			Skin wipes
			Face/eye mask (separate or combined)
			Gloves (disposable)
			Protective apron
			Large absorbent towel
			Pick-up scoop with scraper
			Bio-hazard disposal waste bag
			Instructions
		3	Medical kit
		i	Equipment
			List of contents
			Stethoscope
			Sphygmomanometer (electronic preferred)
			Airways, oropharyngeal (three sizes)
			Syringes (appropriate range of sizes )
			Needles (appropriate range of sizes)
			Intravenous catheters (appropriate range of sizes)
			Antiseptic wipes
			Gloves (disposable)
			Needle disposal box
			Urinary catheter
			System for delivering intravenous fluids
			Venous tourniquet
			Sponge gauze
			Tape - adhesive
			Surgical mask
			Emergency tracheal catheter (or large gauge intravenous cannula)
			Umbilical cord clamp

		Thermometers (non-mercury)
		Basic life support cards
		Bag-valve mask
		Flashlight and batteries
	ii	Medication
		Epinephrine 1:1 000
		Antihistamine - injectable
		Dextrose 50 % (or equivalent) - injectable: 50 ml
		Nitroglycerin tablets, or spray
		Major analgesic
		Sedative anticonvulsant - injectable
		Antiemetic - injectable
		Bronchial dilator - inhaler
		Atropine - injectable
		Adrenocortical steroid - injectable
		Diuretic - injectable
		Medication for postpartum bleeding
		Sodium chloride 0.9 % (minimum 250 ml)
		Acetyl salicylic acid (aspirin) for oral use
		Oral beta blocker
		If a cardiac monitor is available (with or without an AED) add to the above list:
		Epinephrine 1:10 000 (can be a dilution of epinephrine 1:1 000)
<b>B.5</b>		<b>Life rafts</b>
	a	Life rafts shall be equipped appropriately to the area that the flight covers.
	b	Each life raft shall contain the following equipment:
	1	means of maintaining buoyancy; and
	2	a sea anchor; and
	3	lifelines and a means of attaching one life raft to another; and
	4	paddles or other means of propulsion; and
	5	canopy to protect the occupants; and
	6	one radar reflector; and
	7	one life raft repair kit; and
	8	one bailing bucket; and
	9	one inflation pump; and
	10	one magnetic compass; and
	11	one raft knife; and
	12	one liferaft survival pack, equipped in accordance with paragraph 135.B.010.
<b>B.10</b>		<b>Life raft survival pack</b>
	a	Each life raft shall carry a survival pack containing the following equipment:
	1	a waterproof flashlight having at least two 'D' cells or equivalent; and
	2	marine type pyrotechnic distress signals; and
	3	means of making sea water drinkable; and
	4	for every 4 persons the life raft is designed to carry;
	i	100 gm of glucose toffee tablets; and
	ii	500 ml of fresh water in durable containers, of which a proportion may be provided by means of 135.B.010(a)(3); and
	5	first aid equipment; and
	6	one signalling mirror; and
	7	one whistle; and
	8	one dye marker; and
	9	one fishing kit; and
	10	one book on survival appropriate for the area over which the aircraft is operated.
<b>B.15</b>		<b>Survival beacons</b>
		Where life rafts are carried, a survival beacon radio shall also be carried in accordance with Table 1 below.
<b>B.20</b>		<b>Survival equipment</b>
	a	Where survival equipment is required to be carried in accordance with paragraph 135.710, the following items shall be included:
	1	Polar conditions:
	i	one survival beacon radio; and
	ii	pyrotechnic distress signals; and
	iii	first aid equipment; and
	iv	one cooking utensil for melting snow; and
	v	two snow shovels; and
	vi	two ice saws; and
	vii	single or multiple sleeping bags suitable for one-third of persons carried; and



		vii	two sets arctic protective clothing; and
		i	
		ix	one stove for every 75 persons carried; and
		x	for every 4 persons, 100 gm of glucose toffee tablets and 500 ml of fresh water in durable containers.
		2	Tropical conditions:
		i	one survival beacon radio; and
		ii	pyrotechnic distress signals; and
		iii	first aid equipment; and
		iv	for every 4 persons, 100 gm of glucose toffee tablets and 500 ml of fresh water in durable containers.

Table 1 to B.15

Number of rafts	Number of beacons
1 to 8	2
more than 8	One additional radio for each 4 life rafts or proportion of 4 life rafts

**Appendix C — Aerial work and specialised operations**

<b>C.005</b>		<b>Applicability</b>
		The following requirements apply to applicants for and holders of permissions for the conduct of specialised operations as required under 91.375, 91.380 and 91.390.
<b>C.010</b>		<b>Permissions — General requirements</b>
	a	Every applicant for and holder of a permission shall make available to the Director if requested an operations manual containing such information and instructions as may be necessary to enable employees and persons engaged in the operation to perform their duties.
	b	The operations manual shall include standard operating procedures as described in 91.370.
	c	The permission holder shall make such amendments or additions to the operations manual as the Director may require.
	d	The permission holder shall make the manual available to every employee or person who is engaged or may engage in aerial activities conducted by him.
	e	The permission holder shall ensure that each copy of the operations manual is kept up to date.
	f	The permission holder shall clearly define the duties and accountabilities of those persons responsible for managing the safe operation of aircraft.
	g	The permission holder shall ensure that all employees and persons engaged in the operation are trained and equipped as appropriate to the tasks to be performed.
	h	Notwithstanding 91.155:
	1	the permission holder shall be responsible for operational control; and
	2	operational control shall only be delegated to a flight operations officer/flight dispatcher or the pilot-in-command.

**Appendix D — Rules of the Air**

Rules of the Air are published as Schedule 4 of the Air Navigation (Bailiwick of Guernsey) Law, 2012

Appendix E — Performance classes			
			The sections of Appendix E contain the technical description of the Performance Classes. The requirement to apply a Performance Class is not contained in the appendix but in the respective GARs.
Appendix E1 Aeroplanes - Performance Class A			
<b>E1.005</b>			<b>Take-off</b>
	a		The take-off mass shall not exceed the maximum takeoff mass specified in the aircraft flight manual (AFM) for the pressure altitude and the ambient temperature at the aerodrome of departure.
	b		The following requirements shall be met when determining the maximum permitted take-off mass:
		1	the accelerate-stop distance shall not exceed the accelerate-stop distance available (ASDA);
		2	the take-off distance shall not exceed the take-off distance available, with a clearway distance not exceeding half of the take-off run available (TORA);
		3	the take-off run shall not exceed the TORA;
		4	a single value of $V_i$ shall be used for the rejected and continued take-off; and
		5	on a wet or contaminated runway, the take-off mass shall not exceed that permitted for a take-off on a dry runway under the same conditions.
	c		When showing compliance with (b), the following shall be taken into account:
		1	the pressure altitude at the aerodrome;
		2	the ambient temperature at the aerodrome;
		3	the runway surface condition and the type of runway surface;
		4	the runway slope in the direction of take-off;
		5	not more than 50 % of the reported headwind component or not less than 150 % of the reported tailwind component; and
		6	the loss, if any, of runway length due to alignment of the aeroplane prior to take-off.
<b>E1.010</b>			<b>Take-off obstacle clearance</b>
	a		The net take-off flight path shall be determined in such a way that the aeroplane clears all obstacles by a vertical distance of at least 35 ft or by a horizontal distance of at least 90 m plus $0.125 \times D$ , where $D$ is the horizontal distance the aeroplane has travelled from the end of the take-off distance available (TODA) or the end of the take-off distance if a turn is scheduled before the end of the TODA. For aeroplanes with a wingspan of less than 60 m, a horizontal obstacle clearance of half the aeroplane wingspan plus 60 m, plus $0.125 \times D$ may be used.
	b		When showing compliance with (a):
		1	The following items shall be taken into account:
		i	the mass of the aeroplane at the commencement of the take-off run;
		ii	the pressure altitude at the aerodrome;
		iii	the ambient temperature at the aerodrome; and
		iv	not more than 50 % of the reported headwind component or not less than 150 % of the reported tailwind component;
		2	Track changes shall not be allowed up to the point at which the net take-off flight path has achieved a height equal to one half the wingspan but not less than 50 ft above the elevation of the end of the TORA. Thereafter, up to a height of 400 ft it is assumed that the aeroplane is banked by no more than 15°. Above 400 ft height bank angles greater than 15°, but not more than 25° may be scheduled.
		3	Any part of the net take-off flight path in which the aeroplane is banked by more than 15° shall clear all obstacles within the horizontal distances specified in (a), (b)(6) and (b)(7) by a vertical distance of at least 50 ft.
		4	Operations that apply increased bank angles of not more than 20° between 200 ft and 400 ft, or not more than 30° above 400 ft, shall be carried out in accordance with E1.040.
		5	Adequate allowance shall be made for the effect of bank angle on operating speeds and flight path including the distance increments resulting from increased operating speeds.
		6	For cases where the intended flight path does not require track changes of more than 15°, the operator does not need to consider those obstacles that have a lateral distance greater than:
		i	300 m, if the pilot is able to maintain the required navigational accuracy through the obstacle accountability area; or
		ii	600 m, for flights under all other conditions.
		7	For cases where the intended flight path requires track changes of more than 15°, the operator does not need to consider those obstacles that have a lateral distance greater than:
		i	600 m, if the pilot is able to maintain the required navigational accuracy through the obstacle accountability area; or
		ii	900 m, for flights under all other conditions.
	c		The operator shall establish contingency procedures to satisfy the requirements in (a) and (b) and to provide a safe route, avoiding obstacles, to enable the aeroplane to either comply with the en-route requirements of E1.015, or land at either the aerodrome of departure or at a takeoff alternate aerodrome.
<b>E1.015</b>			<b>En-route — one-engine-inoperative (OEI)</b>
	a		The OEI en-route net flight path data shown in the AFM, appropriate to the meteorological conditions expected for the flight, shall allow demonstration of compliance with (b) or (c) at all points along the route. The net flight path shall have a positive gradient at 1,500 ft above the aerodrome where the landing is assumed to be made after engine failure. In meteorological conditions requiring the operation of ice protection systems, the effect of their use on the net flight path shall be taken into account.
	b		The gradient of the net flight path shall be positive at least 1,000 ft above all terrain and obstructions along the route within 5 NM (9.3 km) on either side of the intended track.
	c		The net flight path shall permit the aeroplane to continue flight from the cruising altitude to an aerodrome where a landing can be made in accordance with E1.025 or E1.030, as appropriate. The net flight path shall clear vertically, by at least 2,000 ft, all terrain and obstructions along the route within 5 NM (9.3 km) on either side of the intended track in accordance with the following:
		1	the engine is assumed to fail at the most critical point along the route;
		2	account is taken of the effects of winds on the flight path;
		3	fuel jettisoning is permitted to an extent consistent with reaching the aerodrome with the required fuel reserves, if a safe procedure is used; and
		4	the aerodrome where the aeroplane is assumed to land after engine failure shall meet the following criteria:
		i	the performance requirements at the expected landing mass are met; and
		ii	weather reports and/or forecasts and field condition reports indicate that a safe landing can be accomplished at the estimated time of landing.
	d		The operator shall increase the width margins of (b) and (c) to 10 NM (18.5 km) if the navigational accuracy does not meet at least required navigation performance 5 (RNP5).
<b>E1.020</b>			<b>En-route — aeroplanes with three or more engines, two engines inoperative</b>

	a	At no point along the intended track shall an aeroplane having three or more engines be more than 90 minutes, at the all-engines long range cruising speed at standard temperature in still air, away from an aerodrome at which the performance requirements applicable at the expected landing mass are met, unless it complies with (b) to (f).
	b	The two-engines-inoperative en-route net flight path data shall allow the aeroplane to continue the flight, in the expected meteorological conditions, from the point where two engines are assumed to fail simultaneously to an aerodrome at which it is possible to land and come to a complete stop when using the prescribed procedure for a landing with two engines inoperative. The net flight path shall clear vertically, by at least 2,000 ft, all terrain and obstructions along the route within 5 NM (9.3 km) on either side of the intended track. At altitudes and in meteorological conditions requiring ice protection systems to be operable, the effect of their use on the net flight path data shall be taken into account. If the navigational accuracy does not meet at least RNP5, the operator shall increase the width margin given above to 10 NM (18.5 km).
	c	The two engines shall be assumed to fail at the most critical point of that portion of the route where the aeroplane is more than 90 minutes, at the all-engines long range cruising speed at standard temperature in still air, away from an aerodrome at which the performance requirements applicable at the expected landing mass are met.
	d	The net flight path shall have a positive gradient at 1,500 ft above the aerodrome where the landing is assumed to be made after the failure of two engines.
	e	Fuel jettisoning shall be permitted to an extent consistent with reaching the aerodrome with the required fuel reserves, if a safe procedure is used.
	f	The expected mass of the aeroplane at the point where the two engines are assumed to fail shall not be less than that which would include sufficient fuel to proceed to an aerodrome where the landing is assumed to be made, and to arrive there at least 1,500 ft directly over the landing area and thereafter to fly level for 15 minutes.
<b>E1.025</b>		<b>Landing — destination and alternate aerodromes</b>
	a	The landing mass of the aeroplane determined in accordance with 121/135.560 shall not exceed the maximum landing mass specified for the altitude and the ambient temperature expected for the estimated time of landing at the destination aerodrome and alternate aerodrome.
<b>E1.030</b>		<b>Landing — dry runways</b>
	a	The landing mass of the aeroplane determined in accordance with 121/135.560 for the estimated time of landing at the destination aerodrome and at any alternate aerodrome shall allow a full stop landing from 50 ft above the threshold:
	i	for turbo-jet powered aeroplanes, within 60 % of the landing distance available (LDA); and
	2	for turbo-propeller powered aeroplanes, within 70 % of the LDA.
	b	For steep approach operations, the operator shall use the landing distance data factored in accordance with (a), based on a screen height of less than 60 ft, but not less than 35 ft, and shall comply with 121/135.555.
	c	For short landing operations, the operator shall use the landing distance data factored in accordance with (a) and shall comply with 121/135.550.
	d	When determining the landing mass, the operator shall take the following into account:
	1	the altitude at the aerodrome;
	2	not more than 50 % of the headwind component or not less than 150 % of the tailwind component; and
	3	the runway slope in the direction of landing if greater than $\pm 2\%$ .
	e	For dispatching the aeroplane it shall be assumed that:
	1	the aeroplane will land on the most favourable runway, in still air; and
	2	the aeroplane will land on the runway most likely to be assigned, considering the probable wind speed and direction, the ground handling characteristics of the aeroplane and other conditions such as landing aids and terrain.
	f	If the operator is unable to comply with (e)(1) for a destination aerodrome having a single runway where a landing depends upon a specified wind component, the aeroplane may be dispatched if two alternate aerodromes are designated that permit full compliance with (a) to (e). Before commencing an approach to land at the destination aerodrome, the commander shall check that a landing can be made in full compliance with (a) to (d) and E1.025.
	g	If the operator is unable to comply with (e)(2) for the destination aerodrome, the aeroplane shall be only dispatched if an alternate aerodrome is designated that allows full compliance with (a) to (e).
<b>E1.035</b>		<b>Landing — wet and contaminated runways</b>
	a	When the appropriate weather reports and/or forecasts indicate that the runway at the estimated time of arrival may be wet, the LDA shall be at least 115 % of the required landing distance, determined in accordance with E1.030.
	b	When the appropriate weather reports and/or forecasts indicate that the runway at the estimated time of arrival may be contaminated, the LDA shall be at least the landing distance determined in accordance with (a), or at least 115 % of the landing distance determined in accordance with approved contaminated landing distance data or equivalent, whichever is greater. The operator shall specify in the operations manual if equivalent landing distance data are to be applied.
	c	A landing distance on a wet runway shorter than that required by (a), but not less than that required by E1.030(a), may be used if the AFM includes specific additional information about landing distances on wet runways.
	d	A landing distance on a specially prepared contaminated runway shorter than that required by (b), but not less than that required by E1.030(a), may be used if the AFM includes specific additional information about landing distances on contaminated runways.
	e	For (b), (c) and (d), the criteria of E1.030 shall be applied accordingly, except that E1.030(a) shall not be applied to (b) above.
<b>E1.040</b>		<b>Approval of operations with increased bank angles</b>
	a	Operations with increased bank angles require prior approval by the competent authority.
	b	To obtain the approval, the operator shall provide evidence that the following conditions are met:
	1	the AFM contains approved data for the required increase of operating speed and data to allow the construction of the flight path considering the increased bank angles and speeds;
	2	visual guidance is available for navigation accuracy;
	3	weather minima and wind limitations are specified for each runway; and
	4	the flight crew has obtained adequate knowledge of the route to be flown and of the procedures to be used in accordance with Subpart I and J.
<b>Appendix E2 Aeroplanes - Performance Class B</b>		
<b>E2.005</b>		<b>T ake-off</b>
	a	The take-off mass shall not exceed the maximum takeoff mass specified in the aircraft flight manual (AFM) for the pressure altitude and the ambient temperature at the aerodrome of departure.
	b	The unfactored take-off distance, specified in the AFM, shall not exceed:
	1	when multiplied by a factor of 1.25, the take-off run available (TORA); or
	2	when stop way and/or clearway is available, the followmagg
	i	the TORA;
	ii	when multiplied by a factor of 1.15, the take-off distance available (TODA); or
	iii	when multiplied by a factor of 1.3, the ASDA.
	c	When showing compliance with (b), the following shall be taken into account:
	1	the mass of the aeroplane at the commencement of the take-off run;

		2	the pressure altitude at the aerodrome;
		3	the ambient temperature at the aerodrome;
		4	the runway surface condition and the type of runway surface;
		5	the runway slope in the direction of take-off; and
		6	not more than 50 % of the reported headwind component or not less than 150 % of the reported tailwind component <sup>^</sup>
<b>E2.010</b>			<b>Take-off obstacle clearance — multi-engined aeroplanes</b>
	a		The take-off flight path of aeroplanes with two or more engines shall be determined in such a way that the aeroplane clears all obstacles by a vertical distance of at least 50 ft, or by a horizontal distance of at least 90 m plus 0.125 x D, where D is the horizontal distance travelled by the aeroplane from the end of the TODA or the end of the take-off distance if a turn is scheduled before the end of the TODA, except as provided in (b) and (c). For aeroplanes with a wingspan of less than 60 m, a horizontal obstacle clearance of half the aeroplane wingspan plus 60 m plus 0.125 x D may be used. It shall be assumed that:
		1	the take-off flight path begins at a height of 50 ft above the surface at the end of the take-off distance required by E4.005(b) and ends at a height of 1,500 ft above the surface;
		2	the aeroplane is not banked before the aeroplane has reached a height of 50 ft above the surface, and thereafter the angle of bank does not exceed 15°;
		3	failure of the critical engine occurs at the point on the all engine take-off flight path where visual reference for the purpose of avoiding obstacles is expected to be lost;
		4	the gradient of the take-off flight path from 50 ft to the assumed engine failure height is equal to the average all engines gradient during climb and transition to the en-route configuration, multiplied by a factor of 0.77; and
		5	the gradient of the take-off flight path from the height reached in accordance with (a)(4) to the end of the takeoff flight path is equal to the OEI en-route climb gradient shown in the AFM.
	b		For cases where the intended flight path does not require track changes of more than 15°, the operator does not need to consider those obstacles that have a lateral distance greater than:
		1	300 m, if the flight is conducted under conditions allowing visual course guidance navigation, or if navigational aids are available enabling the pilot to maintain the intended flight path with the same accuracy; or
		2	600 m, for flights under all other conditions.
	c		For cases where the intended flight path requires track changes of more than 15°, the operator does not need to consider those obstacles that have a lateral distance greater than:
		1	600 m, for flights under conditions allowing visual course guidance navigation; or
		2	900 m, for flights under all other conditions.
	d		When showing compliance with (a) to (c), the following shall be taken into account:
		1	the mass of the aeroplane at the commencement of the take-off run;
		2	the pressure altitude at the aerodrome;
		3	the ambient temperature at the aerodrome; and
		4	not more than 50 % of the reported headwind component or not less than 150 % of the reported tailwind component.
<b>E2.015</b>			<b>En-route — multi-engined aeroplanes</b>
	a		The aeroplane, in the meteorological conditions expected for the flight and in the event of the failure of one engine, with the remaining engines operating within the maximum continuous power conditions specified, shall be capable of continuing flight at or above the relevant minimum altitudes for safe flight stated in the operations manual to a point of 1,000 ft above an aerodrome at which the performance requirements can be met.
	b		It shall be assumed that, at the point of engine failure:
		1	the aeroplane is not flying at an altitude exceeding that at which the rate of climb equals 300 ft per minute with all engines operating within the maximum continuous power conditions specified; and
		2	the en-route gradient with OEI shall be the gross gradient of descent or climb, as appropriate, respectively increased by a gradient of 0.5 %, or decreased by a gradient of 0.5 %.
<b>E2.020</b>			<b>En-route — single-engined aeroplanes</b>
	a		In the meteorological conditions expected for the flight, and in the event of engine failure, the aeroplane shall be capable of reaching a place at which a safe forced landing can be made. For landplanes, a place on land is required unless otherwise approved by the Director.
	b		It shall be assumed that, at the point of engine failure:
		1	the aeroplane is not flying at an altitude exceeding that at which the rate of climb equals 300 ft per minute, with the engine operating within the maximum continuous power conditions specified; and
		2	the en-route gradient is the gross gradient of descent increased by a gradient of 0.5 %.
<b>E2.025</b>			<b>Landing — destination and alternate aerodromes</b>
			The landing mass of the aeroplane determined in accordance with 121/135.560 shall not exceed the maximum landing mass specified for the altitude and the ambient temperature expected at the estimated time of landing at the destination aerodrome and alternate aerodrome.
<b>E2.030</b>			<b>Landing — dry runways</b>
	a		The landing mass of the aeroplane determined in accordance with 121/135.560 for the estimated time of landing at the destination aerodrome and at any alternate aerodrome shall allow a full stop landing from 50 ft above the threshold within 70 % of the LDA taking into account:
		1	the altitude at the aerodrome;
		2	not more than 50 % of the headwind component or not less than 150 % of the tailwind component;
		3	the runway surface condition and the type of runway surface; and
		4	the runway slope in the direction of landing.
	b		For steep approach operations, the operator shall use landing distance data factored in accordance with (a) based on a screen height of less than 60 ft, but not less than 35 ft, and comply with 121/135.555.
	c		For short landing operations, the operator shall use landing distance data factored in accordance with (a) and comply with 121/135.550.
	d		For dispatching the aeroplane in accordance with (a) to (c), it shall be assumed that:
		1	the aeroplane will land on the most favourable runway, in still air; and
		2	the aeroplane will land on the runway most likely to be assigned considering the probable wind speed and direction, the ground handling characteristics of the aeroplane and other conditions such as landing aids and terrain.
	e		If the operator is unable to comply with (d)(2) for the destination aerodrome, the aeroplane shall only be dispatched if an alternate aerodrome is designated that permits full compliance with (a) to (d).
<b>E2.035</b>			<b>Landing — wet and contaminated runways</b>
	a		When the appropriate weather reports and/or forecasts indicate that the runway at the estimated time of arrival may be wet, the LDA shall be equal to or exceed the required landing distance, determined in accordance with E2.030, multiplied by a factor of 1.15.



	b		When the appropriate weather reports and/or forecasts indicate that the runway at the estimated time of arrival may be contaminated, the landing distance shall not exceed the LDA. The operator shall specify in the operations manual the landing distance data to be applied.
	c		A landing distance on a wet runway shorter than that required by (a), but not less than that required by E2.030(a), may be used if the AFM includes specific additional information about landing distances on wet runways.
<b>E2.040</b>			<b>Take-off and landing climb requirements</b>
			The operator of a two-engined aeroplane shall fulfil the following take-off and landing climb requirements; except that a two-engined aeroplane that does not meet these climb requirements shall be treated as a single-engined aeroplane.
	a		Take-off climb
		1	All engines operating
		i	The steady gradient of climb after take-off shall be at least 4 % with:
		A	take-off power on each engine;
		B	the landing gear extended, except that if the landing gear can be retracted in not more than seven seconds, it may be assumed to be retracted;
		C	the wing flaps in the take-off position(s); and
		D	a climb speed not less than the greater of 1.1 V <sub>mc</sub> (minimum control speed on or near ground) and 1.2 V <sub>Si</sub> (stall speed or minimum steady flight speed in the landing configuration).
		2	One-engine-inoperative (OEI)
		i	The steady gradient of climb at an altitude of 400 ft above the take-off surface shall be measurably positive with:
		A	the critical engine inoperative and its propeller in the minimum drag position;
		B	the remaining engine at take-off power;
		C	the landing gear retracted;
		D	the wing flaps in the take-off position(s); and
		E	a climb speed equal to that achieved at 50 ft.
		ii	The steady gradient of climb shall be not less than 0.75 % at an altitude of 1,500 ft above the take-off surface with:
		A	the critical engine inoperative and its propeller in the minimum drag position;
		B	the remaining engine at not more than maximum continuous power;
		C	the landing gear retracted;
		D	the wing flaps retracted; and
		E	a climb speed not less than 1.2 V <sub>s1</sub> .
	b		Landing climb
		1	All engines operating
		i	The steady gradient of climb shall be at least 2.5 % with:
		A	not more than the power or thrust that is available eight seconds after initiation of movement of the power controls from the minimum flight idle position;
		B	the landing gear extended;
		C	the wing flaps in the landing position; and
		D	a climb speed equal to V <sub>REF</sub> (reference landing speed).
		2	One-engine-inoperative (OEI)
		i	The steady gradient of climb shall be not less than 0.75 % at an altitude of 1,500 ft above the landing surface with:
		A	the critical engine inoperative and its propeller in the minimum drag position;
		B	the remaining engine at take-off power;
		C	the landing gear retracted;
		D	the wing flaps in the take-off position(s); and
		E	a climb speed equal to that achieved at 50 ft.
		ii	The steady gradient of climb shall be not less than 0.75 % at an altitude of 1,500 ft above the take-off surface with:
		A	the critical engine inoperative and its propeller in the minimum drag position;
		B	the remaining engine at not more than maximum continuous power;
		C	the landing gear retracted;
		D	the wing flaps retracted; and
		E	a climb speed not less than 1.2 V <sub>s1</sub> .
<b>Appendix E3 Aeroplanes - Performance Class C</b>			
<b>E3.005</b>			<b>Take-off</b>
	a		The take-off mass shall not exceed the maximum takeoff mass specified in the aircraft flight manual (AFM) for the pressure altitude and the ambient temperature at the aerodrome of departure.
	b		For aeroplanes that have take-off field length data contained in their AFM that do not include engine failure accountability, the distance from the start of the take-off roll required by the aeroplane to reach a height of 50 ft above the surface with all engines operating within the maximum take-off power conditions specified, when multiplied by a factor of either:
		1	1.33 for aeroplanes having two engines;
		2	1.25 for aeroplanes having three engines; or
		3	1.18 for aeroplanes having four engines,
			shall not exceed the take-off run available (TORA) at the aerodrome at which the take-off is to be made.
	c		For aeroplanes that have take-off field length data contained in their AFM which accounts for engine failure, the following requirements shall be met in accordance with the specifications in the AFM:
		1	the accelerate-stop distance shall not exceed the ASDA;
		2	the take-off distance shall not exceed the take-off distance available (TODA), with a clearway distance not exceeding half of the TORA;
		3	the take-off run shall not exceed the TORA;
		4	a single value of V <sub>j</sub> for the rejected and continued takeoff shall be used; and
		5	on a wet or contaminated runway the take-off mass shall not exceed that permitted for a take-off on a dry runway under the same conditions.
	d		The following shall be taken into account:

		1	the pressure altitude at the aerodrome;
		2	the ambient temperature at the aerodrome;
		3	the runway surface condition and the type of runway surface;
		4	the runway slope in the direction of take-off;
		5	not more than 50 % of the reported headwind component or not less than 150 % of the reported tailwind component; and
		6	the loss, if any, of runway length due to alignment of the aeroplane prior to take-off.
<b>E3.010</b>			<b>Take-off obstacle clearance</b>
	a		The take-off flight path with OEI shall be determined such that the aeroplane clears all obstacles by a vertical distance of at least 50 ft plus $0.01 \times D$ , or by a horizontal distance of at least 90 m plus $0.125 \times D$ , where D is the horizontal distance the aeroplane has travelled from the end of the TODA. For aeroplanes with a wingspan of less than 60 m, a horizontal obstacle clearance of half the aeroplane wingspan plus 60 m plus $0.125 \times D$ may be used.
	b		The take-off flight path shall begin at a height of 50 ft above the surface at the end of the take-off distance required by E3.005 (b) or (c), as applicable, and end at a height of 1,500 ft above the surface.
	c		When showing compliance with (a), the following shall be taken into account:
		1	the mass of the aeroplane at the commencement of the take-off run;
		2	the pressure altitude at the aerodrome;
		3	the ambient temperature at the aerodrome; and
		4	not more than 50 % of the reported headwind component or not less than 150 % of the reported tailwind component.
	d		Track changes shall not be allowed up to that point of the take-off flight path where a height of 50 ft above the surface has been achieved. Thereafter, up to a height of 400 ft it is assumed that the aeroplane is banked by no more than 15°. Above 400 ft height bank angles greater than 15°, but not more than 25°, may be scheduled. Adequate allowance shall be made for the effect of bank angle on operating speeds and flight path, including the distance increments resulting from increased operating speeds.
	e		For cases that do not require track changes of more than 15°, the operator does not need to consider those obstacles that have a lateral distance greater than:
		1	300 m, if the pilot is able to maintain the required navigational accuracy through the obstacle accountability area; or
		2	600 m, for flights under all other conditions.
	f		For cases that do require track changes of more than 15°, the operator does not need to consider those obstacles that have a lateral distance greater than:
		1	600 m, if the pilot is able to maintain the required navigational accuracy through the obstacle accountability area; or
		2	900 m, for flights under all other conditions.
	g		The operator shall establish contingency procedures to satisfy (a) to (f) and to provide a safe route, avoiding obstacles, to enable the aeroplane to either comply with the en-route requirements of E3.015, or land at either the aerodrome of departure or at a take-off alternate aerodrome.
<b>E3.015</b>			<b>En-route — all engines operating</b>
	a		In the meteorological conditions expected for the flight, at any point on its route or on any planned diversion therefrom, the aeroplane shall be capable of a rate of climb of at least 300 ft per minute with all engines operating within the maximum continuous power conditions specified at <sup>a</sup>
		1	the minimum altitudes for safe flight on each stage of the route to be flown, or of any planned diversion therefrom, specified in or calculated from the information contained in the operations manual relating to the aeroplane; and
		2	the minimum altitudes necessary for compliance with the conditions prescribed in E3.020 and E3.025, as appropriate.
<b>E3.020</b>			<b>En-route — one-engine-inoperative (OEI)</b>
	a		In the meteorological conditions expected for the flight, in the event of any one engine becoming inoperative at any point on its route or on any planned diversion therefrom and with the other engine(s) operating within the maximum continuous power conditions specified, the aeroplane shall be capable of continuing the flight from the cruising altitude to an aerodrome where a landing can be made in accordance with E3.035 or E3.040, as appropriate. The aeroplane shall clear obstacles within 5 NM (9.3 km) either side of the intended track by a vertical interval of at least:
		1	1,000 ft, when the rate of climb is zero or greater; or
		2	2,000 ft, when the rate of climb is less than zero.
	b		The flight path shall have a positive slope at an altitude of 1,500 ft (450 m) above the aerodrome where the landing is assumed to be made after the failure of one engine.
	c		The available rate of climb of the aeroplane shall be taken to be 150 ft per minute less than the gross rate of climb specified.
	d		The width margins of (a) shall be increased to 10 NM (18.5 km) if the navigational accuracy does not meet at least RNP 5.
	e		Fuel jettisoning is permitted to an extent consistent with reaching the aerodrome with the required fuel reserves, if a safe procedure is used.
<b>E3.025</b>			<b>En-route — aeroplanes with three or more engines, two engines inoperative</b>
	a		At no point along the intended track shall an aeroplane having three or more engines be more than 90 minutes, at the all-engines long range cruising speed at standard temperature in still air, away from an aerodrome at which the performance requirements applicable at the expected landing mass are met, unless it complies with (b) to (e).
	b		The two-engines-inoperative flight path shall permit the aeroplane to continue the flight, in the expected meteorological conditions, clearing all obstacles within 5 NM (9.3 km) either side of the intended track by a vertical interval of at least 2,000 ft, to an aerodrome at which the performance requirements applicable at the expected landing mass are met.
	c		The two engines are assumed to fail at the most critical point of that portion of the route where the aeroplane is more than 90 minutes, at the all-engines long range cruising speed at standard temperature in still air, away from an aerodrome at which the performance requirements applicable at the expected landing mass are met.
	d		The expected mass of the aeroplane at the point where the two engines are assumed to fail shall not be less than that which would include sufficient fuel to proceed to an aerodrome where the landing is assumed to be made, and to arrive there at an altitude of at least 1,500 ft (450 m) directly over the landing area and thereafter to fly level for 15 minutes.
	e		The available rate of climb of the aeroplane shall be taken to be 150 ft per minute less than that specified.
	f		The width margins of (b) shall be increased to 10 NM (18.5 km) if the navigational accuracy does not meet at least RNP 5.
	g		Fuel jettisoning is permitted to an extent consistent with reaching the aerodrome with the required fuel reserves, if a safe procedure is used.
<b>E3.030</b>			<b>Landing — destination and alternate aerodromes</b>
			The landing mass of the aeroplane determined in accordance with 121/135.560 shall not exceed the maximum landing mass specified in the AFM for the altitude and, if accounted for in the AFM, the ambient temperature expected for the estimated time of landing at the destination aerodrome and alternate aerodrome.
<b>E3.035</b>			<b>Landing — dry runways</b>
	a		The landing mass of the aeroplane determined in accordance with 121/135.560 for the estimated time of landing at the destination aerodrome and any alternate aerodrome shall allow a full stop landing from 50 ft above the threshold within 70 % of the LDA taking into account:
		1	the altitude at the aerodrome;

		2	not more than 50 % of the headwind component or not less than 150 % of the tailwind component;
		3	the type of runway surface; and
		4	the slope of the runway in the direction of landing.
	b		For dispatching the aeroplane it shall be assumed that:
		1	the aeroplane will land on the most favourable runway in still air; and
		2	the aeroplane will land on the runway most likely to be assigned considering the probable wind speed and direction, the ground handling characteristics of the aeroplane and other conditions such as landing aids and terrain.
	c		If the operator is unable to comply with (b)(2) for the destination aerodrome, the aeroplane shall only be dispatched if an alternate aerodrome is designated that permits full compliance with (a) and (b).
<b>E3.040</b>			<b>Landing — wet and contaminated runways</b>
	a		When the appropriate weather reports and/or forecasts indicate that the runway at the estimated time of arrival may be wet, the LDA shall be equal to or exceed the required landing distance, determined in accordance with E3.035, multiplied by a factor of 1.15.
	b		When the appropriate weather reports and/or forecasts indicate that the runway at the estimated time of arrival may be contaminated, the landing distance shall not exceed the LDA. The operator shall specify in the operations manual the landing distance data to be applied.
<b>Appendix E4 Helicopters - Performance Class General</b>			
<b>E4.005</b>			<b>Significant performance factors</b>
			To determine the performance of the helicopter, account should be taken of at least the following factors:
	a		mass of the helicopter;
	b		pressure-altitude and temperature; and
	c		wind:
		1	except as provided in (3), for take-off, take-off flight path and landing requirements, accountability for wind shall be no more than 50 % of any reported steady headwind component of 5 kt or more;
		2	where take-off and landing with a tailwind component is permitted in the aircraft flight manual (AFM), and in all cases for the take-off flight path, not less than 150 % of any reported tailwind component shall be taken into account; and
		3	where precise wind measuring equipment enables accurate measurement of wind velocity over the point of take-off and landing, wind components in excess of 50 % may be established by the operator, provided that the operator demonstrates to the competent authority that the proximity to the FATO and accuracy enhancements of the wind measuring equipment provide an equivalent level of safety.
<b>E4.010</b>			<b>Obstacle accountability</b>
	a		For the purpose of obstacle clearance requirements, an obstacle located beyond the FATO, in the take-off flight path, or the missed approach flight path shall be considered if its lateral distance from the nearest point on the surface below the intended flight path is not further than the following:
		1	For operations under VFR:
		i	half of the minimum width defined in the AFM - or, when no width is defined, '0.75 x D', where D is the largest dimension of the helicopter when the rotors are turning;
		ii	plus, the greater of '0.25 x D' or '3 m';
		iii	plus:
		A	0.10 x distance DR for operations under VFR by day; or
		B	0.15 x distance DR for operations under VFR at night.
		2	For operations under IFR:
		i	'1.5 D' or 30 m, whichever is greater, plus:
		A	0.10 x distance DR, for operations under IFR with accurate course guidance;
		B	0.15 x distance DR, for operations under IFR with standard course guidance; or
		C	0.30 x distance DR for operations under IFR without course guidance.
		ii	When considering the missed approach flight path, the divergence of the obstacle accountability area only applies after the end of the take-off distance available.
		3	For operations with initial take-off conducted visually and converted to IFR/IMC at a transition point, the criteria required in (1) apply up to the transition point, and the criteria required in (2) apply after the transition point. The transition point cannot be located before the end of the take-off distance required for helicopters (TODRH) operating in performance class 1 or before the defined point after take-off (DPATO) for helicopters operating in performance class 2.
	b		For take-off using a back-up or a lateral transition procedure, for the purpose of obstacle clearance requirements, an obstacle located in the back-up or lateral transition area shall be considered if its lateral distance from the nearest point on the surface below the intended flight path is not further than:
		1	half of the minimum width defined in the AFM or, when no width is defined, '0.75 x D';
		2	plus the greater of '0.25 x D' or '3 m';
		3	plus:
		i	for operations under VFR by day 0.10 x the distance travelled from the back of the FATO, or
		ii	for operations under VFR at night 0.15 x the distance travelled from the back of the FATO.
	c		Obstacles may be disregarded if they are situated beyond:
		1	7 x rotor radius (R) for day operations, if it is assured that navigational accuracy can be achieved by reference to suitable visual cues during the climb;
		2	10 x R for night operations, if it is assured that navigational accuracy can be achieved by reference to suitable visual cues during the climb;
		3	300 m if navigational accuracy can be achieved by appropriate navigation aids; or
		4	900 m in all other cases.
<b>Appendix E5 Helicopters - Performance Class 1</b>			
<b>E5.005</b>			<b>Take-off</b>
	a		The take-off mass shall not exceed the maximum takeoff mass specified in the AFM for the procedure to be used.
	b		The take-off mass shall be such that:
		1	it is possible to reject the take-off and land on the FATO in case of the critical engine failure being recognised at or before the take-off decision point (TDP);
		2	the rejected take-off distance required (RTODRH) does not exceed the rejected take-off distance available (RTODAH); and
		3	the TODRH does not exceed the take-off distance available (TODAH).
		4	Notwithstanding (b)(3), the TODRH may exceed the TODAH if the helicopter, with the critical engine failure recognised at TDP can, when continuing the take-off, clear all obstacles to the end of the TODRH by a vertical margin of not less than 35 ft (10.7 m).



	c		When showing compliance with (a) and (b), account shall be taken of the appropriate parameters of 135.505(a), 135.505(b) and E4.005 at the aerodrome or operating site of departure.
	d		That part of the take-off up to and including TDP shall be conducted with the surface in sight so that a rejected take-off can be carried out.
	e		For take-off using a backup or lateral transition procedure, with the critical engine failure recognition at or before the TDP, all obstacles in the back-up or lateral transition area shall be cleared by an adequate margin.
<b>E5.010</b>			<b>Take-off flight path</b>
	a		From the end of the TODRH with the critical engine failure recognised at the TDP:
		1	The take-off mass shall be such that the take-off flight path provides a vertical clearance, above all obstacles located in the climb path, of not less than 35 ft (10.7 m) for operations under VFR and 35 ft (10.7 m) + 0.01 x distance DR for operations under IFR. Only obstacles as specified in E4.010 have to be considered.
		2	Where a change of direction of more than 15° is made, adequate allowance shall be made for the effect of bank angle on the ability to comply with the obstacle clearance requirements. This turn is not to be initiated before reaching a height of 200 ft (61 m) above the takeoff surface unless it is part of an approved procedure in the AFM.
	b		When showing compliance with (a), account shall be taken of the appropriate parameters of 135.505(a), 135.505(b) and E4.005 at the aerodrome or operating site of departure.
<b>E5.015</b>			<b>En-route — critical engine inoperative</b>
	a		The mass of the helicopter and flight path at all points along the route, with the critical engine inoperative and the meteorological conditions expected for the flight, shall permit compliance with (1), (2) or (3):
		1	When it is intended that the flight will be conducted at any time out of sight of the surface, the mass of the helicopter permits a rate of climb of at least 50 ft/minute with the critical engine inoperative at an altitude of at least 1,000 ft (300 m), or 2,000 ft (600 m) in areas of mountainous terrain, above all terrain and obstacles along the route within 5 NM (9.3 km) on either side of the intended track.
		2	When it is intended that the flight will be conducted without the surface in sight, the flight path permits the helicopter to continue flight from the cruising altitude to a height of 1,000 ft (300 m) above a landing site where a landing can be made in accordance with E7.020. The flight path clears vertically, by at least 1,000 ft (300 m) or 2,000 ft (600 m) in areas of mountainous terrain, all terrain and obstacles along the route within 5 NM (9.3 km) on either side of the intended track. Drift-down techniques may be used.
		3	When it is intended that the flight will be conducted in VMC with the surface in sight, the flight path permits the helicopter to continue flight from the cruising altitude to a height of 1,000 ft (300 m) above a landing site where a landing can be made in accordance with E5.020, without flying at any time below the appropriate minimum flight altitude. Obstacles within 900 m on either side of the route need to be considered.
<b>E5.020</b>			<b>Landing</b>
	a		The landing mass of the helicopter at the estimated time of landing shall not exceed the maximum mass specified in the AFM for the procedure to be used.
	b		In the event of the critical engine failure being recognised at any point at or before the landing decision point (LDP), it is possible either to land and stop within the FATO, or to perform a balked landing and clear all obstacles in the flight path by a vertical margin of 35 ft (10.7 m). Only obstacles as specified in E4.010 have to be considered.
	c		In the event of the critical engine failure being recognised at any point at or after the LDP, it is possible to:
		1	clear all obstacles in the approach path; and
		2	land and stop within the FATO.
	d		When showing compliance with (a) to (c), account shall be taken of the appropriate parameters of 135.505(a), 135.505(b) and E4.005 for the estimated time of landing at the destination aerodrome or operating site, or any alternate if required.
	e		That part of the landing from the LDP to touchdown shall be conducted with the surface in sight.
<b>Appendix E6 Helicopters - Performance Class 2</b>			
<b>E6.005</b>			<b>Operations without an assured safe forced landing capability</b>
	a		To obtain and maintain approval for operations without an assured safe forced landing capability during the takeoff and landing phases the operator shall:
		1	conduct a risk assessment, specifying:
		i	the type of helicopter; and
		ii	the type of operations;
		2	implement the following set of conditions:
		i	attain and maintain the helicopter/engine modification standard defined by the manufacturer;
		ii	conduct the preventive maintenance actions recommended by the helicopter or engine manufacturer;
		iii	include take-off and landing procedures in the operations manual, where they do not already exist in the AFM;
		iv	specify training for flight crew; and
		v	provide a system for reporting to the manufacturer loss of power, engine shutdown or engine failure events; and
		3	implement a usage monitoring system (UMS).
	b		A record of the risk assessment carried out under (a) shall be maintained and revised as necessary in accordance with the requirements of the operator's safety management system.
<b>E6.010</b>			<b>Take-off</b>
	a		The take-off mass shall not exceed the maximum mass specified for a rate of climb of 150 ft/min at 1,000 ft (300 m) above the level of the aerodrome or operating site with the critical engine inoperative and the remaining engine(s) operating at an appropriate power rating <sup>^</sup>
	b		For operations other than those specified in E8.005, the take-off shall be conducted such that a safe forced landing can be executed until the point where safe continuation of the flight is possible.
	c		For operations in accordance with E6.005, in addition to the requirements of (a):
		1	the take-off mass shall not exceed the maximum mass specified in the aircraft flight manual (AFM) for an all engines operating out of ground effect (AEO OGE) hover in still air with all engines operating at an appropriate power rating.
		2	for operations from a helideck:
		i	with a helicopter that has an MAPSC of more than 19; or
		ii	any helicopter operated from a helideck located in a hostile environment,
			the take-off mass shall take into account: the procedure; deck-edge miss and drop down appropriate to the height of the helideck with the critical engine(s) inoperative and the remaining engines operating at an appropriate power rating.
	d		When showing compliance with (a) to (c), account shall be taken of the appropriate parameters of 135.505(a), 135.505(b) and E4.005 at the point of departure.
	e		That part of the take-off before the requirement of E6.015 is met shall be conducted with the surface in sight.
<b>E6.015</b>			<b>Take-off flight path</b>
			From the defined point after take-off (DPATO) or, as an alternative, no later than 200 ft above the take-off surface, with the critical engine inoperative, the requirements of E5.010 (a)(1), (a)(2) and (b) shall be complied with.

<b>E6.020</b>			<b>En-route — critical engine inoperative</b>
			The requirement of E5.015 shall be complied with.
<b>E6.025</b>			<b>Landing</b>
	a		The landing mass at the estimated time of landing shall not exceed the maximum mass specified for a rate of climb of 150 ft/min at 1,000 ft (300 m) above the level of the aerodrome or operating site with the critical engine inoperative and the remaining engine(s) operating at an appropriate power rating.
	b		If the critical engine fails at any point in the approach path:
		1	a bailed landing can be carried out meeting the requirement of E6.015; or
		2	for operations other than those specified in E6.005, the helicopter can perform a safe forced landing.
	c		For operations in accordance with E6.005, in addition to the requirements of (a):
		1	the landing mass shall not exceed the maximum mass specified in the AFM for an AEO OGE hover in still air with all engines operating at an appropriate power rating.
		2	for operations to a helideck:
		i	with a helicopter that has an MAPSC of more than 19; or
		ii	any helicopter operated to a helideck located in a hostile environment,
			the landing mass shall take into account the procedure and drop down appropriate to the height of the helideck with the critical engine inoperative and the remaining engine(s) operating at an appropriate power rating.
	d		When showing compliance with (a) to (c), account shall be taken of the appropriate parameters of 135.505(a), 135.505(b) and E4.005 at the destination aerodrome or any alternate, if required.
	e		That part of the landing after which the requirement of (b)(1) cannot be met shall be conducted with the surface in sight.
<b>Appendix E7 Helicopters - Performance Class 3</b>			
<b>E7.005</b>			<b>Operations without an assured safe forced landing capability</b>
	a		Provided the operator has conducted and recorded risk assessments as described in E6.005 (a)(1) and (b), operations may be conducted to/from an aerodrome or operating site located outside a congested hostile environment without an assured safe forced landing capability^
		1	during take-off, before reaching Vy (speed for best rate of climb) or 200 ft above the take-off surface; or
		2	during landing, below 200 ft above the landing surface.
<b>E7.010</b>			<b>Take-off</b>
	a		The take-off mass shall be the lower of:
		1	the MTOM; or
		2	the maximum take-off mass specified for a hover in ground effect with all engines operating at take-off power, or if conditions are such that a hover in ground effect is not likely to be established, the take-off mass specified for a hover out of ground effect with all engines operating at take-off power.
	b		Except as provided in E7.005, in the event of an engine failure the helicopter shall be able to perform a safe forced landing.
<b>E7.015</b>			<b>En-route</b>
	a		The helicopter shall be able, with all engines operating within the maximum continuous power conditions, to continue along its intended route or to a planned diversion without flying at any point below the appropriate minimum flight altitude.
	b		In the event of an engine failure the helicopter shall be able to perform a safe forced landing.
<b>E7.020</b>			<b>Landing</b>
	a		The landing mass of the helicopter at the estimated time of landing shall be the lower of:
		1	the maximum certified landing mass; or
		2	the maximum landing mass specified for a hover in ground effect, with all engines operating at take-off power, or if conditions are such that a hover in ground effect is not likely to be established, the landing mass for a hover out of ground effect with all engines operating at take-off power.
	b		Except as provided in E7.005, in the event of an engine failure, the helicopter shall be able to perform a safe forced landing.



Appendix F — Fatigue Risk Management System Requirements			
			The sections of Appendix F contain the requirements for a fatigue risk management system as required by GARs.
<b>F.005</b>			<b>FRMS policy and documentation</b>
			<b>FRMS policy</b>
	a		The operator shall define its FRMS policy, with all elements of the FRMS clearly identified.
	b		The policy shall require that the scope of FRMS operations be clearly defined in the operations manual.
	c		The policy shall:
		1	reflect the shared responsibility of management, flight and cabin crews, and other involved personnel;
		2	clearly state the safety objectives of the FRMS
		3	be signed by the accountable executive of the organization;
		4	be communicated, with visible endorsement, to all the relevant areas and levels of the organization;
		5	declare management commitment to effective safety reporting;
		6	declare management commitment to the provision of adequate resources for the FRMS;
		7	declare management commitment to continuous improvement of the FRMS;
		8	require that clear lines of accountability for management, flight and cabin crews, and all other involved personnel are identified; and
		9	require periodic reviews to ensure it remains relevant and appropriate
			<b>FRMS documentation</b>
	d		An operator shall develop and keep current FRMS documentation that describes and records:
		1	FRMS policy and objectives;
		2	FRMS processes and procedures;
		3	accountabilities, responsibilities and authorities for these processes and procedures;
		4	mechanisms for ongoing involvement of management, flight and cabin crew members, and all other involved personnel;
		5	FRMS training programmes, training requirements and attendance records;
		6	scheduled and actual flight times, duty periods and rest periods with significant deviations and reasons for deviations noted; and
		7	FRMS outputs including findings from collected data, recommendations, and actions taken.
<b>F.010</b>			<b>Fatigue risk management processes</b>
			<b>Identification of hazards</b>
	a		An operator shall develop and maintain three fundamental and documented processes for fatigue hazard identification:
		1	<b>Predictive</b> The predictive process shall identify fatigue hazards by examining crew scheduling and taking into account factors known to affect sleep and fatigue and their effects on performance. Methods of examination may include but are not limited to:
		i	operator or industry operational experience and data collected on similar types of operations;
		ii	evidence-based scheduling practices; and
		iii	bio-mathematical models.
		2	<b>Proactive</b> The proactive process shall identify fatigue hazards within current flight operations. Methods of examination may include but are not limited to:
		i	self-reporting of fatigue risks;
		ii	crew fatigue surveys
		iii	relevant flight and cabin crew performance data;
		iv	available safety databases and scientific studies; and
		v	analysis of planned versus actual time worked.
		3	<b>Reactive</b> The reactive process shall identify the contribution of fatigue hazards to reports and events associated with potential negative safety consequences in order to determine how the impact of fatigue could have been minimized. At a minimum, the process may be triggered by any of the following:
		i	fatigue reports;
		ii	confidential reports;
		iii	audit reports
		iv	incidents; and
		v	flight data analysis events.
			<b>Risk assessment</b>
	b		An operator shall develop and implement risk assessment procedures that determine the probability and potential severity of fatigue-related events and identify when the associated risks require mitigation.
		1	The risk assessment procedures shall review identified hazards and link them to:
		i	operational processes;
		ii	their probability
		iii	possible consequences; and
		iv	the effectiveness of existing safety barriers and controls
			<b>Risk mitigation</b>
	c		An operator shall develop and implement risk mitigation procedures that:
		1	select the appropriate mitigation strategies;
		2	implement the mitigation strategies; and
		3	monitor the strategies' implementation and effectiveness.
<b>F.015</b>			<b>FRMS safety assurance processes</b>
	a		The operator shall develop and maintain FRMS safety assurance processes to:

		1	provide for continuous FRMS performance monitoring, analysis of trends, and measurement to validate the effectiveness of the fatigue safety risk controls. The sources of data may include, but are not limited to:
		2	hazard reporting and investigations;
		3	audits and surveys; and
		4	reviews and fatigue studies;
	b		provide a formal process for the management of change which shall include but is not limited to:
		1	identification of changes in the operational environment that may affect FRMS;
		2	identification of changes within the organization that may affect FRMS; and
		3	consideration of available tools which could be used to maintain or improve FRMS performance prior to implementing changes; and
	c		provide for the continuous improvement of the FRMS. This shall include but is not limited to:
		1	the elimination and/or modification of risk controls that have had unintended consequences or that are no longer needed due to changes in the operational or organizational environment;
		2	routine evaluations of facilities, equipment, documentation and procedures; and
		3	the determination of the need to introduce new processes and procedures to mitigate emerging fatigue-related risks
<b>F.020</b>			<b>FRMS promotion processes</b>
	a		FRMS promotion processes support the ongoing development of the FRMS, the continuous improvement of its overall performance, and attainment of optimum safety levels. The following shall be established and implemented by the operator as part of its FRMS:
		1	training programmes to ensure competency commensurate with the roles and responsibilities of management, flight and cabin crew, and all other involved personnel under the planned FRMS; and
		2	an effective FRMS communication plan that:
		3	explains FRMS policies, procedures and responsibilities to all relevant stakeholders; and
		4	describes communication channels used to gather and disseminate FRMS-related information.