

2005 No. 1980

CIVIL AVIATION

The Air Navigation (General) Regulations 2005

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The Secretary of State for Transport, in exercise of his powers under articles 16(7)(a), 42(1)(c)(ii), 43(5), 44(5), 45(1), 56(1), 57(1), 58(1)(b), 131, 142(6), 143(2), 155(1) and paragraphs 3 and 4(5) of Schedule 5 to the Air Navigation Order 2005(a), hereby makes the following Regulations:

(a) S.I. 2005/1970.

PART 1

General

Citation and commencement

1. These Regulations may be cited as the Air Navigation (General) Regulations 2005, and shall come into force on 20th August 2005.

Revocation

2. The Regulations specified in Schedule 1 are revoked.

Interpretation

3. In these Regulations:

- (a) “the Order” means the Air Navigation Order 2005;
- (b) references to an “article” mean (unless inconsistent with the context) an article of the Order; and
- (c) other expressions used in these Regulations shall have the same respective meanings as in the Order.

PART 2

Load Sheets

Particulars and weighing requirements

- 4.—(1) Every load sheet required by article 43(5) shall contain the following particulars:
- (a) the nationality mark of the aircraft to which the load sheet relates, and the registration mark assigned to that aircraft by the CAA;
 - (b) particulars of the flight to which the load sheet relates;
 - (c) the total weight of the aircraft as loaded for that flight;
 - (d) the weights of the several items from which the total weight of the aircraft, as so loaded, has been calculated including in particular the weight of the aircraft prepared for service and the respective total weights of the crew (unless included in the weight of the aircraft prepared for service), passengers, baggage and cargo intended to be carried on the flight;
 - (e) the manner in which the load is distributed;
 - (f) the position of the centre of gravity of the aircraft resulting from the particulars mentioned in sub-paragraphs (c), (d) and (e) which may be given approximately if and to the extent that the relevant certificate of airworthiness so permits; and
 - (g) a certificate at the foot or end of the load sheet, signed by the person referred to in article 43(1) as responsible for the supervision of the loading of the aircraft, that the aircraft has been loaded in accordance with the written instructions furnished to him by the operator of the aircraft pursuant to article 43(1).

(2) Subject to paragraph (3) for the purpose of calculating the total weight of the aircraft the respective total weights of the passengers and crew together with their hand baggage entered in the load sheet shall be computed from the actual weight of each person and their hand baggage and for that purpose each person and their hand baggage shall be separately weighed.

(3) The total weights of the passengers and crew together with their hand baggage may, in accordance with paragraphs (4) to (9) and subject to the provisions of paragraphs (13), (14) and (15), be calculated at not less than the appropriate weights shown in Tables 1 or 2 and the load sheet shall bear a notation to that effect.

Table 1

	<i>Passenger Seats Available</i>		
	<i>20 or more</i>	<i>30 or more</i>	
	<i>Male</i>	<i>Female</i>	<i>All adult</i>
Passengers on all flights except holiday charters	88kg	70kg	84kg
Passengers on holiday charters	83kg	69kg	76kg
Children (between 2-12 years) or infants under 2 years of age if occupying a separate seat	35kg	35kg	
Infants under 2 years of age if sharing a seat with an adult	0kg	0kg	
Flight crew	85kg	85kg	
Cabin crew	75kg	75kg	

(4) Subject to paragraph (5) where the total number of passenger seats available on an aircraft is 20 or more, the weights for males and females in Table 1 are applicable.

(5) Where the total number of passenger seats available is 30 or more, the “all adult” weights in Table 1 may be used for passengers over the age of 12 years.

(6) For the purpose of Table 1, “holiday charter” means a flight by an aircraft for the carriage of passengers each of whom is carried pursuant to an agreement which provides for carriage by air to a place outside United Kingdom and back from that place, or from another place to United Kingdom (whether or not on the same aircraft) and for accommodation at a place outside United Kingdom.

(7) Where the total number of passenger seats available on an aircraft is 19 or less the weights in Table 2 are applicable.

Table 2

	<i>Passenger Seats Available</i>		
	<i>1-5</i>	<i>6-9</i>	<i>10-19</i>
Male passengers	104kg	96kg	92kg
Female passengers	86kg	78kg	74kg
Children (between 2-12 years) or infants under 2 years of age if occupying a separate seat	35kg	35kg	35kg
Infants under 2 years of age if sharing a seat with an adult	0kg	0kg	0kg
Flight crew	85kg	85kg	85kg
Cabin crew	75kg	75kg	75kg

(8) On flights where no hand baggage is carried or where such hand baggage is accounted for separately, 6 kg may be deducted from the weight of passengers over 12 years of age when using Table 2.

(9) Where an immersion suit is worn or carried by a passenger or crew member, 3kg shall be added to the appropriate weight shown in Table 1 or 2 in each such case.

(10) Subject to paragraph (11) for the purpose of calculating the total weight of the aircraft the respective total weights of the hold baggage and cargo entered in the load sheet shall be computed from the actual weight of each piece of baggage, cargo or cargo container and for that purpose each piece or container shall be separately weighed.

(11) In the case of an aircraft where the total number of passenger seats available is 20 or more, the total weights of the hold baggage may, subject to the provisions of paragraphs (13), (14) and (15), be calculated at not less than the weights shown in Table 3 and the load sheet shall bear a notation to that effect.

Table 3

<i>Journey made by aircraft</i>	<i>Hold baggage per piece</i>
Domestic	11kg
European	13kg
Intercontinental	15kg

(12) For the purposes of Table 3:

- (a) a journey made by an aircraft shall be treated as domestic if it is confined within an area enclosed by rhumb lines joining successively the following points—

Table 4

N6100.00	W01100.00	N6100.00	E00200.00
N5105.00	E00200.00	N4930.00	W00400.00
N4930.00	W01100.00	N6100.00	W01100.00

but excluding any journey to or from Shannon.

- (b) A journey made by an aircraft, not being a domestic journey, shall be treated as European if it is confined within an area enclosed by the rhumb lines joining successively the following points—

Table 5

N7200.00	E04500.00	N4000.00	E04500.00
N3500.00	E03700.00	N3000.00	E03700.00
N3000.00	W00600.00	N2700.00	W00900.00
N2700.00	W03000.00	N6700.00	W03000.00
N7200.00	W01000.00	N7200.00	E04500.00

- (c) A journey made by an aircraft shall be treated as intercontinental if it is neither domestic nor European.

(13) If it appears to the person supervising the loading of the aircraft that any of the circumstances described in paragraph (14) arise he shall, if he considers it necessary in the interests of the safety of the aircraft, or if the CAA has so directed in the particular case, require any such person and his hand baggage, passenger or hold baggage, as the case may be, to be weighed for the purpose of the entry to be made in the load sheet.

(14) The circumstances referred to in paragraph (13) are:

- (a) any person and his hand baggage to be carried exceeds the weights set out in Tables 1 or 2; or
- (b) where paragraph (8) applies any passenger to be carried exceeds the weights set out in Table 2 as adjusted in accordance with that paragraph; or
- (c) any hold baggage to be carried exceeds the weights set out in Table 3.

(15) If any person and his hand baggage, passenger or any hold baggage has been weighed pursuant to paragraph (13), the weights entered in the load sheet shall take account of the actual weight of that person and his hand baggage, that passenger or that hold baggage, as the case may be, or of the weight determined in accordance with paragraphs (3) or (11), whichever weight shall be the greater.

PART 3

Aircraft Performance

Aeroplanes to which article 44(5) applies

5.—(1) Aeroplanes to which this regulation applies shall comply with Schedule 2.

(2) This regulation applies to aeroplanes to which the CAA has granted a permission under article 44(5) except any aeroplane flying solely for the purpose of training persons to perform duties in aeroplanes.

Helicopters to which article 45(1) applies

6.—(1) Helicopters to which this regulation applies shall comply with Schedule 3.

(2) This regulation applies to helicopters to which article 45(1) applies except any helicopter flying solely for the purpose of training persons to perform duties in helicopters.

Weight and performance: general provisions

7.—(1) The assessment of the ability of an aeroplane to comply with the requirements of Schedule 2 and of a helicopter to comply with the requirements of Schedule 3 (relating in either case to weight, performance and flights in specified meteorological conditions or at night) shall be based on the specified information as to its performance.

(2) In assessing the ability of an aeroplane to comply with sub-paragraphs (8), (12), (16) and (18) of paragraph 1 of Schedule 2, with sub-paragraphs (8) and (11) of paragraph 6 of Schedule 2 and with sub-paragraph (19) of paragraph 7 of Schedule 2, account may be taken of any reduction of the weight of the aeroplane which may be achieved after the failure of a power unit by such jettisoning of fuel as is feasible and prudent in the circumstances of the flight and in accordance with the flight manual included in the certificate of airworthiness relating to the aircraft.

(3) In this Part and in Schedules 2 and 3—

‘specified’ in relation to an aircraft means specified in, or ascertainable by reference to:

- (a) the certificate of airworthiness in force under the Order in respect of that aircraft; or
- (b) the flight manual or performance schedule included in that certificate, or other document, whatever its title, incorporated by reference in that certificate; or
- (c) if there is no flight manual or performance schedule or other such document so incorporated in that certificate, the flight manual for that aircraft;

‘the accelerate-stop distance’ means the distance from the point on the surface of the aerodrome at which the aeroplane can commence its take-off run to the nearest point in the direction of take-off at which the aeroplane cannot roll over the surface of the aerodrome and be brought to rest in an emergency without the risk of accident;

‘the landing distance available’ means the distance from the point on the surface of the aerodrome above which the aeroplane can commence its landing, having regard to the obstructions in its approach path, to the nearest point in the direction of landing at which the surface of the aerodrome is incapable of bearing the weight of the aeroplane under normal operating conditions or at which there is an obstacle capable of affecting the safety of the aeroplane;

‘the take-off distance available’ means either the distance from the point on the surface of the aerodrome at which the aeroplane can commence its take-off run to the nearest obstacle in the direction of take-off projecting above the surface of the aerodrome and capable of affecting the safety of the aeroplane, or one and one half times the take-off run available, whichever is the less;

‘the take-off run available’ means the distance from the point on the surface of the aerodrome at which the aeroplane can commence its take-off run to the nearest point in the direction of take-off at which the surface of the aerodrome is incapable of bearing the weight of the aeroplane under normal operating conditions.

(4) For the purposes of Schedules 2 and 3—

- (a) the weight of the aircraft at the commencement of the take-off run or of the take-off shall be taken to be its gross weight including everything and everyone carried in or on it at the commencement of the take-off run or of the take-off;
- (b) the landing weight of the aircraft shall be taken to be the weight of the aircraft at the estimated time of landing allowing for the weight of the fuel and oil expected to be used on the flight to the aerodrome at which it is intended to land or, any alternate aerodrome, as the case may be;
- (c) where any distance referred to in paragraph (3) has been declared in respect of any aerodrome by the authority responsible for regulating air navigation over the territory of the Contracting State in which the aerodrome is situated, and in the case of an aerodrome in the United Kingdom, notified, that distance shall be deemed to be the relevant distance.

PART 4

Noise and vibration, maintenance and aerodrome facilities

Noise and vibration caused by aircraft on aerodromes

8. For the purposes of article 131, the conditions under which noise and vibration may be caused by aircraft (including military aircraft) on Government aerodromes, licensed aerodromes or on aerodromes at which the manufacture, repair or maintenance of aircraft is carried out by persons carrying on business as manufacturers or repairers of aircraft, shall be as follows—

- (a) the aircraft is taking off or landing; or
- (b) the aircraft is moving on the ground or water; or
- (c) the engines are being operated in the aircraft—
 - (i) for the purpose of ensuring their satisfactory performance;
 - (ii) for the purpose of bringing them to a proper temperature in preparation for, or at the end of, a flight; or
 - (iii) for the purpose of ensuring that the instruments, accessories or other components of the aircraft are in a satisfactory condition.

Pilots maintenance—prescribed repairs or replacements

9. For the purposes of article 16(7)(a), the following repairs or replacements are prescribed—

- (a) replacement of landing gear tyres, landing skids or skid shoes;
- (b) replacement of elastic shock absorber cord units on landing gear where special tools are not required;
- (c) replacement of defective safety wiring or split pins excluding those in engine, transmission, flight control and rotor systems;
- (d) patch-repairs to fabric not requiring rib stitching or the removal of structural parts or control surfaces, if the repairs do not cover up structural damage and do not include repairs to rotor blades;
- (e) repairs to upholstery and decorative furnishing of the cabin or cockpit interior when repair does not require dismantling of any structure or operating system or interfere with an operating system or affect the structure of the aircraft;
- (f) repairs, not requiring welding, to fairings, non-structural cover plates and cowlings;
- (g) replacement of side windows where that work does not interfere with the structure or with any operating system;
- (h) replacement of safety belts or safety harnesses;
- (i) replacement of seats or seat parts not involving dismantling of any structure or of any operating system;
- (j) replacement of bulbs, reflectors, glasses, lenses or lights;
- (k) replacement of any cowling not requiring removal of the propeller, rotors or disconnection of engine or flight controls;
- (l) replacement of unserviceable sparking plugs;
- (m) replacement of batteries;
- (n) replacement of wings and tail surfaces and controls, the attachments of which are designed to provide for assembly immediately before each flight and dismantling after each flight;
- (o) replacement of main rotor blades that are designed for removal where special tools are not required;
- (p) replacement of generator and fan belts designed for removal where special tools are not required;
- (q) replacement of VHF communication equipment, being equipment which is not combined with navigation equipment.

Aeroplanes flying for the purpose of public transport of passengers—aerodrome facilities for approach to landing and landing

10.—(1) This regulation shall apply to every aeroplane registered in the United Kingdom engaged on a flight for the purpose of public transport of passengers on a scheduled journey and to every aeroplane so registered whose maximum total weight authorised exceeds 5,700 kg engaged on such a flight otherwise than on a scheduled journey.

(2) For the purposes of article 42(1)(c)(ii), the following manning and equipment are prescribed in relation to aerodromes intended to be used for landing or as an alternate aerodrome by aircraft to which this regulation applies—

- (a) air traffic control service or aerodrome flight information service, including the reporting to aircraft of the current meteorological conditions at the aerodrome;
- (b) very high frequency radiotelephony;
- (c) at least one of the following radio navigation aids, either at the aerodrome or elsewhere, and in either case for the purpose of assisting the pilot in locating the aerodrome and in making an approach to landing there—
 - (i) radio direction finding equipment utilising emissions in the very high frequency bands;
 - (ii) a non-directional radio beacon transmitting signals in the low or medium frequency bands;
 - (iii) very high frequency omni-directional radio range;
 - (iv) radar equipment.

(3) Subject to paragraph (4), an aircraft to which this regulation applies shall not land or make an approach to landing at any aerodrome unless:

- (a) the services and equipment prescribed by paragraph (2) are provided and are in operation at that aerodrome; and
- (b) such services and equipment can be made use of by that aircraft; and
- (c) in the case of the navigation aids specified in paragraph (2)(c), instructions and procedures for the use of the aid are included in the operations manual relating to the aircraft.

(4) A person shall be deemed not to have contravened the provisions of paragraph (3) if he proves that—

- (a) for the time being use could not be made of the radio navigation aids provided under sub-paragraph (2)(c) whether by reason of those aids not being in operation or of the unserviceability of equipment in the aircraft itself; and
- (b) the approach to landing was made in accordance with instructions and procedures appropriate to that circumstance and included in the operations manual.

PART 5

Mandatory Reporting

Reportable occurrences—time and manner of reporting and information to be reported

11.—(1) For the purposes of article 142(6) but subject to paragraph (2) it is prescribed that a report containing the information referred to in paragraph (5) shall be made to the CAA by post, telex, electronic, facsimile transmission or other similar means which produces a document containing a text of the communication (written in English) within 96 hours of the reportable occurrence coming to the knowledge of the person making the report.

(2) If at the time referred to in paragraph (1) any of the information referred to in that paragraph is not in the possession of the person making the report, he shall despatch that information to the CAA by post, telex, electronic, facsimile transmission or other similar means which produces a document containing a text of the communication (written in English) within 96 hours of the information coming into his possession.

(3) For the purposes of article 142(6), a report shall, as far as possible, contain the following information—

- (a) the type, series and registration marks of the aircraft concerned;
- (b) the name of the operator of the aircraft;
- (c) the date of the reportable occurrence;

- (d) if the person making the report has instituted an investigation into the reportable occurrence, whether or not this has been completed;
- (e) a description of the reportable occurrence, including its effects and any other relevant information;
- (f) in the case of a reportable occurrence which occurs during flight—
 - (i) the Co-ordinated Universal Time of the occurrence;
 - (ii) the last point of departure and the next point of intended landing of the aircraft at that time; and
 - (iii) the geographical position of the aircraft at that time;
- (g) in the case of a defect in or malfunctioning of an aircraft or any part or equipment of an aircraft, the name of the manufacturer of the aircraft, part or equipment, as the case may be, and, where appropriate, the part number and modification standard of the part or equipment and its location on the aircraft;
- (h) the signature and name in block capitals of the person making the report, the name of his employer and the capacity in which he acts for that employer; and
- (i) in the case of a report made by the commander of an aircraft or a person referred to in sub-paragraphs (f), (g) or (h) of article 142(5), the address or telephone number at which communications should be made to him, if different from that of his place of employment.

Mandatory reporting of birdstrikes—time and manner of reporting and information to be reported

12.—(1) Without prejudice to the CAA’s power in a particular case to approve the form of presentation and subject to paragraph (2), for the purposes of article 143(2) a report containing the information referred to in paragraph (3) shall be made to the CAA by post, telex, electronic, facsimile transmission or other similar means which produce a document containing a text of the communication (written in English) within 96 hours of the birdstrike occurrence coming to the knowledge of the person making the report.

(2) If at that time any of that information is not in the possession of that person, a report containing that information shall be made to the CAA by post, telex, electronic, facsimile transmission or other similar means which produce a document containing a text of the communication (written in English) within 96 hours of the information coming into his possession.

(3) For the purposes of article 143(2) a report shall, as far as possible, contain the following information—

- (a) the type, series and registration marks of the aircraft concerned;
- (b) the name of the operator of the aircraft;
- (c) the date and the Co-ordinated Universal Time of the birdstrike occurrence;
- (d) the last point of departure and the next point of intended landing of the aircraft at that time;
- (e) a description of the birdstrike occurrence, including the part(s) of the aircraft affected, the effect on flight and any other relevant information;
- (f) the bird species/description;
- (g) the weather at the time of the occurrence;
- (h) the runway in use (where relevant);
- (i) the height and speed of the aircraft;
- (j) the phase of flight;
- (k) the position (if en route) of the aircraft at the time of the birdstrike;
- (l) any other reporting action taken;
- (m) the signature and name in block capitals of the person making the report;
- (n) the name of his employer and the capacity in which he acts for that employer; and
- (o) the address or telephone number at which communications should be made to him.

PART 6

Navigation performance and equipment

Minimum navigation performance and height keeping specifications

13.—(1) For the purposes of article 56(1) the following navigation performance capability is prescribed, that is to say, a capability to ensure that—

- (a) the standard deviation of lateral errors in the track of the aircraft is not more than 6.3 nautical miles;
- (b) the proportion of the flight time of the aircraft during which the actual track of the aircraft is 30 nautical miles or more off the track along which it has been given an air traffic control clearance to fly is less than 5.3×10^{-4} , and;
- (c) the proportion of the flight time of the aircraft during which the actual track of the aircraft is between 50 and 70 nautical miles off the track along which it has been given an air traffic control clearance to fly is less than 13×10^{-5} .

(2) For the purposes of articles 56(1) and 155(1), the following airspace is prescribed as North Atlantic Minimum Navigation Performance Specification Airspace, that is to say, the airspace from flight level 285 to flight level 420 within the area defined by rhumb lines joining successively the following points—

Table 6

N3410.00 W01748.00	North Pole	N4152.00 W06700.00
N3630.00 W01500.00	N8200.00 W06000.00	N3900.00 W06700.00
N4200.00 W01500.00	N7800.00 W07500.00	N3835.00 W06853.00
N4300.00 W01300.00	N7600.00 W07600.00	N3830.00 W06915.00
N4500.00 W01300.00	N6500.00 W05745.00	N3830.00 W06000.00
N4500.00 W00800.00	N6500.00 W06000.00	N2700.00 W06000.00
N5100.00 W00800.00	N6400.00 W06300.00	N2700.00 W04000.00
N5100.00 W01500.00	N6100.00 W06300.00	N2218.00 W04000.00
N5400.00 W01500.00	N5700.00 W05900.00	N1700.00 W03730.00
N5434.00 W01000.00	N5300.00 W05400.00	N2400.00 W02500.00
N6100.00 W01000.00	N4900.00 W05100.00	N3000.00 W02500.00
N6100.00 00000.00	N4500.00 W05100.00	N3000.00 W02000.00
N8200.00 00000.00	N4500.00 W05300.00	N3139.00 W01725.00
N8200.00 E03000.00	N4336.00 W06000.00	

and from there by that part of the arc of a circle radius 100 nautical miles centred on N3304.00 W01621.00 to N3410.00 W01748.00.

(3) For the purposes of article 57(1), the following height keeping performance capability is prescribed, that is to say, a capability to ensure that:

- (a) altimetry system error shall be in compliance with paragraph 2.1.1(2) of Document 7030/4—NAT Part 1 Rules of the Air, Air Traffic Services and Search and Rescue (ICAO Regional Procedures, Fourth Edition—1987);
- (b) in respect of aircraft first registered in a Contracting State on or after 1st January 1997 altitude can be automatically controlled within a tolerance band of ± 65 feet; and
- (c) in respect of aircraft first registered in a Contracting State before 1st January 1997 altitude can be automatically controlled within a tolerance band of ± 130 feet.

Airborne Collision Avoidance System

14. For the purposes of paragraphs 3 and 4 of Schedule 5 to the Order the prescribed requirements for an airborne collision avoidance system shall be the requirements for ACAS II equipment set out in Volume IV (Third Edition—July 2002), Chapter 4, of Annex 10 to the Chicago Convention.

Mode S Transponder

15.—(1) For the purposes of paragraph 3 of Schedule 5 to the Order, the capability and functionality prescribed for Mode S Elementary Surveillance shall be that specified for a level 2 transponder in Volumes III (First Edition—July 1995) and IV (Third Edition—July 2002) of Annex 10 (Third Edition) to the Chicago Convention together with the additional functionality specified in paragraph (3).

(2) For the purposes of paragraph 3 of Schedule 5 to the Order, the capability and functionality prescribed for Mode S Enhanced Surveillance shall be that specified for a level 2 transponder in Volumes III (First Edition—July 1995) and IV (Third Edition—July 2002) of Annex 10 (Third Edition) to the Chicago Convention together with the additional functionality specified in paragraph (3) and the additional downlinked parameters specified in paragraph (4).

- (3) This is the additional functionality referred to in paragraphs (1) and (2)—
- (a) capability to support the Interrogator Identifier (II) Code and Surveillance Identifier (SI) Code functionality;
 - (b) Extended Squitter Functionality which, for this purpose, means functionality that supports Mode S Elementary Surveillance and Mode S Enhanced Surveillance to provide Automatic Dependant Surveillance—Broadcast, using unsolicited transponder broadcasts; and
 - (c) ACAS Active Resolution Advisory.
- (4) These are the additional downlinked parameters referred to in paragraph (2)—
- (a) reporting of the Magnetic Heading Downlinked Aircraft Parameter;
 - (b) reporting of the Indicated Airspeed Downlinked Aircraft Parameter;
 - (c) reporting of the Mach Number Downlinked Aircraft Parameter;
 - (d) reporting of the Vertical Rate Downlinked Aircraft Parameter;
 - (e) reporting of the Roll Angle Downlinked Aircraft Parameter;
 - (f) reporting of the Track Angle Rate Downlinked Aircraft Parameter;
 - (g) reporting of the True Track Angle Downlinked Aircraft Parameter;
 - (h) reporting of the Ground Speed Downlinked Aircraft Parameter;
 - (i) reporting of the Selected Vertical Intent Downlinked Aircraft Parameter (including Barometric Pressure Setting).

Signed by authority of the Secretary of State for Transport

Karen Buck
Parliamentary Under-Secretary of State,
Department for Transport

21st July 2005

REGULATIONS REVOKED

1. The Air Navigation (General) Regulations 1993(a)
2. The Air Navigation (General) (Amendment) Regulations 1995(b)
3. The Air Navigation (General) (Amendment) Regulations 1997(c)
4. The Air Navigation (General) (Second Amendment) Regulations 1999(d)
5. The Air Navigation (General) (Amendment) Regulations 2000(e)
6. The Air Navigation (General) (Amendment) Regulations 2002(f)
7. The Air Navigation (General) (Amendment) Regulations 2003(g)
8. The Air Navigation (General) (Amendment) (No. 2) Regulations 2003(h)

AEROPLANE PERFORMANCE

Weight and performance of public transport aeroplanes designated as aeroplanes of performance group A or performance group B

1. For the purposes of article 44(6) an aeroplane registered in the United Kingdom, in respect of which there is in force under article 44(5) a permission in which the aeroplane is designated as being of performance group A or performance group B, shall not fly for the purpose of public transport unless the weight of the aeroplane at the commencement of the take-off run is such that the following requirements are satisfied—

(1) That weight shall not exceed the maximum take-off weight specified for the altitude and the air temperature at the aerodrome at which the take-off is to be made.

(2) Subject to sub-paragraph (3) the take-off run, take-off distance and the accelerate-stop distance respectively required for take-off, specified as being appropriate to—

- (a) the weight of the aeroplane at the commencement of the take-off run;
- (b) the altitude at the aerodrome;
- (c) the air temperature at the aerodrome;
- (d) the condition of the surface of the runway from which the take-off will be made;
- (e) the slope of the surface of the aerodrome in the direction of take-off over the take-off run available, the take-off distance available and the accelerate-stop distance available, respectively; and
- (f) not more than 50 per cent. of the reported wind component opposite to the direction of take-off or not less than 150 per cent. of the reported wind component in the direction of take-off,

shall not exceed the take-off run, the take-off distance and the accelerate-stop distance available, respectively, at the aerodrome at which the take-off is to be made.

(3) In ascertaining the accelerate-stop distance available required pursuant to sub-paragraph (2), the point at which the pilot is assumed to decide to discontinue the take-off shall not be nearer to the start of the take-off run than the point at which, in ascertaining the take-off run required and the take-off distance required, he is assumed to decide to continue the take-off, in the event of power unit failure.

(4) The net take-off flight path of the aeroplane with one power unit inoperative, specified as being appropriate to—

- (a) the weight of the aeroplane at the commencement of the take-off run;
- (b) the altitude at the aerodrome;
- (c) the air temperature at the aerodrome; and

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- (a) S.I. 1993/1622.
 - (b) S.I. 1995/1093.
 - (c) S.I. 1997/881.
 - (d) S.I. 1999/1324.
 - (e) S.I. 2000/1995.
 - (f) S.I. 2002/733.
 - (g) S.I. 2003/1365.
 - (h) S.I. 2003/3286.

(d) not more than 50 per cent. of the reported wind component opposite to the direction of take-off or not less than 150 per cent. of the reported wind component in the direction of take-off; and which is plotted from a point 35 feet or 50 feet, as appropriate, above the end of the take-off distance required at the aerodrome at which the take-off is to be made to a height of 1,500 feet above the aerodrome shall show that the aeroplane will meet the requirement of sub-paragraph (5).

(5) Subject to sub-paragraphs (6) and (7) the requirement referred to in sub-paragraph (4) is that the aeroplane shall clear any obstacle in its path by a vertical interval of at least 35 feet; and if it is intended that the aeroplane shall change its direction of flight by more than 15° before reaching 1,500 feet the vertical interval shall not be less than 50 feet during the change of direction.

(6) For the purpose of sub-paragraph (5) an obstacle shall be deemed to be in the path of the aeroplane if the distance from the obstacle to the nearest point on the ground below the intended line of flight of the aeroplane does not exceed—

(a) a distance of 60 metres plus half the wing span of the aeroplane plus one eighth of the distance from such point to the end of the take-off distance available measured along the intended line of flight of the aeroplane; or

(b) 900 metres,

whichever is the less.

(7) In assessing the ability of the aeroplane to satisfy sub-paragraph (5), it shall not be assumed the aeroplane will make a change of direction of a radius less than the specified radius of steady turn.

(8) The aeroplane shall meet the requirements referred to in sub-paragraph (9) in the meteorological conditions expected for the flight, in the event of any one power unit becoming inoperative at any point on its route or on any planned diversion from it and with the other power unit or units operating within the maximum continuous power conditions specified.

(9) Subject to sub-paragraphs (10) and (11) the requirements referred to in sub-paragraph (8) are that the aeroplane shall:

(a) be capable of continuing the flight, clearing by a vertical interval of at least 2,000 feet obstacles within 10 nautical miles either side of the intended track, to an aerodrome at which it can comply with sub-paragraphs (20) or (21), as appropriate, relating to an alternate aerodrome; and

(b) on arrival over such aerodrome the gradient of the specified net flight path with one power unit inoperative shall not be less than zero at 1,500 feet above the aerodrome.

(10) In assessing the ability of the aeroplane to satisfy sub-paragraph (9) it shall not be assumed to be capable of flying at an altitude exceeding the specified maximum permissible altitude for a power unit restarting.

(11) If the operator of the aeroplane is satisfied, taking into account the navigation aids which can be made use of by the aeroplane on the route, that the commander of the aeroplane will be able to maintain his intended track on that route within a margin of 5 nautical miles, sub-paragraph (9) shall have effect as if 5 nautical miles were substituted for 10 nautical miles.

(12) If the aeroplane has three or more power units, it shall meet the requirements referred to in sub-paragraph (13):

(a) in the meteorological conditions expected for the flight; and

(b) in the event of any two power units becoming inoperative at any point:

(i) along the route; or

(ii) on any planned diversion from the route which is more than 90 minutes flying time in still air, at the all power units operating economical cruise speed, from the nearest aerodrome at which it can comply with sub-paragraphs (20) or (21), as appropriate, relating to an alternate aerodrome.

(13) Subject to sub-paragraphs (14) and (15), the requirements referred to in sub-paragraph (12) are that the aeroplane shall:

(a) be capable of continuing the flight with all other power units operating within the specified maximum continuous power conditions, clearing by a vertical interval of at least 2,000 feet obstacles within 10 nautical miles either side of the intended track to such an aerodrome; and

(b) on arrival over such an aerodrome the gradient of the specified net flight path with two power units inoperative shall not be less than zero at 1,500 feet above the aerodrome.

(14) In assessing the ability of the aeroplane to satisfy sub-paragraph (13) it shall not be assumed to be capable of flying at an altitude exceeding the specified maximum permissible altitude for power unit restarting.

(15) If the operator of the aeroplane is satisfied, taking into account the navigation aids which can be made use of by the aeroplane on the route, that the commander of the aeroplane will be able to maintain his intended track on that route within a margin of 5 nautical miles, sub-paragraph (13) shall have effect as if 5 nautical miles were substituted for 10 nautical miles.

(16) Unless it is flying under, and in accordance with, the terms of any written permission granted by the CAA to the operator under this paragraph, an aeroplane having:

- (a) two power units and a maximum total weight authorised which exceeds 5,700 kg; and
- (b) which is not limited by its certificate of airworthiness to the carriage of less than 20 passengers,

shall meet the requirements of sub-paragraph (17).

(17) The requirements referred to in sub-paragraph (16) are that the aeroplane shall, in the meteorological conditions expected for the flight:

- (a) be not more than 60 minutes flying time, at the normal one engine inoperative cruise speed in still air, from the nearest aerodrome at which it can comply with sub-paragraphs (20) or (21), as appropriate, relating to an alternate aerodrome, at any point along;
- (b) the route; or
- (c) any planned diversion from it.

(18) An aeroplane having either:

- (a) two power units and a maximum total weight authorised of 5,700kg or less; or
- (b) two power units and a maximum total weight authorised of more than 5,700kg but which is limited by its certificate of airworthiness to the carriage of less than 20 passengers,

shall, in the meteorological conditions expected for the flight, be not more than 90 minutes flying time in still air, at the all power units operating economical cruise speed, from the nearest aerodrome at which it can comply with sub-paragraphs (20) or (21), as appropriate, relating to an alternate aerodrome.

(19) The landing weight of the aeroplane shall not exceed the maximum landing weight specified for the altitude and the expected air temperature for the estimated time of landing at the aerodrome at which it is intended to land and at any alternate aerodrome.

(20) Subject to sub-paragraphs (22) and (23), in the case of a turbine-jet powered aeroplane the landing distance required shall not exceed, at the aerodrome at which it is intended to land or at any alternate aerodrome, as the case may be, the landing distance available on—

- (a) the most suitable runway for a landing in still air conditions; and
- (b) the runway that may be required for landing because of the forecast wind conditions.

(21) Subject to sub-paragraphs (22) and (23), in the case of an aeroplane powered by turbine propeller or piston engines the landing distances required, respectively specified as being appropriate to the aerodrome at which it is intended to land and at any alternate aerodrome, shall not exceed at the aerodrome at which it is intended to land or at any such alternate aerodrome, as the case may be, the landing distance available on—

- (a) the most suitable runway for a landing in still air conditions; and
- (b) the runway that may be required for landing because of the forecast wind conditions.

(22) If an alternative aerodrome is designated in the flight plan, the specified landing distance required may be that appropriate to that alternative aerodrome when assessing the ability of the aeroplane to satisfy sub-paragraphs (20) and (21) at the aerodrome of destination.

(23) For the purposes of sub-paragraphs (20), (21) and (22) the landing distance required shall be that specified as being appropriate to—

- (a) the landing weight;
- (b) the altitude of the aerodrome;
- (c) the temperature in the specified international standard atmosphere appropriate to the altitude at the aerodrome;
- (d) a level surface in the case of runways usable in both directions or the average slope of the runway in the case of runways usable in only one direction; and
- (e) still air conditions in the case of the most suitable runway for a landing in still air conditions and not more than 50 per cent. of the forecast wind component opposite to the direction of landing or not less than 150 per cent. of the forecast wind component in the direction of landing in the case of the runway that may be required for landing because of the forecast wind conditions.

Weight and performance of public transport aeroplanes designated as aeroplanes of performance group C

2. For the purposes of article 44(6), an aeroplane registered in the United Kingdom in respect of which there is in force under article 44(5) a permission in which the aeroplane is designated as being of performance group C shall not fly for the purpose of public transport unless the weight of the aeroplane at the commencement of the take-off run is such that the following requirements are satisfied—

(1) The weight of the aeroplane shall not exceed the maximum take-off weight specified for the altitude and the air temperature at the aerodrome at which the take-off is to be made.

(2) The take-off run required and the take-off distance required, specified as being appropriate to—

- (a) the weight of the aeroplane at the commencement of the take-off run;

- (b) the altitude at the aerodrome;
- (c) the air temperature at the aerodrome;
- (d) the average slope of the surface of the aerodrome in the direction of take-off over the accelerate-stop distance available; and
- (e) not more than 50 per cent. of the reported wind component opposite to the direction of take-off or not less than 150 per cent. of the reported wind component in the direction of take-off,

shall not exceed the take-off run available and the accelerate-stop distance available, respectively, at the aerodrome at which the take-off is to be made.

(3) Subject to sub-paragraph (7) the net take-off flight path of the aeroplane, with all power units operating, specified as being appropriate to—

- (a) the weight of the aeroplane at the commencement of the take-off run;
- (b) the altitude of the aerodrome;
- (c) the air temperature at the aerodrome;
- (d) not more than 50 per cent. of the reported wind component opposite to the direction of the take-off or not less than 150 per cent. of the reported wind component in the direction of take-off,

and plotted from a point 50 feet above the end of the take-off distance required at the aerodrome at which the take-off is to be made to a height of 1,500 feet above the aerodrome, shall show that the aeroplane will meet the requirement of sub-paragraph (4).

(4) Subject to sub-paragraphs (5) and (6) the requirement referred to in sub-paragraph (3) is that the aeroplane shall clear any obstacle in its path by a vertical interval of not less than 35 feet; but if it is intended that the aeroplane shall change its direction of flight by more than 15° before reaching 1,500 feet the vertical interval shall be not less than 50 feet during the change of direction.

(5) For the purpose of sub-paragraph (4) an obstacle shall be deemed to be in the path of the aeroplane if the distance from the obstacle to the nearest point on the ground below the intended line of flight of the aeroplane does not exceed 75 metres.

(6) In assessing the ability of the aeroplane to satisfy sub-paragraph (4), it shall not be assumed the aeroplane will make a change of direction of a radius less than the specified radius of steady turn.

(7) In the case of an aeroplane which is intended to be flown for any period before reaching a height of 1,500 feet above the aerodrome from which the take-off is to be made in conditions which will not ensure that any obstacles can be located by means of visual observation, the net take-off flight path of the aeroplane, with one power unit inoperative, which is—

- (a) specified as being appropriate to the factors contained in paragraphs (a) to (d) of sub-paragraph (3); and
- (b) plotted from the point of the net take-off flight path, with all power units operating specified as being appropriate to those factors at which, in the meteorological conditions expected for the flight, the loss of visual reference would occur,

shall show that the aeroplane will meet the requirement of sub-paragraph (8).

(8) Subject to sub-paragraphs (9) and (10) the requirement referred to in sub-paragraph (7) is that the aeroplane shall clear by a vertical interval of not less than 35 feet any obstacle in its path but if it is intended that the aeroplane shall change its direction of flight by more than 15° before reaching 1,500 feet the vertical interval shall not be less than 50 feet during the change of direction.

(9) For the purpose of sub-paragraph (8) an obstacle shall be deemed to be in the path of the aeroplane if the distance from the obstacle to the nearest point on the ground below the intended line of flight of the aeroplane does not exceed—

- (a) 75 metres plus one-eighth of the distance from such point to the end of the accelerate-stop distance available measured along the intended line of flight of the aeroplane; or
- (b) 900 metres,

whichever is the less.

(10) In assessing the ability of the aeroplane to satisfy sub-paragraph (8) it shall not be assumed the aeroplane will make a change of direction of a radius of less than the specified radius of steady turn.

(11) In the meteorological conditions expected for the flight the aeroplane shall—

- (a) at any time after it reaches a height of 1,500 feet above the aerodrome from which the take-off is made;
- (b) in the event of any one power unit becoming inoperative at any point on its route or on any planned diversion from it; and
- (c) with the other power unit or power units operating within the specified maximum continuous power conditions,

meet the requirements of sub-paragraph (12).

(12) Subject to sub-paragraph (13) the requirements referred to in sub-paragraph (11) are—

- (a) the aeroplane shall be capable of continuing the flight at altitudes not less than the relevant

minimum altitude for safe flight stated in, or calculated from the information contained in, the operations manual relating to the aeroplane to a point 1,500 feet above an aerodrome at which a safe landing can be made; and

(b) after arrival at that point shall be capable of maintaining that height.

(13) In assessing the ability of the aeroplane to satisfy sub-paragraph (12) it shall not be assumed to be capable of flying at any point on its route at an altitude exceeding the performance ceiling, with all power units operating, specified as being appropriate to its estimated weight at that point.

(14) The landing weight of the aeroplane shall not exceed the maximum landing weight specified for the altitude and the expected air temperature for the estimated time of landing at the aerodrome at which it is intended to land and at any alternate aerodrome.

(15) Subject to sub-paragraph (17), the distance required by the aeroplane to land at the aerodrome at which it is intended to land and at any alternate aerodrome from a height of 50 feet, otherwise than in accordance with specified data for short field landing, shall not exceed 70 per cent. of the landing distance available on:

(a) the most suitable runway for a landing in still air conditions; and

(b) the runway that may be required for landing because of the forecast wind conditions.

(16) For the purposes of sub-paragraph (15) the distance required to land from a height of 50 feet shall be taken to be that specified as being appropriate to—

(a) the landing weight;

(b) the altitude at the aerodrome;

(c) the temperature in the specified international standard atmosphere appropriate to the altitude at the aerodrome;

(d) the level surface in the case of runways usable in both directions or the average slope of the runway in the case of runways usable in only one direction;

(e) still air conditions in the case of the most suitable runway for landing in still air conditions; and

(f) not more than 50 per cent. of the forecast wind component opposite to the direction of landing or not less than 150 per cent. of the forecast wind component in the direction of landing in the case of the runway that may be required for landing because of the forecast wind conditions.

(17) As an alternative to sub-paragraph (15) but subject to sub-paragraphs (18), (19) and (20) the distance required by the aeroplane to land in accordance with specified data for short field landing, with all power units operating or with one power unit inoperative, shall not exceed the landing distance available:

(a) on the most suitable runway for a landing in still air conditions; and

(b) on the runway that may be required for landing because of the forecast wind conditions,

at both the aerodrome of intended destination and at any alternate aerodrome.

(18) For the purposes of sub-paragraph (17) the distance required to land from the appropriate height shall be taken to be that specified as being appropriate to the factors set forth in paragraphs (a) to (e) of sub-paragraph (16) and, subject to sub-paragraph (19), the appropriate height shall be—

(a) for a landing with all power units operating—any height between 30 and 50 feet in the United Kingdom, and 50 feet elsewhere; and

(b) for a landing with one power unit inoperative—50 feet in both the United Kingdom and elsewhere.

(19) If the specified distance required to land with one power unit inoperative from a height of 50 feet at the aerodrome of intended destination exceeds the landing distance available, it shall be sufficient compliance with paragraph (b) of sub-paragraph (18) if an alternate aerodrome, which has available the specified landing distance required to land with one power unit inoperative from such a height, is designated in the flight plan.

(20) The distance required by the aeroplane to land shall be determined in accordance with sub-paragraph (16), and not in accordance with sub-paragraph (17), if either:

(a) it is intended to land at night; or

(b) it is intended to land when the cloud ceiling or ground visibility forecast for the estimated time of landing at the aerodrome of intended destination, and at any alternate aerodrome at which it is intended to land in accordance with specified data for short field landing with all power units operating, are less than 500 feet and one nautical mile respectively.

Weight and performance of public transport aeroplanes designated as aeroplanes of performance group D

3.—(1) For the purposes of article 44(6), an aeroplane registered in the United Kingdom, in respect of which there is in force under article 44(5) a permission in which the aeroplane is designated as being of performance group D, shall not fly for the purpose of public transport:

(a) at night; or

- (b) when the cloud ceiling or visibility prevailing at the aerodrome of departure or forecast for the estimated time of landing at the aerodrome at which it is intended to land, or at any alternate aerodrome, are less than 1,000 feet and one nautical mile respectively.

(2) Such an aeroplane shall not fly for the purpose of public transport at any other time unless the weight of the aeroplane at the commencement of the take-off run is such that the following conditions are satisfied—

- (a) That weight shall not exceed the maximum take-off weight specified for the altitude and air temperature at the aerodrome at which the take-off is to be made.
- (b) The take-off run required and the take-off distance required specified as being appropriate to—
 - (i) the weight of the aeroplane at the commencement of the take-off run;
 - (ii) the altitude of the aerodrome;
 - (iii) the air temperature at the aerodrome;
 - (iv) the average slope of the surface of the aerodrome in the direction of take-off over the accelerate-stop distance available; and
 - (v) not more than 50 per cent. of the reported wind component opposite to the direction of take-off or not less than 150 per cent. of the reported wind component in the direction of take-off,

shall not exceed the take-off run available and the accelerate—stop distance available, respectively, at the aerodrome at which the take-off is to be made.

(3) Subject to sub-paragraphs (4), (5) and (6), the net take-off flight path with all power units operating, specified as being appropriate to—

- (a) the weight of the aeroplane at the commencement of the take-off run;
- (b) the altitude at the aerodrome;
- (c) the air temperature at the aerodrome; and
- (d) not more than 50 per cent. of the reported wind component opposite to the direction of take-off or not less than 150 per cent. of the reported wind component in the direction of take-off,

and plotted from a point of 50 feet above the end of the take-off distance required at the aerodrome at which the take-off is to be made to the point at which the aeroplane reaches a height of 1,000 feet above the aerodrome, shall show that the aeroplane will clear any obstacle in its path by a vertical interval of not less than 35 feet.

(4) If it is intended that the aeroplane will change its direction of flight by more than 15° before reaching 1,000 feet the vertical interval referred to in sub-paragraph (3) shall be not less than 50 feet during the change of direction.

(5) For the purpose of sub-paragraph (3) an obstacle shall be deemed to be in the path of the aeroplane if the distance from the obstacle to the nearest point on the ground below the intended line of flight of the aeroplane does not exceed 75 metres.

(6) In assessing the ability of the aeroplane to satisfy sub-paragraph (3) it shall not be assumed to make a change of direction of a radius less than the specified radius of steady turn.

(7) Subject to sub-paragraph (8) the aeroplane shall:

- (a) at any time after it reaches a height of 1,000 feet above the aerodrome from which the take-off is to be made;
- (b) in the meteorological conditions expected for the flight;
- (c) in the event of any one power unit becoming inoperative at any point on its route or on any planned diversion from it; and
- (d) with the other power unit or power units, if any, operating within the maximum specified continuous power conditions,

be capable of continuing the flight at altitudes not less than the relevant minimum altitudes for safe flight stated in, or calculated from the information contained in, the operations manual relating to the aeroplane to a point 1,000 feet above a place at which a safe landing can be made.

(8) In assessing the ability of the aeroplane to satisfy sub-paragraph (7) it shall not be assumed to be capable of flying at any point on its route at an altitude exceeding the performance ceiling with all power units operating which are specified as being appropriate to its estimated weight at that point.

(9) The landing weight of the aeroplane shall not exceed the maximum landing weight specified for the altitude and the expected air temperature for the estimated time of landing at the aerodrome at which it is intended to land and at any alternate aerodrome.

(10) Subject to sub-paragraph (11), the distance required by the aeroplane to land from a height of 50 feet at the aerodrome at which it is intended to land, and at any alternate aerodrome, shall not exceed 70 per cent. of the landing distance available on the most suitable runway for a landing in still air conditions and also 70 per cent. of the landing distance available on the runway that may be required for landing because of the forecast wind conditions.

(11) For the purposes of sub-paragraph (10) the distance required to land from a height of 50 feet shall be taken to be that specified as being appropriate to—

- (a) the landing weight;
- (b) the altitude at the aerodrome;
- (c) the temperature in the specified international standard atmosphere appropriate to the altitude at the aerodrome;
- (d) a level surface in the case of runways usable in both directions or the average slope of the runway in the case of runways usable in only one direction; and
- (e) still air conditions in the case of the most suitable runway for a landing in still air conditions and not more than 50 per cent. of the forecast wind component opposite to the direction of landing or not less than 150 per cent. of the forecast wind component in the direction of landing in the case of the runway that may be required for the landing because of the forecast wind conditions.

Weight and performance of public transport aeroplanes designated as aeroplanes of performance group E

4.—(1) For the purposes of article 44(6) and subject to sub-paragraph (2), an aeroplane registered in the United Kingdom, in respect of which there is in force under article 44(5) a permission in which the aeroplane is designated as being of performance group E, shall not fly for the purpose of public transport unless the weight of the aeroplane at the commencement of the take-off run is such that the following requirements are satisfied—

- (a) The weight for the altitude and the air temperature at the aerodrome at which the take-off is to be made shall not exceed the maximum take-off weight specified as being appropriate to:
 - (i) the weight at which the aeroplane is capable of a rate of climb of 700 feet per minute if it has retractable landing gear and of 500 feet per minute if it has fixed landing gear, in the en route configuration and with all power units operating within the specified maximum continuous power conditions; and
 - (ii) the weight at which the aeroplane is capable, with one power unit inoperative, of a rate of climb of 150 feet per minute in the en route configuration and if it is necessary for it to be flown solely by reference to instruments for any period before reaching the minimum altitude for safe flight on the first stage of the route to be flown, as stated in, or calculated from, the information contained in the operations manual relating to the aeroplane.
- (b) Subject to paragraph (c), with all power units operating within the maximum take-off power conditions specified and when multiplied by a factor of 1:33 the distance required by the aeroplane to attain a height of 50 feet shall not exceed the accelerate-stop distance available at the aerodrome at which the take-off is to be made.
- (c) For the purposes of paragraph (b) the distance required by the aeroplane to attain a height of 50 feet shall be that appropriate to—
 - (i) the weight of the aeroplane at the commencement of the take-off run;
 - (ii) the altitude at the aerodrome;
 - (iii) the air temperature at the aerodrome; and
 - (iv) not more than 50 per cent. of the reported wind component opposite to the direction of take-off or not less than 150 per cent. of the reported wind component in the direction of take-off.
- (d) Subject to paragraphs (f) and (g) and in the circumstances and conditions referred to in paragraph (e) the aeroplane shall be capable of continuing the flight at altitudes not less than the relevant minimum altitude for safe flight stated in, or calculated from the information contained in, the operations manual relating to the aeroplane to a point 1,000 feet above a place at which a safe landing can be made.
- (e) These are the circumstances and conditions referred to in paragraph (d):
 - (i) at any time after the aeroplane reaches a height of 1,000 feet above the aerodrome from which take-off is to be made;
 - (ii) in the meteorological conditions expected for the flight; and
 - (iii) in the event of any one power unit becoming inoperative at any point on its route or on any planned diversion from such route, and with the other power unit or units, if any, operating within the specified maximum continuous power conditions.
- (f) Subject to paragraph (g) in assessing the ability of the aeroplane to satisfy paragraph (d) it shall not be assumed to be capable of flying at any point on its route, or on any planned diversion from such route, at an altitude exceeding that at which it is capable of a rate of climb, with all power units operating within the maximum continuous power conditions specified, of 150 feet per minute.
- (g) If it is necessary for the aircraft to be flown solely by reference to instruments, it shall be assumed to be capable, with one power unit inoperative, of a rate of climb of 100 feet per minute.

- (h) The landing weight of the aeroplane for the altitude and the expected air temperature for the estimated time of landing at the aerodrome at which it is intended to land and at any alternate aerodrome shall not exceed the maximum landing weight specified in paragraph (i).
- (i) The maximum landing weights referred to in paragraph (h) are—
 - (i) those specified at which the aeroplane is capable, in the en route configuration and with all power units operating within the specified maximum continuous power conditions, of a rate of climb of 700 feet per minute if it has retractable landing gear and of 500 feet per minute if it has fixed landing gear, and
 - (ii) those specified at which the aeroplane is capable—
 - (aa) in the en route configuration and if it is necessary for it to be flown solely by reference to instruments for any period after leaving the minimum altitude for safe flight on the last stage of the route to be flown, as stated in, or calculated from the information contained in, the operations manual relating to the aeroplane; and
 - (bb) with one power unit inoperative, of a rate of climb of 150 feet per minute.
- (j) Subject to paragraph (k) the landing distance required shall not exceed 70 per cent. of the landing distance available on the most suitable runway for a landing in still air conditions at the aerodrome at which it is intended to land and at any alternate aerodrome.
- (k) For the purposes of paragraph (j) the distance required to land from a height of 50 feet shall be taken to be that specified as being appropriate to—
 - (i) the landing weight;
 - (ii) the altitude at the aerodrome; and
 - (iii) the temperature in the specified international standard atmosphere appropriate to the altitude at the aerodrome.

(2) An aeroplane designated by a permission granted under article 44(5) as an aeroplane of performance group E shall not fly for the purpose of public transport:

- (a) at night; or
- (b) when the cloud ceiling or visibility prevailing at the aerodrome of departure or forecast for the estimated time of landing at the aerodrome at which it is intended to land or at any alternate aerodrome are less than 1,000 feet and one nautical mile respectively,

unless the aeroplane is capable, in the en route configuration and with one power unit inoperative, of a rate of climb of 150 feet per minute.

Weight and performance of public transport aeroplanes designated as aeroplanes of performance group F

5. For the purposes of article 44(6) and subject to sub-paragraph (2), an aeroplane registered in the United Kingdom in respect of which there is in force a permission granted under article 44(5) in which the aeroplane is designated as being of performance group F, shall not fly for the purpose of public transport unless the weight of the aeroplane at the commencement of the take-off run is such that the following requirements are satisfied—

- (1) That weight shall not exceed the maximum take-off weight specified for the altitude and the air temperature at the aerodrome at which the take-off is to be made.
- (2) The take-off distance required, specified as being appropriate to—
 - (a) the weight of the aeroplane at the commencement of the take-off run;
 - (b) the altitude at the aerodrome;
 - (c) the air temperature at the aerodrome; and
 - (d) the average slope of the surface of the aerodrome in the direction of take-off over the take-off run available; and not more than 50 per cent. of the reported wind component opposite to the direction of take-off or not less than 150 per cent. of the reported wind component in the direction of take-off,

shall not exceed the take-off run available at the aerodrome at which the take-off is to be made.

(3) Subject to sub-paragraph (5), in the circumstances and conditions referred to in paragraph (4) the aeroplane shall be capable of continuing the flight at altitudes not less than the relevant minimum altitude for safe flight stated in, or calculated from the information contained in, the operations manual relating to the aeroplane to a point 1,000 feet above—

- (a) in the case of an aeroplane having one power unit, a place at which a safe landing can be made; and
- (b) in the case of an aeroplane having two or more power units, an aerodrome at which it can comply with sub-paragraph (7).

(4) The circumstances and conditions referred to in sub-paragraph (3) are:

- (a) at any time after the aeroplane reaches a height of 1,000 feet above the aerodrome from which take-off is to be made;
- (b) in the meteorological conditions expected for the flight; and

- (c) in the event of any one power unit becoming inoperative at any point on its route or on any planned diversion from it, and with the other power unit or power units, if any, operating within the specified maximum continuous power conditions.
- (5) In assessing the ability of the aeroplane to satisfy sub-paragraph (3)—
 - (a) the aeroplane shall not be assumed to be capable of flying, at any point on its route or on any planned diversion from it, at an altitude exceeding that at which it is capable of a gradient of climb of 2 per cent., with all power units operating within maximum continuous power conditions specified; and
 - (b) the aeroplane shall be required to be capable of a gradient of climb of 1 per cent. at the relevant minimum safe altitude, with one power unit inoperative and with the other power unit or power units operating within the specified maximum continuous power conditions, over those parts of the route or any planned diversion where, in the meteorological conditions expected for the flight, it is expected that the aeroplane will be out of sight of the surface due to cloud cover at or below the relevant minimum safe altitude.
- (6) The landing weight of the aeroplane shall not exceed the maximum landing weight specified for the altitude and the expected air temperature for the estimated time of landing at the aerodrome at which it is intended to land and at any alternate aerodrome.
- (7) Subject to sub-paragraph (8) the landing distance required shall not exceed the landing distance available on the most suitable runway for a landing in still air conditions at the aerodrome at which it is intended to land or at any alternate aerodrome, as the case may be.
- (8) For the purposes of sub-paragraph (7) the landing distance required shall be that specified as being appropriate to—
 - (a) the landing weight;
 - (b) the altitude at the aerodrome;
 - (c) the temperature in the specified international standard atmosphere appropriate to the altitude at the aerodrome;
 - (d) a runway with a level surface; and
 - (e) still air conditions.
- (9) An aeroplane with one power-unit and designated by a permission granted under article 44(5) as an aeroplane of performance group F shall not fly for the purpose of public transport:
 - (a) at night; or
 - (b) when the cloud ceiling or visibility prevailing at the aerodrome of departure or forecast for the estimated time of landing at the aerodrome at which it is intended to land or at any alternate aerodrome are less than 1,000 feet and one nautical mile respectively.

Weight and performance of public transport aeroplanes designated as aeroplanes of performance group X

6. For the purposes of article 44(6), an aeroplane in respect of which there is in force under article 44(5) a permission designating the aeroplane as being of performance group X shall not fly for the purpose of public transport unless the weight of the aeroplane at the commencement of the take-off run is such that the following requirements are satisfied—

- (1) That weight shall not exceed the maximum take-off weight specified for the altitude at the aerodrome at which the take-off is to be made, or for the altitude and the air temperature at such aerodrome, as the case may be.
- (2) The minimum effective take-off runway length required, specified as being appropriate to—
 - (a) the weight of the aeroplane at the commencement of the take-off run;
 - (b) the altitude at the aerodrome;
 - (c) the air temperature at the time of take-off;
 - (d) the condition of the surface of the runway from which the take-off will be made;
 - (e) the overall slope of the take-off run available; and
 - (f) not more than 50 per cent. of the reported wind component opposite to the direction of take-off or not less than 150 per cent. of the reported wind component in the direction of take-off,
 shall not exceed the take-off run available at the aerodrome at which the take-off is to be made.
- (3) Subject to sub-paragraphs (4) and (5) the take-off flight path with one power unit inoperative, specified as being appropriate to—
 - (a) the weight of the aeroplane at the commencement of the take-off run;
 - (b) the altitude at the aerodrome; and
 - (c) not more than 50 per cent. of the reported wind component opposite to the direction of take-off or not less than 150 per cent. of the reported wind component in the direction of take-off, and plotted from a point 50 feet above the end of the minimum effective take-off runway length required at the aerodrome at which the take-off is to be made,

shall show that the aeroplane will clear any obstacle in its path by a vertical interval of not less than the greater of 50 feet or 35 feet plus one-hundredth of the distance from the point on the ground below the intended line of flight of the aeroplane nearest to the obstacle to the end of the take-off distance available, measured along the intended line of flight of the aeroplane.

(4) For the purpose of sub-paragraph (3) an obstacle shall be deemed to be in the path of the aeroplane if the distance from the obstacle to the nearest point on the ground below the intended line of flight does not exceed—

- (a) a distance of 60 metres plus half the wing span of the aeroplane plus one-eighth of the distance from such point to the end of the take-off distance available measured along the intended line of flight; or
- (b) 900 metres,

whichever is the less.

(5) In assessing the ability of the aeroplane to satisfy sub-paragraph (3), in so far as it relates to flight path, it shall not be assumed to make a change of direction of a radius less than the radius of steady turn corresponding to an angle of bank of 15°.

(6) Subject to sub-paragraph (8), and in the circumstances mentioned in sub-paragraph (7), the weight of the aeroplane shall be such that the aeroplane will be capable of a rate of climb of at least $K(V_{so}/100)^2$ feet per minute at an altitude not less than the minimum altitude for safe flight stated in or calculated from the information contained in the operations manual relating to the aeroplane, where V_{so} is in knots and K has the value of $797-1060/N$, N being the number of power units installed.

(7) The circumstances mentioned in sub-paragraph (6) are:

- (a) at any point on the route or any planned diversion from the route, having regard to the fuel and oil expected to be consumed up to that point; and
- (b) with one power unit inoperative and the other power unit or units operating within the maximum continuous power conditions specified.

(8) As an alternative to sub-paragraph (6), but subject to sub-paragraph (9), the aeroplane may be flown at an altitude from which, in the event of failure of one power unit, it is capable of reaching an aerodrome where a landing can be made in accordance with sub-paragraph (14), relating to an alternate aerodrome. In that case the weight of the aeroplane shall be such that, with the remaining power unit or units operating within the maximum continuous power conditions specified, it is capable of maintaining a minimum altitude on the route to such aerodrome of 2,000 feet above all obstacles within 10 nautical miles on either side of the intended track.

(9) If the operator of the aeroplane is satisfied, taking into account the navigation aids which can be made use of by the aeroplane on the route, that the commander of the aeroplane will be able to maintain his intended track on that route within a margin of 5 nautical miles, sub-paragraph (8) shall have effect as if 5 nautical miles were substituted for 10 nautical miles and sub-paragraph (10) shall apply.

(10) In the circumstances referred to in sub-paragraph (9):

- (a) the rate of climb, specified for the appropriate weight and altitude, used in calculating the flight path shall be reduced by an amount equal to $K(V_{so}/100)^2$ feet per minute;
- (b) the aeroplane shall comply with the climb requirements of sub-paragraph (6) at 1,000 feet above the chosen aerodrome;
- (c) account shall be taken of the effect of wind and temperature on the flight path; and
- (d) the weight of the aeroplane may be assumed to be progressively reduced by normal consumption of fuel and oil.

(11) Subject to sub-paragraph (12), if:

- (a) any two power units of an aeroplane having four power units shall become inoperative at any point along the route or along any planned diversion from the route; and
- (b) that point is more than 90 minutes flying time (assuming all power units were to be operating) from the nearest aerodrome at which a landing can be made in compliance with sub-paragraph (14), relating to an alternate aerodrome,

the aeroplane shall be capable of continuing the flight at an altitude of not less than 1,000 feet above ground level to a point above that aerodrome.

(12) In assessing the ability of the aeroplane to satisfy sub-paragraph (11) it shall be assumed that the remaining, operative power units will operate within the specified maximum continuous power conditions, and account shall be taken of the temperature and wind conditions expected for the flight.

(13) The landing weight of the aeroplane shall not exceed the maximum landing weight specified for the altitude at the aerodrome at which it is intended to land and at any alternate aerodrome.

(14) Subject to sub-paragraph (15), the required landing runway lengths, respectively specified as being appropriate to the aerodrome of intended destination and the alternate aerodrome, shall not exceed the landing distance available on—

- (a) the most suitable runway for landing in still air conditions; and
- (b) the runway that may be required for landing because of the forecast wind conditions,

at the aerodrome at which it is intended to land or at any alternate aerodrome, as the case may be.

(15) For the purpose of sub-paragraph (14) the required landing runway lengths shall be taken to be those specified as being appropriate to—

- (a) the landing weight;
- (b) the altitude at the aerodrome;
- (c) still air conditions in the case of the most suitable runway for a landing in still air conditions; and
- (d) not more than 50 per cent. of the forecast wind component opposite to the direction of landing or not less than 150 per cent. of the forecast wind component in the direction of landing in the case of the runway that may be required for landing because of the forecast wind conditions.

Weight and performance of public transport aeroplanes designated as aeroplanes of performance group Z

7.—(1) For the purposes of article 44(6), an aeroplane registered in the United Kingdom, in respect of which there is in force under article 44(5) a permission designating the aeroplane as being of performance group Z, shall not fly for the purpose of public transport unless the weight of the aeroplane at the commencement of the take-off run is such that the following sub-paragraphs as apply to that aeroplane are satisfied.

(2) Sub-paragraphs (5) and (6) apply to all aeroplanes to which this paragraph applies.

(3) Sub-paragraphs (7) to (24) inclusive apply to all aeroplanes to which this paragraph applies—

- (a) of which the specified maximum total weight authorised exceeds 5,700 kg; or
- (b) of which the specified maximum total weight authorised does not exceed 5,700 kg, and which comply with neither paragraphs (a) nor (b) of sub-paragraph (5).

(4) Sub-paragraphs (25) to (36) apply to all aeroplanes to which this paragraph applies of which the specified maximum total weight authorised does not exceed 5,700 kg, and which comply with either or both of paragraphs (a) and (b) of sub-paragraph (5).

(5) For the purposes of sub-paragraphs (1) and (2) either—

- (a) the wing loading of the aeroplane shall not exceed 20 lb per square foot; or
- (b) the stalling speed of the aeroplane in the landing configuration shall not exceed 60 knots; or
- (c) the aeroplane shall be capable of a gradient of climb of at least 1 in 200 at an altitude of 5,000 feet in the specified international standard atmosphere, with any one of its power units inoperative and the remaining power unit or units operating within the maximum continuous power conditions specified.

(6) The weight of the aeroplane at the commencement of the take-off run shall not exceed the maximum take-off weight, if any, specified for the altitude and the air temperature at the aerodrome at which the take-off is to be made.

(7) Subject to sub-paragraph (9) the distance required by the aeroplane to attain a height of 50 feet, with all power units operating within the maximum take-off power conditions specified shall not exceed the take-off run available at the aerodrome at which the take-off is to be made.

(8) Subject to sub-paragraph (9) the distance required by the aeroplane to attain a height of 50 feet with all power units operating within the maximum take-off power conditions specified, when multiplied by a factor of either 1.33 for aeroplanes having two power units or by a factor of 1.18 for aeroplanes having four power units, shall not exceed the accelerate—stop distance available at the aerodrome at which the take-off is to be made.

(9) For the purposes of sub-paragraphs (7) and (8) the distance required by the aeroplane to attain a height of 50 feet shall be that appropriate to—

- (a) the weight of the aeroplane at the commencement of the take-off run;
- (b) the altitude at the aerodrome;
- (c) the air temperature at the aerodrome;
- (d) the condition of the surface of the runway from which the take-off will be made;
- (e) the slope of the surface of the aerodrome in the direction of take-off over the take-off run available and the accelerate-stop distance available, respectively; and
- (f) not more than 50 per cent. of the reported wind component opposite to the direction of take-off or not less than 150 per cent. of the reported wind component in the direction of take-off.

(10) Subject to sub-paragraphs (12), (13) and (14), in the conditions mentioned in sub-paragraph (11) the take-off flight path of the aeroplane shall show that the aeroplane will clear any obstacle in its path by a vertical interval of at least 35 feet except that if it is intended that an aeroplane shall change its direction by more than 15° the vertical interval shall be not less than 50 feet during the change of direction.

(11) The conditions mentioned in sub-paragraph (10) are—

- (a) that one power unit is inoperative and the remaining power unit or units are operating within the maximum take-off power conditions specified in sub-paragraph (12); and
- (b) the take off path is plotted from a point 50 feet above the end of the appropriate factored distance required for take-off under sub-paragraph (8) at the aerodrome at which the take-off is to be made.

(12) The maximum take-off power conditions specified in sub-paragraph (11)(a) are those appropriate to—

- (a) the weight of the aeroplane at the commencement of the take-off run;
- (b) the altitude at the aerodrome;
- (c) the air temperature at the aerodrome; and
- (d) not more than 50 per cent. of the reported wind component opposite to the direction of take-off or not less than 150 per cent. of the reported wind component in the direction of take-off.

(13) For the purpose of sub-paragraph (10) an obstacle shall be deemed to be in the path of the aeroplane if the distance from the obstacle to the nearest point on the ground below the intended line of flight does not exceed—

- (a) a distance of 60 metres plus half the wing span of the aeroplane, plus one-eighth of the distance from such point to the end of the take-off distance available, measured along the intended line of flight; or
- (b) 900 metres,

whichever is the less.

(14) In assessing the ability of the aeroplane to satisfy sub-paragraph (10), it shall not be assumed the aeroplane will make a change of direction of a radius less than a radius of steady turn corresponding to an angle of bank of 15°.

(15) Subject to sub-paragraph (17), in the circumstances and conditions referred to in sub-paragraph (16) the aeroplane shall be capable of continuing the flight, clearing obstacles within 10 nautical miles either side of the intended track, by a vertical interval of at least—

- (a) 1,000 feet when the gradient of the flight path is not less than zero; or
- (b) 2,000 feet when the gradient of the flight path is less than zero,

to an aerodrome at which it can comply with sub-paragraph (10), and on arrival over such aerodrome the flight path shall have a gradient of not less than zero at 1,500 feet above the aerodrome.

(16) The following are the circumstances and conditions referred to in sub-paragraph (15)—

- (a) the meteorological conditions expected for the flight;
- (b) in the event of any one power unit becoming inoperative at any point on its route or on any planned diversion from it; and
- (c) with the other power unit or units, if any, operating within the maximum continuous power conditions specified.

(17) For the purpose of sub-paragraph (15) the gradient of climb of the aeroplane shall be taken to be 1 per cent. less than that specified.

(18) In the meteorological conditions expected for the flight and at any point on its route or on any planned diversion from it the aeroplane shall be capable of climbing at a gradient of at least 1 in 50, with all power units operating within the maximum continuous power conditions specified at the following altitudes—

- (a) the minimum altitudes for safe flight on each stage of the route to be flown or of any planned diversion from it specified in, or calculated from the information contained in, the operations manual relating to the aeroplane; and
- (b) the minimum altitudes necessary for compliance with sub-paragraphs (15) and (19), as appropriate.

(19) If, on the route to be flown or on any planned diversion, the aeroplane will:

- (a) be engaged in a flight over water; and
- (b) at any point during such flight it may be more than 90 minutes flying time in still air from the nearest shore,

it shall be capable of complying with the requirements of sub-paragraph (20) in the event of two power units becoming inoperative during such time and with the other power units, if any, operating within the maximum continuous power conditions specified.

- (20) The requirements referred to in sub-paragraph (19) are:
- (a) that the aeroplane is capable of continuing the flight, having regard to the meteorological conditions expected for the flight;
 - (b) clearing all obstacles within 10 nautical miles either side of the intended track by a vertical interval of at least 1,000 feet; and
 - (c) to an aerodrome at which a safe landing can be made.

(21) The landing weight of the aeroplane shall not exceed the maximum landing weight, if any, specified for the altitude and the expected air temperature for the estimated time of landing at the aerodrome at which it is intended to land and at any alternate aerodrome.

(22) Subject to sub-paragraph (23) the distance required by the aeroplane to land at the aerodrome at which it is intended to land from a height of 50 feet shall not exceed 60 per cent. of the landing distance available on—

- (a) the most suitable runway for a landing in still air conditions; and
- (b) the runway that may be required for landing because of the forecast wind conditions; provided that if an alternate aerodrome is designated in the flight plan, the landing distance required at the aerodrome at which it is intended to land shall not exceed 70 per cent. of that available on the runway.

(23) For the purpose of sub-paragraph (22) the distance required to land from a height of 50 feet shall be taken to be that appropriate to—

- (a) the landing weight;
- (b) the altitude at the aerodrome;
- (c) the temperature in the specified international standard atmosphere appropriate to the altitude at the aerodrome;
- (d) a level surface in the case of runways usable in both directions;
- (e) the average slope of the runway in the case of runways usable in only one direction;
- (f) still air conditions in the case of the most suitable runway for a landing in still air conditions; and
- (g) not more than 50 per cent. of the forecast wind component opposite to the direction of landing or not less than 150 per cent. of the forecast wind component in the direction of landing in the case of the runway that may be required for landing because of the forecast wind conditions.

(24) Subject to paragraph (25), the distance required by the aeroplane to land from a height of 50 feet at any alternate aerodrome shall not exceed 70 per cent. of the landing distance available on—

- (a) the most suitable runway for a landing in still air conditions; and
- (b) the runway that may be required for landing because of the forecast wind conditions.

(25) For the purpose of sub-paragraph (24) the distance required to land from a height of 50 feet shall be determined in the manner provided in sub-paragraph (23).

(26) If the aeroplane is engaged:

- (a) on a flight at night; or
- (b) when the cloud ceiling or visibility prevailing at the aerodrome of departure or forecast for the estimated time of landing at the aerodrome of destination at which it is intended to land or at any alternate aerodrome are less than 1,000 feet and one nautical mile respectively,

it shall be capable of climbing at a gradient of at least 1 in 200 at an altitude of 2,500 feet in the specified international standard atmosphere with any one of its power units inoperative and with the remaining power unit or units, if any, operating within the maximum continuous power conditions specified.

(27) Subject to sub-paragraph (29), the distance required by the aeroplane to attain a height of 50 feet with all power units operating within the maximum take-off power conditions specified, shall not exceed the take-off run available at the aerodrome at which the take-off is to be made.

(28) Subject to sub-paragraph (29), the distance required by the aeroplane to attain a height of 50 feet, with all power units operating within the maximum take-off power conditions specified, when multiplied by a factor of 1.33 shall not exceed the accelerate-stop distance available at the aerodrome at which the take-off is to be made.

(29) For the purposes of sub-paragraphs (27) and (28) the distance required by the aeroplane to attain a height of 50 feet shall be that appropriate to—

- (a) the weight of the aeroplane at the commencement of the take-off run;
- (b) the altitude at the aerodrome;
- (c) the temperature in the specified international standard atmosphere appropriate to the altitude at the aerodrome or, if greater, the air temperature at the aerodrome less 15° centigrade;
- (d) the slope of the surface of the aerodrome in the direction of take-off over the take-off run available and the accelerate-stop distance available respectively; and
- (e) not more than 50 per cent. of the reported wind component opposite to the direction of take-off or not less than 150 per cent. of the reported wind component in the direction of take-off.

(30) The take-off flight path of the aeroplane, with all power units operating within the maximum take-off power conditions specified, appropriate to—

- (a) the weight of the aeroplane at the commencement of the take-off run;
- (b) the altitude at the aerodrome;
- (c) the temperature in the specified international standard atmosphere appropriate to the altitude at the aerodrome, or, if greater, the air temperature at the aerodrome less 15° centigrade;
- (d) not more than 50 per cent. of the reported wind component opposite to the direction of take-off or not less than 150 per cent. of the reported wind component in the direction of take-off; and
- (e) plotted from a point 50 feet above the end of the factored distance required for take-off under sub-paragraph (28), at the aerodrome at which the take-off is to be made,

shall show that the aeroplane will meet the requirements of sub-paragraph (31).

(31) The requirements referred to in sub-paragraph (30) are that the aeroplane shall clear any obstacle lying within 60 metres plus half the wing span of the aeroplane on either side of its path by a vertical interval of at least 35 feet. In assessing the ability of the aeroplane to satisfy this sub-paragraph it shall not be assumed to make a change of direction of a radius less than a radius of steady turn corresponding to an angle of bank of 15°.

(32) The aeroplane shall be capable of continuing the flight so as to reach a point above a place at which a safe landing can be made at a suitable height for such landing:

- (a) in the meteorological conditions expected for the flight;
- (b) in the event of any power unit becoming inoperative at any point on its route or on any planned diversion from it; and
- (c) with the other power unit or units, if any, operating within the maximum continuous power conditions specified.

(33) The aeroplane shall be capable of climbing at a gradient of at least 1 in 50, with all power units operating within the maximum continuous power conditions specified at the altitudes referred to in paragraph (34) in the meteorological conditions expected for the flight and at any point on its route or any planned diversion.

(34) The altitudes referred to in paragraph (33) are:

- (a) the minimum altitudes for safe flight on each stage of the route to be flown or on any planned diversion from it specified in, or calculated from, the information contained in the operations manual relating to the aeroplane; and
- (b) the minimum altitudes necessary for compliance with paragraph (32).

(35) If on the route to be flown or any planned diversion from it the aeroplane will:

- (a) be engaged on a flight over water;
- (b) during which, at any point, it may be more than 30 minutes flying time in still air from the nearest shore; and
- (c) in the event of one power unit becoming inoperative during such time and with the other power unit or units, if any, operating within the maximum continuous power conditions specified,

the aeroplane shall be capable of climbing at a gradient of at least 1 in 200 at an altitude of 5,000 feet in the specified international standard atmosphere.

(36) The landing weight of the aeroplane shall not exceed the maximum landing weight, if any, specified for the altitude and the expected air temperature for the estimated time of landing at the aerodrome at which it is intended to land and at any alternate aerodrome.

(37) Subject to sub-paragraph (38) the distance required by the aeroplane to land at the aerodrome at which it is intended to land and at any alternate aerodrome from a height of 50 feet shall not exceed 70 per cent. or, if a visual approach and landing will be possible in the meteorological conditions forecast for the estimated time of landing, 80 per cent. of the landing distance available on—

- (a) the most suitable runway for a landing in still air conditions; and
- (b) the runway that may be required for landing because of the forecast wind conditions.

(38) For the purposes of sub-paragraph (37) the distance required to land from a height of 50 feet shall be taken to be that appropriate to—

- (a) the landing weight;
- (b) the altitude at the aerodrome;
- (c) the temperature in the specified international standard atmosphere appropriate to the altitude at the aerodrome;
- (d) a level surface in the case of runways usable in both directions or the average slope of the runway in the case of runways usable in only one direction; and either
- (e) still air conditions in the case of the most suitable runway for a landing in still air conditions; or

- (f) not more than 50 per cent. of the forecast wind component opposite to the direction of landing or not less than 150 per cent. of the forecast wind component in the direction of landing in the case of the runway that may be required for landing because of the forecast wind conditions.

SCHEDULE 3

Regulation 6

HELICOPTER PERFORMANCE

Weight and performance of public transport helicopters carrying out Performance Class 1 operations

1. For the purposes of article 45(1), a helicopter registered in the United Kingdom when carrying out Performance Class 1 operations shall not fly for the purpose of public transport unless the weight of the helicopter at the commencement of take-off is such that the following requirements are satisfied—

- (a) the weight does not exceed the maximum take-off weight specified for the altitude and the air temperature at the site from which the take-off is to be made; and
- (b) the landing weight of the helicopter will not exceed the maximum landing weight specified for the altitude and the expected air temperature for the estimated time of landing at the site at which it is intended to land and at any alternate site.

Weight and performance of public transport helicopters carrying out Performance Class 2 operations

2.—(1) For the purposes of article 45(1) but subject to sub-paragraph (3), a helicopter registered in the United Kingdom when carrying out Performance Class 2 operations shall not fly for the purposes of public transport if the cloud ceiling or visibility prevailing at the departure site and forecast for the estimated time of landing at the site at which it is intended to land and at any alternate site are less than 500 feet and 1,000 metres respectively and shall not fly for the purpose of public transport at any other time unless all of the requirements specified in sub-paragraph (2) are satisfied.

(2) The requirements referred to in sub-paragraph (1) are that the weight of the helicopter at the commencement of take-off shall be such that—

- (a) the weight does not exceed the maximum take-off weight specified for the altitude and the air temperature at the site from which the take-off is to be made; and
- (b) the landing weight of the helicopter will not exceed the maximum landing weight specified for the altitude and the expected air temperature for the estimated time of landing at the site at which it is intended to land and at any alternate site.

(3) This paragraph shall not apply to a helicopter flying under and in accordance with the terms of a police air operator's certificate.

Weight and performance of public transport helicopters carrying out Performance Class 3 operations

3.—(1) For the purposes of article 45(1) but subject to sub-paragraph (3), a helicopter registered in the United Kingdom when carrying out Performance Class 3 operations shall not fly for the purposes of public transport at night or out of sight of the surface or when the cloud ceiling or visibility prevailing at the departure site and forecast for the estimated time of landing at the site at which it is intended to land are less than 600 feet and 1,000 metres respectively and shall not fly for the purpose of public transport at any other time unless all of the requirements specified in sub-paragraph (2) are complied with.

(2) The requirements referred to in sub-paragraph (1) are that the weight of the helicopter at the commencement of take-off shall be such that—

- (a) the weight does not exceed the maximum take-off weight specified for the altitude and the air temperature at the site from which the take-off is to be made; and
- (b) the landing weight of the helicopter will not exceed the maximum landing weight specified for the altitude and the expected air temperature for the estimated time of landing at the site at which it is intended to land and at any alternate site.

(3) This paragraph shall not apply to a helicopter flying under and in accordance with the terms of a police air operator's certificate.

EXPLANATORY NOTE

(This note is not part of the Regulations)

These Regulations consolidate the Air Navigation (General) Regulations 1993, as amended by the Air Navigation (General) (Amendment) Regulations 1995, 1997, 2000, 2002 and 2003, the Air Navigation (General) (Second Amendment) Regulations 1999, and the Air Navigation (General) (Amendment) (No. 2) Regulations 2003. Those Regulations are revoked.

In addition to minor, drafting amendments the Regulations make the following changes of substance—

(1) Under Article 44(1) of the Air Navigation Order 2005 aeroplanes registered in the United Kingdom and flying for the purposes of public transport must comply with JAR-OPS 1 but the CAA may grant a permission under Article 44(5) in respect of such aeroplanes, authorising them to comply with the applicable provisions of Schedule 2 of these Regulations instead. Aeroplanes to which the CAA grants a permission under article 44(5) of the Air Navigation Order 2005 are required to comply with Schedule 2. This comprises public transport aeroplanes designated as aeroplanes of performance groups A, B, C, D, E, F, X and Z, the latter designation being intended for aeroplanes with no performance group classification in their certificates of airworthiness. (Regulation 5 and Schedule 2).

(2) Regulations 7 to 12 of the Air Navigation (General) Regulations 1993, which specified prescribed performance criteria, have been transcribed to Schedule 2. The Schedule to the Air Navigation (General) Regulations 1993 has also been transcribed to, and is now paragraph 7 of Schedule 2.

(3) Regulations 19, 20 and 21 of the Air Navigation (General) Regulations 1993 have been transcribed into Schedule 3 of these Regulations. Schedule 3 applies to helicopters, to which article 45(1) of the Air Navigation Order 2005 applies. This comprises public transport helicopters carrying out performance class 1, 2 and 3 operations. (Regulation 6 and Schedule 3)

(4) The Regulations prescribe the capability and function for Mode S elementary surveillance and Mode S enhanced surveillance under paragraph 3 of Schedule 5 to the Air Navigation Order 2005. (Regulation 15)

(5) Regulation 14 of the Air Navigation (General) Regulations 1993 (Certificates of Maintenance Review and of Release to Service—issued by maintenance engineers licensed by prescribed countries) has not been replicated in these Regulations.

Copies of Document 7030/4-NAT Part 1, Rules of the Air, Air Traffic Services and Search and Rescue (ICAO Regional Procedures, Fourth Edition—1987) can be obtained from The Stationery Office at www.tso.co.uk and Annex 10 to the Chicago Convention can be obtained from Airplan Flight Equipment Limited at www.afeonline.com or from ICAO.

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