STATUTORY INSTRUMENTS

1974 No. 1403

CIVIL AVIATION

The Air Navigation (General) Regulations 1974

Made - - - -	*15th August* 1974
Coming into Operation	*12th September* 1974

The Secretary of State in exercise of his powers under Articles 9(4), 11(2) and (5) 14, 26(1)(*c*), 27(4), 28(1), 62 and 75 of the Air Navigation Order 1974**(a)**, and of all other powers enabling him in that behalf, hereby makes the following Regulations:

1. These Regulations may be cited as the Air Navigation (General) Regulations 1974, and shall come into operation on 12th September 1974.

2.—(1) The following Regulations are hereby revoked, that is to say—

The Air Navigation (General) Regulations 1972**(b)**.

The Air Navigation (General) (Amendment) Regulations 1973**(c)**.

(2) Section 38(2) of the Interpretation Act 1889**(d)** (which relates to the effect of repeals), shall apply to these Regulations as if they were an Act of Parliament and as if the Regulations revoked by paragraph (1) of this Regulation were Acts of Parliament thereby repealed.

3.—(1) In these Regulations "the Order" means the Air Navigation Order 1974.

(2) Expressions used in these Regulations shall, unless the context otherwise requires, have the same respective meanings as in the Order.

(3) The Interpretation Act 1889**(d)** applies for the purpose of the interpretation of these Regulations as it applies for the purpose of the interpretation of an Act of Parliament.

Load Sheets

4.—(1) Every load sheet required by Article 27(4) of the Order 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 Authority;

(a) S.I. 1974/1114. (1974 II, p. 4057).
(b) S.I. 1972/322 (1972 I, p. 1310).
(c) S.I. 1973/1805 (1973 III, p. 5530).
(d) 1889 c. 63.

(*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 passengers, crew, baggage and cargo intended to be carried on the flight;

(*e*) the manner in which the load is distributed and the resulting position of the centre of gravity of the aircraft which may be given approximately if and to the extent that the relevant certificate of airworthiness so permits,

and shall include at the foot or end of the load sheet a certificate, signed by the person referred to in Article 27(1) of the Order as responsible for 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 the said Article 27.

(2) For the purpose of calculating the total weight of the aircraft the respective total weights of the passengers and crew entered in the load sheet shall be computed from the actual weight of each person and for that purpose each person shall be separately weighed:

Provided that, in the case of an aircraft of which the maximum total weight authorised exceeds 5,700 kg. or which has a total seating capacity of 12 or more persons, the total weights of the passengers and crew may, subject to the provisions of paragraph (4) of this Regulation, be calculated at not less than the weights shown in Table 1 and the load sheet shall bear a notation to that effect:

Table 1

Males over 12 years of age	75 kg.
Females over 12 years of age	65 kg.
On journeys between the United Kingdom, the Channel Islands and the Isle of Man:	
Children aged 3 years or more, but not over 12 years of age	40 kg.
Infants under 3 years of age	10 kg.
On any other journey:	
Children aged 2 years or more, but not over 12 years of age	39 kg.
Infants under 2 years of age	8 kg.

(3) (*a*) For the purpose of calculating the total weight of the aircraft the respective total weights of the 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:

Provided that, in the case of an aeroplane of which the maximum total weight authorised exceeds 5,700 kg. or which has a total seating capacity of 12 or more persons, the total weights of the baggage may, subject to the provisions of

paragraph (4) of this Regulation, be calculated at not less than the weights shown in Table 2 and the load sheet shall bear a notation to that effect:

Table 2

1	2	3	
Journey made by the aeroplane	Cabin baggage per passenger*	Hold baggage per piece	
		Scheduled Journey	Holiday Journey
Domestic	3 kg.	10 kg.	13 kg.
European	3 kg.	12 kg.	13 kg.
Intercontinental	3 kg.	14 kg.	16 kg.

*Not infants under 3 years of age on journeys between the United Kingdom, Channel Islands and Isle of Man, or under 2 years of age on any other journey.

(*b*) If Table 2 has been used, subject to the provisions of paragraph (4) for determining the weight of hold baggage, it shall also be used, subject as aforesaid, for determining the weight of the cabin baggage.

(*c*) For the purposes of this Regulation:

(i) A journey made by an aeroplane shall be treated as domestic if it is confined within an area joining successively the following points:

61°00′N 11°00′W 61°00′N 02°00′E
51°05′N 02°00′E 49°30′N 04°00′W
49°30′N 11°00′W 61°00′N 11°00′W

but excluding any journey to or from Shannon.

(ii) A journey made by an aeroplane, not being a domestic journey, shall be treated as European if it is confined within an area joining successively the following points:

66°30′N 30°00′W 66°30′N 39°00′E
30°00′N 39°00′E 30°00′N 11°00′W
24°00′N 11°00′W 24°00′N 30°00′W
66°30′N 30°00′W.

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

(iv) A journey made by an aeroplane shall be treated as a holiday journey and not as a scheduled journey if it is made for the carriage of passengers each of whom is carried pursuant to an agreement which provides for carriage by air to a place outside Great Britain, and back from that place or from another place to Great Britain (whether or not on the same aeroplane) and for accommodation at a place outside Great Britain.

(4) (*a*) If it appears to the person supervising the loading of the aircraft that any passenger or baggage to be carried exceeds the weights set out in Table 1 or Table 2 of this Regulation he shall, if he considers it necessary in the interests of the safety of the aircraft, or if the Authority has so directed in the particular

case, require any such person or baggage to be weighed for the purpose of the entry to be made in the load sheet.

(*b*) If any person or baggage has been weighed pursuant to sub-paragraph (*a*) of this paragraph, the weights entered in the load sheet shall take account of the actual weight of that person or baggage, or of the weight determined in accordance with the respective provisoes to paragraph (2) or (3), whichever weight shall be the greater.

Weight and Performance: General provisions

5.—(1) The assessment of the ability of an aeroplane to comply with the requirements of Regulations 6 to 11 inclusive (relating to weight and performance) shall be based on the specified information as to its performance:

Provided that, in the case of an aeroplane in respect of which there is in force under the Order a certificate of airworthiness which does not include a performance group classification, the assessment may be based on the best information available to the commander of the aircraft, in so far as the relevant information is not specified.

(2) In assessing the ability of an aeroplane to comply with condition (7) in the Schedule hereto, conditions (4) and (5) of Regulation 7, and conditions (2)(i)(*b*) and (2)(ii) of Regulation 11, 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 Regulations 5 to 11 inclusive, and in the Schedule hereto, unless the context otherwise requires:

"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;

"the emergency distance 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 aeroplane cannot roll over the surface of the aerodrome and be brought to rest in an emergency without 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 Regulations 5 to 11 inclusive, and of the Schedule hereto:

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

(*b*) the landing weight of the aeroplane shall be taken to be the weight of the aeroplane 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 alternate aerodrome, as the case may be;

(*c*) where any distance referred to in paragraph (3) of this Regulation 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 situate, and in the case of an aerodrome in the United Kingdom, notified, that distance shall be deemed to be the relevant distance.

(5) Nothing in Regulations 5 to 11 inclusive shall apply to any aircraft flying solely for the purpose of training persons to perform duties in aircraft.

Weight and Performance of Public Transport Aeroplanes having no Performance Group Classification in their Certificates of Airworthiness

6. With reference to Article 28(1) of the Order an aeroplane registered in the United Kingdom in respect of which there is in force under the Order a certificate of airworthiness which does not include a performance group classification 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 such of the conditions in the Schedule hereto as apply to that aircraft are satisfied.

Weight and Performance of Public Transport Aeroplanes classified as Aeroplanes of Performance Group A in their Certificates of Airworthiness

7. With reference to Article 28(1) of the Order an aeroplane registered in the United Kingdom in respect of which there is in force under the Order a certificate of airworthiness in which the aeroplane is designated as being of performance group A 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 conditions are satisfied:

(1) That weight does not exceed the maximum take-off weight for altitude and temperature 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, take-off distance and the emergency 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 emergency 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,

do not exceed the take-off run, the take-off distance and the emergency distance available, respectively, at the aerodrome at which the take-off is to be made; in ascertaining the emergency distance required, 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.

(3) (*a*) The net take-off flight path with one power unit inoperative, specified as being 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,

and 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, shows that the aeroplane will 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° the vertical interval shall not be less than 50 feet during the change of direction.

(*b*) For the purpose of sub-paragraph (*a*) hereof 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:

(i) 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

(ii) 1,500 metres,

whichever is the less.

(*c*) In assessing the ability of the aeroplane to satisfy this condition, it shall not be assumed to make a change of direction of a radius less than the specified radius of steady turn.

(4) The aeroplane will, 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 therefrom and with the other power unit or units operating within the maximum continuous power conditions specified, 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 condition (7) in this Regulation relating to an alternate aerodrome, and 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; and in assessing the ability of the aeroplane to satisfy this condition it shall not be assumed to be capable of flying at an altitude exceeding the specified maximum permissible altitude for power unit restarting:

Provided that where 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, the foregoing provisions of this paragraph shall have effect as if 5 nautical miles were substituted for 10 nautical miles.

(5) The aeroplane will, in the meteorological conditions expected for the flight, in the event of any two power units becoming inoperative at any point along the route or on any planned diversion therefrom more than 90 minutes flying time in still air at the all power units operating economical cruising speed from the nearest aerodrome at which it can comply with condition (7) in this Regulation, relating to an alternate aerodrome, 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 on arrival over such 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; and in assessing the ability of the aeroplane to satisfy this condition it shall not be assumed to be capable of flying at an altitude exceeding the specified maximum permissible altitude for power unit restarting:

Provided that where 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, the foregoing provisions of this paragraph shall have effect as if 5 nautical miles were substituted for 10 nautical miles.

(6) The landing weight of the aeroplane will 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) (*a*) The landing distances required, respectively specified as being appropriate to aerodromes of destination and alternate aerodromes, do 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:

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

(ii) 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 specified landing distance required may be that appropriate to an alternate aerodrome when assessing the ability of the aeroplane to satisfy this condition at the aerodrome of destination.

(*b*) For the purposes of sub-paragraph (*a*) hereof the landing distance required shall be that specified as being appropriate to:

(i) the landing weight;

(ii) the altitude at the aerodrome;

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

(iv) (*aa*) a level suface in the case of runways usable in both directions;

(*bb*) the average slope of the runway in the case of runways usable in only one direction; and

(v) (*aa*) still air conditions in the case of the most suitable runway for a landing in still air conditions;

(*bb*) 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 classified as Aeroplanes of Performance Group C in their Certificate of Airworthiness

8. With reference to Article 28(1) of the Order an aeroplane registered in the United Kingdom in respect of which there is in force under the Order a certificate of airworthiness 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 conditions are satisfied:

(1) That weight does 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 of 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 emergency 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,

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

(3) (*a*) Subject to condition (4) of this Regulation, the net take-off flight path with all power units operating 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) 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 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 shows that the aeroplane will clear any obstacle in its path by a vertical interval of not less than 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 be not less than 50 feet while the aircraft is changing direction.

(*b*) for the purpose of sub-paragraph (*a*) hereof 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.

(*c*) In assessing the ability of the aeroplane to satisfy this condition, it shall not be assumed to make a change of direction of a radius less than the specified radius of steady turn.

(4) (*a*) 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 with one power unit inoperative specified as being appropriate to the factors contained in sub-paragraphs (i) to (iv) of condition 3(*a*) in this Regulation, and plotted from the point on 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, shows that the aeroplane will clear by a vertical interval of not less than 35 feet any obstacle in its path; and if it is intended that the aeroplane shall change its direction of flight by more than 15° the vertical interval shall not be less than 50 feet during the change of direction.

(*b*) For the purpose of sub-paragraph (*a*) hereof 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:

(i) 75 metres plus one eighth of the distance from such point to the end of the emergency distance available measured along the intended line of flight of the aeroplane; or

(ii) 1,500 metres,

whichever is the less.

(*c*) In assessing the ability of the aeroplane to satisfy this condition it shall not be assumed to make a change of direction of a radius less than the specified radius of steady turn.

(5) The aeroplane at any time after it reaches a height of 1,500 feet above the aerodrome from which the take-off is made will, 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 therefrom, and with the other power unit or power units operating within the specified maximum continuous power conditions, 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 after arrival at that point be capable of maintaining that height:

Provided that in assessing the ability of the aeroplane to satisfy this condition 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.

(6) The landing weight of the aeroplane will 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 condition (8) of this Regulation, the distance required by the aeroplane to land from a height of 50 feet otherwise than in accordance with specified data for short field landing does not, at the aerodrome at which it is intended to land and at any alternate aerodrome, exceed 70 per cent of the landing distance available on the most suitable runway for a landing in still air conditions, and on the runway that may be required for landing because of the forecast wind conditions; and for the purposes of this condition 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*) (i) a level surface in the case of runways usable in both directions;

(ii) the average slope of the runway in the case of runways usable in only one direction;

and

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

(ii) 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.

(8) As an alternative to condition (7) of this Regulation, the distance required by the aeroplane, with all power units operating and with one power unit inoperative, to land in accordance with specified data for short field landing, does not at the aerodrome of intended destination and at any alternate aerodrome exceed the landing distance available on the most suitable runway for a landing in still air conditions and on the runway that may be required for landing because of the forecast wind conditions; and for the purpose of this condition the distance required to land from the appropriate heights shall be taken to be that specified as being appropriate to the factors set forth in sub-paragraphs (*a*) to (*e*) of condition (7) of this Regulation and 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 the United Kingdom and elsewhere:

Provided that—

(i) 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 sub-paragraph (*b*) of this condition 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;

(ii) the distance required by the aeroplane to land shall be determined in accordance with condition (7) and not in accordance with this condition if it is intended to land at night, or 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 classified as Aeroplanes of Performance Group D in their Certificate of Airworthiness

9. With reference to Article 28(1) of the Order an aeroplane registered in the United Kingdom in respect of which there is in force under the Order a certificate or airworthiness in which the aeroplane is designated as being of performance group D shall not fly for the purpose of public transport at night or when the cloud ceiling or visibility prevailing at the aerodrome of departure and forecast for the estimated time of landing at the aerodrome at which it is intended to land and at any alternate aerodrome are less than 1,000 feet and one nautical mile respectively and 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:

(1) That weight does 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.

(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 of 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 emergency 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,

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

(3) (*a*) The net take-off flight path with all power units operating, specified as being 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;

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 the point at which the aeroplane reaches a height of 1,000 feet above the aerodrome shows that the aeroplane will clear any obstacle in its path by a vertical interval of not less than 35 feet, except that if it is intended that the aeroplane shall change its direction of flight by more than 15° before reaching 1,000 feet the vertical interval shall be not less than 50 feet while the aircraft is changing direction.

(*b*) For the purpose of sub-paragraph (*a*) hereof 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.

(*c*) In assessing the ability of the aeroplane to satisfy this condition it shall not be assumed to make a change of direction of a radius less than the specified radius of steady turn.

(4) The aeroplane, at any time after it reaches a height of 1,000 feet above the aerodrome from which take-off is to be made, will, 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 therefrom, and 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:

Provided that in assessing the ability of the aeroplane to satisfy this condition 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.

(5) The landing weight of the aeroplane will 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.

(6) The distance required by the aeroplane to land from a height of 50 feet does not, at the aerodrome at which it is intended to land and at any alternate aerodrome, exceed 70 per cent of the landing distance available on the most suitable runway for a landing in still air conditions, and on the landing because of the forecast wind conditions; and for the purposes of runway that may be required for this condition 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*) (i) a level surface in the case of runways usable in both directions;

(ii) the average slope of the runway in the case of runways usable in only one direction; and

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

(ii) 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 classified as Aeroplanes of Performance Group E in their Certificates of Airworthiness

10.—(1) With reference to Article 28(1) of the Order an aeroplane registered in the United Kingdom in respect of which there is in force under the Order a certificate of airworthiness 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 conditions are satisfied:

(*a*) That weight for the altitude and the air temperature at the aerodrome at which the take-off is to be made does not exceed the maximum take-off weight specified as being appropriate to:

(i) the weight 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) the weight at which the aeroplane is capable, 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, stated in, or calculated from the information contained in, the operations manual relating to the aeroplane and, with one power unit inoperative, of a rate of climb of 150 feet per minute.

(*b*) 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 does not exceed the emergency distance available at the aerodrome at which the take-off is to be made. 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.

(*c*) The aeroplane will, 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 therefrom, and with the other power unit or power units, if any, operating within the specified maximum continuous power conditions, 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 to a point 1,000 feet above a place at which a safe landing can be made:

Provided that in assessing the ability of the aeroplane to satisfy this condition it shall not be assumed to be capable of flying at any point on its route or on any planned diversion therefrom 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 and if it is necessary for it to be flown solely by reference to instruments, be capable, with one power unit inoperative, of a rate of climb of 100 feet per minute.

(*d*) 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 will not exceed the maximum landing weight specified:

(i) 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) at which the aeroplane is capable 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, stated in, or calculated from the information contained in, the operations manual relating to the

aeroplane and with one power unit inoperative, of a rate of climb of 150 feet per minute.

(*e*) The landing distance required does not, at the aerodrome at which it is intended to land and at any alternate aerodrome, exceed 70 per cent of the landing distance available on the most suitable runway for a landing in still air conditions, and for the purposes of this sub-paragraph 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 as aforesaid as an aeroplane of performance group E shall not fly for the purpose of public transport at night or when the cloud ceiling or visibility prevailing at the aerodrome of departure and forecast for the estimated time of landing at the aerodrome at which it is intended to land and at any alternate aerodrome are less than 1,000 feet and one nautical mile respectively:

Provided that the foregoing prohibition shall not apply if 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 classified as Aeroplanes of Performance Group X in their Certificates of Airworthiness

11. With reference to Article 28(1) of the Order an aeroplane in respect of which there is in force under the Order a certificate of airworthiness 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 conditions are satisfied:

(1) (i) That weight does 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.

(ii) 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,

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

(iii) (*a*) The take-off flight path with one power unit inoperative, specified as being appropriate to:

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

(ii) the altitude at the aerodrome; and

(iii) 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, shows that the aeroplane will thereafter 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.

(*b*) For the purpose of sub-paragraph (*a*) 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:

(i) 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

(ii) 1,500 metres,

whichever is the less.

(*c*) In assessing the ability of the aeroplane to satisfy this condition, insofar 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°.

(2) (i) (*a*) Subject to sub-paragraph (*b*), the weight of the aeroplane at any point on the route or any planned diversion therefrom, having regard to the fuel and oil expected to be consumed up to that point, shall be such that the aeroplane, with one power unit inoperative and the other power unit or units operating within the maximum continuous power conditions specified, will be capable of a rate of climb of at least $K(Vso/100)^2$ 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, where Vso is in knots and K has the value of 797—1060/N, N being the number of power units installed.

(*b*) As an alternative to (*a*), 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 condition (3)(ii) in this Regulation 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:

Provided that where 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, the foregoing provisions of this sub-paragraph shall have effect as if 5 nautical miles were substituted therein for 10 nautical miles and

(*aa*) 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 $K(Vso/100)^2$ feet per minute;

(*bb*) the aeroplane shall comply with the climb requirements of condition 2(i)(*a*) at 1,000 feet above the chosen aerodrome;

(*cc*) account shall be taken of the effect of wind and temperature on the flight path; and

(*dd*) the weight of the aeroplane may be assumed to be progressively reduced by normal consumption of fuel and oil.

(ii) An aeroplane having four power units shall, if any two power units become inoperative at any point along the route or any planned diversion therefrom, being a point more than 90 minutes flying time (assuming all power units to be operating) from the nearest aerodrome at which a landing can be made in compliance with condition (3)(ii) of this Regulation relating to an alternate aerodrome, 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. In assessing the ability of the aeroplane to satisfy this condition, it shall be assumed that the remaining 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.

(3) (i) The landing weight of the aeroplane will 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.

(ii) The required landing runway lengths respectively specified as being appropriate to the aerodromes of intended destination and the alternate aerodromes do 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 landing in still air conditions; and

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

the required landing runway lengths being taken to be those specified as being appropriate to:

(*aa*) the landing weight;

(*bb*) the altitude at the aerodrome;

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

(*dd*) 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.

Noise and vibration caused by aircraft on aerodromes

12. With reference to Article 75 of the Order, the conditions under which noise and vibration may be caused by aircraft (including military aircraft) on Government aerodromes, aerodromes owned or managed by the Authority, 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, that is to say, that, whether in the course of the manufacture of the aircraft or otherwise—

(*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.

Certificates of Maintenance, Release and Compliance—issue by maintenance engineers licensed by prescribed countries

13. With reference to Article 9(4) Article 10(3) and Article 11(5) of the Order the following countries are hereby prescribed—

Antigua
Australia
Bahamas
Barbados
British Honduras
British Virgin Islands
State of Brunei
Burma
Canada
Cayman Islands
Dominica
Ghana
Grenada
Guyana
Hong Kong
India
Jamaica
Kenya
Kuwait
Malawi
Malaysia
Montserrat
New Zealand
Pakistan
Republic of Ireland
Republic of South Africa
Sri Lanka
St. Christopher, Nevis and Anguilla
St. Lucia
St. Vincent
Singapore
The Sudan
Trinidad and Tobago
Turks and Caicos Islands
Uganda
United Republic of Tanzania
Zambia

Radio Navigational Equipment to be carried in aircraft

14.—(1) This Regulation shall apply to all aircraft of over 2,300 kg. maximum total weight authorised when flying for the purpose of public transport.

(2) (*a*) For the purpose of Scale B in paragraph 3 of Schedule 6 to the Order radio navigational equipment shall be provided, subject to the provisions of sub-paragraph (*b*) of this paragraph, in all aircraft to which this Regulation applies in accordance with the following Table. The numbered areas in column 1 of that Table are more particularly described in paragraph (3) of this Regula-

tion, and the letters in column 2 have the meanings assigned to them by paragraph (4) of this Regulation:

Table

Column 1 *Area in which the aircraft is flying*	*Column* 2 *Combination of Equipment to be carried*
Area 1	Either A, B, C, D or E
Area 2	Either A, C, D or E
Area 3	Either A, C or E
Area 4	D or E
All other areas	E

(*b*) Where not more than one item of equipment in a combination of equipment carried in an aircraft pursuant to this Regulation is unserviceable when the aircraft is about to begin a flight, the aircraft may nevertheless take off on that flight if—

(i) it is not reasonably practicable for the repair or replacement of that item to be carried out before the beginning of the flight; and

(ii) the aircraft has not made more than one complete flight since the item was last serviceable; and

(iii) the commander of the aircraft has satisfied himself that taking into account the latest information available as to the route and aerodrome to be used (including any planned diversion), and the weather conditions likely to be encountered, the flight can be made safely and in accordance with any relevant requirements of air traffic control,

and in such case the commander of the aircraft shall cause written particulars of the flight, and the reasons for making it, to be given to the Authority within 10 days thereafter.

(3) The Areas 1 to 4 referred to in Column 1 of the Table in the preceding paragraph are as follows:

(*a*) *Area* 1

The area enclosed by the notified boundaries of the United Kingdom Flight Information Regions.

(*b*) *Area* 2

The area enclosed by rhumb lines joining successively the following points, but excluding area 1:

62°00′N 10°00′W	63°00′N 08°00′W	63°00′N 03°00′W
62°00′N 00°45′W	58°50′N 06°00′E	58°50′N 15°00′E
61°45′N 15°00′E	61°45′N 25°00′E	60°15′N 24°00′N
58°20′N 24°00′E	54°15′N 13°45′E	50°45′N 15°00′E
48°00′N 10°00′E	48°00′N 06°20′E	44°00′N 06°20′E
44°00′N 01°30′W	46°00′N 02°00′W	46°00′N 09°00′W
54°34′N 09°00′W	54°34′N 10°00′W	62°00′N 10°00′W

(*c*) *Area* 3

The area enclosed by rhumb lines joining successively the following points:

61°45′N 15°00′E	61°45′N 12°30′E	63°30′N 12°30′E
63°30′N 18°00′E	65°00′N 14°45′E	66°30′N 16°45′E
66°30′N 27°00′E	65°30′N 28°30′E	61°45′N 25°00′E
61°45′N 15°00′E		

(*d*) *Area* 4

The area enclosed by rhumb lines joining successively the following points, but excluding areas 1 and 2:

62°00′N 10°00′W	63°00′N 08°00′W	63°00′N 03°00′W
62°00′N 00°45′W	62°00′N 04°00′E	65°00′N 10°00′E
68°30′N 13°00′E	68°30′N 23°00′E	66°30′N 23°00′E
66°30′N 16°45′E	65°00′N 14°45′E	63°30′N 18°00′E
63°30′N 12°30′E	61°45′N 12°30′E	61°45′N 26°00′E
58°20′N 24°00′E	50°30′N 17°30′E	41°30′N 23°15′E
41°30′N 30°00′E	40°00′N 37°00′E	30°00′N 37°00′E
30°00′N 10°00′W	62°00′N 10°00′W.	

(4) Each of the letters in Column 2 of the Table in paragraph (2)(*a*) of this Regulation shall signify the combination of equipment which is specified opposite that letter in columns 2 and 3 of the following Table. The Roman numerals in column 3 of the last-mentioned Table have the meanings assigned to them by paragraph (5) of this Regulation:

Table

Column 1 *Reference letter of combination of Equipment*	*Column* 2 *Single or duplicate Equipment*	*Column* 3 *Items of Equipment in the combination*
A	Single	(i), (ii), (iii) (iv) and (v)
B	Duplicate	(i)
	Single	(ii)
	Single	(iii)
	Single	(v)
C	Duplicate	(i)
	Single	(ii)
	Single	(iv)
	Single	(v)
D	Single	(iii)
	Duplicate	(iv)
	Single	(v)
E	Duplicate	(iii)
	Single	(iv)
	Single	(v)

(5) The Roman numerals indicating the items of equipment in column 3 of the Table in the preceding paragraph signify the following—

(i) equipment which will enable the aircraft to be navigated by means of signals received from radio navigation land stations forming part of the Decca radio navigation system;

(ii) a flight log intended to operate with the equipment described in the preceding paragraph and to display on a chart to the pilot at the controls of the aircraft a continuous and instantaneous pictorial plot of the path of the aircraft;

(iii) automatic direction finding equipment which indicates to the pilot at the controls of the aircraft the bearing of any radio station transmitting signals in the low and medium frequency bands received by such equipment,

(iv) equipment capable of giving to the pilot at the controls of the aircraft visual indications of bearings of the aircraft by means of signals received from very high frequency omni-directional radio ranges;

(v) a VHF receiver capable of receiving signals from a 75MHz marker beacon.

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

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

(2) For the purposes of Article 26(1)(*c*) of the Order, 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, 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) radio navigation land stations forming part of the Decca radio navigation system;

(v) radar equipment.

It shall be sufficient if the equipment specified in sub-paragraph (*c*) is provided, even if for the time being it is not in operation.

(3) An aircraft to which this Regulation applies shall not land or make an approach to landing at any aerodrome unless services and equipment according with paragraph (2) of this Regulation are provided and are in operation at that aerodrome, and can be made use of by that aircraft, and, in the case of the navigation aids specified in sub-paragraph (*c*), items (i) to (iv), instructions and procedures for the use of the aid are included in the operations manual. A person shall be deemed not to have contravened the provisions of this paragraph if he proves that—

(*a*) for the time being use could not be made of the radio navigation aids provided under 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.

(4) An aircraft to which this Regulation applies shall, without prejudice to the requirements of Regulation 14, be equipped with the equipment necessary to enable use to be made of at least one of the navigation aids specified in paragraph (2)(*c*) of this Regulation and in use for landing at the aerodrome, and in particular the equipment for use with the radio navigation land stations referred to in paragraph (2)(*c*)(iv) of this Regulation shall include a flight log designed to operate with that equipment and to display on a chart to the pilot at the controls of the aircraft a continuous and instantaneous pictorial plot of the path of the aircraft. Nothing in this paragraph shall require the duplication of any equipment carried in pursuance of any other provision of the Order or of any regulation made thereunder.

Pilot Maintenance—prescribed repairs or replacements

16. With reference to Article 11(2) of the Order the following repairs or replacements are hereby prescribed:

(1) Replacement of landing gear tyres, landing skids or skid shoes.
(2) Replacement of elastic shock absorber cord units on landing gear where special tools are not required.
(3) Replacement of defective safety wiring or split pins excluding those in engine, transmission, flight control and rotor systems.
(4) 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.
(5) 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.
(6) Repairs, not requiring welding, to fairings, non-structural cover plates and cowlings.
(7) Replacement of side windows where that work does not interfere with the structure or with any operating system.
(8) Replacement of safety belts or safety harness.
(9) Replacement of seats or seat parts not involving dismantling of any structure or of any operating system.
(10) Replacement of bulbs, reflectors, glasses, lenses or lights.
(11) Replacement of any cowling not requiring removal of the propeller, rotors or disconnection of engine or flight controls.
(12) Replacement of unserviceable sparking plugs.
(13) Replacement of batteries.
(14) Replacement of wings and tail surfaces and controls, the attachments of which are designed to provide for assembly immediately before such flight and dismantling after each flight.
(15) Replacement of main rotor blades that are designed for removal where special tools are not required.
(16) Replacement of generator and fan belts designed for removal where special tools are not required.

G. R. Sunderland,
An Assistant Secretary,
Department of Trade.

15th August 1974.

SCHEDULE

Regulation 6

WEIGHT AND PERFORMANCE OF PUBLIC TRANSPORT AEROPLANES HAVING NO PERFORMANCE GROUP CLASSIFICATION IN THEIR CERTIFICATES OF AIRWORTHINESS

Conditions (1) and (2) apply to all aeroplanes to which Regulation 6 applies;

Conditions (3) to (10) apply to all aeroplanes to which Regulation 6 applies—

(i) of which the specified maximum total weight authorised exceeds 5,700 kg., or

(ii) of which the specified maximum total weight authorised does not exceed 5,700 kg. and which comply with neither condition (1)(*a*) nor condition (1)(*b*);

Conditions (11) to (18) inclusive apply to all aeroplanes to which Regulation 6 applies of which the specified maximum total weight authorised does not exceed 5,700 kg., and which comply with condition (1)(*a*) or condition (1)(*b*) or with both those conditions.

All aeroplanes

(1) Either—

(*a*) the wing loading of the aeroplane does not exceed 20 lb. per square foot; or

(*b*) the stalling speed of the aeroplane in the landing configuration does not exceed 60 knots; or

(*c*) the aeroplane, with any one of its power units inoperative and the remaining power unit or units operating within the maximum continuous power conditions specified, is 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.

(2) The weight of the aeroplane at the commencement of the take-off run does 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.

Aeroplanes of a specified maximum total weight authorised exceeding 5,700 *kg. and aeroplanes of a specified maximum total weight authorised not exceeding* 5,700 *kg. which comply with neither condition* (1)(*a*) *nor condition* (1)(*b*).

(3) (*a*) 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 does not exceed the take-off run available at the aerodrome at which the take-off is to be made.

(*b*) 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 or either 1·33 for aeroplanes having two power units or by a factor of 1·18 for aeroplanes having four power units, does not exceed the emergency distance available at the aerodrome at which the take-off is to be made.

(*c*) For the purposes of sub-paragraphs (*a*) and (*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;

(iv) the condition of the surface of the runway from which the take-off will be made;

(v) the slope of the surface of the aerodrome in the direction of take-off over the take-off run available and the emergency distance available, respectively; and

(vi) 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.

(4) (*a*) The take-off flight path with one power unit inoperative and the remaining power unit or units operating within the maximum take-off power conditions specified, 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;

(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,

and plotted from a point 50 feet above the end of the appropriate factored distance required for take-off under condition (3)(*b*) of this Regulation at the aerodrome at which the take-off is to be made, shows 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.

(*b*) For the purpose of sub-paragraph (4)(*a*) 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:

(i) 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

(ii) 1,500 metres,

whichever is the less.

(*c*) In assessing the ability of the aeroplane to satisfy this condition, 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°.

(5) The aeroplane will, 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 therefrom and with the other power unit or units operating within the maximum continuous power conditions specified, 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 condition (9), 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.

For the purpose of this condition the gradient of climb of the aeroplane shall be taken to be one per cent less than that specified.

(6) The aeroplane will, in the meteorological conditions expected for the flight, at any point on its route or on any planned diversion therefrom 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 therefrom 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 conditions (5) and (7), as appropriate.

(7) If on the route to be flown or any planned diversion therefrom, the aeroplane will be engaged in a flight over water during which at any point it may be more than 90 minutes flying time in still air from the nearest shore, it will in the event of two

power units becoming inoperative during such time and with the other power unit or units operating within the maximum continuous power conditions specified be capable of continuing the flight having regard to the meteorological conditions expected for the flight, clearing all obstacles within 10 nautical miles either side of the intended track by a vertical interval of at least 1,000 feet, to an aerodrome at which a safe landing can be made.

(8) The landing weight of the aeroplane will 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.

(9) The distance required by the aeroplane to land from a height of 50 feet does not, at the aerodrome at which it is intended to land, exceed 60 per cent of the landing distance available on—

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

(ii) 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.

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*) (i) a level surface in the case of runways usable in both directions;

(ii) the average slope of the runway in the case of runways usable in only one direction; and

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

(ii) 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.

(10) The distance required by the aeroplane to land from a height of 50 feet does not, at any alternate aerodrome, exceed 70 per cent of the landing distance available on—

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

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

For the purpose of this condition the distance required to land from a height of 50 feet shall be determined in the manner provided in condition (9).

Aeroplanes of a specified maximum total weight authorised not exceeding 5,700 *kg. and which comply with either condition* (1)(*a*) *or condition* (1)(*b*), *or with both these conditions*

(11) If the aeroplane is engaged in a flight at night or when the cloud ceiling or visibility prevailing at the aerodrome of departure and forecast for the estimated time of landing at the aerodrome of destination or at any alternate aerodrome are less than 1,000 feet and one nautical mile respectively, it will, with any one of its power units inoperative and the remaining power unit or units operating within the maximum continuous power conditions specified, 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.

(12) (*a*) 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, does not exceed the take-off run available at the aerodrome at which the take-off is to be made;

(*b*) 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 does not exceed the emergency distance available at the aerodrome at which the take-off is to be made;

(*c*) For the purposes of sub-paragraphs (*a*) and (*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 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;

(iv) the slope of the surface of the aerodrome in the direction of take-off over the take-off run available and the emergency distance available respectively; 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.

(13) The take-off flight path, with all power units operating within the maximum take-off power conditions specified, appropriate to:

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

(ii) the altitude at the aerodrome;

(iii) 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; 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,

and plotted from a point 50 feet above the end of the factored distance required for take-off under condition (12)(*b*), at the aerodrome at which the take-off is to be made, shows that the aeroplane will 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 condition 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°.

(14) The aeroplane will, 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 therefrom and with the other power unit or units, if any, operating within the maximum continuous power conditions specified, 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.

(15) The aeroplane will, in the meteorological conditions expected for the flight, at any point on its route or any planned diversion therefrom, 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 on any planned diversion therefrom 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 condition (14).

(16) If on the route to be flown or any planned diversion therefrom the aeroplane will be engaged in a flight over water during which at any point it may be more than 30

minutes flying time in still air from the nearest shore, it will, in the event of one power unit becoming inoperative during such time and with the other power unit or units operating within the maximum continuous power conditions specified, 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.

(17) The landing weight of the aeroplane will 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.

(18) The distance required by the aeroplane to land from a height of 50 feet does not at the aerodrome at which it is intended to land and at any alternate aerodrome, 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:

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

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

the distance required to land from a height of 50 feet being 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*) (i) a level surface in the case of runways usable in both directions;

(ii) the average slope of the runway in the case of runways usable in only one direction; and

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

(ii) 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.

EXPLANATORY NOTE

(*This Note is not part of the Regulations.*)

These Regulations revoke and re-enact the Air Navigation (General) Regulations 1972, as amended, with minor and drafting amendments. In particular, in relation to aeroplanes of Performance Groups C & D, a specified margin is now presented for the clearance of obstacles between take-off and height of 1,500 feet (Group C) and 1,000 feet (Group D) (Regulations 8 and 9).

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