The Air Navigation (Radio) Regulations, 1949

1949 No. 375

Made - - - -	*5th March*, 1949
Coming into Operation except Section IV, which comes into operation on the	*1st April*, 1949 *1st April*, 1950

The Minister of Civil Aviation, in exercise of the powers conferred upon him by the Air Navigation Order, 1949(a), and of all other powers enabling him in that behalf, hereby makes the following Regulations.

SECTION I

Preliminary

1.—(1) In these Regulations, unless the context otherwise requires—

" Aerial work aircraft " means an aircraft, not being a public transport aircraft, which is being flown for payment required to be made to the operator of the aircraft, being a payment for the flight or in respect of the purpose for which the flight is carried out, and any reference to an aerial work aircraft of any class shall be construed accordingly ;

" Aeronautical station " means a radiocommunication land station which performs a service with aircraft stations ; if, however, it also performs other services, it shall be deemed to be an aeronautical station only during the period of its service with aircraft stations ;

" Aircraft " includes all balloons (whether captive or free), kites, gliders, airships and flying machines ;

" Aircraft station " means a radio station on board an aircraft ;

" Air Traffic Control " means a service established to promote the safe, orderly and expeditious flow of air traffic ;

" British Civil Radio Airworthiness Requirements " means the requirements described by that title which are incorporated in the " British Civil Airworthiness Requirements " published by the Air Registration Board, Brettenham House, Lancaster Place, Strand, London, W.C.2 ;

" Civil Aviation Communications Handbook " means the " Civil Aviation Communications Handbook " (M.C.A.P.5), Second Edition, published by His Majesty's Stationery Office ;

" Flight radio operator's licence " means a licence granted by the Minister under Article 20 of the Order to operate radio apparatus in aircraft registered in the United Kingdom ;

" Licensed operator " means the holder of a flight radio operator's licence ;

" Operating crew " in relation to an aircraft includes pilots, flight navigators, flight engineers and flight radio operators ;

" Person in command " in relation to an aircraft means, in a case where a person other than the pilot in charge is in command, that person, and in any other case, the pilot in charge ;

(a) S.I. 1949 No. 349, p. 165 above.

" Public transport aircraft " means:—

(*a*) an aircraft carrying passengers or goods for hire or reward ;

(*b*) every aircraft comprised in a combination of aircraft where an aircraft is towing other aircraft, if any such aircraft, either towing or being towed, is carrying passengers or goods for hire or reward ;

(*c*) in a case where carriage of passengers or goods is effected by an air transport undertaking—

(i) the aircraft carrying the passengers or goods, or

(ii) if the passengers or goods are carried in any aircraft comprised in such a combination as aforesaid, every aircraft, either towing or being towed, comprised therein,

whether such carriage is for hire or reward or not, save in a case where every passenger carried is a person in control or in the employment of the undertaking and any goods carried consist entirely of articles belonging to the undertaking,

and any reference to a public transport aircraft of any class shall be construed accordingly ;

" Radio " is to be interpreted as a general term applied to the use of electromagnetic waves of frequencies between ten kilocycles a second and three million megacycles a second ;

" Radio apparatus " includes all apparatus, including any ancillary equipment for sending or receiving by means of radio ;

" Radio navigation apparatus " means radio apparatus designed to assist the navigation of the aircraft ;

" Rating " means an entry in a licence specifying a privilege or limiting the effect of a privilege conferred by the licence ;

" Scheduled journey " has the meaning assigned to it by subsection (2) of Section 23 of the Civil Aviation Act, 1946(**a**), and does not include a journey made for any of the purposes specified in subsection (3) of that Section ;

" The Minister " means the Minister of Civil Aviation ;

" The Order " means the Air Navigation Order, 1949(**b**).

(2) In these Regulations references to:—

Passengers carried " for hire or reward " do not include references to any person when being carried within the United Kingdom in an aircraft owned by a member of any of His Majesty's Forces or Civil Service where no payment is made to the owner in respect of such carriage otherwise than by way of an allowance payable under Regulations applicable to him as such member, but include references to persons carried in aircraft for the purposes of instruction in flying for which payment is made except when the aircraft is a glider belonging to or being flown under arrangements made by a gliding club of which both the person giving and the person receiving the instruction are members ;

" The United Kingdom " include references to the territorial waters adjacent to the United Kingdom.

(3) Other expressions in these Regulations have the same respective meanings as in the Order.

2. Unless the context otherwise requires, these Regulations apply only to and in relation to aircraft registered in the United Kingdom.

(a) 9 & 10 Geo. 6. c. 70. (b) S.I. 1949 No. 349, p. 165 above.

3. In the radiocommunication service of air navigation, type B waves are prohibited.

4. For the purposes of these Regulations, frequencies shall be measured by the standard of measurement for the time being in use by the Postmaster General.

SECTION II

Approval of Radio Apparatus and its Installation in Aircraft

5.—(1) Except as provided in this Regulation and in Regulation 6, radio apparatus shall not be installed in any aircraft unless the apparatus and the installation thereof comply with the following requirements :—

(*a*) The apparatus shall be of a type approved in writing by the Minister as satisfying " British Civil Radio Airworthiness Requirements " and as being suitable for the purpose for which it is intended to be used ;

(*b*) The apparatus shall have been constructed, tested and inspected in accordance with all relevant requirements of " British Civil Radio Airworthiness Requirements " in a manner approved in writing by the Minister ; and

(*c*) The apparatus shall be installed in the aircraft in a manner approved in writing by the Minister as complying with all relevant requirements of the sub-sections of " British Civil Radio Airworthiness Requirements " concerning Installation (Radio Apparatus). Any such approval given for the purpose of this requirement shall remain in force for such period, not exceeding twelve months, as may be shown therein, but may be renewed from time to time on application to the Minister:

Provided that the requirements of this paragraph shall not be deemed to apply to self-contained portable receivers which are not attached physically or connected electrically to the aircraft or its electrical system.

(2) References in paragraph (1) of this Regulation to " British Civil Radio Airworthiness Requirements " shall be construed as references to those Requirements as from time to time amended.

6.—(1) Where radio apparatus manufactured elsewhere than in the United Kingdom is installed in an aircraft and in respect of such apparatus a document has been issued by the competent authorities of the State in which it was manufactured certifying that the apparatus is of a type approved by them, the Minister may, if he is satisfied that the apparatus has been designed and constructed to standards not lower than those required in respect of similar types of apparatus manufactured in the United Kingdom, and subject to such conditions as he thinks fit, confer on such document the same validity as if it had been issued in accordance with the provisions of paragraph (1) (*a*) of Regulation 5.

(2) The provisions of paragraph (1) (*c*) of Regulation 5 shall apply to such apparatus and to the installation of such apparatus in the aircraft.

SECTION III

Compulsory Carriage in Aircraft of Radio Apparatus and Licensed Operators

7.—(1) Subject to the provisions of paragraph (3) of this Regulation and the proviso to Regulation 9:—

A. No aircraft shall carry out a flight in any of the circumstances specified in (*a*), (*b*), and (*c*) of this sub-paragraph unless (i) the aircraft is equipped

with radio apparatus for the sending and receiving of messages, and (ii) the requirements in respect of the carriage of licensed flight radio operators specified in Regulation 8 are complied with ;

(*a*) Flight in circumstances which require the aircraft to communicate by radio with Air Traffic Control in order to comply with the Rules of the Air in Schedule II to the Order ;

(*b*) In the case of a public transport aircraft, flight over water beyond gliding distance from the nearest shore ;

(*c*) Flight on a scheduled journey :

B. No aircraft shall carry out a flight in any of the circumstances specified in (*a*), (*b*), and (*c*) of this sub-paragraph unless, in addition to the requirements in sub-paragraph A of this paragraph, the following requirements are also complied with :—

(*a*) in the case of a public transport aircraft, when the aircraft is operated over regions where search and rescue would be especially difficult in the event of emergency, or is flying over water at a greater distance than 100 nautical miles from the nearest shore, the aircraft shall be fitted with radio apparatus capable of being operated for the sending and receiving of messages after normal landing of the aircraft ;

(*b*) in the case of a public transport aircraft which is unable to maintain continuous communication with an aeronautical station when flying over water beyond gliding distance from the nearest shore, the radio apparatus shall be capable of being operated on the international distress frequency for the sending of messages ;

(*c*) in the case of flight in circumstances which require the aircraft to comply with the Instrument Flight Rules in Schedule II to the Order, the aircraft shall also be equipped with radio navigation apparatus.

(2) Radio apparatus carried in aircraft in accordance with the requirements of this Regulation shall be suitable for satisfactory operation in the conditions obtaining on the route to be flown over and shall be in working order.

(3) In exceptional circumstances exemption from compliance with all or any of the requirements of this Regulation and of Regulation 8 may be granted by the Minister in respect of any aircraft or type of aircraft and subject to any conditions he may think fit. In particular, the Minister may grant such exemption in any case where, owing to the absence of radio facilities available for air navigation, it appears to him that the carriage in the aircraft of radio navigation apparatus would serve no useful purpose.

8. Subject to the provisions of paragraph (3) of Regulation 7 and the proviso to Regulation 9, the following requirements of this Regulation relating to the carriage of licensed flight radio operators shall apply in respect of aircraft required to be equipped with radio apparatus in accordance with the provisions of Regulation 7 :—

(*a*) The aircraft shall carry at least one licensed flight radio operator qualified under the terms of his licence to operate, for the sending and receiving of morse or spoken messages, the radio apparatus with which the aircraft is equipped.

(*b*) If the aircraft carries out two-way communication by means of morse code and is flown in circumstances which require it to comply with the Instrument Flight Rules in Schedule II to the Order, the flight

radiotelegraphy operator shall be a separate person from any other member of the operating crew and, while on duty as a flight radiotelegraphy operator, shall not carry out any duties in the aircraft other than those of a flight radiotelegraphy operator.

(*c*) If the aircraft carries out two-way communication by means of morse code as distinct from spoken messages, the flight radio operator (if he is the holder of the appropriate pilot's licence) shall not act in the capacity of pilot of the aircraft except in case of emergency and as a temporary measure.

(*d*) If the aircraft is employed on a scheduled journey the Minister may, at his discretion, require further conditions to be complied with in respect of the flight radio operators and the radio apparatus to be carried in the aircraft, according to the particular circumstances of the case.

9. The following provisions of this Regulation shall apply to flights on which the requirements specified in Regulations 7 and 8 are required to be complied with :—

(*a*) Before commencing any such flight, the person in command of the aircraft shall satisfy himself that the aircraft is equipped with radio apparatus in accordance with the requirements of Regulation 7, and that such apparatus is fit in every way for the flight, and (as from the first day of April, 1950), in the case of a public transport aircraft, that a certificate has been given under paragraph (2) of Regulation 10 and is in force. If a flight radiotelegraphy operator other than the pilot is to be carried on such flight, he shall be responsible for furnishing such information to the person in command as will enable him so to satisfy himself.

(*b*) If the radio apparatus becomes defective during the flight the aircraft shall comply with such of the Rules of the Air in Schedule II to the Order as may be appropriate in the circumstances of the case:

Provided that nothing in this Regulation or in Regulations 7 and 8 shall be deemed to prevent an aircraft, the radio apparatus installed in which is defective, from exceptionally undertaking or continuing a flight to the nearest convenient place at which the defect can be remedied, if the person in command of the aircraft is satisfied that such flight can safely be performed having regard to the circumstances and exigencies of the case.

SECTION IV

Maintenance and Certification of Aircraft Stations

10.—(1) The provisions of this Regulation shall apply to flights by public transport aircraft in respect of which the requirements specified in Regulations 7 and 8 are required to be complied with.

(2) Within the twenty-four hours previous to any such flight, a licensed aircraft radio maintenance engineer or, should an engineer not be available, a licensed first class flight radiotelegraphy operator shall satisfy himself as to the condition of the aircraft station so far as it is possible to do so from consultation of the most recent record made under paragraph (3) of this Regulation and from tests carried out on the ground, and, if the aircraft station appears to him to be serviceable in every respect, shall

certify accordingly in writing, and, if not, shall record in writing which part or parts thereof are defective. If, however, after such a certificate has been given, a serious defect, as defined in Article 15 (4) of the Order, is disclosed, the certificate shall forthwith cease to be in force.

(3) On the completion of any such flight, the flight radio operator shall record in writing whether the aircraft station was functioning during the flight in a satisfactory manner, and, in the event of any defect having been disclosed, shall so record the nature of the defect.

(4) The records and certificates required by paragraphs (2) and (3) of this Regulation and the certificate required by paragraph (3) of Regulation 11 shall be in a form approved by the Minister and shall be preserved for a period of six months.

11.—(1) The provisions of this Regulation shall apply to every public transport aircraft equipped with an aircraft station.

(2) The aircraft station shall be examined at intervals in accordance with a maintenance schedule and for this purpose there shall be provided by the operator of the aircraft for the use of persons employed on the maintenance of the aircraft station data in the form of a manual or other suitable publication, approved by the Minister, giving essential information as to the operations and procedures necessary for the servicing and maintenance of the aircraft station. The frequency of each check, overhaul or inspection shall be stated therein as well as the specific responsibilities of the persons so employed. The examination shall extend to all accessories on board the aircraft installed solely to ensure the efficient working of the aircraft station and its correct tuning and shall include the bonding of the aircraft station.

(3) In respect of every such examination, a certificate recording the date of the examination, its result, and any consequent action taken, shall be made out in a manner approved by the Minister by an aircraft radio maintenance engineer qualified under the terms of his licence to carry out the examination to which the certificate relates.

12. Any aircraft station (other than an aircraft station comprising only the radio apparatus specified in the proviso to paragraph (1) of Regulation 5) installed in an aircraft may be inspected by persons authorised for this purpose by the Minister to ensure that its nature, installation, and condition are such that it can be employed without prejudice to the safety of the aircraft or to the efficiency of the radio services. In addition, any aircraft station may be inspected by persons authorised by the Postmaster General in accordance with the terms of the aircraft station licence.

13. The overhaul or repair of radio apparatus installed or intended to be installed in public transport aircraft shall only be undertaken by or under the supervision of a licensed aircraft radio maintenance engineer qualified for this duty under the terms of his licence, or by the approved manufacturer of the equipment: Provided, however, that in emergency the person in command of the aircraft may exceptionally authorise the work to be undertaken by a person not so qualified or without such supervision but shall in that case cause the apparatus to be subsequently examined at the earliest opportunity by a licensed aircraft radio maintenance engineer so qualified. After each such overhaul or repair has been completed or examined, as the case may be, the aircraft radio maintenance engineer shall record the particulars in a manner approved by the Minister.

SECTION V

Operation of Radio Apparatus in Aircraft

14. Except as otherwise provided in this Section, radio apparatus in aircraft shall be operated in compliance with these Regulations and in conformity with—

(*a*) the conditions contained in the licence issued by the Postmaster General in respect of the use of radio apparatus in the aircraft; and

(*b*) the instructions contained in Chapters III, IV, IX, XI, XVI to XX inclusive and XXIII to XXVIII inclusive, of the "Civil Aviation Communications Handbook", which instructions shall be deemed to be comprised in these Regulations:

Provided that nothing in these Regulations shall exempt an aircraft, when flying outside the United Kingdom, from complying with any regulations in force in the country flown over.

15. Except that watch may be discontinued for reasons of safety (e.g., danger of lightning or danger arising from a defect in the aircraft station as mentioned in Regulation 17) and subject to the provisions of Regulation 18—

(*a*) every aircraft required by Section III of these Regulations to be equipped with radio apparatus; and

(*b*) every aircraft, whether registered in the United Kingdom or elsewhere, flying in circumstances which require it to communicate with Air Traffic Control in order to comply with the Rules of the Air in Schedule II to the Order—

shall carry out a continuous watch on the calling frequency in use in the area flown over, unless it has been exempted therefrom by the aeronautical station with which it is in communication.

16. No aircraft, whether registered in the United Kingdom or elsewhere, or unregistered, shall send radio messages or signals while flying within the United Kingdom except in accordance with the conditions of the aircraft station licence and in the following circumstances:—

(*a*) when sending is necessary to ensure the safety of any aircraft or of persons on board aircraft; or

(*b*) when sending is necessary in order to comply with the instructions contained in Chapters III, IX, XI, XVI, XIX, XX and XXIII to XXVIII inclusive, of the "Civil Aviation Communications Handbook"; or

(*c*) when sending is required by the procedure prevailing on the route on which the aircraft is flying; or

(*d*) in accordance with a special permission in writing given by the Minister.

17. An aircraft which is equipped with an aircraft station having a defect such as to impair the safety of the aircraft shall not undertake any flight until the aircraft station has been rendered safe, or, if such defect occurs during flight, shall land as soon as possible unless the aircraft station can be and is speedily rendered safe during flight.

18. An aircraft station which is in such a condition that it cannot be employed without causing interference to the efficiency of the radiocommunication service of air navigation shall not be used (*a*) in an aircraft registered

in the United Kingdom wherever the aircraft may be, or (*b*) in an aircraft registered elsewhere than in the United Kingdom, or in an unregistered aircraft, when such aircraft is flying within the United Kingdom.

19. The use by aircraft stations of the calling and distress wave for ships—500 kc/s. (600 metres)—shall be confined to Type A2 Emission except in a case of urgency when, if the use of this type of emission is impracticable, use may be made of Type A3 for the sending and receiving of spoken messages.

20. Radio apparatus installed in an aircraft shall not be operated for the purpose of sending morse or spoken messages otherwise than by a licensed flight radio operator and in accordance with the privileges attaching to his licence:

Provided that—

(i) if a licensed flight radio operator has become incapacitated during a flight the person in command of the aircraft may, as a temporary measure, authorise a person not licensed for the purpose to work the apparatus for sending and receiving distress, urgency and safety messages, messages relating thereto and messages or signals regarding the navigation of the aircraft;

(ii) the Minister may, at his discretion, grant permission to particular persons, or to persons of such classes or description as he may specify, not being licensed flight radio operators, to operate radio apparatus in aircraft for sending spoken messages to aeronautical stations in the United Kingdom, or to aircraft flying within the United Kingdom, on frequencies above 60 mc/s. that are not regarded internationally as frequencies to be used by aircraft on international flights. Any such apparatus worked by unlicensed operators shall be incapable of easy adjustment for changing frequencies to any other than those for which the apparatus is licensed, and shall be worked in accordance with such conditions as may be attached to the permission.

SECTION VI

Telecommunication Log Books

21. With reference to Article 24 (3) of the Order, telecommunication log books shall be kept by the persons and entries in such books shall include the particulars and be made and signed in the form and manner specified in Chapter III of the "Civil Aviation Communications Handbook".

SECTION VII

Licensing of Flight Radio Operators

22. With reference to Article 20 of the Order, application for the grant or renewal of a licence to act in the capacity of flight radio operator, or for an extension of a rating included in such a licence, should be made to the Secretary, Ministry of Civil Aviation, London, W.C.2, on a form which will be supplied by him on request.

Minimum Ages

23. Licences may be granted only to applicants who have reached the minimum ages indicated below:—

(i) For a general flight radiotelephony operator's licence (temporary) ... ... 17 years

(ii) For a general flight radiotelephony operator's licence ... 18 years
(iii) For a first class flight radiotelegraphy operator's licence (temporary) ... ... 18 years
(iv) For a first class flight radiotelegraphy operator's licence 20 years

Requirements for Grant of Licence

24. An applicant for the grant of a flight radio operator's licence shall be required to satisfy the following conditions:—

(i) be a natural-born British subject whose father or mother is (or was at death) a British subject, or, irrespective of parents' nationality, a British subject (natural-born or naturalised) who has been either resident in the British dominions or employed in the service of the Crown for five of the preceding eight years, or has in some other way satisfactorily demonstrated his close connection with the British Commonwealth ;
(ii) satisfy the requirements in respect of technical competency specified in Regulation 27 ;
(iii) pass a medical examination in accordance with Regulations 29 to 34 ;
(iv) except in the case of an applicant for a temporary flight radio operator's licence, produce evidence of radio experience in accordance with Regulation 35 ; and
(v) give a written undertaking to preserve the secrecy of correspondence.

Radio Apparatus Rating

25. The aircraft radio apparatus for the operation of which a flight radio operator's licence is valid shall be as specified in the certificate of competency.

Privileges attaching to Licences

26.—(1) A general flight radiotelephony operator's licence (temporary) entitles the holder to operate, in accordance with the terms of the licence, radiotelephony apparatus—

(*a*) on board aircraft other than public transport aircraft ; and
(*b*) on board public transport aircraft, but only under the supervision of a person who is the holder of either a first class flight radiotelegraphy operator's licence or a general flight radiotelephony operator's licence.

(2) A general flight radiotelephony operator's licence entitles the holder to operate, in accordance with the terms of the licence, radiotelephony apparatus on board any aircraft.

(3) A first class flight radiotelegraphy operator's licence (temporary) entitles the holder to operate, in accordance with the terms of the licence, radiotelegraphy or radiotelephony apparatus on board any aircraft but only under the supervision of a person who is the holder of a first class flight radiotelegraphy operator's licence.

(4) A first class flight radiotelegraphy operator's licence entitles the holder to operate, in accordance with the terms of the licence, radio apparatus on board any aircraft.

Technical Competency

27.—(1) *General Flight Radiotelephony Operator (Temporary).*—The applicant shall be required to satisfy the Minister, by examination or otherwise, of his technical competency in the following matters:—

(*a*) Practical knowledge of radiotelephony, especially as regards the avoidance of interference ;
(*b*) Knowledge of the adjustment and working of radiotelephony apparatus ;

(*c*) Ability to send correctly and to receive correctly messages by radiotelephony;

(*d*) Knowledge of the Radio Regulations annexed to the International Telecommunication Convention applying to radiotelephony communications and particularly of that part of those Regulations relating to the safety of life, and of the special instructions and operating procedures applying to radiotelephony communications in the radiocommunication service in air navigation, as contained in the handbook "Radiotelephony Procedure" (M.C.A.P.46) published by His Majesty's Stationery Office.

(2) *General Flight Radiotelephony Operator.*—The applicant must be the holder of a general flight radiotelephony operator's licence (temporary).

(3) *First Class Flight Radiotelegraphy Operator (Temporary).*—The applicant shall be required to satisfy the Minister, by examination or otherwise, of his technical competency in the following matters:—

(*a*) Theoretical and practical knowledge of the general principles of electricity, of the theory of radio in relation to the sending and receiving of morse and spoken messages and air navigation, and of the adjustment of and practical working of the principal radio apparatus used in aircraft stations including apparatus for direction finding and the taking of direction finding bearings;

(*b*) Theoretical and practical knowledge of the accessory apparatus, such as motor-generators, accumulators, etc., used in the operation and adjustment of the apparatus specified in (*a*) of this paragraph;

(*c*) Practical knowledge necessary to effect during flight with the means available on board, the repair of damage which may occur to the radio apparatus;

(*d*) Ability to send correctly and to receive correctly by ear, code groups (mixed letters, figures and punctuation marks) at a speed of 20 groups per minute, and of a plain language passage in English at a speed of 25 words per minute. Each code group must comprise five characters, each figure or punctuation mark counting as two characters. The passage in plain language must average five characters to the word. The duration of each test of sending and receiving will as a rule be five minutes;

(*e*) Ability to transmit correctly and to receive correctly telephonic communications;

(*f*) Knowledge of the Radio Regulations annexed to the International Telecommunication Convention applying to radiocommunications and particularly of that part of those Regulations relating to the safety of life; knowledge of the documents relating to charges for radiotelegraphy communications*; knowledge of the special instructions and operating procedures applying to the radiocommunication service in air navigation, as contained in Chapters III, IV, IX, XI, XVI to XX inclusive and XXIII to XXVIII inclusive, of the "Civil Aviation Communications Handbook";

(*g*) Knowledge of the general geography of the world, of the principal air navigation routes, and of the most important telecommunication routes.

(4) *First Class Flight Radiotelegraphy Operator.*—The applicant must be the holder of a first class flight radiotelegraphy operator's licence (temporary).

* This knowledge is required only in the case of operators handling public correspondence.

(5) *Certificate of Competency.*—A certificate of competency will be issued to an applicant who satisfies the Minister as to his technical competency in the foregoing matters.

(6) *Extension of Radio Apparatus Rating.*—An applicant may be examined in special radiocommunication or radio navigation systems not covered by the basic examination and, if successful, an appropriate entry will be made in the certificate of competency. For the purpose of obtaining such an entry in respect of particular radio navigation systems an applicant may be required to satisfy the Minister that he has an elementary knowledge of air navigation.

28. Syllabuses and particulars of the examination referred to in Regulation 27 may be obtained on application to the Secretary, Ministry of Civil Aviation, London, W.C.2.

Medical Requirements

29.—(*a*) A person applying for the grant or renewal of a flight radio operator's licence shall be required to undergo a medical examination to ascertain whether his physical condition conforms with the standard of fitness, i.e., physical, visual, colour perception and hearing, specified in Regulation 34:

Provided that an applicant who does not satisfy the specified medical requirements may, at the discretion of the Minister, be accepted as eligible for the grant or renewal of a licence so far as medical requirements are concerned if the licence is to be restricted to flying within the United Kingdom. Any licence granted or renewed in accordance with this proviso may be made subject to such conditions and restrictions as the Minister may consider appropriate in the particular case.

(*b*) The medical examination shall be conducted by specially qualified medical officers appointed by or acting under the authority of the Minister. Applications for examination should be made to the Secretary, Ministry of Civil Aviation, London, W.C.2.

30. Every applicant who presents himself for medical examination for the grant or renewal of a licence shall be required to furnish to the medical examiner a declaration signed by him stating whether he has previously undergone such medical examination and, if so, where, when and with what result. A false declaration may entail the cancellation of any licence granted or renewed as a result of the examination.

31. If the holder of a licence is aware, or has reasonable grounds to suspect, that his physical, aural or eye condition has deteriorated in any respect, even if only temporarily as a result of a common minor ailment, so that it may be below the standard of medical fitness required for the grant of such a licence, he shall not act in any capacity for which he is so licensed until he is satisfied that his condition has been restored to the required standard.

32.—(1) If the holder of a licence—

(*a*) suffers any personal injury as the result of an accident occurring while he is acting in any capacity for which he is licensed;

(*b*) suffers any personal injury involving incapacity for work as the result of an accident occurring otherwise than while he is acting in any capacity for which he is licensed; or

(*c*) suffers from any illness involving incapacity for work during twenty days or more;

he shall send notification of the occurrence, in writing, to the Secretary, Ministry of Civil Aviation, London, W.C.2, as soon as possible in the case of accident, and, in the case of illness, as soon as the said period of twenty days has elapsed.

(2) The holder of a licence may, after suffering any such personal injury or illness as aforesaid, be required to undergo a full or partial medical examination. He shall not, therefore, resume acting in any capacity for which he is licensed until he has either been examined and pronounced fit or notified that an examination is not required.

(3) Pregnancy shall be regarded as incapacitating the holder of a licence from carrying out flying duties. As soon as the condition has been diagnosed the holder of a licence shall cease flying and shall not again fly until she has, in due course, been examined and pronounced fit.

(4) Whenever the holder of a licence has performed a total of 125 hours' flying in the capacity of a member of the operating crew of a flying machine or glider within any period of thirty consecutive days since his last medical examination under these Regulations, he shall not continue to act in that capacity until he has been re-examined and pronounced fit:

Provided that in exceptional circumstances relaxations of the requirements of this paragraph may be made at the discretion of the Minister.

(5) The medical examinations required for the purpose of this Regulation shall be in accordance with the same conditions and standards as for the grant or renewal of a licence, except, however, as provided by Regulation 33.

33. If an applicant for the renewal of a licence is for the time being acting as a member of the operating crew of an aircraft in a region distant from official medical centres the medical examination which he should normally pass to obtain renewal of the licence may exceptionally, at the discretion of the Minister—

(*a*) be deferred once for a period of six months in the case of a member of the operating crew of a private aircraft; or

(*b*) be deferred for two consecutive periods of three months each in the case of a member of the operating crew of a public transport or aerial work aircraft, on condition that the applicant obtains locally on each occasion a satisfactory medical certificate after having been examined by a qualified medical officer.

34. The medical examination and assessment will be based on the following requirements of mental and physical fitness:—

A. *Physical Standard*

(*a*) *General*

(i) The applicant shall be required to be free from any congenital or acquired disability causing such degree of functional incapacity as is considered by the medical examiner likely to interfere, in the case of piloting, with the safe handling of an aircraft at any altitude throughout a prolonged or difficult flight or, in the case of members of the operating crew of an aircraft other than pilots, with the efficient performance of the duties to be carried out when exercising the privileges of the licence.

(ii) The medical examination will include a full enquiry into the family and personal history of the applicant. The information obtained shall be given in a statement made and signed by him and will be taken into consideration by the medical examiner.

(*b*) *Examination of the nervous system*

The applicant shall have no history of significant mental or nervous trouble. He shall be required to be free from any disability of the nervous system considered by the medical examiner to be of such degree as likely to interfere with efficient function during prolonged flight. Cases in which syphilis, past or present, has affected the central nervous system will be assessed as permanently unfit.

(*c*) *Injuries of the head*

(i) Cases of simple concussion or simple fracture of the skull without associated intracranial injury will be assessed as temporarily unfit for a period of not less than two months from the date of the concussion or fracture. When the licence is renewed, it will be made valid only for a period of two months in the first instance. Thereafter its validity will be restricted to consecutive periods of two months until the medical examiner reports that he has good reason to presume that the after-effects of the concussion or fracture are no longer likely to cause a sudden incapacity in flight;

(ii) Cases of head injury associated with intracranial injuries will be assessed as permanently unfit if a local lesion of the brain persists;

(iii) Cases of head injury in which there has been an operation on the skull with loss of bony substance involving the two tables of the cranial vault will be assessed as permanently unfit;

(iv) Cases of head injury associated with a lesion of the dura mater will be assessed as permanently unfit even if a bone graft has been done.

(*d*) *General surgical examination*

The applicant shall neither suffer from any wound or injury, nor have undergone any operation, nor possess any abnormality, congenital or acquired, which is considered by the medical examiner likely to interfere with the efficient performance of the duties to be carried out when exercising the privileges of the licence.

Cases in which there is any significant anatomical or functional lesion in the walls of any part of the digestive tract, any stricture, any calculus or foreign body, any significant peritoneal lesion, established by clinical or laboratory examinations, will be assessed as unfit. An applicant who has undergone a major surgical operation on the biliary passages or the digestive tract, except for appendicitis, which has involved a total or partial excision or a diversion of any of these organs will be assessed as unfit unless a period of one year has elapsed since the surgical operation and the effects of the operation are not considered liable to cause sudden incapacity in the air, provided that this period of one year may be shortened on the production of an attestation made by a surgeon having knowledge of the nature of the disease which necessitated the operation, certifying that no immediate or future after-effects are to be feared.

(e) General Medical Examination

The applicant shall not suffer from any disease or disability which renders him liable suddenly to become incompetent in the performance of the duties to be carried out when exercising the privileges of the licence.

There shall be no significant cardiovascular abnormality. The systolic and diastolic blood pressures shall be within normal limits.

There shall be no acute disability of the lungs nor any active disease of the structures of the lungs, mediastinum or pleura. In the case of an examination for the first grant of a licence, radioscopy will form a part of the chest examination. Radiography will form a part of the medical examination in all doubtful clinical cases.

Cases of active pulmonary tuberculosis, however diagnosed, will be assessed as unfit. Cases of quiescent or healed lesions which are known to be tuberculous, or are presumably tuberculous, in origin may be assessed as fit. Cases of doubt about the activity of a lesion, where symptoms of activity of the disease are lacking, clinically, will be assessed as temporarily unfit for a period of not less than three months from the date of the medical examination. At the end of the three months' period, a further radiographic record will be made and compared carefully with the original. If there is no sign of extension of the disease and there are no general symptoms or symptoms referable to the chest, the applicant may be assessed as fit but, where the licence is renewed in these circumstances, it will be made valid only for a period of three months in the first instance. Thereafter, provided there continues to be no sign of extension of the disease as shown by radiographic examinations carried out at the end of each three months' period, the validity of the licence will be restricted to consecutive periods of three months. When the applicant has been under observation under this scheme for a total period of at least two years and comparison of all the radiographic records shows no changes or only retrogression of the lesion, the lesion will be regarded as "quiescent" or "healed".

Cases of disease of, or of significant impairment of the functioning of the liver, biliary passages or pancreas will be assessed as unfit. Cases of diabetes will also be assessed as unfit.

The applicant shall be required to be free from disease of the urogenital tract.

An applicant for the first grant of a licence who has a personal history of syphilis shall be required to furnish evidence, satisfactory to the medical examiner, that he has undergone adequate treatment; this evidence shall include the result of an examination of the blood and of the cerebro-spinal fluid. An applicant showing any clinical signs of active syphilis will be assessed as temporarily unfit for a period of not less than three months from the date of the medical examination. At the end of the three months' period, provided the applicant furnishes proof, satisfactory to the medical examiner, that he has undergone adequate treatment in the interim and that the serological reaction for syphilis is negative, he may be assessed as fit but, where a licence is granted or renewed in these circumstances, it will be made valid only for a period of three months in the first instance. Thereafter, provided serological reactions for syphilis continue to be negative at the end of each three months' period, the validity of the licence will be restricted to consecutive periods of three months. When the applicant has been

under observation under this scheme for a total period of at least three years and the serological reactions have continued to be negative, the restriction on the period of validity of the licence may be removed. In cases where the serological reaction for syphilis remains persistently positive, examinations of the cerebro-spinal fluid at the end of each period of six months with negative results may be accepted in lieu of negative serological reactions at the end of each period of three months. Any evidence of syphilis of the central nervous system will be confirmed by the result of an examination of the cerebro-spinal fluid.

The cases of applicants of the female sex who have undergone gynaecological or other surgical operations will be considered individually. In the event of presumed pregnancy the applicant will be assessed as temporarily unfit until, at least, after the pregnancy has been terminated; after confinement or miscarriage the candidate will not be permitted to exercise the privileges of her licence until she has undergone a new medical examination and been assessed as fit.

(f) *Eye examination.*

There shall be no active pathological condition, acute or chronic, of either eye or adnexae which is considered likely by the medical examiner to interfere with its proper function. (*Note:* The details of the Visual Standard are specified in paragraph B and those for Colour Perception in paragraph C of this Regulation.)

(g) *Ear examination*

There shall be:—

(i) No active pathological process, acute or chronic, of the internal ear or middle ear cleft;

(ii) No unhealed (unclosed) perforation of the tympanic membrane;

(iii) No obstruction of the Eustachian tubes;

(iv) No disturbances of the vestibular apparatus.

(*Note:* The details of the Hearing Standard are as specified in paragraph D of this Regulation.)

(h) *Nose, throat and mouth examination*

There shall be free nasal air entry on both sides. There shall be no serious malformation or serious, acute or chronic, affection of the buccal cavity or upper respiratory tract.

B. *Visual Standard*

The measurement of visual acuity will be made by means of a series of optotypes of Landholt, or similar optotypes, illuminated at not less than twelve lux and not more than twenty lux, and placed at a distance of twenty feet from the applicant.

The applicant shall be required to have:

(*a*) a visual acuity of at least 6/12 (20/40) in each eye separately, without correction:

Provided that

(i) in the case of an applicant for the grant of a licence, if the vision in either or both eyes is less than 6/12 (20/40) but not less than 6/24 (20/80) and can be brought up to 6/6 (20/20) or better in each eye by glasses, the applicant may be assessed as fit upon condition that correcting glasses are worn while exercising the privileges of the licence; and

(ii) in the case of an applicant for the renewal of a licence, if the vision in either or both eyes is less than 6/12 (20/40) but not less than 6/60 (20/200) and can be brought up to 6/9 (20/30) or better in each eye by glasses, the applicant may be assessed as fit upon condition that correcting glasses are worn while exercising the privileges of the licence and that a second set of correcting glasses are carried on his person ;

(*b*) normal fields of vision, due allowance being made where errors of refraction exist for those areas not covered by the correcting lenses.

C. *Colour Perception Standard*

The measurement of colour perception should be made by means of a suitable lantern. When a lantern is used it should present the light, transmitted by coloured screens lighted at five lux, for one second and seen at a distance of twenty feet in an angle of three minutes.

The applicant shall be required to be able to distinguish easily signal red, signal green and white.

D. *Hearing Standard*

The applicant shall be required not to have a loss in either ear of more than twenty decibels at any one of the four frequencies, 500, 1,000, 2,000 and 3,000 cycles per second as measured by means of a standard pure tone audiometer in a quiet room, that is, a room in which the intensity level of the background noise is less than fifty decibels as measured by a sound level meter.

Where, however, the applicant for the grant or renewal of a licence fails to satisfy this standard the licence may nevertheless be granted or renewed provided that the applicant either—

(*a*) has not a loss in either ear of more than twenty decibels at any one of the three frequencies, 500, 1,000 and 2,000 cycles per second, or of more than forty decibels at the frequency of 3,000 cycles per second, or

(*b*) demonstrates his ability, under practical or simulated practical conditions, to receive spoken messages by radiotelephony accurately in a complex noise background of an intensity level of not less than 100 decibels, the intensity level of the spoken messages being 8 decibels above the intensity level of the background noise ;

and the Minister is satisfied that the applicant, by reason of his experience in radio reception, can competently perform the duties for which the licence is desired.

Radio Experience

35.—(1) An applicant for the grant of a general flight radiotelephony operator's licence (temporary) shall not be required to furnish evidence of radio experience.

(2) An applicant for the grant of a general flight radiotelephony operator's licence shall be required to furnish satisfactory evidence that he has performed the duties of a temporary flight radiotelephony operator in flight under the provisions of his temporary licence.

(3) An applicant for the grant of a first class flight radiotelegraphy operator's licence (temporary) shall not be required to furnish evidence of radio experience.

(4) An applicant for the grant of a first class flight radiotelegraphy operator's licence shall be required to furnish the following evidence of radio experience :—

(i) A minimum of two years' approved manual radiotelegraphy operating experience in the aeronautical or marine mobile radio services, or experience which in the opinion of the Minister is of equivalent value. Such experience must have been acquired during a period reasonably recent in relation to the application and at least four months of it should normally have been obtained during the twelve months immediately preceding the date of the application.

(ii) Satisfactory evidence that he has performed the duties of a temporary flight radiotelegraphy operator in flight under the provisions of his temporary licence for a minimum period of twenty-five hours during the twelve months immediately preceding the date of the application.

Period for which Licence may remain in force and Renewal of Licence

36.—(1) The period for which a flight radio operator's licence may remain in force, following either the grant or any renewal thereof, shall not exceed twelve months.

(2) An applicant for the renewal of a licence shall be required to undergo a medical examination in accordance with Regulations 29 to 34, and may, at the discretion of the Minister, be required to undergo all or any part of the technical examination specified for the grant of a licence of the class to which the application relates.

(3) An applicant for the renewal of a general flight radiotelephony operator's licence or a first class flight radiotelegraphy operator's licence shall also be required to furnish satisfactory evidence of having been actively employed in the performance of appropriate radio operating duties in the aeronautical service for a period of not less than one month in the one case, and two months in the other case, during the twelve months immediately preceding the date of the application :

Provided that applications from persons unable to satisfy these requirements may be dealt with at the discretion of the Minister.

SECTION VIII

Licensing of Aircraft Radio Maintenance Engineers

37. With reference to Article 31 (3) of the Order, application for the grant or renewal of a licence to act in the capacity of aircraft radio maintenance engineer, or for an extension of a rating included in such a licence, should be made to the Secretary, Ministry of Civil Aviation, London, W.C.2, on a form which will be supplied by him on request.

Requirements for Grant of Licence

38. An applicant for the grant of an aircraft radio maintenance engineer's licence—

(*a*) must be not less than 21 years of age ;

(*b*) must satisfy the Minister, by examination or otherwise, of his theoretical and practical knowledge of aircraft radio apparatus ;

(*c*) must produce satisfactory evidence of having had at least ten hours' flying experience on board aircraft equipped with radio apparatus, during which he has studied the functioning and practical operation of such apparatus ; and

(*d*) must produce satisfactory evidence of having had not less than three years' practical experience in the servicing, maintenance and repair of aircraft radio apparatus; such experience shall have been acquired during a period reasonably recent in relation to the application.

39. A syllabus and particulars of the examination referred to in paragraph (*b*) of Regulation 38 may be obtained on application to the Secretary, Ministry of Civil Aviation, London, W.C.2.

Certificate of Competency

40. A certificate of competency will be issued to an applicant who satisfies the Minister as to his technical competency in the foregoing matters.

Radio Apparatus Rating

41. The aircraft radio apparatus for the maintenance, examination and certification in working order of which an aircraft radio maintenance engineer's licence is valid shall be as specified in the certificate of competency.

Extension of Radio Apparatus Rating

42. An applicant may be examined in special radiocommunication or with respect to radio navigation apparatus not covered by the basic examination and, if successful, an appropriate entry will be made in the certificate of competency.

Period for which Licence may remain in force and Renewal of Licence

43.—(1) The period for which an aircraft radio maintenance engineer's licence may remain in force, following either the grant or any renewal thereof, shall not exceed twelve months.

(2) An applicant for the renewal of a licence—

(*a*) shall be required to furnish satisfactory evidence of having been actively employed in the performance of appropriate radio duties for a period of not less than two months during the twelve months immediately preceding the date of the application:

Provided that applications from persons unable to satisfy this requirement may be dealt with at the discretion of the Minister;

(*b*) may, at the discretion of the Minister, be required to undergo all or any part of the technical examination specified for the grant of a licence.

SECTION IX

Supplementary

44.—(1) These Regulations may be cited as the Air Navigation (Radio) Regulations, 1949.

(2) These Regulations shall come into operation on the first day of April, 1949, except Section IV thereof, which shall come into operation on the first day of April, 1950.

Signed by order of the Minister of Civil Aviation this fifth day of March, 1949.

A. E. Overton,
Secretary of the Ministry of Civil Aviation.