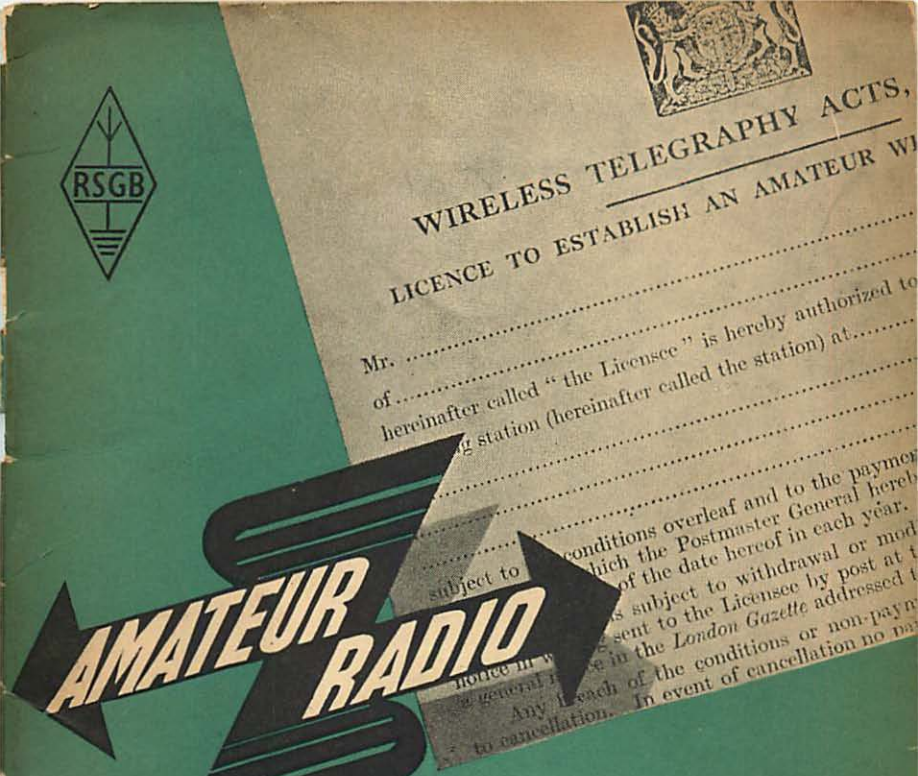


RSGB

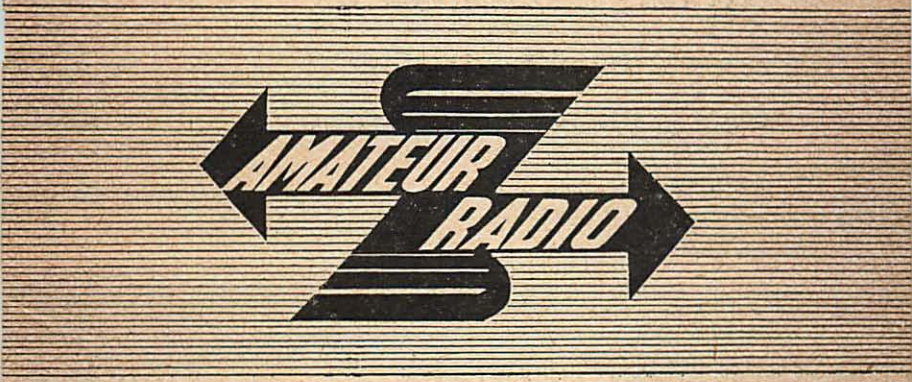
AMATEUR RADIO

THE TRANSMITTING LICENCE

THIRD EDITION

AN R.S.G.B. PUBLICATION

The TRANSMITTING LICENCE



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CONTENTS

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General Secretary, Incorporated Radio Society of Great Britain

INTRODUCTION.

THE purpose of this booklet—the first of a series—is to present in a convenient form the essential information required by those who wish to obtain an Amateur Transmitting Licence. It is not a technical publication.

The present edition has been revised to include details of the frequency bands in current use by radio amateurs resident in Great Britain and Northern Ireland; in addition certain of the official documents issued by the G.P.O. and reproduced herein have been amended since earlier editions appeared.

* * *

The question is often asked: "What *is* Amateur Radio?" Stated briefly, Amateur Radio is a scientific hobby practised by men and women of divers ages and occupations, from their own homes, at all times of the day and night, and at all seasons of the year.

The fully-fledged Radio Amateur is a person who holds a Government licence to operate short-wave transmitting and receiving equipment. But there are countless thousands of other enthusiasts who are chiefly interested in the reception of signals from other Amateur Radio stations. Many of these listeners aspire, after gaining experience, to apply for a transmitting licence. It is for them in particular that this booklet has been produced.

Amateur Radio thrives on personal friendships and depends for its continued progress upon the exchange of technical knowledge. It knows no barriers of race or religion or creed and its devotees—both men and women—are bound together by an indefinable link which they call the Ham Spirit.

Amateur Radio is an *Open Sesame* and those who practise the science have the world at their finger tips.

Radio Amateurs of two or three decades ago were the pioneers of short-wave international telecommunication and by their endeavours they laid the foundation for many epoch-making developments.

The great majority of the licensed Radio Amateurs of the United Kingdom, as well as many who reside abroad, are members of the *Incorporated Radio Society of Great Britain*, an organisation founded in 1913 to promote the growth of interest in the science of radio communication. Through the medium of *The R.S.G.B. Bulletin*—official monthly journal of the Society and now in its 25th year of continuous publication—members are kept informed of current technical progress. Articles of interest to both transmitting and listening members appear in each issue. The Society also sponsors local meetings and organises numerous contests and social events.

During the 1939–45 war the Society continued its activities and as a result the Governing Council was in a position to negotiate for the restoration of transmitting facilities immediately hostilities ceased. In point of fact licences were again being issued within a few months of the war ending.

Since its foundation the Society has negotiated with the G.P.O. on all matters appertaining to amateur transmitting and as a consequence of such negotiations many improved operating facilities have been secured.

It is hoped that the information contained in this booklet will go some way towards helping many readers to achieve their ambition—the possession of an Amateur Transmitting Licence. The path of Amateur Radio is full of delightful surprises not the least of which is the pleasure derived from friendships established through the medium of an amateur transmitting station.

J. C.

HOW TO APPLY FOR AN AMATEUR WIRELESS LICENCE

IN Great Britain the licensing authority is His Majesty's Postmaster-General, and all amateur wireless licences are issued on his behalf by the Engineer-in-Chief, General Post Office.

The initial step to be taken by those who wish to obtain a licence is to write to The Engineer-in-Chief, Radio Branch, W5/5, Brent Buildings, North Circular Rd., London, N.W.2., for an application form and a copy of the Summary of Conditions governing the issue of such a licence. The conditions are set out fully on page 6 and following pages.

MORSE KNOWLEDGE.

It will be seen from the Summary of Conditions that before an amateur licence can be issued an applicant must satisfy the Postmaster-General of his ability to send and receive the Morse Code at a speed of not less than 12 words per minute.

This qualification is necessary under International regulations, even when wireless telephony is used, as the person in charge of the station must be in a position to act upon instructions in the Morse Code issued by Government and commercial stations.

Slow Morse practice transmissions are given by members of the Radio Society of Great Britain, and details of the schedules appear regularly in the Society's Journal. Morse Code classes are also held in many parts of the country, usually in conjunction with local R.S.G.B. meetings. The Morse Code is set out on page 16.

TECHNICAL KNOWLEDGE.

Every holder of an amateur wireless licence must have a knowledge of the theory and practice of wireless communication and in particular of low power sending apparatus of a standard to enable him to comply with the conditions of the licence.

To assist prospective applicants, the City and Guilds of London Institute have arranged to hold regular Radio Amateurs' Examinations, and a pass certificate in this examination will normally be required as evidence of technical knowledge. The syllabus of the City and Guilds Radio Amateurs' Examination and a specimen set of questions are set out on later pages.

EXEMPTIONS.

As explained in the Summary of Conditions, the Postmaster-General is prepared to agree to certain exemptions from both the technical knowledge and Morse Code examinations.

This concession should prove of particular value to those who have served, within the last two years, in a radio trade in any of the Fighting Services. A list of Radio Service trades which carry exemption appears on pages 12–14.

In addition to the Service exemptions the Postmaster-General is prepared to accept other qualifications which are equivalent to or better than the requirements previously mentioned. Some examples of exempting academic or theoretical qualifications are given in Appendix A of the Summary of Conditions.

APPLICATION FOR A LICENCE (FORM E-IN-C 447)

The following is a copy of the application form for a licence to establish an amateur wireless station.

Note.—Under the Wireless Telegraphy Acts, 1904–1926, *the Postmaster-General's authority is necessary before any apparatus for wireless telegraphy may be installed or worked.*

1. (*a*) Name of Applicant with christian names in full (in block capitals).....

.....

Address.....

(*b*) Are you over 21 years of age? .....

(*c*) Evidence of British nationality and two recent written references as to character must be enclosed—see note (2).

(*d*) If you are under 21 years of age (see notes (1) and (2)) the following information is required.

(i) Name of parent or guardian (with christian names in full).....

.....

(ii) Relationship (if any) to applicant:

(iii) Address .....

(iv) Evidence and references as under 1 (*c*) to be furnished.

2. Technical Qualifications:

(*a*) Have you obtained a pass in the City and Guilds of London Institute's Radio Amateurs' Examination?..... If so state month and year of examination.....

(*b*) If you have not obtained a pass in the above-mentioned examination but you consider that you hold exempting qualifications (see form E-in-C. 428, appendix A) give particulars and enclose evidence.....

.....

3. (*a*) Have you passed the Post Office Morse test for Radio Amateurs? ..... If so enclose evidence.

(*b*) If you have not passed the above test but consider that you have exempting qualifications (see form E-in-C. 428, appendix A) give particulars and enclose evidence.

(*c*) If you cannot claim exemption, where do you wish to be tested in Morse? .....

4. If the applicant proposes to employ an operator to work the sending apparatus, give name and address of operator and particulars of his qualifications.

.....

5. Full address of the station at which wireless apparatus would be installed with telephone number, if any.

.....

6. (*a*) Is the sender to be crystal controlled?.....

(*b*) Particulars of frequency measuring apparatus and range of frequencies covered.

.....

(*Note.*—Even if the sender is crystal controlled a reliable frequency meter is required)

7. Maximum Power (in watts) for which authority is desired.....watts. "Power" is defined as the total D.C. power (watts) input to the anode circuit of the valve or valves energising the aerial.

8. Frequencies and types of emission for which licence is required.....

.....

9. Have you read the summary of conditions of issue of a licence to establish an amateur wireless station (Form E-in-C 428)?.....

Signature of Applicant.....

.....19.....

Counter signature of parent or guardian if the applicant is a minor:—

.....

.....19.....

Notes: (1) *If the applicant is under* 21 *years of age, any licence granted will be issued in the name of the parent or guardian who will be the person responsible for the observance of its terms. Evidence of British nationality and references should be furnished both in respect of the applicant and of the parent or guardian.*

(2) *The references should be persons of British birth and standing, not related to the applicant.*

(3) *If apparatus is used for receiving broadcast programmes for entertainment, etc., a Wireless Receiving Licence (obtainable at most Post Offices), must be held.*

SUMMARY OF CONDITIONS (FORM E-IN-C 428)

AND OTHER INFORMATION IN CONNECTION WITH THE ISSUE OF LICENCES

1. QUALIFICATIONS OF LICENSEES AND OPERATORS.

The holder of an Amateur Wireless Sending and Receiving Licence must have the following qualifications:

(*a*) *British Nationality.*—The applicant for an Amateur Licence must produce evidence of British nationality and two recent references as to character. A certificate of birth should also be furnished if possible; but this will not be insisted on if the referees testify of their own knowledge that the applicant is of British nationality. The referees should be persons of British birth and of standing, not related to the applicant. If the applicant is under 21 years of age, evidence of British nationality and references should be furnished both in respect of the applicant and of his parent or guardian.

(*b*) *Technical knowledge.*—The licensee must have a knowledge of the theory and practice of wireless communication, and in particular of low power sending apparatus of a standard to enable him to comply with the conditions of the licence. A pass certificate of the City and Guilds of London Institute in the Radio Amateurs' Examination will normally be required as evidence of this qualification, but the P.M.G. is prepared to agree to certain exemptions (see Appendix A).

(*c*) *Morse Telegraphy knowledge.*—An amateur sending station may only be operated by or under the supervision of a person who is able to send and receive in the Morse code at not less than 12 words per minute. This qualification is necessary under International regulations, even when wireless telephony only is used. The person in charge of the station must be in a position to act

upon instructions in the Morse code issued by Government and commercial stations. Details of the Morse tests conducted by the Post Office for this purpose and of exempting Morse qualifications are given in Appendix A.

(*d*) *Service exemptions.*—Evidence of proficiency in certain approved Service categories will be accepted in lieu of requirements (*b*) and (*c*). (See Appendix A.)

2. APPLICATIONS FOR LICENCES.

The applicant for authority to use wireless sending and receiving apparatus for amateur communication should complete the form of application (E-in-C 447) and return it to the Engineer-in-Chief, Radio Branch, W5/5, Brent Building, North Circular Road, London, N.W.2, together with the required evidence of British nationality, etc. (see para. 1 (a)).

3. CHARGES.

A charge is made for a licence in order to cover the Post Office expenses in connection with its issue and subsequent inspection, etc., of the station. The charges are graded according to the power authorised for sending and are shown in Appendix B to this summary of conditions. The charges cover also the use of receiving apparatus for amateur communication purposes only. If apparatus is also used for receiving broadcast programmes for entertainment, etc., a wireless Receiving Licence (obtainable at most Post Offices) must be held.

A charge of 5s. will be made when a Morse examination is necessary.

No payment should be forwarded until application is made for it.

4. LICENCE CONDITIONS.

The general conditions attaching to licences are indicated below:—

(1) *Radiotelegraph Conventions.*—The Licensee shall observe the provisions of the International Telecommunication Convention, 1932, and the Radiocommunication Regulations annexed thereto or those of any subsequent International Convention and Regulations which may replace them so far as they are applicable to amateur stations.

(2) *Frequencies, Power and Types of Emission.*—Messages shall be sent only on frequencies within the bands and by the types of emission specified in the conditions attached to the licence and the total D.C. power input to the anode circuit of the valve or valves energising the aerial shall not exceed that shown against the respective frequencies tabulated in those conditions.

The frequency bands, available to amateurs in this country, the maximum power in each band and the types of emission in each band may vary from time to time. Appendix C gives this information in Schedule form at the date of issue.

The use of "spark" sending apparatus is specifically forbidden. Unrectified alternating voltage shall not in any circumstances be employed for the H.T. supply to the sending apparatus, and the H T. supply shall be so smoothed that the value of the residual ripple voltage does not exceed 5 per cent. of the D.C. voltage.

(3) *Frequency Control and Measurement.*—When in use, the sending apparatus shall be tuned to a frequency within an authorised band, which frequency shall be so selected and maintained that no appreciable energy is radiated on any frequency outside the limits of the band with and without the modulation applied, due allowance having been made for the inaccuracy of the calibrating device. A satisfactory method of frequency stabilisation shall be employed in the sending apparatus.

Where the sending apparatus is not crystal controlled there shall be kept at the station, and used whenever necessary (and on all occasions when the

frequency used for sending is changed), a reliable frequency meter of the piezo-electric crystal type or other type approved by the Postmaster-General, for measuring the sending frequency to an accuracy of not less than ± 0.1 per cent. Where the sending apparatus is crystal controlled the use of a separate crystal frequency meter as a calibrating device will not be compulsory, but a reasonably reliable frequency meter must be provided for checking that the sender is operating normally.

(4) *Operator.*—The apparatus must in all cases be operated by or under the direct supervision of the approved operator named in the Licence.

(5) *Sending Periods.*—The station may be operated at any time, provided that no period of sending shall exceed 10 consecutive minutes. Sending shall not commence without listening on the frequency which is to be used in order to ascertain, as far as possible, whether interference is likely to be caused thereby with any other station which may be working.

(6) *Log.*—A running record shall be kept in a book of approved type (not loose-leaf) of all sending periods showing the date and time of each period and the frequency and type of emission employed (see Condition (2)). No gaps shall be left between entries in the log. The record of sending periods shall in all cases be initialled at the time of recording by the authorised operator named in Condition 4.

(7) *Receiver.*—The station shall always be equipped for the reception of signals sent on frequencies in current use at the station at any time by means of continuous wave telegraphy, telephony and any other type of emission authorised in Condition (2).

(8) (i) *Messages.*—Messages may be exchanged only with amateur stations (as defined by the International Radiocommunication Regulations) in this country or abroad. Except as is in this condition expressly provided messages exchanged by means of the station shall relate solely to the Licensee's private (but not business) affairs or those of the person with whom he is communicating and shall be in plain language. Special gramophone records for reproducing modulations of definite tones may be used for test purposes. Gramophone records of the type intended for entertainment purposes may be used on the condition that only one record is used during the course of any day, the same record being repeated as desired; any record so used shall not have a playing time exceeding 10 minutes when played at the correct speed.

(ii) The use of the station for (*a*) advertising or business purposes, (*b*) the sending or reception of news or the messages of persons other than the Licensee or the person with whom he is communicating, (*c*) the sending or reception of broadcast programmes, or (*d*) the sending or reception of social or political propaganda or the messages of any social or political organisation is expressly prohibited.

(iii) The Licensee shall not receive any payment (either direct or indirect) for the use of the station or allow the station to be controlled by or used for the purpose of any social or political organisation.

(9) *Secrecy of Correspondence.*—If any message which the Licensee is not entitled to receive is, nevertheless, received the Licensee shall not make known or allow to be made known its contents, its origin or destination, its existence or the fact of its receipt to any person (other than a duly authorised officer of His Majesty's Government or a competent legal tribunal) and shall not reproduce in writing, copy or make any use of such message or allow the same to be reproduced in writing, copied or made use of.

(10) *Call Signal.*—A call sign consisting of one figure and either two or three letters will be allotted to the station. The prefix of nationality, *i.e.* " G " must invariably be included in the call signal which may be sent either by

Morse telegraphy at a speed not greater than 20 words per minute or telephonically if the station is authorised to use telephony.

The call signal must be sent for identification purposes at the beginning and at the end of each period of sending.

In calling another station the call signal of that station must be sent and may be repeated throughout a period of not more than one minute, after which the signal " de " must be sent once and the call signal of the calling station three times. This procedure may be repeated but the time taken in calling must not exceed three minutes without an interval during which the operator must listen in the band of frequencies in which the call has been made.

In answering a call the call signal of the calling station must be sent three times, the signal " de " once and the call signal of the answering station three times.

When telephony is used the letters of the call signals may be confirmed by the pronunciation of well-known words of which the initial letters are the same as those in the call signals, but words used in this manner must not be of a facetious character nor be capable of undesirable misinterpretation.

(11) *Inspection.*—The station shall be subject to the approval of the Postmaster-General and together with the record of transmissions and this licence shall be open to inspection at all reasonable times by duly authorised officers of the Post Office who will produce their cards of identity on request.

(12) *Non-interference.*—The station shall be used in such a manner as not to cause interference with other stations outside the authorised bands. Sending shall at once be discontinued or postponed at the request of any Government or commercial station.

When telegraphy is being used the arrangement employed for " keying " the sender must be such as to reduce to a minimum the risk of interference due to key clicks being produced in neighbouring apparatus Whenever, for any reason, the carrier wave of the sender is being modulated by any system of modulation, care must be taken to avoid over-modulation. Particular care must be taken to avoid unwanted frequency modulation of the carrier frequency. At all times every precaution shall be taken to prevent the radiation of energy at frequencies other than those which are necessary for the type of emission in use.

(13) *Aerial.*—If the station is situated within half a mile of the boundary of any aerodrome, the height of the aerial above the ground level shall not exceed 50 feet. An aerial which crosses above or is liable to fall upon or to be blown on to any overhead power wire (including electric lighting and tramway wires) or power apparatus must be guarded to the reasonable satisfaction of the owner of the power wire or power apparatus concerned.

(14) *Control in Emergency.*—(*a*) If and whenever in the opinion of the Postmaster-General an emergency shall have arisen in which it is expedient for the public service that His Majesty's Government shall have control over the sending and receipt of messages by means of the station, it shall be lawful for the Postmaster-General to direct and cause the station to be taken possession of in the name and on behalf of His Majesty and to prevent the Licensee from using it and for these purposes or either of them to cause any part of or all the apparatus forming the station to be removed to such place as he may think fit and any person authorised by the Postmaster-General may from time to time enter the premises at which the station is maintained for any such purposes as aforesaid.

(*b*) The Licensee shall not be entitled to any compensation in respect of the exercise by the Postmaster-General of the power conferred by th

condition which shall remain in force notwithstanding the withdrawal or modification of the Licence.

Notes.—(i) Use of Supply Mains.—If power for the working of the wireless station is taken from a public electricity supply no direct connection shall be made between the supply mains and the aerial.

(ii) Broadcast Reception.—The amateur licence does not authorise the reception of broadcast programmes for entertainment purposes. For the reception of broadcast programmes for entertainment a separate broadcast receiving licence is necessary.

(iii) Copyright.—A licence does not authorise the Licensee to do any act which is an infringement of any copyright which may exist in the matter transmitted.

(iv) Return of Licence.—When a licence is cancelled or superseded by a new licence it must be returned to The Engineer-in-Chief, Radio Branch, W5/5, General Post Office, London, E.C.1, together with any letters authorising additions or alterations to the terms of the licence.

(v) Payment of Renewal Charge.—The renewal charge shall be forwarded on the due date to the Comptroller and Accountant General, General Post Office, London, E.C.1, quoting the reference given on the licence. It is unnecessary to forward the licence when the renewal fee is remitted.

APPENDIX A

Qualifications Exempting Applicants from Technical and Morse Examinations

Applicants for amateur wireless transmitting licences are required to satisfy the Postmaster-General regarding (*a*) their technical knowledge of the theory and practice of wireless communication, and (*b*) their ability to send and receive in the Morse code at a speed of at least 12 words per minute.

Technical Qualifications

As regards technical qualifications, arrangements have been made with the City and Guilds of London Institute to hold regular examinations. A pass in the City and Guilds of London Institute, Radio Amateurs' Examination will be accepted as sufficient technical qualification. The P.M.G. is prepared however to agree to exemption from this examination in the case of applicants possessing equivalent or better technical qualifications and provision has been made in the application forms for applicants to claim such exemption. The onus is placed on the applicant to produce satisfactory evidence of such qualifications and the P.M.G.'s decision in the matter is final.

In order to explain the basis on which such exemptions are agreed, the technical qualifications required of an amateur may be set out as follows :—

(*i*) Theoretical knowledge of radio up to approximately the standard of the City and Guilds of London Institute Radio Communication Grade I or Radio I examination, including some knowledge of the propagation of high frequency waves.

(*ii*) Some knowledge of the technique of lining-up and operating radio transmitters with special reference to the maintenance of correct frequency and avoidance of interference.

(*iii*) Some knowledge of operating procedure.

Questions on all the above subjects are set in the City and Guilds of London Institute Radio Amateurs' Exam., but in general any academic qualifications which might be offered in lieu would cover only (i). Hence, it is regarded necessary for an applicant who holds suitable academic qualifications,

no matter how good, to have had some practical experience or to have had the opportunity to obtain sufficient knowledge of (ii) and (iii) above.

Some examples of exempting academic or theoretical qualifications equivalent to (i) above or better are given below :—

The P.M.G's 1st and 2nd class certificates in Radiotelegraphy.

Aircraft Radio Operator's Radiotelegraphy certificate and licence.

Any City and Guilds of London Institute certificates in Radio Communication.

Passing-out examinations from certain Service courses.

B.Sc. or B.Sc. (Eng.) degree including radio communications subjects.

Diploma in Radio Engineering for a 3 year Day Course of any of the Universities of Great Britain or their constituent Colleges.

Graduateship or higher grade of membership of certain technical Institutions.

Ordinary National certificate with endorsement in Radio or Light Current Engineering.

Examples of exempting qualifications as regards (ii) and (iii) are :—

(*a*) Practical experience of the operation of radio transmitters in one of the Services or in the course of the applicant's employment.

(*b*) Control of or, in some cases, close association with, the operation of radio transmitters in one of the Services or in the course of the applicant's employment.

(*c*) Experience and knowledge gained by assisting a licensed amateur.

(*d*) The P.M.G.'s special certificate of proficiency in Radiotelegraphy.

The P.M.G.'s 1st and 2nd class and special certificates in Radiotelegraphy and the Aircraft Radio Operator's Radiotelegraphy certificate and licence include a practical test and will be accepted as complete exemption.

Applicants claiming exemption on these or similar grounds must provide supporting evidence. Thus, for example, a reference from a radio amateur who has held a transmitting licence for 3 years or more would be accepted in the case of the third category (*c*) above.

B.—Morse Qualifications

Applicants will normally be expected to pass the Post Office Morse test at 12 words per minute. Arrangements can be made for the Morse test to be taken by applicants for Amateur transmitting licences at a Head Post Office in any large town. The test will be in accordance with the table below.

Morse Test—12 words per minute.

Type	Length of Test	Duration of Test	Sending		Receiving
			Max. No. of Erasures	Max. No. of uncorrected errors	Max. No. of errors
Plain language	36 words	3 mins.	4	0	4
Figures	10 groups of 5 figures	1½ mins.	2	0	2

In the receiving test each letter incorrectly received counts as one err

The applicant should state, in his application form, the Head Post Office at which he prefers that the test should be arranged. Here again, however, exemption will be granted to applicants possessing equivalent or better Morse qualifications.

Examples of such qualifications are :—

P.M.G.'s 1st and 2nd class certificates in Radiotelegraphy.

P.M.G.'s special certificate in Radiotelegraphy. Aircraft Radio Operator's Radiotelegraphy certificate and licence.

Passing-out certificates from certain Service courses.

Certificates furnished by employers or Services by whom the applicant has been employed provided that these are certified by a holder of the P.M.G.'s 1st class certificate in Radiotelegraphy.

C.—Service Exemptions

As a result of discussions with the Radio Society of Great Britain and the three fighting Services, a list has been prepared, and is given below, of officers and other ranks whose qualifications, (*a*) technical, and (*b*) Morse, will be accepted as giving exemption. This list is subject to review from time to time as trade classifications in the Services are changed. The applicant must submit evidence to prove his claim to have served in one of these categories either by forwarding his Service History Sheet, Service Book, Statement of Service and Certificate of Discharge or similar document (if other ranks) or a statement from the Service concerned (if an officer). Service documents should be sent by Registered Post.

N.B.—Service qualifications submitted for the purpose of claiming exemption will be regarded as valid only if the applicant has been engaged in the Services in the particular trade (or trades) within two years of the date of his (or her) application for a licence.

LIST OF OFFICERS AND OTHER RANKS

Officers and Other Ranks of the fighting Services with qualifications exempting them from technical and/or Morse examinations.

(*This list was completely revised by the P.M.G. in May*, 1948, *and was correct as at July*, 1949.)

ROYAL NAVY

	Exempt from:
Officer, R.N. (C)	Technical and Morse
,, R.N.V.R. (C)	,, ,, ,,
,, R.N.V.R. (CE)	Morse only
,, R.N.V.R. (W)R.	Technical and Morse
,, R.N.V.R. ex R.N.V. (W)R. (with call sign before 1939–45 war)	,, ,, ,,
Observer	Morse only
Sub-Lieutenant (L) R.N. and above	Technical only
Officer promoted from Telegraphist Branch ..	Technical and Morse
,, ,, ,, Signalman ,, ...	Morse only
,, ,, ,, Aircrewman or T.A.G. ..	Technical and Morse

Commissioned and Warrant Electrical Officers (R)	Technical only
Warrant Officer R.N.V. (W)R.	Technical and Morse
Telegraphist	Morse only
Leading Telegraphist and above	Technical and Morse
Naval Airman T.A.G. 3	Morse only
,, ,, T.A.G. 1 & 2	Technical and Morse
Aircrewman 3rd Class	Morse only
,, 1st & 2nd Class	Technical and Morse
,, (ex L.R.E.M.)	Technical only
Petty Officer Observer (F.A.A.)	Morse only
Leading Radio Mechanic and above (promoted from Telegraphist Branch)	Technical and Morse
Leading Radio Mechanic and above	Technical only
,, ,, Electrician's Mate and above	,, ,,
Leading Radio Electrician's Mate and above (ex Telegraphist Branch)	Technical and Morse
Radio Electrical Artificers 4th Class and above	Technical only
,, ,, ,, ,, ,, ,, ,, (ex Telegraphist Branch)	Technical and Morse
Radar Officer	Technical only
Telegraphist W/T.2 and W/T.3	Technical and Morse

ARMY

R.A.

Officers R.A. (I.F.C.)	Technical only
,, R.A. Instructors in Radar (Field)	,, ,,
Technical Instructors in Fire Control, if passed: Special War Wireless Course (R.A.) or Post-War Long and/or Short Gunnery Staff Course Radar and Searchlights)	,, ,,

R. Signals

Signal Officers and N.C.O.s if passed one of the following: Advanced Wireless Course (Wartime Course only); Officers' Long or Short Telecomms. Course; University B.Sc. (Engineering); Military College of Science B.Sc. (Engineering) N.C.O.'s Wireless Equipment Course	,, ,,
R. Signals A.F.V. Course, Bovington (Wartime Course)	Technical and Morse
Technical Officers (Maintenance)	Technical only
,, ,, (Telecomms.)	,, ,,
Foremen of Signals	Technical and Morse
Radio Mechanic (Class I & II only)	Technical only
Telegraph Mechanic or Line Mechanic (Class I only)	,, ,,
Operator, Wireless and Line (Class I & II only)	Morse only
Operator (Special) (Class I & II only)	,, ,,

R.E.M.E.

Electrician Signals (All Classes)	Technical only
R.E.M.E. Telecomms. Officers (ungraded)	,, ,,

Armament Artificers, Wireless and Radio	Technical only
Telecomm. Mechanic, all types (but Class I tradesmen only)	,, ,,
Leading Artisan S/Sjt. Wireless and Radio	,, ,,

ROYAL AIR FORCE

Signals Officer	Technical and Morse
,, ,, (Radar)	Technical only
,, ,, (Radar) (Ground)	,, ,,
,, ,, (Radar) (Air)	,, ,,
Officer Signaller	Technical and Morse
Officer Signal Leader	,, ,, ,,
Officer Radar Leader	Technical only
Officer Gunner (S.)	Technical and Morse
Officer Wireless Operator (Air)	,, ,, ,,
Officer Navigator Wireless	,, ,, ,,
Officer Navigator Bomber Wireless	,, ,, ,,
Officer Navigator Radar	Technical only
High Speed Telegraphist	Technical and Morse
Telegraphist	,, ,, ,,
Wireless Telegraphy Operator	,, ,, ,,
,, Operator or Wireless Op./Tele. Op.	,, ,, ,,
,, ,, (Air)	,, ,, ,,
,, ,, Mechanic	,, ,, ,,
,, ,, Mechanic (Air)	,, ,, ,,
,, ,, D/F	,, ,, ,,
Navigator Wireless	,, ,, ,,
Navigator Bomber Wireless	,, ,, ,,
Signaller	,, ,, ,,
Wireless Mechanic	Technical only
Wireless and Electrical Mechanic	Technical and Morse
Radar Fitter (A)	Technical only
Air Radio Fitter	,, ,,
Radar Fitter (G)	,, ,,
Ground Radio Fitter	,, ,,
Air Radar Mechanic	,, ,,
Ground Radar Mechanic	,, ,,
Wireless Telegraphy (Slip Reader) Operator	Technical and Morse
Wireless Fitter	Technical only
Wireless Fitter (if remustered from W.E.M. or W.O.M.)	Technical and Morse
Air Wireless Mechanic	Technical only
Ground Wireless Mechanic	,, ,,
Radio Mechanic (Air)	,, ,,
,, ,, (Ground)	,, ,,

ROYAL MARINES

R.M. Signals Officer	Technical and Morse
Foreman of Signals	,, ,, ,,
N.C.O. (S1 and S2)	,, ,, ,,
Marines (S3) (Qualified in Naval Signalling)	Morse only
Radio Mechanic	Technical only

APPENDIX B

TABLE OF CHARGES

Power	Initial Charge exclusive of Annual Charge	Transfer Charge from 10 watts to higher power	Annual Charge
10 watts	10s.	—	£1 0 0
25 watts	£1 0 0	10s.	£1 10 0
Over 25 watts	£1 0 0	10s.	£2 0 0

Notes.—(1) *The initial charges and transfer charges are shown separately from the annual charges, which are payable in addition at the time of granting of a licence or of transfer to higher power. No charge is made for transfer from 25 watts to higher power.*

(2) *When a licensee is authorised to transfer to a higher power, a rebate on the annual charge for the current licence proportionate to the number of months still to run will be allowed.*

CURRENT AMATEUR BANDS

The following table shows the frequency bands which are now available to U.K. amateurs, together with the types of emission permitted.

Max. Power in Watts	Frequencies	† Types of Emission	Max. Power in Watts	Frequencies	† Types of Emission
10	1,715–2,000 kc/s.	A1, A2 or A3 (A.M. only)	25	144–146 Mc/s.*	A1, A2 or A3 (A.M. only)
150	3,500–3,635 kc/s. 3,685–3,800 kc/s. 7,000–7,300 kc/s. 14,000–14,400 kc/s.		25	420–460 Mc/s.‡ 1,215–1,300 Mc/s.‡	A1, A2 or A3 (A.M. or F.M.)
150	28–30 Mc/s.	A1, A2 or A3 (A.M. or F.M.)	25	2,300–2,450 Mc/s. 5,650–5,850 Mc/s. 10,000–10,500 Mc/s.	A1, A2 or A3 (A.M. or F.M.)

* Subject to non-interference with Government Services working in this band.

‡ Subject to non-interference with other Services working in these bands.

† A1 Continuous Wave (Telegraphy). A.M. Amplitude Modulated.
A2 Modulated Continuous Wave. F.M. Frequency Modulated.
A3 Radiotelephony.

Note.—Power in excess of 25 watts and the use of M.C.W. (except on frequencies above 420 Mc/s.) or radio telephony and frequency modulation are not normally granted on the first issue of a licence. The licensee can apply for the full power and types of emission shown above at the end of the first year of his licence.

THE MORSE CODE

LETTERS

de dah		A
dah de de de		B
dah de dah de		C
dah de de		D
de		E
de de dah de		F
dah dah de		G
de de de de		H
de de		I
de dah dah dah		J
dah de dah		K
de dah de de		L
dah dah		M
dah de		N
dah dah dah		O
de dah dah de		P
dah dah de dah		Q
de dah de		R
de de de		S
dah		T
de de dah		U
de de de dah		V
de dah dah		W
dah de de dah		X
dah de dah dah		Y
dah dah de de		Z

ACCENTED LETTERS

de dah de dah		Ä
de dah dah de dah		Å
dah dah dah dah		CH
de de dah de de		É
dah dah de dah dah		Ñ
dah dah dah de		Ö
de de dah dah		Ü

(Accented letters do not form part of the G.P.O. Morse Test for Amateurs.)

AN INVITATION

★ THE R.S.G.B. INVITES THE SUPPORT OF ALL WHO ARE INTERESTED IN AMATEUR RADIO.

WRITE TODAY FOR DETAILS OF MEMBERSHIP!

NUMERALS

de dah dah dah dah		1
de de dah dah dah		2
de de de dah dah		3
de de de de dah		4
de de de de de		5
dah de de de de		6
dah dah de de de		7
dah dah dah de de		8
dah dah dah dah de		9
dah dah dah dah dah		0

(*The numeral* 0 *is sometimes shortened to one dash.*)

PUNCTUATION SIGNALS

de dah dah dah dah de		Apostrophe
dah de dah dah de dah		Brackets
dah dah de de dah dah		Comma
dah de de dah de		Fractional Bar
de dah de dah de dah		Full Stop
dah de de de de dah		Hyphen
de dah de de dah de		Inverted Commas
de de dah dah de de		Note of Interrogation
de dah de de dah		Separation
de de dah dah de dah		Underline

PROCEDURE SIGNALS

de dah de		Acknowledgement of Receipt
dah de de de dah		Break Sign
de dah de dah de		End of Message
de de de dah de dah		End of Work
de de de de de de de de		Error
dah de dah		Invitation to Transmit
dah de dah de dah		Preliminary Call
de de de dah de		Understood
de dah de de de		Wait

RADIO AMATEURS' EXAMINATION

PRIOR to the war, when the only recognised justification for the issue of a licence was the carrying out of experiments, it was necessary for an applicant to furnish the G.P.O. with details of the experiments he proposed to conduct. This was by no means a simple matter, and in some cases an applicant felt it necessary to " invent " excuses whilst in others, the services of a third party were solicited to invent them for him !

All that has been changed under the conditions of the new Amateur licence, for it is now fully realised that even without experimental activity, the amateur acquires skill and training of great value to the community. Therefore he is now only called upon to produce evidence of his ability to satisfy the technical requirements of his licence, and thus to respect the rights of others.

This evidence may take the form of a radio Service trade qualification, a P.M.G. Certificate, or a pass standard in certain examinations. There will, however, be many who possess no recognised technical qualification, and it is for their benefit that special Radio Amateurs' Examinations, conducted by the City and Guilds of London Institute, are being arranged.

The R.S.G.B. has been closely associated with the preparatory work necessary for the introduction of these special examinations into the extensive syllabus of the Institute and it has been represented on the Advisory Committee (appointed by the Institute) by Mr. W. A. Scarr, M.A., G2WS (Director of Studies, British Council), and Mr. John Clarricoats, G6CL (General Secretary of the Society and a Member of the Southgate Borough Council Education Committee).

This examination may be taken at a number of centres throughout the country, and intending candidates should apply to their nearest technical college for accommodation. The Institute's fee for the examination is 10s. and, in addition, the examination centre may charge a small accommodation fee. An intending candidate who finds difficulty in contacting a suitable examination centre should communicate with the Superintendent of the City and Guilds Institute.

SYLLABUS.

A comprehensive Syllabus has been prepared by the Advisory Committee as an indication of the ground to be covered by the examination paper. The full Syllabus is reproduced below.

1. ELECTRICITY AND MAGNETISM.

The elementary theory of electricity; conductors and insulators; units including power; Ohm's law; resistances in series and parallel.

Permanent magnets and electro-magnets and their uses in radio.

Self and mutual inductance; types of inductances used in receiving and transmitting circuits. Capacitance. Condensers in series and parallel; construction of condensers; electrolytic condensers.

2. RADIO PRINCIPLES (ELEMENTARY TREATMENT ONLY).

Alternating currents; series and parallel A.C. circuits incorporating inductance, capacitance and resistance; impedance; resonance; acceptor and rejector circuits; coupled circuits.

Radio waves ; wavelength, frequency, velocity; nature and propagation of radio waves; fading and its connection with frequency, length of path.

3. THERMIONIC VALVES AND CIRCUITS.

Construction of valves; thermionic emission; principles and characteristics of diode and triode valves. Multi-electrode valves.

Use of valves; amplification, oscillation, frequency-changing, signal detection; the power stage; power rectification. Power packs for H.T. supply; smoothing.

4. RADIO RECEIVERS.

The essentials of a receiver. Typical receivers; principles and operation of T.R.F., superheterodyne and super-regenerative receivers. C.W. reception. Interference caused by receivers.

5. LOW-POWER TRANSMITTERS.

Oscillator circuits; frequency stability; use of quartz crystal to control oscillators; frequency multipliers; power amplifiers. Methods of modulation and keying.

Avoidance of harmonic radiation and interference by shock excitation; use of key-click filters and other means of preventing spurious emissions. Dangers of overmodulation. Use of wave-traps and other devices for reducing interference with nearby broadcast receivers.

6. AERIALS.

Simple types of receiving and transmitting aerials. Transmission lines. Simple direction aerials. Aerial couplings to lines and transmitters.

7. MEASUREMENTS.

Measurements of frequency and simple frequency meters (including crystal type). Artificial aerials and their use for lining-up transmitters. Measurement of anode current and voltage. Power input to final stage.

8. LICENCE CONDITIONS.

Conditions laid down by H.M. Postmaster-General for amateur transmitting licences covering power and frequencies, frequency control and measurement, sending periods, avoidance of interference to other stations, log of sending periods, use of call-signs of calling and called stations, control in emergency, etc. (Particular importance is attached to this section of the syllabus.)

DURATION OF EXAMINATION.

Although a period of three hours will be assigned for each examination, it is expected that the majority of candidates will find no difficulty in completing their paper in about two hours.

LICENCE CONDITIONS.

It will be seen from the syllabus that particular importance is attached to Section 8 (Licence Conditions). Those who propose entering for the examination are strongly recommended to study carefully the conditions of the licence published on page 6 and following pages.

TEXT BOOKS.

The text books listed below are recommended by the Advisory Committee to the attention of candidates who will find therein all that is covered by the syllabus. It should, however, be appreciated that the scope of all these books is considerably wider than the standard needed by candidates to secure a pass.

The Amateur Radio Handbook (R.S.G.B.) .. .. .. (*This book is at present out of print*)	3s. 6d.
The Radio Handbook Supplement (R.S.G.B.)	5s. 6d.
Notes for Wireless Operators (H.M.S.O.)	3s. 6d.

Admiralty Handbook of Wireless Telegraphy (H.M.S.O.)

Part I	4s. 6d.
Part II	6s. 0d.

Modern Radio Communication (Pitman) By J. H. Reyner

Part I	7s. 6d.
Part II	7s. 6d.

Foundations of Wireless (Iliffe) By A. L. M. Sowerby .. 7s. 6d.

The above prices do not include postage.

CORRESPONDENCE.

All communications relating to Radio Amateurs' Examinations should be addressed to :—

The Superintendent,
City and Guilds of London Institute,
Department of Technology,
31 Brechin Place, South Kensington, London, S.W.7.

SPECIMEN EXAMINATION QUESTIONS

The following questions were set at a recent Radio Amateurs' Examination. Candidates were asked to attempt as many questions as possible. The maximum possible marks for each question is shown in brackets.

1. *How is a low-power transmitter likely to interfere with broadcast reception? What steps would you take to prevent such interference.* (15 *marks.*)

2. *What steps should be taken by the holder of an amateur transmitting licence to ensure full compliance with the requirement that a full record should be kept of all transmissions?* (15 *marks.*)

3. *Give a brief description of a suitable receiver for the* 58·5 *to* 60 *Mc/s. frequency band, and explain how it works.* (15 *marks.*)

4. *How is the input power to the last stage of a transmitter measured? What is understood by the "efficiency of operation" of this stage and how is this connected with the permissible anode dissipation?* (15 *marks.*)

5. *Describe briefly how the ionosphere influences the propagation of radio waves, and how propagation differs between the* 1·7 *to* 2·0 *Mc/s. band and the* 58·5 *to* 60 *Mc/s. band.* (10 *marks.*)

6. *What advantage is gained from using a piezo-electric crystal oscillator in a radio transmitter? Give a diagram of a crystal-controlled stage for a short-wave transmitter.* (10 *marks.*)

7. *Describe a transmitting aerial suitable for one of the amateur bands, indicating the main features of the design and any directional properties. Illustrate your answer with a diagram.* (10 *marks.*)

8. *What is the effect of connecting two capacitors* (a) *in series and* (b) *in parallel?*

What is the total effective capacitance when four capacitors, each of 100 $\mu\mu F$ *are connected in a series-parallel arrangement consisting of two parallel paths, each of which contains two capacitors in series?* (10 *marks.*)

THE LICENCE (Form E-in-C 435).

The following is a copy of the Conditions printed in an actual licence.

1. *Radiotelegraph Conventions.*—The Licensee shall observe the provisions of the International Telecommunication Convention, 1932, and the Radiocommunication Regulations annexed thereto or those of any subsequent International Convention and Regulations which may replace them so far as they are applicable to amateur stations.

2. *Power and Frequencies.*—Messages shall be sent only on frequencies within the bands and by the types of emission specified hereunder and the total D.C. power input to the anode circuit of the valve or valves energising the aerial shall not exceed that shown against the respective frequencies.

Power (in watts).	Frequencies (in kilocycles per second).	Approximate equivalent wavelengths (in metres).	Types of emission.

The use of "spark" sending apparatus is specifically forbidden. Unrectified alternating voltage shall not in any circumstances be employed for the H.T. supply to the sending apparatus, and the H.T. supply shall be so smoothed that the value of the residual ripple voltage does not exceed 5 per cent. of the D.C. voltage.

3. *Frequency Control and Measurement.*—When in use, the sending apparatus shall be tuned to a frequency within the authorised band, which frequency shall be so selected and maintained that no appreciable energy is radiated on any frequency outside the limits of the band with and without the modulation applied, due allowance having been made for the inaccuracy of the calibrating device. A satisfactory method of frequency stabilisation shall be employed in the sending apparatus.

Where the sending apparatus is not crystal controlled there shall be kept at the station, and used whenever necessary (and on all occasions when the frequency used for sending is changed), a reliable frequency meter of the piezo-electric crystal type or other type approved by the Postmaster General, for measuring the sending frequency to an accuracy of not less than $\pm 0{\cdot}1$ per cent. Where the sending apparatus is crystal controlled the use of a separate crystal frequency meter as a calibrating device will not be compulsory, but a reasonably reliable frequency meter must be provided for checking that the sender is operating normally.

4. *Operator.*—The apparatus must in all cases be operated by or under the direct supervision of.....

5. *Sending Periods.*—The station may be operated at any time, provided that no period of sending shall exceed 10 consecutive minutes. Sending shall not commence without listening on the frequency which is to be used in order to ascertain, as far as possible, whether interference is likely to be caused thereby with any other station which may be working.

6. *Log.*—A running record shall be kept in a book of approved type (not loose-leaf) of all sending periods showing the date and time of each period and the frequency and type of emission employed (*see* Condition 2). No gaps shall be left between entries in the log. The record of sending periods shall in all cases be initialled at the time of recording by the authorised operator named in Condition 4.

7. *Receiver.*—The station shall always be equipped for the reception of signals sent on frequencies in current use at the station at any time by means of continuous wave telegraphy, telephony and any other type of emission authorised in Condition 2 (page 21.)

8. (i) *Messages.*—Messages may be exchanged only with amateur stations (as defined by the International Radiocommunication Regulations) in this country or abroad. Except as is in this condition expressly provided messages exchanged by means of the station shall relate solely to the Licensee's private (but not business) affairs or those of the person with whom he is communicating and shall be in plain language. Special gramophone records for reproducing modulations of definite tones may be used for test purposes. Gramophone records, of the type intended for entertainment purposes, may be used on the condition that only one such record is used during the course of any day, the same record being repeated as desired ; any record so used shall not have a playing time exceeding 10 minutes when played at the correct speed.

(ii) The use of the station for (*a*) advertising or business purposes, (*b*) the sending or reception of news or the messages of persons other than the Licensee or the person with whom he is communicating, (*c*) the sending or reception of broadcast programmes, or (*d*) the sending or reception of social or political propaganda or the messages of any social or political organisation is expressly prohibited.

(iii) The Licensee shall not receive any payment (either direct or indirect) for the use of the station or allow the station to be controlled by or used for the purpose of any social or political organisation.

9. *Secrecy of Correspondence.*—If any message which the Licensee is not entitled to receive is, nevertheless, received the Licensee shall not make known or allow to be made known its contents, its origin or destination, its existence or the fact of its receipt to any person (other than a duly authorised officer of His Majesty's Government or a competent legal tribunal) and shall not reproduce in writing, copy or make any use of such message or allow the same to be reproduced in writing, copied or made use of.

10. *Call Signal.*—The call signal G.....(g.....) has been allotted to the station. The prefix of nationality, *i.e.* " G," must invariably be included in the call signal which may be sent either by Morse telegraphy at a speed not greater than 20 words per minute or telephonically if the station is authorised to use telephony.

The call signal must be sent for identification purposes at the beginning and at the end of each period of sending.

In calling another station the call signal of that station must be sent and may be repeated throughout a period of not more than one minute, after which the signal " de " must be sent once and the call signal of the calling station three times. This procedure may be repeated but the time taken in calling must not exceed three minutes without an interval during which the operator must listen in the band of frequencies in which the call has been made.

In answering a call the call signal of the calling station must be sent three times, the signal " de " once and the call signal of the answering station three times.

When telephony is used the letters of the call signals may be confirmed by the pronunciation of well-known words of which the initial letters are the same as those in the call signals, but words used in this manner must not be of a facetious character nor be capable of undesirable misinterpretation.

11. *Inspection.*—The station shall be subject to the approval of the Postmaster General and together with the record of transmissions and this

licence shall be open to inspection at all reasonable times by duly authorised officers of the Post Office who will produce their cards of identity on request.

12. *Non-interference.*—The station shall be used in such a manner as not to cause interference with other stations outside the authorised bands. Sending shall at once be discontinued or postponed at the request of any Government or commercial station.

When telegraphy is being used the arrangement employed for "keying" the sender must be such as to reduce to a minimum the risk of interference due to key clicks being produced in neighbouring apparatus. Whenever, for any reason, the carrier wave of the sender is being modulated by any system of modulation, care must be taken to avoid over-modulation. Particular care must be taken to avoid unwanted frequency modulation of the carrier frequency. At all times every precaution shall be taken to prevent the radiation of energy at frequencies other than those which are necessary for the system in use.

13. *Aerial.*—If the station is situated within half a mile of the boundary of any aerodrome, the height of the aerial above the ground level shall not exceed 50 feet. An aerial which crosses above or is liable to fall upon or to be blown on to any overhead power wire (including electric lighting and tramway wires) or power apparatus must be guarded to the reasonable satisfaction of the owner of the power wire or power apparatus concerned.

14. *Control in Emergency.*— (*a*) If and whenever in the opinion of the Postmaster General an emergency shall have arisen in which it is expedient for the public service that His Majesty's Government shall have control over the sending and receipt of messages by means of the station it shall be lawful for the Postmaster General to direct and cause the station to be taken possession of in the name and on behalf of His Majesty and to prevent the Licensee from using it and for these purposes or either of them to cause any part of or all the apparatus forming the station to be removed to such place as he may think fit and any person authorised by the Postmaster General may from time to time enter the premises at which the station is maintained for any such purposes as aforesaid.

(*b*) The Licensee shall not be entitled to any compensation in respect of the exercise by the Postmaster General of the power conferred by this condition which shall remain in force notwithstanding the withdrawal or modification of the Licence.

NOTES.—(i) Use of Supply Mains.—If power for the working of the wireless station is taken from a public electricity supply no direct connection shall be made between the supply mains and the aerial.

(ii) Broadcast Reception.—This licence does not authorise the reception of broadcast programmes for entertainment purposes. For the reception of broadcast programmes for entertainment a separate broadcast receiving licence is necessary.

(iii) Copyright.—This licence does not authorise the Licensee to do any act which is an infringement of any copyright which may exist in the matter transmitted.

(iv) Return of Licence.—When this licence is cancelled or superseded by a new licence it must be returned to the address given at the foot of page 1 *(of the licence), together with any letters authorising additions or alterations to the terms of the licence.*

*(v) Payment of Future Royalty.—The Royalty should be forwarded on the due date to the Comptroller and Accountant General, General Post Office, London, E.C.*1, *quoting the reference given (on the licence). It is unnecessary to forward the licence when the renewal fee is remitted.*

INTERNATIONAL AMATEUR RADIO PREFIXES

AC4 .. TIBET
AG2 .. TRIESTE (U.S. assigned)
AP .. PAKISTAN
AR .. LEBANON
C .. CHINA
CE .. CHILE
CM-CO CUBA
CN8 .. MOROCCO (French)
CP .. BOLIVIA
CR4 .. CAPE VERDE IS.
CR5 .. PORTUGUESE GUINEA
CR6 .. ANGOLA
CR7 .. MOZAMBIQUE
CR8 .. PORTUGUESE INDIA
CR9 .. MACAO
CR10 .. TIMOR I.
CT1 .. PORTUGAL
CT2 .. AZORES IS.
CT3 .. MADEIRA IS.
CX .. URUGUAY
DL .. GERMANY
DU .. PHILIPPINE IS.
EA .. SPAIN
EA6 .. BALEARIC IS.
EA8 .. CANARY IS.
EA9 .. MOROCCO (Spanish)
EI .. EIRE
EK .. TANGIER ZONE
EL .. LIBERIA
EP, EQ PERSIA
F .. FRANCE
FA .. ALGERIA
FB8 .. MADAGASCAR
FD8 .. TOGOLAND (French)
FE8 .. CAMEROONS (French)
FF8 .. FR. WEST AFRICA
FG8 .. GUADELOUPE
FI8 .. FR. INDO-CHINA
FK8 .. NEW CALEDONIA
FL8 .. FRENCH SOMALILAND
FM8 .. MARTINIQUE
FN .. FRENCH INDIA
FO8 .. TAHITI
FP8 .. MIQUELON & ST. PIERRE IS.
FQ8 .. FR. EQUATORIAL AFRICA
FR8 .. REUNION
FT4 .. TUNIS
FU8, YJ NEW HEBRIDES
FY8 .. FRENCH GUIANA
G .. ENGLAND
GC .. CHANNEL ISLANDS
GD .. ISLE OF MAN
GI .. NORTHERN IRELAND
GM .. SCOTLAND
GW .. WALES
HA .. HUNGARY
HB .. SWITZERLAND
HC .. ECUADOR
HH .. HAITI
HI .. DOMINICA
HK .. COLOMBIA
HL .. KOREA

HP .. PANAMA
HR .. HONDURAS
HS .. SIAM
HV .. VATICAN CITY
HZ .. HEDJAZ
I .. ITALY
IS .. SARDINIA
JA2–7 .. JAPAN
KB6 .. BAKER, HOWLAND & AMERICAN PHOENIX IS.
KC6 .. CAROLINE IS.
KG6 .. GUAM, BONIN AND VOLCANO IS.
KH6 .. HAWAII
KJ6 .. JOHNSTON I.
KL7 .. ALASKA
KM6 .. MIDWAY I.
KP4 .. PUERTO RICO
KP6 .. PALMYRA GROUP, JARVIS I.
KR6 .. RYUKYUS IS.
KS4 .. SWAN IS.
KS6 .. AMERICAN SAMOA
KV4 .. VIRGIN IS.
KW6 .. WAKE GROUP
KX6 .. BIKINI
KZ5 .. CANAL ZONE
LA .. NORWAY
LU .. ARGENTINA
LX .. LUXEMBOURG
LZ .. BULGARIA
M1 .. SAN MARINO
MB9 .. BRITISH FORCES IN AUSTRIA
MD1 .. CYRENAICA
MD2 .. TRIPOLITANIA
MD3 .. ERITREA
MD4 .. SOMALIA
MD5 .. SUEZ CANAL ZONE
MD6 .. BRITISH FORCES IN IRAQ
MD7 .. BRIT. FORCES IN CYPRUS
MF2 .. TRIESTE (Brit. assigned)
MP4 .. OMAN
MX .. MANCHUKUO
OA .. PERU
OE .. AUSTRIA
OH .. FINLAND
ON .. BELGIUM
OQ .. BELGIAN CONGO
OX .. GREENLAND
OY .. FAEROE IS.
OZ .. DENMARK
PA .. NETHERLANDS
PJ .. CURACAO
PK1, 2, 3 JAVA
PK4 .. SUMATRA
PK5 .. BORNEO (Neth. Indies)
PK6 .. NEW GUINEA (Neth. Indies)
PX .. ANGOLA
PY .. BRAZIL
PZ .. SURINAM
SM .. SWEDEN
SP .. POLAND

ST .. SUDAN
SU .. EGYPT
SV .. CRETE & GREECE
TA .. TURKEY
TF .. ICELAND
TG .. GUATEMALA
TI .. COSTA RICA
TT .. TANNU TUVA
UA1, 3, 4, 6 .. U.S.F.S.R. (EUROPEAN RUSSIA)
UA9,0 .. ASIATIC RUSSIA
UB5 .. UKRAINE (U.S.S.R.)
UC2 .. WHITE RUSSIA (U.S.S.R.)
UD6 .. AZERBAIJAN (U.S.S.R.)
UF6 .. GEORGIA (U.S.S.R.)
UG6 .. ARMENIA (U.S.S.R.)
UH8 .. TURKOMAN (U.S.S.R.)
UI8 .. UZBEK (U.S.S.R.)
UJ8 .. TADZHIK (U.S.S.R.)
UL7 .. KAZAKH (U.S.S.R.)
UM8 .. KIRGHIZ (U.S.S.R.)
UN1 .. KARELIA (U.S.S.R.)
UO5 .. MOLDAVIA (U.S.S.R.)
UP2 .. LITHUANIA (U.S.S.R.)
UQ2 .. LATVIA (U.S.S.R.)
UR2 .. ESTONIA (U.S.S.R.)
VE .. CANADA
VE1 .. MARITIME PROVINCES
VE2 .. PROVINCE OF QUEBEC
VE3 .. PROVINCE OF ONTARIO
VE4 .. PROVINCE OF MANITOBA
VE5 .. PROVINCE OF SASKATCHEWAN
VE6 .. PROVINCE OF ALBERTA
VE7 .. PROVINCE OF BRITISH COLUMBIA
VE8A–L YUKON TERRITORIES
VE8M–Z NORTH WEST TERRITORIES
VK .. AUSTRALIA
VK2 .. NEW SOUTH WALES
VK3 .. VICTORIA
VK4 .. QUEENSLAND AND PAPUA
VK5 .. SOUTH AUSTRALIA AND NORTHERN TERRITORY
VK6 .. WESTERN AUSTRALIA
VK7 .. TASMANIA
VK9 .. NEW GUINEA (Ter. of)
VO .. NEWFOUNDLAND & LABRADOR
VP1 .. BRITISH HONDURAS
VP2 .. LEEWARD & WINDWARD IS.
VP3 .. BRITISH GUIANA
VP4 .. TRINIDAD & TOBAGO
VP5 .. CAYMAN IS.
VP5 .. JAMAICA
VP5 .. TURKS & CAICOS IS.
VP6 .. BARBADOS
VP7 .. BAHAMAS
VP8 .. FALKLAND IS.
VP8 .. SOUTH GEORGIA
VP8 .. SOUTH ORKNEY IS.
VP8 .. SOUTH SHETLAND IS.
VP9 .. BERMUDA IS.
VQ1 .. ZANZIBAR
VQ2 .. NORTHERN RHODESIA
VQ3 .. TANGANYIKA
VQ4 .. KENYA
VQ5 .. UGANDA
VQ6 .. BRITISH SOMALILAND
VQ8 .. CHAGOS IS.
VQ8 .. MAURITIUS
VQ9 .. SEYCHELLES
VR1 .. GILBERT & ELLICE IS. & OCEAN I.
VR2 .. FIJI
VR3 .. FANNING IS.
VR4 .. BRITISH SOLOMON IS.
VR5 .. TONGA AND NORFOLK IS.
VR6 .. PITCAIRN I.
VS1 .. STRAITS SETTLEMENTS
VS2 .. FED. MALAY STATES
VS3 .. NON-FED. MALAY STATES
VS4 .. BRITISH NORTH BORNEO & LABUAN
VS5 .. SARAWAK & BRUNEI
VS6 .. HONG KONG
VS7 .. CEYLON
VS9 .. ADEN, KAMARIN, PERIM & SOCOTRA
VU2 .. INDIA
VU4 .. LACCADIVE IS.
VU5 .. ANDAMAN IS.
VU7 .. BAHREIN IS.
W .. UNITED STATES
XA .. MIDDLE EAST SERVICES PERSONNEL
XE .. MEXICO
XZ .. BURMA
YA .. AFGHANISTAN
YI .. IRAQ
YK .. SYRIA
YN .. NICARAGUA
YR-YO .. ROUMANIA
YS .. SALVADOR
YT–YU .. YUGOSLAVIA
YV .. VENEZUELA
ZA .. ALBANIA
ZB1 .. MALTA
ZB2 .. GIBRALTAR
ZC1 .. TRANSJORDAN
ZC2 .. COCOS IS.
ZC3 .. CHRISTMAS IS.
ZC4 .. CYPRUS
ZC6 .. PALESTINE
ZD1 .. SIERRA LEONE
ZD2 .. NIGERIA & BRITISH CAMEROONS
ZD3 .. GAMBIA
ZD4 .. GOLD COAST & BRITISH TOGOLAND
ZD6 .. NYASALAND
ZD7 .. SAINT HELENA
ZD8 .. ASCENSION I.
ZD9 .. TRISTAN DA CUNHA
ZE .. SOUTHERN RHODESIA
ZK1 .. COOK IS.
ZK2 .. NIUE
ZL1–2 .. NEW ZEALAND (North I.)
ZL3–4 .. NEW ZEALAND (South I.)
ZM .. SAMOA (Western)
ZP .. PARAGUAY
ZS .. SOUTH AFRICA
ZS1–2 .. CAPE PROVINCE
ZS3 .. SOUTH WEST AFRICA
ZS4 .. ORANGE FREE STATE & BECHUANALAND
ZS5 .. NATAL
ZS6 .. TRANSVAAL
ZS7 .. SWAZILAND
ZS8 .. BASUTOLAND
ZS9 .. BECHUANALAND

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