

TRANSMITTING AERIALS

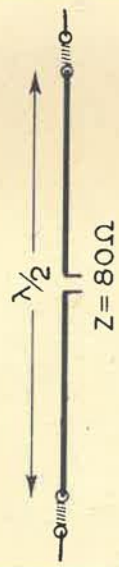
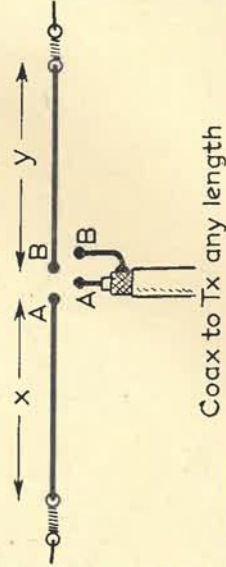


Fig.1 The basic half-wave dipole



BAND	LENGTH X	LENGTH Y
1.8	130 feet	130 feet
3.5	66 feet	66 feet
7.0	33 ft. 2 in.	33 ft. 2 in.
14.0	16 ft. 8 in.	16 ft. 8 in.

Fig.2 A practical half-wave dipole and dimensions

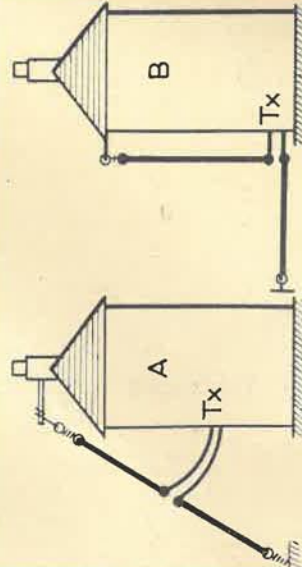


Fig.3 Where space is restricted, the dipole may be tilted (as at A), or bent (as at B)



Fig.4 The polar diagram of a dipole aerial

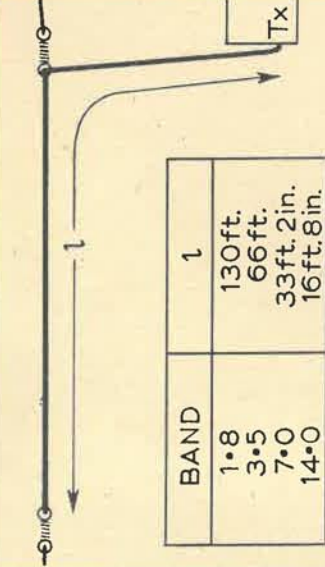


Fig.5 A simple quarter-wave aerial with dimensions

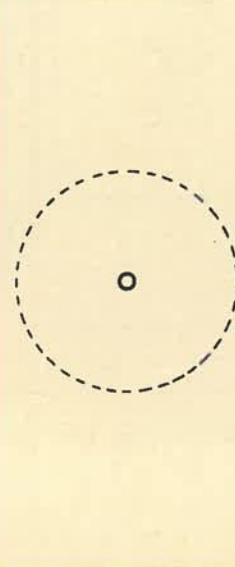


Fig.6 The polar diagram of a vertical aerial

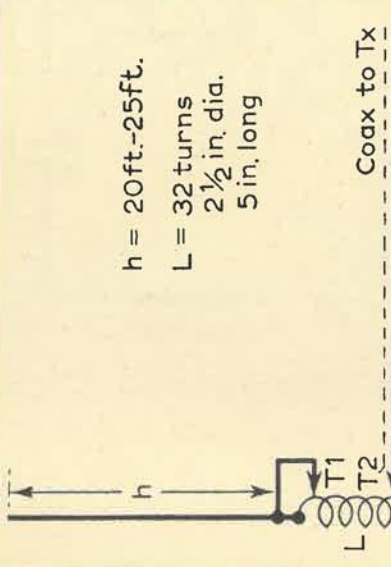
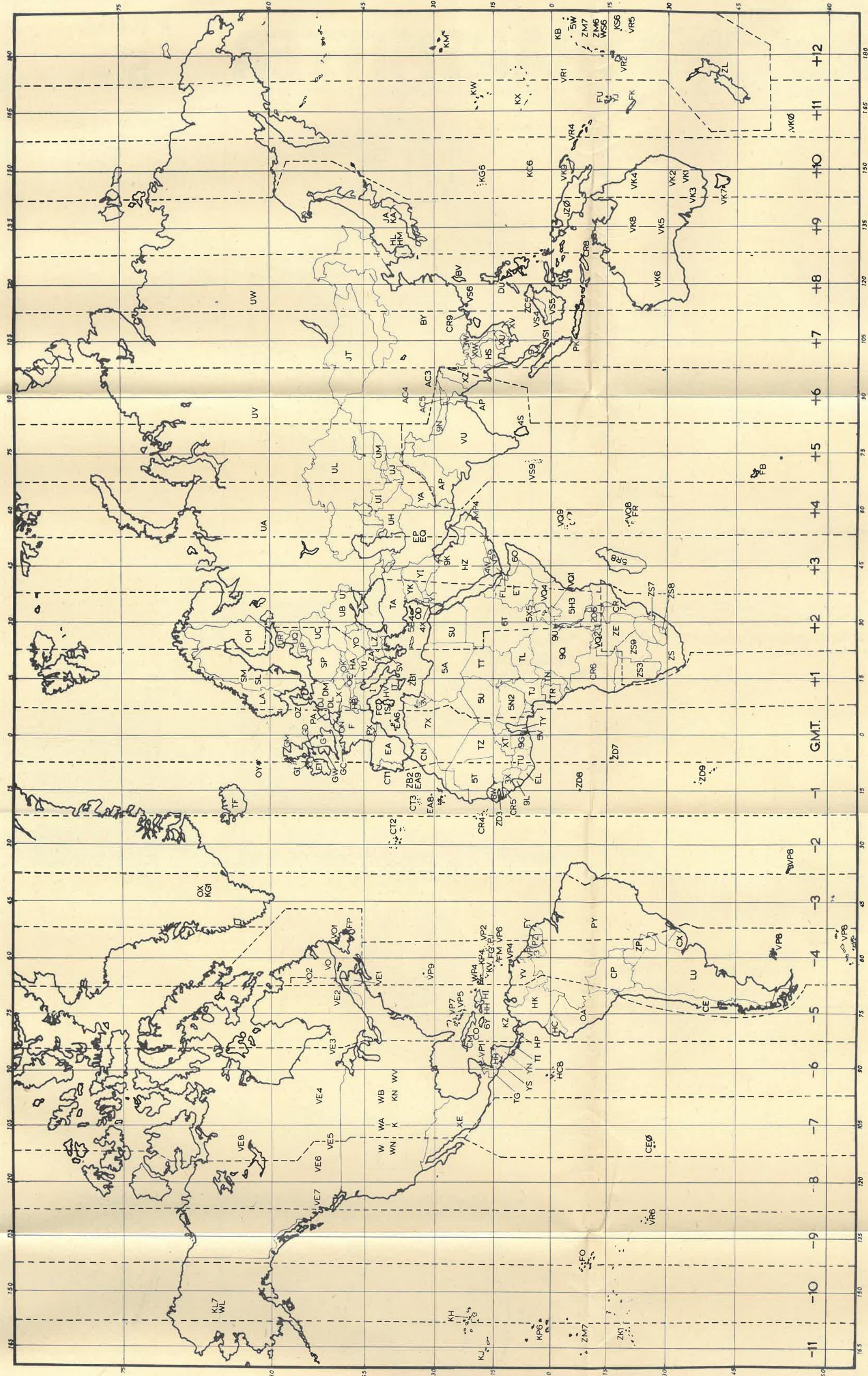


Fig.7 A wide-band vertical aerial



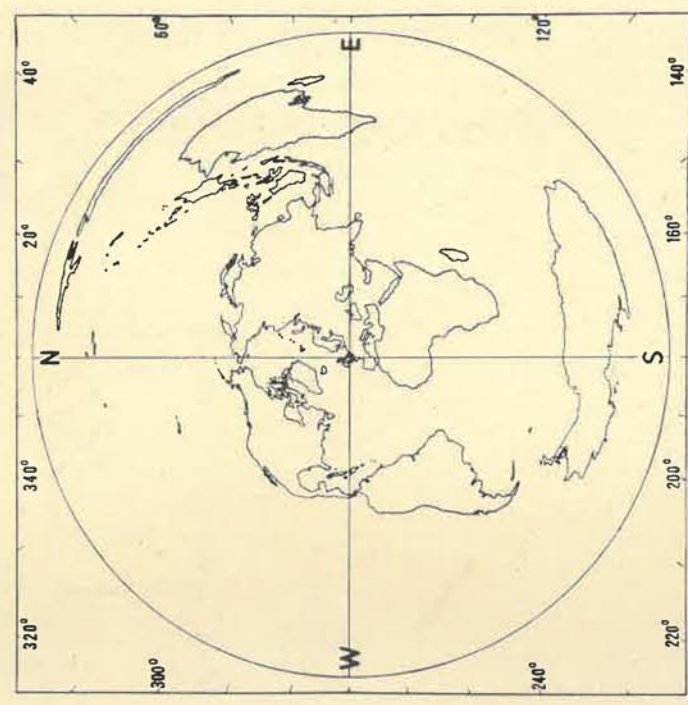
The world map above is based on a conventional Mercator's Projection and shows the main amateur call sign prefixes against their appropriate countries. (A complete list of amateur prefixes is given on the blueprint issued with the November 1963 *Practical Wireless*.) In addition to the longitude and latitude lines, time zones are indicated. Generally speaking, standard time differs by one hour for each shift of 15 degrees latitude.

(as shown on the map), although there are a few exceptions; time is advanced as one travels eastwards and earlier as one travels westwards. Thus, using the Greenwich meridian as a datum point, when the time is 14.00 hours GMT, the corresponding time in Central Europe is 15.00 (one hour forward) and in Eastern USA it is 09.00 EST (five hours back). This does not take into account any daylight saving times that may be in force.

Great Circle Map

Although the familiar Mercator's Projection is convenient and clear, it does not show true compass directions and distances from a given point on the map. There is another type of projection, however, which is designed to overcome these problems. This is the Azimuthal Equidistant Projection (or Great Circle Map). On the right is an outline of such a map, based on London, and from this it is possible to ascertain the true directions and

distances from the datum position. This is especially valuable when considering the erection and performance of aerial systems. Note, however, that a Great Circle Map can only be used in this way when based on a particular point. A large Great Circle Map, based on London, and with information on amateur prefixes, etc., is available from Short Wave Magazine Ltd., 55 Victoria Street, London, S.W.1, price 11s. 0d., post paid.



IMPORTANT! In order to operate an amateur transmitter it is necessary to obtain a transmitting licence.

The Postmaster-General requires that every applicant for an amateur transmitting licence must pass the Radio Amateurs' Examination as evidence of his possessing the requisite theoretical knowledge. Every applicant for an amateur licence must also pass the Post Office Morse Test at 12 words per minute.

The City and Guilds Radio Amateurs' Examination is held each year in May and December and is of three hours duration. The syllabus upon which the examination

is set is contained in Pamphlet No. 55 (Radio Amateurs' Examination) which may be obtained, price 1/-, from The City and Guilds of London Institute (Publications), 76 Portland Place, London, W.1.

Also obtainable from the above address, price 2/-, are copies of the question papers set during the last three years.

A helpful pamphlet entitled *How to Become a Radio Amateur* may be obtained on request from the Radio Services Dept., General Post Office, Headquarters Building, St. Martins-le-Grand, London, E.C.1.

THE AMATEUR BANDS

Band Limits (Mc/s)	Maximum Power (Watts)	Class of emission permitted
1.8-2.0	10	A1, A2, A3, A3A, F1, F2, F3
3.5-3.8	150	
7.0-7.1		
14.0-14.35		
21.0-21.45		
28.0-30.0		