

INTERFERENCE DUE TO ELECTRICAL PLANT

Method of finding Sources of Interference

1. General.—Observations and tests at the complainant's premises, as described in F 1001, will furnish information as to the nature and mode of propagation of the interference, and the type of electrical plant to be suspected as its source. Further investigation to find the source of the interference should, when possible, be pursued by the systematic use of the official portable receiver.

2. Use of Portable Receiver as an Interference Locator.—Owing to the existence of radiation from local electric wiring, etc., the radiated field cannot always be assumed to originate from a point source and, consequently, "direction-finding" methods may have little application to the finding of sources of electrical interference. A portable receiver with a frame aerial or search coil is, however, of considerable use, since it will enable observations to be made of the variations of the intensity of the interfering disturbances.

3. In the case of directly-radiated interference, such observations may be made at a number of points in the neighbourhood of the complainant's premises. An increase in the severity of the interference heard on the portable receiver will indicate that the latter is being taken nearer to the source of the interference. For the purpose

of these observations, the sensitivity of the receiver should be kept constant, or, if changes in sensitivity are necessary, due regard should be taken of the changes made.

4. Mains-propagated interference will generally be audible on the portable receiver when it is placed over the supply mains in the footway outside the complainant's residence, the intensity of the interference being a maximum when the receiver is directly over the mains and the plane of its frame aerial is parallel to their direction. The mains can then be "followed" with the receiver, and observations of the variation of intensity of the interference will indicate the approximate situation of the interfering plant.

5. The use of the portable receiver in this way will also reveal the presence of service mains leading-in to premises at which interfering plant may be situated. It is necessary to exercise care at such junction points, however, for it will frequently be observed that the volume of interference picked up increases, although the interfering source is not located in those premises. Normally, this effect, which is due to the reduction of screening of the mains, is sharply defined and can be recognized and allowed for after a little experience.

Distribution :—67

[For Official Use Only]

6. Care should also be taken to adjust the sensitivity of the portable receiver to a suitable value, having regard to the intensity of the interference being investigated. The use of too high a sensitivity may give misleading results, since a sensitive receiver will detect disturbance on most supply mains with perhaps little variation in strength from point to point, although these disturbances may not be sufficiently strong to cause interference with the reception of wireless programs in the neighbourhood.

7. Very often, the tracing of interference in this manner will reveal many individual sources of interference, which, although apparently severe, are not affecting the particular complainant whose case is being investigated. Before proceeding with suppression experiments, therefore, a deciding test of the suspected plant should always be made by having it started and stopped while observations are made on the complainant's receiver.

8. It is undesirable to approach plant owners before obtaining evidence by the use of the

portable receiver that their plant is likely to be causing interference, although this course is unavoidable if the interference is of infrequent occurrence. House to house searches for interfering plant should only be resorted to when all other methods fail. If the interference is general, but intermittent, a house to house search for interfering plant may be justified.

9. The information obtained from the complainant as to the times of occurrence and nature of the interferences should be borne in mind during the search for interfering plant. This information will often enable a short cut to be taken in locating the particular source of the interference which is the cause of the complaint.

10. In cases of difficulty, visits to listeners other than the complainant are recommended, since they will give information as to the area affected. By intelligent observation, the Investigation Officer may thus be able considerably to reduce the possible area in which the interfering plant is situated.

Reference :—F 1001
(WM1/3)

Instruction cancelled :—General, C 0305

END

Page 2
Issue 1, 13.9.51