

G.C.T.

IN your issue for January 4 you inform an inquirer, S.V.B., that G.C.T., as used by QST, means general central time. Well, that is a bad guess on somebody's part. It means Greenwich civil time, and your inquirer will find full details on page 8 of QST for March, 1927. As some of your other readers may be interested, I will give a short resume of the article.

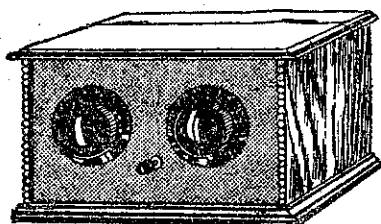
There are two kinds of time used, Civil time, and mean time, which is the hour angle of the mean sun. Civil time commences at midnight, and comprises twenty-four hours to the next midnight. This is the time people live by. Mean time, commencing at noon, is used for astronomical purposes.

Now, almost everybody all over the world has been using Greenwich civil time, but calling it Greenwich mean time. When this was pointed out in QST, that journal immediately changed over to the correct time, G.C.T. Thus 12 noon N.Z. time is 00.30 G.C.T., but 12.30 G.M.T.

Summing up, we should keep on thinking in the same figures that we have in the past, but calling it G.C.T., or simply Greenwich time—not G.M.T.—C. W. PARTON (ZL3CP).

[The error was noticed and corrected in our last issue. However, the difference between G.C.T. and G.M.T. was not made clear.—Osver.]

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A Corner for Beginners

—By Observer—

Meaning of G.C.T.

"S.V.B." (Stratford), wrote last week asking for the meaning of the letters G.C.T., which he encountered in QST. The letters stand for Greenwich Civil Time. Perhaps I had better explain exactly what G.C.T. is. As you all know, Greenwich is the place where there is an observatory from whence the time of the world is calculated. At Greenwich a new day starts when the sun is overhead there. Now, the clocks in London indicate midday at that time. Therefore, there are two distinct times in London. In order to distinguish between the two, the time at the observatory is called the astronomical time, or as it is more commonly called, Greenwich mean time, or G.M.T., and the time the London people use is Greenwich civil time, or G.C.T. If "S.V.B." can obtain a copy of March, 1927, Q.S.T., he will find in

TO A.C. SET OWNERS.

Have you ever noticed the instructions not to put your hands inside the set when the power is on? If not, look up these instructions: they may save a rather nasty jar.

the editorial of that magazine an article explaining in clearer terms than I have been able to, the distinction between the two times. I would also like to point out that there are four different times in the United States. They are (from west to east), Pacific (P.S.T.), mountain (M.S.T.), Central (C.S.T.), and Eastern (E.S.T.). In Canada there are five different times. From west to east they are: Pacific (P.S.T.), mountain (M.S.T.), Central (C.S.T.), Eastern (E.S.T.), and inter-colonial (I.S.T.).—C.C.J.

Rheostats.

ONLY recently a correspondent wrote, complaining of a trouble which pointed to a defective rheostat. After some time, the arm of the rheostat loses its spring, and fails to make a good contact. This not only gives noisy, but intermittent reception.

A particular case is quite worth mentioning here. The owner of a quite simple set was greatly troubled by noises, especially when the rheostat was turned. The spluttering caused by that noisy control was sufficient to drown out or badly distort reception. At times, it would work loose, and cause intermittent reception. Quite frequently, a footfall would be enough to silence the set.

By the aid of a screwdriver and pliers, the contact was greatly improved. The contact arm was bent inwards to form a surer contact with the winding.

However, the noise in the speaker when the knob was turned, remained,

and so the rheostat, which had done quite good service, was discarded.

It pays to examine these pieces of radio apparatus frequently, tightening up, and if necessary, replacing. Like everything that is constantly in use, it wears loose if not attended to regularly.

By the way, do you turn the rheostats to zero before shutting off the switch? If you don't, reform, and do so henceforth.

Faulty Terminals.

THESE can cause more troubles than noises. Just recently, a case of this kind has been reported. Reception from a big valve set was weak, so weak that 2YA came in as a whisper. A careful examination was made, commencing at the batteries. B's, battery, O.K. A battery—terminals very much corroded. A thick layer of deposits from the liquid had been allowed to settle round the contacts, so that the spring clips did not get a chance. The introduction of a pocket knife cleaned things up a great deal. The station came in much clearer, and the noise was reduced. The set was by no means right, but the other trouble comes under another head.

See that all terminals are clean. Particularly those A battery contacts. They become corroded very quickly, and cause a great deal of trouble. Don't think because you are getting weak signals that the A battery is lasting all the longer. Probably the reverse, as much energy is required to overcome the resistance of the deposit. The end of the flex attached to the battery clip may be nearly eaten away by acid so that only a few strands are left to carry the heavy current—more resistance, more noise, more weak signals.

Clip off this end when it is in this state, and make a new, clean soldered joint. It is well worth while.

Broken-down Grid Leak.

A FAULT which often escapes notice is a breakdown in the grid leak. The newer metalised leaks are less liable to failure than the older carbon leaks, but faults, which are specially noticeable when receiving fairly weak signals or distant stations, still occur occasionally. Once a grid leak shows signs of these defects it is impossible to repair it, and it must be replaced. Blocking condensers, especially the cheaper kinds, with waxed paper as the dielectric often break down and cause receiver noises.

Although mica blocking condensers are slightly more expensive than the paper ones, their use is justified, because the breakdown of a blocking condenser can often result in the destruction of a high-tension battery or even the burning-out of the valves in a receiver.

An Unusual Short Circuit.

AN interesting short circuit of a peculiar nature was discovered recent-

ly in a factory-made receiver of a well-known make. The receiver provided entirely satisfactory service for several months before the trouble developed, and then the owner reported that the only way it was possible to obtain reception was to remove the first high-frequency valve.

On replacing the valve, it was found that this was not the trouble. Upon removing the set from the cabinet the usual test failed to indicate where the trouble was situated. Finally it was discovered that when the high-frequency valve was pressed into its socket, instead of the prongs pressing into their correct contact springs one of them missed the spring, and was making contact with another pin, thus directly causing a short circuit.

A simple operation with a pair of pliers shifted the spring to the correct position and corrected the difficulty.

Carelessness in Soldering.

INNUMERABLE short circuits are caused by carelessness in soldering, even in factory-made receivers. A recent example of this occurred to the owner of a factory-made set. The set had been operating perfectly for a period of three months, when it suddenly stopped, and all the tests failed to locate the cause of the stoppage. Finally it was discovered after a careful examination, that a thread of solder, which was so fine that it was barely visible to the eye, was across the aerial and the ground terminals.

SHUTTING OFF ELIMINATORS.

More instructions that are worth noting:—Always turn off the eliminator before the filaments. Failure to do this may mean short life to the eliminator, and one cannot be replaced very cheaply.

This thread of solder probably was caused by the iron being slid from one connection to another when the set was wired, and did not cause a short circuit until the vibrations from the speaker caused it to sag.

However, in the proper position, a thin piece of solder is as effective in stopping the operation of a receiver as a piece of No. 14 bus bar.

A Homely Simile.

IF you sit in a room with an electric lamp aglow, provided that the supply is A.C., as it is called, the effect of the oscillation may be observed quite distinctly if you look at the lower end, or pip, of the globe. If, on doing this, you shade your eyes by means of your hand or the brim of a hat, a pronounced flicker will be apparent.

Try to imagine, then, what must be the speed of oscillation of radio waves when they alternate at a frequency of anything from 10,000 to 300,000,000 cycles per second. Such a speed is almost incomprehensible. Yet it is this very speed of oscillation which makes radio transmission and reception possible.

WHEN ebonite tubing has to be cut into short lengths for frame aerial supports, etc., the difficulty of holding it in the vice can be overcome by using a wooden block drilled to about the same diameter as the tube and then halved to form two shaped blocks, which can easily be held in the vice.