

Best 135

Prince Albert Daily Herald

PRINCE ALBERT, SASKATCHEWAN, SATURDAY, NOVEMBER 23, 1929.

Are Easy to Locate

Timely Article Written On Subject Provides Readers Who Are Radio Fans With Information Which Should Enable Them To Improve Faulty Reception In Many Cases

Several letters have come to The Herald, complaining of radio interference in this city. Most of the complaints are directed at the Power Plant. The following article deals with the entire subject of radio interference, how to trace it, how to deal with the annoyance, and should assist radio fans in obtaining better radio reception.

Several years ago while radio was in its experimental stage, radio fans throughout the world were content to clamp a couple of ear phones over their heads and sit for hours waiting and listening for anything that a station within reach might be broadcasting. Regenerative sets with their screeching and howling noises, were universally used at that time and as fans, we can no doubt remember the many hours spent on dialing, changing connections, rebuilding the sets and changing tubes.

During those hectic days static, weather conditions, power lines, and telephone systems, were no worse than they are today. But with the improvement of radio broadcasting stations, better programs have resulted which in turn have created demands for better and more powerful radio receiving sets. To-day, we have electrically operated radio receivers with electrically operated loud speakers, which are not only tremendously powerful in amplifying the signals detected, but are also capable of picking up decidedly weak signals and noises, which when amplified and passed through a loud speaker result in a terrible conglomeration of sounds.

Not Always Evident

But happily, interference from static, power lines, telephone lines or wireless broadcasting stations, is not always evident, and we often enjoy real good programs in spite of conditions and interference of a local or general nature. In time no doubt, a great deal will be done to eliminate the so called local interference, but in order to eliminate all such interferences a great many changes and alterations will have to be made to the electrical lines, telephone lines, and electrical equipment of every kind as the radio has advanced so rapidly in the past few years that it has been humanly impossible for power supply corporations and others to keep pace with the times, and locate and introduce means to eliminate interference to radio from this source.

A radio receiving set, and particularly electrical sets are very delicate and complicated pieces of apparatus, consisting of a great many parts, each in their turn performing an intricate duty, combining the ultimate performance of the receiver. Tubes will howl and otherwise cause disturbances, condensers will leak and filters function improperly, a loose connection or faulty wiring will cause a decided disturbance, but many causes for disturbance in a set appear to be tubes, and if a few of the different types are kept on hand and exchanged with defective ones, much better service can be expected from your set.

Complicated Apparatus

An electrical radio receiving set to the average fan, constitutes a much more complicated piece of apparatus than an automobile, and when the auto goes out of order or does not function properly it is taken to a garage for check over and repairs. But not so with the radio. If it will not turn on and operate with the ease that one turns on the electric light, and if it does not function in just as dependable a way, we become annoyed, and usually such annoyance is dissipated by directing remarks of every description against everything and everyone in general, and bemoaning the terrible conditions that disturb our peace of mind in such a way.

No thought is ever given to the possibility that a radio set might become out of order like any delicate apparatus and that the services of an expert should be obtained to check the set over. Neither is any thought ever given to the possibility, that the trouble might be in the interior wiring of the house or electrical apparatus connected thereto. But rather it is a foregone conclusion that if the radio set does not work, it must be the fault of the power supply company, telephone system, or wireless telegraph station.

So why not digest a few of the following paragraphs, dealing with possible radio interference, and if guided by the remedies no doubt we will be able to locate for ourselves a great many of the so called local interferences.

Noises Through Air

Interference coming through the air to the antenna: Radio telegraph transmitters, either on shipboard or on shore, may emit a wave so broad and so overpowering that no receiver will tune them out. They are heard as the series of rapid dots and dashes that sooner or later becomes familiar to most broadcast listeners.

The receiving antenna may be close to, or may even run parallel with, electric power lines. Loud cracking noises will then be picked up whenever these lines are in use. Discharges of lightning during any kind of electrical storm will cause a series of crackling noises, and sharp bangs in your radio receiver.

An oscillating or regenerative receiver operated by some neighbor will cause howling, groaning, squeals and high pitched noises of varying intensity in your radio set.

Interference coming through power, light or telephone circuits from out-

side: Sparking commutators of motors, of oil burners, vacuum cleaners, sewing machines, or other household devices; sputtering arc lamps; sparking trolley wheels or their rail shoes; heating pads, curling irons, electric irons, and all other devices using electric heat; vibrating battery chargers; Violet ray and X-ray machines; power or lightning circuits in which may be found accidental grounds through trees or guy wires, cracked or dirty insulators, defective switch contacts, grounded transformers, neutrals, etc.

Electrical Interference

Sparkling may be suspected in any electrical device which contains a motor. Radiation of interference as well as of warmth may be suspected from any device which uses electricity to produce heat. Practically all medical and physiological appliances for household use are likely to cause interference. Loose connections or contacts anywhere in the house lighting circuit; this applying to switches, fuses, wall plugs, lamp sockets, and everything else about this wiring or fixtures.

Within Receiver

Apparent interference within the receiver: Faults of this kind will produce noise in operation. All of the causes and remedies for noise are treated under the heading "Noise."

If interference of the kinds already considered is of considerable strength and comes from a nearby source it may be picked up by any long leads between the receiver and batteries.

If the receiver is operated from any kind of a power supply unit attached to the lighting circuit of the building, disturbances in these circuits may be carried through into the receiver, if the power supply unit has a faulty or poorly designed filter system.

Recognizing Kind

Recognizing the Kind of Interfer-

ence: It is not sufficient to simply realize that some kind of interference is spoiling reception. It is quite necessary to be able to make an intelligent guess as to the cause of the interference. About the only thing on which such a guess may be based is the kind of sounds that are heard. Some of these will now be described although it is rather difficult to describe some of the sounds that are caused by interference.

A rapid and regular clicking noise which keeps time with the frequency of the power lines may be attributed to vibrating battery chargers or any other electrical device employing a vibrator.

A rapid whirring noise which rises in pitch immediately after it starts and then falls in pitch as it comes to a stop may be blamed to direct current motors using commutators.

An intermittent rasping and scratching noise of varying intensity may be caused by defective insulators, accidental grounds or loose contacts in any circuit.

A loud roar which dies out after a few seconds is usually caused by the charging of lightning arresters.

A more or less steady and continual crackling comes from arc lamps, medical devices or any electrical units in which there is a heating coil.

A Faint Buzzing

A rather faint buzzing which lasts for only a few seconds at a time is generally due to vibrating bells, door bells, telephone bells, etc.

A violent squeal which rises and falls in pitch when the receiver's dials or controls are not being touched is caused by a nearby oscillating or regenerative receiver. The changes are caused by the operator of the offending receiver because he cannot be satisfied by his lack of success in tuning and is continually trying to do the impossible by changing his controls.

A loud crashing noise which rises in intensity and finally dies away after five or ten seconds is generally caused by trolley cars, elevated trains or subway trains whose contact wheels or shoes are sparking.

Rather musical long and short dashes and dots which rise and fall in pitch are caused by radio telegraph stations. These are especially noticeable when tuning at the highest wavelengths.

A steady, rapid, sharp buzzing may be caused by the small motors used in vacuum cleaners, electric sewing machines, oil burners, etc.

A low pitched, rather soft vibration, continuing as long as the receiver is used is almost always caused by the antenna or ground lead being near power lines or by the use of an improperly filtered power supply unit.

A cracking sound which occurs at regular intervals is generally due to electric sign flashers.

Locating Position

Locating the Position of the Source of Interference: The first step in this part of the work is to decide whether the interference is in the receiver, in electrical parts within the building, in outside power, light or telephone

and then go over them while the receiver is in operation; moving and shaking all joints, insulators and supports. If the procedure has any effect on the interference it indicates that there are poor connections or poor insulators in the antenna or ground circuits.

To determine whether the interference comes from electrical equipment within the building, wait until the offending noises are decidedly noticeable and then open the main supply switch just inside of the building. This of course presumes that the receiver is operated from batteries and not from power supply units. If it found that the interference may be stopped as the switch is opened the fault is in the building. The test should be made by opening the switch while the interference is bad and noting the result.

Noting the effect of closing the switch is not so reliable because the interference may stop while the switch is open and may not start immediately after the switch is closed.

Should it be decided that the interference is in the building, try removing the fuses or opening the circuit breakers for any branch circuit, handling these circuits one at a time. Should the interference stop with any one circuit open, that is the circuit giving the trouble. It is then in order to go over this wiring: tightening all terminal screws, loose wire ends, fuse clips, switch contacts, service outlet plugs, lamp sockets, lamp bulbs in their sockets, wall switches, etc.

Outside Wiring

Interference Coming Through Wiring from Outside: If none of the foregoing methods have stopped the interference and shown it to be in the receiver or within the building, it may be coming through the air to the antenna. The location of the antenna should be checked and if it runs near or parallel with any power lines its position must be changed so that it is as nearly as possible at right angles to these lines. Using a shorter antenna or a lower antenna will help to reduce the effect of the interference although it will not eliminate it.

The effect of the interference may be reduced by connecting a resistance of 50,000 to 100,000 ohms between the antenna binding post and the ground binding post of the receiver. This will bypass most interference of low frequency to the ground, but will also greatly reduce the sensitivity and distance getting ability of the receiver.

If it is finally decided that the interference is coming from outside the building, either over power lines lead-

ATTENTION! RADIO FANS



Here it is — helpful hints for hundreds of radio owners who regularly read The Herald. So many complaints of poor reception have been received that the article on this page has been specially prepared as an aid in finding some of the many forms of interference which may be causing the trouble. Don't fail to read it and we hope it will help solve some of your problems and make the programs more enjoyable.

lines, or in the air.

First disconnect the antenna. If the interference continues, disconnect the ground. If it still continues the fault is in the receiver itself, unless a power supply unit is being used. Of course, if the power supply units were to be disconnected the receiver would no longer detect nor amplify either interference or signals and nothing would be gained.

If the power supply unit furnishes current for the filaments only and contains a small storage battery it may be disconnected and the tubes operated from the storage battery for a short time. Should the interference continue with all possible outside connections removed from the receiver, the methods given under the heading of "Noise" should be followed.

If the removal of antenna or ground stops the interference the trouble may have been coming through the air or it may be due to faults in the antenna or ground. Reconnect both of these

ing into the building or through the air to the antenna, it is advisable to attempt co-operation with other listeners in the neighborhood. Inquire of these neighbors whether they experience the same kind of interference and enlist their help in tracing it to its source.

Power Company's Help

Power and light companies, also all other companies using electrical apparatus which may be causing the interference, are almost without exception more than glad to help in its removal. This is true because the interference indicates that something is wrong with their equipment and any faults in the equipment generally mean a loss of money to its owners.

The interference may be reported to any of these companies. It is necessary to make an intelligent report if anything is to be gained. In writing to the company or talking with its representatives be prepared to describe as well as possible the sound of the interference, its tone or pitch and whether it is intermittent or continuous. Make a notation of the exact time down to the minute at which the interference starts and when it stops. Also make a note of weather conditions during the time of interference, whether rain was falling, whether there was a high wind, the temperature and any abnormal conditions. With this information the power company or any other organization interested will be enabled to trace down the interference and remove its cause in most cases.