

SQUEALING OF RECEIVERS IS HARD TO ELIMINATE

Trying for Distance Is Chief Cause of Interference—
Crystal Sets Only Ones Immune.

By ISRAEL KLEIN,
NEA Service Radio Editor.

The recent international broadcasting tests revealed one difficulty in radio reception that is almost impossible of correction.

That is squealing.

Squealing results when receivers, especially of the single circuit and regenerative type, are permitted to oscillate beyond the point of average broadcasting reception. That point generally is determined by the filament capacity of the detector tube.

When an enthusiastic fan turns the rheostat control beyond this rated capacity, he causes the tube to oscillate so that it acts as a squealing transmitter among neighboring sets.

The fan, generally speaking, does this when he is trying for distance. The international tests caused considerable local interference of this kind throughout the country.

Crystal Is Innocent

Of the 3,000,000 receivers in this country, only the simple crystal set is free of any possibility of squealing. Every single and regenerative circuit is capable of this interference, and even the neutrodyne and super-heterodyne squeal, when the detector tubes are tuned beyond the oscillating point.

Beyond this point, to be sure, there are local tube noises in the earphones. But the rabid fan is willing to tolerate these noises in order to catch the call from a broadcaster overseas or across the continent.

Regulation can not eliminate this interference, because it would mean depriving at least 2,000,000 fans of their receivers. Such regulation would have to include even the finest super-het in its injunction and would mean the abolition of practically every receiver, except crystal sets, from the market.

Two means present themselves for assurance against local interference from squealing receivers. Both, however, are practically impossible of adoption, because they would require the abolition of every tube receiver now in use.

One recourse is to confine all reception to crystal receivers, with the development of broadcasting by the use of super-power and interconnecting stations. But how can the urge to get distance be quelled?

Another hope lies in invention of a system of private broadcasting and receiving so that each set is tuned in automatically to a special group of broadcasters and can be operated by a push-button system for any kind of entertainment desired.

It's Practicable

Harold J. Power, noted radio engineer, forecasts such an arrangement. German scientists have already designed some such plan.

A wired wireless system in New York, already in operation, actually uses this method of broadcasting and reception.

But even with this perfected and in operation by regular radio, the millions who have squealing receivers can not be induced to give them up unless every broadcaster in

WJAX Is Now WEAR

Station WJAX has changed its name to WEAR. The Union Trust Company of Cleveland has sold the station to the Goodyear Company of Akron. As WEAR, the station will be put on higher power and may eventually be moved to Akron.

Exclusive in Peru

Broadcasting is a monopoly in Peru, and the government has consented to it. A ten-year concession has been granted one company for exclusive broadcasting rights there.

Jail Looms Abroad

A radio fan in Czechoslovakia just finished six weeks' imprisonment because he built a receiving set and occasionally sold parts without a license.

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the country, and beyond, adopts the private system of transmission.

This eventuality is so far ahead of us that it is almost an improbability. Yet future generations may wonder how we ever tolerated the squealing system of today.

Short Cuts

THINGS TO KNOW IN BUILDING AND OPERATING A RECEIVER.

KEEP the "low loss" in low-loss coils by making them self-supporting. If four leads are taken from such a coil leave the ends of the windings long enough to solder to bus wire attached and perpendicular to the terminals of the instruments the coil leads hook to. Making such a "cradle" eliminates supports for coils that might cause losses.

Selectivity of some circuits, such as the super-heterodyne, can be increased by replacing the grid leak and condenser with a C-battery. The battery is hooked between the A-plus line and the filament terminal on the transformer, the positive side going to the A-battery line.

Vernier potentiometer can be made by hooking a 30-ohm rheostat in the negative lead to the potentiometer, leaving the positive and grid-return leads as they are.

A .00025 mfd. fixed condenser shunted across the aerial and ground

No Headaches



Headphones can be made to fit right without causing the headaches and dizzy spells some fans have been experiencing by the application of the simple attachment shown here. The piece is attached to the head-bands and tightened until they fit snugly on the head. At the same time it keeps the head-bands from pressing down uncomfortably.

binding posts will decrease interference from local stations in many types of sets.

A small brass rod filed to a square point and inserted in a cork handle to protect the hands will make a fine soldering iron for delicate work.

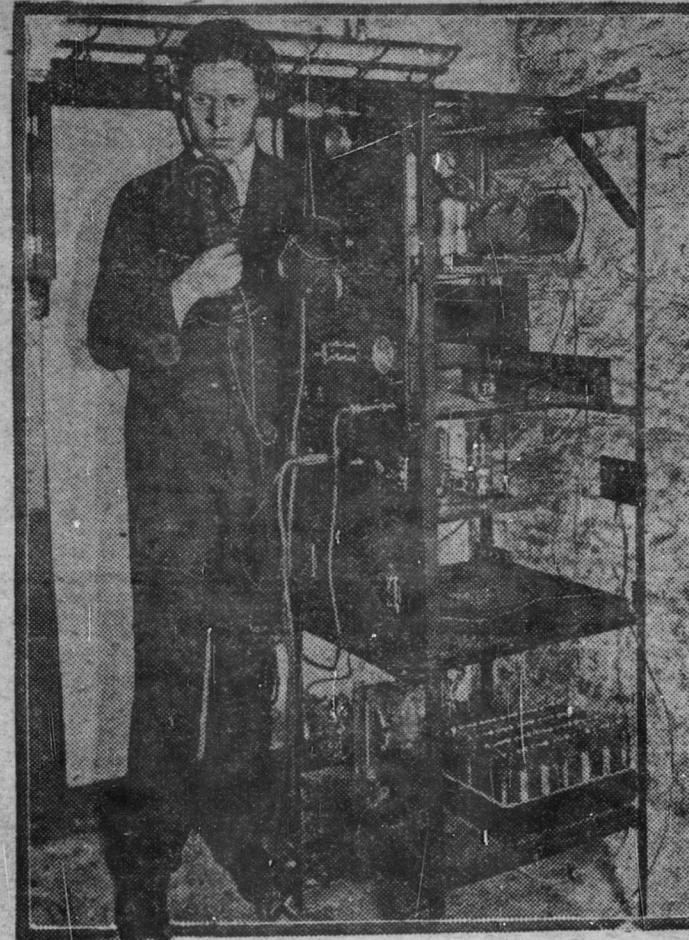
WITH aerial and ground disconnected, but the batteries hooked up and the phones on, press against each wire with a hard rubber fountain pen, if you want to locate loose connections. Grating or rasping sound will be heard when the poor connection is touched.

Make your own socket wrenches with a screw driver and various sizes of brass tubing. Shape one end of the pieces of tubing to fit over nuts and the other to admit the end of a screw driver.

The frame of an audio-frequency transformer may be grounded to rid the set of howls caused by magnetic feedback or intercapacity action. These eddy currents are short-circuited to the ground.

Spokes for a wooden spiderweb coil form can be made with pieces of No. 12 or 14 rubber-covered wire. Insulation is scraped away at the ends that insert in the wooden centerpiece.

Toy Broadcasting Station



E. W. EDWARDS, CINCINNATI AMATEUR, BUILT THIS LITTLE BROADCASTING STATION HIMSELF. IT'S IN THE CELLAR OF HIS HOME. EDWARDS HAS BROADCAST TEST PROGRAMS AND HAS BEEN HEARD AS FAR AS CHICAGO, ON HIS 200-WATT TRANSMITTER, BUT HE HAS TO WAIT FOR FURTHER OPERATIONS UNTIL THE GOVERNMENT ASSIGNS CALL LETTERS FOR IT.

Radio Remarks

RECENT PRONOUNCEMENTS OF INTEREST TO FANS.

CROWDING of the ether lanes available to broadcasters has all but reached a point where chaos looms in the offing, with less promise than ever before that a better order soon may be established.—Dr. L. W. Austin, radio physical laboratory, U. S. Bureau of Standards.

It seems probable that broadcasting is permanently established as a public necessity and may be considered as indispensable in the average home as the telephone.—Commissioner D. B. Carson, Bureau of Navigation.

the next decade. Radio will soon be on the same plane as the automobile industry.—James F. Kerr, general manager, Radio Shows.

We will be able some time to forecast in a general way what radio reception conditions will be each day.—Dr. L. W. Austin, radio physical laboratory, U. S. Bureau of Standards.

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RADIO ADVANCES EXPORT BUSINESS

Electrical Equipment Shipping 12 Million Larger.

By NEA Service

WASHINGTON, Jan. 22.—Growing interest in radio outside the United States has helped raise exports of electrical equipment in 1924 by about \$12,000,000 above those of 1923.

According to the electrical equipment division of the U. S. Department of Commerce, the estimate for 1924 exports for electrical goods is about \$85,000,000. This does not include figures covering such electrical equipment as motor cars, built-in motors of machine tools and the like.

Since radio assumed a commercial role, the exportation of storage batteries has shown a decided increase over the years when a radio was unknown.

Radio exports alone for last year is estimated to have exceeded \$5,000,000. This is expected to go much higher during 1925, due to the loosening of restrictions against radio transmission and reception in foreign countries.

The little liberties given radio fans last year in Europe and other countries has been reflected in the increased exports of radio material during 1924 over those of 1923.

MEXICO GIVES LICENSES

95 Per Cent of Sets Are of American Origin, Says Report.

WASHINGTON, Jan. 22.—There are four radio broadcasting stations of considerable size in Mexico, besides six smaller ones. Commercial Attaché Alexander V. Dye of Mexico City, reports to the Department of Commerce.

Government license, regulations and inspection is required for all receiving as well as sending stations. Ceiling sets in Mexico City and 12,000 more in other parts of the country, about 95 per cent of which are of American origin.

Ethel Watch The Times



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