

# RADIO

## INSTRUCTIONS FOR TROUBLE SHOOTING

### How to Detect and Remedy the Open Circuit, Short Circuit and Leakage.

Radio circuits are subject to the same ills that the ordinary power circuits are subject to. However, to cure them is not such a difficult task as might be supposed, especially if some logical procedure is used.

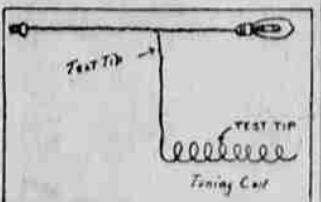
If a receiver is well put together in the first place and all contacts and other parts come over once in a while, there is no reason why there should be any trouble. But the human being is prone to cry, so that for the "once in a while" that is liable to happen, this article will be devoted to the explanation of what might happen to a simple receiver and the best way to fix it.

The usual troubles of the receiver fall under one of the following three headings:

- 1.—An open circuit.
- 2.—A short circuit.
- 3.—Leakage.

An open circuit can most easily be detected by means of a series lamp. Nearly every one has available the ordinary 110 volt lighting circuit. Take an ordinary extension cord and cut one wire at any convenient place and use these two ends as test clips or tips. The extension cord is plugged into the house lighting circuit at any convenient outlet and when the two cut ends are held together the lamp will light as the circuit is closed. When the tips are held open the circuit is "open" and the light will go out.

Suppose it is desired to test for an open circuit in a tuning coil. Connect one tip to one end of the winding and the other test clip to the slider. As the



slide is moved back and forth the light should remain lighted. If the light goes out at times there is an open circuit in the coil. If the light goes out when the coil is jarred the slider does not make good contact with the winding.

If a buzzer and battery are available they can be used in testing for an open circuit in the same way that the lamp can be used. Connect the battery and buzzer in series with the test clips or tips and any low resistance circuit can be tested.

The ground connections can be tested with a buzzer and battery, but do not use the house-lighting circuit to test for grounds because one side of the lighting circuit is already grounded and if the other side were connected to the ground a short circuit would exist and an excessive current flow.

If the ground wire is connected to the water pipe, connect one test tip to the ground and the other to the gas pipe, which is also grounded. The buzzer should buzz if one has a good low resistance ground.

Leakage usually exists between the antenna and the ground. An antenna should be well insulated from its support. The lead-in should be brought down to the point where it enters the wall of the station in such a manner that when the wind causes it to swing, it cannot touch any grounded material, and that rain and snow cannot cause a path along which the current can ground. In bringing the lead



In through the wall, insulate it well and inside the station use as short a piece of well-insulated wire as is possible to make good connection with the set.

To test the continuity of the circuit of a pair of telephone receivers touch the tips of the cord phone to the tongue. If the receivers are in reasonably good condition a slight click will be heard. If the response in one receiver seems to be weaker than that in the other, examine the diaphragm of the receiver giving the weaker response and see if it is bent toward the pole piece. Try tuning the diaphragm over if such is the case. Be careful when the diaphragm of a receiver is removed that the leads of fine wire from the magnet spoils to the connection blocks do not become broken in handling.

If the continuity of the circuit of a pair of telephone receivers is checked and no response is heard when the cord tips are touched to the tongue, try checking each receiver of a double head set separately.

The two receivers are connected in

series and to check either one separately, short circuit the tips of the cord leading to the other receiver just outside of the case. Should it appear that there is an open circuit in the cord, short circuit both receivers where the cord enters the case and with a buzzer or lamp connected to the tips on the end of the cord test for an open circuit.

Care should be exercised by the operator when adjusting a crystal detector to see that his fingers do not touch the surface of the crystal or the contact point of the little spring. The oil secretion that exists in the skin together with the dust that it collects will render a crystal detector inoperative by the insulating film that it will cause to form on the portion of the crystal surface that is touched. Should the surface of the crystal get dirty as evidenced by the received signals becoming weaker and weaker, try cleaning the crystal with alcohol and a little brush. Or if this does not seem to remedy the trouble, clip off old surface so that an entirely new surface is presented to the spring.

## TIPS TO THE RADIOIST

The higher the aerial the stronger the signals. An increase of five to ten feet in the height of the flat top aerial will increase signals.

Addition of a variable condenser to the secondary or to the primary of a loose coupler often helps to tune out the undesired signals.

The sliders on tuning coils often make poor contacts with the slide rod. Thus much of the signal strength is lost. You can overcome this by soldering a flexible wire to the slider.

Increase length of spreaders of two, three or four-wire aerials from six to ten feet for best results. Each wire should be from four to six feet from its neighbor. Two wires one or two feet apart are no better than one wire. Likewise four wires on short spreaders are no better than one wire.

series and to check either one separately, short circuit the tips of the cord leading to the other receiver just outside of the case. Should it appear that there is an open circuit in the cord, short circuit both receivers where the cord enters the case and with a buzzer or lamp connected to the tips on the end of the cord test for an open circuit.

Care should be exercised by the operator when adjusting a crystal detector to see that his fingers do not touch the surface of the crystal or the contact point of the little spring. The oil secretion that exists in the skin together with the dust that it collects will render a crystal detector inoperative by the insulating film that it will cause to form on the portion of the crystal surface that is touched. Should the surface of the crystal get dirty as evidenced by the received signals becoming weaker and weaker, try cleaning the crystal with alcohol and a little brush. Or if this does not seem to remedy the trouble, clip off old surface so that an entirely new surface is presented to the spring.

Amateurs should play fair

Radio Inspector Schmidt Urges That They Learn the Laws and Regulations.

Nine out of every ten radio fans are good sports, but the tenth is either a fan with poor judgment or a "rotter." It is up to the amateurs to see that restrictions are not imposed upon them, by playing fair, says Radio Inspector L. R. Schmidt of the Ninth district.

This can be done by observing certain cautions and by becoming posted on the radio laws and regulations. A copy of these regulations may be obtained from the superintendent of documents, government printing office, Washington, D. C., for 15 cents. It is worth while to spend 15 cents in order to be a "square shooter" in the radio game.

The great trouble with amateurs is that when they want to send a message around a corner they put on all the power they have with the hope that some one in Texas might pick up their message. The object should be to use the minimum amount of power to get the message to its destination.

"In all circumstances, except in case of signals or radiograms relating to vessels in distress, all stations shall use the minimum amount of energy necessary to carry out any communication desired."

Amateurs should keep their wave length to 200 meters.

"They should use a 'pure wave' or, as the regulations state, 'if the sending apparatus is of such a character that the energy is radiated in two or more wave lengths, more or less sharply defined, as indicated by a sensitive wave meter, the energy in no one of the lesser waves shall exceed 10 per centum of that in the greater.'"

"The wave must be 'sharp.' As to this the regulations state: 'At all stations the logarithmic decrement per complete oscillation in the wave trains emitted by the transmitter must not exceed two-tenths when sending distress signals or signals and messages relating thereto.'"

Amateurs frequently are at fault in cutting stations too often. The law states that they can call three times send "at" once and sign their station call three times; but often the amateurs will send the calls a dozen or more times.

HOW TO GROUND AN AERIAL

If Properly Done It Really Protects the Property From Lightning.

Generally speaking, aerials do not attract lightning, but they do store up atmospheric electricity, and, of course, this condition does create a hazard. However, when the aerial is properly grounded it then acts as a lightning rod and really protects the property from this electrical hazard.

Hereby, the fire underwriters require that the aerial be grounded when not in use by a copper wire no smaller than No. 8 (large No. 4 or larger, and run said wire as directly as possible to the outside ground.

This means that water, gas or steam pipes inside the property cannot be used for a lightning ground, because if ever this ground was called into service there is a possibility that fire and loss of life may result. So do not use inside grounds for lightning protection.

Preserving Valuable Documents.

An expert restorer of ancient documents in Washington is able to split a thin sheet of paper, separating the writing on two sides, insert a middle layer of paper and cover the entire sheet with a thin silk gauze. This enables the document to stand considerable heating.

Jud Tunkins.

Jud Tunkins says a special delivery letter is worth considerably more than a quarter if it's as important as the girl who receives one usually seems to think.

# Churches

First Church of Christ, Scientist.—Corner of First and Washington, Sunday morning service at 11 o'clock. Subject: "Soul and Body."

Sunday school at 9:45 a. m. Wednesday evening meeting at 8 o'clock. Reading room open to the public every Monday, Wednesday and Saturday from two to four. All are welcome to attend our services.

FIRST BAPTIST CHURCH.—Sunday school 10 a. m. Good music. A large choir directed by Mrs. E. S. Jester. Sermon at 11 a. m. by Evangelist Theodore A. Osborn of Seattle. Rev. Osborn is passing through the city and has consented to preach at this hour. His subject will be "What is the Gospel?" Mr. Osborn is the man that first introduced "Gold Dust Twins," the noted washing powder. He is known as the Drummer Evangelist. At 8 p. m. all the churches go to the high school. Let's have a record crowd Sunday morning.—A. H. Stinson, minister.

M. E. CHURCH SOUTH.—Sunday school at 9:30 a. m. and preaching at 11 a. m. There will be no preaching in the evening as we call in our services for graduation services at the high school building.—A. J. Starnier, pastor.

FIRST PRESBYTERIAN CHURCH.—The regular Sunday school hour at 9:45 and the regular morning worship at 11 will be the order of tomorrow, with the minister in charge of the services. The Young People's Society and the evening services will be omitted in order that we might all join in the annual baccalaureate service at 8 in the high school auditorium, with the Rev. J. W. Gunn bringing the message to the graduating class. This church and minister is at the service of the community and our services are available at all times.

CHRISTIAN CHURCH.—Bible school meets at 9:45. There is a class for all ages and we want you to come. There were 229 there last Sunday, and we are expecting that many again tomorrow. Preaching by the pastor at 11 o'clock, subject: "An Open Bible." The C. E. will meet at 7, but there will be no evening preaching service on account of the high school service at the auditorium.—O. W. Jones, minister.

THE FIRST METHODIST EPISCOPAL CHURCH.—The service Sunday forenoon will be dedicated to "Motherhood and the Home." Special efforts will be made to render this a beautiful, attractive and helpful service.

English Paper.—Young lady required as governess for a little girl aged ten. As she has unacceptably lost a leg, it is considered that more sympathy will be shown by a lady in a similar position; preference therefore given to such.—Boston Transcript.

African Salt.

A report made to the French Society of Biology shows that 25,000,000 human beings in the Congo region commonly employ salt of potassium instead of salt of sodium for seasoning their food. They obtain this salt from the ashes of certain plants. Since the opening up of the country ordinary salt has been largely imported, but the negroes regard it as insipid, and shun it with regret the use of their familiar ashes. They take the imported salt only because it is cheap.

Unique Ad.

Overstrained eyes may cause a nervous breakdown that will take years of effort and cost hundreds of dollars to correct, which could have been saved by properly fitted glasses.

Saving your EYES saves your health as well as your sight. Our equipment and methods are the most modern.

Let Me Examine Your Eyes

DR. W. M. PEARE Optometrist With

J. H. PEARE & SON

SEND IT TO THE MODERN LAUNDRY

"Send your laundry to The Modern Laundry, Mary. They're efficient and dependable. I have been using The Modern for quite a while, and find them entirely satisfactory."

"I shouldn't know what to do without them."

MAIN 77

THE MODERN LAUNDRY

SEND IT TO THE MODERN LAUNDRY

ful service. One of the musical numbers will be the old song "Home Sweet Home," sung by Mrs. E. Aldrich. Music, address and decorations will all combine to make a service worth while. You are cordially invited. This church will unite in the baccalaureate service at the high school in the evening. Bible school at 9:45 and Epworth League at 7 in the evening.—G. H. Quisley.

ST. PETER'S EPISCOPAL CHURCH.—Corner Fourth street and O avenue. May 21st is Rogation Sunday. The Thursday following is Ascension Day. Monday, Tuesday and Wednesday are, in the Christian year, known as Rogation Days when special prayers are offered for blessings on seed sowing and for a fruitful harvest. We have the usual Sunday morning services and in the evening at 8 p. m. we join in the baccalaureate service at the high school auditorium. Special attention is called to the fact that Bishop Lemuel H. Wells will be with us Sunday afternoon and will administer confirmation to those prepared at an informal service at the church at 5 p. m. The bishop will arrive here from Baker by auto. He sure and be on time to meet him.—Jos. W. Gunn.

LATTER DAY SAINTS.—Regular services at the Tabernacle, Sunday school commences at 10:30 a. m. Sacramental services at 12:15 o'clock p. m. Mutual Improvement Association Sunday at 7:30 p. m. Priesthood and Relief Society meeting at 7:30 p. m. Primary association at the tabernacle Tuesday, for children, 4 p. m. Primary association on north side at the little chapel, for children, Thursday at 4 p. m. Religion class at tabernacle Thursday at 2:30 and 4 p. m. Religion class at the chapel on north side at 2:30 and 4 p. m. Tuesday. Regular choir practice at the Tabernacle Thursday at 7 p. m. The public is cordially invited to attend any or all of our services.—David I. Stoddard, Bishop.

Unique Ad.

Overstrained eyes may cause a nervous breakdown that will take years of effort and cost hundreds of dollars to correct, which could have been saved by properly fitted glasses.

Saving your EYES saves your health as well as your sight. Our equipment and methods are the most modern.

Let Me Examine Your Eyes

DR. W. M. PEARE Optometrist With

J. H. PEARE & SON

SEND IT TO THE MODERN LAUNDRY

"Send your laundry to The Modern Laundry, Mary. They're efficient and dependable. I have been using The Modern for quite a while, and find them entirely satisfactory."

"I shouldn't know what to do without them."

MAIN 77

THE MODERN LAUNDRY

SEND IT TO THE MODERN LAUNDRY

"Send your laundry to The Modern Laundry, Mary. They're efficient and dependable. I have been using The Modern for quite a while, and find them entirely satisfactory."

"I shouldn't know what to do without them."

MAIN 77

THE MODERN LAUNDRY

SEND IT TO THE MODERN LAUNDRY

SEND IT TO THE MODERN LAUNDRY

SEND IT TO THE MODERN LAUNDRY

## The Bookworm

From an old, yellowed, leather-bound diary running over a two-year period comes a very readable book—"The Diary of a Forty-Niner," edited by C. L. Canfield. It is a vivid first-hand account of the ventures and day's work of a gold miner in the days of the gold rush in California. Equally interesting is the gradual evolution in the character of the puritanical New England diarist to a broader-minded, more charitable individual. A love story also embroiders the pages. The book was first published in San Francisco just before the earthquake and the plates and most of the copies in existence were destroyed during that disaster. Now a famous publishing house has reissued the book.

Sir Ernest Shackleton's record of the farthest South expedition of his good ship "Nimrod" is contained in his book, "Heart of the Antarctic." It was this expedition that fixed the position of the magnetic pole, accomplished the ascent of the most southerly volcano, and planted the British flag within a hundred miles of the South Pole.

In the April reports from the libraries in the Union County Library system that from North Powder stands out particularly noteworthy. Out of its group of 165 books it made 355 loans during the month. Elgin reported 265 loans which was almost equalled by Cove with 255. Union loaned 287 books, Imbler 207, and La Grande 3,785. The Dry Creek school holds the banner at present in its use of the books placed with them—92 loans during one month on its little group of ten books. Seventy-four books were mailed out to fill special requests from individuals.

Now that the rural schools are closing we wish to emphasize the fact that Uncle Sam's mail man can bring the Public Library to your very doors. The Union County Library loans books free of charge to residents of the county and will pay the postage for their transportation to those living outside of La Grande.

Unique Ad.

Overstrained eyes may cause a nervous breakdown that will take years of effort and cost hundreds of dollars to correct, which could have been saved by properly fitted glasses.

Saving your EYES saves your health as well as your sight. Our equipment and methods are the most modern.

Let Me Examine Your Eyes

DR. W. M. PEARE Optometrist With

J. H. PEARE & SON

SEND IT TO THE MODERN LAUNDRY

"Send your laundry to The Modern Laundry, Mary. They're efficient and dependable. I have been using The Modern for quite a while, and find them entirely satisfactory."

"I shouldn't know what to do without them."

MAIN 77

THE MODERN LAUNDRY

SEND IT TO THE MODERN LAUNDRY

"Send your laundry to The Modern Laundry, Mary. They're efficient and dependable. I have been using The Modern for quite a while, and find them entirely satisfactory."

"I shouldn't know what to do without them."

MAIN 77

THE MODERN LAUNDRY

SEND IT TO THE MODERN LAUNDRY

# Strawberries and Cream

The California Berries which we are getting are very nice, and we can also send the cream with your order.

- Walla Walla Asparagus.
- Large solid Head Lettuce.
- Green Peas, the Telephone kind.
- New Potatoes, getting cheaper.
- New Hawaiian Fresh Pineapples.
- Cucumbers, hot house.
- Radishes and Green Onions.

Just Tell Central Main 80 When Placing Your order for Vegetables.

## PATTISON BROTHERS GROCERY

Call Main 80

## LA GRANDE CONSTRUCTION & SUPPLY CO.

General Contractors and Builders  
Screen Doors, Windows and all kinds of Mill and Cabinet Work. Estimates on Plate Glass and Store Fronts

Phone 428-J Cor. Greenwood and Madison  
La Grande, Oregon  
H. P. Neilson and Chas. E. Harris, Props.

## LA GRANDE CONCRETE PIPE COMPANY

PERMANENT AS THE PYRAMIDS  
Manufacturers of Building Foundation Sills Chimney

WELL CURBING—SEPTIC TANKS  
Phone Main 120 Factory Island City

WANT TO BUY OR SELL SOMETHING?—TRY AN OBSERVER WANT AD

Want to Look Your Best?



ONE OF OUR MADE-TO-MEASURE SUITS or OVERCOATS IS THE ANSWER

To Be Well Dressed—Keep Your Clothes Well Pressed

The man who is careful of his appearance will win. We can help you to be careful by cleaning and pressing your suit. Let us do it regularly. Ladies' and Men's Suits Cleaned and Pressed

## The Wardrobe

WOOD W. BERRY

—Dry Cleaning a Specialty—

## SPECIAL

PRICES on Tires, Tubes, Gabriel Snubbers, Bumpers, Spot Lights and Tire Chains. Over stocked and must move them—We want your repair business on any make of car. Our Guarantee is what you need on your repair work—Home of the Chevrolet and Nash.

BLUE MOUNTAIN GARAGE  
AVERY HARRISON, PROPRIETOR