



Three Circuit Regenerative Receiver

PART ONE
By R. M. SHERRILL
(Radio Engineer)

The old "Three-Circuit Variometer Regenerative" receiver was the first real popular broadcast receiver. It had been used almost universally by the amateur operators in their successful short wave work, and as these amateurs furnished the broadcast listeners with their first sets, this type of receiver became their favorite also. Although several years of broadcast reception have brought out many new types of receivers, many listeners have come back to the "Three-Circuit Regenerative," which has been appropriately nicknamed "The Old Reliable."

The tuning apparatus consists of the following:
1. 23-plate variable condenser.
2. variometer.
3. variometers.

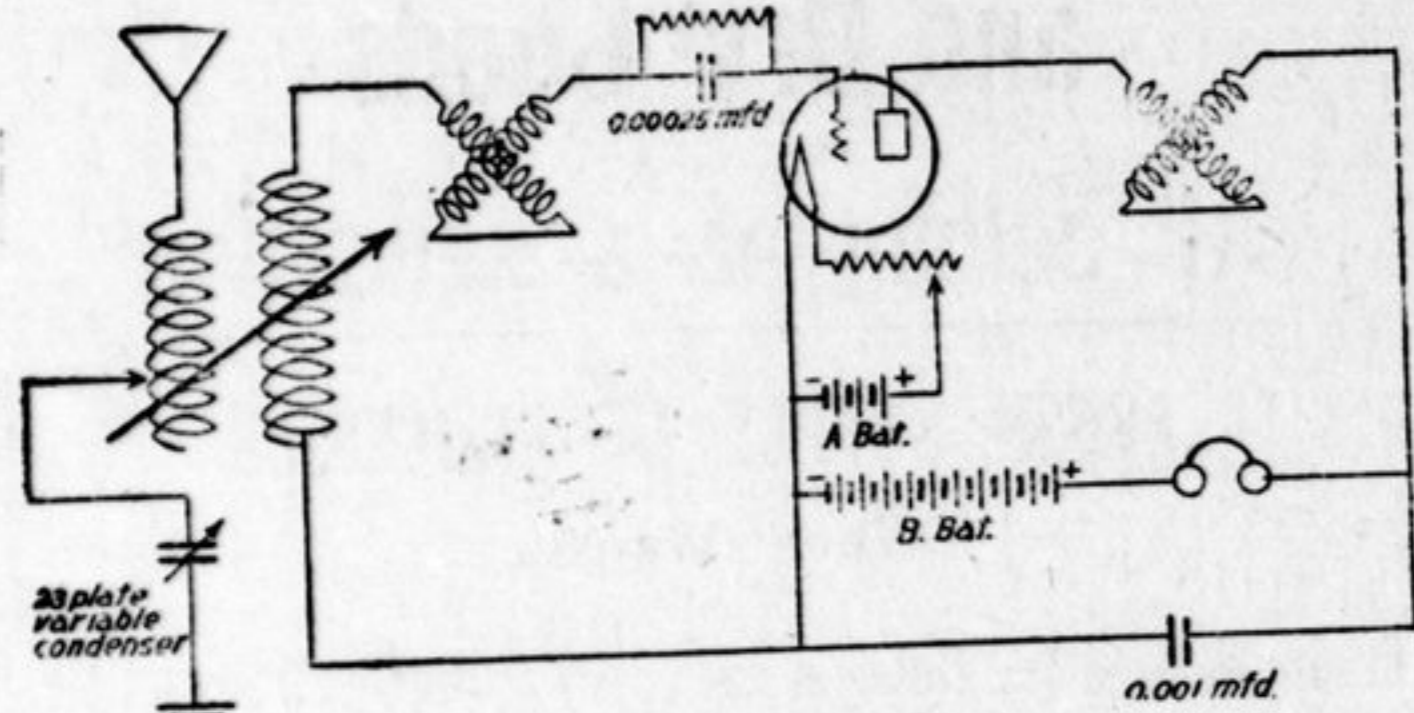
As the variocoupler and variometer

stage audio-frequency amplifier should put local stations on the loud speaker, and a two-stage amplifier should do the same on most of the distant stations.

As shown in the diagram, the antennae and ground are connected to the primary of the coupler. The variometer is placed in the ground wire and with the rotary plates connected to the ground.

One side of the second (rotor of the variometer) goes to the grid variometer, and the connection from the other side of the variometer goes through the grid condenser and grid leak to the grid of the detector tube. The other side of the secondary connects to the negative side of the filament.

The negative sides of the A and B batteries are connected together.



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"The Old Reliable"

eters are rather difficult to construct properly, it is recommended that they be bought ready-made.

The variocoupler should have about 65 turns of wire on the primary and about 30 on the secondary. These numbers, however, will vary with the different diameters of the coils used in different makes. The tapping arrangement on the primary is not important.

All that is necessary with this circuit arrangement is to have about five taps about ten turns apart. If the coupler to be used has arrangements made for tapping which are similar to this, it may be used just as it is. Otherwise, it is recommended that new taps be soldered on as suggested above.

Wiring Easy

The circuit diagram accompanying this article shows a detector tube only, and this, under favorable conditions, should provide good head-phone reception on stations up to 1,500 or 2,000 miles distant. A one-

and the + side of the A battery goes through the rheostat to the filament. The + side of the B battery goes through the headphones and then through the plate variometer to the plate connection on the detector tube. The 0.001 Mfd. fixed condenser is connected around the B batteries and phones to provide a better path for the radio frequency currents.

Almost any type of vacuum tube may be used with this circuit. The receiver is the most sensitive and will give the best results on broadcasting stations however, when a soft detector tube of the UV200 type is used. 16 to 22½ volts of B battery are generally used with these tubes.

The size of the grid leak to be used is somewhat critical and should be determined by experiment. It will usually be in the neighborhood of one-half to one megohm.

Radio Fans, Note: Part 2 of this article on a Sensitive Single Tube Receiver will be published in these columns next week.

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RADIO QUESTIONS AND ANSWERS

Mr. Sherrill will be glad to help you solve your radio problems. Write him, care of The Durham Chronicle.

S. K. Jr., inquires: "Is there any objection, in a two-stage amplifier to using the same rheostat for controlling both filaments? The tubes used are both 201As."

Ans.—Ordinarily there is no objection to doing this but often the tubes are not near enough alike electrically. In addition the use of a common rheostat is sometimes the cause of howling. It would be safer to use separate rheostats.

E. P. S. asks: "Would there be any advantage in using a by-pass condenser around the C battery in my one-stage amplifier?"

Ans.—If you are speaking of an audio-frequency amplifier, here is no reason for using a by-pass condenser.

D. B. F. asks: "Is a 'ground' connection made by soldering on to a piece of galvanized pipe which is driven four feet into the earth sufficient for receiving purposes?"

Ans.—Such a ground might be O. K. if the earth around it were always moist. A water pipe would probably be better. A still better ground would be one or more long bare copper wires buried directly under the aerial.

Perfect

There was a good deal of excitement in the village when notices appeared announcing that the local minister would that night address a meeting on the subject of "The Perfect Woman—Where is She?"

He had quite a good audience and soon got warmed up to his subject. "Now," he said, during the course of his address, "I ask you, has any one ever seen or heard of a perfect woman?"

Suddenly from the back of the hall rose a tall, gaunt, angular woman in rusty black. In a melancholy voice she said:

"Yes, sir; I have heard of the woman you mention."

"Who was it," inquired the speaker.

"My husband's first wife," replied the gaunt one feelingly.

It's nice to visit a big city but it is nicer at home where you can walk out and tell them to charge it.

GLENELG COUNCIL

Met October 4th at Township Hall. Members all present, the Reeve in chair. Minutes of last meeting read and adopted. Comr. Black reported work filling approaches to Anderson's bridge \$217. Report adopted. Comr's McGrath No. 2 ward reported appropriation work, amount \$7: T J Brodie, ward 4, special work, \$5. Reports adopted. The Reeve reported completion of Anderson's bridge at lot 15 con 5.

Black—Aljoe: That com. on expenditure be paid as follows: Jno. McGrath \$12: T. J. Brodie, \$8. Carried. Aljoe—McGrath: That the Reeve and Treasurer be authorized to borrow an additional \$2000 to pay for Anderson's bridge. Carried.

Aljoe—Black: That the gravel accounts be paid as follows: Alex. Campbell, 32 yds, \$3.20: Dan McCormick, 38 yds, \$3.80: Jas Lawrence, 80 yards, \$8. Carried.

Brodie—McGrath: That Denis Ryan be paid \$12 for 1 sheep killed by dogs and that S. H. Wright be paid \$1.50 for inspecting same. Carried.

Brodie—Black: That Burlington Steel Co. be paid \$226.97, steel for bridge at lot 17 con 5 and that C. P. R. be paid \$35.35 for freight on steel. Carried.

Black—Brodie: That Mr David Keyes be paid \$4,200, contract price of bridge at lot 15 con 5 (Anderson's Bridge.) Carried.

Black—Brodie: That the Reeve be paid for inspecting Anderson's bridge, 30 days, \$90. Carried.

Aljoe—McGrath: That Markdale Standard be paid \$116.50 for printing to date, viz: Part III, 1923 Voters' List: Parts I and II, 1924, advertising Court of Revision and Voters' Lists. Carried.

Aljoe—McGrath: That Clerk be paid on salary \$50, postage \$5.36. Carried.

Council adjourned to meet Nov. 8th at 10 a. m.
H. H. McDONALD, Clerk

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Renfrew Cream Separators
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Dress Serges, 40 inches wide. Good assortment of colors, per yard 83c

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All-wool Homespuns. A variety of colors, per yd. \$1.25

Wrapperettes, all colors, per yard 29c.

Comforter Cloths.. 28c. to 35c.

Fancy Coat Linings, all colors and designs 69c. to 89c.

Men's Shirts, heavy, yd. 35c.

Linen Towelling, per yd. 15c.

Ladies' Fancy Striped All-wool Cashmere Hose, in the latest Putty and Oyster Shades 99c.

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Children's Cotton Ribbed Hose per pair 29c. 32c.

Boys' Big Chief Hose, very heavy rib 59c. to 75c.
Men's plain blue Railroad Overalls, heavy and well made, per pair \$2.23

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Campbell's Tomato Soup 15c.

Orange Pekoe Tea, per lb 64c.

Wheat Crystals, pkt. 25c.

White Swan Wheat Flakes 25c.

Kentucky Corn Meal, pkt. 25c.

Creme Toilet Paper, 5 rolls 25c.

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The Moderation League of Ontario

President, I. F. Hellmuth, K.C.

ONE of the most embarrassing facts that the advocate of compulsory total abstinence has to face is that wherever his theory has been put into practice there has grown a strong movement against it; further, the longer the experiment of prohibition has been tried, the greater the opposition it has created. Time has always been against it.

This movement is that in favour of Government Control.

Had Government Control been dependent for its adoption on the votes of those who have always voted against so-called prohibition, it could never have become the law of any Province in Canada. One of the most encouraging things to those who have been active in the work of Moderation Leagues is that there have rallied around them everywhere men and women who in the past have voted with the opponents of the Leagues.

Contrary to the statements made by the prohibitionists, these men and women were not and are not concerned with promoting the interests of what is so euphemistically called "the booze business". They were not and are not men and women ignorant of conditions existing in their own communities. They were not and are not ignorant of conditions existing in other communities. They were and are, for the most part, typical sound, sane and reasonable citizens of Canada.

These men and women, just as is the case with the men and women of Ontario today, had placed before them all the usual stock arguments of the prohibition propagandist. They had placed before them rows of figures and lurid statements showing that prohibition was a success and that Government Control was a failure.

In spite of this, the greater argument of personal experience and observation made them discard prohibition and adopt Government Control.

It is impossible to enumerate all the reasons prompting the change, but it is highly significant that, to take one example only, the Province of Saskatchewan, which for years had voted strongly, whenever opportunity arose, in favour of prohibition, should last year have voted decisively against it; and the significance of this is increased when there is taken into account what the people have been told in Ontario regarding Manitoba. The people in Saskatchewan have, by their geographical position, a much better opportunity of knowing the conditions in Manitoba than have those in Ontario, and it will not be questioned that they had a much better opportunity of knowing the conditions in their own Province than people residing elsewhere.

Let it be remembered that the system in Manitoba had been in operation many months before the people in Saskatchewan voted on this question.

The conclusions are irresistible.

Prohibition was considered a lamentable failure in Manitoba, a lamentable failure in Alberta, and a lamentable failure in Saskatchewan. For their prohibitory laws these Province adopted a policy of Government Control.

And Prohibition has been a lamentable failure in Ontario.

There is no substantial evidence anywhere that any of these Western Provinces would revert to its old prohibitory system.

On the other hand, after less than twelve months, the revenues of the Province of Manitoba have been increased by more than a million dollars and for the first time in years they have balanced their Budget.

No one contends that Government Control has yet attained its last degree of perfection. It is, however, contended that it is a better method of dealing with those evils with which prohibition pretends to deal, and that in addition the revenues of the Province benefit.

Government Control can be had by marking your Ballot as follows:

1 Are you in favour of the continuance of The Ontario Temperance Act?

2 Are you in favour of the sale as a beverage of beer and spirituous liquor in sealed packages under Government control?

MARK YOUR BALLOT HERE

Provincial Headquarters, 9 Richmond Street East, Toronto
Telephone: Main 8387 and Main 1193
F. Gordon Oser, Treasurer R. J. Christie, Vice-President C. D. Boyce, Secretary