

The Rogers AC Tube – a World First for Canada!

In the early 1920's, all radio receivers fitted with tubes were powered by batteries – not one, but at least two and sometimes several: a large low-voltage accumulator (the 'A' battery) to power the thirsty tube filaments (a 201 tube used 1 amp at 5 volts) and a high-voltage 'B' battery (90 volts was typical) for the plate (anode) circuit(s). The accumulators, similar to car batteries, leaked acid and were not popular items to bring into the living room or 'parlour'. When the 'B' battery voltage dropped, the radio tended to break into oscillation and become distorted. And, of course, they would expire at that critical moment or when the local radio store was closed on a Sunday. The batteries were connected to the various circuits in the set via a maze of wires that were another source of problems – poor connections, shorts and the like. The design of the tubes of the day was such that they had a directly-heated cathode (similar to the filament in a light bulb). But this meant that if you



Rogers Super A.C. Console Model

Type 100—5 tube set with loud speaker inbuilt. Equipped with 5 A.C. Tubes and Rogers Patented Power Unit. Beautiful walnut cabinet all complete ready to plug into any light socket.

Price \$370.00

Type 105—Same without "B" Eliminator and with space for "B" Batteries.

Price \$310.00

NOW - Another Radio Problem Solved!

STEADY — UNIFORM — DEPENDABLE — ECONOMICAL
"B" CURRENT FROM ANY HOME LIGHTING CIRCUIT
 — EITHER 25 OR 60 CYCLES



A Canadian designed and manufactured instrument that eliminates the need of "B" batteries, taking the ordinary electric light current, either 25 or 60 cycles, and transforming it into suitable "B" power for the operation of any Radio Set. Its efficiency has been definitely proven by expert Radio Engineers in a series of tests carried out on a large number of sets in actual operation, over an extended period of time. Do not confuse the Rogers "B" Eliminator with any other battery substitutes. It is manufactured under exclusive patents, the use of which successfully accomplishes the entire elimination of the alternating current hum in either 25 or 60 cycles current.

You will at once appreciate the enormous sales possibilities of this new development. Investigate now and be ready for a good volume of new business this Fall.



RADIO DEALERS

Prove to your own satisfaction the efficiency of the Rogers "B" Eliminator

Write for our special trial offer that will enable you to give the Rogers "B" Eliminator a fair test, and demonstrate it to interested customers.

LIST PRICE - \$60

Slightly Higher in the West

Manufactured only by

STANDARD RADIO MANUFACTURING CORP'N LIMITED

Dent. "RN" - 90 CHESTNUT ST., TORONTO

powered the filament with AC power, the signals passing through the radio became modulated with a loud hum – AC-powered radios were therefore not practical.

Ted Rogers, a Canadian radio pioneer, and by the early-1920's, an ambitious and bright young man who owned his own radio company, set about eliminating this problem, realizing that to get wider acceptance in the home, radio sets must break their ties with awkward and costly batteries. He left Toronto in April 1924 on an extensive trip to research for his 'AC tube'. His travels took him to Pittsburgh to visit Westinghouse, there discussing the tube problems with Fredrick McCulloch, who was experimenting with AC tubes (unsuccessfully) – the wily young Ted



purchased the Canadian rights to McCulloch's experimental tubes for \$10,000. On returning to Toronto, Ted experimented relentlessly, trying one idea after another to produce a reliable and effective indirectly heated cathode (one in which the heating element, or filament', is electrically isolated from the cathode that emits the electrons as part of the tube's

function). On August 1, 1924 he finally achieved success with his experimental tube designated the '15S'. The insulation in the cathode of this tube provided better electromagnetic and electrical performance than achieved previously and the tube's structure provided better separation of the AC-powered heater from the other tube elements. Although the 15S worked, and with little hum present, there was much work to be done to bring the tube into production and have it widely accepted in radio designs – this meant re-tooling for many companies (a costly



business) and they took some convincing this was the way to go. Also, in order to make an all AC-powered radio, Ted realized that a robust high-voltage rectifier tube had to be designed



for the plate circuit supply. Ted worked on the rectifier design during the winter of 1924-25 and was awarded Patent 250174 in April, 1925 for his rectifier tube. These two inventions finally led to the production of the first AC-powered radio on April 8, 1925, later designated the Rogers Model 120. This set contained five AC tubes and the Rogers 'B-Eliminator' power unit. By the late-1920's,

people were throwing out their battery sets and replacing them with AC-powered sets by the thousand.



Ted Rogers built-up a true radio legacy before his premature death at the age of

38 in 1939. He even started up his own radio station, CFRB ('Canada's First Rogers Batteryless', in Toronto

