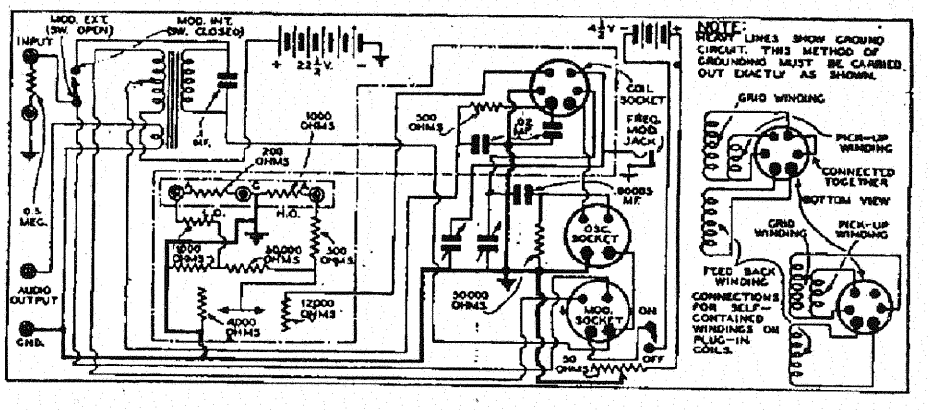
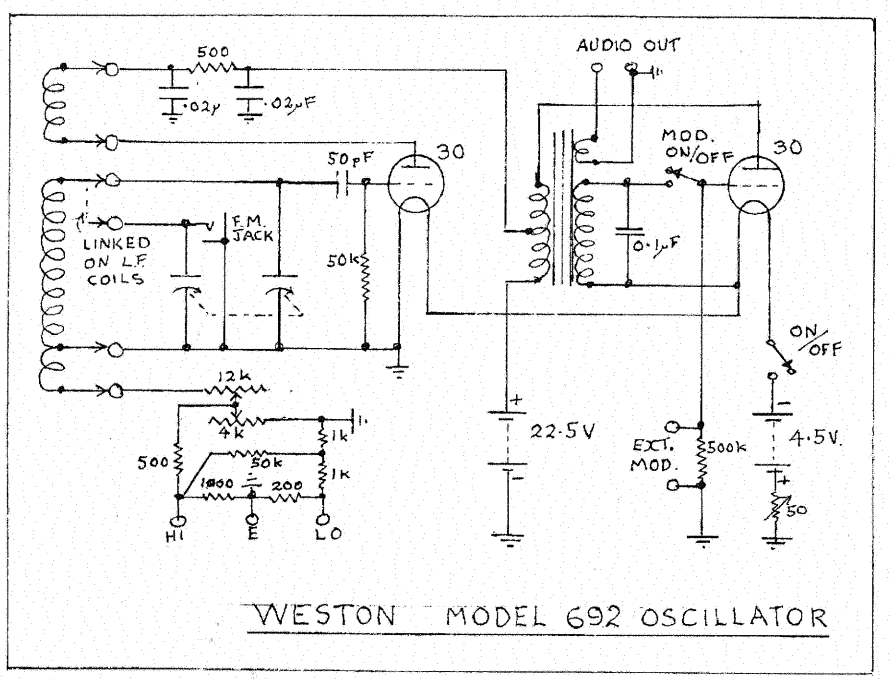


Above : Schematic of Weston Model 692 Modulated Oscillator as drawn at the time of manufacture.

Below Above schematic redrawn in more modern form



Restoration

As might be expected there were electrical problems in this 70 year old instrument. The modulation transformer had an open primary winding which I set about fixing by dissembling the transformer and peeling off the top layers - at least that was what I intended but the varnish resisted strongly and I had to cut through the winding layers to remove the output winding and the primary which luckily were on top.. This left the main secondary winding intact but I then had no idea of the number of turns and the position of the tap on the primary Some measuring and calculating gave me a rough idea of the turns and tapping point then by winding on extra turns, connecting the transformer in circuit and taking off the extra turns a few at a time until the modulator operated correctly, I managed to get the transformer operational. It is worth noting that when, afterwards, I discussed this problem with Bill Farmer, he suggested that next time I give the job to him as he had a chemical bath in which he soaked varnished windings to soften the enamel allowing the turns to be easily removed and counted..

Having rewound and installed the modulation transformer I found that the RF Oscillator failed to oscillate on some of the bands. The type 30 valves tested OK and by making up a test rig I determined that the coils were OK as they oscillated correctly in that rig. Obviously there was some RF loss in the original wiring. I replaced all wiring but the trouble was still there. There were only two components left to cause the trouble, the variable capacitor and the 6 pin bakelite socket which took the coils. Q meter tests showed that the bakelite socket was the culprit - it reduced the Q of the coils by some 30% - enough to inhibit oscillation. This socket is baseboard mounting and a replacement had to be fabricated out of a steatite socket and a modified aluminium standoff for the socket. Now all is well. Apparently the original bakelite had deteriorated with probably some absorption of water during the many years of non-use

In the next article of this series I propose describing one of the most sophisticated Signal Generators of the 1930s which I had the good fortune to operate- the General Radio type 605-B.