

THE MAJESTIC MODEL 20

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GENERAL

In mid-1931 the model 20 was one of Grigsby-Grunow's first superhets; it was also one of the first to use a smaller chassis packed with older large size components, and thereby hangs a tale... From a servicing point of view its construction is a horrible example of what happens when this procedure is adopted. Although its performance is up to scratch, the 20 earned for itself the reputation of being one of the most difficult sets to work on that was ever produced.

Those lucky individuals who have never encountered a model 20 will probably be blissfully unaware that any American set could be as bad as, or even worse than, some Philips sets, but experience could make them change their minds. So, just what was it that made the 20 so difficult to work on? Because the chassis proper was not large enough to accommodate all the components the 'overflow' consisting of the filter block, the filter choke, input and output transformers were potted in pitch-filled cans bolted to the bottom cover plate, thus completely preventing access to underside of the chassis in the normal manner. In addition, the two IF transformers were also pitch filled and each contained a .1uF bypass condenser sealed inside. As it happened, these condensers frequently failed quite early in the life of the sets resulting in what would have been a simple replacement in an ordinary set becoming a major operation in this case.

CIRCUITRY

The 20 was an 8-valve superhet using the then new type 51 vari-mu tubes in the RF, mixer and IF positions with a 27 separate oscillator. Volume control was by means of a rheostat in the cathodes of all three tubes, but why the mixer was included is open to question. A second 27 triode was used as a high-level detector with 255 volts on its plate feeding into push-pull 45s via a high ratio stepup transformer. Audio gain was by no means excessive and it required a large IF signal on the detector grid to ensure that the 45s were fully driven.

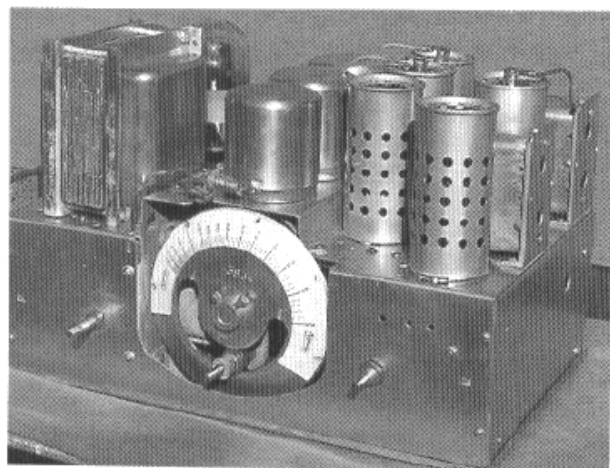
CABINETS

Three different cabinet styles were available, a table model plus two consoles. Illustrated here, the '21' table model was most frequently encountered in N.Z. where it was advertised in May 1931 at twenty-nine pounds ten shillings. The consolette model 22 is unusually small, particularly for a Majestic, though well proportioned and attractive; a 12" speaker was used.

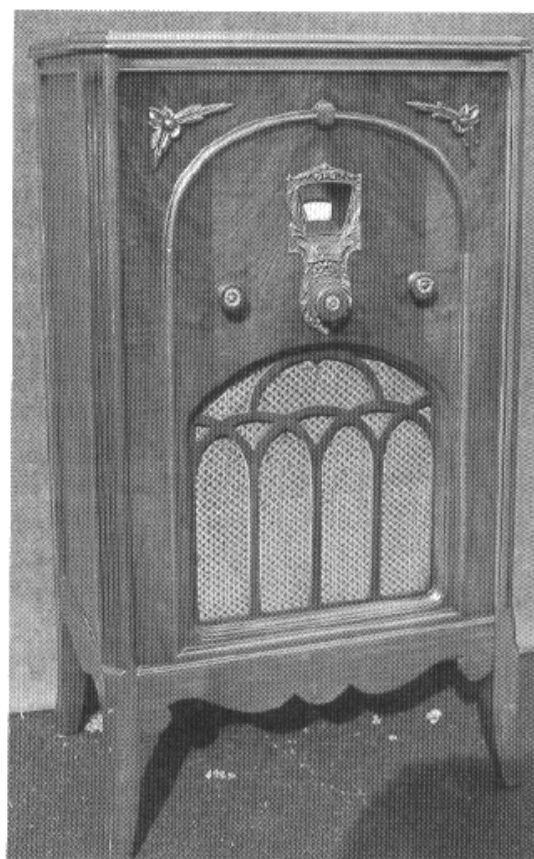
HISTORY

The 22 illustrated here was a 110 volt model and had been fitted with a 230/110-V stepdown transformer at the factory, an unusual procedure for Grigsby-Grunow who were one of the first American manufacturers to supply export models equipped with 230-V power transformers. Incidentally, the N.Z. Wiring Regulations did not permit a switch to be included in the

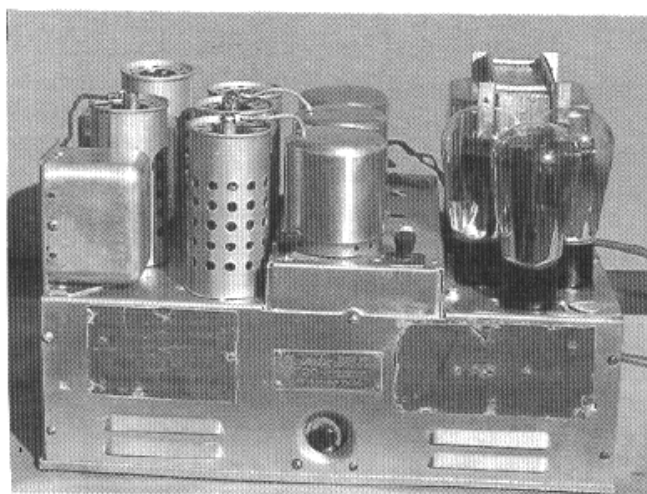
primary of a set's transformer when it was supplied from a stepdown transformer, yet how seldom was this regulation observed! Full marks to Spedding Ltd in this case as although there was a switch attached to the volume control it had never been connected up at the factory, obviously to comply with a request from the importers. How about that?



The model 20 chassis in front view is shown above and the model 21 table cabinet below.

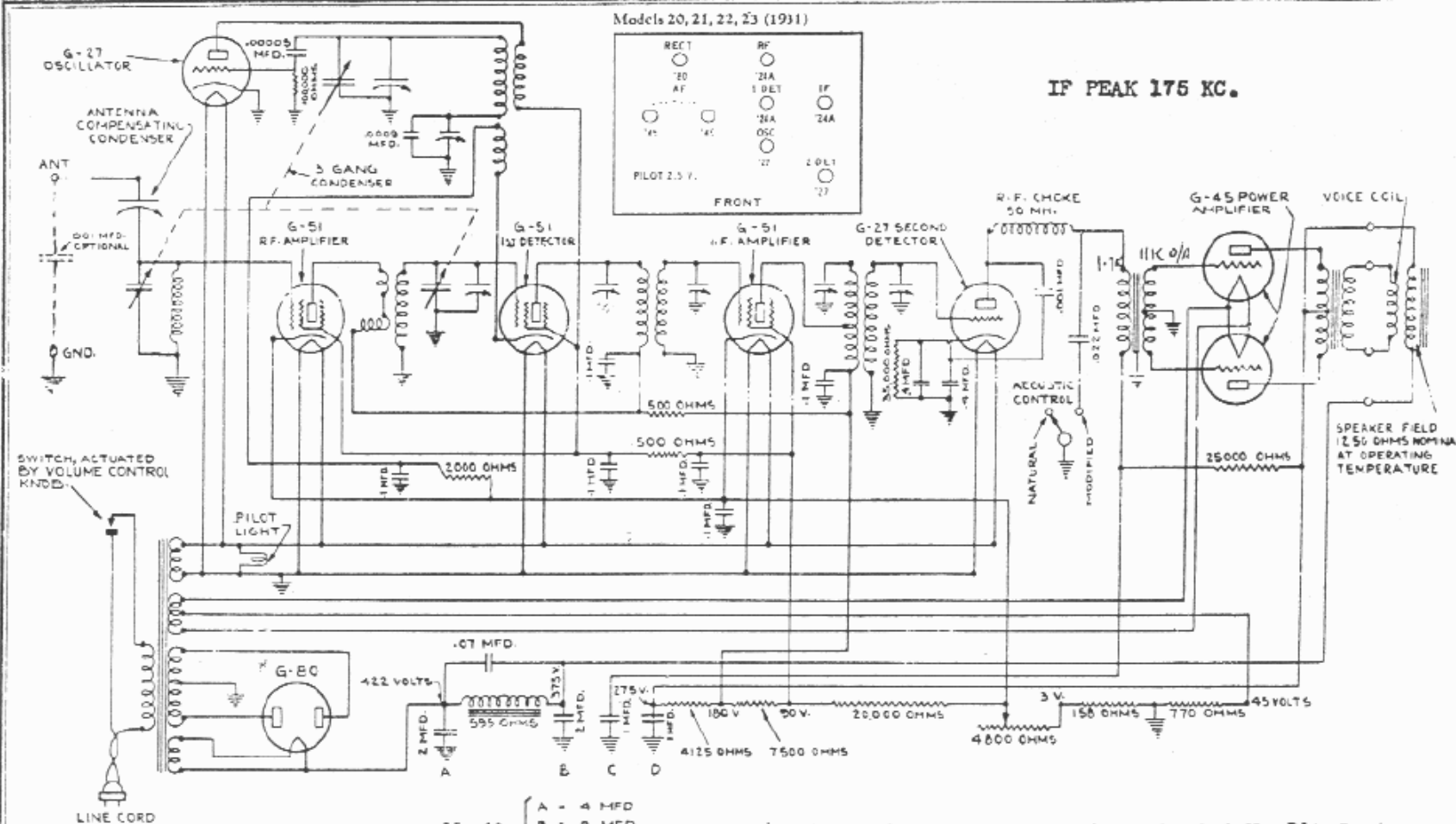


Handsome little console model 22 above and a rear view of the model 20 chassis below



MODEL 20, 21, 22, 23

GRIGSBY - GRUNOW CO.



CONDENSER COLOR CODE

2 mfd condenser- Orange, stranded
 2 mfd condenser- Blue, stranded
 1 mfd condenser- Red, stranded
 1 mfd condenser- Green stranded
 Condenser common- Black stranded
 .07 mfd condenser- White stranded

Tube	Fil.V.	Plt.V.	Grd.V.	Cath.V.	Sc.Gr.V.	Plt.Crnt
1RF	2.32	180.		3.	90.	5. ma
Osc.	2.32	90.		0.		4.
1Det.	2.32	180.		8.	90.	1.
1IF	2.32	180.		3.	90.	5.
2Det.	2.32	255.		21		8.
PPAF	2.36	275.	45.			28.
PPAF	2.36	275.	45.			28.
Rec.	4.88	410.				80.