

## The Reception of MUU

By A. L. Groves

The reception of MUU unfortunately is no easy matter for amateurs residing within a couple hundred miles of the high power stations NSS, WGG and WII, especially if they are not used to copying long waves. The wave of NSS is 16,900 m. and that of WGG 16,100, and at short distance they heterodyne each other to such an extent that copying weak signals within three or four thousand meters of these waves becomes very difficult to the inexperienced. WII uses 13,600 m., which at close distances also intermingles with the waves of NSS and WGG.

MUU's wave length is about 14,200 m., from which it will be seen that some fairly close tuning must be done to receive him with success if all three of the above stations are working. The best and simplest way of receiving it is with the honeycomb coils, and taking WII as a guide MUU will be located just a few degrees on the secondary condenser scale above where WII comes in loudest.

With Duo-Lateral coil 1500 in the secondary, shunted by a 43-plate (.001 mfd.) condenser, WII tunes in at about 50 degrees on the 180 degree scale, and MUU should tune in at not over 53 degrees. With DL-1250 in the secondary, shunted by same condenser as above, WII tunes in at about 79 or 80 degrees and MUU at 83 to 85 degrees. The greatest selectivity, however, is obtained by using DL-1000 in secondary, and with this coil shunted by the 43-plate condenser WII should tune in at about 135 or 136 degrees while MUU will tune in about 142 to 144 degrees.

Whatever coil is used in the secondary, DL-750 should be used in the plate. No condenser is required to shunt this coil.

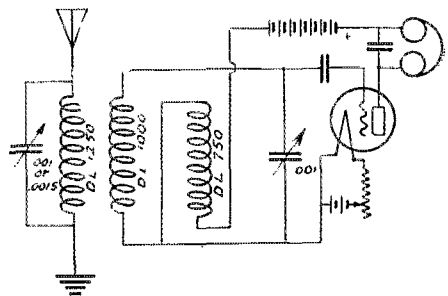
For all small aerials with a fundamental under 200 meters, DL-1250 is the correct coil for the primary and this should be shunted by a .001 mfd. or preferably a .0015 mfd. variable. For aerials from about 200 m. natural wave length up to around 250 or 260, DL-1000 should be used for the primary, shunted by a .001 or .0015 mfd. condenser. For larger aerials, smaller primary coils are used. An aerial with a natural wave length of about 1000 meters will require DL-500 in the primary.

To build a temporary set especially to receive MUU I would recommend the "rod" type of mounting with wooden "centers" for the coils as this is very cheap and efficient where it will not be necessary to change coils. Unmounted coils are suitable for use with this type of mounting and somewhat cheaper than the mounted ones. Three coils, the DL-750, DL-1000 and DL-1250, costing about \$8.65, are what most amateurs will need. If DL-1250 is too large for your primary you can use it in

the secondary and employ DL-1000 in the primary. The diagram herewith shows method of connecting, and position of the coils on the rod.

The filament and B battery are of course adjusted in the usual manner; then the secondary condenser is adjusted to approximately the figures above indicated. The plate coil is gradually brought closer to the secondary until the tube oscillates—which is indicated by a "thud" in the phones. With the primary coil about 2 to 2½ inches from the secondary, slowly vary the primary condenser until the set is "balanced out". After signals are picked up they can be brought in clearer and stronger by further adjustment of primary coupling, accompanied by slight changes in primary condenser. After that a slow loosening of the plate coupling will almost always give additional amplification.

The best method for the inexperienced is to practice a few minutes on WII and then



move up to MUU. Most of the time MUU can be heard weakly when tuned direct to WII and it is then only a matter of moving the secondary condenser up a few degrees and then barely move the primary condenser, and presto!—there is MUU. With DL-1000 in the secondary it is no trouble to tune out WII completely while on MUU, but to those unfamiliar with long wave work it will seem impossible at first.

Most of the common tubes will work well on the long waves, altho less B battery should be used and a much dimmer filament may be used, than on amateur waves. The steadiest work and perhaps the best is accomplished by using an amplifier tube on the long waves in place of the regular detector but for a temporary set it is doubtful if the difference would warrant the purchase of a special tube if one is not already on hand. Amplification is not recommended for copying MUU. His signals are strong enough for anyone to copy, as a rule, and amplifiers on long waves only serve to increase static and tuning difficulties.