

WAYFARER

RADIO

WARNING!!

This car radio is intended for operation on the voltage for which it was designed - 6 volts or 12 volts, whichever is shown on the metal nameplate at the back. While it has also been made to stand up to moderate and intermittent overvoltage, it cannot be expected to give good service if continually operated at over-voltage conditions, and is not covered by guarantee against breakdown caused by such abuse.

In some car electrical systems, more particularly those in recent model cars with 12-volt systems, overvoltage conditions are all too frequently encountered. The trouble has been found to often originate in:-

1. INCORRECT ADJUSTMENT OF THE CAR'S AUTOMATIC BATTERY CHARGING EQUIPMENT. We have even had a case reported where defective operation of this equipment produced a peak voltage of 23 VOLTS in a 12-volt system, while 18 volts is stated as being not uncommon. The remedy is to have a competent auto electrician adjust the system at the time a car radio is fitted.
2. THE USE OF INFERIOR CONNECTIONS BETWEEN THE CAR'S GENERATOR AND BATTERY - either cables that are too light and perhaps not making good connections or, more frequently, "push-on" type connections to the battery which do not make good enough contact. If "push-on" or similar connections to the battery are used, you are advised to have them replaced by the heavy "clamp" type as a matter of course when your car radio is fitted.

A ROUGH CHECK can be made by anyone. At night time, with car headlights switched on, rev. the engine - if this produces a marked brightening of the headlights then overvoltage conditions may be present.

INTERFERENCE NOISE: This radio has built-in interference suppression circuits, and if fitted by a qualified radio serviceman then any additional suppressors or condensers made necessary by the particular make and model of car will also be installed by him. First step in elimination of stubborn interference however, is to have spacing and seating of contacts in the car's ignition system checked by a competent auto electrician. "Tyre static" (only encountered when car is travelling) can usually be cured by having suitable graphite grease or powder added to front hubs during periodical wheel lubrication.

AERIALS: The longer the aerial the more "punch" your car radio will have. Best and most reliable aerial for New Zealand radio conditions is the 8-9 foot side-mounting type, which should be used wherever the shape of the car will allow it - it makes all the difference to reception in country districts.

MODEL K100 CAR RADIO - INSTALLATION NOTES

MOUNTING: The lugs attached to the set allow support of its front, while the heavy bolt at the rear may either be secured to the car bulkhead or supported by the multi-hole strip supplied. In vehicles where vibration is excessive, lug and strip mounting holes may be enlarged with a taper reamer to take standard radio type rubber grommets and so provide a shockproof mounting - if this is done however, it will be necessary to loop a heavy woven braid lead across the rear grommet to provide a satisfactory earth return.

PLASTIC FRONT: If the set is installed below the instrument panel, this front remains in position on the nose of the set. In flush-mount installations, front may be removed so that instrument panel is sandwiched between set and plastic front. Where car has a radio "knock-out" panel provided, an adaptor panel (AK-1) is available.

CONNECTION TO BATTERY: Connection is made via the fused lead provided, to some point in the wiring which is joined to the battery by a very heavy cable - at the back of the ammeter on the instrument panel is the usual place in many types of car. If connection is made at any other point in the wiring, excess voltage may be applied to the radio (see "WARNING" sheet supplied with every radio). The Model K100 car radio is designed so that it may be fitted to either positive earth or negative car systems without any alteration or adjustment to the set being required. Battery drain is approximately $2\frac{1}{2}$ amps (12-volt model) or $4\frac{1}{2}$ amps (6-volt model).

AERIAL CONNECTIONS: It is usually impossible (because of the full shielding of this set) to hear any stations until an aerial is connected. The telescopic rod-type aerial is standard today, and by far the best type from the point of both reliability and results is the 8-9 foot side mounting pattern - which should be fitted in every case where the shape of the car will permit its use. Other types of aerial, while satisfactory in other countries, do not best suit N.Z. conditions.

Connection to the aerial rod must be via a special low-capacity shielded lead (usually supplied with the rod at time of purchase) which has at one end a bayonet type plug suiting the aerial socket on the K100 unit - at the other end it has either a shielded plug which fits into a socket on the rod, or two lugs - if of the latter type, the shield connects to the frame of the car at the point of aerial entry (making sure of a good electrical connection) while the centre conductor goes to the rod itself. For best results this aerial lead should be as short as possible. When set is installed and aerial is connected, the set is matched to the aerial in the following way:-

FULLY EXTEND ROD AERIAL AND ADJUST AERIAL TRIMMER SCREW (ALONGSIDE AERIAL SOCKET) FOR MAXIMUM RESULT ON SOME DISTANT STATION WITH A FREQUENCY AROUND 1300-1400 KILOCYCLES. This should be done in daytime - at night the dial will be too crowded with stations

NOISE: This may be classified in the following ways:-

- (a) Static and noise from powerlines etc.
- (b) Noise from car's electrical system
- (c) Static electricity generated by movement of car
- (d) Between-station noise.

(a) Static and noise from power lines: Static noise is familiar to everyone, is worse at some times than at others, and is most noticeable on distant stations. Power line noise, including noise from trams, is usually at its worst in the city and again is most noticeable on weak or distant stations. Unfortunately nothing can be done about noises of this type.

(b) Noise from car electrical system: Nothing need be done to the K100 set itself - it is fitted with a double filter in the battery circuit, and also a special aerial filter circuit. The car itself can produce noises equivalent to power line noise however, and it is usual to take steps to eliminate them. Different cars require different treatment, even among cars of the same make and model. Often no noise is heard in the City, where stations are close at hand, but shows up when the car is driven in the country away from the stations.

Usual practice during radio installation is to fit a suppressor condenser to the car generator, and a distributor suppressor in the centre lead to the distributor (in cars with voltage regulator system, make sure generator condenser goes to generator armature - NOT field connection). Occasionally it is necessary to fit a spark suppressor to each of the car's plugs, or fit the new suppressor-type plugs now available which are claimed to have the added advantage of improving engine performance ("Autolite" is one brand we have seen, and there are probably others). Sometimes a condenser on the battery side of the ignition coil will help. If an electric wiper is used, this usually requires to be suppressed by the fitting of a braided-lead condenser right at the motor connections - as close as possible. Other appliances such as car heaters, electric clocks, etc., may also require special treatment, which in general involves suitable use of suppressor condensers. Of course, as mentioned, all this suppression work is usually unnecessary if the radio is to be used only in the City for listening to the local stations - it is when you drive further away from the radio stations that the noises show up.

(c) Static electricity generated by movement of car: This generally consists of crackling noises heard when the car is travelling at reasonable speed along a bitumen or other smooth road, and usually only after the car has been running for a mile or more. It usually either disappears or becomes worse when brakes are applied, and is most frequently due to either friction of tyres on the road surface or poorly adjusted brakes. Cures are to have a little graphite grease added to the hubs (usually only front wheel hubs) during periodical car lubrication, and to have brake adjustment checked.

(d) Between-station noise: Due to automatic volume control action, noise appears between stations in all modern radios, but is usually more noticeable in a car radio. It is not entertaining to listen between stations however, and the only thing that counts is whether or not you can hear stations without

noise being objectionable.

MAINTENANCE: The Model K100 set is designed so that most maintenance work can be carried out without removing any part of the set from the car, while in practically no case should it be necessary to take the case of the set out of the car. Dismantling for maintenance can therefore be considered in only two stages, viz:-

Stage 1. Remove the six screws (3 on each side of the case) holding the bottom plate (with 5-inch speaker attached if the installation is a single-unit or dual-speaker fitting). The bottom plate may now be removed, allowing easy access to all valves, vibrator, etc.

Stage 2. Remove remaining four screws (2 on each side of the case), control knobs, and plastic front. Complete "works" of set may now be removed, leaving only the steel case remaining in position in the car. WARNING! When removing these last four screws, keep one hand supporting chassis of set, which is otherwise liable to drop down on to floor of car.

REALIGNMENT: Tuning realignment is usually only necessary if some major maintenance work has been carried out - if required, it should only be carried out by a properly qualified radio technician using a Signal Generator.

R.F. tuning range of the K100 is from 548 to 1500 kc/s. Intermediate Frequency is 460 kc/s. Trimmer adjustment should be carried out at 1400 kc/s, and padder adjustment at 600 kc/s. Radio frequency coils are fitted with variable inductance slugs which are set in position at the factory, and should never require alteration. If for any reason one of these coils requires replacement, the slug adjustment routine for "Hy-line" variable inductance coils should be followed (available on request).

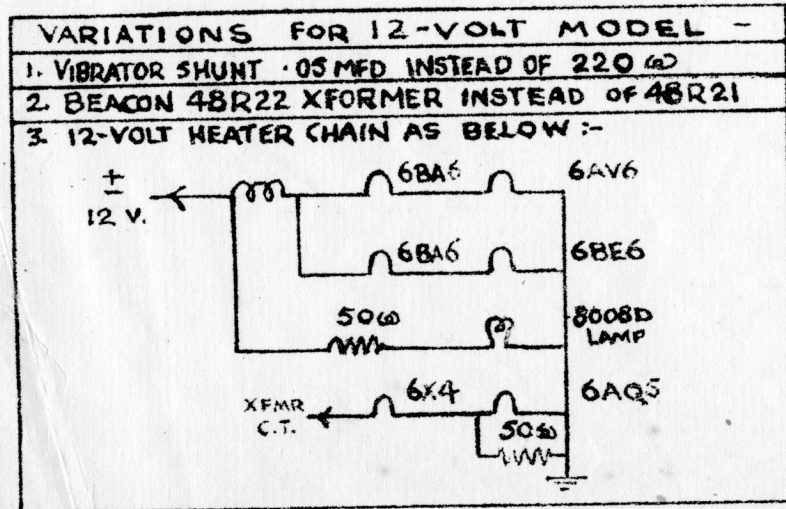
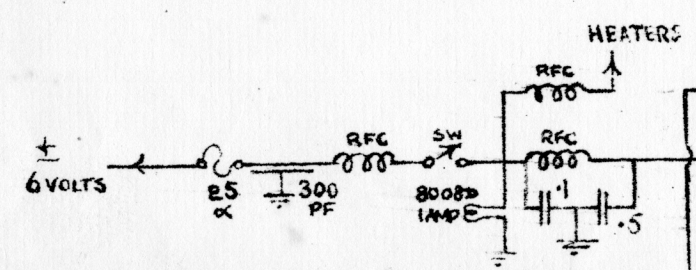
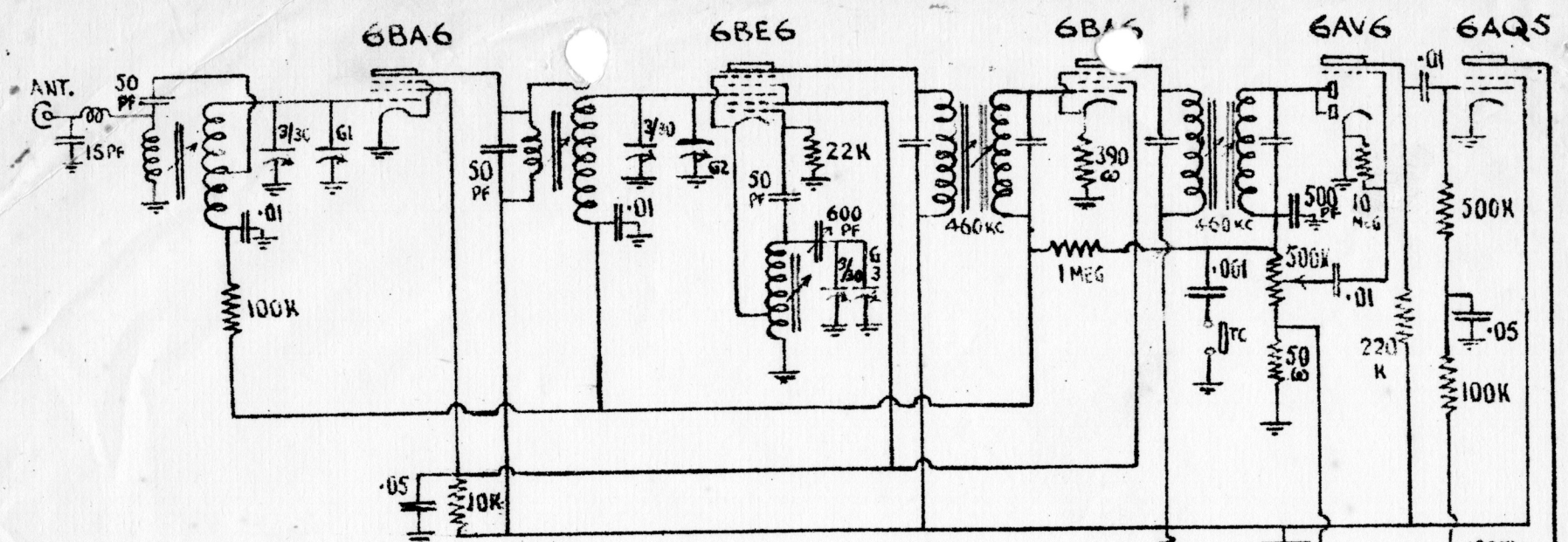
<u>VALVES:</u>	R.F. 6BA6	I.F. amp. 6BA6	Output 6AQ5
	Mixer 6BE6	2nd. det. 6AV6	Rect. 6X4

POWER TRANSFORMER: Standard "Beacon" 48R21 (6 volt models) or
" " 48R22 (12 " ").

I.F. TRANSFORMERS: Standard "Philips" Ferroxcube AP1000/52.

K102 SPEAKER UNIT: Where set is installed as a two-unit single speaker, or dual-speaker fitting, the K102 unit is used. This is simply a loudspeaker unit of the most sturdy and wholesome type (8-inch circular) mounted in a case suitable for fitting anywhere within the car. The wire to this speaker should be reasonably heavy for best results, and connects to a plug which fits into a socket on the K100 set. Your Radio Dealer will also, if you wish, supply you with one of the several types of extension speaker with a long lead and plug attached which you may plug into your Model K100 - in this way you can, when on holiday, have the benefit of radio in your tent or bach without the need for another radio set.

CIRCUIT DIAGRAM: A full circuit diagram is attached. Due to the difficult supply position, there may from time to time be minor variations in manufacture, but these will be easily followed by professional radio servicemen.



MODEL K100 CAR RADIO - 6 VOLT