Up-dating with a Tripler

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THE e.h.t. section of the writer's old Decca dual-standard Model CTV25 colour receiver had been a source of increasing annoyance since the set had been bought exrental a year previously. For the first three months it worked well, then the GY501 e.h.t. rectifier valve base began to conduct, causing a great deal of trouble. Various other problems then began to show up, most of which were cured for a short while by using damp-start spray.

One night however sinister noises were heard coming from within the X-ray screening can, and the picture shimmered and vanished with a terrible smell of burning plastic. Rather than replace the offending items it was decided to see whether an e.h.t. tripler could be installed. This is a much neater unit than the unsightly X-ray can and much less heat is given off inside the cabinet, benefitting the set in general.

Circuit Changes

The modifications carried out were as follows. First the e.h.t. overwinding on the line output transformer was removed completely, the input to the tripler being taken from the line output valve anode tap on the primary winding (see Fig. 1). The most accessible point is the a.c. side of the TV6.5 focus rectifier, below the PD500 valve base — this is connected directly to the line output valve anode.

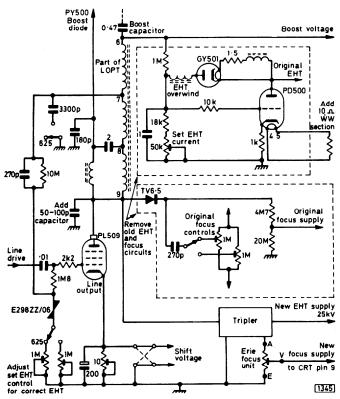


Fig. 1: Modifications carried out to the e.h.t. and focus supply circuits to enable a tripler to be used.

When experimenting initially it was found that the existing focus circuit had inadequate range. The focus supply was obtained from the tripler therefore, using an Erie focus potentiometer (available from Manor Supplies). The control has four pins at the rear, labelled A, B, V and E. E goes to chassis, A is the input from the tripler, V should be connected to the c.r.t. via the existing screened cable, and B is a test point which should be insulated.

This arrangement gave good focus and correct e.h.t. (24-25kV) but the width was found to be short by about half an inch on each side. This can be overcome by connecting a low-value pulse ceramic capacitor of 50-100pF from the top cap of the line output valve to chassis. In the prototype this capacitor took the form of six inches to a foot of mains flex, one side going to the top cap and the other to chassis. The first set tried needed a foot, another subsequently modified required only six inches. It depends no doubt on the condition of the line output valve, and a certain amount of experimentation with different lengths/values may be needed.

The PD500 shunt stabiliser valve is removed altogether, a 10Ω dropper section being wired under the valve base to maintain heater line continuity.

The tripler used was an ITT TS25/11ATZ since it was the cheapest available. This has since been increased in price however and several other cheap models are now on the market. They will no doubt work just as well.

In the writer's case the modifications were carried out for less than £5, which makes sound economics if the line output transformer overwinding should go.

Physical Arrangements

The tripler was mounted in the CTV25 astride the PD500 valve base. Two holes must be drilled carefully on each side. It is advisable to remove the chassis from the set when doing this, otherwise the static convergence will drift somewhat! Don't forget to connect the thin yellow lead (ITT tripler) to chassis. The tripler should be kept at least 20mm clear of the metalwork.

The focus unit was mounted on the edge of the cabinet, using its two right-hand side screw holes only. If the chassis has to be removed at any time the leads are simply unplugged from the unit. Make a cut-out in the back cover so that final adjustment of the focus can be made.

Results

The two Decca CTV25 models modified in this way have been working for six months now without giving any trouble. Although the modification has been tried on only the Decca chassis, it will no doubt work just as well with other early colour chassis, for example the Pye 691 which has a very similar line output stage. In fact I thoroughly recommend the change when trouble shows up inside the X-ray can of sets with an all-valve e.h.t. section.