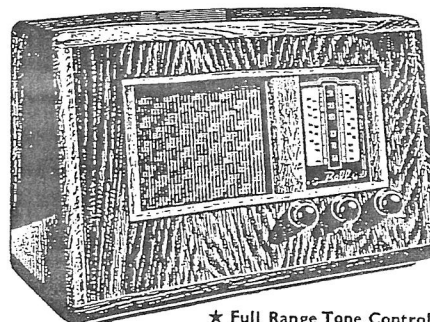


## THE BELL COLT Part 1

In the adverts for Bell Colts, the word colt was seldom used but in an advert by Bell on page 100 in MGA there are three identical cabinets, one a Colt at £13/19/6 one a Champ at £12/12/0 and the other an Explorer at £15/15/0 with short wave. It would appear that the Champ has no built in aerial and maybe no tone control. A wooden cabinet model in June/55 had a similar chassis, was this the first Colt? In July/55 the plastic version was shown available in four colours and in Jan/56 another wooden cabinet model appeared in



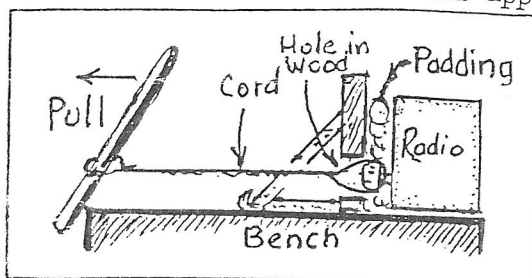
- ★ Full Range Tone Control
- ★ Floodlit easy-to-read Dial
- ★ Built-in Aerial
- ★ Australasian reception

**UNMATCHED QUALITY**

AT ONLY  
**£16/11/-**

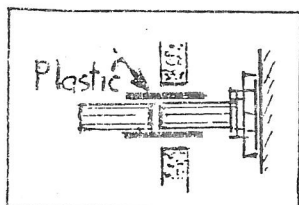
This 5 valve A.C. mantel radio is beautifully styled in natural or dark oak.

In good looks, in excellence of reproduction, in unbeatable radio value — there's everything you want in a Bell Radio.

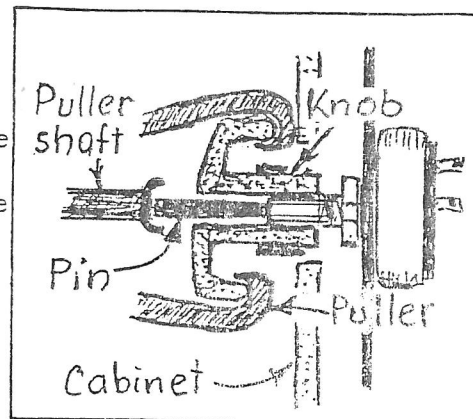


natural or dark oak which is shown in MGA page 101 in light oak but on page 100 as a Planet and in our Bulletin for May 1993 as a White enamel finish on page 9. On the rear cover of MGA are illustrated six colours, some with different knobs and dials. The seventh colour would be the dark red.

on some models the type of plastic in the knobs has a habit of sticking to the shafts. Some previous owners have used levers against the cabinet to take a nick out of the knob and crack the cabinet. One method is to tie a heavy cord around the knob and mount the cabinet on one end of the bench against a soft padding then with a lever arm on the other side of the bench pull on the cord. If still not a success drill a hole in the centre of the knob and use a bearing puller hooked over the knob with a short shaft through the hole in the knob against the shaft on the set. This will either break the knob or pull it off.

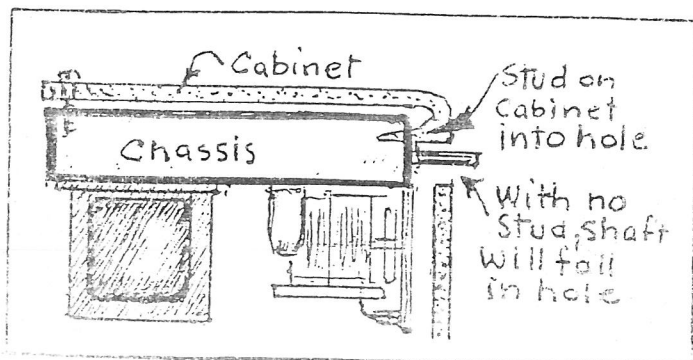


As the push-on knobs are no longer available, the shafts will have to be extended or replaced.



The volume and tone controls can be replaced with those with longer shafts as the old ones may be worn out and the tuning shaft can be extended with a brass coupling unit with flush grub screws to clear the cabinet or a close fitting solid plastic tube glued to the shaft and extension. This could be used on the others if the controls are in good order.

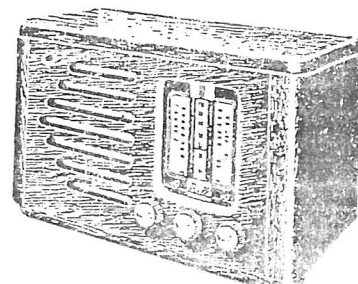
The next stage is to remove the chassis. Be careful not to allow the chassis to drop at the rear when removing the mounting screws with the set upside down, as this will break the stud on the cabinet at the front in a hole in the chassis used to align the shafts central to the large holes required for the push-in knobs and to anchor the chassis at the front. If broken off, this stud should be glued back in place in case the radio is packed upside down during a removal trip when the weight of the chassis will be suspended from the two rear screws causing cracks or breakage at the rear of the cabinet.



**5 Valve Mantel**

With built-in aerial, Australasian reception. On specially-selected natural or dark oak.

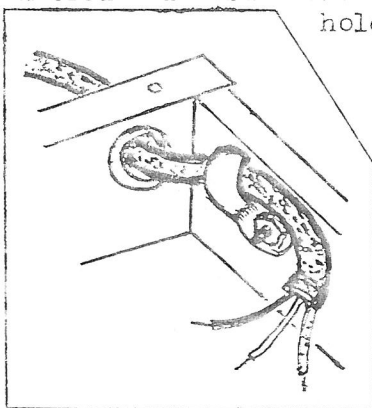
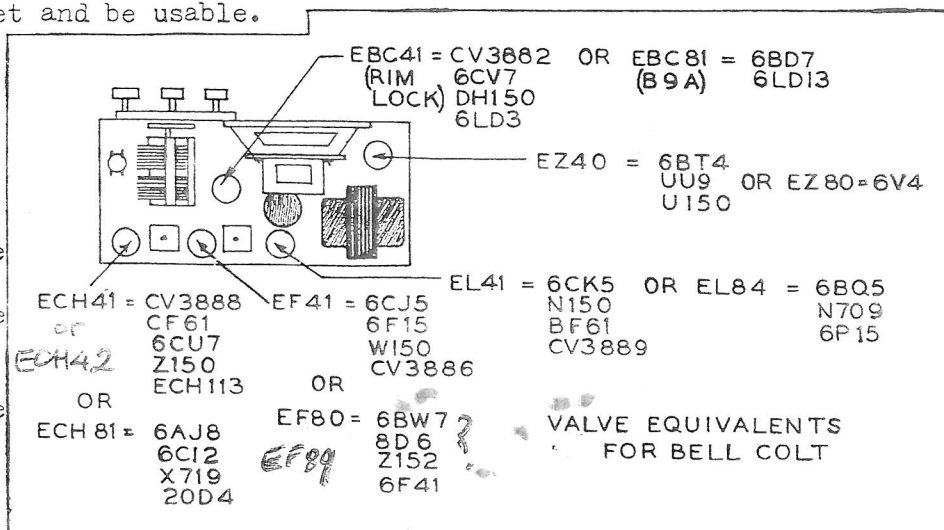
**£16/11/-**



## THE BELL COLT Part 2

Having removed the chassis from the cabinet, don't remove the valves until you have cleaned all the dust and grime from the chassis to prevent this from clogging up the valve socket holes from where it will be difficult to remove. Remove the valves one at a time and use an indelible felt pen to write the type number on the lower edge of the glass. Some will have the original type number worn off when you can refer to the valve equivalent list to find the correct label. These equivalents indicate an American or an English type some of which may not be an exact replacement but will fit the socket and be usable.

The next step will be to check the power transformer. The primary should be 50 $\Omega$  and the secondary 350 $\Omega$  from each rectifier plate to earth. If open windings are found then the transformer will be useless where a new one, type 52 R68 will be expensive and difficult to locate and a rewind also expensive so a used similar one will be required. Then check the primary and secondary windings on each IF transformer where the resistance should be about 25 $\Omega$ . Other similar IF transformers can be taken from a surplus Bell chassis. The mains cord will require to have the knot untied and a suitable clamp installed to lock the cable inside the chassis. A suitable



hole is already in the side of the chassis. The use of a knot to lock the cable is now illegal as constant twisting can break the cord off at the ends and a bare phase end could touch the chassis! Also the early open ended power plug, if used, now illegal will have to be replaced with a modern one.

The electrolytic capacitor may need to be reformed if the set has been idle for some years. The leakage should be under one milliamp for each section after twenty minutes but if a high current persists with a low voltage, then a new capacitor will be required for that section and if all sections are useless a new unit or three new separate units will be required. Some three section units short enough to clear the

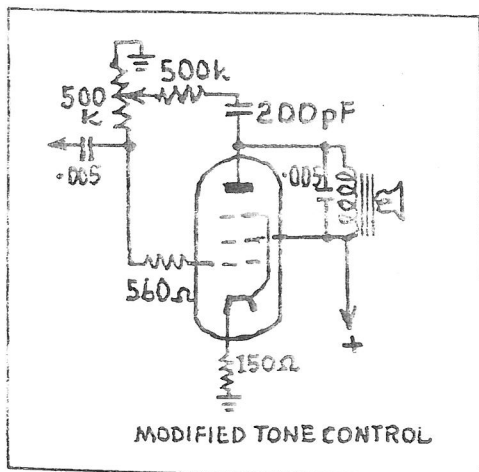
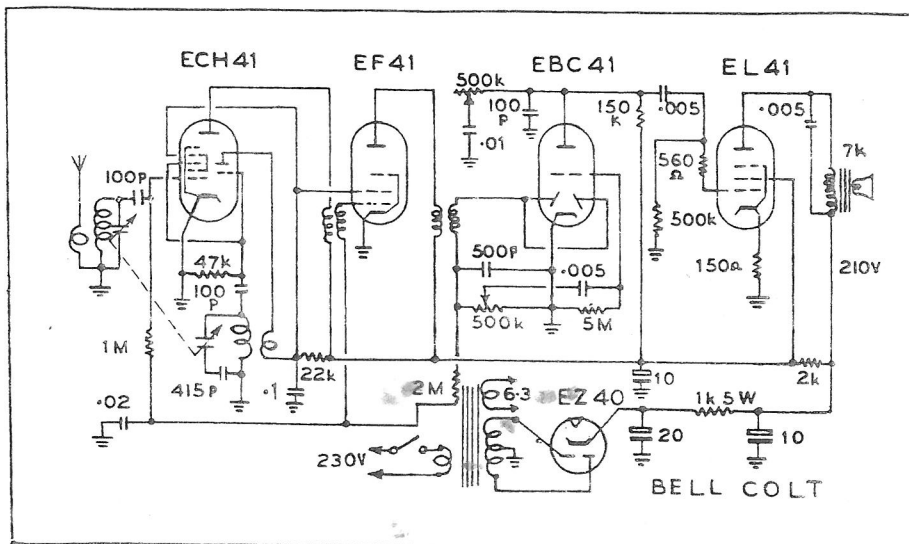
speaker transformer are available but these mount with three lugs instead of four on the original but these can be used by bending two of the lugs to fit two of the holes when the third lug will come down in the large centre hole to be bent over the chassis. A taller unit can be used if the speaker transformer is relocated on the chassis at an angle at the front as used on some later Colts. Replace any wax capacitors, usually two, one from the high tension on the oscillator coil and one on the A2C line at the rear. The detector plate resistor is often high, after measuring 300k and will need a new 150k half watt. Also check the large carbon resistors in the power supply, one at 1000 $\Omega$ , one at 2000 $\Omega$  and one at 22k.

At this point we can apply the mains through a variac or a 110 volt transformer at first. If all is silent, disconnect the power and check the speaker transformer which often has an open primary. Replace this transformer and apply the full mains when all may be well apart from replacing a dead dial lamp and maybe a worn dial cord which will be found to be more tricky than at first thought.

## THE BELL COLT Part 3

I have found three Colts with a whistle on the local station, each with a different fault. The first was found to have the third 10 $\mu$ f electrolytic section which filters the audio and RF sections, to be weak when a separate replacement obtained a cure. The next was found to have no electrical fault but the previous owner had joined the aerial to the top of the tuning coil to increase sensitivity maybe because he was in a remote area. The third was similar where there was a fine lead soldered across the two terminals on top of the tuning coil to connect the top of the tuning to top of the aerial coil.

Another fault, this time with the original design was found by David Clist when he was running a series of distortion checks and found that the tone control of a .01 $\mu$ f capacitor and 500k control from the plate of the high impedance detector to earth was producing high harmonic distortion when in the full base position. Most users of this set would not have used this setting as the tone was rather woolly. A simple



cure is to shift the control to the output valve by using a 200pF condenser from the output plate, in series with a 500k resistor then through the 500k control to earth and to the output grid through the existing 560 ohm resistor. This system was used by Columbus and Ultimate and is based on inverse feedback of the treble. The addition of a 500k resistor in series reduces the maximum treble cut to give a smoother control. A purist may not wish to alter the original circuit, but if changed tie a tag to the power cord to notify a future owner. A similar tag should be tied to any radio with the date when serviced for future reference.

Another fault difficult to detect was frustrating a serviceman some years ago, a crackling similar to a dry joint that came and went. The elderly lady owner was becoming frustrated at the time it was taking, but I was able to supply him with another Colt chassis to put in the original cabinet to make the owner happy leaving me with the problem. After much shaking, soldering and replacing parts, no improvement. Then by removing valves it was found to be in the tuning section, finally found to be the 100pF capacitor on the oscillator coil. Some years later another Colt turned up a similar noise that was constant. By removing valves from the front, no difference till removing the detector, when a great increase occurred. By shorting the output grid to earth, no more crackle but by shorting the plate pin of the detector socket to earth also removed the noise so here it was, the 100pF moulded capacitor to earth from the detector plate.

R J Hatton  
Oct. 2004

**BELL Radio**  
1955 112-10-6

