

DIY Philco B-537 Deluxe People's Set by Robert Darwent

Like many, I just can't resist the lure of a nice bakelite set that catches my eye. In this instance it wasn't so much a complete set as the empty black bakelite case from a Philco 444 in a dirty but otherwise good condition. My immediate thoughts were to adapt or build from scratch a chassis to fit inside to give the appearance of a working original. However, other restorations gradually took me away from the intended project and the case stood idle for almost a year awaiting my attention again, until...



A friend telephoned telling me that whilst helping to clear out a garden shed he had come across a rusty old valve radio chassis and would I like to have it, otherwise it was going to be dumped along with the rest of the junk being cleared out. Of course I said yes expecting it to be only fit for stripping down for the odd useable part. However, it proved to be in a much better condition than I had first assumed. It was immediately obvious from the dial that it was from one of the many Philco people's set models. It was quite rusty on top, which is very common with these sets due to the chassis only being thinly plated, but in an otherwise remarkably good restorable condition. It had been discovered inside a disintegrating suitcase which had obviously offered it some protection. It still had a full set of original Philco branded valves, the speaker was in a good state, its celluloid tuning dial was very well preserved and even all its bakelite knobs were still present and intact rattling around in the bottom of the suitcase. After some research I narrowed down the model, despite no markings on the chassis or dial, to be either a B-537 or a C-537. After scrutinising the service sheets for those two sets I pinpointed it to be a C-537 of 1937 vintage, which was one of the deluxe people's sets that came in a veneered wooden case. The B-537, also of 1937 vintage came in the familiar domed bakelite case and used an almost identical chassis, differing in only having a rotary on/off control rather than the combined on/off and tone control present on the C-537. But would it be possible to get this chassis to fit into my earlier obtained bakelite case to make what would then be a do-it-yourself home built Philco B-537 model?

Chassis Restoration

I spent some time cleaning the accumulated dirt and rust from the chassis. I cleaned all the valve sockets using Servisol 10, and the pins of the valves themselves with a glass fibre pen. Referring to Philco Service Bulletin No.72 for the C-537 model, I replaced a dozen or so of the tubular capacitors and the electrolytics in the power supply section. I didn't bother testing or trying to reform them, as at this point I was just trying to get the chassis working quickly. After 70 or so years I reasoned the electrolytics in the power supply were probably not to be trusted anyway so simply bypassed them with modern components. After further continuity and resistance checks and a new length of mains cable fitted, I was ready to apply power for the first time via a lamp limiter. I switched on for a minute or so, no indication of a problem from the lamp, so applied power directly. A short while later and I had the local medium wave station coming in loud and clear, despite no external aerial connected at this point. BBC Radio 4 on long wave was a little quiet but soon came in loud and clear too with a few metres of aerial wire hooked up. As this chassis was one of the 'deluxe' models it also offered a short wave range from 5.7 to 18 MHz which also performed quite

well. Spurred on by this initial success, I proceeded to restore the chassis more thoroughly. Whilst it was still on the bench I took the opportunity to replace two further electrolytics and all of the tubular wax capacitors that were remaining with modern polypropylene types. I also replaced the rubber mountings at the front of the tuning capacitor, the old ones were no longer flexible but just hard and brittle. The original large can-type electrolytics were carefully polished with Brasso, and retained for appearances sake whilst having been electrically disconnected below the chassis. I had intended to 're-stuff' these components, but decided it was not really necessary and far easier to add the new electrolytics out of sight underneath instead. The top and sides of the chassis were painted in grey 'Smoothrite' paint, whilst the frame of the tuning capacitor and the mains transformer have been given a coat of the same product in silver. It was quite time consuming, and a steady hand needed, to paint the chassis without stripping it down completely first. But I'm more than happy with how it turned out, a definite improvement I think to the overall appearance.

Case Restoration & Modification

Note, an original B-537 has a mottled black/brown bakelite case, whereas the set here is all black.

A couple of issues here. First, the case I had was from a standard Philco 444 model and only had two holes at the bottom for the control spindles whereas the C-537 had three, having an extra control in the middle. And second, I would need to make a replacement baffle-board to mount the speaker and to fit some new grille cloth to. Drilling a third hole in the bakelite case was fairly straight forward. After accurately marking out a position in-line and equi-distant from the two existing holes, it was a matter of careful drilling starting with a small diameter bit and progressively changing to larger sizes to enlarge the hole. Making a new baffle-board though was not as easy as I had first assumed. The angle and curve of the case made taking accurate measurements difficult, plus the four mounting holes needed drilling at an angle through the board in order to fit correctly. I eventually got the measurements necessary by using a sheet of paper carefully pushed on to the mounting threads, taking care to keep the paper taut, and then drawing around the speaker opening whilst holding it in place. This enabled me to make a thin card template with which to cut the baffle and grille cloth accurately to size. With the aid of the card template I marked out some 3/8 inch plywood, then using an electric jigsaw and an electric drill carefully cut out the speaker aperture and made the mounting holes. Using some nuts and

bolts reclaimed from a baffle-board from an unrelated scrapped set, I was able to make the mounting points for the speaker itself. After a bit of fine tuning here and there I eventually got the board to fit snugly in the correct position inside the case. At this point I removed the plywood again and gave it a coat of dark-brown matt paint. I cleaned the accumulated dirt that had been present inside the case when I had obtained it by using foam cleanser and plenty of paper towels. The outside of the case was cleaned in the same fashion, then any minor scuffs, hairline scratches, and the inevitable tiny white spots of paint polished out with 'bake-o-bryte' paste. When the baffle was dry, I used the card template again to cut a piece of 'Tygon' type material for the grille, and attached it to the board using Vinyl Flooring Tile Adhesive. I find this type of glue ideal for this purpose. I've used it on other restorations with excellent results, and it has the advantage of being water based so if it goes anywhere it shouldn't it can be easily removed with a damp sponge.

Reproduction Back-Board

I was unable to find any photographs at the time showing the appearance of an original Philco B-537 back. Instead I decided to make one along the lines of a Philco 444 back, adding the different openings and cut-outs necessary for the C-537 chassis. Using images of the 444 back as a guide, along with a tracing of the opening of the bakelite case, I eventually achieved a full-sized paper drilling template. Obtaining some 3/16 inch thick MDF-board, I transferred the cut-out lines and drill points over to it using the template. After some careful cutting with an electric jigsaw and a total of 690 drilled holes later, I had produced the completed back-board ready for painting.

The Finished Result

It was now a simple matter of assembling everything. I fitted the speaker to the baffle-board and likewise the chassis into the case, completing the set with the reproduction back-board. Note, an original B-537 has a mottled black/brown bakelite case, whereas the set here is all black. In addition, the control far-left was just a rotary on/off switch on the B-537, whereas the C-537 chassis has a combined on/off and tone control instead. There are Philco 444 sets out there with a third hole too, so I didn't have much reservations about doing a modification which Philco had apparently also done themselves. Philco produced several versions of the bakelite people's set, and judging by the variations seen, seemingly used whichever sort of case they had available at the time. Many 444's have a three-holed case with the extra hole blanked off by a plug. I have no intentions to deceive with this set, rather it was a just a way of making good use of a separate chassis and a bakelite case that uncombined would probably otherwise have just gathered further dust.