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“Club test boiler”

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In a previous article, I described how we got the original idea, how we arrived at a suitable design, and how due to the members' generosity we managed to scrounge most of the materials and fittings to complete the boiler.



A start was made by cutting off a four-inch piece of the eighteen-inch-long copper tube donated by Dave Brutnell to form the firebox, Glenn undertook this job at work, as the cut had to be quite accurate, as the two pieces had to mate together seamlessly when the boiler was assembled. As we had decided to divide the work equally, Glenn, aided by Nigel, cut the 4mm copper for the tubeplates. I then got the job of annealing and flanging them, using a steel former that originally came from Lionel, however, it had to be reduced in size slightly because we were using thicker material. After flanging, I then machined them so as to be a close fit in the barrel, then back to Glenn for drilling the 26, 12.5mm holes using a template drawn in CAD by my son.



When I built my 2-8-2 loco boiler, I miscalculated the amount of half inch tube I needed, and ended up with 6 metres over, and so after a quick check with the calculator, found this was enough for 26 nine and a half inch tubes, so I set to work cutting the tubes to length and then putting a quarter of

an inch register on either end, so they could not fall through the tubeplates. While I was busy with this, the barrel and firebox went back to Glenn so he could fit the firebox and drill for the bushes. Once this was all done, we silver soldered the tube and tubeplate assembly, and after pickling, fitted it in the barrel, followed by another silver soldering session to stick the whole lot together. For the bushes we decided on mainly quarter and eighth BSP, with one three eighth by thirty-two for the injector feed, and two five sixteenth by thirty- two for the gauge glass. I machined these all from drawn bronze using some odd bits I had in stock.

Once we had the main boiler finished, Glenn started on the chimney by TIG welding a cone from copper sheet, I then machined an adaptor for it, using a large piece of bronze from my scrap box, he then finished off the top with a piece of 50mm brass tube donated by John Elsworth.



The finished boiler was given a coat of heat resistant black paint, and looks very smart indeed. To date it has passed a 200psi hydraulic, and recently underwent successful steam tests, using a commercial propane gas burner purchased by the society.

Many thanks to the following members for the kind donations, without which the project would not have been possible –

Dave Brutnell, for the copper tube for the barrel, Geoff Bashall for the gauge glass fitting and globe valve, John Dean, for the ball valves and various fittings, and Neil Furze, for the injector steam valve.

Andrew Breese, Lionel Flippance, Phil Downes, Paul Parsons, for silver solder and Dereck Langridge for silver solder and flux.

Jim Alderman, for the pump and pressure gauges, Martin Laker for the cash donation and Peter Quigley for the safety valves.

Robert Adams, for not only ordering a burner, and then having to return it (my fault), but for the brand-new gas regulator.

Lastly, and by no means least, Glenn, for his many hours of hard work and supplying the propane.