

2548 Restoration Report 2008

By Rob Handford

After the modest progress of 2007, restoration work on 2548 has been far more notable this year. Work during January and February centred on completing stripping of life expired material from the upper saloon. All leather cloth, floor treads, seat blocks and lino required removal. Having made a start on this project with Robert Day and Chris Ash, the stripping of all the flooring was completed by them whilst I was away on a five-week trip to Singapore, Australia and New Zealand.

After returning revitalised in March, I immediately set about removing the platform planking.

It had been agreed amongst the owning group during a meeting in January that we would employ some help to push the project forward. The areas to be put out to 'contractors' were to be external painting, reupholstering of the lower deck seats and rebuilding the platform.

Accordingly, I removed all the old platform woodwork, preparing the way for professional welder Roger Radcliffe to attend the museum and chop out all the rotten sections of steel framework. This was done by the end of March and all the pieces removed were delivered by Robert Day to a fabricator in Cradley Heath for production of replicas (minus the rust and holes!).

These were all ready for Roger's return in mid-May when, in one day, he welded the entire framework in place along with the complete lower edge of the partition/step riser panel which runs the full width of the bus between the platform and the lower saloon. A couple of minor welding jobs to complete the steelwork were subsequently carried out by Mick Evans after problems were discovered following Roger's mammoth welding session. After this it had been the plan to get further paid assistance to board the platform, but Mick Evans and Keith Ball kindly offered to help us do this ourselves.

Starting at the end of June, Mick and Keith arrived with the machinery required to cut the planks and fix them in place. The wood had been very kindly donated some time ago by Richard Burbidge Ltd of Oswestry and is superb quality seasoned 7/8" ash tongue and groove, specially machined to our specifications. This was prepared for installation by painting with Cuprinol wood preserver followed by a coat of aluminium paint on one side. In the previous few weeks, the steelwork had been given three coats of paint by Matthew Parker and me and wooden inserts for the steel support cross-members had been made to pattern by a cabinetmaker, as well as nosing pieces for the platform edge.

Within two weeks, all was fully assembled and we had a solid platform once more. The pole could then be refitted after being sent away for welding of cracks in the end brackets, followed by polishing.

Whilst all this had been going on, work had been started on a programme of mechanical refurbishment, aided by our good friend and expert former-BCT Quinton fitter, Des Kerrigan. First job, starting at the beginning of April, was a complete strip-down of the rear hubs and brakes. Everything was thoroughly de-greased and inspected and the opportunity taken to clean the road springs and axle stubs before one coat of red oxide and two silver. The only significant issue was that the offside brake cam arm was badly pitted and grooved where the needle bearings had collapsed and the seals had failed. Barry Whitelaw came to the rescue and arranged re-metalling and machining of the arm before we re-installed it with new bearings and seals, which we were able to purchase 'off the shelf!' All other components were either good enough to refit after thorough cleaning and lubrication or were replaced from our existing stocks, except for a few paper gaskets and felt washers, which we had made to pattern.

During the winter and spring, Robert Day and I had made several trips to upholsterer, Martyn Wilkins, at his workshop at Earlswood. Details were discussed and copies of Metro Cammell's original drawings of the lower deck seating were provided. This resulted in us receiving the finished product on 11th June. Martyn has made an absolutely superb job and even fitted the backs into the renovated frames so that when the time comes, they can be bolted in place without us having to struggle with that particular task. It is wonderful to see the pristine BCT pattern

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moquette used as we intended when we arranged the manufacture of the material at Holdsworths of Halifax back in 1996.

Back in the fitting department, following re-assembly of the rear hubs by mid-May and fitting of restored shock absorbers along with newly manufactured rubber bushes, attention moved to the front, where Des pulled apart the hubs, brakes, servos, steering arm and track rod. Once again everything was stripped to its component parts and checked. One new servo piston seal (made of compressed leather) had to be made to pattern, but otherwise the brakes required renovation similar to the rears. One ball pin in the track rod was pitted and needed changing and the rubber bushes that retain the grease around the ball pins had to be made new to pattern. The nearside king pin top bearing was found to be badly worn and a new one had to be bought and fitted. Removal of the king pin to enable this to happen was only possible with the help of a blowtorch and a 10lb sledgehammer! The old bearing had to be pressed out of the hub carrier and the new one pressed in and this was achieved thanks to our friends in the Diesel Traction Group who have the required heavy-duty kit at their Cradley Heath workshop. Once again, everything was cleaned, de-greased and painted where required in red oxide and two coats of silver. New auto-lube pipe-work was made up for the brake servos and king pin bearings and fitted before Des returned to help complete re-assembly at his usual impressive speed!

With the bus now back on all four wheels, it was possible at the start of September to drive it onto the inspection pit, where we were able to have a proper look underneath for the first time since 1983! The intention was to repair as required the main brake servo, brake linkages, exhaust system and auto-lube. Whilst this was under way, the chassis and all other components would require cleaning ready for painting. Once again, after we had taken down the rotted front section of the exhaust, Des set about removing all the components needing attention, plus others that would allow better access for cleaning once removed. Additionally, the worn out offside mounting bushes on the gearbox were removed in order to get new made to pattern.

During the next couple of months, a willing gang of helpers in the form of my nephews Graeme and Chris Handford and Graeme's girlfriend Sarah as well as Graeme's friend, Dave, assisted us. They travelled up from Thornbury, Gloucestershire, to help with the daunting task of cleaning the underside. They all threw themselves into removing decades worth of accumulated oil, grease and road dirt, which was inches thick in the places the steam cleaner never got to over the years! Components removed were cleaned up, some being shot-blasted, and then primer and silver paint applied. Their work has been extremely thorough.

Meanwhile, from July onwards bodywork repairs had continued around the platform, stairs and in the lower saloon. Once the platform timber had been completed, all rivets and bolts were replaced in the step riser to the lower saloon and in the partition between the platform and saloon. I then set about painting and re-assembly of the ticket bin situated in the partition, which then enabled me, by mid-August, to fill, prepare and paint the partition and step riser up to second undercoat blue on the near-side and final coat brown under the stairs. Once the ticket bin and its sprung flap were completed, it was possible to re-assemble the storage compartment beneath the nearside rear seat. This contains the emergency jacking equipment, which was also renovated and repainted in original green and black. The whole area beneath and behind the nearside longitudinal seat was then painted up to final coat brown.

From late July, Mick Evans and Keith Ball's work following on from the platform re-boarding turned to repair of the wooden framework beneath the stairs. Much of it was rotten or split due to warping or collision damage and Mick made up new pieces to fit. We then glued and screwed the whole thing together to make a firm structure once more. The mild steel plates that once held the staircase side panel to the platform planking required replacement and the inner one had almost totally rotted away. New plates were made up and fixed in place with round-head rivets. A piece of aluminium beading, to a long-obsolete profile, was found to replace a section missing from the side panel of the stairs since before we acquired 2548. A length of 5/8" stainless steel pipe was then bent and slit to form new edge capping, replacing the corroded mild steel edging to the staircase side panel.

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After this came the start of re-assembly of the offside rear wheel-arch and luggage rack area. First job was to adjust and secure the support for the single longitudinal seat over the arch. This was attached to the offside structure panel using riv-nut fixings (a threaded insert for screwing into). Use of solid rivets, the original fixing method, would not have been possible without removing the exterior panels. Next was the extremely difficult and time-consuming job of fitting together the plates that make up the conductor's locker, ticket box shelf and luggage rack. Mick had to carry out spot-welding repairs to one panel and then make many adjustments to get the whole thing to fit together, with the aid of Keith's size 10 boot! The original wooden planks forming the base of the conductors locker were screwed back in after priming, then sealed and painted up to final coat gloss brown and Mick made up new wooden support batons for the ticket box shelf and luggage rack top. We then cut to shape a new aluminium panel for the back of the staircase, to which the shelf support batons would be screwed. This panel had been rolled to the correct curvature at Tower Farm in 2006 by Tony Niblett and Mick, but required cutting to the exact dimensions to fit onto the previously mentioned wooden framework beneath the stairs.

After my nephew Graeme had stripped off all the old rubber stair treads, the wooden treads to which they had been fixed were examined and a decision made to replace all except the top and bottom ones. Once again, Mick's carpentry skills came to the fore and plywood supplied by Keith was soon cut to shape. After Dave Hartnoll had thoroughly cleaned up the stainless steel structure, I drilled and screwed the new wooden treads in place before sealing and painting them matt black. Eventually, the stairs and platform will be coated with black Bostic C adhesive before we nail down new rubber treads.

Solid riveting of the back-plate for the offside rear wheel-arch enabled the seat support to be finally riveted in place and this was followed by the fore-plate, which slopes forward from the wheel-arch to support the ends of the floor planks. We were then, at long last, ready to rivet together the floor bearer structure for the rear of the lower saloon, which has been in a dismantled state for 16 years! New components had been fabricated about five years ago and these had been drilled and temporarily bolted together last year by Steve Draper. At the start of November, heavy-duty pneumatic riveting guns were hired and in one day we were able to secure the floor bearers to the wheel-arches and to the forward section of the lower saloon floor. The new steel step riser structure for the nearside longitudinal seat footstool was also fully riveted in position.

I had the following five days off work and with the help of Robert Day was able to fix to the rear wheel-arches the new key-rubbers specially made to pattern and could then re-fit the rear wing panels to make the exterior of the bus look complete again. Aluminium 'kick plates' kindly supplied by Barry Whitelaw were also screwed, pop-riveted and sealed in place on each riser of the stairs and the two original wooden stair treads not replaced were re-secured, probably making the staircase more solid than it has ever been since new! Also tackled was final painting of components for the conductor's compartment and luggage rack and the tricky job of trimming with leather cloth the staircase back panel and the structure panel behind the luggage rack.

Robert Day and I solid riveted in place the support angle for the front edge of the near-side longitudinal seat cushion and Mick and Keith made final adjustments to the near-side wheel-arch fore plate before riveting and screwing in place, again with the aid of riv-nuts. Another piece of plywood was cut out to make a new top for the aforementioned longitudinal seat footstool.

The next weekend, final assembly of the conductor's locker and luggage rack structure took place, with the shelf plates secured and the locker door covered in leather cloth and riveted to its hinge before being fitted. It sounds straightforward, but I can assure you that this was the culmination of a lot of struggling, as Mick will testify. After this job we are fully qualified contortionists!

For the remainder of 2008, effort was concentrated on the chassis and running gear. Following the September – October blitz on grime removal by our more youthful volunteers, Chris Ash and I

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had continued to work our way through the remaining areas to be de-greased. This included the chassis either side of the engine. Muck removal here was more akin to an archaeological dig! Compacted road dirt, oil and mislaid nuts and bolts represented years of undisturbed history in the life of the bus. You could almost see the annual layers of winter dirt, starting from 1950-51! Most of the time it was impossible to see what was hidden behind fuel, vacuum and oil pipes, the only way of detecting when all was removed was by touch after endless applications of Jizer de-greaser and scraping with old chisels and wiping with rag before washing down with pressurised hot water. Other preparation of the chassis involved de-rusting some areas, which had not had the benefit of oil for protection. These sections were then treated with Jenolite rust neutraliser before painting with red oxide. The culmination of all this effort came on December 5th when spray painting in silver started, using Mick's small portable compressor and spray gun. Final coating of the entire underside, less a few areas, such as the engine and fuel tank, which were masked off, took place on 10th December. Sunglasses are now recommended for anyone inspecting the gleaming underside. I hope the MOT inspector will be impressed!

Immediately following the spray painting, we started bolting back the many renovated components. These had all been painted silver except for the exhaust, which Robert Day had cleaned up and sprayed with high temperature matt black. The front prop shaft had previously had attention by Keith to one partly seized universal joint. He found that it was in good order apart from having been over-tightened. The main brake servo had only required a partial strip down and clean as no appreciable wear was found. The record cards show it has done about 40,000 miles since installation. Under BCT preventative maintenance schedules this would not have been changed until 100,000 miles. A 'top hat' spacer from the dynamo cradle assembly was found to be missing and Mick machined a new one on his lathe before fitting and installation of the dynamo and new drive belts. Newly made rubber bushes were installed in the gearbox mountings and a new rear engine mounting rubber fitted from stock.

As the year closed we were making preparations to secure new boards to the lower saloon floor bearer framework and concluding replacement of all the mechanical components, which will make the bus mobile.

The one job intended for 2008, which did not get started, was external painting. This is because our painter, Dave Hird, was unavailable due to other commitments. He is involved in the Diesel Traction Group and has painted diesel hydraulic locomotive D1015 'Western Champion' to a very high standard. He has now found time to start on 2548 in January. This is good timing for us as 2008 was so hectic; trying to do everything else whilst a painter was working would have been very difficult.

Without doubt, 2008 was the most productive year in the renovation of 2548 – by a huge margin. This is down to the excellent support of the people mentioned above and I would like to put on record my appreciation.

2009 will be another busy year, with fitting out and finishing of the whole interior with leather cloth, moquette, lino, floor treads, varnished wood cappings, handrails and the upper saloon ceiling. Rubber treads require fitting to the platform and staircase and renovation of upper saloon seating is needed as well as completion of external painting. On the mechanical front, after fitting the exhaust system, new Speedo cable, the remaining brake and gear change linkages, etc, the radiator still has to be assembled and fitted once some replacement tube seals have been obtained and all the cooling fins have been secured to the tubes. Testing to class 5 MOT standard will take place when the bodywork renovation has progressed far enough for us to drive the bus out on the road. Because of the extent of rebuilding of 2548, it is our intention to take the bus out for a good 'shake down' prior to final finishing so that we don't get any nasty surprises after the last lick of varnish has been applied!