# Common as M


*Looking dirty and unloved is the 8.75 gvw Shelvoke & Drewry dust cart which was made at Letchworth in 1972.*

*The rear door compartment which was used by the dust men has had the door panel ripped off and the spare tyre certainly does not fit this lorry.*

## By Alec Kermotschuk

**We welcome Alec Kermotschuk, who is to keep us in touch on the preservation and restoration of a 1972 Shelvoke & Drewry Ltd refuse wagon. This vehicle is in the process of being restored at this very minute! The wagon is expected to be finished and back to its former glory later in the year and, through Alec's work, we will keep you in full touch with progress on this unusual project.**

**This project, which we will follow in detail, is to be carried out by members of the City of Bradford transport vehicle maintenance section (as was the Dennis Pax II gully emptier restoration).**

The restoration team is based at the Shearbridge Depot of the Housing and Environmental Protection Cleansing Section of the City of Bradford Metropolitan Council. Yes, this restoration is certainly a little different, however the principles are similar to any mainstream commercial vehicle restoration. The project will involve the complete stripdown, and upwards restoration, to bring the vehicle back to its original condition in 1972.

Our story starts when the vehicle was found at a village called Denholme, on the outskirts of Bradford, by assistant works manager Paul Wright and project fitter Allen Freer. The vehicle was new to Oldham Engineering Public Services, a division of Oldham Council. However, the vehicle had changed hands a few times since then and is what one would call in scrap condition and is a non-runner. Following discussions with the various parties, the vehicle was purchased on behalf of the Bradford City Council's Transport Department for a nominal sum.

Shelvoke & Drewry Ltd of Letchworth, Herts is an old established company that launched its new concept, the S & D Freighter, in 1923. It was a small wheeled vehicle for short distance work. It was fitted with a ET White mono-block engine mounted transversely. The original Freighter had a turning circle of just 21ft which was exceptional and ideal for work in towns and cities.

The first vehicles S & D supplied in those early orders as refuse vehicles went to Deptford Corporation - that was back in 1923. From that time onwards the

# Muck!


*There are plenty of things hidden inside the dustcart that will keep the apprentice busy for a few hours cleaning it out!*

company became associated with this type of vehicle. However, one should not forget that S & D in those far off days sold a good number of their vehicles to PSV operators all over the world. It was in 1933 that S & D significantly acquired the patent rights for the Principality moving floor refuse collector, which lays the foundations for our 1972 TBN series vehicle.

When this vehicle was built, S & D were selling their vehicles totally to municipalities, however, that was all to change in the mid-'70s when they started to diversify, but that is another story.

Turning to the bodywork, our S & D is fitted with the Pakamatic refuse compressing body with double-acting packer plate and shredding tongues to break up the waste refuse. This design was introduced on the smaller TN series in 1963, however the design dates back to 1961 when it was made available on the larger 14 ton gvw range of refuse vehicles.

The action started on Tuesday November 25 1997 at 9am when Paul, Allen and Terry Pycroft, senior workshop supervisor, set off to collect the vehicle from the site. They were joined on site by Roger Dyson and the Leyland DAF Freighter recovery lorry, which is complete with Dyson hydraulic flat back section, and


*Down goes the back of the Leyland Freighter and it is all systems go in the loading of the dust cart.*

which carries the serial number of 966680HR. This vehicle normally recovers and transports council vehicles in its day-to-day use.

On closer inspection, the 1972 Shelvoke & Drewry refuse collector is in quite a state, particularly the refuse section of the vehicle. Various auxiliary parts are missing, including the light units and associated equipment. Nevertheless, the bulk of the vehicle is complete, from what one could see, and will not be as difficult to restore as the 1950 Dennis Pax II that this team have successfully tackled.

Before the vehicle could be loaded up, the front tyres had to be re-inflated. However, this was an easy thing to do with the auxiliary air supply tank which is fitted to the rear of the recovery vehicle. In no time at all Allen Freer had the tyres re-inflated to 90psi and the S & D was ready to be loaded up.

With Paul Wright at the helm of the S & D it was all systems go with the winch cable eye from the Leyland-DAF Freighter recovery vehicle connected to the front towing bracket of the refuse collector. In no time at all the old wagon was squealing away (brakes stuck on) as it was forcibly loaded onto the back of the recovery truck. Once on the recovery vehicle the hydraulic platform was lowered and slid forward into position. The refuse collector was then securely strapped on before the team headed back to the depot, which is about 20 minutes away.

Upon arrival at the depot, the refuse collector created great interest with a number of staff coming out to look at the Shelvoke & Drewry and wondered why anyone would want to rebuild a vehicle such as this? No matter what these people think, the refuse collector is very much part of local history and is well worth rebuilding to its former glory. I am sure that in 12 months' time things will be seen in a different light.

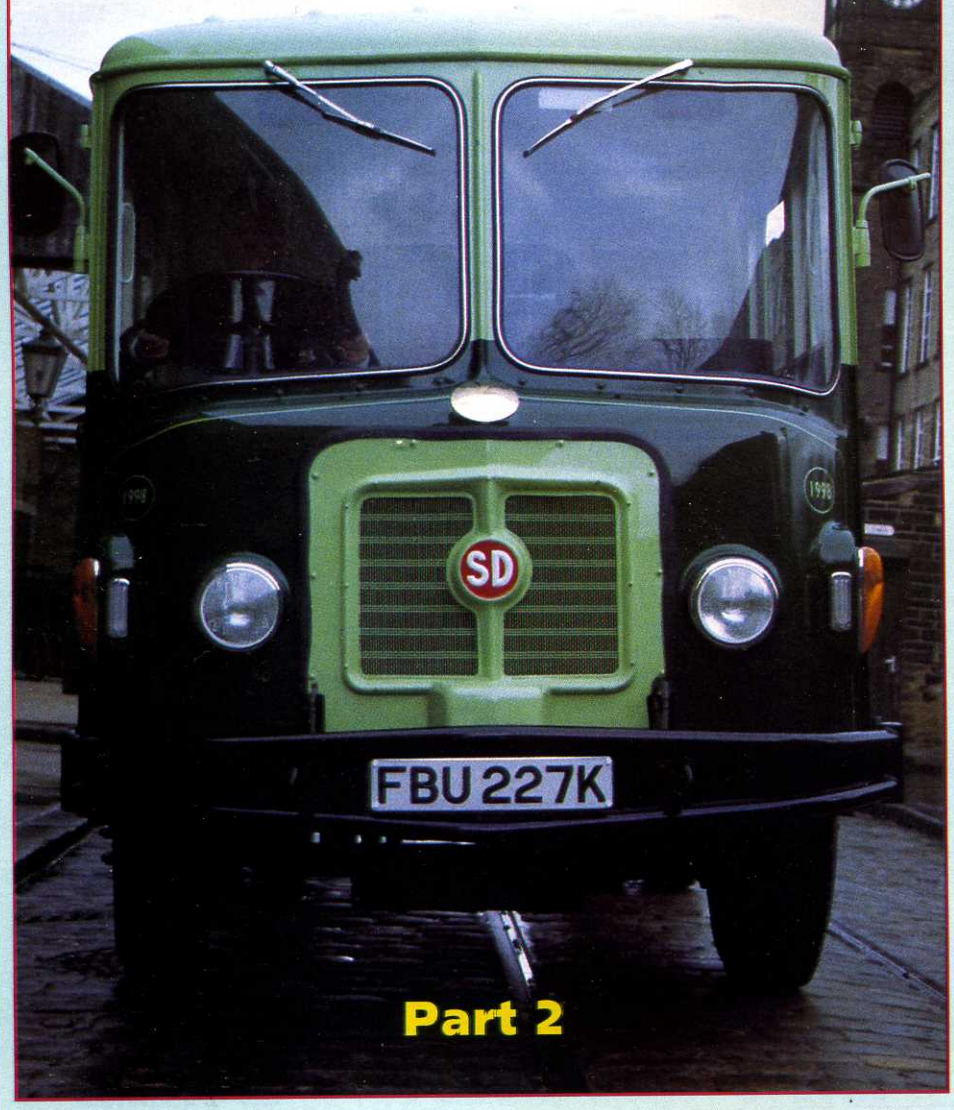
After the vehicle was removed from the recovery vehicle, it was all hands to the deck to move the S & D into its final resting place in the workshop. After gathering more help, the vehicle was having the last laugh as the brake shoes were fighting the brake drums and stopping the vehicle from moving backwards. However, not for long, with the long wheelbase Land Rover fired up it was about to have the last word when it promptly moved the vehicle into its designated area.

I look forward to giving you the next instalment as progress is made with the S & D dust cart - it's Common as Muck! ●

*The well equipped Freighter, which includes a Hiab, with the S&D dust cart in mid air!*


*I'm coming home! Roger Dyson drives into the depot at Shearbridge, Bradford, where th S & D is to get some personal attention from Terry Pycroft, Paul Wright and project engineer Allen Freer and his crew.*

# COMMON AS MUCK!




Part 2

## *Alec Kermotschuck continues the story of Bradford's S&D refuse wagon*

***After covering the acquisition of the Shelvoke & Drewry TBN refuse wagon from its resting place at Denholme on the outskirts of Bradford, we now move on to the start of the restoration of this unusual vehicle.***

**The S&D had certainly suffered from its years of neglect, with extensive repairs being necessary to the cab and the main bodywork. However, the chassis was found to be in remarkably good condition, testimony to the workmanship of the Letchworth-based Shelvoke & Drewry.**

The chassis was thoroughly wire-brushed and cleaned, then hand-painted in grey primer by Paul Tordoff, the apprentice at the workshops, prior to it being sent away to a local firm for the remainder of the work. This was done at Hatfields Motors, a repair centre used by the council to carry out repairs to all kinds of vehicles, from refuse wagons to meals-on-wheels delivery vans. Hatfields are at Little Horton, conveniently sited about 1½ miles from the Shearbridge workshop.


*The chassis propped up on axle stands in the oven prior to the preparation and paint work commencing at Hatfields Motors. Notice the wheels turned inside out - this gave Frank the painter easier access to the chassis.*

*The rear of the chassis, taken looking out of the oven.*

*The chassis just prior to the start of the painting.*

Accordingly, on January 27 last year I was invited by the proprietor of Hatfield, Frank Davies, to see the chassis being prepared for its top coats of gloss black paint. Frank explained the work necessary to achieve a first-class finish on the chassis, including his 'trade secrets' of the painting process, before work commenced.

The preparation of the chassis prior to painting involves the degreasing of the whole thing, using a cleaning solvent which evaporates quite quickly, leaving everything free from grease. Then certain parts fitted onto the chassis, ie brake hose ends and the open ends of the hydraulic pipes, are all

*Transformed! The chassis after repainting and baking. There is a lovely gloss finish to the paintwork - well done Frank!*

masked up to prevent paint entering the pipes etc. This stops any bits being taken into the fluid systems which could cause blockages, thereby damaging seals and cylinders.

Both axles and the wheels were found to be in generally good condition, the axles needing nothing more than the original oil thoroughly flushing out and a refill of fresh oil. The wheels complete with their tyres were left on for ease of moving the chassis around. The tyres shown are not roadworthy and will be replaced with new ones at the end of the restoration project, prior to it going on the road. The wheels themselves were included in the painting job.

The chassis frame was thoroughly sandblasted and primed ready for the top coat. The paint used was a two-pack low bake professional PPG black finish, applied by spraying at a pressure of 44psi at a temperature of around 60°F obtained from working in the pre-heated oven. Once the spraying had been done, the painter, Frank himself in this instance, then left the oven, re-closed the doors and turned up the heat to a temperature of about 70°C for a period of 45 minutes. Two top coats were applied using the same method. While this was being done I went down to the workshops at Shearbridge to have a chat with Allen Freer, the project fitter. I returned later to see the finished chassis.

On a health and safety issue, it's worth mentioning that the oven is provided with its own lighting and fume extraction ventilation system, so once the painter is inside the oven with the doors closed and equipped with totally enclosed overalls and a breathing mask, the job of spraying can commence.

*Allen Freer uses an unorthodox steering position while the chassis is winched up on the transporter.*

The Perkins 4.236-litre four-cylinder engine developing 74bhp at 2,800rpm, has been completely pulled down and new piston liners and pistons have been fitted to replace the originals. Unfortunately the cylinder head was found to be badly cracked and so a replacement was found at the local Perkins agents, Hindles in Bradford. The bottom end, ie the crankshaft and main bearings, was found to be satisfactory with no further work required. On completion of the rebuild the whole engine was given a coat of silver Hammerite paint. Before it was fitted back into the chassis mountings it was started and run up to see if all was well, and it was.

The fuel injection system consists of a rotary distributor injection pump, which is flange mounted to the rear timing case. A hydraulic governor is provided with an automatic timing advance and retard mechanism. A fuel pump is in line driven

*Easy does it as the chassis is loaded up.*

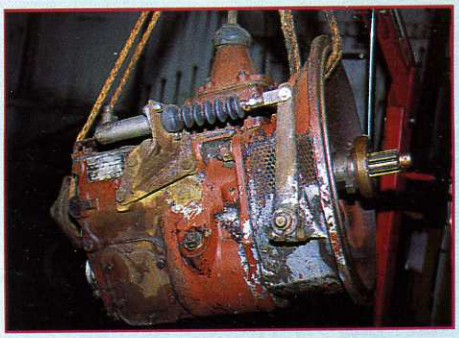
from an eccentric cam on the camshaft. All this was thoroughly checked out and new injectors fitted to replace the badly corroded originals.

Very little was done to the five-speed gearbox apart from replacing the clutch slave unit. All the seals and bearings were replaced as a matter of course. The clutch friction plate, pressure plate and flywheel were all found to be in good condition. These

*Ready for taking back to the workshop at Shearbridge.*

vehicles didn't do much mileage during their life of refuse collection with the council - in fact this example showed a mere 77,357 miles on the odometer.

On the cooling side, the radiator cooling fins were in need of resoldering to the frame in places, and this work was carried out at local specialists Britannia Cooling at Morley near Leeds. The radiator was then pressure tested, given a coat of paint and refitted.



*The gearbox is suspended ready for spraying with Hammerite high-temperature silver paint.*

The brakes are hydraulically actuated, with air assistance supplied by an internal compressor. The entire system was reworked with new seals and the original brake pipes replaced throughout. These pipes were fixed to the side of the chassis main frame. All the front and rear brake linings were replaced and the entire system refilled with new hydraulic fluid at the master cylinder. A new handbrake cable was also fitted - this had to be obtained from Nottingham!

The 13-gallon fuel tank was replaced with a new one fabricated locally, as the original was beyond economical repair.

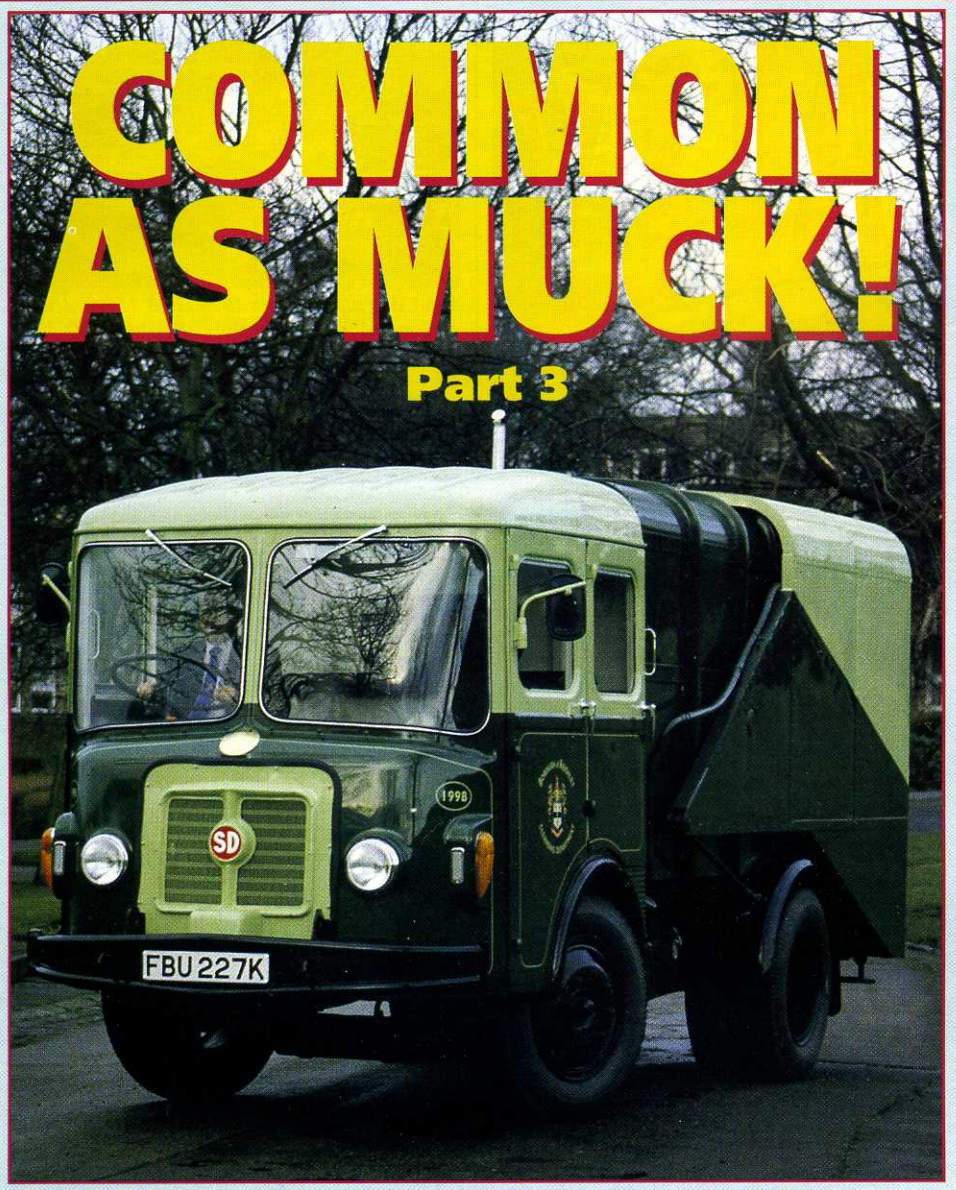
The original hydraulic pump, normally found at the front of the vehicle just behind the bumper, was missing at the time the S&D was acquired. These are quite rare to find, but following a number of phone calls to various spares dealers, one was located at Cahill Motors of Newtownabbey in Belfast. So arrangements were made between Alan and Jim Cahill to buy the pump unit, subject to an initial inspection by Alan. Sure enough when Alan arrived at Cahill Motors the pump was satisfactory and a deal was struck.

Back at Shearbridge the pump was given nothing more than a coat of paint and fitted to its place back on the S&D. It cost £100, which is very reasonable given the fact that these pumps are quite rare, and of course it's an essential part of the operation of the tipper body. The one very important aspect of this restoration is that the Shelvoke will be in full working order, just as it left the factory back in 1972, and to its original specification. New flexible and rigid hydraulic pipes were fitted from the front to the rear of the vehicle, connected to the tipper body rams from the pump and hydraulic tank. The tank itself required some welding following the discovery of a split seam joint, but this was not too serious a problem. The tank was then repainted.

*The engine and gearbox coupled together and about to be reunited with the chassis. The lifting hoist was in fact the Hiab on the back of the recovery vehicle.*

# COMMON AS MUCK!

## Part 3




*Alec Kermotschuk continues the story of Bradford's S & D refuse wagon*

***In the penultimate part of our story on Bradford council's Shelvoke & Drewry TBN refuse wagon we look at the restoration of the cab and bodywork, and the final assembly and painting of this interesting and unusual project.***

**The cab features a deep wraparound windscreen that was designed to provide good visibility, and is constructed from a combination of glass fibre and coachbuilt timber framing. The front bulkhead and cab roof are made from fire-retardent polyester resin bonded glass fibre, while the crew area is made from steel panels mounted on the timber frame. The whole cab is then mounted on a steel and aluminium foundation, complete with rubber mountings, which is secured to the main chassis. Accommodation is provided for the driver and two loaders.**

*The cab on its return from the sandblasters and awaiting repairs to the timber work. There's still a long way to go yet!*

*The basic structure had withstood the ravages of time quite well.*

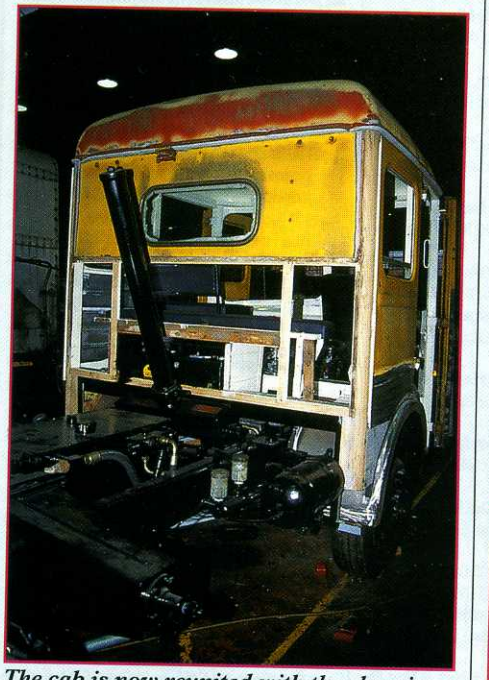
*Front view of the cab before repairs commenced.*

The cab's original timber frame was rotten in places, especially the lower sections. These have been replaced exactly as the manufacturer's specification by the council's own joiner. The metal panels on the lower half of the doors have been cut out and replaced due to corrosion, but generally the doors were in pretty good condition, needing minimal work to make them serviceable once more. By good fortune all the original glass in the cab windows will be reused again once the cab has been painted.

All the original seats have been reupholstered and fitted back in place, and very smart they look too. The inside of the cab was cleaned up and repainted in a cream finish, applied by brush by Alan Freer.

Situated within the cab itself is the very basic instrument panel set into the front dashboard, consisting of a speedometer and mileage recorder, oil pressure gauge, ammeter, and water temperature gauge. The light switches are on the steering column stalk. The

*These two shots show the cab from the near and off sides, with the new sections visible in the lower doors.*

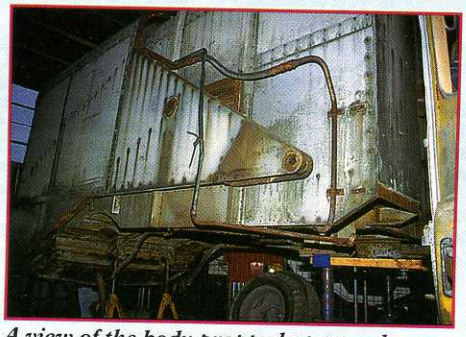


*The cab is now reunited with the chassis and the S&D begins to take shape once more. Note the fine workmanship evident on the chassis.*

gauges were all replaced by new Smiths units, as the originals were smashed by vandals while the vehicle was parked.

The only original electrical item that could be reused was the ignition switch which also incorporates the lighting switches. All the original lights and indicators that were smashed or damaged have been replaced with ones to the original S&D specification. A secondhand driver's side windscreen wiper motor has been purchased to replace the damaged original, and this

*Note the new ash framing in the cab.*



*A view of the body propped up on axle stands awaiting repairs.*

too matches the original specification. Another unit is required for the passenger side. The cab was now reunited with the chassis - another milestone in the restoration had been reached.

The next stage of the project was the rewiring of the entire vehicle. This was done by the council's very own auto-electrician John Greenwood. The lorry has a 12 volt negative earth system

*The interior of the cab, showing the reupholstered seats and the rebuilt Perkins engine.*

*The underside of the loading hopper, revealing the extent of the corrosion to the basic steel structure under the aluminium panels.*

*Not a pretty sight! All the corroded areas were replaced.*

powered from two heavy duty 6 volt batteries connected in series, giving a capacity of 120 amp/hr. These are located at the back of the cab and fitted with a hinged guard cover.

The batteries power the entire lighting and starting system via the alternator driven off the engine to provide a split charging arrangement. The rear loading hopper is controlled by hydraulic rams electrically operated from the cab, a task usually done by the driver during refuse collection and disposal at the council tipping site.

John Greenwood made up a complete new wiring loom and fitted it to the cab and chassis of the S&D, then connected up all the various gauges, lights and the starter circuit. There are also a set of remote operating buttons for the hopper, situated at the rear of the vehicle. Although not as complicated as a modern-day vehicle, this stage of the operation was still quite involved and John is to be congratulated on a fine job.

# COMMON AS MUC

## Part 4


*Alec Kermotschuk concludes the restoration on Bradford Council's Shelvoke & Drewry TBN refuse wagon.*

**Attention now turned to the main body. This was in need of extensive repairs because of corrosion to the steel frame, especially the underneath sections. It was decided from the outset that all the replating would match Shelvoke & Drewry's original specification, in keeping with the entire restoration. The first stage was to have the entire body shot-blasted, to enable Allen Freer to determine the extent of the work needed.**

After examination the steel floor panels and loading hopper were replaced by new fabrications produced by a local sheet metal shop, and these were welded in place on site. New rear twin folding steps have been made and fitted by the team. These were used to provide access for maintenance in the body hopper, and they also were used during refuse collection by the men to stand on while the vehicle was in motion between houses. Some of the aluminium side body panels had to be replaced and repaired by fitting new riveted sections between the side arms which form the all welded main construction.

The rest of the bodywork was cleaned ready for repainting. It should be noted that the body operates on the 'jack-knife' principle - in other words the body splits open in the middle and allows the refuse to fall out into the tip. This operation was performed hydraulically, and all the hydraulic cylinders, seals and pipes were also overhauled and renewed where necessary.

*A view of the driver's position. The interior of the cab now looks better than new.*

# UCK!

*The finished article, totally transformed from when it arrived from Denholme.*

Now at last the main painting could begin. The upper body and loading hopper, together with the top section of the cab, is finished in a light green called 'Eau de Nil', while the lower sections are finished in a darker 'Brunswick' green, and these colours set the S&D off delightfully. This was the original livery of the council's vehicles working in the Keighley District when the vehicle was in use, as Bradford itself did not own vehicles of this type at that time. The cab was hand painted by David Morton, a skilled coachpainter, who used to work for the council's transport paint shop. As for the coat of arms and associated lettering on the door panels, these were hand painted by specialist signwriter 'Brian the Brush' of Bradford and are again accurate for the period when these vehicles were used around the area. Unfortunately there are very few craftsmen around these days that can do this skilful artwork, as nowadays most lettering is applied by transfers.

*Allen Freer in the driving seat. Note the spacious cab interior and excellent visibility – essential in the narrow streets and lanes of Bradford.*

*The S&D parked up at the Industrial Museum – you can just imagine this scene back in the '70s.*

In total some 2,000 hours have been spent restoring the little Shelvoke & Drewry in the workshop by the various craftsmen involved in the project, under the supervision of Allen Freer, and the end result is a credit to the team who have lovingly restored this vehicle. Looking at this example it reflects how well the Council maintain their modern fleet. It just remains for me to thank the entire team involved in this project, in particular workshop manager Frank Atkins, his assistant Terry Pycroft and of course Allen Freer. We look forward to seeing this little beauty at events and shows in the near future.

*The first bit of refuse to be tipped into the back of the S&D's loading hopper since the restoration. Terry Pycroft (left), assistant workshop manager at Shearbridge Depot, and project fitter Allen Freer put the S&D back to work.*

*This picture shows the method of emptying the body.*

# SHELVOKE &

**The origins of Shelvoke & Drewry (S&D) go back to the days of the Lacre Company who were one of the early British commercial vehicle manufacturers. In 1910 the company had moved from Long Acre (Lacre) in London to Letchworth in Hertfordshire and the following year the brilliant engineer Harry Shelvoke became their general manager.**

The chief engineer at the time was James S Drewry, who was noted as having built the first petrol railcar, and while at Lacre was credited with the design of the first successful mechanically powered road sweeper. Later in that decade the two men pondered over the design for a miniature lorry that was easy to drive and economical to run. Unfortunately for the Lacre company, the senior management could see no future for this vehicle and the two men went off to start their own company, named obviously enough Shelvoke & Drewry, based also in Letchworth.

The vehicle these two had designed was a small-wheeled, transverse-engined truck with an ellipsoid gearbox. Driving this lorry was simplicity itself, with one tiller (like a tram car controller) to steer the vehicle and a second tiller to work the gear selection and braking. The only foot controls were an accelerator and brake pedal for the front wheels, since the rear wheels relied on transmission braking. This little vehicle, with its low loading height, was designed for local haulage use, but very soon came to the notice of the municipal authorities where it was realised that the low loading height, small turning circle and simple controls made it an ideal vehicle to replace the horse and cart on refuse collection duties. Some of the first municipal customers were Deptford and Wallasey Councils. The truck became known as the Freighter and remained in volume production for both municipal and haulage use until just after the Second World War, though often fitted with a proper steering wheel by then. The final Freighter was built in 1955.

Generally municipal Freighters came fitted with 'Chelsea' style bodies with sliding flaps along the sides, but moving floor rear loaders were built as well as gully emptiers.

A final innovation for this model in the late '40s was a fore-and-aft tipping refuse body based on German Faun designs. The engineering of the Freighters had to be seen to be believed. It was more akin to locomotive engineering than road use.

The replacement for the Freighter also boasted small road wheels but at that point the similarity ended. The new model, designated the W type, had an engine in the conventional position and a normal gearbox as well as a steering wheel (hence the designation 'W'). There was a proper cab rather than the 'driver only' version offered on the original Freighters. Production commenced in 1947 and the last of the 3,200 built came out of the factory in 1961. Just like its forerunner, the new W type came with a variety of bodies and the majority were fitted with S&D petrol engines, an uprated version of that fitted in the Freighter model.

The W, with its economical engine and easy entry cab, was very successful, but was not designed to operate at the maximum legal weight of vehicles at that time, needing to be small enough to be able to get round crowded back streets.

Greater efficiency was required from refuse vehicles during the 1950s and S&D took a long time to get around to designing a vehicle offering higher compaction ratios and a higher gross weight. It was not until Tom Tillson joined the company in 1959 that a suitable model was made available. This was the T type (for Tillson) and was offered at 14 tons gross weight with a compaction body. The cab was a new design with a wooden frame covered with a glass fibre cladding and the vehicles were fitted with diesel engines as standard. Two basic chassis designs existed, the TY for maximum weight and the TN for lower gross weights of about 8-9 tons.

The TN was the narrow version and came with a four-cylinder Perkins engine, against the Leyland engine fitted in its big brother. Models were made available with Pakamatic compaction bodies (based on the French Semat Rey principles) or fore-and-aft tippers. The early Pakamatic bodies had a compaction mechanism


*1953 W-type with conventional side loading dustcart bodywork.*


*One of the late tiller steered tipper from 1936. This one for Hamilton had a demountable body.*

# & DREWRY

consisting of a single pressure plate fitted in the rear hopper and a main body that tipped to discharge the load. Later Pakamatics had horizontal load discharge and were sold as Paka Ejectors. They were the forerunners of the Revopak.

The T series vehicles continued in production until 1972 when the steel-cabbed N series was introduced, but to confuse things the T cab could still be fitted to the narrow bodied N chassis, the resultant vehicle being called the NN type. The new N series relied on the Motor Panels cab, modified to suit its use as a municipal vehicle, and generally came with various versions of the Revopak body.

Back in 1966 S&D had merged with road tanker makers Butterfield, and later became the Butterfield Harvey Group and later still the Dempster Group. S&D continued production of the Revopak, which, with its continual compacting mechanism, was very expensive to run and vehicle sales dropped. The Dennis company were rapidly increasing their market share at the expense of the Letchworth company, which spelt the end of S&D in the late '80s. For the company that once boasted two-thirds of the municipal market, the company met their sad fate with production ceasing and the spares operation passing on to their great rivals Dennis. However some of the design staff at S&D did join the new company and commenced work on a brand new refuse collection vehicle in connection with Norba in 1997.

Bradford Council's dustcart is one of the later TN models built in 1972 and originally supplied to Oldham Borough Council. While this is quite a late date for such a relatively old-fashioned machine with its lowly 2:1 compaction ratio, it was quite likely bought for use on the narrow streets and 'ginnels' of central Oldham, where the ash content of the refuse could easily bring the load up to gross weight without needing a higher compaction ratio. The vehicle worked for Oldham into the '80s, when it was sold by auction, and was later found in Denholme where our story started in the July 1998 issue of *Classic & Vintage Commercials* 'Common as Muck.'●

***S&D N series was introduced in 1972. These are fitted with* Revopak *bodies.***

***Loading a 1973 Pakamatic on a S&D chassis but also available on proprietory types.***


***Nick Baldwin tries the tiller controls of the early Freighter that S&D restored to resemble their first vehicle of 1922.***


***The P series was new in 1978 to replace the N series.***