

A plumber.....with **BIG TOOLS**

Story Brian Cowan – Photos Terry Marshall

On the move to another job, Hadlee & Brunton's big directional drill calls for a four-axle transporter and 8x4 tractor unit. The Fuso behind is towing an equally-large drilling mud reclamation unit



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The spectacular reach of the HIAB XS544 E-8 crane fitted to the company's MAN 8x8 is clearly demonstrated in these pictures. On major projects the MAN supplies drilling pipe to the rigs, but it has a myriad of other uses. All-wheel-drive offers real benefits offroad

Left: The MAN 8x8 on the first leg of its journey from Timaru to Foxton. Major projects take the company all over NZ. Four-axle curtainsider trailer carries support equipment for the drill

Right: Ross Brunton joined the company over 50 years ago, is still very hands-on as managing director

RUBBING SHOULDERS WITH OTHER KIWI Freightliner customers at a recent function hosted by Mercedes-Benz New Zealand, Timaru's Ross Brunton was asked by another guest what he did – meaning what branch of the transport industry he was in.

“Actually, I'm a plumber,” he replied. “That floored him a bit,” he recalls with a laugh. The reaction was entirely understandable: The mix of plumber and Argosy is certainly not your usual.

And yet....Ross' answer was quite accurate: At the start of his career he completed a plumbing and drainlaying apprenticeship, and it's the sector that, as managing director of Hadlee & Brunton, he's still working in.

The company has, in fact, always had plumbing as one of the mainstays of its work – dating all the way back to 1906...when it was founded as Hadlee & Clough – “Plumbers, Gasfitters and Bell-hangers.”

While there's been a severe decline in bell-hanging jobs since, conventional plumbing and drainlaying still make up a high proportion of the company's work.

It's just that the new Argosy 8x4 – which earned Ross the invite to the Freightliner function – is

actually involved in the directional drilling work that H&B has also carried out over the past 20 years.

It is, in fact, just one of a dozen heavy trucks (and just as many or more associated trailers) run by the company as transport support – backing-up that the company's core work.

On a major project, the drills themselves are just the centrepiece of a series of activities, most of which involve trucks to a greater or lesser extent – providing and mixing drilling mud, carting away drilling spoil, carrying drilling pipe and craning it to the primary units, acting as support platforms for hydrovac units, hooked to spinner trailers that dispense smaller-diameter pipes and conduits and a myriad of other tasks.

And when a major project is being set up, the diverse range of equipment has to be taken to the job – and when it's completed, has to be transported back to base. Both journeys call for piloted, heavy-permit convoys – travelling up and down the country.

The upshot is that this plumbing and drainlaying company from a regional city of just over 35,000 people has a fleet that – while not huge – has a remarkable diversity and level of customisation.

Ross Brunton says that out-there machinery was definitely not common when he started with the then Hadlee & Williams as an apprentice in 1964: “At that time all we had by way of trucks was a 1955 Bedford Type A....the rest of the work was done with pick and shovel.”

This old-guard approach could be partly down to the company's long standing in the community, having been set up in 1906 as a partnership between plumbers George Hadlee and Frank Clough. When George retired in 1946 his two sons, Victor and George, took over his shareholding. The same year, Frank Clough's share was bought by Lloyd Williams and the company name changed to Hadlee & Williams.

After gaining his plumbing and drainlaying qualifications, Ross Brunton rose to become company foreman before leaving to work in Australia for a year. On his return in 1975 he and his wife Shirley bought Lloyd Williams' share and the name changed again, to Hadlee & Brunton. Two years later the couple attained sole ownership after the Hadlee brothers retired and sold their holding.

The introduction of the next Brunton generation came in 1996 when Ross and Shirley's son Andrew joined the business and began his qualification as a craftsman plumber, drainlayer and gasfitter. Older brother David had meanwhile gained a Bachelor of Construction (majoring in quantity surveying), and spent a decade in NZ and overseas working as a consultant project manager and quantity surveyor before also joining the family firm, in 2005.

In 2007 the two boys became shareholders in the company and today share its day-to-day running with their parents: When it comes to the specialised aspects of the directional drilling in particular, David concentrates more on feasibility studies and onsite management, while Andrew's forte lies in handling the drills and their associated equipment.

The first steps in the evolution from pick and shovel to today's lineup of advanced technology were modest, recalls Ross: “In 1975, after I bought into the business we bought this wee Ferguson tractor, fitted it with a front-end bucket, and went from wheelbarrows to mechanised loading!”

Refurbished, the tractor currently sits in the entry area of the company's new headquarters, along with a replica of the Ford Model T truck that was the first motor vehicle used by Hadlee & Clough a century ago. The display changes intermittently – Ross has several restoration projects on the go, related to vehicles that have been associated with the company's history.

Fords were the trucks of choice in the 1970s and '80s. One of the first after Ross bought into the firm was a secondhand short-wheelbase D-Series tipper. Not long after that came the first new truck, an N1317, which was used to cart the company's first backhoe on a two-axle transporter trailer, in addition to its tipper duties. To cope with increasingly bigger machinery, a three-axle trailer was brought into service.

As the drainage side of the business expanded, so too did the numbers of small Ford tippers (Traders and N-Series) in its fleet. The company still has an N-Series from late in that era, with a swap body that enables it occasionally to do duty as a tractor unit for the smaller semi-trailers.

Another oldster still with the fleet is a Ford N1521, bought new in 1991 and with only 89,000km up. Originally set up as a tractor unit to tow a tipulator or a transporter trailer for a three-tonne digger, more recently it's been fitted with a Palfinger crane, and a swap tipper body which is occasionally replaced with a spinner unit to carry flexible piping.

As Ross points out, just driving around the city on infrastructure projects means that the trucks do very low mileages, so the N-Series is not out of the ordinary.

Main picture: On a recent project to run a gas line under the Manawatu River at Foxton, the Herrenknecht drill is the centre of a complex web of activity. Note the MAN crane truck loading cassettes of drill rod, remote operator cab for the drill and mud-mixing equipment in the curtainsider trailer at the right

Top, left: Fuso-mounted hydrovac unit boasts a 12,000-litre capacity

Top, centre & right: Established in its earliest form not long after the turn of last century, Hadlee & Brunton remains very active in conventional plumbing and drainlaying. Model T was the first of many Fords subsequently run by the company



The inexorable move to bigger gear has seen the drainage projects now supported by 6x4 tippers, with Isuzu being a popular choice. Since 2010 Hadlee & Brunton has dealt with Steve Hoyne of CAL Isuzu, and over the years has bought several new trucks from CAL, which Ross speaks highly of.

Another major association, going back over 30 years, is with Russell Marr of Prestige Commercial Vehicles, and is reflected in the Mercedes-Benz, Freightliner and Fuso models that are well represented in the fleet

There's around 13 12-tonnes-plus units that require at least a Class 4 licence, with several of them dedicated to supporting the directional drilling operations.

The progression from classic plumbing and drainlaying to the high-technology sphere has been

gradual, and stems back to the mid to late 1990s, says Ross: "I've always been keen on doing things smarter and sharper with better gear, and we have been doing infrastructure work for the Timaru District Council and similar bodies in the Canterbury area for many years. The Timaru Council engineers have been brilliant, because they embraced the concept early on and have given us the opportunity to prove the viability of using this sort of machinery on some of their projects.

"But where I took it to a certain level, David and Andrew have looked even further and have progressed to another level yet again. The company has always worked on the principle of doing it once and doing it really right."

Ross bought his first directional drill in 1996. It was capable of around half a tonne of pullback and

thrust and could drill approximately a 50m length at 200mm diameter. Over the years the drilling fleet has increased, as has the size and capability of the equipment. The biggest of the five current directional drill rigs operated by Hadlee & Brunton, a German-built Herrenknecht HK175CK, was added to the lineup in 2014. The maxi rig can drill over a kilometre in length and install pipes over a metre in diameter.

It is far from the largest equipment Herrenknecht builds – the company also specialises in tunnel-boring machines, and provided the rig that recently did Auckland's Waterview Project motorway tunnels.

On a directional drilling project, the rig will initially bore a pilot hole. When it breaks surface at the far end, the drill head is replaced by a larger reamer unit which is drawn back through the hole

– the process being repeated as needed with larger reamers until the required diameter is achieved. At this point the prefabricated final pipe is drawn back through the length of the hole.

All this naturally calls for a bit of muscle. When drilling, the Hadlee & Brunton rig can produce a rotational torque through the drill rods of some 70,000Nm and also exert a pullback or thrust force equivalent to 175-tonnes. Primary power for the hydraulics that produce this grunt comes from a CAT C-13 engine.

The Hadlee & Brunton HK175 is actually custombuilt – based on the HK250 that is one of the primary models from Herrenknecht, but with a shortened chassis and drill rod segments to give it greater manoeuvrability for use in urban confines, as opposed to the open spaces that are the more





Preparing to pull a length of pipe through an already-drilled hole. Because it minimises surface disruption, directional drilling works well in urban environments



natural range of rigs of this size.

Ross Brunton explains: “We already had two medium-sized American Ditch Witch directional drills when the Christchurch earthquake occurred, but it was obvious there’d be a need for even bigger gear to handle the major infrastructure repairs that would be necessary.

“Shirley and I travelled to a big machinery show in Munich and talked to several companies, finally settling on Herrenknecht. They were fully accommodating in our need for a more dimensionally-compact machine than the standard design, but still one with the ability to handle the big-diameter, long-run jobs.”

On top of the city-environment considerations, the Bruntons wanted to be able to carry the rig – set up in crawler configuration so it could work on the widest range of surfaces – on a single transporter, fitting inside the 50MAX regulations. To this end a four-axle trailer was built, and because of weight issues an 8x4 tractor unit was also required.

The model chosen for the task was a 620hp Freightliner Argosy, which offered the required necessary combination of power, tare weight and, most critically, axle spacing. Even so, it was a close-run thing. During operations, the operator cab on the big HK rig is set up apart from the machine itself, the operator viewing various aspects of the drilling operation on screens showing feeds from cameras mounted on the rig and its supporting equipment, and guiding it via other touch-screens. With most maxi rig applications, the cabin is integrated in a 10ft or 20ft container, transported separately from the rig, but with the Hadlee & Brunton machine, its makers designed the cab and elevating frame to be mounted directly on the drill chassis for transit, eliminating the need for an additional transporter.

Consequently, setting up a tractor unit and trailer to take the drill is super-critical as far as axle weights go, says Ross: “Half an inch in the machine’s placement on the trailer can see the weights



Main picture: The American Augers drilling mud recycling and reclamation unit is so heavy when operating it has to sit flat on the ground. In transit, it calls for a piloted heavy-load permit. Main mechanical power is provided by a CAT C-13, electricity by a CAT genset

Top pictures: Andrew Brunton (far left) and brother David (left) run the company with their father. Andrew handles the drills and their associated equipment, while David concentrates on feasibility studies and onsite management

going over. Originally, with a 6x4 tractor unit, we had to carry the drill control cabin and some of the drill components on one of the other trucks, but now, with the Freightliner, we can carry the whole unit in one.

“When we were setting it up the local CVIU helped us with measuring the axle weights, and ensuring they were within limits. We had a couple of days of running the truck and trailer over their scales. Without that help, getting it just right would have been a lot more difficult.”

And because several major sub-assemblies on the drill are moveable, like the head carriage and gearboxes, all have to be in their correct positions to get the axle loadings right, explains Andrew Brunton: “To make sure we don’t muck it up, we’ve taken photos of the precise positions of the components when the weights are correct, and these are used as visual templates every time the combination goes on the road.”

The Bruntons are also very appreciative of the support from local company Hilton Haulage, which

provided them with a driver and Freightliner Coronado for a day to compare it with the Argosy when they were close to making a decision on what truck to buy for the job.

But setting up a truck and trailer combination to cart a big directional drill like the Herrenknecht or one of the two larger Ditch Witch models to and from projects is merely the beginning. While working, the drills are the centrepiece of a range of support functions, the majority requiring trucks.

Take the drilling rods – each segment between six and nine metres long. These have to be carted to site and loaded onto the rigs. The loadings carried out by a crane truck – the one run by Hadlee & Brunton being a serious piece of kit indeed.

It’s an 8x8 MAN, fitted with a HIAB XS544 E-8 Hipro crane that – with a jib extension fitted – has a reach of 35m. Originally set up by an Australian company for a transmission line project in the North Island, the truck came to Hadlee & Brunton with a smaller crane, which fell a bit short of the company’s needs.





Clockwise from left: An earlier crane truck was this Fassi-equipped Kenworth K125, which had begun life as a 6x4 and had the extra steer axle added locally; the company's new headquarters was previously a Mitre 10, offers plenty of space for vehicles; the foyer features a replica of the company's first truck, and the bucket-equipped Ferguson tractor that was its first mechanical loader, in the 1970s

The big HIAB not only eases the task of supplying drill rod to the rigs without getting in the way, but has proved invaluable on the roofing work that is another segment of the company's portfolio, and on one-off projects like cell-tower installation.

Crane trucks are notorious for getting stuck offroad, so the MAN's all-wheel-drive – while at first sight looking like a touch of overkill – offers a real benefit.

Then there's the bentonite-based mud that's integral to any drilling project – used as a lubricant and coolant at the drill or auger head, and to flush the extraction material back out of the hole. It comes dry, and is mixed onsite with water, the process requiring a truck that can both transport the material and has the necessary mixing unit fitted. For the bigger projects, this task is carried out by a 480hp Foden 8x4 tractor unit hitched to a three-axle semi.

Water tanks and the pump for a mixer unit are fitted to the truck's chassis ahead of the turntable, while another mixer unit is carried in the curtainsider trailer.

When drilling, the mud is extensively recycled, the job being carried out by an American Augers MPR-6000, built integrally on a three-axle semi. Primary power is provided by a 475hp CAT C-15, driving dual shaker/filter screen units through a 10-speed Roadranger gearbox. A 114kW/480V CAT genset looks after the three high-capacity fluid pumps. The shale and silt abstracted from the mud is transferred directly to tippers via a custombuilt auger system

and used for clean fill.

In transit, the MPR-6000 is hooked to a 470hp Fuso 6x4 tractor unit, recently added to the fleet. Onsite, the weight of the fluid and drill material it's carrying at any one time would be too much for the chassis to handle, so with the tractor unit unhitched, hydraulic legs lower the MPR-6000, allowing its forward section to sit directly on the ground.

When a big project is being set up or returned to base, the transport logistics can be huge – usually involving a dozen vehicles, of which two must be piloted. A recent job that entailed threading a new gas main 700m under the Manawatu River at Foxton offered an added challenge – in the shape of the earthquake-blocked SH1 up the Canterbury coast.

Eventually, the call was made to avoid the fraught alternative through the Lewis Pass and SH7 in favour of coastal shipping ex-Lyttelton to Wellington. This meant the relevant units could be transferred the 160kms from Timaru to the port in smaller convoys, over three days – with only the HK drill and the MPR reclamation unit needing the full pilot treatment.

With less pressure time-wise, the return trip was done over two days by Cook Strait ferry and the SH7 road route. David Brunton, who drove the Fuso/MPR combination, says the journey was challenging but enjoyable, and the big convoy attracted a lot of interest from other truckers when it overnights at the Riverlands truck stop just out of Blenheim.

Away from the drilling support functions, the trucks in the Hadlee & Brunton fleet are pretty much



Above: The Argosy and its cargo ready to roll. Accurate placement of the drill on the trailer is critical to keep axle weights within limits

Left: The Herrenknecht drill is operated from a separate cab, set up beside the main unit

what you'd expect in a firm whose regular work includes major drainage projects – a range of 6x4 and 4x2 tippers and 4x2 site service vehicles. Isuzu is the most prominent brand, with smaller numbers of Fusos and some UD's.

The company also runs several truck-mounted hydro and air excavation units that use high-pressure water or air to cut the ground and then vacuum the slurry or fractured spoil into the truck for carting away. The benefit with this technology is that it cuts into the ground without the risk of damaging existing underground services or tree roots as could be the case with a mechanical digger. The biggest of the lineup, fitted to a 430hp Fuso 8x4, has an 8000-litre capacity. When full the unit is close to the weight limit for its layout.

Two truck-mounted cherrypickers – the larger one able to reach up to 27m high – are kept busy on a variety of hire jobs.

As well as the four-axle unit designed for the Herrenknecht drill, trailers include a three-axle semi transporter and a three-axle pull transporter, both primarily used to carry the company's diggers and loaders, while a 15m trombone unit carts roofing material and the longer lengths of drill pipe. Over the years Adams and Currie has supplied numerous purposebuilt trailers and truck decks to suit the company's specific requirements. A four-axle curtainsider bought from Temuka Transport has been refurbished and fitted with new curtains and carries support equipment for the directional drills. It's usually linked with the MAN on big jobs.

That trailer, says Ross, has proved to be very versatile: "It not only carries the drilling gear, but also acts as an all-weather site shed as well. We used to have a dedicated curtainsider truck to do a similar job, but once it got the gear to a site it wasn't able to be put to any other work. That is



Right & below right: Isuzu 6x4 tippers are the main models used in the company's drainage work, which – along with plumbing – accounts for the bulk of its activities

Below left: Annual distances covered by the trucks aren't big. This N-Series Ford, bought new in 1991, has just 89,000km up, is still in great condition and used regularly



why we've set up the trucks now to tow trailers when needed, but to be able to handle other work as well."

Two trailer-mounted caravans, used as site offices, mud laboratories or site engineer offices, have a less than linear history. They originally arrived in the country in a batch of factory Isuzus set up for applications like food trucks. They weren't selling fast, so the distributor took the bodies off and sold the trucks as cab/chassis... giving Hadlee & Brunton the chance to pick up just what it needed.

Regular servicing on the trucks is handled by the company's mechanical workshop, across the road from its new headquarters in what was previously the Timaru Mitre 10 store. More extensive work is handled by an independent workshop in Washdyke.

Ross Brunton points out that the company does not have specialised drivers: "All our guys are plumbers and drainlayers at base. When they're coming through from Class 1 we help them out in getting a Class 2.

"We don't take them on for truck driving as such. When they start with us, even if they have their eye on the driving, we tell them they're just as likely to be needed on a pick and shovel or to drive a cherrypicker. The majority of our fleet can be handled with a Class 2...and we have enough people on hand to take on the heavier units when they're needed."

In other words, conventional plumbing and drainlaying remain the core of the business...as they have been for the past 111 years. The evolution of technology in that time – from picks and shovels and wheelbarrows through converted tractors to mechanical diggers and trenchers...to you-beaut kit like the Herrenknecht maxi drill, and from Model T Fords to Freightliner Argosys – has been undeniably spectacular...

But, as David Brunton points out "...the majority of our work is still fixing leaking taps and unblocking drains.

"The bigger stuff is just to test our pain threshold!" 