

A
SCRAPPY
TO THE CORE

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THINK SCRAP-METAL MERCHANT AND IT'S EASY enough to imagine company transport that's a slightly (but only slightly) more modern take on the horse and cart used by *Steptoe & Son* in the classic BBC TV comedy. But that's manifestly not the case with many (most?) contemporary scrap dealers.

Their stock in trade is sourced from all over and, once sorted, a high proportion of it is destined for export. Trading successfully depends on an efficient and cost-effective transport infrastructure as much as any other factor.

Scrap-metal, steel in particular, can also be a brutal cargo, says Jeff Harris, managing director of Lower Hutt's Macaulay Metals.

Which is why the 20-plus trucks in the company's smartly-presented fleet – and their associated trailers and hundreds of load bins – are set up and constructed with toughness and longevity as key criteria.

By the standards of the wider transport industry the units' tare weights are high, he says: "As a result, our payloads are modest...but the gear needs to be able to handle it."

The country's largest privately-owned metal recycling business, Macaulays has been in operation for over 55 years. As well as the expected trading in various scrap-

metals – sourced primarily from industrial suppliers, but with a significant proportion also coming from the general public – the company is active in large-scale demolition and site-clearance projects.

The pylons from several decommissioned high-voltage transmission lines and electricity transformers from the Benmore hydro power station – replaced after 50 years in service – fit into this category.

Macaulays was also the prime contractor for the dismantling and disposal of the Methanex MTG (methanol to gasoline) plant in Taranaki – that project spanning 18 months.

The company processes in excess of 100,000-tonnes of scrap per year in yards located in Whakatane, Rotorua and Palmerston North, as well as at its Hutt headquarters.

There the two-hectare site is crowded with hundreds of bins, storage and sorting warehouses and a drive-through buying facility...and is dominated by a central scrap pile of near-alpine dimensions.

In every respect, the scrap-metal industry is big...and people are often surprised to learn of the extent of activity in the sector, says Jeff Harris: "I've seen a statistic that says the industry in the USA, for example, has a turnover of around 70% of New Zealand's GDP. And with a growing emphasis being given to recycling, it will only get bigger."

Scrap comes in a variety of materials and in all shapes and sizes. A company's skill lies in sorting it efficiently



Macaulay's central operations manager Glen Jacobs says that scrap companies have to approach their business from the viewpoint of having two sets of relationships – one with their suppliers and one with their customers: "In that respect we're more like a retail shop, in that we have 'wholesalers' who supply us, and customers who buy the goods we stock.

"And our transport arm is an important factor in the maintenance of both these relationships.

"An article in a recent scrap industry magazine, on an American company that runs a 60-strong fleet, quoted the MD as saying that if he treated it as a standalone transport operation it'd make no commercial sense, but it was important to the company's overall operation."

Jeff agrees: "Running our own fleet confers benefits beyond simply getting the raw scrap into the yard, or the export output to the wharves. In an important sense, our drivers are our representatives out in the wider world.

"As a result, we have regular catchups with the guys in the trucks, reminding them that how they perform reflects on the company overall."

Changing patterns of scrap sourcing has also made running a company fleet more important, he adds: "There was a time, when prices were a lot higher, that you could look in the *Yellow Pages* and find several ads for people

willing to pick up scrap for free. That's all gone – nothing's free any more, and independent trucking operators still have to cover their running costs.

"You cannot run trucks all over the place and make no money out of them. That's been a real education process over time – explaining to people that there is a cost in trucking. If you want to deliver four tonnes of steel to our buying shed upfront, then it will be a particular price. But if you want us to pick it up from Kapiti, it'll be another, lower, price – that takes into account the cost of getting it here.

"Of course, that's not the same across the board. If you're carting steel, which at the moment is a commodity worth only around \$200 per tonne, and you don't recover your transport costs, you're in trouble.

"On the other hand, copper, at \$7000 a tonne, could warrant travelling a fair distance for a smaller load and carrying some of the costs."

The result, adds Glen, is that the Macaulay fleet doesn't operate like a conventional transport business, where it's fundamental to get a return on all running costs: "Sometimes – and this always depends on the particular circumstances – a proportion of them are absorbed in favour of the bigger picture."

Other factors have also driven the growth of the

This page: The company has found Hinos reliable and inexpensive to buy, making them the truck brand of choice. Several of the smaller units carry cranes for optimal versatility

Opposite page: Jeff Harris admits he's "a scrappy to the core," has traded in metals since he was young



Macaulay fleet from just three trucks 20 years ago to the current numbers, says Jeff: “What we’ve seen over time is that it has become harder to organise a reliable transport option for getting scrap in from further afield.

“It’s not a cargo that’s as predictable for weight and volume as, for example, trucking 30 pallets of tinned food every night over the same route. Contract trucking companies can be reluctant to provide a service to handle an unpredictable commodity...and on top of that there’s the potential for the materials to damage curtainsiders and the like.

“So, though there’s a big commitment and capital tied-up in running our own trucks, having them makes sense in that it gives us a level of predictability and control. That said, we also still use several independent contractors for carrying scrap from out-of-town suppliers.

“In this respect we’ve found smaller operators to be more responsive and helpful than the bigger firms, who can sometimes seem not to care about staying on top of our sort of work.

“Often, the transport component makes up part of a deal. I can be negotiating on the phone with a supplier for a shipment from up-country and I’ll be simultaneously texting a transport operator we have dealings with in the area – to see when they can handle a load to down here,

so I can let the supplier know by the time we conclude the deal.”

Historically, running big fleets wasn’t a feature of the NZ scrap industry, primarily because of the Government embargo on the export of scrap steel following the establishment of Pacific Steel in 1962. The new mill’s feedstock was largely scrap, collected at a network of Pacific Metals depots nationwide and railed to Auckland.

Consequently, dealers concentrated on the lower-volume non-ferrous metals, which didn’t call for bulk heavy transport.

Macaulay Metals was set up by Wellington businessman Bill Macaulay in 1959. Jeff Harris explains that his own association with the company began at a comparatively early age: “My father worked for a company that reconditioned 44-gallon (200-litre) oil drums. I used to help out after school and in the holidays, knocking the dents out of the drums, washing them, repainting them – earning a bit of money for the work.

“The company also had a few scrap projects going that I’d help out with – breaking down machinery, getting the nuts and bolts off. I used to love it.” He is, he admits, “a scrappy to the core.”

What scrap the company extracted was sold to Macaulay Metals, and as a result Jeff got to know Bill.



His father's company eventually got out of scrap, but Jeff was bitten by the bug, he explains: "While I was studying at university, Wellington was going through one of its retrenchment periods, and factories and government workshops were being closed and their contents sold up. My brother and I would go to auctions – which would be on virtually every weekend – and bid for the stuff that could be broken down.

"The activity proved profitable enough that it virtually paid my way through university. Then, having finished an accountancy degree, I worked for two years with Holden NZ, followed by a stint with Telecom. I'd been there for around two years when, in 1995, I heard that Bill Macaulay was thinking of selling his business.

"I'd built up a certain amount of capital by then as I was still buying and selling scrap in my spare time, and I told Bill I was very interested in trying to buy the business.

"It turned out another potential buyer was also interested, but a few days later Bill told me that deal had fallen through, so I scraped together all the money I could for the deposit we agreed on.

"It still fell \$15,000 short, but I told Bill I'd sell my Isuzu Trooper to cover the balance – I reckoned it would fetch more than that – and he agreed. When it came time for the purchase to be ratified formally, the lawyers on both sides were horrified that I'd already paid him the deposit money on no more than a handshake....and because I hadn't had the time to get around to it, I was still driving the Trooper!

"So I ended up with a big debt to Bill, who also funded the ongoing working capital. He was a massive help to us getting under way."

At the time the company truck fleet ran to just two Mitsubishi FVR 4x2s and a Ford N-Series, used to pick up material from industrial suppliers.

It was a good time to be buying into the industry: The lifting of the export embargo in the late 1980s, boosted further by rising commodity metal prices and demand for scrap from Japanese and Chinese mills, meant that growth had been strong for five or six years.

And it continued that way...to the extent that, by 1998, Macaulays had outgrown its original site in Petone. A chance came up to buy a much larger industrial property in Seaview, which has been the company's home ever since. Originally a back section, it was subsequently added to when the adjoining front property came up for sale.

Scrap steel prices peaked in the late 2000s, by which time Macaulay Metals' seven staff of 1995 had grown to more than 100 and the truck fleet close to 30. Growth had been boosted further by the acquisition in 2007 of two other scrap companies – one in Palmerston North, one with three yards in the Bay of Plenty. A new site had also been established in Gisborne.

With the lower prices and reduced demand from China in the period since, there has been some contraction...but staff numbers are still in the high 80s, and the reduced truck numbers are partly down to bigger-capacity, more powerful units joining the fleet.

In the past 18 months depots in Gisborne and Kawerau have been closed, leaving Wellington, Whakatane, Rotorua and Palmerston North.

In fact, says Jeff, the fluctuations of global scrap prices –

A wide variety of bins and trailers has been tailored to meet the different demands of various metals





Dismantling decommissioned electricity transmission line pylons has become a Macaulays specialty. Shear attachment on digger cuts the structures into pieces for transporting, while helicopters are sometimes used to lift sub-assemblies to the ground (*opposite page*)



though sometimes quite marked – don't impact all that much on the volumes sourced from longterm industrial suppliers: "They aren't all that sensitive to the ups and downs of the market prices. Often, other factors are seen by them to be just as important – the reliability and regularity of the service we provide in picking up their scrap, the fact that we might have bins purpose-installed on their premises, that sort of thing."

As far as truck brands go, the fleet is primarily Hino, in a range of 4x2, 6x4 and 8x4 layouts depending on application – and generally part of truck and four-axle trailer combinations.

There's a smattering of other Japanese brands, plus a Volvo and a Foden, while the glamour unit of the fleet is a recently-commissioned 560-horsepower Freightliner Argosy 8x4.

Glen Jacobs says that the decision on which truck brand to buy is always a toss-up between how much they cost to buy, and how much they cost to run: "The Freightliner, for example, has a high capital cost, but is light and great on fuel use. The Hinos that make up much of the fleet are great to buy, have very few breakages...but drink fuel.

"The Hinos are wonderfully reliable. The other brands were mainly inherited from the companies that we bought, but as we go on, the Hinos look to be the best bet for our type of business."

However, the true heart of the company's transport arm lies in the number and variety of its bins. There are close to a thousand, in all manner of capacities and configurations. Capacities for the conventional customer bins range from two to five cubic metres, while non-ferrous metals are often collected in 1.5-cubic metre foldable bags that are ideal for confined spaces.



Above left: Though much incoming scrap comes from industrial suppliers, purchases from the public are also significant

Above right: Restored Ford Model AA truck has no direct link with the company's history, but is a brilliant attention-grabber when put on show

Below: The company's biggest bins are built to last, weigh a solid 2.6t each. Combinations are typically 8x4 truck and four-axle trailer

Gantry-loaded skips with capacities up to nine cubic metres make up a significant proportion of the lineup, while hook bins carry the big loads – up to 40 cubic metres. Supplier pickups are done by the nine crane trucks, fitted with front-mounted Palfinger units, or the smaller gantry trucks, while the four hook-truck combinations look after the heavy stuff. Loading these involves the truck first picking up the bin, then push-sliding it onto the trailer, which it has backed right up to.

Some of the trucks have drop-down sides to their bodies to allow bagged and baled non-ferrous metals and wire to be loaded.

Allcrane supplies the A.T.I.B. hook systems, while their four-axle trailers – the latest ones fitted with air suspension and disc brakes – are built by Mount Maunganui's Koromiko Engineering. Gary Douglas Engineers of Palmerston North builds several of the other trailers as well as handling truck body and chassis engineering.

The specialised equipment includes a two-axle hook bin trailer fitted with big offroad tyres and custom-designed, in conjunction with Koromiko Engineering, to work

on transmission line dismantling.

Macaulay Metals' first job of the type was between Arapuni and Pakuranga three years ago, while it's currently working on two other projects – one in the central North Island, between Whakamaru and Wairakei, the other in Transmission Gully, north of Wellington.

The trailer is towed by a 200hp tractor, which also provides the PTO for its hydraulic hook system. On farm properties where the pylons are located, the tractor and offroad trailer shift the bins to and from spots inaccessible to highway hook trucks.

The process sees the pylons gas-axed, then pulled over. They're then cut and folded into small, bin-sized sections by a digger fitted with a shears attachment. In places it can't get to, sections of the downed pylons are helicoptered to the digger.

Where necessary the tractor/trailer combo carts the bin-loads of steel to a truck-accessible location for delivery back to the Hutt.

Jeff says the company got into this part of the process almost by accident: "We'd tendered with Transpower to buy the scrap from the Arapuni to Pakuranga line and the





Above: Central operations manager Glen Jacobs superintends the transport, enjoys the challenge of carting sometimes-problematic cargoes

Below: This offroad hook-loading trailer was the ingenious answer to the problem of carting bins of electricity pylon scrap from inaccessible locations to highway bin trucks

deal was all but settled when we asked how the scrap was to be delivered to the farm gates.

“We were told the plan was for demolition crews to unbolt the pylons and stack the sections on farm trailers for delivery to the road. We said, ‘are you kidding? How are lightweight galvanised trailers going to handle that sort of a job?’

“So they asked us to quote and we went away and came up with the customised trailer and bin idea. We were actually paying them for the steel, but by the time the cost of dismantling was factored in Transpower was paying us!

“The original scheme had health and safety aspects as well. With a pylon structure lying on its side there’s a lot of it under tension, so when elements are unbolted there’s a real risk of them springing clear. Cutting them with the digger-mounted shear attachment was much less risky.”

He enjoys working out solutions for unusual challenges like this, adds Jeff, and dealing with companies like Koromiko and Gary Douglas who are able to think innovatively for the various applications.

“Over time we’ve become quite creative on our projects. For example, another thing we do a lot of is decommissioned high-voltage transformers. Last year, we bought all the transformers from Benmore – 60-tonners. Carted them from the dam to a yard near the port in Timaru using Jacksons Cranes & Heavy Haulage, then broke them down there before shipping the scrap out.”

Bulk export shipments of scrap can go as high as 20,000-tonnes and call for an all-hands-to-the-pump approach, with up to 12 independent contractors supplementing the company trucks in carting the 20ft loadout bins to the wharf.

The bins weigh around 2.6t each, and have a payload of 10t-plus, meaning some loads call for 900 vehicle movements. The loading is carried out around the clock, with some 4000t being shifted per day.

The bins are twist-locked to the truck and trailer units and loaded empty onto the trucks and trailers at Seaview by forklift before being loaded with scrap-metal. At the wharf they’re lifted off by the ship’s



A 60t transformer on its way from Timaru to Benmore hydro in the early 1960s. Replaced 50 years later, it's been hauled back over the same road.....to be cut up for scrap by Macaulays



cranes, using a spreader beam and hook system....then the front hook's released in the hold, allowing the bin (which has a sloping floor at the front end) to empty as the crane lifts it back up again.

A high level of project management is demanded for these events to be successfully handled, says Jeff: "After a couple of smooth runs there's a danger of getting complacent, and of taking your eye off the ball. It can be something as simple as a driver forgetting to lock the handle of a twist-lock at two in the morning and having it pulled out of the deck.

"It doesn't damage the truck, but you've got to have a spare twist-lock available for quick replacement. Sometimes the back hooks on the bins can get jammed and might need to be replaced as well. You've got to think ahead for these eventualities."

The loading process at Seaview is about to be streamlined considerably with the arrival of a new 35t Combilift straddle carrier. The Irish-built unit features slab lifts and is able to stack the bins two high as well as load them onto the trucks and trailers. The company investigated buying a 30t forklift for the job, but the

Combilift was not only considerably less expensive but needs less room to manoeuvre in the tight confines of the yard.

Macaulays has also looked at adopting bins with a 30t capacity, meaning a single skelly with one of those aboard can carry the same as three of the current load-out bins, says Jeff: "However, they're moonbeams for cost, and we'd need at least 10 to replace our current lot of bins. In addition, our new compression shear plant cuts steel to smaller sizes, meaning the scrap packs tighter in the bins and they can carry a higher payload when full...so we can now run the trucks as HPMVs to take advantage of this."

The unpredictable and variable nature of a lot of scrap makes it important for drivers to understand their cargoes, he says: "The style that I like is that the drivers can be versatile – and rewarding them for those abilities. Our product is such that there are plenty of downstream options for drivers – helping out at auctions and making their own decisions as to the loading of a truck, for example.

"I remember arriving at the yard we had in Kawerau and seeing one of our drivers just in from a pickup in Gisborne.



Left: The Harris family tradition of scrap-metal trading continues. Ned (*left*) and Finn come into the yard when it's closed on Sundays (hence their lack of vis-vests and hard-hats) to get a taste of stripping down scrap equipment and selling the metal... just as their Dad did when he was their age

Below: As well as sourcing scrap from industry, Macaulays is active in recovering metal from major demolition projects

He had a road paving machine – quite a big one – tipped on its side and securely tied down in a bin on his truck. I asked: ‘How the heck did you get that in there?’

‘He answered: ‘We needed to be pretty creative. We used a digger to tip it on its side before lifting it up.’ That’s the sort of attitude we’re looking for. Our loads are seldom predictable, MacDonaldis-style, like containers or pallets or logs.

‘Consequently the type of driver best suited for our work is somebody who has come up through the yard, knows the processes for handling the metal here, knows what’s needed to be done with the product when he gets here.

‘You don’t want to be double-handling the material. When somebody comes to us who you’d call a professional truck driver, with plenty of experience, still you’re almost setting them up for a fall when it comes to handling scrap.

‘That’s why it’s better to have a driver come from the

industry background, because they know the metal – and understand what’s needed....and the safety aspects of the job. We’ve had guys start with us with no more than a car licence and we’ve brought them through to a really high standard of competence.

‘In this respect we can offer a career pathway – beginning with them getting the feel of the job as they work in the yard, then progressing to the trucks. In that respect we’re unlike a conventional heavy-truck transport company, where workers can’t be given a productive job while they’re going through their heavy licence.’

Pride in driving the well-presented trucks ensures there’s no lack of interest from the yard workers in getting behind the wheel. Though the trigger for the distinctive colour scheme was a professional branding exercise, it was developed in-house, explains Jeff: ‘When we bought from Bill Macaulay the trucks he had were pretty nondescript – a basic white with the name in letters.





Above left: Forklifts handle the smaller and medium bins. New Combilift straddle carrier will be able to load and stack the biggest units with ease

Above right: Twenty years ago scrap metal trucks were pretty understated. The old Inter is now the yard truck at Macaulays HQ

Right: All manner of scrap can be found in the sprawling Macaulays yard. A crane-equipped 4x2 Hino delivers a load of wire

Below: Today, smart presentation and custombuilt equipment are the watchwords



“We went through a branding exercise with a marketing company that came up with the orange and black colours and a central logo of a gear cog with circular arrows to signify the recycling aspect of the business. We had a guy with us at the time, Rob Abraas, who then worked up our current grey, black and orange truck colour scheme off his own bat. It works very well, because it matches our wider corporate colours and is distinctive on the road.”

The effect is to elevate the transport component of the company to the status of a very effective calling card. As Jeff Harris points out, Macaulay Metals is primarily in the business of buying and selling – a trader and not a transporter.

But he clearly sees too that there’s no reason why “a necessary evil” shouldn’t also be used to optimise customer service, operating efficiency and company image. 