

# Thiess takes a side step forward

By Garth Lamb

THIESS has provided the waste industry a springboard to jump past “standard improvement” in transport efficiencies and into the realm of “step change” technology. In a mature industry where even a 1-2% improvement across a regular truck run can be considered a major development, Thiess is talking about cutting kilometres travelled by over 25% using the side tipping B-double transfer trailers it has pushed to develop.

“It improves the mode of transport dramatically,” claims Peter King, general manager of waste management for Thiess Services. “It’s a really good environmental story, it’s a really good safety story, and it’s a really good productivity and efficiency story.”

That story has been some two years in the making and started with a fairly simple observation that, “if we could cart more waste with less trucks, it would have some cost benefits”.

The company’s existing 45-48 foot (13.7-14.6m) ‘moving floor’ transfer trailers can handle 24 tonnes of waste. Moving to a B-double could increase the payload up to 32-40 tonnes (with Higher Mass Limit approvals), and when Thiess crunched the numbers on what that might mean running between its three transfer stations and two Brisbane landfills, the option clearly looked attractive.

“Some of the statistics we came up with were we would reduce the number of trucks on the road, which gives a safety benefit [and] would take our annual kilometres down from 1,250,000 a year to under 900,000 a year – that’s a 28.5% reduction in simple figures,” says King. “The number of trips we would need to cart the same amount of waste would reduce from nearly 21,000 to 15,000 trips – that’s a 26% reduction.”

It also means 6,000 fewer chances of being involved in a road accident, and of course 6,000 fewer opportunities for an irate Aunt Mavis to complain about the trucks rumbling past her house. In terms of operating costs, fuel savings were calculated at a massive 250,000 litres a year.

With the scale of potential benefits in perspective, the question became how best to increase the payload? While some operators swallow the inconvenience of de-coupling B-double moving-floor trailers and unload them separately, and it more recently became



Meet the High Volume Side Tipper – a step change in waste transport.

an option to install walk-through moving floors on B-doubles (Vawdrey showcased this option in the Sept/Oct 2008 issue of *Inside Waste*), Thiess was keen to “look outside the square” and explore a totally new concept.

After being told “it can’t be done” by several better known trailer makers, Thiess turned to Azmeb Global Trailers (also known as BTS, or Bulk Transfer Systems), a specialist in transport R&D with a particular focus on side tipper trailers. As you can tell from the

B-trailer is empty, the process is simply repeated for the A-trailer.

This design provides impressive productivity and safety advantages. For starters, the driver never needs to get out of the vehicle on site, providing obvious OH&S benefits. But perhaps most exciting is the fact this B-double can be fully unloaded in “around 5-6 minutes”, compared with 11-16 minutes to unload the (smaller capacity) moving floor trailers.

Another major advantage of the

floor, however, the hydraulic system is engaged pumping planks back and forth for about 15 minutes. Multiply each figure by five loads per day, and the HVST hydraulics work 50 minutes less each day.

“A [moving] floor has so many moving parts, and the cost of maintenance is so much higher... with a side tipping truck, it’s simple, it’s neat, there’s less moving parts and it will be a winner for the industry – there’s no doubt about that,” says King.

The company is well placed to make that call. Its first prototype rolled off the line about a year ago, and was in use for “probably nine months” before engineers “got all the bugs out of it” and moved into building the second prototype. That second version, which has a 120m<sup>3</sup> capacity, is now on the road and comes with even better figures than the first: the design team took two tonnes out of its weight, lifting the payload to about 36-37 tonnes. Azmeb is aiming for 39-40 tonnes on future models.

In terms of loading material into the HVST, the operator simply drives under an outlet shoot at the transfer station, presses a button to automatically open the tarpaulin cover, and pre-compacted waste is then dropped into the trailer. Loading the full B-double takes about 15 minutes, longer than loading smaller moving floor trailers, although it works out “about the same” on a minutes-

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Peter King, Thiess Services

photos, the prototype they came up with is like nothing the waste industry has seen before.

## Ejecting trailer trash

The High Volume Side Tipper (HVST), or “green truck” as Thiess has tentatively named it, basically involves one fold-down side with a box on top. When it pulls up at a tip face, the hydraulics work in sequence to slide the box top up as the side flap folds down. These steps take about 20 seconds each and, once fully open, the whole body tips on its side to eject waste. Once the

HVST is much lower maintenance. Abrasive material, such as glass fragments, works its way into cracks in between moving floor planks, eventually requiring floors to be rebuilt – which can take several weeks, and cost a pretty penny.

Fewer moving parts are one big maintenance advantage of the HVST. Another is less pressure on the hydraulic system, meaning the oil doesn’t get as hot and overall maintenance on the system is much reduced. The hydraulics on the HVST are engaged for only five minutes per trip. To empty a moving

per-tonne loaded basis.

Outside the transfer station environment, the HVST can be filled with a normal loader by lifting the top box without letting the side flap down. This could come in handy back-loading mulch from a greenwaste site, for example.

### ***Innovation is king***

The HVST won't suit every application, especially as it is only allowed on approved B-double routes. But King believes it could "transform" the waste game, as well as finding applications in a host of other bulk transport industries. Asked what drove Thiess to pursue such a novel concept, King points to the Waste Innovation Alliance it formed with Brisbane City Council in December 2006.

"We're engaging in some real innovative processes going forward, and we've already delivered some quite interesting innovations into the management of Brisbane's waste," he claims.

But innovation doesn't come cheap. Taking into account cash and time, King says Thiess invested "in the order of nearly \$700,000" to get the

truck to this point, although he adds there is "absolutely no doubt" the company will see a rapid return on this investment, with the HVST helping it "provide the best service at the minimal cost in a very competitive market".

The company currently has a fleet of 22 prime movers and trailers in Brisbane, although it will now be able to reduce that to 18, "and we believe that with some more efficiencies we're working on now, we'll take that 18 down to 16". While HVST trailers cost more than moving floor varieties, needing fewer vehicles means capital costs to replace the full fleet work out about even.

Thiess will "without doubt" introduce the system outside its Brisbane operations, and King tips once people become aware of the advantages, "there will be a big industry step change".

One of the few potential barriers to uptake is resistance to B-doubles from people who don't believe bigger



*A novel design coming to a tip face near you?*

is better when it comes to the size of vehicles on their roads. But King points out modern B-doubles come with few downsides compared to the trucks that are 6m shorter, especially in light of the improved efficiencies – meaning less trucks on the road and cheaper transport, which is ultimately "good for all the community".

Getting more customers on side

will be the final step in a long process. As with any innovative project, getting a new concept off the ground took a lot of teamwork – from Thiess management backing the idea and spending the cash, through to engineers working out the bugs, and drivers ultimately testing the prototype.

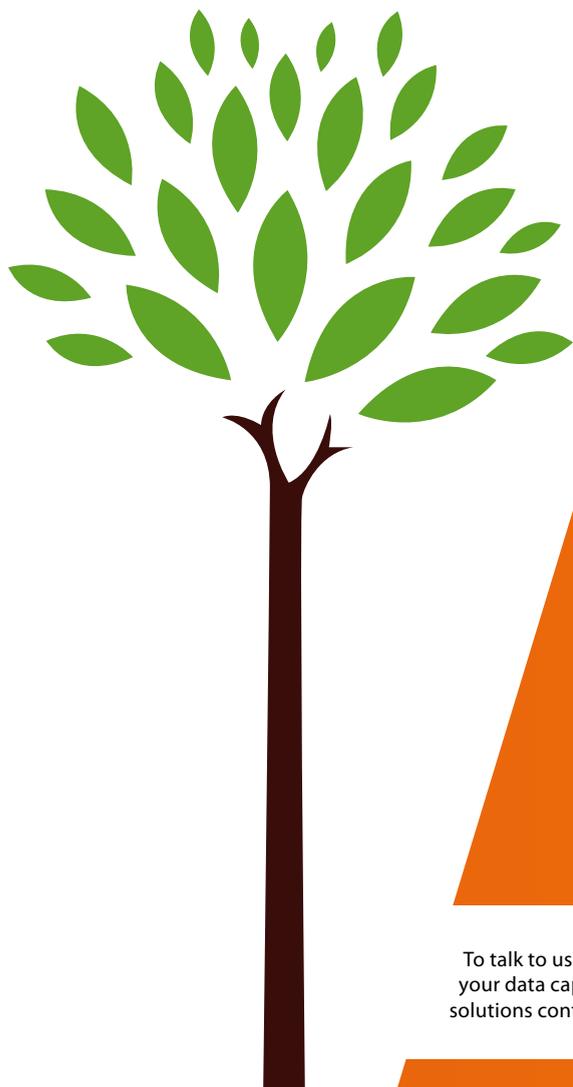
Thiess will reap some benefit being the first to make the change, although it is not likely stay ahead of its competition too long: Azmeb owns the design patents and will market the HVST to the wider waste industry. Some may consider Thiess foolish for putting so much effort into developing a product that will also benefit

its competitors, although King seems comfortable with sharing.

"We see our role, as a key industry contributor, [as] enhancing productivity and sustainability to the industry and our business," concludes King.

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