

Tanker tales

Tanker builders and operators are finding ever more innovative approaches to maximising efficiency, payload and access. Dan Gilkes reports

Every haulier is concerned about payload and load capacity; indeed, achieving a maximum possible load can make the difference between profit and loss. For tanker operators, however, payload is perhaps the bigger consideration.

While a haulier carrying caged, palletted or boxed items can stack them to the roof, their cargo will never occupy every available scintilla of space in the trailer. In contrast, a tanker that carries bulk powders or liquids can literally fill every available cubic cm. Yet, while every effort is being made to reduce tare weight and maximise payload on the tanker, advances in truck design – many pushed by legislation, such as emissions controls – are making that task increasingly difficult.

“We are already using high grade aeronautical class aluminium alloys [for tanker construction]. We’ve looked at composites, but in most cases they are no lighter,” comments Richard Harrison, from tanker manufacturer Feldbinder UK.

Despite the best efforts of tanker builders to improve fuel efficiency, Euro 4 and now Euro 5 regulations have forced the introduction of AdBlue tanks for many marques, as well as diesel particulate filters and other auxiliary equipment to the truck chassis. All of these elements increase the weight of the unladen truck and it’s fair to say that we can expect more of the same, with further componentry forced by the introduction of Euro 6 models in 2013.

Alloy fuel and AdBlue tanks and wheels, as well as light plastic bodywork components, all play their part in cutting weight, but they can only go so far. In the end, further reductions are going to have to rely

on engineering ingenuity and careful truck design to suit individual applications.

Cheshire-based Arclid Transport provides an excellent example of how what, at first sight, seems an unconventional approach can work. This haulier has slightly reduced the available payload on its fleet of trucks specifically to achieve a net gain, in terms of fuel savings. Essentially, it has moved away from traditional PTO-driven hydraulic pumps and compressors for its bulk tanker trailers, and has instead adopted Perkins engine-driven GHH Rand compressors, mounted on its Feldbinder trailers.

Weight loss, efficiency gain

Arclid transport manager Peter Conway says the benefits of running the compressor on low-cost red diesel more than make up for the drop in available payload. The self-contained trailer pumps also make it easier to use a range of tractors, when necessary. “I feel that it’s the right way to go, on fuel savings and in terms of fleet utilisation,” says Conway.

The firm has made weight savings on the overall combination – by adding two highly specified Super Space cab DAF XF105s to its fleet. These trucks are the FTP mid-lift model, using a smaller 17.5in wheel on the lift axle to reduce weight. This is said to cut around 500kg, compared to a 22.5in wheel combination, which, along with an alloy tank and alloy wheels on both the tractor and the 42m³ tri-axle trailers, helps to compensate for the additional weight of the blower engine.



The new CF85 from Abbey

The trailers were converted by WG Tanker Services. The donkey engine and compressors come with a noise reduction pack that cuts levels to 80dB(A), which, though still higher than the tractor output, is much lower than older power packs.

"We've probably sacrificed half a tonne of payload by using the FTP DAF, but it would have been nearer one tonne with the larger wheeled FTG chassis," Conway estimates. With no idling time to discharge the tanks – an operation that can sometimes be carried out four times a day – he is hoping that the savings from the lower cost red diesel will more than make up for the loss of carrying capacity.

Another operator using lightweight DAF trucks is Abbey Roadtanks. The haulier has been looking to increase efficiency and is boosting payload by up to 7%, while cutting fuel consumption by 5%.

To achieve this, the firm has recently taken 13 DAF CF85 trucks, again fitted with the FTP mid-lift axle. The trucks are also equipped with day cabs, a fixed Jost fifth wheel and aluminium fuel and air tanks, plus alloy wheels. Even with full fuel and AdBlue tanks, pumping kit and driver on board, Abbey Roadtanks has been able to get the weight of the DAF tractor down to just 7,572kg, increasing payload to 29.5 tonnes.

The target is to be able to regularly carry a full 30 tonne load.



Converted tri-axle tractor made by Clayton Commercials

"We are looking at every ancillary feature to see if it is necessary and if we can improve it," comments safety, health, environment and quality director Stephen Lucy. "We have worked with various manufacturers and we can actually carry 30 tonnes now. But I think we are approaching the theoretical max, in terms of weight saving. You may nibble away at 50kg here and there, but it's almost not worth it."

The move to day cabs could certainly have been controversial, if the tractors were on a short contract hire term, as manufacturers don't like taking back a day cab tractor that has little value on the used market. But Abbey runs its own trucks on a seven-year replacement policy, so will not be affected by concern over residual values. Around 10% of the firm's 140-strong tractor fleet now have a day cab.

With weight such an overriding concern, Abbey remains a firm believer in the tractor-driven PTO hydraulics to power compressors and pumps. "We have hydraulics on every vehicle as standard," says

Lucy. But Abbey has a highly organised business, with depots around the country allowing trucks to move from one job to another, without too much empty running. Indeed, this network also allows Abbey's drivers to wash out tankers at its own sites before carrying the next load, so further increasing efficiency. "The best thing for us is to keep a driver with his own tanker," he adds.

The rise and rise of weight

One of the biggest problems in boosting payload has been that steady march of legislation already alluded to – particularly regarding emissions that sees ever more equipment put on the truck chassis. DAF is not the only manufacturer to appeal to weight-conscious tanker operators, though. Volvo has been developing a number of options contributing to a weight saving. "We have on offer lightweight tractors with a smaller mid-lift axle. Our I-Shift gearbox also saves around 70kg," says Volvo's senior account manager John McCluskey. "The duty cycle is high, though, so you don't want to sacrifice durability."



New Volvo narrow track model

Volvo has also been working closely with tanker operators for whom payload is not the only concern – such as those that need access to restricted rural locations; companies delivering fuel oil and gas need compact, highly manoeuvrable tankers to reach outlying farms and domestic sites.

One of the fruits of these efforts has seen Volvo recently launch its FL Narrow Track. At just 2.1m in width over the doors and 2.3m over the front

mudguards, the new vehicle is plated at 16 tonnes. This is due in part to the adoption of 455/45R 22.5 super single tyres at the rear. A full 18 tonne gross weight would require twin rear tyres and a wider track. “The ability to plate at 16 tonnes provides an efficient vehicle for users,” comments McCluskey.

West Country fuel oil distributor Tincknell Fuels is among the first to adopt the FL Narrow Track. The truck can carry up to 11,000 litres of oil, which means that it can stay out on the road for far longer than the obvious alternative of a 7.5 tonne truck – allowing it to operate away from base all day, in some circumstances.

Off the beaten track

Meanwhile, a totally different twist on rural tanker distribution has recently been developed by tanker manufacturer Clayton Commercials. A number of customers had asked the company to build drawbar tanker combinations, so that the trailer could be left off the road during rural collections and deliveries.

While a drawbar combination may be nothing new, what is different about these trucks is that they have been commissioned using second-hand, three-axle tractors as the front half of the rig. “We are

seeing interest from two customers wanting to put a tank on a tri-axle unit, with another tank being pulled behind,” states Clayton managing director John Quirk. “We have been able to mount a 10,000-litre tank on the tractor, re-plated as a chassis, and a 14,000-litre drawbar tank, all up at 44 tonnes.”

Most of us would expect the larger tank to be mounted on the truck, with a smaller trailer being towed behind, but this combination allows for a very compact tanker truck to access farmyards and other rural locations. “For some operations, the customers simply can’t get a big vehicle in,” explains Quirk. The tractor retains its lifting centre axle, but has to be re-registered as a rigid chassis. Quirk confirms Clayton has not had to stretch the chassis or the wheelbase.

There are a number of benefits to this approach. The first is that there is no shortage of tri-axle tractor units around on the used truck market, which reduces price considerably, compared to a new rigid truck. In addition, many will be equipped with powerful engines capable of pulling a 44-tonne combination, whereas ordering a high-powered six-wheeler rigid can be very expensive.

For many operators, a tanker trailer can be a very long-term purchase, with non-abrasive load carriers lasting 12 to 15 years and easily seeing out a number of tractors. Operators therefore have to choose very carefully when investing in tankers, as they will have to work with their selection for a long time. “The tanker doesn’t wear out; it is legislation that changes it,” observes Quirk.

Health and safety regulations, for example, have forced some operators to update tankers, with walkways, ground level operation and pneumatic valves – all increasingly important factors in tanker operation. Manufacturers continue to look closely at new materials and techniques of construction, though in most cases stainless steel and aluminium remain the favourites. They would have to find something very special, though, to make an operator change a tanker before it is due. **TE**



Conventional 6x2 with drawbar