PUMP it UP

When it comes to specifying commercial vehicles, you have to go some to beat what it takes to get high-value gully emptiers right. Brian Tinham reports

If you want to witness 'fitness for purpose' working at its best, look no further than the fleets of gully emptiers, used by local authorities and specialists under contract. Speak to virtually any of these organisations' fleet engineers and you'll find a world of difference between their vehicle specification processes and those of, say, general haulage companies going out to tender on tractor units.

Why? Because, while these vehicles must run just as well and reliably as any hauliers' trucks, they also have to perform other functions as efficiently as possible. And those typically mean not only specifying additional equipment, without compromising axle and vehicle weight limits, but also ensuring that it, too, can be operated safely and effectively. Inevitably, that means choices and compromises. As regulations and responsibilities change, it also means evolution. But above all, for these fleet engineers it means worrying less about residual values and more about the detail of what amounts to expensive mobile plant.

Take drain maintenance specialist EEG, one of the UK's largest providers of drainage and sewer cleaning, inspection and repair services to companies ranging from local authorities and utilities to industrial clients. This firm runs a fleet of more than 300 trucks – mostly 26- and 32-tonners – from virtually all of the major OEMs in this market, including DAF, Hino, Mercedes-Benz, Scania and Volvo. All carry substantial jet-vac equipment and EEG fleet manager Douglas Stewart says the firm has pursued a diversified approach to acquiring its bodies, using suppliers ranging from Aquatech to Disab, JHL, Morrow, Rivard and Whale Tankers.

He explains that, although some might criticise the potential maintenance headache this might cause, in fact with this many trucks and their spread of specialised duties, that's the least of his worries. "They all do different things, so some are better at certain jobs than others. That's what matters."

Stewart makes the point that these are expensive, but typically very long-lived pieces of equipment, so getting the specification right is critical. "We've got vehicles costing from £50,000 to £250,000, depending on the size and specialisation. For example, with the cost of water and time in filling up, we need to recycle as much water as possible to maximise productivity. But that depends on using quality kit to suck out debris fast, depositing dry waste in the back and recycling the water for more jetting."

Sprinter chassis cab

That sort of equipment is not cheap, but it does make cleansing efficient – keeping costs down and clients happy. "Local authorities don't want their cleansing contractors having to come back to site three times: they want the job done in one go. So our trucks have to be specified to do that."

Most recently, however, EEG has acquired 17 5-tonne Mercedes-Benz Sprinter 513 CDI chassis cabs (right) to extend its work into domestic properties, where manoeuvrability with larger trucks – even 7.5-tonners – can be a serious problem. "We needed more

manageable vehicles that combined a smaller footprint with a sufficiently high payload to carry the necessary equipment – and the 5-tonne Sprinter was the perfect solution," says Stewart. "We've been relying on Sprinters since 2002 [on CCTV drain inspection duties] and, although they rack up some very high mileages, only very rarely does one suffer a problem. You can't buy that sort of reliability anywhere else."

For him, though, the real engineering work involved Dutch bodybuilder Rioned. Working with EEG's engineering specification team, this specialist developed and built bespoke bodies to accommodate the water tank, jetting and suction plant, and all the associated equipment.

"Rioned was the only company we knew that could do this job," states Stewart, adding that it's not trivial. "You've got to get the weight right to stay within the law, so you have to downsize everything. But you still have to ensure that jetting and suction are powerful enough to work at some distance. You also have to carry enough fresh water to do the job."

Stewart explains that getting this right for EEG's requirements meant finding space for 100m of jetting hose reel, as well as big storage compartments for CCTV equipment, and all its health and safety gear. That includes PPE (personal protection equipment), barriers, cones, winches and cleaning materials. "Rioned are good at that. They built the equipment, mounted it on skids and fitted those to the vehicles."

Practical developments

Mark Wilkinson, fleet specification engineer with Lancashire County Council, may have a slightly different take on the detail, but he agrees with EEG's thrust. Pointing to his latest consignment of gully emptiers – all DAF LF55.220 18-tonners, fitted with Whale Tankers' 1,800 gallon combination jet-vac units (main picture, page 29) – he says latest improvements range from the transmission choice to implementing advanced tracking, automated fill systems and new traffic safety measures, all geared to improving efficiency.

"For our last two trucks, we specified [ZF] AS-Tronic auto gearboxes, partly to reduce driver fatigue but also to cut clutch wear and improve fuel economy," he says. Wilkinson notes that, with AMTs fast becoming manufacturers' default (making manual sticks an option), some manufacturers are also reducing R&M costs. Indeed, he reckons the additional cost is easily recovered on maintenance alone.

Just as important for his operation, though, he observes that going for the automatic reduces the risk of costs associated with driving on-board equipment. "We get two years warranty from DAF on the driveline but only 12 months from Whale for a conventional PTO. By specifying the AS Tronic, we effectively get the PTO from the factory with the full DAF warranty."

As for the tracking, this is a story of expanded functionality, with Lancashire County Council now using its Masternaut systems to do more than just locate vehicles. "We've installed keypads in the cab, which allow our drivers to indicate, for example, that gullies are empty or full – which helps to modify our route scheduling – or that cars were parked over them, so we'll need to go back. Also, we've installed pickups on the vehicle booms, which we're using to build an up-to-date database of our entire gully infrastructure."

Wilkinson makes the point that the technology is all there anyway, and says his team may use it to record that the PTO is on and working, that safety beacons are lit and that drivers' safety belts are on. "We're looking at the cost/benefits now. Tracking systems give very useful information and they're good for lone working and mitigation of insurance claims, too."

At the other end of the technology scale, though, Wilkinson reports success with improving efficiency and safety through the simple measure of installing large flashing arrow beacons on the rear of its entire gully emptying fleet.

"We used to have trailing vehicles warning traffic on our high-speed roads, but there were problems with cars overtaking them or coming between our two vehicles. So we applied to DfT for a derogation and fitted LP15 flashing light arrows on top of all our gully emptiers. They lie flat on the vehicle when not in use, and can be raised from inside the cab." TE

Düsseldorf concept vehicle

A joint effort between the city of Düsseldorf and specialist vehicle manufacturer Assmann has led to a new jet-vac truck that is now keeping the city's 47,000 gullies clean. The vehicle is based on a Mercedes-Benz Econic chassis, equipped with an Allison 3000 Series fully-automatic transmission, while its bodywork includes two tanks – one 3,000 litres for fresh water and the other 6,000 litres for debris.

A liquid-ring pump (VacuStar WR 3100, from CVS Engineering, rated at 94kW) provides for solids suction, while a high-pressure pump (P45-75/80, from Speck Pumpen, rated at 80 bar and delivering 75 l/min) covers the jetting side. The truck also features an intelligent hydraulic and telescopic jib-arm, which automatically raises the cast-iron gully grates (using magnets) and then repositions them correctly after cleaning.

Achim Tölle, fleet manager of Düsseldorf's municipal drainage company, states that it's all about "automatic system saving time and nerves". Allison's 3000 Series, for example, includes its Continuous Power Technology, which ensures manoeuvrability and control when inching through congested streets and narrow roads. The torque converter and uninterrupted power shifts also deliver excellent 'startability', he says, while its fifth generation electronic controls optimise shift strategies for fuel economy.