



Keep the noise

The recent Quiet Cities conference played host to the latest generation of low-noise trucks and hushed ancillary equipment. Brian Weatherley reports

As supermarket giants open more inner city convenience stores, the race is on to find ways of delivering goods outside peak periods. It's all about avoiding the costs and delays caused by rush hour congestion – and the real challenge is to do so without disturbing local residents.

There are plenty of barriers to out-of-hours deliveries, as Sainsbury's logistics director Richard Fleming confirmed at the Quiet Cities conference. "Of our convenience shops, 50% are subject to some form of delivery restrictions, whether it's planning, EHO [environmental health] or residents' complaints." Yet they all need to be stocked. So operators looking at out-of-hours need to keep the noise down.

What to do? Quiet Cities presented several

solutions – including DHL's 'City Safe, City Quiet' prototype Scania rigid (above). The 18-tonner addresses several issues in a single truck, thanks to its cleaner and quieter CNG (compressed natural gas) engine and bodywork-based, noise-reducing interventions. Meanwhile, its low-entry crew cab and glazed lower panel passenger door improve the driver's sight lines for spotting vulnerable road users.

The P280's 9.3-litre 280bhp five-cylinder, spark-ignition OC09101 motor (Scania's own) has a bare engine noise some 50% lower than an equivalent DC09113 diesel. This Euro 6 engine also boasts 23% more torque (1,350Nm at 1,000–1,400 rpm) than its Euro 5 CNG predecessor. On the DHL prototype, it's coupled to an Allison six-speed auto box.

Its Don-Bur body also features: a noise-absorbing





down

floor, which deadens the sound of roll cages; an electro-pneumatically operated Whiting rear shutter with nylon components; and a quieter tail-lift, certified by the UK Noise Abatement Society (NAS) and Dutch PIEK. Then the D Hollandia tuck-away lift features a 'silent' power pack and motor, operating at below 65dB(A), with safety stop flaps/ramps that fold out noiselessly. Additionally, DHL's new 18-tonner also has a NAS- and PIEK-approved Brigade low-noise reversing alarm and automatic radio mute when the driver's door is open.

Presenting this fully air-suspended concept rigid, Phil Roe, DHL's vice president for innovation, strategy and business development, says: "We're trying to put together something that's right for the city and we're already talking to customers about using it."

Moving on, DAF's Silent CF was launched last year as an option on single drive axle CF rigids and artics powered by Paccar's Euro 6 10.8-litre MX-11 diesel (290-440bhp). However, the Silent option will shortly



Moffett's E-Series



K Hartwall's containers



Transcold's new City Line

Left: Centadrive low noise shutters

Below: DAF's Silent CF truck



be extended to XF models powered by the 440bhp MX-11. DAF's UK marketing manager Phil Moon describes the low-noise option as well suited to "the last mile of delivery" – a phrase heard more than once at Quiet Cities. To rig for silent running, the driver presses a dashboard switch that restricts driveline noise to 72dB(A) while accelerating and driving – making it eligible for Quiet Truck PIEK certification.

Until now, most low-noise trucks have used alternative fuel to bring noise down. CF Silent retains a regular diesel engine, the reduction in noise being controlled by its ECU, which caps the MX-11 at 1,400 rpm and 800Nm torque during Silent mode. With the AS-Tronic auto box fitted, shifts are also at lower revs, further reducing the CF's noise footprint – helped by additional gearbox encapsulation.

Incidentally, when Silent mode is no longer required, cancelling the dashboard switch restores the engine's normal performance characteristics. "The MX-11's standard multi-pulse fuel injection system also cuts down on diesel knock on what's already an inherently quiet vehicle," adds Moon. Price for the option on an RHD CF is just over £3,000.

Electric alternative

Another near silent vehicle is Paneltex's electric 7.5-tonner, based on the Isuzu N75 chassis, which replaces the diesel engine with a "zero engine noise" 150kW Magtec electric traction motor. Paneltex started its electrification programme six years ago and to date has supplied 14 electric trucks to operators including Warburtons, Ocado and Whitbread. The company's range of all-electric 5-11 tonners, based on Isuzu's N and F Series, uses a lithium-ion battery pack with a claimed eight-year life, dependent on use, and offering a range up to 120 miles.

Electric trucks have several attractions – not least no road fund licence and exemption from charges for the London LEZ (low emission zone).

They're also future-proofed for the proposed Euro 6 ULEZ (ultra low emission zone) and upgraded Greater London Emission Zone, expected to come into force in 2020 and 2025 respectively.

What about beeping reverse alarms? In 2000, Brigade Electronics launched its patented bbs-tek 'white sound' alarm that has since become standard. Then in 2010 it announced the phasing out of its tonal alarms. In addition to bearing NAS's Quiet Mark, certain bbs-tek models are also PIEK-certified. What's more, the distinctive 'shish shish' sound not only makes it easier for workers to locate the warning, but also dissipates quickly outside the hazard zone.

White sound alarms can operate five decibels quieter than tonal alarms yet still provide the same alerting effect, according to Brigade. And the firm says that beeping tonal alarms can be heard up to 30 times the distance of the hazard zone. Smart bbs models can also react to surrounding noise levels and self adjust – meaning the alarm is loud enough to

work, but not so loud that it startles workers or disturbs residents.

Truck-mounted forklifts (TMFLs) have also seen development. The electric E-Series Pro Future range, from Moffett (part of Cargotec), offers operators an ultra-low noise and zero emission TMFL. E-Series shares the same dimensions and construction as Moffett's equivalent diesel truck, along with a carrying capacity up to 2,000kg, while lithium-ion battery technology means its largest capacity 180Ah pack can be recharged in less than seven hours (the smallest 100Ah pack takes under four). And with a noise level below 60dB(A), Moffett's E-Series also has NAS Quiet Mark accreditation.

Sheffield-based automotive parts distributor FPS

Hiab's recently launched electric ePTO, based on its X-HiPro 192 truck-mounted crane



Paneltex's electric 7.5-tonner, based on the Isuzu N75 chassis

was one of the first E-series users. Transport manager Mark Wilson reports: "Some of the depots we deliver to are in built-up areas, and the silent running TMFL is ideal to ensure that we cause minimum disruption to local residents, while taking into account operational needs and costs."

Fellow Cargotec firm Hiab recently launched its ePTO, based on its X-HiPro 192 crane, for truck crane operators keen to reduce noise. Whereas conventional lorry-mounted cranes are powered via an engine-driven PTO and pump, the ePTO and X-HiPro 192 crane use a battery, electric motor, hydraulic pump and electronic control system, all in a stainless steel box on the truck chassis. Using the crane without the truck's engine running, ePTO cuts noise by up to 30% and eliminates emissions, making it ideal for noise-sensitive and indoor areas.

The ePTO's 40kWh battery pack is sufficient for an average day of crane work, according to Hiab. Its battery can be charged in six hours, while an optional quick-charging system can take the battery to 80% within 50 minutes. The battery, engine, pump and tool box weigh about 800kg in the 40kW option. Incidentally, the crane can still be operated conventionally as the conventional engine and

gearbox PTO plus the hydraulic pump are retained.

What about cool chain transport in urban areas? Carrier Transcold's City Line range for rigid and trailers is PIEK certified for night-time deliveries. The Vector 1550 City displayed on the front of an Arla Montracon reefer at Quiet Cities exemplifies the breed. It uses the same mounting points and front wall opening as a standard fridge, but generates a noise level below 60dB(A). Vector 1550 uses Carrier's patented E-Drive all-electric technology which converts engine power into electricity through a generator that in turn drives the fridge on the road.

Meanwhile, crashing roll cages in and out of trucks and trailers can also be a cause for after-hours annoyance. K Hartwall's latest line-up of PIEK-certified nesting A-frame roll containers, hybrid dollies and Euro dollies are all designed to minimise noise, thanks to a combination of rubber wheels, bumpers and plastic floors. At Quiet Cities, the Sheffield-based firm showed its Compactainer Classic Silent 60 – described as suitable for noiseless operations in city centres. It's all about avoiding metal-on-metal noise generation and the firm says this is "one of the most ergonomic and silent roll containers on the market".

Doors and tyres

Meanwhile, commercial vehicle components supplier Albert Jagger's Centadrive remote control door system replaces the noise of rear roller shutter door closing with an infinitely more muted sound. That's thanks to a smooth operating 24V electrical motor and lightweight composite shutter. Centadrive has undergone extensive trials with Aspray Transport and has been specifically developed for multi-drop operations, also providing for easier access and increased driver safety. An in-cab alarm alerts the driver if the door is left open and, should the driver attempt to move off, it automatically closes. It also has an auto-retraction sensor if it detects an obstacle when lowering. Centadrive can be supplied new to bodybuilders or retrofitted to existing vehicles, with a fitting time claimed as two hours.

That leaves tyres, and Michelin is among the leaders with its X Multi D 17.5 and 19.5in tyres for urban distribution vehicles, which not only offer 18% more life and 12% lower rolling resistance than their predecessors, but also a 5dB(A) reduction in noise. That's thanks to a new tyre architecture, making X Multi Z and D tyres 50% quieter. According to the manufacturer, this is a "major technological breakthrough, particularly ... for urban environments".

By the way, existing noise regulations for CV tyres will be tightened from November 2016. Michelin explains that EU tyre labels with the 'three waves' noise marking will then no longer be permitted. Tyres with two waves will meet the new phase of legislation, while one wave means the tyre is at least 3dB(A) below the new limits. Michelin's X Multi D range already boasts one wave noise status. **TE**