

Breath of fresh

By tapping into a common source of compressed air, Essex Fire Service has developed a low-cost way to refill tyres on its fire appliances

Essex County Fire & Rescue Service operates 50 stations across the county, the majority of which store a single fire appliance in a rural location.

Firefighters operate some 130 specialist rescue vehicles and fire appliances, Scania P-series 4x2s and 6x2s, primarily 18t gwv rigids, carrying perhaps a 14t payload of rescue gear, water and tools. "The appliance is a huge cupboard on wheels," says Peter Warner, Essex Fire Service fleet workshops engineering manager.

Just as in the commercial world, drivers do daily checks and weekly inspections. The trouble has been what to do if the tyre pressures run low.

Adequate tyre pressures are crucial to the safety of emergency operations; although Warner was at pains to point out that fire appliance drivers aren't out to break speed limits, but they certainly have to take a more assertive approach than a distribution truck might. And the best cornering and acceleration performance comes from properly inflated tyres. For the Scania in question, that means 9bar (130psi) on the front axle and 6.2bar (90psi) on the twinned rears.

The problem is, fixed compressors are expensive to fit and maintain in every station, and would be relatively little-used; local vehicle repair garages may



have suitable air compressors, but their numbers are declining; and consumer units in petrol station forecourts may not be able to reach those pressures. While a portable rotary vane compressor could be taken to the more remote stations, it would be awkward to move in the narrow space around the vehicle, and its power cable poses a trip hazard.

Instead, Warner had a different idea. One of the many items carried on board the fire appliances are 9-litre cylinders of compressed air (at 300bar) for portable breathing apparatus. The service owns about 1,000 BA cylinders, mostly from Interspiro, that it manages, delivering full bottles and picking up empties for recharging from six compressor stations.

Warner worked with forecourt pump supplier Pneumatic Components (PCL) to develop a prototype. That unit was wheeled out to fire stations around the county, and news was circulated beyond, as Warner happens to be chair of

Scania's national fire services user group.

The final unit, about the dimensions of a sack barrow, is powered by a rechargeable battery, and provides pressure up to 145psi (10bar).

Essex Fire Service has since ordered 20 units from PCL - which now markets and manufactures the units - and Hertfordshire has also bought 30; others have the units on test.

The device has received acclaim inside the fire service - where it was shortlisted for the innovation award at the annual Excellence in Fire and Emergency Awards - and out, winning the SOE's Sir Moir Lockhead Safety Award 2018, and the award for Innovation and Best Use of Technology at the TyreSafe awards.

Warner states: "It's a simple idea; there's no astonishing new technology. It is just bringing the different elements together" - an approach that comes from the fire service's culture of problem solving, he adds. [TE](#)