

Increasingly often, technicians must draw on both electrical and mechanical knowledge of vehicles to diagnose a fault from its symptoms, finds Will Dalrymple



BUS DOCTORS

These days, most repairs start by plugging in a computer and running some software. That's not diagnostics, contends Carl Dibble, Knorr-Bremse sales executive, who also trains technicians to use its Neo diagnostics software. "There's a difference between getting through the diagnostics process, and understanding what the system is telling you," Dibble observes.

What doesn't help technicians is that the definition of 'system' keeps changing - vehicle systems now span both electrical and mechanical elements. "The crossover is so much that you can't say, 'that's a mechanic's job and that's an electrician's job'. It is now one person's job to do both sides, or you can't fix the vehicle properly," Dibble points out. This integration is driving the increasing popularity of the Mechelec qualification, which has been a recognised category within the IRTE Skills Challenge for years.

The event aims to improve the abilities of bus and coach technicians

across the board. For S&B lecturer Gulam Bakawala, who judges at the Skills Challenge and at WorldSkills, success in diagnostics requires two things. They are: a good methodology and a good understanding of the system, which includes its components and their thresholds and tolerances. He states: "With my students, I teach them mapping of systems." For example, if a fault is causing the steering to feel heavy, he would advise testing the system completely, both from the mechanical system from steering wheel to tyre, and the hydraulic system, from the reservoir to the steering pump. Then technicians need to verify the symptoms of the fault by collecting data, and then compare it with manufacturers' reference values, to help pinpoint the likely fault, he adds.

Another judge, Steve Lilley, MAN Truck & Bus field service manager, points out that, sometimes, a physical fault with the vehicle will not result in a warning or code; he says that the fuel temperature sensor was just such a case. The fault

with that condition would be smoke from the exhaust, because the engine was being overfuelled. He adds: "In a case like that, you could be reading a fuel temperature of 7°, but if the engine is hot, you should expect it should be 20°. That's about knowing how the system should work. If you don't know how it works, how can you know where it's not working?"

This year, as before, MAN, as well as DVSA, will support the event by running challenges, to be held as usual at S&B Automotive Academy in Bristol.

"Diagnostics doesn't just mean rushing in with a multimeter," contends Stuart Oakley, BAE Systems senior field service technical representative, who also judges at the event. He offers another example: "If they see an injector problem on any engine, the majority of technicians will swap it around with another. We don't promote that kind of approach, because if something else is wrong up the line, such as an overpressure from a faulty fuel pump,

 <p>10th ANNIVERSARY EDITION irteskills.org.uk</p>	<p>PREMIUM SPONSORS</p>			<p>SPONSORS</p>		
	 	 	 	 	 	



they could damage a good injector.”

Instead, in the Skills Challenge, and in workshops generally, Oakley encourages technicians to use the diagnostic tool, together with live data and documentation, to deeply consider the problem. “My test, my challenge, is not to find the fault. It’s to understand where to look.”

In any case, Bakawala argues that competitions like this one serve a vital training role: “As a judge, I see really good people, excellent technicians, who can’t perform in the spotlight.” That’s when they realise that they don’t know quite as much as they had thought they did - without delaying a vital repair in a workshop.

“Placing someone out of their comfort zone will stretch them to become a better technician,” he adds. [IE](#)



Entry deadline 27 March
**IRTE SKILLS
 CHALLENGE 2020**

Take part and show us your talent

Get involved [f](#) [t](#) [in](#) #IRTESkills



For information on the
IRTE Skills Challenge, or
 to enter, please contact

Patrycja Plawna on
+44 (0)20 7630 2174
 or irtskills@soe.org.uk

Visit irtskills.org.uk