

Bus and coach maintenance technicians from across the UK and Ireland competed in the seventh annual IRTE Skills Challenge, tracing faults, fixing problems and answering questions. Will Dalrymple was there

The largest ever IRTE Skills Challenge took place from 5-8 June at the S&B Automotive Academy in Bristol. This year, the event welcomed 62 contestants (plus team managers) from 14 companies, arranged in 25 teams. Each contestant tackled eight mechanical, seven electrical or three bodybuilding challenges (see boxes) over the course of a single day. They tested their general knowledge, plus their ability to troubleshoot bus and coach technical issues.

Following a good method is a key part of solving the challenges, explains S&B tutor Ghulam Bakawala, working as a judge on the Alexander Dennis electrical test. He says: "What we're looking for isn't just fault-finding. What we're looking for is a process." He recalls that, to one experienced candidate who



immediately pinpointed the site of the problem, he said: "You found the fault, but what about the process?" Adds Bakawala: "Because that's what he's going to get marked on."

That UK coachmaker was new this year. It, along with fellow supporters MAN, Allison Transmission, BAE Systems, Bridgestone and Knorr-

Bremse, as well as DVSA, all proposed technical challenges, which are then reviewed by S&B and IRTE. In addition, S&B ran a number of additional challenges, and Groeneveld and Shell also sponsored the event.

Also new this year was the first contestant from outside of the British Isles, Tower Transit of Singapore. A new venture stemming from the London bus operation of the same name, the company won a bus contract there two years ago. It now operates 377 vehicles from a single depot (Bulim), where 44 engineers have been recruited from across general industry (following a Singapore government mandate that 85% must be Singaporean). Earlier this year, 16 members of staff, including 12 mechanics, were irtec licensed; that followed an IRTE Workshop Accreditation last year. The company entered the challenge to improve standards of its staff, says senior diagnostic engineer Ray Silcox, himself a

BODYBUILDING CHALLENGES

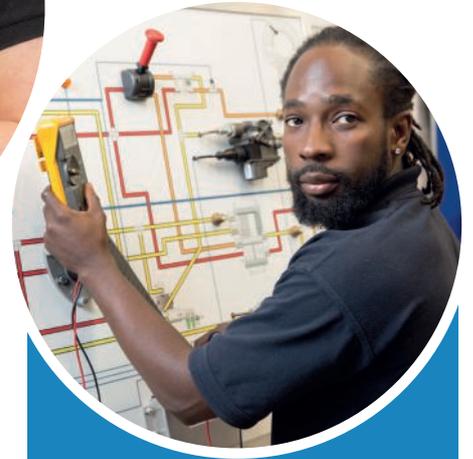
- 1 Fabricating radiator header tank from sheet (pictured). Using workshop tools, contestants had to mark out, fold, cut, form and perform multiple spot, fillet, butt and lap welds.
- 2 Matching body part paint from one of four sample cards.
- 3 Computer-based multiple-choice test on bodybuilding topics, covering paint, metal and fibreglass properties, and fabrication methods.





MECHANICAL CHALLENGES

- 1 DVSA compliance inspection. Given an inspection checklist, competitors had to identify a number of faults on a bus. A general knowledge test was also included.
- 2 Bridgestone tyre inspection. Contestants were asked to identify different faults and judge their likely cause; there was also a task consulting the Bridgestone Truck Tyre Data Book.
- 3 Measurement of parts (pictured above). Given a DTI (digital test indicator) gauge, micrometer, Vernier calipers and feeler gauges, contestants had to perform measurements of a number of different engine parts.
- 4 Allison Transmission fault, on a bus donated by Abellio. Given a small manual, competitors had to find the cause of the fault. In addition, competitors had to sit a written theoretical test. Sample question: "What is the purpose of a torque converter in an Allison transmission? (Four possible answers)".
- 5 Knorr-Bremse air brake fault on its fully-functional air brake testing board (shown left) used by both S&B and Knorr-Bremse for training year-round. Competitors had to go through a fault-finding sequence to identify an induced fault.
- 6-8 Computer-based multiple-choice tests in lubrication, inspection and general vehicle knowledge.



ELECTRICAL CHALLENGES

- 1 Alexander Dennis bus-non start. Contestants had to diagnose the issue and pinpoint the fault, given a wiring diagram and workshop manual.
- 2 MAN coach fault. Given a multimeter, wiring diagrams, fuse plans and ECU information, contestants had to locate the fault and propose a repair.
- 3&4 Windscreen wiper and washer fault on automotive electrical test boards. Competitors had to check the circuit to trace the fault, determine how to repair it, and specify what the technician would use to make the repair.
- 5 BAE Systems hybrid bus fault. Competitors had to use BAE Systems' IDS computer diagnostic system to retrieve and analyse fault histories from the bus to analyse and diagnose the fault. There was also a written test about how to use IDS based on a 15 minute presentation given on site.
- 6 Knorr-Bremse air brake board fault. Using the fully-functional training mock-up board (above), contestants were tasked to isolate an induced electrical fault, given diagrams and component numbers.
- 7 Computer-based multiple-choice electronics test.

2015 Skills Challenge winner. He states: "In Singapore, we're trying to upskill, and bring the level up to UK standards as well." Group engineering director Satnam Cheema was the driving force behind the company's entry into the awards, reveals Silcox, adding: "He wants to showcase our skills".

The skills required for success in the Challenge are also vital to bus operations, points out Martin Dixon, Abellio engineering manager, Twickenham depot. He says: "We rely heavily on all of our guys having basic electrical skills. If they can't do it, that's where our electricians come in - and we're going to need more of those." In addition, Abellio has plans to train all of its engineers to the IRTE's irtec standard (<https://is.gd/noxime>).

Other entrants this year were: Arriva Bus and Coach, Arriva UK Bus, Bournemouth Transport, First Bus UK, First Eastern Counties, Go Ahead London, Lothian Buses, Metrolink

London, RATP Dev London, Tower Transit UK, Translink and Trent Barton.

The Challenge took place at S&B Automotive Training Academy, which has hosted every event so far. The effort requires blocking out two weeks of shopfloor time: one week to clear most of the bays, and a second to conduct the challenges.

The rest of the time, the company trains some 550 apprentices a year; it also provides a venue for regional heats of Worldskills competitions, for apprentices. (In fact the Skills Challenge also invites apprentices; this year there were 19 taking part, compared to 43 master technicians). S&B offers apprenticeships in maintenance and repair of light and heavy vehicles and bus and coach (<https://is.gd/yuvece> and <https://is.gd/iquhak>, respectively).

Winners, announced at an awards dinner this month, are offered tool packages from supporter Tengtools. 