

Proof of competence on

The best training boosts productivity and slashes recruitment costs. But how do you provide evidence of an operative's competence? We brought a range of panellists together to discuss. **Ian Valley** reports

The panellists

Paul Alway

M&S

Paul Arrowsmith

Sainsbury's

Dave Bartlett

Star Refrigeration

Graeme Fox

ACRIB & BESA

Steve Gill

Institute of Refrigeration

Tony Howard

BESA Training

Tim Rook

BESA

Malcolm Thompson

Enigma Environmental and BESA

As the adage goes, "If you think training is expensive, try ignorance". Progressive companies have a deep commitment to this important management maxim, and it's why they invest in high quality training and development.

After all, confidence in their ability to do the job has a large part to play in how well people actually perform it and effective skills (or competence) training helps boost self-confidence, and therefore productivity and reliability.

That's why many industry experts have called upon the HVACR sector to use it to tackle what they regard as a pressing skills shortage. And it's why we brought a range of experts together to discuss the issue in our first combined RAC/H&V Round Table debate.

But it's not as simple as that, contends Paul Alway. As manager of refrigeration specification at M&S he provocatively kicked off the debate by saying: "I don't see a skills shortage from where I am."

M&S is in the process of tendering a service and maintenance contract and Mr Alway explained: "There

will be at least 10 or 15 companies that will tender for it that have got the engineers to cover it, every single one of which has got their City and Guilds, F-gas qualification, and so on. And they've got apprenticeship schemes and are in bringing guys who can demonstrate appropriate skills."

But, he went on, there is an issue – but it is not with skills. "It isn't that we haven't got skilled engineers. For me, sufficient experience is the one thing that we miss."

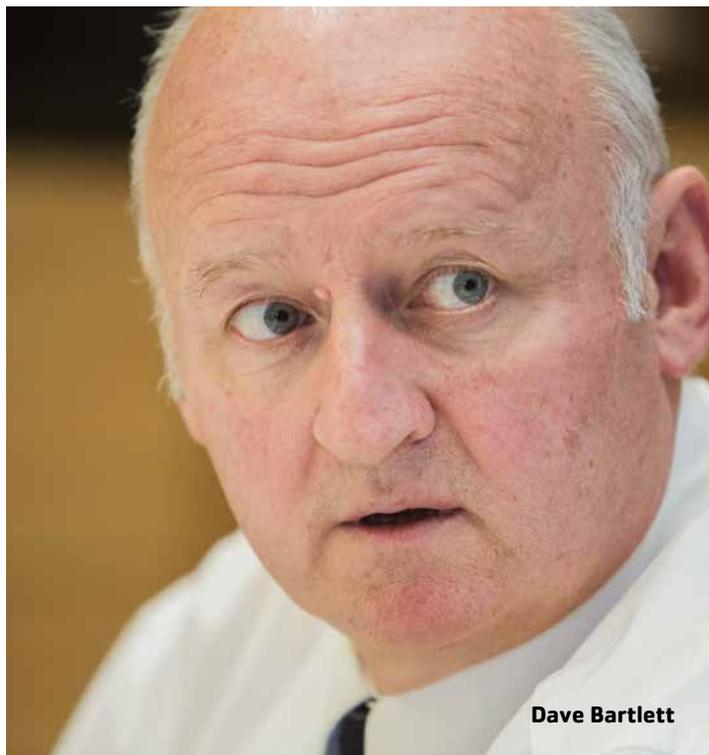
BESA technical director Tim Rook identified a central problem with finding these experienced engineers: "You learn what you learn in college, but you've also got to learn a lot on the tools, on-the-job and on site. From my knowledge, it's very hard for companies to provide that experience to inexperienced guys because they've just got to get the job right all the time, every time.

"There is no room for error; the margins are quite slim. How do you supply technicians coming through with the opportunity to gain experience in sufficient quantity that they can then deal with stuff?"

Right and wrong

Being a contractor holds significant training challenges, according to Dave Bartlett, operations training manager at Star Refrigeration. He said: "As a training manager I have big battle with the operations managers. I want the trainees to be allocated a mentor and I want him to spend 60 per cent of his working week with that mentor, who will teach him the right and wrong way of doing things.

"The operations team see that trainee as a resource – he's a body that has an ability to deliver on the site. So he goes and delivers, and the training slips back. I understand that because I have been a branch



Dave Bartlett

the cards



“It isn’t that we haven’t got skilled engineers. For me, sufficient experience is the one thing that we miss”

manager for 15 years – when you need resources, you use whoever you have available. But there really does need to be a balance.”

For Malcolm Thompson, managing director at Enigma Environmental Services and BESA president, the width of the skills gap varies depends on the type of kit: “If you’re talking about some sort of electronic VRF/VRV system, for example, it’s largely self-diagnostic, isn’t it? So, if you have the skills to check the diagnostics, you’re halfway to solving the problem. My



Graeme Fox



Malcolm Thompson

experience is that lots of people know how to deal with electronics and controllers, and split air conditioning, but you show them a chiller and they don’t even know what it is.”

Star Refrigeration’s Mr Bartlett identified a different problem: “I think training is too often delivered to enable you to gain a qualification rather than to assess your understanding and ability to diagnose the root cause of problems.”

He insisted that technological fundamentals remain the same: “The compressor and expansion valves have always done the same – none of that technology has actually changed. But, for me, people always try to delve in too

deeply rather than getting back to the fundamentals. I think we need to focus on ensuring people with qualifications actually understand the content of what’s been delivered.”

Mr Bartlett said his company has withdrawn from external air conditioning and refrigeration training: “We didn’t feel the training providers were delivering the understanding that we required. So we now do building services apprenticeships and teach refrigeration in-house.”

For him, the issue is measuring competence, not allowing people to ‘feel qualified’ just because they hold a certificate. However, he admitted: “I don’t know how

that gets managed.”

Perhaps skills shortages were not related to the number of trained people, but rather to the level of skill they exhibited, suggested Graeme Fox, director of ACRIB and senior mechanical engineer at BESA: “We are going to be phasing out HFCs and are using an increasing number of new technologies which are being developed almost on a weekly basis.

“The growth of Amazon home delivery and that sort of technology will drive more of a market for data centre server room applications. That’s a very different control philosophy and a different specialism from commercial/retail refrigeration or, indeed, general building services.

“Does that then create a problem for training centres? Does it create a situation where we don’t really need a generic apprenticeship, but we need something more specialised?”

For Tony Howard, BESA’s director of training, the easiest way to consider this question is to consider other sectors: “Take farming, for example. If you go back 100 years, every farm had about 50 employees doing all the work. Then somebody invented the steam tractor so you went down to about 20 employees with, say, two guys knowing how to work the steam tractor. If you come right forward to now, farmers have satellite-guided tractors capable of processing 500 acres a day. The system will even load different types of seed and tell the driver how to drive in order to get the maximum load from the field.

“In our own industry, particularly in refrigerants, we are seeing an evolution process that has been condensed from 100 years to 10 years and it is taking the industry’s supply chain time to react.”

Mr Howard identified two opposing trends: “On the one hand,



Steve Gill



Paul Alway

you have a deskilling process. So, for example, you'll have people now on a farm loading bags into hoppers on a tractor. At the other end, there will be someone capable of operating the sophisticated control systems of a modern tractor, so you also need massive upskilling."

Acknowledging the pace of change and using the driverless car as an example, Steve Gill, president of the Institute of Refrigeration, said: "If I had told you 10 years ago that a blind man could drive a car, you would have laughed at me. The rate of change is incredible and whether its controls or any other aspect of technology, everything is connected. That has a huge impact on training and skills development, and how they are delivered and managed."

Everybody agreed that dealing with this polarised and rapidly changing skills landscape will be an enormous challenge. However, said Mr Fox, there is at least one answer – the new ACRIB smart SKILLCard.

Mr Fox explained: "The



Paul Arrowsmith

SKILLCard is continuously updatable and all your qualifications are stored electronically on the card. It will highlight dates when you pass certain qualifications and any additional modules you've got.

"The old ACRIB SKILLCard was basically just an acknowledgement that you had your F-gas qualification, whereas the new card will identify your NVQs or SVQs and even qualifications that aren't

"If I had told you 10 years ago that a blind man could drive a car, you would have laughed at me. The rate of change is incredible"



Tony Howard

necessarily sector-related, such as powered access lifts."

Mr Rook agreed that the SKILLCard is a valuable resource, and added: "You are demonstrating your competence on one card and it moves with the individual so, as projects move between companies, there is no need to replicate that paperwork on training records etc. It is – in other words – proof of compliance." 

Why have a smart SKILLCard?

- Future qualifications can be added electronically at no cost
 - Fewer cards are needed to demonstrate competence
 - Smartcards are more accurate, eliminating fake cardholders
 - Evidence of additional training can be recorded all on one card
 - Contractors, clients and third parties can develop and install their own app for applications such as site access control, cashless vending and authorised use of powered plant
 - All qualifications and training certificates can be transported securely on one card
 - Qualifications and skills can be checked quickly, saving time and making sure workers hold the right card for the job
- For more information, see acrib.org.uk**



Tim Rook

High performance on show

We bring you some of the product highlights from October's Chillventa exhibition

Bitzer

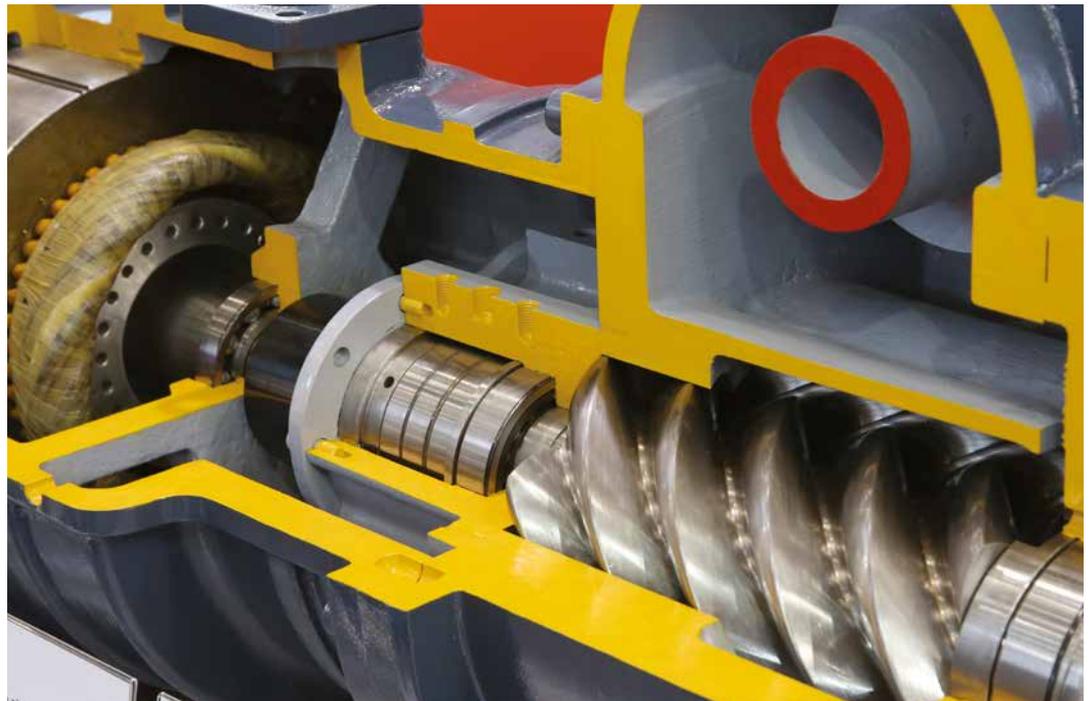
Bitzer has introduced the six-cylinder Ecoline+ reciprocating compressors for transcritical CO₂ applications, which it says sets a new benchmark in the use of CO₂ as a future-compliant refrigerant.

The series boasts three key developments: a new motor technology has been developed for series production to achieve new levels of energy efficiency. This, together with mechanical capacity control, which is also new for transcritical CO₂ applications, has increased system efficiency considerably in full and part-load operation, the firm says.

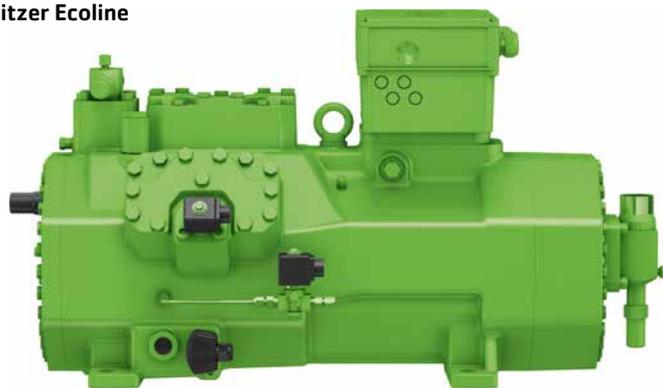
Rainer Große-Kracht, chief technology officer says: "We would like to make efficient CO₂ technology simpler and easier to understand again, and thus significantly expand the range of applications with the forward-looking refrigerant. The ability to provide refrigeration solutions that are reliable over the long term will require expanding access to CO₂ technology."

A line-start permanent-magnet motor (LSPM), which can be operated directly in networks with 50 or 60 Hertz, makes it possible to significantly increase motor efficiency in full and part-load operation the firm says. The technology has been undergoing testing by Bitzer for more than five years.

In addition to accommodating operation with frequency inverters, the new Ecoline+ compressors can also be equipped with the new mechanical capacity control, enabling compressor operation with a refrigerating capacity between 10 and 100 per cent. The capacity control, which can comprise one controller in two-cylinder compressors and up to three controllers in six-cylinder compressors, is adjusted just as it is with the well-known capacity



Bitzer Ecoline



Rainer Große-Kracht

"We would like to make efficient CO₂ technology simpler and easier to understand again"

control of HFC refrigeration compressors.

The intelligent operating concept of the CM-RC-01 IQ module, which comes as standard, also ensures optimal efficiency for the oil supply, the oil heater and the new CR11 capacity control, which is specially developed for CO₂ applications. The interplay between CR11 and CM-RC-01 allows the capacity to be

adjusted virtually infinitely between 10 and 100 per cent, Bitzer adds. The IQ module not only improves protective measures and options for monitoring compressors, but also expands their range of applications and thus offers users greater flexibility. This in turn makes it easier, for instance, to compensate for differences between summer and winter operation. The