

Engineers under pressure



Training and CPD (continuing professional development) are critical factors for any operations engineer. How else are we to keep pace with the multitude of emerging methods, tools and technologies? Brian Wall assesses opportunities

Rail industry training specialist Catalis in Derby now has the biggest range of signal engineering equipment in the UK, thanks to a massive investment from ATA, Catalis' holding group.



Operations engineers have never been so challenged as they are now. Look at the plethora of new tools, technologies and equipment flooding into industry generally. Look at the heightened requirements of competitiveness and efficiency, tightening budgets and also environmental awareness.

Technology advances in particular have been rapid. Take automation systems, for example: PLCs, control systems, multi-loop controllers and fieldbus systems, but also hydraulics and pneumatics – they're all constantly changing. It's the same with maintenance, test and inspection equipment, and machinery and plant monitoring systems: the rate of introduction of new or improved tools, sensors and devices has never been greater – and some of these are quite complex. Then there are developments with materials, technology transfer between industries and applications, and even lubricants (see page 16).

Yet as professional engineers and engineering

technicians, we are expected to know how to use anything and everything that's relevant to our specific roles and industry sectors, to be abreast of improving technologies and methods, and to be able to prove competence. And, on top of all that, there is the never-ending wave of new legislation and associated developing best practice.

How can we cope? The answer is we just have to. Engineers and technicians throughout the UK are expected to acquire the requisite skills to handle all of this as part of their professional development. Moreover, the onus is strictly on the individual to ensure that he or she is competent, as the SOE makes clear in its Code of Practice on Continuing Professional Development (CPD).

'It is the responsibility of every engineer to maintain professional standards by keeping up to date with the latest technology and anticipating future needs as they may arise. Professional Development implies the need for an individual to undertake life-long learning in order to keep at the

forefront of the thinking and skills required in their profession. Every engineer shall demonstrate commitment to continually enhancing their professional competence through self-managed Professional Development.'

Mark Organ, head of membership and professional standards at the SOE, concedes it's not easy, but makes the point that this is one of the most important benefits of SOE membership. "We can help you to plan your professional development," he says. Which is even more valuable than it might at first seem. Because personal development has to be, well, personal. Plans have to take into account individuals' own needs, the needs of their employers and likely career and employability requirements.

As Organ says: "It's no good attending a CPD course or session that is of little use to you or your employer. You can chase CPD points and fulfil your quota in one hit, but get nothing from it in terms of personal development. CPD has to be relevant and right for each individual. Also, things are changing so quickly that people may have to learn on a just-in-time basis to keep up to date. Our view is it's about getting what you need, when you need it."

Collective responsibility

Clearly, without the right educational and support structures in place, this would simply not be possible. It's one thing to put the PD obligation on engineers, but there has to be a collective responsibility that also embraces employers, the professional institutions and the educational establishments whose role it is to provide guidance, support and direct training. And the good news is that's happening – particularly with the SOE and some of its links into training bodies.

Blackburn College, for example, develops courses very much geared to changing individual needs. "As the younger generations come through, they are more aware of the need for CPD," says Roger O'Loughlin, head of blended learning at Blackburn College. "It's almost a follow-on from school and college where increasingly they have to build CPD into their portfolios. Formal qualifications at some level are becoming almost a prerequisite of employment: the bar is definitely being raised."

Why? With the prevailing lean workforce mentality, employers are demanding fewer, but higher calibre and more multi-skilled people. "Which is why we, as a training college, see forging closer links between academia and industry as critical, almost as industry partners," says O'Loughlin. "As employers identify the training needs of their engineers, we must tailor our courses to meet that requirement, rather than tell them what we offer."

Demand will only grow. As Geoff Disley, training manager and lecturer in engineering at Blackburn College, says: "I'm a firm believer that in four or five



Rocol Lubricants is investing in future generations of engineers with the sponsorship of an award for excellence for the next five years at HETA, one of the north of England's top engineering apprentice training organisations. Pictured above are Rocol technical manager Paul King, right, with Stuart Compton, left, project engineer at Weir Turbomachinery, presenting the ROCOL Award for Excellence 2006 to HETA-trained engineering apprentice Steve Lammin.

years we will have to be licensed as a profession. There is no real protection for the title 'engineer' in the UK, in the way there is in other European countries. As the focus intensifies on attaining certain levels of qualification, we will see a form of 'licence to practice' that, incidentally, will encourage not just CPD, but also engineering as a career."

Everyone and every aspect of engineering can be covered – whether you're fresh out of college, more senior in the profession or, for that matter, coming to engineering later in your career. For instance, Martin Smith, one of the partners at Technical Training Solutions, says: "We provide a great deal of support to people who are highly qualified, but who need to

Seize the opportunities

Dedicated training isn't an added cost; it's an investment in payback. That is the message from FLIR Systems. "Anyone using thermography must have a thorough grounding in the principles, regardless of their professional qualifications," explains sales and marketing manager Paul Sacker. "Stinting on this important element only serves to compromise the substantial cost-saving potential of thermography." FLIR Systems now offers certification training to PCN standards and is an accredited Authorised Training Organisation for the British Institute of Non-Destructive Testing (BINDT). Details of all 2007 courses, seminars and roadshows are available from: www.flirthermography.co.uk/seminars.

Quantitech is planning to use the MCERTS 2007 exhibition to explain the advantages of the latest environmental emission monitoring technologies. A portable FTIR monitor will be on display at Stand 26/27 and Quantitech will run FTIR Workshops in Room 1 at 2.15pm on Wednesday 25 April and 3.45 pm on Thursday 26 April. Also, the DECS (Dioxin Emission Continuous Sampling) system from TCR Tecora, Italy, has recently received MCERTS approval and Quantitech will run further workshops entitled 'A New Installed Long-Term Dioxins Sampling Unit with MCERTS Approval' on both days of the event. Also featured will be the Horiba PG250, Sick Bernath Model 3006 and the LN Industries Sonimix Blender.




A special event was held at the National Metals Technology Centre (NAMTEC) in Rotherham recently to celebrate the success of the first set of students to complete successfully the pilot programme for the South Yorkshire Engineering Scholarship. NAMTEC chief executive Dr Alan Partridge presented eight final-year students with certificates and congratulated them on becoming part of the future of manufacturing and engineering in this region. The two-year

project is being run by Doncaster College, in association with Yorkshire Forward, the EEF, CoVE and the Learning and Skills Council, and aims to address the skills shortage within the engineering and manufacturing industries in this region. Businesses that could offer support to the programme should contact John Edwards at Doncaster College on john.edwards@don.ac.uk or NAMTEC on 01709 724990 or go to www.namtec.co.uk

get up to speed in areas where there are gaps in their knowledge as they go through change. Also, where people have been let down by the education system, we work with companies to build up employee knowledge through specific training programmes.”

Here we’re talking very much about training that’s not just for a qualification, but hands-on, testing and measuring what is required of individuals to ensure competency in the relevant industry. And it’s the same at Four Counties Training.

Chris Brandreth, commercial director, points to the rail industry sector as an example. “We work with people at all levels, from those operating at the coal face – such as station staff and drivers, signal operatives, maintenance and installation workers – to senior engineers. We are very serious about CPD and work to help people develop their ‘soft’ skills – station announcements and information delivery, for example – as well as the ‘hard’ ones. The purpose is to give people a greater pride in what they do and create, over time, a more rounded CPD.”

And that’s critical. As the SOE’s Organ says: “Technology is developing ever faster, standards are rising and new issues are becoming important. Forty years ago, nobody thought much about the environment, for example. Today, it’s a crucial issue in engineering. If you don’t move with the times and undertake new challenges, then you won’t remain ‘the best’. You won’t even stay okay.” 

Marshall your skills

One person who can confirm the value of this collective responsibility approach to CPD is Warrant Officer Paul Tyson, currently working as a Prince2 qualified project engineer for the Ministry of Defence. “If you are planning to go down the engineering management route, CPD is very important, career wise,” he says, “particularly where you want to gain promotion and improve your future employment prospects.”

He began training as an apprentice engineer when he joined the Army 22 years ago, aged 18, progressing to junior and then senior line manager through a combination of aggressive PD planning and further education. “I undertook an intensive HNC course in order to attain a management position and went on to become a workshop manager. When I was offered a position at the Defence College to teach engineering students, I was given the opportunity to qualify as a further education teacher and NVQ assessor.

“I’ve been fortunate to have had an employer that has supported my career development over a number of years. This has helped me enormously, especially when it came to IEng registration. It also means, when I leave the Army at the end of this year, I will have a range of skills and recognised qualifications that are transferable to other environments.”

For the private sector, Paul Winstanley, senior environment engineer at Alfred McAlpine Business Services, echoes these sentiments. “Our clients – facilities managers, engineering managers, building operators – are looking for us to make use of new technologies and tools around, for example, harmonics and vibration analysis, to bring them greater efficiencies and business benefits. Our engineers have to acquire that knowledge as part of their professional standing and competence, otherwise we’ll be walking backwards.”

And he adds: “Personal development has to be treated as a continuation of the principles learned in early education. You need to establish what courses and what support networks are most valuable.” He also stresses the importance of the Internet. “First, there is all of the professional advice and guidance that can be found on the SOE’s website. Then there is the knowledge individuals acquire themselves and share with their colleagues across the team.”