

Flying without wings

Testing mobile plant is a challenging job for the armed forces around the world. Brian Tinham talks to Corporal Mick Reece about what's involved

Mobile plant takes some stick in the armed forces. It's not just that it's required to do the job it was designed for – loading baggage, bombs or weapons on and off aircraft; transporting and lifting materials, equipment and people, both in peacekeeping and combat zones; and providing the backbone for demolition and reconstruction. It's also the fact that the forces' support vehicles have to be ready to work effectively, efficiently and safely any time, winter or summer, anywhere and in any conditions.

So who looks after all this specialist equipment? How do they keep it measuring up to those kinds of challenges? Indeed, exactly what kind of engineer does it take to tackle one of the most disparate and far-flung fleets of mobile plant in the world?

Meet Corporal Mick Reece, a time-served vehicle technician with qualifications and experience covering just about every class of large mobile plant the armed forces have been able to throw at him. Reece is part of the RAF's engineering elite – one of just eight technicians in two teams of four, based at RAF Wyton and Brize Norton – whose task it is to travel the globe assessing, certifying and troubleshooting the entire range.

"If you like living out of a suitcase, being on standby and you've got an understanding family, it's a great job: it's the top of the engineering tree," says Reece. "I joined up 18 years ago, working on

motorcycles and Land Rovers, but moved on to more specialist vehicles, such as fire engines, buses, armoured vehicles, cranes and refuellers. That's why I was chosen for the job. I've got a passion for it. You have to be able to adapt and this team specifically looks for aptitude there – as well as maintenance engineers from different bases that can bring in different experience and fresh eyes."

What specifically does the team do? "We have a database at RAF Wyton that keeps tabs on all RAF support vehicles – so that's everything from 18 tonne working-load freight loaders, to Coles cranes, Hella cranes, Grove all-terrain cranes, aircraft de-icers, back hoe loaders and diggers, fork lifts and tail lifts," he says. "There are more than 400 vehicles – and we're employed by the RAF to go around all the bases in the UK and the rest of the world, to inspect and load test all of this plant, most of it every six months."

No Crown immunity

Load test? "Yes, most of our work is the thorough examination and plant testing demanded by LOLER [Lifting Operations and Lifting Equipment Regulations] and PUWER [Provision and Use of Work Equipment Regulations]. There's no Crown immunity and the armed forces have to conform to health and safety regulations concerning plant and equipment, just the same as everybody else," explains Reece.

"My team covers all plant north from Cambridge, west to Wales and all of Scotland, but also Gibraltar, as well as Afghanistan – in Kandahar and Helmand province – and Iraq, currently Basra. We also look after all plant in the Ascension Islands and the Falklands under the tri-service flag – so there we're also talking about equipment owned by the Royal Engineers. We're effectively the specialist team that does all the plant testing for them as well – meaning, for example, JCB 3CXs and 4CXs."

But this certainly isn't just about load testing – significant though that is. Although the vehicle maintenance itself is performed by RAF service technicians, when it comes to safety systems on



Below: on site in the Falklands
Right: Mick Reece putting plant through its paces



cranes, earth movers and other plant, it's Reece's team that goes in to perform the testing and calibration – for example, of safe load indicators. “90% of new fork lifts and cranes have a computerised system to prevent them from being over-stretched, so we need to be able to replace circuit boards, set safe limits and so on. Vehicles today aren't just about mechanical engineering, gears, levers, nuts, bolts and hydraulics: it's also very much about electro-hydraulic systems and electronics.”

What's more, such testing needs to take account of the harsh realities. “Many of our vehicles support aircraft, so they get sent all over the world – which means we can have forklifts freezing in the Falklands one month and then roasting in the deserts of Afghanistan the next,” comments Reece. “In that way, all our vehicles do take a pounding and we have to take that into consideration. So we test to strict procedures in the UK, but also, when we're sent on tours of duty to, say, Basra or Kandahar, we use the opportunity to reassess plant and the effectiveness of our testing processes in light of what's happening on the ground.”

Extreme conditions

“The majority of our current operations are in desert conditions, with sand, dust and temperatures up to 55°C in the day, but below freezing at night, so we've got a lot of experience now in making that work. Effectively, we're like an outside agency – looking at the state of the vehicles and acting as mobile eyes and ears for the RAF's fleet managers. If we find concerns, we have systems designed to catch problems that might be occurring on similar vehicles. These are flagged back to the UK and disseminated, so that additional vehicle checks can be done, wherever they might be.”

It's all part of continuous improvement: “In the forces, you have the right and responsibility to flag up potential problems and you're trained to look for ways of improving what you do. Think about the schedule of an earth mover: the book tells you how to change the clutch, brakes, whatever, but if you can see a quicker and safer way of doing it, you feed that back. You also help out where you can. We were in Basra last year, for example, and some of the vehicles were getting old, so we did a mini fleet evaluation and managed to get 50% of them replaced purely by using our initiative. There are enough dangers and problems out there. If we can make their lives a little easier, that goes a very long way.”

As for logistics, Reece explains that everything is driven by the database, modified with common sense and a constant feedback of information, mostly around vehicle movements. “We can see the vehicle testing schedules, but we also try to arrange testing by area, rather than go all over the

place all the time. There's always additional work to do anyway – for example, if station technicians have to change a major component on, say, a Groves crane, such as the lift pan, or stabiliser legs, then we need to re-test that. Everything is planned and we get notified if vehicles are being moved.”

Not that the team stands still: there's always room for evolution of its role. “We're currently looking at taking on fuel tanker and air-portable refueller pressure testing, for example – checking vent and leak valves, safety cut-outs and so on. We're setting up the procedure now and discussing safety issues, logistics and the legal implications,” says Reece.

All of which should stand people like him in pretty good stead when their contracts with the military come to an end – whether the personal goal is engineering surveying, training, consultancy or hands-on service or maintenance management. As Reece says: “We're all trained in military discipline and looking after ourselves, and the level is exceptional. But we're also trained to think for ourselves: if we find a method for improving anything, we can do so, irrespective of rank. I'd like to think that counts for something in the civilian world.” **FE**

Pointers

- Mobile plant testing is not just mechanical and hydraulic engineering
- A roving team needs to flag problems for checks against similar plant
- Global tours of duty provide an opportunity for reviewing processes, not just mobile equipment
- Gifted engineers look for better, quicker, safer ways to work – and feed that back to the team
- Behind everything is a CMMS, modified with common sense and operational feedback

