Artillery troops put their stamp on innovation

SUBURBAN streets are not the traditional home of heavy ordnance but that could change thanks to the Royal Artillery's newly- formed innovation and experimentation team – 34 (Seringapatam) Battery.

The 14th Regiment outfit used to be responsible solely for training support. But now, thanks to the Future Soldier initiative, it is also charged with shaping the way the artillery will fight in the years ahead.

As a result, some major rethinks of techniques, tactics and procedures are taking place.

"The nature of warfare has become asymmetric – there is no defined front line with guns positioned at a set distance anymore," says Battery Commander Maj Glyn Forster-Haig. "That means the speed with which we can fire and shift location, while remaining hidden and not engaged by the enemy, is more vital than ever.

"We've been assessing splitting light gun troops in half and operating them like a soldier might do when providing a colleague with covering fire. That makes them more manoeuvrable and harder to find.

"It also means the crews have to fire twice as fast to provide the same effect, so obviously they'll need to be fit enough to do the job.

"But this is all part of our new role – to look at how we could use current assets to be more effective on operations."

With the unit drawing its manpower from across the Royal Artillery on two-to three-year postings, 34 Bty has quickly become a melting pot of ideas.

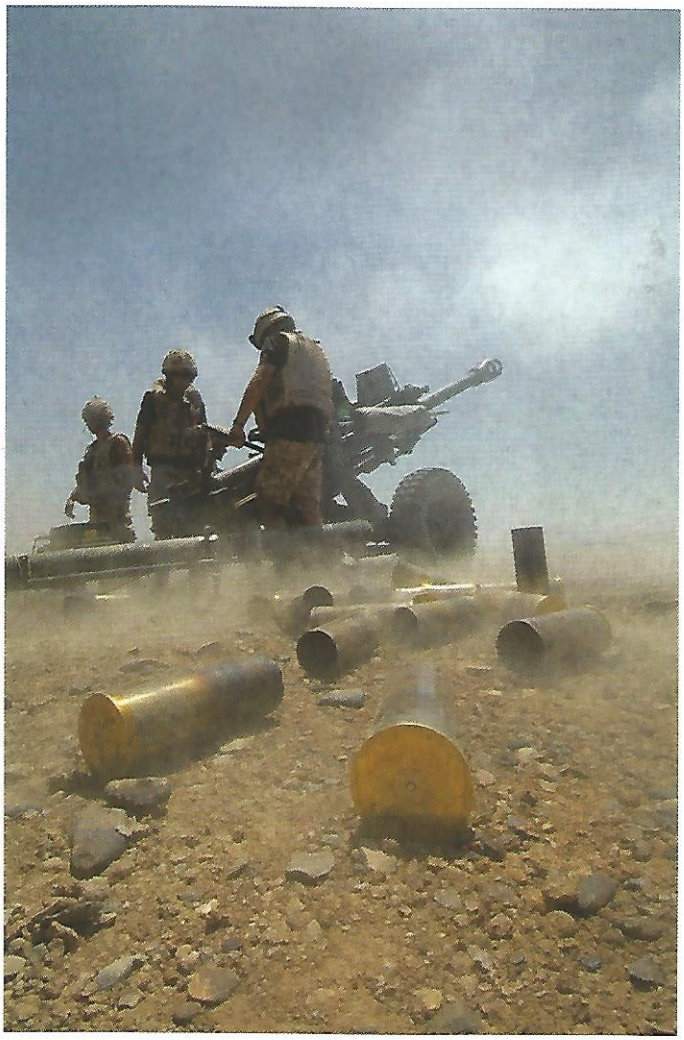
The most promising ones are stress tested and put forward for alterations to tactics and doctrine across the regiments.

One current priority is exploring how to operate light guns and AS90s to maximum effect in urban areas.

"For a long time we've trained mostly in the rural environment," explains Maj Forster-Haig. "Yet every indicator is now telling us that future battlefields will be congested, contested, connected, urban or an urban-rural mix."

"However, for guns, which like space and the freedom to move, these areas carry a very

high threat. We haven't perfected operating there yet so that's what we're leading on at the moment."



The challenges in managing towed 105mm howitzers and the AS90 leviathan, with its huge 155mm gun and noisy V8 diesel engine, in built-up areas with anything resembling a stealthy profile are immense. But being as discreet as possible really matters.

"One priority for us is understanding how we can protect our assets," adds the officer. "It's difficult to physically conceal a gun in an urban environment or disguise yourself against an enemy's wide array of sensors."

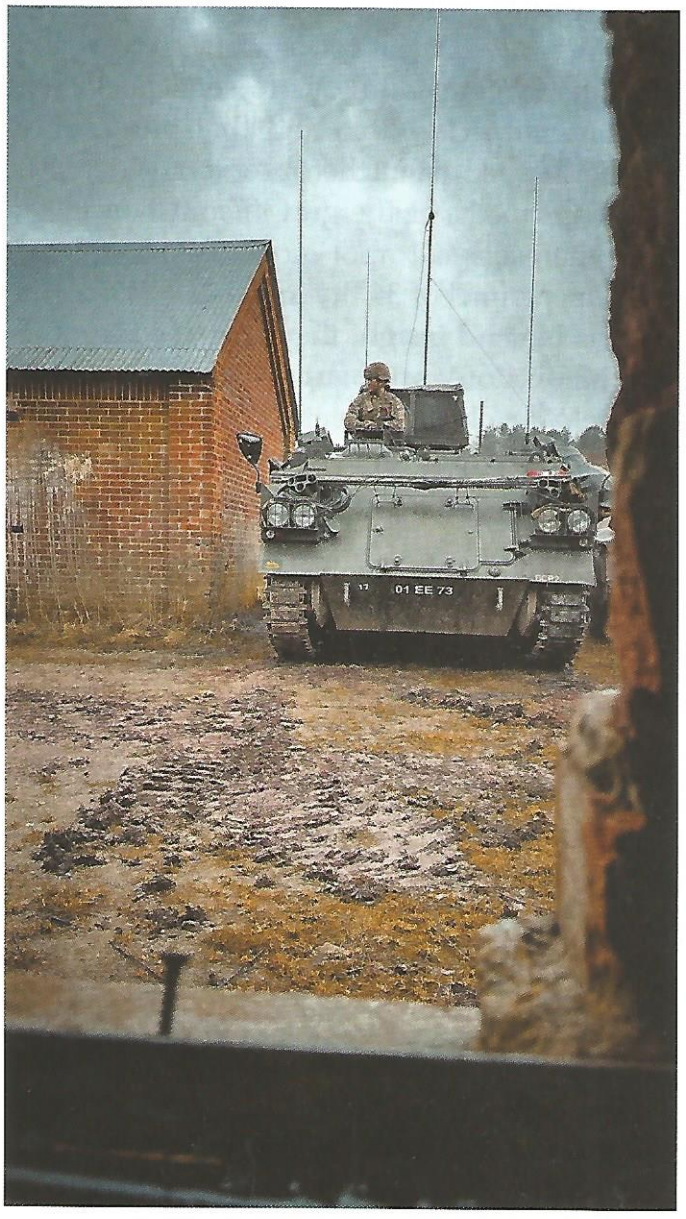
"We're looking at how we can use ISO containers, for example, to move about unnoticed, and how effective concrete-look tarpaulin covers or thermal cam nets are."

"During recent trials in locations such as Imber Village on Salisbury Plain we've been assessing how to move and hide light guns and AS90s, and in the near future we'll be practising firing out of urban areas too."

With intricate city streets slowing down a gun battery's fire and manoeuvre tactics, the issue of communication speed has been high on the battery's agenda.

"We have been testing digital fires frequently because we are still largely dependent on voice," Sgt Marin Redhead (RA).

"It can take around 20 seconds to use the radio to communicate a mission, but that's reduced to a fraction of a second when we use data."



"The AS90 already has the tech installed for it but it's not used often enough. The light gun, meanwhile, will get data comms functionality

in the next few months so it's important we develop the procedures now and be really forward thinking in that area."

The electronic footprint of a weapon system is also a point of vulnerability – and this is another area where data systems come into their own.

"In reality, all artillery needs to do to be more lethal is to be around longer," explains Maj Forster-Haig. "With near- peer opponents the major threat is counter-battery fires."

"As soon as we launch we'll be unmasked, but even before that happens turning on a radio is like putting a huge spotlight on yourself."

"If you're using voice comms you are turning that light on for a protracted period, but data systems allow us to send packets of information in a blink, and that information can be relayed from the observers directly to command posts at the gun line and on to the guns themselves."

The personnel of 34 Bty are already using the knowledge and insight they've gained through their innovation work to support experimentation and help develop new platforms.

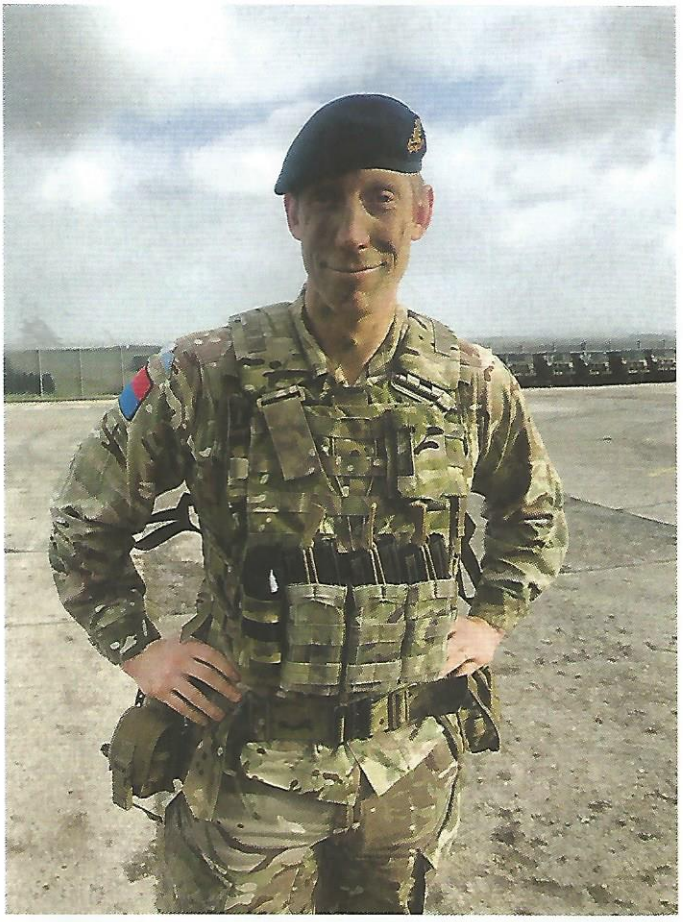
One of those is the successor to the AS90, which they are cooperating on with the Defence Science and Technology Laboratory, Defence Equipment and Support and the Royal Artillery Trials and Development Unit.

"We are providing the scientists with the end-user viewpoint, so they can smell the cordite, feel the weight of the round, and talk to young gunners about how they operate these systems in real-time conditions," adds Maj Forster-Haig.

"It's vital our equipment is soldier-proofed – it must be made robust enough for the challenges that operations and training present."

"Often, talking to us is a dose of reality for the boffins and it's great to see a young soldier telling someone with lots of degrees and doctorates exactly how and why they should improve or change their kit.

"Our people have areas of expertise that scientists just cannot acquire but really need, so we have to have an environment where ideas and challenge are welcomed, regardless of rank – and I think we've created that."



Maj Glyn Forster-Haig

BOXING CLEVER

Bright idea on urban cover

Our battery commander pushed us to come up with ideas about how to operate more stealthily in the urban landscape.

I immediately thought of the command post, which is always a major target, and how it could be disguised in an urban environment if we could fit the appropriate equipment into a vehicle common to the country we were in. The CP needs to move around innocuously, and the main problem with ours is that they are normally in Pinzgauers or Bulldogs. Even a civvy van with the large Bowman antenna can be a giveaway.

I have a background in comms so we decided to adapt a commercial van's regular radio aerial so it could be used instead – and it worked. The next stage is to look at how we can adapt a modular dismounted operations room – a mobile box of kit that was developed for Afghanistan and is mostly sitting in storage these days – and use that in our CPs.

It would be great to reutilise equipment that's lying around unused. The unit is working out the best way to fit it into virtually any commercial vehicle.

There are power considerations, of course, but potential solutions being explored include plugging in extra battery packs. The goal is that if we deployed abroad we could ship this equipment out in a small box, purchase a vehicle locally, and install the kit so we have a CP that blends into the local environment and is up and running very quickly."

Sgt Marin Redhead

TAPPING INTO APPS

Killer coding skills show promise

"I'd been interested in computers for ages and had already started teaching myself coding when I realised an app could easily replace all the long-winded paperwork around the live firing of light guns.

This was back in 2020, but when 34 Bty turned into an experimentation and innovation unit my superiors really backed the project and gave me time to refine it.

Detailed firing records have to be logged for every gun because they require a major service after 750 live rounds and a re-barrel after 8,000. Barrel wear must also be measured regularly and logged. This all helps with planning and maximising training time.

I'm doing a presentation on my app to the commanding officers next month. It's reckoned it could cut 40 hours – or a standard working week – every year just from form filling for the firing sergeant alone.

I'm still developing it, but my aspiration is for the app to eventually link to James – the joint asset management and engineering solution – so the fitters can see the status of every gun at the touch of a button and plan their schedule accordingly."

Bdr Sam Smith