

The MOD Grand Challenge: war games for young engineers?

Phil Chamberlain discovers some disturbing activities on Salisbury Plain.

The 'Grand Challenge' was a Ministry of Defence competition where entrants were encouraged to design a new robot to be used in urban warfare. While the military imperative behind this competition was clear, it also had several other objectives – some commercial, some promotional. For example, it brought small military/defence companies to the attention of the MOD, and it fostered links between established defence giants and potential suppliers. But most disturbingly, it helped promote military industry inside universities and schools.

Hundreds of organisations originally got in touch and eventually they coalesced into 23 teams, of which 11 reached the final. The competition was deliberately designed to attract entries from small defence firms and educational establishments. Indeed the MOD funded six teams to "ensure a diverse representation of solutions". This ensured that two schools and seven universities made it to the final. Whether it was more important to bring in potential partners than the quality of their entry was not clear.

One of the competition's key aims was: "To provide an opening into the UK defence market for new suppliers and investors". This echoed the objective of the Defence Technology Strategy (DTS) under which the competition was launched. The DTS sets out the MOD's research and development priorities for providing future UK military capability.

Lord Drayson, the then Defence Procurement Minister (and now Science Minister), said at the time of the competition's launch: "I am well aware how difficult it is for smaller companies and research laboratories to get large organisations interested in their ideas. Through the Grand Challenge I believe we will make it much easier for them to approach the MOD."

The stage for this beauty contest was Copehill Down, a huge mock village on Salisbury Plain. It has trained troops in urban warfare for 20 years. The teams had spent a year preparing for the three days they would get to test their systems. It was also the

culmination of an intensive MOD public relations effort. Dozens of journalists from across the world attended and were treated to a fly-past by the Red Arrows, a Eurofighter and an Apache helicopter. The cost in fuel alone for those three aircraft could have been used to fund a whole new team.

A movie production company was employed to run the show. Television presenters Vicki Butler-Henderson and Phillipa Forrester, who also do not come cheap, interviewed contestants for the sake of the cameras and presented the awards. The MOD's public-relations team made sure that footage and words were repackaged and issued in as many different outlets as possible – including those targeting schools.

The autonomous systems themselves were eye-catching. There were mini-helicopters, flying saucers, radio-controlled cars and even hi-tech wheelbarrows. Each was packed with detection systems not only to register thermal signatures but to identify suspect cars or sniff for chemical traces. This was not a glorified 'Robot Wars' though. The UK and overseas military were taking it very seriously.

There were lots of men in trench coats peering excitedly inside the machines. These were the scientists from departments such as the Defence Science and Technology Laboratory. Meanwhile Tom Killion, the US Army's chief scientist, had also come along together with colleagues from the US Soldier Battle Lab and defence attachés from several foreign embassies.

As well as the universities of Warwick, Surrey, Manchester, Reading, Bristol and Portsmouth, sixth-formers from two schools also took part. On 'Team Mira' pupils from the Royal Grammar School Guildford, who helped design its entry, had their work assessed as part of their final A-level course. Meanwhile pupils from Bruton School for Girls in Somerset, part of the 'Silicon Valley' Team, did the research and building in their own time.

Steve Christopher, Head of Technology at Bruton, admitted that the thought of taking part in a military event had given him pause for the thought – but the opportunity was too good to pass up. He identified a lack of role models for young people interested in engineering.

While the MOD was making the most from the 'Grand Challenge' military companies saw opportunities too. Thales ran its own competition alongside the MOD one, asking schools to submit designs for their own autonomous vehicles. Dawn Ohlson, Director of Educational Affairs at Thales, works to encourage links between schools and the defence firm. "I've never had a school say no because we are a defence company," she said. "But then it depends how you present it. We don't go in and say would you like to see our guns."

Many of those taking part argued that, while their machines were designed for military purposes, there could be significant civilian spin-offs. Suggestions included television companies using the flying spy planes for filming and developing countries adapting one of the vehicles to clear mines. When asked why not just build a mine clearance vehicle, one of the scientists replied: "Well, no-one's going to fund that. I mean, where's the return for the company?"

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A mini-helicopter: one of the entrants in the MOD's Grand Challenge

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