

[News story: Xbox controllers, Hoverbikes and robotic trucks trialled by British and American Armies](#)

Continuing the MOD's investment in cutting-edge technology, the UK has been working with the US military on autonomous resupply, providing a glimpse into the future of getting much-needed supplies to the front line.

In a week-long exercise in Michigan, the UK MOD's Defence Science and Technology Laboratory (Dstl) and organisations from the US Army's Research, Development and Engineering Command (RDECOM) have been testing an all-terrain 4x4 vehicle controlled by an Xbox-style controller, driverless trucks in convoy and Hoverbike drones for delivering supplies in the most dangerous "last mile" up to the battlefield.

Defence Minister Harriett Baldwin said:

One hundred years ago we pioneered tank warfare with our US allies, and today we remain right at the forefront of military technology together. This exercise has proven the success of our ongoing investment in science and technology as we see concepts becoming reality. This particular project is spearheading solutions to the notoriously dangerous operation of supplying our frontline on the battlefield. Delivering crucial food, fuel and ammo remotely will help save soldiers' lives.

A British Army MAN SV 6-tonne truck leading two US Light Medium Tactical Vehicle trucks in a driverless convoy.

This is a new way of coordinating and delivering vital supplies to front-line operations, aiming to reduce risk to those troops and provide on-demand delivery of food, fuel or ammunition to the front line. The Coalition Assured Autonomous Resupply (CAAR) demonstration, the first in a three-year project to bring concepts to life, marked initial demonstration of unmanned tactical resupply technologies in the three areas.

The line-haul convoy is the first time ever that a UK-US collaboration has joined together in this format, with a British Army MAN SV 6-tonne truck as a 'leader' vehicle in the convoy, followed by two US Light Medium Tactical Vehicles (LMTV) trucks. Travelling at speeds of up to 25mph, the vehicles used integrated robotics to make decisions about speed, steering and other driving functions.

The Unmanned Aerial Vehicles (UAVs) demonstrated included the British-developed Malloy Aeronautics Hoverbike. An advanced prototype quadcopter drone, it can deliver more than 100kg of supplies, using a simple tablet

controller. Unveiled for the first time, this version of the Hoverbike could also potentially be used for humanitarian aid and disaster relief missions.

The 4x4 vehicle tested was a tele-operated Polaris MRZR, fitted with advanced sensors, cameras and GPS, and operated by a joint UK-US trials team. Using an adapted Xbox game console controller, Corporal Mortimer and Lance Corporal Thorne remotely 'drove' the 4x4 around the area to simulate an off-road task.

A remote-operated 4x4 being tested by the British and US Armies out in Michigan.

Pete Stockel, innovation autonomy challenge lead for Dstl, said:

Following the communique signature between the two nations in 2014, we have been working closely with our American counterparts to develop effective demonstrations and assessments of important new autonomy technologies, which could one day reduce the burden on and risk to the military user, while improving logistics efficiencies and interoperability.

This is the first time that we have created a UK-US coalition semi-autonomous leader-follower convoy to bring to life concepts which will provide solutions to de-risk the Last Mile of logistics support to the front line.

We are enormously excited to be working with our US colleagues on this project, delivering on the commitment announced at the Farnborough Airshow in 2016. It has been an exciting challenge to drive this forward at pace. This could be a step-change in how operational risk might be managed, costs could be reduced and – ultimately – lives can be saved, as a result of harnessing this rapidly-evolving technology.

Under the Autonomous Last Mile resupply challenge, Dstl and the Defence and Security Accelerator (DASA) are bringing together a wide range of military and industry partners to join commercial-off the-shelf (COTS) suppliers with novel ideas and tech start-ups in producing a futuristic demonstration of how UK and US forces' tactical resupply might one day operate.

Colonel John McCrann, from Army Headquarters, said:

The British Army is keen to work with its US counterparts through Dstl to identify where autonomous technologies can benefit UK military capability.

Jeffrey Ratowski, TARDEC's project leader for the Coalition Assured Autonomous Resupply (CAAR) effort, said:

We're using US and UK Soldiers to control multiple robotic assets including the convoy, the autonomous last mile- ground piece, and there's also an autonomous last mile- air piece.

The MOD spends 1.2% of its rising £36 billion defence budget on science and technology. In September Defence Minister Harriett Baldwin [announced the 25 winners of the Last Mile Challenge](#), up-and-coming tech startups and entrepreneurs hoping to bring innovative solutions to resupply the frontline.

Any entrepreneurs can apply to Pitch@Palace Series 9.0, the theme of which is "Data, Intelligence, and The Future of Security". A Defence themed On Tour Event is scheduled to take place in London on 31 January 2018. Find out more or apply to take part [here](#).

[News story: UK ratifies new agreement to tackle global warming](#)

The UK has today become one of the first nations to ratify a landmark agreement that will play a major role in preventing global warming by reducing emissions from appliances such as air conditioning units and refrigerators.

The Kigali amendment to the UN Montreal Protocol commits nations to reducing hydrofluorocarbon greenhouse gases (HFCs) by 85% between 2019 and 2036.

These harmful greenhouse gases could have risen by up to 11% by 2050 and the United Kingdom is one of the first countries to approve the landmark UN agreement to help prevent that from happening.

The Montreal Protocol is already one of the most successful treaties ever agreed, having phased out 98% of ozone depleting substances – including chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons. As a result, the ozone layer is showing the first signs of recovery.

The Kigali amendment to the Montreal Protocol, which the UK has completed ratifying, goes even further and extends targets to HFCs. Although HFCs do not harm the ozone layer, they have a global warming potential thousands of times greater than carbon dioxide.

Consequently this deal is likely to avoid close to 0.5 degrees Celsius of global warming by the end of this century, making it the most significant step yet in achieving the Paris climate agreement goal of keeping temperatures well below two degrees.

Environment Secretary Michael Gove said:

Adopting this ambitious target marks the UK as a world leader in tackling climate change. This deal will reduce global greenhouse gas emissions by the equivalent of around 70 billion tonnes of carbon dioxide by 2050 – the same as more than 600 coal fired power stations would produce during that time.

The UK, along with the rest of the EU, has already begun to phase down HFCs by 79% between 2015 and 2030.

The Montreal Protocol will result in an additional UK reduction equivalent to around 44 million tonnes of carbon dioxide

Notes to editors:

- As part of global efforts to tackle climate change, countries agreed at the Montreal Protocol meeting in Kigali, Rwanda in October 2016 to phase down the production and use of HFCs. Developed countries agreed to an 85% phase-down between 2019 and 2036; most developing countries agreed to 80% between 2024 and 2045; and ten developing countries (India, Pakistan, Saudi Arabia, Bahrain, Kuwait, Oman, Qatar, The United Arab Emirates, Iran and Iraq) agreed to 85% between 2028 and 2047.
- For further information please contact Defra press office on 020 8225 7510 or out of hours on 0345 051 8486.

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Statement to Parliament: Publication of the Mendoza Review of Museums in England and the Strategic Review of DCMS-sponsored museums.

Neil Mendoza was the lead, independent reviewer. He was supported by officials at DCMS. Throughout the process Neil engaged closely with the museums sector, Arts Council England (ACE), Heritage Lottery Fund (HLF), Historic England (HE), and relevant government departments.

The Mendoza Review of Museums in England

The Mendoza Review is the first in over a decade to examine the English museums sector. It was commissioned in response to the Culture White Paper in 2016 which called for “a wide-ranging review of national, local and regional museums, working closely with ACE and HLF”. Therefore, it has looked at what the national infrastructure for museums is, what it could and should be, the museums sponsored directly by government, and the challenges and opportunities for all of England’s museums. Whilst it focuses primarily on the 1,312 ACE accredited museums, it does consider the wider context of the sector, which encompasses approximately 2,000 museums in England. The review does not cover the policy of free admission to the permanent collections of national museums as this is a manifesto commitment.

The Mendoza Review proposes recommendations enabling a more strategic approach to public funding for museums from government and its Arm’s Length Bodies. It highlights the increased importance for government and its ALBs (including the National Lottery) of distributing funding in a more joined-up and effective fashion. The roles and responsibilities for relevant stakeholders are divided as follows:

- a more strategic and focused approach by DCMS and its ALBs;
- a more prominent and assertive role for Arts Council England;
- a more strategic use of Lottery funding for museums;
- a more active role for Historic England;
- and national responsibilities for national museums.

The Review also sets out ideas for local authorities on how to make best use of their museums, and best practice suggestions for the sector itself.

The report is available [here](#)

Alongside the Mendoza Review we publish the Strategic review of DCMS-sponsored museums. This is the first clustered review undertaken by any government department, following Cabinet Office guidelines for tailored reviews. It examines the form and functions of 16 ALBs (15 museums and the British Library) sponsored by DCMS, their functions, forms, effectiveness, efficiency and accountability. Of particular importance was establishing the extent of the leadership and coordinating activity these ALBs provide, nationally and internationally, identifying any areas for improvement. It should be read alongside the Mendoza review for a full picture of the role, importance and significance of the sponsored museums, especially after the UK’s exit from the European Union, and how the findings from this review feed into and support its recommendations.

Both reviews benefited from the independent Challenge Panel, members of which were appointed to ensure the review’s robustness and impartiality. I am also grateful to the following government departments who sat on the Programme Board: HM Treasury, Cabinet Office, the Department for Education, the Department for Communities and Local Government and the Ministry of Defence. Finally, I would like to thank all those who contributed evidence to the review through the public consultation.

The report is available [here](#)

Research and analysis: Bathing waters in England: compliance reports

Updated: 2017 compliance report updated to correct the classification for Crackington Haven from “Good” to “Excellent”.

These reports set out the classifications for bathing waters in England based on monitoring.

Earlier reports are available on the [bathing waters](#) page.