

# Next generation anti-land mine device

March 29 2005

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UK-based humanitarian de-mining specialists Disarmco have teamed up with ordnance and explosives experts at Cranfield University at Shrivenham to develop the next generation of anti-land mine device. The anti-landmine invention – codenamed 'Dragon' – is the subject of a European patent application and is cheaper, faster and quicker than many existing alternatives.

In addition, a specially designed portable facility for the production of hundreds of 'Dragons' is being deployed in a worldwide effort to clear certain types of land mines and unexploded ordnance (UXOs) that claim over 8,000 lives a year and maim around 20,000 people, 25% of them children.

The entire project is sponsored by the UK Government's Department for International Development (DFID) as part of its programme of humanitarian mine action and its effort to export British technological know-how and expertise for humanitarian benefit around the world.

Following successful field trials in Lebanon in October 2004, a team of experts will travel in May 2005 to clear landmines and UXOs in Cambodia – one of the worst landmine contaminated areas in the world.

'Dragon' is a type of pyrotechnic torch that works on the principle of burning out a landmine rather than exploding it across a wide surface area, thereby reducing the risk of land contamination and increasing the safety for the user.

The tubular shaped pyrotechnic device directs a very hot flame at the

munitions to achieve the deflagration effect. It can be placed either on the ground next to the munitions or directed at the landmine mounted on a simple wire frame.

The torches are made in situ in the portable unit and do not require any specialist knowledge or expensive training in order to be used safely by local communities employed in decontamination efforts.

Professor Ian Wallace, Head of the Department of Environmental and Ordnance Systems at Cranfield University, explained: "Working with the Disarmco team, we've created a new formulation based on low-cost materials which are readily available around the world. Local communities – with little training – can use the portable production unit to manufacture the thousands of 'Dragons' required to deal with landmines and UXOs."

Christopher Le Hardy, Director of Disarmco, added: "Burning is a more effective and scientifically safer way to dispose of certain types of landmines and UXOs compared with high explosives that are inherently more dangerous."

Victims of landmines and UXOs have welcomed the development of 'Dragon'.

Chris Rennick (52), who works in the field of explosive ordnance disposal and ammunition technical services, knows first hand the dangers of landmines and UXOs after losing his right leg below the knee as a direct result of a Type 72 anti-personnel landmine he was attempting to clear in Kuwait in 1992. He said: "'Dragon' could have a significant role to play around the world in making it safer for locals to be better equipped in the disposal of anti-personnel landmines."

A demonstration of the effectiveness of 'Dragon' will take place at the

Defence Academy of the UK, Shrivenham, Oxfordshire, at 11.00am on 29 March 2005.

Professor Wallace continued: "In many ways 'Dragon' is a classic piece of lateral thinking.

"We've used our knowledge of military pyrotechnics to come up with a low tech answer to a global problem.

"Traditionally, munitions have been destroyed or disposed of by explosion, by burning or even deep sea dumping. In recent years these methods, for legal, safety, environmental and practical reasons, have become increasingly difficult to justify.

"However, the scale of the land mine problem is such that we need to find other methods of disposal.

"In 'Dragon' we've found an inexpensive, effective alternative which involves burning out the dangerous explosives present in mines where they lie. And it's a safe and environmentally friendly option."

DFID is delighted with the results achieved to date. Andy Willson, Programmes Officer for Mine Action at DFID, said: "The mobile unit has dramatically reduced the typical costs associated with the production of anti-land mines and UXO devices that often run into hundreds of pounds."

He continued: "With the new system, local labour, under suitably trained supervisors, can produce the pyrotechnic torches on site and this further reduces production and transportation costs of the clean up efforts as well as creating much needed employment opportunities at the same time."

According to the Mines Advisory Group (MAG), a UK-based charity that has been closely involved in the development of 'Dragon', landmines continue to present a deadly hazard to those in developing countries that have lacked the resources to clear them from urban and densely populated areas until now.

Rob White, Head of Operations at MAG, concluded: "The development of 'Dragon' adds another tool for the safe disposal of mines and UXOs. An added advantage is its compact nature and cost. MAG is always keen to support new developments that assist its vital humanitarian mission of improving conditions for those living and working in mine affected countries around the world."

Source: Cranfield University

Citation: Next generation anti-land mine device (2005, March 29) retrieved 22 September 2024 from <https://phys.org/news/2005-03-anti-land-device.html>

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