



TECHNOLOGY | ROBOTICA EPISODE 2

Navy Robots Test the Limits of Autonomy

By THE NEW YORK TIMES MAY 6, 2015

This is the second episode in a Bits video series, called Robotica, examining how robots are poised to change the way we do business and conduct our daily lives.

At a naval research facility along a stretch of the Pacific Coast in San Diego, civilian engineers work alongside active-duty troops to develop and test the next generation of military robots.

The engineers are members of the Unmanned Systems Group at Spawar, or Space and Naval Warfare Systems Command, a research and operations arm of the Navy. Their mandate is simple: Take the soldier out of the minefield.

When autonomous systems are deployed, engineers at the center say they will revolutionize the way the military fights. They envision a day when one soldier will control an entire fleet of driverless trucks, or a driverless vehicle will make a road safe for a Humvee full of troops. They could also assist in detecting and combatting chemical or biological warfare.

Chris Scrapper is leading a team of engineers who envision an autonomous future. On a recent afternoon, they were tapping away at

computers to analyze data from a failed run with RaDer (it stands for reconnaissance and detection expendable rover), the boxy black vehicle they're trying to make drive on its own.

It's hard to say when autonomous technologies will be ready for use in combat, Mr. Scrapper said, adding, "It depends on the threat level."

Remote-controlled unmanned robots have been in use by the military for over a decade. The Packbot from iRobot defuses bombs; armed drones track and strike their targets; and the MK-18, an underwater torpedo-shaped vehicle, mimics a dolphin's sonar to locate mines on the ocean floor. What these robots have in common is that there is one person directly controlling them.

Mr. Scrapper and his colleagues see the future of combat as using fewer humans to control more machines. While there will always be a human operator involved, they say, that operator may be in touch with several autonomous devices at a time.

Mr. Scrapper says that the technology they have developed is "mission-agnostic and platform-agnostic," meaning that the same technology that makes a Humvee autonomous could be incorporated into a boat or a bomb-defusing robot.

So while he says his engineers are not working on weaponizing autonomous robots, their technology could be used for that purpose in the future.

His goal, and the one funded by the Office of Naval Research, is to make a tool that keeps troops out of harm's way and frees them up for tasks that require human ingenuity and imagination.— *Emma Cott*

Correction: May 8, 2015

An earlier version of this article misspelled the name of a bomb-

defusing robot from iRobot. It is the Packbot, not Pakbot.

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