

The Packbots are Coming

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High-tech robots called PackBots [i] will be unleashed during the 2014 FIFA World Cup in Brazil to help boost security and examine suspicious objects [ii].

The Brazilian government purportedly spent US\$7.2 million to buy 30 military-grade robots from designers iRobot that will police the stadiums throughout Brazil's 12 host cities during soccer matches [iii].

PackBot is a hunk of metal with an extendable arm and tactile claw, jam-packed on-board sensors and a computer with overheat protection, nine high-resolution cameras and lasers and two-way audio [iv].

But is it overkill to implement wartime robots to a sporting event?

Sport's history of violence

On April 30 1993, then-world number 1 tennis sensation Monica Seles was stabbed in the back while playing a quarter-final at Hamburg's Rothenbaum [v]. She was only 19.

That incident not only changed the course of women's tennis history but also changed the face of security in sport [vi].

Of course, we can also point to the Munich massacre of the 11 members of the Israeli Olympic team during the 1972 Summer Olympics in West Germany in rethinking approaches to the safety of high-profile athletes.

It was Seles' plight however, that brought attention to an ever-increasing problem of public figure security. Her stabbing in Hamburg had naught to do with terrorism, and more to do with her perpetrator's fixation on arch rival Steffi Graf. Player safety was going to become even bigger business.

It was floated that the Rothenbaum tournament organisers had spent A\$650,000 on security, and that Seles herself had employed security guards to protect her at all her tournament appearances. So what went wrong?

The human factor

Not only are people unpredictable but intervention is almost impossible if one cannot anticipate the actions of another. On November 13 1982, one of Australia's great wicket takers Terry Alderman made a costly mistake when he took security matters into his own hands [vii].

The West Australian was disabled for over a year with a shoulder injury he sustained when he came off second best after attempting to tackle an English-supporting ground invader at the WACA Ground in Perth.

Such has become the concern over security that spectators can no longer spill onto the grounds after the final siren to get close to their heroes.

Pitch invasions had long been a tradition of Australian Football League (AFL), and at the end of matches supporters could run onto the field to celebrate the game and play kick-to-kick with their family and friends.

But in recent years stricter controls were introduced and finally the “rushing the field” was banned, to the great disappointment of fans.

The non-human factor

What makes PackBots attractive for civilian security situations, such as large-scale sporting tournaments?

PackBots made their debut in Afghanistan as far back as 2002. During the “war on terror” these uninhabited systems had several tasks:

- to clear bunkers
- search in caves
- enter collapsed buildings in search of life
- cross minefields
- conduct surveillance [^{viii}].

This began a trend of development subsequently in Iraq and other US conflicts, until recently when they went where no human would want to go, the Fukushima nuclear facility in March 2011 after the devastation of the Japanese tsunami.

There are certainly positive uses to these uninhabited systems which few would argue against.

PackBots can move faster than 14km/h, rotate 360 degrees, traverse rugged terrain, climb up 60% grades and even swim in water, being able to cope with being submerged up to two metres. It can even be remotely operated with hardly any lag using a joystick [^{ix}].

iRobot’s bots are not recent entries into the commercial market. No, many of us would have been introduced to the domestication of the robot by the introduction of the company’s Roomba household cleaning machine [^x].

And the use of electronics in sport isn’t new. Hawk-Eye officiates whether the ball was in or out of the sideline [^{xi}], FoxCopter hovers above spectators at the cricket just to give us up-close personal shots of players and the third umpire adjudicates challenges [^{xii}].

But now the PackBots are coming: ostensibly precise, they are not supposed to malfunction or act against the controller’s wishes (or those instructions that they have been programmed with) and

they cannot be easily destroyed. In the not-so-distant future they could use their cameras to observe you, their chemical sensors to breathalyse you, their extended arm to trap you and their claw to handcuff you.

We are giving over control to machine entities, or better still, “objects and units” outside of ourselves.

In fact many argue we have already lost great chunks of our autonomy without the expected commensurate increase in security. Will the natural instincts and creative inputs of human beings become increasingly redundant in a world where the “tin man” has the final say?

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References:

ⁱ Robot 510 PackBot, *iRobot*, March 21, 2014; <http://www.irobot.com/en/us/learn/defense/packbot.aspx>

ⁱⁱ T. Mogg, PackBot military robots to help with security at 2014 FIFA World Cup in Brazil, *Digital Trends*, May 17, 2013; <http://www.digitaltrends.com/cool-tech/irobot-military-bots-to-patrol-2014-world-cup-in-brazil/#ixzz2wY7iyF92>

ⁱⁱⁱ D. Faggella, Packbot: Serving the Military and World Cup Football, *Robohub*, February 19, 2014; <http://robohub.org/packbot-serving-the-military-and-world-cup-football/>

^{iv} Staff, iRobot's PackBot on the front lines, *Phys.org*, Feb 24, 2006; <http://phys.org/news11166.html>

^v M. Isaacson, Stabbing stole Monica Seles' career, *ESPNW*, May 1, 2013; <http://espn.go.com/espnw/news-commentary/article/9226901/espnw-stabbing-stole-monica-seles-tennis-career>

^{vi} AFP, Germany knife attack on Monica Seles changed the face of sport, *The Australian*, April 30, 2013; <http://www.theaustralian.com.au/sport/tennis/germany-knife-attack-on-monica-seles-changed-face-of-sport/story-fnbe6xeb-1226632270388>

^{vii} M. Williamson, A costly tackle, *ESPNCricinfo*, March 8, 2008; <http://www.espncricinfo.com/magazine/content/story/341460.html>

^{viii} Staff. 510 PackBot, *Army Guide*, March 1, 2008; <http://www.army-guide.com/eng/product2717.html>

^{ix} M. Buchanan, Object of Interest: The Packbot, *The New Yorker*, April 23, 2013; <http://www.newyorker.com/online/blogs/elements/2013/04/object-of-interest-the-packbot.html>

^x Staff. iRobot Roomba: Vacuum Cleaning Robot, *iRobot*, March 1, 2013; <http://www.irobot.com/us/learn/home/roomba.aspx>

^{xi} R. Braun, A Hawk-Eye for detail: how accurate is electronic judging in sport? *The Conversation*, July 18, 2012; <https://theconversation.com/a-hawk-eye-for-detail-how-accurate-is-electronic-judging-in-sport-8136>

^{xii} M. Corcoran, Drones set for commercial take-off, *ABC News*, <http://www.abc.net.au/news/2013-03-01/drones-set-for-large-scale-commercial-take-off/4546556>