

Boston Dynamics unwraps military robot AlphaDog (w/ video)

October 3 2011, by Nancy Owano



(PhysOrg.com) -- Boston Dynamics has taken the wraps off its newest prototype combat escort, AlphaDog, which was developed with funding from DARPA and the US Marine Corps. Waltham, Massachusetts-based Boston Dynamics last week revealed the video that shows AlphaDog's capabilities for troop support. Those who have seen the video are calling the quadruped robot such names as Mule Poodle, Monster Mutt and BigDog-on-Steroids, but AlphaDog is its name. The robot is described further as the prototype for the formally named LS3. The latter stands for Legged Squad Support System.

The [robot](#), once fully ready for combat, will navigate through any rough terrain conditions, and will carry 400 pounds of equipment for 20 miles

without having to refuel.

AlphaDog does not need a driver; it follows along with troops, making use of its GPS, [computer vision](#) and state of the art hydraulics.

AlphaDog is actually the offspring of BigDog, an earlier, noisier, version with limited [payload](#) and operating range. Nonetheless, BigDog was an impressive step forward in the company's development efforts toward a mule-like pack robot that could support troop movements and carry gear.

BigDog took on four legs articulated like an animal's, with compliant elements to absorb shock and recycle energy from one step to the next. Sensors for locomotion included a gyroscope, LIDAR and stereo vision system

AlphaDog, in comparison, is designed to be over ten times quieter than BigDog, according to the company. This quadruped has the same cargo carrying mission as BigDog, but with better range and payload.

AlphaDog is to debut next year, and the video shows results so far of this latest round of development. "This video shows early results from the control development process," says the company. The video has drawn reactions from viewers who are impressed not as much over its ability to maneuver its four legs over rough rocks and logs but rather its ability to stay on balance no matter how hard the testers shove it around.

Boston [Dynamics](#) teamed up with outside groups to assemble the robot. The company worked with engineers and scientists from Boston Dynamics, Bell Helicopter, AAI Corporation, Carnegie Mellon, the Jet Propulsion Laboratory and Woodward HRT (the latter does motion control systems and components).

When AlphaDog does make its appearance in 2012, [DARPA](#) and the U.S. Marines will put the robot through tests.

[Boston Dynamics](#) is an [MIT](#) spinoff. The company's president, Marc Raibert said, "If LS3 can offload 50 pounds from the back of each soldier in a squad, it will reduce warfighter injuries and fatigue and increase the combat effectiveness of our troops."

More information: via [IEEE Spectrum](#)

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