

COMMENTARY by DON TALEND

# New dozer and control system changes the meaning of construction speed

**M**ore than 170 construction company executives, purchasing managers and machine operators recently had a look at the latest in construction speed during a two day John Deere product demonstration event. Deere introduced its new 764 High-Speed Dozer, (HSD), which is designed to allow contractors to perform grading and moderate dozing at nearly double the speed of a similarly sized crawler dozer.

The new dozer combines the speed of a grader with the flotation of a crawler dozer. This combination allows a contractor to handle some tasks that previously required both a dozer and grader with just a dozer. The speed-enhancing rubber tracks give the 34,000-pound machine the ability to travel up to 18 mph across a job site, as rubber tracks have a much lower rolling resistance than a conventional steel track system meaning a higher traveling speed. An articulation joint is incorporated for maneuverability when grading around pavement or navigating side slopes.

The shorter tracks of the dozer cover less ground while turning than longer tracks, which is a design feature used to extend track life. Rubber tracks do not have segments, as with steel tracks, that would make the blade bounce. Rather all four tracks are fully, independently suspended and can walk smoothly over uneven or bumpy surfaces.

The 764 HSD also features articulated steering, a hydrostatic drive train and a Tier 3 John Deere PowerTech Plus 6.8-L engine rated at 200 horsepower. The engine provides 200 net horsepower at 1,800 rpm and 210 net horsepower at 1,900 rpm. The dozer's finish speed control feature allows for infinite control from zero to 18 mph with four speed ranges available. Finish grading reportedly can be achieved at nearly twice the speed of a comparably sized dozer.

A key feature of the 764 HSD is Topcon Positioning Systems' 3D-MC2, which is the fastest machine-control



system on the market. The 3D-MC2 system is an evolution of Global Navigation Satellite System machine-control technology, which automates grading and excavation. Testing indicates that the 3D-MC2 system can allow grading with twice the productivity of other systems, and four times the productivity of grading without the use of machine control. A new MC-R3 GNSS controller

unveiled at Con-Expo 2008 works in conjunction with a MC2 sensor, which replaces a slope sensor, and combines a gyro, compass and inertial sensor to measure the X, Y

and Z position of the dozer. The MC-R3 GNSS controller also measures the roll, pitch, yaw and acceleration of the dozer. The technology gives the system the capability to provide blade position readings up to 100 times per second or roughly five times as many as alternative systems. Additionally, testing indicates that the system yields nearly three times the grading smoothness of other machine-control systems.

According to Topcon, doubling a machine's productivity allows a contractor to take on twice as much work without

incurring major, additional capital costs

RJS Construction Group of Superior, Wisc., a general contractor with both building and heavy highway divisions serving northern Wisconsin and northern Minnesota, recently adopted a new 764 HSD and 3D-MC2 system for the new dozer. Vice President Dave Lemke explained that one ongoing project would particularly benefit from greater speed: a 5.7-mile rail spur near Grand Rapids, Minn., that requires 2.7 million cubic yards of excavation, 40-foot cuts and 40-foot back slope fills. According to Lemke, the 764 HSD and 3D-MC2 should have a fundamental, beneficial impact on company operations when they start working with both the machine and the system.

"We can probably do more work with the equipment we have," he said. "Our radius of work for heavy highway is 150 to 200 miles in northern Minnesota and northern Wisconsin, and if we have a piece of equipment that can handle a couple of different tasks it would save the mobilization costs for a five-hour drive." ///

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