



HDT Announces 2014 Top 20 Products

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by Deborah Lockridge

Each year, Heavy Duty Trucking's editors spend a lot of time going to press conferences and combing through news releases on the latest new products for trucking to determine the very best of the past year's introductions for our Top 20 Products.

First, HDT Editor in Chief Deborah Lockridge, Senior Editor Tom Berg, Equipment Editor Jim Park and Technology Editor Jim Beach chose their top picks, selected from products that appeared in HDT's editorial pages between December 2012 and November 2013 and/or appeared in editorial coverage on Truckinginfo.com through Oct. 31 of 2013.

Each product was selected based on its level of innovation, whether it addresses significant industry issues or concerns, and its potential to improve a trucking operation's bottom line.

Then we got input from a panel of experienced fleet executives and maintenance managers, including HDT's Truck Fleet Innovators, and a panel of Technology and Maintenance Council members led by past TMC President Darry Stuart.

Products need not be available at the time of the announcement, but do need to have a reasonable expectation of being widely available within a year from the introduction. No "concept" or "prototype" products are allowed.

New trucks are not included, and no one company may appear more than once in our list each year.

The resulting Top 20 products are listed on the following pages in alphabetical order by company name.



Agility 116DGE CNG Fuel System

This compact, high-capacity compressed natural gas fuel system is specifically designed to be mounted behind the cab of Class 7 and 8 tractors in over-the-road, long-haul applications. Three cylinders of 26 inches in diameter and 80 inches in length can carry 116 diesel gallon equivalents on board, offering up to a 500-mile range. The company says this is the industry's best DGE per inch of frame rail. Adding rail-mounted tanks can bring it to a maximum of 240 DGE. With a width of only 87 ¼ inches, it maintains vehicle aerodynamics by not protruding beyond the side of the cab.



American Power Group dual-fuel natural gas glider kit

American Power Group partnered with glider providers such as Ervin USA, Fitzgerald Glider Kits and the WheelTime Network to offer dual-fuel natural gas gliders, using pre-EGR Detroit Series 60 engines in new Freightliner and Western Star models. Adding APG's V5000 Turbocharged Natural

Gas Dual-Fuel System to a glider offers typical annual fuel savings of 20% to 30% compared to a standard diesel, says the company. This non-invasive, patented turbocharged dual-fuel conversion technology displaces 50% to 65% of diesel with CNG or LNG for most regional and long haul applications. It offers a 300- to 800-mile dual-fuel range and the flexibility to return to 100% diesel operation at any time.



ATDynamics TrailerTail AutoDeploy

The TrailerTail AutoDeploy system uses radar technology mounted under the trailer to measure vehicle speed and automatically deploy the TrailerTail when a tractor-trailer reaches a driving speed of 35 mph. Once the threshold is met, the TrailerTail deploys slowly, regulated by a swing-arm dampening device. TrailerTails are an aerodynamic “boat tail” device for trailers. They have been third party tested using SAE J1321 Type II test protocol and are said to reduce tractor-trailer fuel consumption by 5.54%. This increases tractor-trailer fuel economy by 0.3 to 0.5 mpg, when used with skirted trailers, says the company.

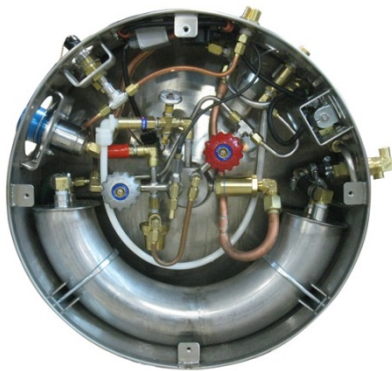
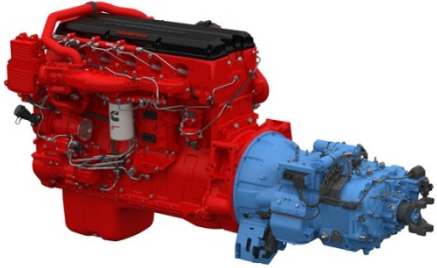


Chart LNG truck fuel system

Chart Industries has addressed some of the drawbacks of using liquefied natural gas for long-haul trucking with improvements to its LNG truck fuel system. A larger-capacity single tank extends range and cuts costs, while integration and fewer parts make for faster installation. Chart increased the maximum single tank LNG storage capacity to more than 100 diesel gallon equivalents. This high-capacity tank extends driving range significantly without the added cost of an additional fuel tank. In fact, the 100-DGE tank costs about \$5,000 less than two separate tanks.



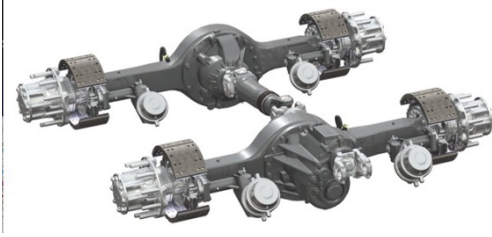
Cummins-Eaton Smart Advantage Powertrain

Eaton and Cummins teamed up to create an integrated powertrain that offers better fuel economy, lower preventive maintenance costs and total lifecycle cost improvements. SmartAdvantage combines an Eaton Fuller Advantage Series automated transmission with new Cummins ISX15 SmartTorque2 ratings. Through a combination of hardware and software enhancements, it uses integrated power, fuel and shifting strategies to provide 3% to 6% fuel economy improvement for linehaul and regional haul applications. Optimized engine and transmission communications and new control logic enable further engine downspeeding in the overdrive position, and the effective use of direct drive technology in operational conditions required for efficiency.



Daimler Trucks North America's Detroit Connect telematics

The Detroit Connect On-Board Tablet integrates with DTNA's Virtual Technician and Visibility fleet back-office software, and also offers hours of service, pre-and post-trip inspections, two-way messaging and navigation. Developed in collaboration with Zonar, the tablet can be docked inside the cab, allowing voice navigation and text-to-voice messages to play through the truck's sound system. The Android-based tablet features camera/video, Bluetooth, a USB port, a built-in flashlight, and a 7-inch touch-screen display with an hours-of-service clock. The touch screen works when a driver is wearing gloves. Additional apps will be available from DTNA and from third-party developers.



Dana Spicer AdvanTek 40 tandem axle

Dana's Spicer AdvanTek 40 is a 40,000-pound-capacity tandem axle using new gear sets, bearings and other components. It saves fuel, improves reliability, reduces vehicle weight and decreases total ownership costs, says the company. The new tandem replaces the current DS404, and is estimated to deliver more than \$8,000 in operating savings over a five-year period.

Features include an axle ratio of 2.26:1, which allows cruising at low engine speeds; optimum inter-axle driveline angles by means of a hypoid coupling on the rear axle's differential; and reduced lubrication quantity. AdvanTek 40's fast gear sets can handle higher input torques while lowering engine rpm at cruise speed, and increase axle efficiency by up to 1.2%. It's also up to 21 pounds lighter than competitive models.



ENow eCharge

ENow has developed solar-powered idle reduction, refrigeration, liftgate and battery charging systems for the transportation industry. It works with Bergstrom's Nite APU to eliminate fuel from diesel-powered APUs or the engine alternator to charge batteries. For refrigeration, it can keep a cold plate storage system charged or run evaporator fans while in operation. It can supply power to stand-alone liftgate batteries to reduce the demand on the engine alternator.



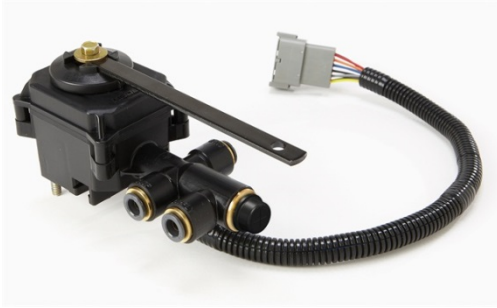
Espar Airtronic CNG

The Airtronic CNG heating system can help reduce idling in cold weather for vehicles fueled by compressed natural gas. It can be used on vehicles van-sized or larger and has a thermostat-controlled shut down and re-ignition. Other benefits include low power consumption, various possible installation positions, electronic control unit and function monitoring system. The Airtronic CNG features a quiet, integrated fan, option of 12-volt or 24-volt connection and weighs 10.4 pounds. The system measures 14.6 inches long, 9.8 inches wide and 4.9 inches high.



FuelDefend's Vehicle Protector DPF theft prevention system

Truck diesel particulate filters and catalytic converters contain valuable precious metals that are attractive to thieves. An all-makes product to help prevent DPF theft is now being marketed by a UK-based company, FuelDefend Global. It's being distributed in the North America as VehicleProtector by FuelDefend USA, which markets the Neck-It fuel anti-siphon device. The alarm uses patent-pending technology to detect any irregular movement on the exhaust system. It is automatically armed and requires no driver input. Once activated an alarm is sounded. An optional text message system is available alerting designated people of the crime along with the vehicle registration number.



Hadley SmartValve

Hadley Products, known for air horns, is making it easier and safer for drivers to connect the tractor and trailer. SmartValve, a multi-function height adjustment valve for tractor air suspensions, raises and lowers a tractor's chassis to match that of the trailer's upper coupler and kingpin, saving drivers time and effort. It helps reduce back and leg injuries because it can eliminate the hard labor of raising and lowering trailer noses when their heights don't match a tractor's. In high-frequency drop-and-hook operations, SmartValve saves each driver a week's worth of time every year, says the company.



J.J. Keller Compliance Tablet

The J.J. Keller & Associates' Compliance Tablet offers a simple, one-step option for making the transition to electronic logs, says the company. This 7-inch Samsung Galaxy Tab 2 is pre-loaded with J.J. Keller Mobile applications. Approximately the size of a paper log book, the Compliance Tablet lets drivers input hours-of-service information quickly and easily. A pre-programmed Roadside Inspection mode displays only the last seven days of logs, allowing drivers to simply hand the tablet to enforcement officers. The tablet is "locked down" to keep drivers from loading non-approved applications, and also is inoperable while the vehicle is in motion. Program enhancements such as HOS regulatory changes are done through automatic updates.



LinkeDrive PedalCoach

LinkeDrive's PedalCoach uses a smartphone or tablet app to convert complex data from the engine and other areas into a simple graphic gauge interface that coaches drivers to stay in the "green zone" for fuel efficiency. The product saves an average of a nickel per mile, says the company. The smartphone plugs into a dock in the cab that gets information wirelessly from the engine's electronic control unit, such as engine load, vehicle speed and engine speed, as well as data from the cloud. It translates the target mpg into a gauge graphic on the smartphone, as well as a red-yellow-green light system like a traffic signal. For each mile driven in the green zone, the driver gets a point, which tick up like an odometer.



Maxwell Ultracapacitor Engine Start Module

Maxwell Technologies' Engine Start Module uses ultracapacitor technology to help solve on-board electrical demands. The same size as a Group 31 truck battery, a single ESM replaces a bank of two, three or four heavy lead-acid batteries, leaving room in the battery box for a few AGM (absorbed glass mat) batteries to power hotel loads such as on-board electric air-conditioners, refrigerators, etc. Maxwell's ESM is very good at starting engines, because it is designed to deliver high current output over short periods. ESMs are not affected by cold temperatures. Relieving the AGM batteries of their starting duties can about double their life expectancy.



Navistar OnCommand Connection

Navistar says its new OnCommand Connection remote diagnostics system is the first single remote diagnostics portal to use an open architecture system that works with fleets' existing telematics providers. The OnCommand Connection portal connects fleets, dealers, Navistar's Technical Service and OnCommand Repair Advocate. A dashboard allows customers to view action steps, as well as the location of vehicles requiring attention on a map in proximity to service locations. A vehicle health report shows make, model, engine, mileage, etc. and where that data came from, telematics or the dealer. You can see information such as fault codes, the last time the truck was in for service, and GPS location and weather conditions at the time of the fault.



PeopleNet engine reporting for natural gas

PeopleNet says it is the first telematics provider to support compressed natural gas and liquid natural gas vehicles by delivering engine reporting in diesel equivalent gallons that easily compares performance and forecasts savings for multi-fueled fleets. Collecting and analyzing comparative fuel use is critical for determining the return on investment of moving from diesel to natural gas. In addition, the comparative data PeopleNet provides allows fleets to compare a driver's miles per gallon while in diesel vehicles with mpg in natural gas vehicles in order to preserve the integrity of driver incentive programs based on performance.



Peterson LED headlight

Peterson's new, DOT-legal 701C 7-inch round headlight is a drop-in LED replacement for all PAR56 standard headlights, including popular H6014, H5024 and H6024 halogen-sealed beams. The 701C incorporates two OSRAM Opto Semiconductors OSTAR HL Pro LED devices per headlamp (one for low beam, and another for high beam). These LED light sources are much more efficient than halogen lights, drawing only 0.7 to 1.9 amps, and will last many times longer than a traditional

sealed beam. The color temperature range closely simulates natural daylight. The solid-state multi-volt design is compatible with all 12-volt and 24-volt vehicles. Standard H4 3-blade terminals are integrated directly into the cast alloy housing.



Phillips Sta-Dry QCMS2 (Quick Connect Modular System)

Phillips Industries says its Sta-Dry QCMS2 (Quick Connect Modular System) is the cure for the most common warranty complaint with 7-way tractor-to-trailer electrical connections – complete loss of electrical function on the “blue” circuit. The loss of function almost always results from lack of maintenance, water and chemical de-icer intrusion into the connector. Phillips’ new modular socket/plug hybrid, the Sta-Dry QCMS2 is semi-hardwired to the tractor, creating a complete seal at the 7-way connection. By removing the socket from the union, the QCMS2 mates directly with Phillips Sta-Dry QCS (Quick Connect Socket) boot, eliminating any gap where moisture can enter.



Westport LNG fuel tank system

Westport Innovations says its new iCE Pack LNG Tank System allows you to fuel even the largest spark-ignited (stoichiometric) liquefied natural gas engines on a single tank and provide increased range, longer hold times and faster fueling times. Current industry standard systems require two LNG tanks to operate effectively with larger SI engines and require warm (saturated) LNG. By

carrying fuel as cold LNG, the Westport iCE Pack doubles tank hold times from five days to 10 days and improves vehicle range by up to 10% compared to “warm (saturated)” LNG systems. It offers lower weight than an equivalent compressed natural gas system. Fleets with a combination of SI and Westport HPDI trucks can now rely on the same LNG refueling infrastructure; the system can be filled at any LNG station (cold or warm) in North America.



XRS-Samsung integrated mobile

Xata Corp. transformed itself into XRS Corp. and went to a completely mobile platform for compliance and fleet optimization with its XRS system. The mobile platform runs on more than 50 types of devices and automatically transmits vehicle and operator data directly to a management dashboard, including hours of service. However, it generated some concerns about the bring-your-own-device strategy. For those concerned with security and other challenges of the bring-your-own-device strategy, XRS followed up by partnering with Samsung to develop an integrated package that will separate personal and fleet data. Dubbed NXT, it's the first integrated mobile device and software package designed specifically for the trucking industry, according to the companies.