

Link Testing Laboratories Receives Award at the Annual Brake Manufacturers Council Meeting

At the 2008 Brake Manufacturers Council (BMC) meeting in Mexico, LINK was presented with the BMC Technical & Engineering award by Mike Zissman, Chairperson of the BMC Friction Material Technical Committee. Roy Link, President Link Engineering, expressed LINK's sincere appreciation for this award and acknowledged the significant accomplishments which have been achieved through our collaboration. Tim Duncan, LINK's Vice President Test Operations added, "We feel it is a distinct honor to receive this award, and we are



particularly proud that our partners in the Brake Manufacturers Council have recognized us in this way."

The Brake Manufacturers Council was established in 1973. This is a not-for-profit organization whose members include the leading manufacturers of brake systems and components. BMC members are dedicated to improving the quality and performance of brake parts and systems for the North American car and light trucks. The BMC is a product line group of the Motor & Equipment Manufacturers Association (MEMA).

Refurbished Test Equipment Available

LINK has several refurbished machines in our inventory which are available for sale or lease. The equipment includes the following:

- Model D1500 Passenger Car Inertia Brake Dynamometer
- Passenger Car & Light Truck Dual-End Inertia Brake Dynamometer
- Truck Inertia Brake Dynamometer
- Passenger Performance Brake Dynamometer

- Model 3016 Residual Drag Machine
- Chase Type Friction Material Test Machine
- Rotor Mapping Station

This refurbished equipment provides excellent value, can be on site in a short time frame, and will be in like new condition. Depending on a customer's needs, refurbished test equipment can include modified enclosures, altered inertia range and the addition of optional equipment to permit a number of applications from noise measurement to environmental control.

Continued on page 4



INSIDE THIS ISSUE

Link Testing Lab Receives Award	1
Refurbished Test Equipment Available	1
Link Visits India.....	2
Dick Radlinski Teaches in South Africa.....	2
Link/Ford Brake Pedal Feel Simulator.....	3
Link Dyno Installed in Brazil	4
Calendar of Events	4

Link Visits India: Views Growth of Industry First-Hand

Roy Link and Jim Stimach traveled to India, February 7-13, where they attended the 2nd International Workshop on the Advances in Asbestos-Free Friction Composites (IWA AFC-2) in New Delhi February 7-8, 2008. The workshop was held on the campus of the Indian Institute of Technology, New Delhi. Also attending the conference with them was J. Prem Aruliah, Sales Manager for Blue Star Limited, Link Engineering's Indian Representative.




three primary automotive regions of India: Delhi, in the north, Pune to the west, and Chennai in the south.

Link currently provides equipment, service, and support for India through our exclusive representative, Blue Star Ltd. Additionally, vehicle and laboratory testing services are

provided by Link in India through our European test facility in Koblenz, Germany. The partnership with Blue Star, with their presence in each of these key automotive regions, allows us to support the growing testing market in India.

On the second day of the conference Roy presented his paper, "Global Perspective on Friction Material Regulation and Certification Testing", which focused on the US and ECE OEM and aftermarket test requirements and programs. He also discussed various ISO activities, new test procedures, future trends in the braking industry and their potential global impacts.

The Indian brake industry, and the Indian automotive market in general, is moving fast and showing great growth potential for both national and international sales. It will be important for the country's infrastructure to keep pace in order for the industry to reach its full potential. We at Link are excited about the opportunity to be a part of supporting such growth. 


In addition to attending the Workshop a number of corporate introductions and visits were made in the

Dick Radlinski Teaches in South Africa

Dick Radlinski, along with Chris Winkler and Tom Gillespie of the University of Michigan Transportation Research Institute (UMTRI), taught a special course entitled "Mechanics of Heavy Duty Truck Systems" April 7-10 in Stellenbosch, South Africa. The course was sponsored by the South African Road Federation. Dick lectured on the design and testing of heavy vehicle braking systems. He has taught a similar course at the University of Michigan for the



last 15 years as part of the Summer Engineering Program offered by the Center for Professional Development at the University of Michigan.

Dick is available to provide seminars on heavy vehicle brake system design, regulations, and testing at Link Engineering in Plymouth, MI as well as off-site. Please contact Dick at d.radlinski@linkeng.com or 410-827-0044 for pricing and scheduling. 

Link/Ford Brake Pedal Feel Simulator

Did you ever feel like your brake pedal felt too hard or too soft? Did your pedal ever feel like you have to push it too far to make things happen? Did your brake pedal ever feel like it was so short or “touchy” that it was hard to control the stop? LINK was contracted by Ford Motor Company to build and commission a pedal feel simulator for the F250/F350 Super Duty trucks, to try to improve characteristics of the pedal apply.

The Pedal Feel Simulator consists of an entire brake system, including:

- Brake pedal
- Brake booster/master cylinder
- ABS hydraulic control system
- Front calipers and rotors
- Rear calipers and rotors
- Brake tubes and hoses

This entire system is mounted to a framework which includes a seat and a brake pedal just as in your passenger vehicle or truck.

The purpose of the simulator is to mock up system parameters for various brake systems used in Ford trucks. Data analysis of the pedal apply force, pedal travel, and brake line pressure will be used to




determine whether the brake system pedal feel has improved or deteriorated from previous systems tested or systems currently in production.

The Pedal Feel Simulator for F250/F350 brakes currently includes three different types of braking systems:

- Brake system with vacuum provided by the operation of a gasoline engine
- Brake system with vacuum provided by a vacuum pump for diesel engine applications (diesel engines do not provide enough vacuum to make the vacuum operated brake booster function properly)
- Brake system with a hydroboost hydraulic brake booster used for very heavy duty truck applications with diesel engines which the vacuum pump cannot service

Link Testing Services is working in conjunction with Link Engineering (Plymouth) to construct the mechanisms required for the vacuum pump and the Hydroboost systems.

Testing on the brake system with normal vacuum boost has already begun. The data from the testing will help to improve the future brake systems for Ford trucks. 

visit our website at
www.linkeng.com

Continental Automotive Systems Brazil has Acquired the Link Model 3900 NVH Dynamometer



Continental Automotive Systems Brazil finalized negotiations last December regarding their acquisition of a Link Model 3900 NVH Dynamometer, for state-of-the-art brake system noise evaluation. This is the second Model


3900 NVH dyno that Link Engineering has provided to Brazil in the past two years.

The NVH Dynamometer recently acquired by Continental provides full capability for brake noise testing on brake systems assembled on the axle with suspension fixtures for the appropriate corner, reproducing noise characteristics specific to each brake system under foot.

The Model 3900 control and evaluation system incorporates the cutting edge in technology

providing an excellent correlation between the brake test evaluation and the real brake operation conditions of the vehicle. The unique advanced characteristics of the ProLink[®] software control allows fully automatic or manual control of all test functions. All test parameters may be monitored including the integration of NVH data with operating parameters.


The Model 3900 brake enclosure is designed to allow for brake testing under a wide range of environmental conditions. Within the brake enclosure, these units control both temperature and humidity levels to conform with a wide range of control set points, as defined by given industry and governmental test procedures.

This important technological acquisition will place Continental Automotive Systems Brazil on the same level as the world's leading enterprises for NVH test capabilities, with the most modern NVH dynamometer, to achieve the diversified demands of their Brazilian clients as well as the world market. 

Refurbished Dynamometers Available

Continued from page 1

The refurbished test equipment will operate with our state-of-the-art ProLink software package for control, data acquisition, analysis and reporting. Each piece of refurbished equipment will operate like a new unit with a full one-year warranty on all refurbished components.

Please reference our website, www.linkeng.com, for further details on all available equipment including typical specifications for each. For further information or to request pricing and timing, please contact 734-453-0800 or sales@linkeng.com. 

CALENDAR OF EVENTS

June 10-12—Coil Winding, Insulation & Electrical Manufacturing Exhibition
Berlin, Germany; Booth 2229

September 17-19, 2008—Automotive Testing Expo China
Shanghai Everbright Convention & Exhibition Center, China www.testing-expo.com/china/

October 12-15, 2008—SAE Brake Colloquium
Grand Hyatt, San Antonio, TX www.sae.org/events/bce/

October 22-24, 2008—Automotive Testing Expo
Rock Financial Showplace, Novi, MI www.testing-expo.com/usa/