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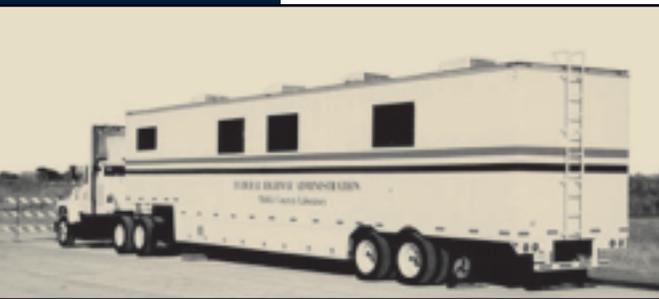
LTRC

2004

A publication of the Louisiana Transportation Research Center

FHWA Mobile Asphalt Laboratory

Visits Louisiana



The Federal Highway Administration's Mobile Asphalt Laboratory paid a visit to its counterpart at LTRC this spring. The FHWA team, including Leslie Meyers and Chuck Paugh, Engineering

Managers of the FHWA pavements group, worked for five weeks with the staff of LTRC's mobile lab and Engineering Materials Research Facility (EMCRF) to examine a newly developed strength test for asphalt mixtures.

Since Superpave™ design methods were first developed 10 years ago, the FHWA, along with the entire asphalt research community, has promised a "simple"

performance test to "prove" the performance ability of the asphalt mixture during the production process. This new device, called the "SPT" or asphalt simple performance tester, is the primary focus of the work being done by the FHWA in many states throughout the country.

Three mix types were examined by the LTRC and

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Ongoing FRP Studies in Louisiana

Fiber-Reinforced Polymer, or FRP, is a new material being used experimentally in structural concrete repair and new construction across the country. Although the Louisiana Transportation Research Center (LTRC) has been actively involved

in this work through a number of research projects, the center is now taking the work from the lab to the field through both maintenance and construction projects.

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Visit our website:
www.ltrc.lsu.edu

Ongoing FRP Studies in Louisiana (cont. from page 1)

Strengthening of Highway Bridge Beams Using Fiber Reinforced Polymers (FRP) and FRP Deck Application in Concrete Bridges
PI: Paul Ziehl, Ph.D., P.E., Tulane University

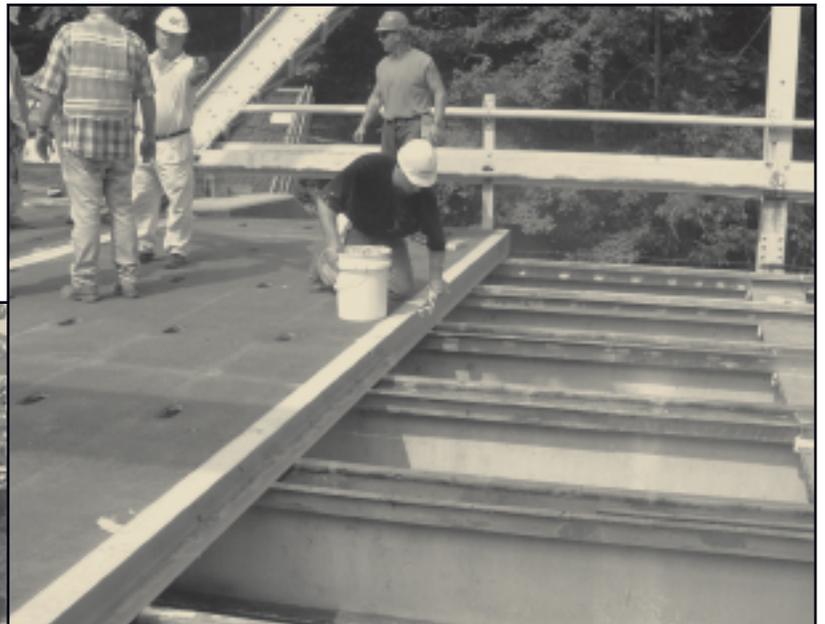
In the initial projects, LTRC funded three innovative ideas regarding the use of Fiber Reinforced Polymers (FRP) in strengthening concrete beams. Currently LTRC is funding two larger-scale studies related to the use and application of FRP as a means for strengthening and / or rehabilitating highway concrete bridges.

A load-posted bridge has been selected for the first study, "Strengthening of Highway Bridge Beams

carrying capacity. The first system incorporates the external mounting of FRP laminates on the beams' bottom faces. The second system incorporates the insertion and pre-stressing of FRP plates in tiny, pre-cut grooves on the bottom faces of the beams. The beams

with an FRP deck. The bridge will be instrumented, and the data collected will be analyzed to assess the performance of the FRP deck. A cost-benefit analysis will also be performed.

If the study results are promising, a recommenda-



will be instrumented, and data will be collected and analyzed for the purpose of performance analysis. A cost-benefit analysis will be performed.

tion will be submitted to the Bridge Design Section to include FRP products as an alternative for highway bridge beam and deck repair. The ability to increase the truck load capacity or extend the life of a structure can save the Department millions of dollars, allowing those funds to be redirected to other areas.

Using Fiber Reinforced Polymers (FRP)." Two different strengthening systems will be investigated for the purpose of removing the load posting or at least increasing the bridge load-

In the second study, "FRP Deck Application in Concrete Bridges," a bridge with a deteriorated deck will be selected. The deck will be removed and replaced

LTTRC Contracts to Provide Confined Space Training to LADOTD

The Louisiana State Division of Administration's Office of Risk Management, or ORM, provides a comprehensive risk management program for the state. As part of an agency's overall safety program / audit, the Office of Risk Management requires that, if the agency does not contract out all of its "confined space" work, a written program must exist. The formal program must identify permit and non-permit locations and must conduct tests to ensure the oxygen level in the confined space is within safe ranges.

Accordingly, LADOTD has developed a safety policy for confined spaces which contains the safe operating procedures for the protection of its employees when entering confined spaces.

To help implement this policy, LADOTD has entered into a contract with a consultant to provide training for confined space entry. Three levels of participants have been identified: entrants; attendants; and supervisors.

By definition, a confined space is an enclosed or partially enclosed area that is not designed for human occupancy; has a restricted entrance and/or exit; and can represent a risk to the health and safety of anyone who enters. This risk may be due to design, construction, location, or atmosphere; the materials or substances in the space; and/or the work activities being performed.

Examples of department-specific, permit-required confined spaces include weigh scale pits, pump stations, pontoon barges, manholes, storm sewers, sewage treatment plants, water vessels, ferry holds, highway tunnels, and concrete bridge pilings. Examples of non-permitted confined spaces include catch basins and manholes. Examples of hot work areas include pontoon barges; the holds of ferry (water) vessels; weigh station scale pits; and pump station sumps.

Department field personnel whose jobs require them to enter, supervise, or monitor confined spaces will be required to attend a workshop detailing the hazards and use of equipment required to enter confined spaces and fire watch duties regarding hot work situations.

Interactive workshops have been developed and are now being offered statewide.

for the first quarter of 2004.



Allison Landry, Executive Services Assistant for Tech Transfer and Training, was named DOTD Employee of the Quarter

Dr. Chester Wilmot, Special Studies Research Administrator, co-authored a paper that will appear in an upcoming issue of the Journal of Public Procurement (Vol. 4, Issue 1). "Assessing Outsourcing Potential in a State DOT" by Chester Wilmot, Donald R. Deis, and Rong Xu was based on LTTRC-sponsored research (LTTRC Report 358: *Designing a Comprehensive Model to Evaluate*

News Briefs

Save the Date

The 2004 Annual Meeting of the Southeastern Asphalt User / Producer Group (SEAUPG) will be hosted by LADOTD at Baton Rouge's Radisson Hotel and Conference Center on November 15-18, 2004. SEAUPG is an ongoing regional forum for discussion and exchange of asphalt pavement technology. Its mission is to improve the quality and performance of asphalt pavement applications in the southeastern United States by encouraging the adoption of best practices in all aspects of asphalt technology, including materials selection and testing, construction and maintenance procedures, and environmental protection.

Technology Workshops

Several workshops on the state of technology in LTRC's different research areas are in the planning stages. These workshops, intended to be a forum for discussing today's concerns, will be open to the public and feature interactive presentations by LTRC, LADOTD, and industry personnel about current technology, problems and issues, research projects, and implementation possibilities. Concrete workshops were conducted the spring, and pavement workshops are tentatively slated for the fall. Watch upcoming issues of *Technology Today* and the LTRC web site (www.ltrc.lsu.edu) for more details.

TRB Representative Visits Louisiana

Each year, the Transportation Research Board (TRB) sends a representative to each state to meet with transportation leaders and researchers to learn about current research topics and needs and hear concerns and questions from transportation officials. In meetings at LTRC and LADOTD headquarters on April 1- 2, 2004, Kimberly Fisher, a Transportation Planning and Environmental Analysis representative with TRB, met with LTRC research and tech transfer staff, LSU faculty, and various LADOTD personnel.

This yearly visit is also a chance for TRB to promote the benefits of involvement with the organization, which include important networking opportunities, awareness of current research findings, making contributions to the transportation community as a whole, and attending an annual meeting that typically attracts 8,000 transportation professionals from the U.S. and abroad. For more information, visit www.trb.org.

Tümay Family Creates Memorial Fellowship



Note: Dr. Mehmet Tümay, a current member of LTRC's Policy Committee, was LTRC's Associate Director, Research for several years.

The Peri Tümay, DVM, Memorial Fellowship has been established in memory of Peri Tümay who earned a Doctor of Veterinary Medicine in 1996 from the LSU School of Veterinary Medicine. Peri graduated from Baton Rouge Magnet High School in 1985 as a National Merit Scholar and received her Bachelor of Science degree in Dairy Science from LSU

in December 1990. Peri was married to Dr. James Carrol Roden who is also a graduate of the LSU School of Veterinary Medicine.

Dr. Mehmet Tümay, Associate Dean for Research and Graduate Studies in the LSU College of Engineering, and his wife Karen have made a donation to the LSU Foundation to establish the fellowship as a legacy to their daughter, Dr. Peri Tümay, who died in Istanbul, Turkey, on January 7, 2003.

"This is a remarkable tribute to remember such an outstanding veterinary student and professional. While serving as a lasting memori-

al for Peri, this fellowship will encourage future veterinarians to achieve her high standard for academic excellence and her compassion for animals," said Dr. Michael G. Groves, Dean of the LSU School of Veterinary Medicine.

Contributions to the Peri Tümay, DVM, Memorial Fellowship may be made to the LSU Foundation.

by Elizabeth Nealy

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Work Zone Traffic Control

Training Program Implemented

The Department of Transportation and Development, or LADOTD, through the Louisiana Work Zone Task Force, recently identified the need for an extensive multi-year Work Zone Traffic Control Training Program. Implemented in April of 2003, this program will continue through April of 2006.

The Work Zone Traffic Control Training Program delivered by the American Traffic Safety Services Association (or ATSSA) will provide LADOTD employees and industry personnel involved in work zones statewide with the skills and knowledge of current work zone safety standards and practices. This training will help ensure the consistent implementation of work zones throughout the state, on every LADOTD project, improving both the safety and mobility in Louisiana's work zones.

The Training Program includes the following courses:

Traffic Control Technician (TCT) - This one-day workshop session covers the underlying principles of temporary traffic control as set forth in the Manual on Uniform Traffic Control Devices (MUTCD) and provides the student with the practical knowledge, techniques, and instruction on the installation and maintenance of traffic control devices enabling them to apply practical concepts. This will be a basic course that is a prerequisite to the Traffic Control Supervisor, the Traffic Control Design Specialist, and the Flagger Instructor courses.

Traffic Control Supervisor (TCS) - This two-day, advanced training course covers the specific job-related duties of a Traffic Control Supervisor. The following topics are covered: traffic control standards: manuals, fundamental principles, devices, components, plan reading; driver considerations: planning, design, inspection, liability discussion; enhancements and phasing of traffic control; supervisory skills needed in making decisions; and temporary traffic control.

Traffic Control Design Specialist (TCDS) - This two-day training course addresses the factors that influence the design, installation, maintenance and evaluation of traffic controls for temporary traffic control conditions. The course includes the following topics: how to apply the roadway design elements to a traffic control plan; how to read, interpret and apply traffic engineering factors to the traffic control plan; how to recognize the relationship of traffic control plans in relation to the overall risk management in highway work zones; how to locate the sources for standards, guidelines, and specifications governing the design of traffic control plans; a demonstration of the techniques and procedures for designing an effective, efficient and safe traffic control plan for roadway work zones; how to conduct inspections of the traffic control system during operations and implement adjustments needed when conditions warrant; and the proper procedures to use for follow-up action and disposition of documentation.

Flagger Course - This six-hour training course addresses the fundamental concepts, usage, and proper procedures for trained and responsible work zone flaggers. The course includes proper flagging procedures; standard flagging equipment; proper signing for flaggers; correct flagger positioning; who's in charge of work zones; and flagger rules of conduct.

Flagger Instructor Training - This two-day, "Train-the-Trainer" course provides comprehensive training in the approach and presentation of information and material required to train flagger trainees in the fundamental concepts, usage, and procedures of flagging.

You may obtain additional information and registration forms by contacting your local District Training office and / or Treba Patin, LTRC, 225-767-9155, or email trebaspatin@dotd.louisiana.gov.

(Complete registration forms and fax them to Treba Patin, LTRC, 225-767-9178.)

FHWA Mobile Asphalt Laboratory (cont. from page 1)

FHWA team: the US 190 base and binder course and the LA 964 wearing course, all under construction by Sullivan Construction Co. in the Baton Rouge area.



tions along with initial characterization of our mixture.

Now that there is finally a device that can be operated by more personnel, the biggest challenge LTRC faces is deter-

mining which test parameters to use for each mix application. In due time, the SPT will bring strength testing back into the plant laboratory where it belongs.

Although the SPT machine requires a 4" diameter core out of an asphalt specimen 6"-tall, made by a gyratory compactor, the total testing time is minimal, and the software very quickly provides modulus values at multiple frequencies and temperatures. Additionally,

any technician can perform the test with a limited degree of standard training, as the complex mathematical computations and machine settings are performed automatically.

LTRC and FHWA have performed tests on split samples to compare lab varia-



Concrete Workshops Combine LADOTD and Private Industry Resources

This spring, LTRC's materials research division sponsored a series of concrete workshops as part of an

ongoing effort to implement new technologies, educate transportation professionals, and partner with private industry. John Eggers, LTRC's Senior Concrete Research Engineer, developed and coordinated the workshops with representatives from private industry, LTRC, and LADOTD serving as workshop facilitators. Nearly 200 LADOTD personnel, city and parish employees, and contractors attended the interactive one-day meetings that were held in Alexandria, Hammond, Lafayette, and Ruston.

Designed for technicians and field personnel, the workshops served as a refresher course in concrete basics and good field practices. The workshops began with a review of mix designs along with plant and job site preparations. Quality control and quality assurance (QC/QA) practices were covered next, followed by presentations on the variety of pavement and structural uses for concrete. New topics in the field, such as the use of high performance concrete (HPC), were also addressed. Workshop participants used the forum to ask questions about specification changes for paving concrete gradation and new flexural strength requirements for Portland cement concrete (PCC) pavements. Finally, a practical troubleshooting discussion dealt with lessons learned from previous mistakes, how to stop problems before they start, and how to most efficiently correct problems after they occur.

Concrete Workshop Leaders

- Darrell Elliot, Lonestar Industries
- B.J. Eckholdt, Lafarge Concrete
- Craig Duos, Concrete and Aggregates Association of Louisiana (CAAL)
- John Eggers, LTRC
- Sadi Torres, LTRC
- Sarah Kemp, LADOTD
- Mike Ricca, LADOTD
- Don McMahon, LADOTD

For more information on the concrete workshops, contact John Eggers at (225) 767-9103.



B.J. Eckholdt of Lafarge Concrete discusses trial batch preparation.

The statewide workshops updated field personnel on new topics in the concrete industry.

"Our post-workshop evaluations indicate that these workshops were of great value to the participants," Eggers said. "It is LTRC's intent to continue to provide leadership in concrete technology to the transportation industry by providing periodic workshops."