Test Track Update

Traffic loading at the NCAT Pavement Test Track is currently about 43 percent complete (4.3 million ESALs). The trucking contractor (Covenant Transport) has worked aggressively to stay on schedule to complete the work by mid-November of 2002, as planned. This effort is reflected in their progress plot now lying directly on top of the “ideal” line.

Only two incidents worthy of report have occurred since full traffic was allowed to begin in November of last year. The first incident, which occurred in the Spring, resulted from the simultaneous shearing of every lug stud on the last axle of one of the trailer trains. When this happened, one of the dual wheels flew off into the infield and the other flew off into the outfield. The driver managed to stop the vehicle without incident, and the next truck pulled into the inside (emergency) lane to avoid contact. We hope to find the missing wheels when snake season has safely passed.

In the second incident, a driver drifted a little too far over onto the shoulder and clipped a sign that hosted one of twenty-three datalogging systems that monitor pavement temperature and subgrade moisture within each experimental section. We were pleased to find that the driver, the truck, and the datalogging system all survived the incident without damage; however, the datalogger had to be remounted.

One of the most exciting aspects of the work is directed towards identifying any relationship that may exist between roughness and fuel consumption. Through the end of August of this year, we have observed what appears to be a distinct relationship between the two parameters; however, it is unclear how air and pavement temperatures may affect our findings over the Winter. (Figure 1)

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Figure 1. Fuel Economy and Roughness vs Time

Continued on Page 11
Update on the Southeast Asphalt User Producer Group (SEAUPG) Mix Design Task Group

At the 2000 meeting, the Southeast Asphalt User Producer Group (SEAUPG) Mix Design Task Group had presented several topics of interest which deal with hot mix asphalt mix design. The goal is to keep agency and industry personnel informed of current research, which addresses questions concerning equipment, test procedures, and mix design procedures. Specifications related to mixture properties, design requirements, and certifications programs are also discussed.

Some of the recent presentations to the Mix Design Task Group involved differences in density between Superpave gyratory compactors, use of the Corelok device, and use of the Asphalt Pavement Analyzer (APA) for fatigue testing of asphalt mixtures. NCAT is currently evaluating differences in observed bulk specific gravities obtained from different Superpave gyratory compactors in Alabama. The FHWA Angle Verification Kit is also being used to measure the gyration angle internally during this study. Internal angles may be able to show why some have observed differences in density between different Superpave gyratory compactors. The FHWA is leading an effort to develop protocols to resolve the gyratory compaction issues.

The Corelok device has been used to determine the maximum specific gravity of the mix as well as the bulk specific gravity of compacted specimens. A Round Robin of southeastern states has recently been completed as well as joint testing through a national pooled-fund research study.

The APA has been used for several years to evaluate rutting susceptibility of asphalt mixtures. With some modification in sample preparation and test temperature, the APA has the potential of being able to perform fatigue testing as well. More research is needed to develop an APA fatigue test method, but it may be possible to perform both rutting and fatigue testing using the same specimen. There is also interest in developing a moisture susceptibility test using the APA.

Use of Asphalt Pavement Analyzer (APA) Increases

An informal poll by the APA Users Group indicates that several state highway agencies now use an APA rutting test to screen mix designs in specific situations. Georgia and Utah, which gained experience with the loaded wheel tester through the past decade, require all mix designs pass their rutting test. A handful of other states require the test only for mixes passing through the restricted zone or other similar situations.

Most states, however, have yet to find the level of confidence needed to utilize the test to accept or reject mixtures. “We have been working to reduce the test variability, and evaluating a lot of Superpave mixes, but it may be another year before we are comfortable with actually requiring mixes to pass a specific criteria,” says Greg Sholar of the Florida DOT. Greg Duncan of the Tennessee DOT indicates that they have found that the APA rutting test to be most sensitive to binder stiffness and not necessarily a good indicator of the strength of the aggregate structure.

Meanwhile, NCAT is wrapping up a major study to refine the procedure to give the best possible correlation to field rutting performance. Several significant changes are expected to be recommended by NCAT. The final report on the study is due early in 2002.

“Even after those refinements are made, the method will probably continue to evolve,” says Randy West of APAC. “There are several good ideas going around to simplify and improve the rutting test which also need to be evaluated,” adds West. Several researchers also continue to experiment with other tests in the APA including moisture damage tests, fatigue tests, and a friction test. The best way to stay informed on the status of all of these efforts is to attend the annual APA Users Group meeting which will be held just prior to the Southeast Asphalt User/Producers Group Meeting in Jackson, MS. For more information on the APA Users Group contact Randy West at 404-603-2774 or rcowest@ashland.com.
Continued from Page 1

When rutting is averaged for all sections and presented as a function of ESAL accumulations, the effect of temperature variation is clearly demonstrated. (Figure 3) No cracking of any type has been observed as of this date. The accumulation of rutting vs. temperature is shown in Figure 4.

We have been working to improve the web presentation throughout the course of the research in order to keep section sponsors better informed. Surfers are now advised of relatively current environmental conditions, ESAL count, and the range of observed rutting from the home page. In this manner, interested parties can become quickly informed of current conditions without spending a lot of time linking to other pages (unless they need more detailed information).

It is critical that we receive input and guidance from our research sponsors; consequently, the next onsite sponsor meeting is scheduled for November fifth and sixth. This meeting will follow the same format as the June meeting, where we convened at the Track at 1:30 on Monday afternoon for inspections and data collection observations, reassembled at 8:30 the next morning in the NCAT classroom, and adjourned at 12:00 noon after the technical reviews had been completed. Travel will be reimbursed by the pooled fund for one representative from each sponsoring entity, but additional sponsor attendees are welcome.
# Calendar of Events

## 2001

<table>
<thead>
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<th>Date</th>
<th>Event</th>
<th>Location</th>
<th>Contact Information</th>
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<tbody>
<tr>
<td>Nov 14-16</td>
<td>Asphalt Pavement Alliance Asphalt Pavement Conference</td>
<td>Doubletree Hotel, Austin, Texas</td>
<td>Contact: Asphalt Pavement Alliance, 888/468-6499, <a href="http://www.asphaltalliance.org">www.asphaltalliance.org</a></td>
</tr>
<tr>
<td>Nov 27</td>
<td>Annual Asphalt Pavement Analyzer Users Group Meeting</td>
<td>Hilton, County Line Road, Jackson, MS</td>
<td>Send discussion questions to <a href="mailto:rcwest@ashland.com">rcwest@ashland.com</a>, fax: 404/603-2770</td>
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<tr>
<td>Nov 28-30</td>
<td>SEAUPG Annual Meeting</td>
<td>Jackson Hilton on County Line Road, Jackson, MS</td>
<td>Contact: Jill Baumgardner, E-Mail: <a href="mailto:SEAUPG@aol.com">SEAUPG@aol.com</a></td>
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<tr>
<td>Nov 30-Dec 4</td>
<td>AASHTO Annual Meeting</td>
<td>Fort Worth, Texas</td>
<td>Website: <a href="http://www.aashto.org/mtng_events/">http://www.aashto.org/mtng_events/</a></td>
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<tr>
<td>Dec 11-13</td>
<td>Second Annual Asphalt/Concrete Materials and Testing Workshop for FHWA Engineers: 2002 Pavement Design Guide</td>
<td>Jackson Hilton on County Line Road, Jackson, MS</td>
<td>Contact: Jill Baumgardner, E-Mail: <a href="mailto:SEAUPG@aol.com">SEAUPG@aol.com</a></td>
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## 2002

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<tr>
<td>Feb 25-28</td>
<td>SAASTHO Quality Workshop</td>
<td>Embassy Suites, Kingston Plantation, Myrtle Beach, SC</td>
<td>Contact: Milt Fletcher, South Carolina DOT</td>
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<tr>
<td>April 14-17</td>
<td>International Center for Aggregates Research (ICAR) 10th Annual Symposium</td>
<td>Baltimore, MD</td>
<td>Contact: ICAR, (512) 471-4498, Web: <a href="http://www.ce.utexas.edu/org/icar">www.ce.utexas.edu/org/icar</a></td>
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The National and Regional Superpave Newsletters are published three times a year and are coordinated by the North Central Superpave Center.

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