

ASTM Update
to the
LRI Gear Oil Review Committee

May 14, 2015

J. L. Gropp

Chairman, ASTM Section D02.B0.03

Status of the ASTM D7038 (L-33-1) Test

- Test availability and operation
 - Test stands available at multiple labs
 - No known test stand-related problems
- Hardware
 - Supplies of hardware diminishing
- General
 - Labs working on next-generation test
 - Will use American Axle “K2XX” axle
 - Testing on pilot batch showed good discrimination between good and poor reference oils
 - Large batch of hardware has been ordered
 - Expect delivery in 2nd quarter CY 2015
 - Targeting 3rd / 4th quarter CY 2015 for finalization/approval of test procedure

Status of the ASTM D6121 (L-37) Test

- Test availability and operation
 - Test stands available at multiple labs
 - No known test stand-related problems
- Hardware
 - Limited availability of supplier-built axles
 - Surveillance Panel developed procedure to enable labs to build axles using pinions and rings from approved batch of hardware
 - Requires multiple tests on good and poor reference oils to insure quality and consistency of build process at each lab
- General
 - Labs continuing work on next-generation test
 - Details on following slide

Status of the “Next-Generation” L-37 Test

- Uses L-37-type hardware manufactured by Gleason
- Hardware available at all test labs
- Lab audits and axle-build workshop have been completed
- Testing on reference oils is in progress
 - Intended to evaluate new test procedure and this batch of hardware
- Expect several companies to evaluate various commercial formulations following completion of reference oil test matrix
 - Need to insure that results correlate with historic data
- Targeting 4th quarter of CY 2015 or 1st quarter of CY 2016 for finalization and approval of test procedure

Status of the ASTM D7452 (L-42) Test

- Test availability and operation
 - Test stands available at multiple labs
 - No known test stand-related problems
- Hardware
 - Hardware shortage is over - New batch of hardware has been approved
- General
 - Labs starting discussion on development of next-generation test
 - Details on following slide

Status of the “Next-Generation” L-42 Test

- Current test stand uses a gasoline engine and manual transmission to drive the axle
- Next-generation test stand will use an electric motor as the power source
 - Will continue to use current L-42 axle
- Hope to see some initial test results in 3rd quarter of CY 2015

Status of the ASTM D5704 (L-60-1) Test

- Test availability and operation
 - Test stands available at multiple labs
- Hardware
 - Large quantity of test gears available at all labs
- Surveillance Panel has been asked to focus more attention on addressing ongoing test severity trend
 - Concern that test may not be operating at it's historic level of severity
 - Question is: Could oils which previously gave acceptable results in this test no longer do so?
 - Will require in-depth review of changes made in test since it's introduction and possible affects these changes may have had on test severity

Status of the ASTM D5579 (Cyclic Durability) Test

- Test availability and operation
 - Continues to be only one calibrated stand within the industry
 - Has been able to meet industry's needs
 - No known test stand-related problems
 - Test severity at historic levels
- Hardware
 - Adequate supplies of hardware available

Status of the ASTM D5662 (Oil Seal Compatibility) Test

- Test availability and operation
 - Test can be conducted at multiple labs
 - No known test stand (bath)-related problems
- Hardware
 - Adequate supplies of elastomer available
- Reference oils
 - Will phase-in a new reference oil to replace TMC 168
 - Suitable replacement has been identified
 - Used in the Nitrile seal portion of the test