

ASTM Update
to the
LRI Gear Oil Review Committee

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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
 - Industry ordering large batch of hardware
 - Expect delivery in 1st quarter CY 2015
 - Targeting 2nd 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
 - Inventory of supplier-built axles diminishing
 - 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

- Eventual replacement for the current L-37 test
- Test stands updated to improve consistency of test results
 - Use electric motor (in place of gasoline engine) as power source
 - Eliminate use of manual transmission
- Use L-37-type hardware manufactured by Gleason
- Hardware currently arriving at test labs
- Lab visits and axle-build workshop will be held in 4th quarter CY 2014 and 1st quarter CY 2015
- Targeting 2nd / 3rd quarter of CY 2015 for finalization/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
 - Supplies of hardware diminishing
 - Assembly of new batch of hardware in progress
 - Expect labs to begin receiving in December
 - Should have new batch approved for use in 1st quarter CY 2015
- 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 may use an electric motor as the power source
 - Expected to improve test precision
- Longer-term, may want to use a downsized version of current hardware in a reusable fixture
 - Goal would be to improve precision and reduce cost
 - Eliminate variability related to test stand and/or axle
 - Eliminate cost related to current practice of discarding used axle housing, carrier, etc.
- Do members of the LRI Review Committee consider this to be a viable approach?

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

- Test availability and operation
 - Test stands available at multiple labs
- Hardware
 - Adequate supplies of test gears available
- General
 - Surveillance Panel continuing to investigate cause(s) for differences in test severity between labs
 - Industry-wide severity trend (severe) has existed for several years
 - Recent introduction of new batch of hardware may be having an effect
 - Situation is confusing
 - Different reference oils responding differently
 - Not all labs responding in the same manner

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
 - Third test lab is now “on line”
 - No known test stand (bath)-related problems
- Hardware
 - Adequate supplies of elastomer available