

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
 - Very limited supply of hardware available
- General
 - Labs working on next-generation test
 - Will use American Axle “K2XX” axle
 - Reference oil testing on large batch of hardware nearing completion
 - Need to ensure that test maintains historic level of severity
 - Targeting 2nd quarter of CY 2016 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
 - Very limited supply of supplier-built axles available
 - Procedure which enables labs to obtain approval to build axles in-house using pinions and rings from approved batch of hardware is in place
- General
 - Labs continuing work on next-generation test
 - Details on following slide

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

- Uses L-37-type pinion and ring manufactured by Gleason
- Current process is for each lab to retrofit an existing L-37 axle housing and carrier with the Gleason pinion/ring
 - Long-term plan is to develop a reusable fixture
- Have identified test conditions which:
 - Show discrimination between good and poor reference oils
 - Produce acceptable results on commercial oils with proven performance in the existing L-37 test and the field
- Currently working to complete testing on reference oils, develop reference oil acceptance bands, finish writing test procedure in ASTM format, etc.
- Targeting 2nd or 3rd 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
 - Ample supplies of hardware available

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 addressed issue of ongoing test severity trend
 - Required introduction of an industry-wide correction factor for Carbon/Varnish
 - Returns test to historic/original level of 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
 - New reference oil to replace TMC 168 has been identified and is being phased in
 - Necessary because supply of TMC 168 is low, and oil can not be reblended
 - Used in the Nitrile seal portion of the test
 - May introduce TMC 155-1 (the Category Reference Oil) as an additional reference oil at some future date