

ASTM Update  
to the  
LRI Gear Oil Review Committee

February 7, 2013

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Chairman, ASTM Section D02.B0.03

## Status of the ASTM D 7038 (L-33-1) Test

- Test availability and operation
  - Test stands available at multiple labs
  - No known test stand-related problems
- Hardware
  - Adequate supplies of hardware available
    - Unsure of continued availability of current hardware
  - Labs evaluating alternate axle
    - American Axle “K2XX”
    - Currently running tests on good and poor reference oils to confirm viability of hardware
    - Will need to develop rating templates, verify weighting factors, etc.

## Status of the ASTM D 6121 (L-37) Test

- Test availability and operation
  - Test stands available at multiple labs
  - No known test stand-related problems
- Hardware: Non-lubrited
  - Evaluation of new batch of hardware has completed
  - Hardware was found to produce severe results on reference oils in both Standard and Canadian versions of test
  - Surveillance Panel voted to approve new batch of hardware in December, 2012
    - Required correction factors for Rippling and Ridging in Standard test, correction factor for Rippling in Canadian test, and exclusion for Spalling on pinion teeth to compensate for hardware-related severity
  - Information Letter to update test procedure currently being balloted
  - Final approval of hardware on “hold” pending outcome of this ballot

## Status of the ASTM D 6121 (L-37) Test, continued

- Hardware: Lubrited
  - Evaluation of new batch of hardware has completed
  - Hardware was found to produce severe results on reference oils in both Standard and Canadian versions of test
    - Was necessary to reduce load/contact stress, as was done with previous batch of non-lubrited hardware, in order to prevent catastrophic failure
  - Surveillance Panel voted to approve new batch of hardware in December, 2012
    - Required correction factor for Ridging in Standard test, correction factors for Rippling and Ridging in Canadian test, and exclusion for Spalling on pinion teeth to compensate for hardware-related severity
  - Information Letter to update test procedure currently being balloted
  - Final approval of hardware on “hold” pending outcome of this ballot

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

- Eventual replacement for the current L-37 test
- Work to finalize test procedure continues
- Initial results on reference oils looked promising
- Testing on two oils of known performance in the current L-37 test yielded unexpected (severe) results
- Investigating effect of modifications in test conditions
  - Looked at changes in oil temperature and oil charge
    - Both produced positive effect, but may have moved test too mild
  - Developing plan for additional modifications/evaluations
    - Extend test length?
    - Re-adjust oil charge?

## Status of the ASTM D 7452 (L-42) Test

- Test availability and operation
  - Test stands available at multiple labs
  - No known test stand-related problems
- Hardware
  - New batch of hardware has been approved
    - Drive-side scoring seen in pilot batch was found to be due to an error in manufacture of this initial batch of parts
    - Large batch of hardware was manufactured properly
- Beginning discussion on development of a replacement test
  - Improve configuration and standardization of test stands
  - Move to more modern hardware

## Status of the ASTM D 5704 (L-60-1) Test

- Test availability and operation
  - Test stands available at multiple labs
  - No known test stand-related problems
- Hardware
  - Adequate supplies of test gears available
- General
  - Panel agreed to adopt use of a fixture to hold gears at specific angle, specified distance from light, etc.
    - Expected to improve consistency of ratings

## Status of the ASTM D 5579 (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 stand-related problems
  - Test severity at historic levels
- Hardware
  - Manufacturer made change in style of sliding clutch assembly
  - Evaluation of new style hardware has completed
  - Testing showed change in hardware did not affect test results
  - Surveillance Panel has approved use of new hardware



## Status of the ASTM D 5662 (Oil Seal Compatibility) Test

- Test availability and operation
  - Baths available at two labs
  - No known “stand” (bath) related problems
- Hardware
  - Adequate supplies of elastomer available