

ASTM Update  
to the  
LRI Gear Oil Review Committee

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## 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

## 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
  - Test severity (with approved hardware) at historic levels
- Hardware: Non-lubrited
  - Adequate supplies of hardware available

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

- Hardware: Lubrited
  - Shortage of hardware continues to be a concern
  - Manufacturer produced a new pilot batch of hardware with optimized geometry, heat-treating, lapping, etc.
    - Both pinion and ring lubrited
    - Results of evaluation mixed - Generally encouraging, but some failures on one of the good reference oils
    - Subsequent testing indicated that reducing the test length to twenty hours might be a viable approach
  - Manufacturer also produced a “companion” batch of hardware where only the ring was lubrited
    - Testing suggested that this, too, might be a viable approach
  - Following a detailed review of the options, the Surveillance Panel decided that a reduced-length test where both the pinion and the ring are lubrited is the preferable approach
    - Additional testing to solidify decision is underway
  - Hope to have hardware approved and available for candidate oil testing by the end of the year

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

- Next-generation Test
  - Surveillance Panel working on development of next-generation test
    - Will use an electric motor as the power source, will eliminate the use of a transmission, will consider the use of hardware from various/alternate sources, etc.
  - Two laboratories have been (independently) conducting test development activities
    - One lab using ground gears from Gleason
    - One lab using current production hardware from American Axle
    - Both labs evaluating both lubrited and non-lubrited hardware
    - Initial results from each lab are encouraging
    - Additional testing is being conducted in each stand/procedure/hardware
  - Task Force has been formed to coordinate future investigations and test-development work
  - Goal is to have a procedural outline finalized in late CY 2011 or early CY 2012

## 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
  - Test severity at historic levels
- Hardware
  - Most labs have sufficient hardware to last until the next batch is available
    - One lab has depleted their inventory
  - Labs have placed order for new batch
  - New batch should be available and approved in 4<sup>th</sup> quarter of CY 2011 or 1<sup>st</sup> quarter of CY 2012

## 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
- Test severity
  - ASTM Test Monitoring Center visited labs to determine cause behind severity alarms (severe) for Insolubles
    - Identified several areas for improvement in ASTM D893 Test Method
    - Working within ASTM to incorporate changes/improvements in the ASTM D893 Test Method
- Hardware
  - Adequate supplies of hardware available
  - Surveillance Panel is in the process of ordering a new batch of hardware

## Status of the ASTM D 5579 (Cyclic Durability) Test

- Test availability and operation
  - Currently only one test stand available within the industry
    - Test stand at second lab being relocated
    - Timing for availability of second stand uncertain
    - The available stand has been able to meet the industry's needs
  - No known stand-related problems
  - Test severity at historic levels
- Hardware
  - Adequate supplies of hardware available
    - Industry recently received and approved a new batch of 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
  - Test severity at historic levels
- Hardware
  - Adequate supplies of elastomer available
- Reference Oils
  - Adequate supplies of reference oils are available
  - Developing data on replacement for TMC 161, which will not be available in the (distant) future

## Update on Proposed Category PM-2

- New performance category to define lubricants for commercial vehicle synchromesh manual transmissions and transaxles
  - Service fill applications
- Work on development of this Category has been suspended
  - Task Force unable to identify a standardized pitting test which will be universally accepted
  - Also unable to identify oils with known acceptable and unacceptable performance in the field
  - Response to industry requests for support/assistance on both items has been minimal
- SAE Technical Committee 3 has been requested to revalidate the interest in and need for this Category
  - Indications are that the need for this Category no longer exists
  - Awaiting formal response from SAE TC3