

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.
 - Results of initial evaluation mixed - Generally encouraging, but some failures on one of the good reference oils at one lab
 - Additional testing will be conducted
 - May conduct testing under modified test conditions as a contingency
 - Manufacturer also producing a “companion” batch of hardware where only the ring has been lubrited
 - Will conduct limited testing as a contingency
 - Manufacturer has been instructed to proceed with manufacture of the full batch of hardware
 - Approximately 2000 pinions and rings
 - Some portion of batch will be lubrited, remainder will remain as non-lubrited
 - Decision on lubriting – both pinion and ring or ring only – will be made based upon results of above testing
 - Intent is to have hardware available and approved before end of the year

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

- Next-generation Test
 - Surveillance Panel beginning work on development of next-generation test
 - Two laboratories have (independently) conducted some initial evaluations
 - One lab evaluated ground gears from Gleason using a fired engine test stand
 - Follow-up work will be conducted in an electric motor-driven test stand
 - One lab evaluated current production hardware from American Axle using an electric motor-driven test stand
 - Both labs evaluated both lubrified and non-lubrified hardware
 - Both labs were able to distinguish between good and poor-performing oils (as determined by performance in the L-37 test)
 - Additional testing will be 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 through late CY 2011
 - Possibly somewhat longer
 - One lab has nearly depleted their inventory of hardware
 - Labs have placed order for new batch
 - Will be manufactured at same location as previous batches, but assembled at a new location
 - Task Force visited new assembly location and was very encouraged by the level of interest being expressed
 - New batch should be available and approved in 4th quarter of CY 2011

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 beginning process of ordering 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
 - No known stand-related problems
 - Test severity at historic levels
- Hardware
 - Adequate supplies of hardware available
 - Industry recently received new batch of hardware
 - Hardware being introduced as stands are due for calibration
 - Initial results on both good and poor reference oil fell within current reference oil acceptance bands

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
 - Will evaluate new elastomers which may be more representative of current production materials
- Reference Oils
 - Adequate supplies of reference oils are available
 - Developing data on replacement for TMC 161 (which will not be available in the 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