

ASTM Update  
to the  
LRI Gear Oil Review Committee

November 16, 2006

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

- Test availability and operation
  - Multiple stands available at multiple labs
  - No known test stand-related problems
  - Slight severity trend (severe)
    - May be primarily attributable to one lab
    - Test Monitoring Center (TMC) working with lab to identify and address source of problem
- Hardware
  - Adequate supplies of hardware available
- General
  - Adopted standardized rating templates for Area 2 and Area 4

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

- Test availability and operation
  - Test stands available at multiple labs
  - No known test stand-related problems
  - Test severity at historic levels
- Hardware
  - Both lubrited and non-lubrited hardware is in short supply
  - Production of a new batch of lubrited hardware is in progress
    - Delivery anticipated in 4<sup>th</sup> quarter of 2006
  - Recent batches of hardware have required correction factors to compensate for offsets in performance on reference oils
- General
  - Rater calibration process is in place (and working)
  - Raters developing new / improved rating aids
  - Recently introduced two new reference oils

## Status of L-42 Test

- Test availability and operation
  - Test stands available at multiple labs
  - Significant effort / activity directed at standardization of test stands
  - No known stand-related problems
    - Working to reduce test-to-test variability
  - Test severity at historic levels
- Hardware
  - Hardware is in short supply
  - Evaluation of a new batch of hardware is in progress
    - Promising results obtained on a pilot batch
    - Remainder of batch currently being manufactured / assembled
    - Delivery anticipated in 4<sup>th</sup> quarter of 2006
- General
  - Procedure written in ASTM format – ASTM ballot under consideration

## Status of L-42-1 Test

- Test availability and operation
  - Will use the same test stands and hardware as the L-42 test
  - Hope to implement tighter controls on test operation than current L-42 test procedure
    - Difficult to accomplish in a dynamic test
  - Ongoing activity

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

- Test availability and operation
  - Multiple stands available at multiple labs
  - No known stand-related problems
  - Slight severity trend (severe)
    - Activity to improve test stand standardization may address
    - Severity Bias Adjustment process in place to compensate for minor test stand severity offsets
- Hardware
  - Adequate supplies of hardware available

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

- Test availability and operation
  - One calibrated stand available at each of two independent labs
    - Additional, non-calibrated stands are also available
  - No known stand-related problems
  - Slight severity trend (severe)
    - May be related to move to newer hardware
    - Reference oil results were recently updated to reflect use of newer hardware – May address severity question
- Hardware
  - Adequate supplies of hardware available

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

- Test availability and operation
  - Multiple baths available at two independent labs
  - No known “stand”-related problems
  - Test severity at historic levels
- Hardware
  - Recently implemented new batch approval process for elastomers
  - Calibration process recently modified to make better use of elastomers and other resources
  - Adequate supplies of all elastomers are available
- General
  - Several recent improvements were made in the equipment calibration process
  - Recently introduced a new reference oil for Nitrile seal material



## Rating Task Force Update

- Calibration Workshop meetings being held every six months
  - Intended to improve accuracy and precision of ratings in all tests
- Working to improve rating aids
  - New photos for the L-37 test
  - Will re-evaluate use of “molds” in the L-37 test
    - Focus on improving rating of Wear and Ridging
- Adopted better definitions of wear in the L-37 test
- Refining definitions of wear and polish in the L-42 test
- Developed and adopted use of standardized rating templates for Area 2 and Area 4 in the L-33-1 test

## API Category GL-5 Task Force Update

- API Category GL-5 has been written in the form of an ASTM Standard
- New document will address several issues
  - Old document described performance based upon the use of outdated tests – New document references current tests
  - New document specifies tests required by viscosity grade of finished lubricant – Eliminates confusion, ambiguity
  - New document requires additional testing on SAE 75W-xx grade lubricants – Better reflection of current wants / needs of the Original Equipment Manufacturers
  - No process in place to keep old document current – ASTM Standard will be routinely updated
- Document ready for ballot within ASTM

## PM-2 Task Force Update

- Proposed performance category for synchronized manual transmissions in commercial vehicles
- Includes numerous performance tests which are appropriate for lubricants intended for use in manual transmissions
  - Emphasis on wear protection, elastomer compatibility, resistance to oxidation, synchromesh performance, etc.
- Pass/fail limits have been proposed for several of the performance tests
- Reference oils are required to identify appropriate pass/fail limits for remaining tests
  - Task Force has solicited input and assistance from SAE Technical Committee 3