Section D02.B0.03 Status Report
to
Subcommittee D02.B0

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ASTM Section D02.B0.03

- Scope
  - This Section is responsible for the promotion of knowledge of, and specifications, test methods and terminology for automotive gear lubricants and fluids. This includes gear lubricants used in rear drive axles, power dividers, and fluids used in manual and automatic transmissions of wheeled or track laying vehicles such as passenger cars, recreation vehicles, taxicabs, trailers, trucks, buses, tractors, construction and farm vehicles.
- Objectives
  - Keep existing performance tests operational, at historic severity and precision levels.
  - Ensure that performance test parts and reference oils are available in adequate supply and of a consistent quality.
  - Develop and maintain performance tests for gear lubricant and transmission fluid categories.
  - Maintain surveillance of test procedures under Section jurisdiction.
  - Work to improve test precision and correlation with field service.
  - Maintain active liaison with related organizations (CEC, SAE, API, etc.)

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Test Procedures Under the Jurisdiction of Section D02.B0.03

Common Designation	ASTM Designation	Purpose of Test
L-33-1	D 7038	To evaluate the rust and corrosion-inhibiting properties of a water-contaminated lubricant
L-37	D 6121	To evaluate the load-carrying, wear, and extreme pressure properties of a lubricant under low-speed, high-torque conditions
L-42	D 7452	To determine the anti-scoring properties of a lubricant subjected to high-speed and shock conditions
L-60-1	D 5704	To evaluate the thermal and oxidative stability of a lubricant
High Temperature Cyclic Durability	D 5579	To evaluate the thermal stability of a lubricant in a high temperature, cyclic durability test
Oil Seal Compatibility	D 5662	To determine the compatibility of a lubricant with specific polyacrylate, fluoroelastomer, and nitrile seal materials
Storage Stability & Compatibility	D 7603	To insure that lubricants maintain their integrity during storage, and that they are compatible with other lubricants intended for use in similar applications

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- Tests under the jurisdiction of the Section are used to evaluate lubricants under the following performance categories:
  - ASTM D 7450
    - Lubricants for automotive axles
    - Update of API Category GL-5
  - ASTM D 5760
    - Lubricants for non-synchronized manual transmissions in buses and heavy-duty trucks
    - Also known as API Category MT-1
  - SAE J2360
    - Multipurpose gear-lubricating oils
    - Technical equivalent of the MIL-PRF-2105E Specification
      - Cancelled on February 16, 2005
  - Proposed Category PM-2
    - Lubricants for synchronized manual transmissions in commercial vehicles
    - Detailed discussion to follow

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- Update on Test Procedures
  - All tests under the jurisdiction of the Section are available for use
    - Status of ASTM D 7038 (L-33-1) test
      - No test stand or hardware problems to report
    - Status of ASTM D 6121 (L-37) test
      - No test stand problems to report
      - Adequate supplies of non-lubrited hardware available
      - Shortage of lubrited hardware continues to be a problem
        - » Recent pilot batch (with both pinion and ring lubrited) produced mixed results - Additional testing is underway
        - » Manufacturer also producing pilot batch with only the ring lubrited (as a back-up plan)
        - » Manufacturer was instructed to proceed with production of full batch of (non-lubrited) hardware. Results of above testing will determine how parts will be lubrited

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- Update on Test Procedures, continued
  - Status of ASTM D 6121 (L-37) test, continued
    - Surveillance Panel beginning work on development of next-generation test
      - » Will use electric motor, updated hardware, etc.
      - » Two laboratories conducted some preliminary development work
      - » One laboratory used ground gears from Gleason - Other laboratory used production hardware from American Axle
      - » Both laboratories evaluated non-lubrited and lubrited hardware
      - » Both labs able to distinguish between good and poor oils
      - » Task Force formed to coordinate future investigations and test development
      - » Goal is to have a procedural outline developed in late CY 2011 or early CY 2012

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- Update on Test Procedures, continued
  - Status of ASTM D 7452 (L-42) test
    - No test stand or hardware problems to report
    - Supplies of test hardware are diminishing
      - » New batch of hardware has been ordered
      - » Should be available and approved in 4th quarter of CY 2011
  - Status of ASTM D 5704 (L-60-1) test
    - No test stand or hardware problems to report
    - New batch of hardware being ordered
    - Test continues to be slightly severe on Carbon/Varnish Deposits and Toluene Insolubles
      - » Not hampering ability to conduct testing
      - » Laboratory visits by ASTM Test Monitoring Center identified several potential improvements to ASTM D893 (Insolubles) Test Method

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- Update on Test Procedures, continued
  - Status of ASTM D 5579 (High Temperature Cyclic Durability) test
    - No test stand or hardware problems to report
    - New batch of hardware has been introduced
    - Currently only one test stand available within the industry
      - » Has been able to meet industry's needs
      - » Second stand at second lab being relocated
      - » Timing for availability of second stand uncertain
  - Status of ASTM D 5662 (Oil Seal Compatibility) test
    - No test stand or hardware (elastomer) problems to report
    - Introducing new reference oil to replace one which is no longer available
  - Status of ASTM D 7603 (Storage Stability & Compatibility) test
    - No problems to report

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- 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
    - Task Force unable to identify oils with known acceptable and unacceptable performance in the field
      - Both of above required to develop performance category and acceptance criteria
      - Response to industry requests for support/assistance in both areas has been minimal
  - SAE Technical Committee 3 has been asked to revalidate industry's interest in and/or need for this category
    - Initial indications are that interest/need no longer exists
    - Awaiting formal response from SAE Technical Committee 3

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- Other Activities
  - Section D02.B0.03 assumed responsibility for updating ASTM D 4998
    - Standard Test Method for Evaluating Wear Characteristics of Tractor Hydraulic Fluids
      - Used to evaluate lubricants for gear wear
    - Updated test procedure sent to ASTM for review and preparation for ballot
    - Requesting Subcommittee D02.B0 approval to ballot