



Test Monitoring Center

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L-60-1 Information Letter 15-3
Sequence Number 47
June 18, 2015

ASTM consensus has not been obtained on this information letter. An appropriate ASTM ballot will be issued in order to achieve such consensus.

TO: L-60-1 Surveillance Panel

SUBJECT: 1. Clarification regarding when stand calibration expires
2. Standardized wording describing the role of the TMC

During its May 13, 2015 meeting, the L-60-1 Surveillance Panel approved the addition of wording clarifying when a non-reference may be considered to have been run on a calibrated test stand. Candidate runs may start any time on or before the calibration expiration date. This revision to the existing Section 9.2 was subsequently moved to Section 9.4 due to additional revisions included in this information letter.

Also, at a June 23, 2014 meeting, ASTM Section D02.B0.10 on Standards Acceleration approved standardized wording describing the role of the Test Monitoring Center. Subcommittee B has requested that the TMC incorporate this wording into all test methods through the information letter system. D7038 has been revised to incorporate this wording. The text of the revisions is shown in the attachment. This change is effective immediately.

Larry Hamilton
Chairman
L-60-1 Surveillance Panel

Frank M. Farber
Director
ASTM Test Monitoring Center

Attachments

cc: ftp://ftp.astmtmc.cmu.edu/docs/gear/1601/procedure_and_ils/il15-3.pdf

Distribution: Email

(Revises Test Method D 5704-15 as revised by Information Letters 15-1 and 15-2)

Add new section titled "Introduction" before current Section 1, "Scope":

INTRODUCTION

Portions of this test method are written for use by laboratories that make use of ASTM Test Monitoring Center (TMC)² services (see Annex A4).

The TMC provides reference oils, and engineering and statistical services to laboratories that desire to produce test results that are statistically similar to those produced by laboratories previously calibrated by the TMC.

In general, the Test Purchaser decides if a calibrated test stand is to be used. Organizations such as the American Chemistry Council require that a laboratory use the TMC services as part of their test registration process. In addition, the American Petroleum Institute and the Gear Lubricant Review Committee of the Lubricant Review Institute (SAE International) require that a laboratory use the TMC services in seeking qualification of oils against their specifications.

The advantage of using the TMC services to calibrate test stands is that the test laboratory (and hence the Test Purchaser) has an assurance that the test stand was operating at the proper level of test severity. It should also be borne in mind that results obtained in a non calibrated test stand may not be the same as those obtained in a test stand participating in the ASTM TMC services process.

Laboratories that choose not to use the TMC services may simply disregard these portions.

Replace the entirety of Section 9 text with the following:

9. Calibration and Standardization

9.1 Annex A5 describes calibration procedures using the TMC reference oils, including their storage and conditions of use, the conducting of tests, and the reporting of results.

9.2 Annex A6 describes maintenance activities involving TMC reference oils, including special reference oil tests, special use of the reference oil calibration system, donated reference oil test programs, introducing new reference oils, and TMC information letters and memoranda

9.3 Annex A7 provides information regarding new laboratories, the role of the TMC regarding precision data, and the calibration of test stands used for non standard tests."

9.4 Reference Test Frequency – The test stand calibration period is defined as three months or 10 tests, whichever occurs first. It begins on the completion date of an operationally and statistically acceptable reference oil test as determined by the TMC. Any test started on or before the stand calibration expiration date is defined to have been run on a calibrated stand.

9.4.1 When a test stand is out of calibration for a period of six months or longer, renumber the stand, and follow LTMS guidelines for new stand introduction.

9.4.2 Report modification of test stand apparatus or completion of any nonstandard test on a calibrated test stand to the TMC immediately.

9.5 Every test start on any test stand shall receive a sequential test run number designated before testing begins. All tests, including aborted starts and operationally invalid tests, must retain their test number.

9.6 Instrumentation Calibration – Immediately prior to commencing each reference oil test, calibrate the large gear shaft speed system, alternator output system, blower motor output system, air flow controller system, air box temperature control system, and oil temperature control system against standards traceable to NIST. Instrumentation calibrations prior to reference oil tests that follow a failed or invalid first attempt are at the discretion of the test laboratory. Retain record of these calibrations for a minimum of two years.

Replace the current Section 15 with the text below. Retain TABLE 1 Test Validity Parameters.

15. Report

15.1 For reference oil results, use the standardized report form set available from the ASTM TMC.

NOTE 4—Report the non-reference oil test results on these same forms if the results are intended to be submitted as candidate oil results against a specification.

15.1.1 Fill out the report forms according to the formats shown in the data dictionary.

15.1.2 Transmit results to the TMC within 5 working days of test completion.

15.1.3 Transmit the results electronically as described in the ASTM Data Communications Committee Test Report Transmission Model (Section 2 – Flat File Transmission Format) available from the ASTM TMC. Upload files via the TMC's website.

- 15.2** Report all reference oil test results, whether aborted, invalidated, or successfully completed, to the TMC.
- 15.3** *Deviations from Test Operational Limits*—Report all deviations from specified test operational limits.
- 15.4** *Precision of Reported Units*—Use the Practice E29 rounding off method for critical pass/fail test result data. Report the data to the same precision as indicated in data dictionary.
- 15.5** In the space provided, note the time, date, test hour, and duration of any shutdown or off-test condition. Document the outcome of all prior reference oil tests from the current calibration sequence that were operationally or statistically invalid.
- 15.6** If a calibration period is extended beyond the normal calibration period length, make a note in the comment section and attach a written confirmation of the granted extension from the TMC to the test report. List the outcomes of previous runs that may need to be considered as part of the extension in the comment section.
- 15.7 Attach to the test report plots for all parameters in Table 1. Include warmup time.
- 15.8 For non-reference tests with a value of zero for viscosity increase, pentane insolubles, or toluene insolubles, report a value of zero as the test result and report NA for the transformed results. For tests with viscosity results that are too viscous to measure, report a value of NA as the test result and the transformed result. For test results where viscosity is too viscous to measure or have a value of zero for viscosity increase, pentane insolubles, or toluene insolubles, do not apply any severity adjustment.

Replace the current Annex A4 with the text for A4, A5, A6, and A7 below. Renumber existing Annexes A5 through A9 accordingly.

A4. ASTM TEST MONITORING CENTER ORGANIZATION

A4.1 *Nature and Functions of the ASTM Test Monitoring Center (TMC)*—The TMC is a non profit organization located in Pittsburgh, Pennsylvania and is staffed to: administer engineering studies; conduct laboratory inspections; perform statistical analyses of reference oil test data; blend, store, and ship reference oils; and provide the associated administrative functions to maintain the referencing calibration program for various lubricant tests as directed by ASTM Subcommittee D02.B0 and the ASTM Executive Committee. The TMC coordinates its activities with the test sponsors, the test developers, the surveillance panels, and the testing laboratories. Contact TMC through the TMC Director at:

ASTM Test Monitoring Center
6555 Penn Avenue
Pittsburgh, PA 15206-4489
www.astmtmc.cmu.edu

A4.2 *Rules of Operation of the ASTM TMC*—The TMC operates in accordance with the ASTM Charter, the ASTM Bylaws, the Regulations Governing ASTM Technical Committees, the Bylaws Governing ASTM Committee D02, and the Rules and Regulations Governing the ASTM Test Monitoring System.

A4.3 *Management of the ASTM TMC*—The management of the Test Monitoring System is vested in the Executive Committee elected by Subcommittee D02.B0. The Executive Committee selects the TMC Director who is responsible for directing the activities of the TMC.

A4.4 *Operating Income of the ASTM TMC*—The TMC operating income is obtained from fees levied on the reference oils supplied and on the calibration tests conducted. Fee schedules are established by the Executive Committee and reviewed by Subcommittee D02.B0.

A5. ASTM TEST MONITORING CENTER: CALIBRATION PROCEDURES

A5.1 *Reference Oils*—These oils are formulated or selected to represent specific chemical, or performance levels, or both. They are usually supplied directly to a testing laboratory under code numbers to ensure that the laboratory is not influenced by prior knowledge of acceptable results in assessing test results. The TMC determines the specific reference oil the laboratory shall test.

A5.1.1 *Reference Oil Data Reporting* - Test laboratories that receive reference oils for stand calibration shall submit data to the TMC on every sample of reference oil they receive. If a shipment contains any missing or damaged samples, the laboratory shall notify the TMC immediately.

A5.2 *Calibration Testing:*

A5.2.1 Full scale calibration testing shall be conducted at regular intervals. These full scale tests are conducted using coded reference oils supplied by the TMC. It is a laboratory's responsibility to keep the onsite reference oil inventory at or above the minimum level specified by the TMC test engineers.

A5.2.2 *Test Stands Used for Non Standard Tests*—If a non standard test is conducted on a previously calibrated test stand, the laboratory shall conduct a reference oil test on that stand to demonstrate that it continues to be calibrated, prior to running standard tests.

A5.3 *Reference Oil Storage*—Store reference oils under cover in locations where the ambient temperature is between -10 °C and +50 °C.

A5.4 *Analysis of Reference Oil*—Unless specifically authorized by the TMC, do not analyze TMC reference oils, either physically or chemically. Do not resell ASTM reference oils or supply them to other laboratories without the approval of the TMC. The reference oils are supplied only for the intended purpose of obtaining calibration under the ASTM Test Monitoring System. Any unauthorized use is strictly forbidden. The testing laboratory

tacitly agrees to use the TMC reference oils exclusively in accordance with the TMC's published Policies for Use and Analysis of ASTM Reference Oils, and to run and report the reference oil test results according to TMC guidelines. Additional policies for the use and analysis of ASTM Reference Oils are available from the TMC.

A5.5 *Conducting a Reference Oil Test*—When laboratory personnel are ready to run a reference calibration test, they shall request an oil code via the TMC website.

A5.6 *Reporting Reference Oil Test Results*—Upon completion of the reference oil test, the test laboratory transmits the data electronically to the TMC, as described in Section 13. The TMC reviews the data and contacts the laboratory engineer to report the laboratory's calibration status. All reference oil test results, whether aborted, invalidated, or successfully completed, shall be reported to the TMC.

A5.6.1 All deviations from the specified test method shall be reported.

A6. ASTM TEST MONITORING CENTER: MAINTENANCE ACTIVITIES

A6.1 *Special Reference Oil Tests*—To ensure continuous severity and precision monitoring, calibration tests are conducted periodically throughout the year. Occasionally, the majority or even all of the industry's test stands will conduct calibration tests at roughly the same time. This could result in an unacceptably large time frame when very few calibration tests are conducted. The TMC can shorten or extend calibration periods as needed to provide a consistent flow of reference oil test data. Adjustments to calibration periods are made such that laboratories incur no net loss or gain in calibration status.

A6.2 *Special Use of the Reference Oil Calibration System*—The surveillance panel has the option to use the reference oil system to evaluate changes that have potential impact on test severity and precision. This option is only taken when a program of donated tests is not feasible. The surveillance panel and the TMC shall develop a detailed plan for the test program. This plan requires all reference oil tests in the program to be completed as close to the same time as possible, so that no laboratory/stand calibration status is left pending for an excessive length of time. In order to maintain the integrity of the reference oil monitoring system, each reference oil test is conducted so as to be interpretable for stand calibration. To facilitate the required test scheduling, the surveillance panel may direct the TMC to lengthen and shorten reference oil calibration periods within laboratories such that the laboratories incur no net loss or gain in calibration status. To ensure accurate stand, or laboratory, or both severity assessments, conduct non reference oil tests the same as reference oil tests.

A6.3 *Donated Reference Oil Test Programs*—The surveillance panel is charged with maintaining effective reference oil test severity and precision monitoring. During times of new parts

introductions, new or re blended reference oil additions, and procedural revisions, it may be necessary to evaluate the possible effects on severity and precision levels. The surveillance panel may choose to conduct a program of donated reference oil tests in those laboratories participating in the monitoring system, in order to quantify the effect of a particular change on severity and precision. Typically, the surveillance panel requests its panel members to volunteer enough reference oil test results to create a robust data set. Broad laboratory participation is needed to provide a representative sampling of the industry. To ensure the quality of the data obtained, donated tests are conducted on calibrated test stands. The surveillance panel shall arrange an appropriate number of donated tests and ensure completion of the test program in a timely manner.

A6.4 *Intervals Between Reference Oil Tests*—Under special circumstances, such as extended downtime caused by industry wide parts or fuel shortages, the TMC may extend the intervals between reference oil tests. Such extensions shall not exceed one regular calibration period.

A6.5 *Introducing New Reference Oils*—Reference oils produce various results. When new reference oils are selected, participating laboratories will be requested to conduct their share of tests to enable the TMC to recommend industry test targets. ASTM surveillance panels require a minimum number of tests to establish the industry test targets for new reference oils.

A6.6 *TMC Information Letters*—Occasionally it is necessary to revise the test method, and notify the test laboratories of the change, prior to consideration of the revision by Subcommittee D02.B0. In such a case, the TMC issues an Information Letter. Information Letters are balloted semi annually by Subcommittee D02.B0, and subsequently by D02. By this means, the Society due process procedures are applied to these Information Letters.

A6.6.1 *Issuing Authority*—The authority to issue an Information Letter differs according to its nature. In the case of an Information Letter concerning a part number change which does not affect test results, the TMC is authorized to issue such a letter. Long term studies by the surveillance panel to improve the test procedure through improved operation and hardware control may result in the issuance of an Information Letter. If obvious procedural items affecting test results need immediate attention, the test sponsor and the TMC issue an Information Letter and present the background and data supporting that action to the surveillance panel for approval prior to the semiannual Subcommittee D02.B0 meeting.

A6.7 *TMC Memoranda*—In addition to the Information Letters, supplementary memoranda are issued. These are developed by the TMC and distributed to the appropriate surveillance panel and participating laboratories. They convey such information as batch approvals for test parts or materials, clarification of the test procedure, notes and suggestions of the collection and

analysis of special data that the TMC may request, or for any other pertinent matters having no direct effect on the test performance, results, or precision and bias.

A7. ASTM TEST MONITORING CENTER: RELATED INFORMATION

A7.1 *New Laboratories*—Laboratories wishing to become part of the ASTM Test Monitoring System will be requested to conduct reference oil tests to ensure that the laboratory is using the proper testing techniques. Information concerning fees, laboratory inspection, reagents, testing practices, appropriate committee membership, and rater training can be obtained by contacting the TMC Director.

A7.2 *Information Letters: COTCO Approval*—Authority for the issuance of Information Letters was given by the committee on Technical Committee Operations in 1984, as follows: "COTCO recognizes that D02 has a unique and complex situation. The use of Information Letters is approved providing each letter contains a disclaimer to the affect that such has not obtained ASTM consensus. These Information Letters should be moved to such consensus as rapidly as possible."

A7.3 *Precision Data*—The TMC determines the precision of test methods by analyzing results of calibration tests conducted on reference oils. Precision data are updated regularly. Current precision data can be obtained from the TMC.