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T-10 INFORMATION LETTER 04-4
Sequence No. 9

September 20, 2004

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

TO: Mack Mailing List

SUBJECT: Revised Intermediate Precision and Reproducibility Definitions in D 6987

At the request of ASTM Section D02.B0.09, the definitions of Intermediate Precision and Reproducibility in the T-10 procedure, Test Method D 6987, have been revised. Note 3 has been added to Section 13.1.1.1, Sections 13.1.1.2 and 13.1.1.4 have been updated, and a footnote has been added to Table 5. All new and revised sections are attached. This change is effective the date of this information letter.

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Attachment

c: ftp://ftp.astmtmc.cmu.edu/docs/diesel/mack/procedure_and_ils/T-10/il04-4.pdf

Distribution: Email

13.1.1.1 *Intermediate Precision Conditions* – Conditions where test results are obtained with the same test method using the same test oil, with changing conditions such as operators, measuring equipment, test stands, test engines, and time.

Note 3 – Intermediate precision is the appropriate term for this method rather than repeatability which defines more rigorous within-laboratory conditions.

13.1.1.2 *Intermediate Precision Limit (i.p.)* – The difference between two results obtained under intermediate precision conditions that would, in the long run, in the normal and correct conduct of the test method, exceed the values shown in Table 5 in only one case in twenty. When only a single test result is available, the Intermediate Precision Limit can be used to calculate a range (test result ± Intermediate Precision Limit) outside of which a second test result would be expected to fall about one time in twenty.

13.1.1.4 *Reproducibility Limit (R)* – The difference between two results obtained under reproducibility conditions that would, in the long run, in the normal and correct conduct of the test method, exceed the values shown in Table 5 in only one case in twenty. When only a single test result is available, the Reproducibility Limit can be used to calculate a range (test result ± Reproducibility Limit) outside of which a second test result would be expected to fall about one time in twenty.

TABLE 5 Test Precision

Test Result	Measured Units	
	Intermediate Precision, (i.p.)	Reproducibility, (R)
Adjusted liner wear, mm	11.84	11.84
Top ring weight loss, mg	65.5	65.5
DPb at EOT, ln(ppm)[A]	1.68	1.70
Oil consumption, g/h	19.4	24.8
D lead 250 - 300 h , mass ppm	10.6	12.0

[A]This parameter is transformed using a natural log. When comparing two test results on this parameter, first apply this transformation to each test result. Compare the absolute difference between the transformed results with the appropriate (intermediate or reproducibility) precision limit.