



Test Monitoring Center

6555 Penn Avenue
Pittsburgh, PA 15206-4489
(412) 365-1000

MEMORANDUM: 04-074

DATE: October 1, 2004

TO: Robert Stockwell, Chairman, Roller Follower Wear Test Surveillance Panel

FROM: Jeff Clark

SUBJECT: Roller Follower Wear Reference Testing for the October 2004 ASTM Report Period

The following is a summary of Roller Follower Wear reference oil tests that were completed during the October 2004 ASTM period which began April 1, 2004 and ended September 30, 2004.

The following table summarizes the status of the reference oil tests completed this ASTM report period:

Test Description	TMC Validity Code	Number of Tests
Operationally and Statistically Acceptable	AC	1
Failed Acceptance Criteria	OC	2
Operationally Invalid	LC	2
Aborted	XC	0
Total		5

One test failed acceptance criteria for severe average follower wear; one test failed acceptance criteria due to a stand EWMA precision alarm. Both operationally invalid tests were due to improper oil charge amounts at start of test.

Severity and Precision:

Figure 1 (attached) shows the current industry severity and precision EWMA control charts and the industry cusum chart for average follower wear (AFW). AFW is currently within the industry severity and precision limits.

Since testing frequency is low, an estimate of precision by ASTM period will not be presented. Instead, the TMC will provide yearly pooled (across all reference oils) standard deviation as an estimate of test precision as shown in the following table.

AFW Pooled Precision By Year

Parameter	1995	1996	1997	1998	2002
df	9	9	12	2	2
AFW	0.02	0.05	0.03	0.01	0.01

Due to low test activity, precision estimates are not available for 1999 through 2001, and 2003. Also, no estimate is available for 2004. Precision for 1998 and 2002 show improvement versus historical levels. This apparent improvement may be due to all data from August 1997 to March 2004 being generated at only one laboratory. Note, the degrees of freedom (df) equals $\Sigma(\text{no. obs. per oil} - 1)$.

Reference Oils and Hardware:

The table below shows the current AFW test targets.

Parameter	Reference Oil	N	Mean (mils)	S
AFW	1004-2	10	0.33	0.05
	1004-3	2	0.44	0.06
	1005-1	5	0.20	0.05
	1005-2	-	0.20	0.05

Oils 1004-3 and 1005-2 have been distributed for reference testing. Test targets for 1004-3 will be updated with each test, until five tests have been completed. The first five tests for oil 1005-2 will be judged against the targets for oil 1005-1. To date one test has been completed on oil 1005-2.

Information Letters:

No information letters were issued this report period.

Laboratory Visits:

No TMC laboratory visits were conducted this ASTM period.

Additional Information:

The RFWT industry database, LTMS plots, industry alarm log, and timeline may all be accessed from the TMC home page at www.astmtmc.cmu.edu.

JAC/jac/mem04-074.jac.doc

Attachments

c: J.L. Zalar, TMC
 F.M. Farber, TMC
 Roller Follower Wear Test Surveillance Panel
<ftp://ftp.astmtmc.cmu.edu/docs/diesel/rfwt/semiannualreports/rfwt-10-2004.pdf>

Distribution: Email

Figure 1 RFWT INDUSTRY OPERATIONALLY VALID DATA

