

ENGINE OIL AERATION TEST (EOAT) SURVEILLANCE PANEL

of

ASTM D02.B0.02

June 18, 2001

Sheraton San Diego Hotel & Marina, San Diego, CA

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UNAPPROVED MEETING MINUTES**1. Call to Order**

The meeting was called to order by Chairman Mark Sarlo at 9:00 a.m. on June 18, 2001, in room 421 of the Sheraton San Diego Hotel & Marina, San Diego, California. There were five in attendance...(T. Bates-facilitator, F. Bondarowicz, R. Grundza for J. Clark, M. Sarlo, & J. Wells).

2. Membership

There were no membership changes

3. Meeting Minutes

The minutes of the December 4, 2000 meeting were approved as written

4. Test Trends

Rich Grundza (representing TMC & Jeff Clark) presented the TMC report (attached) and indicated there were no current problems with the test based on one piece of data for the last reporting period. LTMS severity is on target and precision is good. Rich will make sure that the TMC report is available on their site so that it can be linked to.

5. Test Procedure

There were no changes

6. Elevation to Standard

The new facilitator, Terry Bates is working with the previous facilitator (Al Sarkis) to get his draft of the standardized procedure. Al continues to experience health problems so Terry is not able to progress as quickly as he would like. Terry hopes to be able to get most of the information from Al, consolidate & organize it, produce a reasonably complete draft, and introduce it to the EOAT Surveillance Committee for review (see attached report from facilitator). With the full cooperation from Al during information exchange, Terry optimistically hopes to be able to ballot in the third quarter of 2001.

7. New Business

Frank Bondarowicz explained that roller lifter durability and engine oil aeration control (both for variable cam timing & hydraulically-actuated injectors) would be important for near future engine designs (next 5+ years). He believes that the EOAT procedure will definitely be a part of PC-9.

Mark Sarlo expressed concern over having only one 1994 vintage engine as a back up for the flush-and-run engine presently used to conduct EOAT evaluations at SwRI. Based on past experimentation, later model engines do not appear to aerate the oil within the targets established for the reference oils. This concern will be discussed with Frank Bondarowicz (Navistar/International) at a later date.

8. Next EOAT Meeting

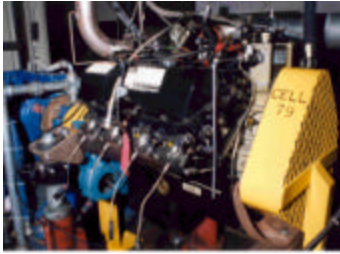
The next meeting will be held at the call of the chairman, probably to be held during the D.02 meetings in December, 2001 in Miami.

9. Adjournment

The meeting was adjourned at 9:30 a.m.

Submitted by:

Mark K. Sarlo
Chairman



Meeting Notice

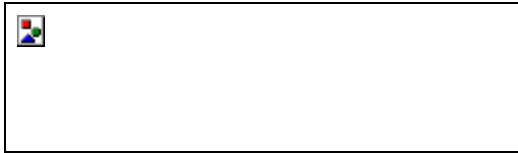
EOAT Surveillance Panel

Date: Monday, June 18, 2001
Time: 9:00 - 10:00 a.m.
Place: Room 411 (Upstairs)
Sheraton San Diego Hotel & Marina
San Diego, California

Agenda

1. Member Sign-in
2. Review, Correction, and Acceptance of 12/04/00 Meeting Minutes
3. Reference Test Trends by TMC
4. Test Procedure Discussion by Group
5. Procedure into ASTM format report by Facilitator
6. New Business
7. Planning for next EOAT Surveillance Panel Meeting
8. Adjourn

EOAT Surveillance Panel Chairman
Mark K. Sarlo
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MEMORANDUM: 01-056
DATE: May 15, 2001
TO: Mark Sarlo, Chairman, Engine Oil Aeration Test Surveillance Panel
FROM: Jeff Clark
SUBJECT: Engine Oil Aeration Reference Testing for the April 2001 ASTM Report Period

The following is a summary of Engine Oil Aeration reference oil testing completed during the April 2001 ASTM period, which began October 1, 2000 and ended March 31, 2001. It should be noted that for the history of the EOAT, all data has been generated at one laboratory.

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

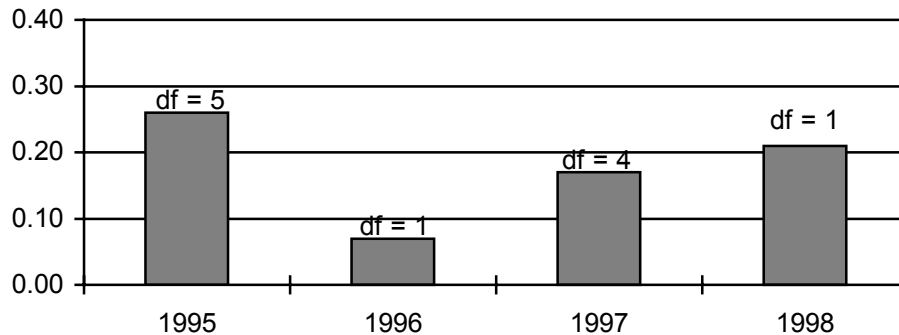
Test Description	TMC Validity Code	Number of Tests
Operationally and Statistically Acceptable	AC	1
Failed Acceptance Criteria	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		1

Severity and Precision:

Figure 1 (attached) shows the current industry severity and precision EWMA control charts and the industry cusum chart for average engine oil aeration (AEOA). AEOA is currently within the industry severity and precision limits. For a history of AEOA industry alarms, refer to the industry alarm log shown in Table 1.

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 on the following chart.

Pooled Precision by Year



Precision estimates for 1999, 2000, and 2001 are not available due to low test volume. The 1998 precision estimate for AEOA appears to be within historical levels. However, it should be noted that the small degrees of freedom for every year dating back to 1995 makes it difficult to draw any meaningful comparison of precision. Note, the degrees of freedom (df) equals $\Sigma(\text{no. obs. per oil} - 1)$.

Reference Oils and Hardware:

The table below shows the current AEOA test targets.

Parameter	Reference Oil	n	Mean (%)	S
AEOA	1004-2	13	9.46	0.25
	1004-3	-	9.46	0.25
	1005	2	7.80	0.25
	1005-1	-	7.80	0.25

The current test targets for oils 1004-3 and 1005-1 are based on oils 1004-2 and 1005 respectively. These targets will be updated at five tests. To date, three tests have been run on oil 1004-3 and two tests on oil 1005-1.

Information Letters:

No information letters were issued during the April 2001 ASTM period.

Additional Information:

Table 2 (attached) contains the AEOA Timeline which details changes to the Engine Oil Aeration Test since 1995.

Memo 01-056

Page 3

Additional Information (cont.):

The EOAT database, the industry LTMS plots, industry alarm log, and the EOAT Timeline may all be accessed from the TMC home page at www.tmc.astm.cmri.cmu.edu.

JAC/jac/mem01-056.jac.doc

Attachments

c: J.L. Zalar, TMC

F.M. Farber, TMC

Engine Oil Aeration Test Surveillance Panel

<ftp://tmc.astm.cmri.cmu.edu/docs/diesel/eoat/semiannualreports/eoat-04-2001.pdf>

FIGURE 1 EOAT INDUSTRY OPERATIONALLY VALID DATA

ENGINE OIL AERATION

FIGURE 1

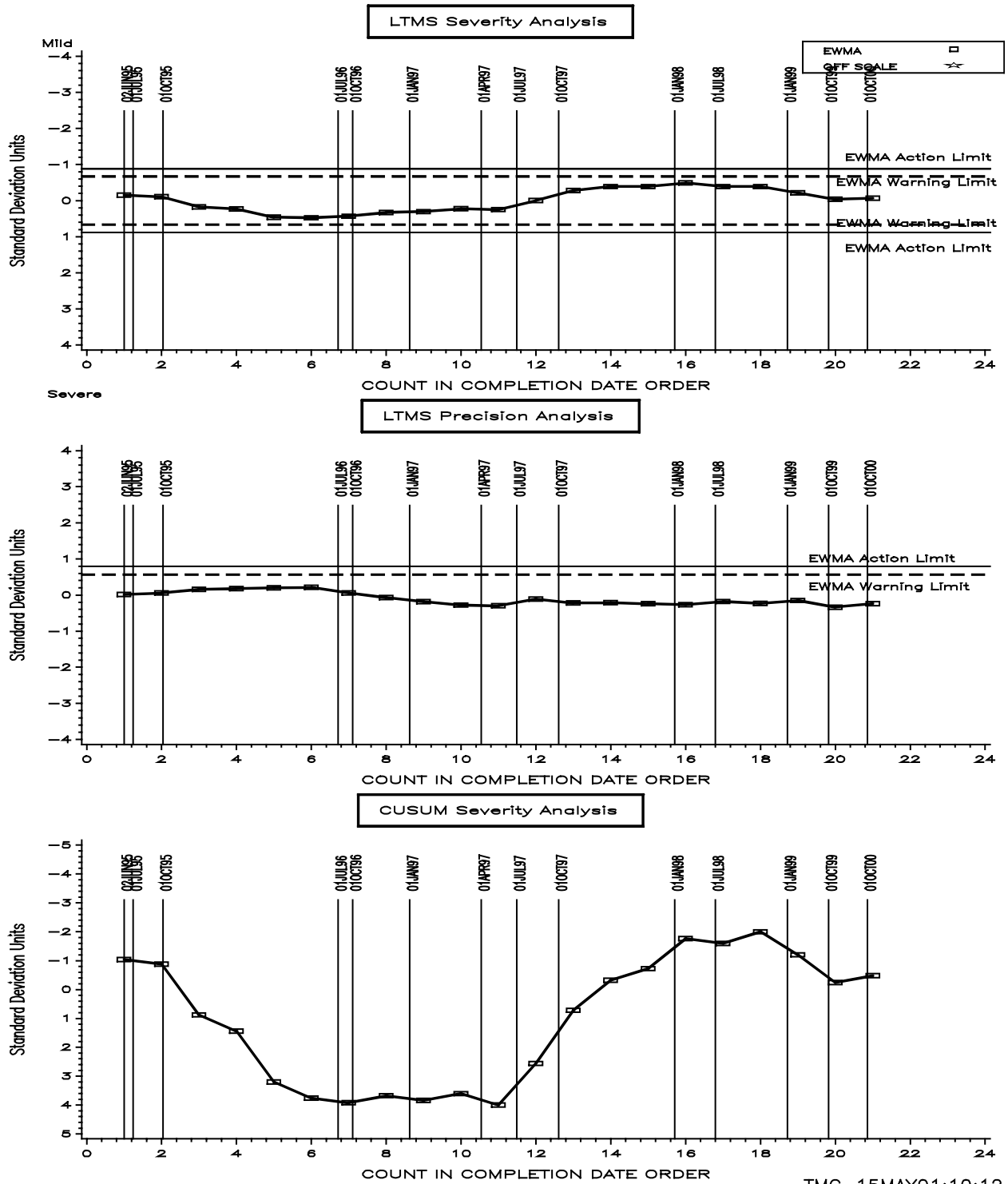


TABLE 1
ENGINE OIL AERATION INDUSTRY ALARM LOG

No industry alarms have occurred.

Updated 5/16/01

TABLE 2
Engine Oil Aeration Test Timeline

Date	Info. Letter	Topic
19950602,	,	OIL 1004-2 INTRODUCED
19970510,	,	OIL 1005 INTRODUCED
19971025,	,	OIL 1004-3 INTRODUCED
19980812,	,	OIL 1005-1 INTRODUCED
19990101,	,	TMC BEGINS MONITORING TEST. LTMS USED FOR DETERMINING TEST STAND CALIBRATION
19990621,	,	CALIBRATION PERIOD SET AS 1 YEAR FROM REFERENCE EOT, OR 30 TESTS
19991101,	99-1	DATA DICTIONARY AND REPORT FORMS VERSION 19990803
20001204,	,	INTAKE MANIFOLD TEMPERATURE SPECIFICATION SET TO MAXIMUM 325 DEG. F
20001204,	,	AMBIENT AIR TEMPERATURE CHANGED TO A RECORD PARAMETER

EOAT Standard: Facilitator report

Facilitator: Terry Bates

Current Status

June 5, 2001: Draft 4 (Jan 15, 2000) received from Al Sarkis (non-electronic form)

Procedure written following discussions at SwRI

**June 14: New electronic version of draft 4 generated
Comprises 14 sections, 4 annexes and 2 Appendices**

Facilitator actions in-hand:

Change all units to SI

Add footnotes to text

remove report forms and data directory - (as agreed by the Panel)

edit the draft

Submit to Surveillance Panel for approval

D02.B0 Ballot

Q3.01?

