

**HEAVY-DUTY ENGINE OIL CLASSIFICATION PANEL**  
OF  
ASTM D02.B0.02  
December 4, 2007  
Hyatt Regency Phoenix – Phoenix, AZ

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**ACTION ITEMS**

**1. CAT to request and ACC to provide 1P to C13 correlation data.**

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**MINUTES**

1.0 Call to order

- 1.1 The Heavy Duty Engine Oil Classification Panel (HDEOCP) was called to order by Chairman Jim McGeehan at 10:05 a.m. on Tuesday, December 4, 2007, in the Ellis Room of the Hyatt Regency Phoenix, Phoenix, AZ.
- 1.2 There were 13 members present and 50 guests present. The attendance list is shown as Attachment 2.

2.0 Agenda

- 2.1 The agenda shown is included as Attachment 1.

3.0 Minutes

- 3.1 The minutes from the June 19, 2007 were approved as written.

4.0 Membership

- 4.1 There was one membership change. Dan Arcy replaces Matt Urbanek for Shell.

5.0 PC-10 Task Force Report

- 5.1 Lew Williams presented a summary of the work to date of the task force. See Attachment 3. Lew followed up on question 8. The group compiled thoughts by email. Membership was a cross section of parties. Background is that engine tests need to be available for all active C categories. Availability can be by 2 methods: keep the old test or an alternative test at equivalent limits. The current approach to determine equivalent limits in new tests was reviewed. Some issues with this are: the process usually started after issues arise, old test is kept longer than need be, limited data volunteered, and data often generated on similar chemistry, not identical chemistry.
- 5.2 This is a work in process, not a final report. A way forward is to run old reference oils in new tests which would likely result in more testing. Need to keep a supply of all old reference oils until API Lubricants Committee declares a category obsolete. Make sure the reference oils are near the limits.

- 5.3 Patrick Lai reminded the group that CF-2 is still a category and the 6V92 has low activity levels. EMA discussed the 6V92 and the 1M-PC and will discuss at a future DEOAP meeting.
  - 5.4 The other PC-10 improvement issues will be reported separately.
  - 5.5 Chairman Mc Geehan showed the SAE paper on the CJ-4 category he compiled that was "authored" by many.
  - 5.6 A few members will meet to begin discussions on the next category.
- 6.0 Ken Henderson of ASTM
- 6.1 Ken joined the meeting to present an Award of Appreciation to Don Marn of Lubrizol. Don has been very active and made many contributions. Don did not expect this and only attended to say good-bye as he is retiring at the end of 2007.
  - 6.2 An Award of Excellence was presented to Lew Williams of Lubrizol for his many years of service and contributions to the industry. Lew started in 1969 and was asked to improve the sulfated ash test and recently worked on it again which was a career spanning task.
- 7.0 Supply of 500 ppm fuel sulfur
- 7.1 Scott Cobb of ChevronPhillips gave an update on the availability of PC-9 and PC-10 fuel. There was not a presentation. PC-9 orders are being shipped on time. The desired safety stock is 100,000 gallons. Currently below that, but should be back by January 2008. 500 ppm sulfur will be available. ChevronPhillips are investing in separate lines to secure 500 ppm feedstocks through 2015. They are also in the process of securing a 3<sup>rd</sup> supplier.
  - 7.2 PC-10 orders are being shipped and are currently above the safety stock. A tank inspection is scheduled, but shouldn't affect supplies. Working on a 1M gallon batch.
- 8.0 Action item from June 2007 meeting on Cat support
- 8.1 Hind Abi-Akar gave an update on the C13 in place of 1P and the 1M-PC. See Attachment 4. The C13 is different than the 1P. Cat is asking for data to determine if they will accept a C13 in place of a 1P. A request will be sent to ACC to provide data on oils that ran in both tests. If a relationship between the two can be created, CAT will agree to allow a C13 to substitute for a 1P. This will only apply in cases where both tests are needed. ACC is meeting next week, so if the request can be sent by then, the ACC will consider.
  - 8.2 Pat Fetterman said this doesn't really address the concern. CJ-4 is to be backward compatible. If modern chemistry is used to generate a CJ-4 oil, then that oil won't have a 1P, but shouldn't have to run one to claim CI-4 or CI-4+ if it passes the C13. A category for category review has been completed, but not a test by test. If all tests, except the ISB, are complete and passing for CJ-4 then go back and allow CI-4 without a 1P. Since a 1P can be run in place of a 1R, then this would cover CI-4, CI-4+, and CH-4. Hind and Pat will discuss off-line.
  - 8.3 Hind would still like to see the data. ACC will include related chemistries in addition to exact pairs.
  - 8.4 1P liners are now available.
  - 8.5 1M-PC parts availability. The 1M-PC is only in CF and CF-2. There was a liner availability issue in the recent past. CAT proposed supporting the 1M-PC through 2009. The head will be available on a made to order (MTO) basis. The price for the head will be slightly above double the current price and will take around 2 months. CAT proposes stopping support in 2009. An option is to replace with an equivalent test. There is not an obvious replacement.
  - 8.6 EMA discussed this some and will continue discussions.
- 9.0 EMA position on 2010
- 9.1 Greg Shank, as EMA, first thanked Don and Lew. He presented a status on EMA needs. See Attachment 5. EMA has serious concerns on B20. Fuel dilution increases with B20

and the EMA considered a post injection engine to develop a test around. The NBB and EMA have agreed to conduct a C13, T12, and ISB on B20 with some additional oil analysis and hardware inspection. Some of the additional tests are CAT methods to characterize oxidation. Since the engine tests selected are high temperature tests, fuel dilution may not occur at elevated levels, but still may see deposits or wear. Further testing may be needed at lower temperatures to determine fuel dilution effects.

- 9.2 A request could be sent to ACEA to see if they have low temperature post injection tests and data.
- 9.3 Infineum has reported results at the NPRA meeting on 1N testing with E6 oils and CJ-4 oils. B30 made no difference compared to #2 diesel. Then the oil was doped with 5% B30 resulting in a bad fail on crown land deposits.
- 9.4 CJ-4 field performance is still a question mark. EMA received some data recently. EMA is asking for data by March 1, 2008.
- 9.5 Additional performance requirements. EMA is still interested in characterizing oxidation further. A turbo deposit test is being developed in Europe. Fuel economy is still an important subject. EMA would like a task group to investigate fuel economy. At this point, no reason to change chemical limits through 2010. EMA reviewed test redundancy and they will look at it again since there is more experience and data.

#### 10.0 API CH-4

- 10.1 Shawn Whitacre started the discussion by reviewing some history on the correlation of the ISM back to the M11HST. Cathy Devlin showed an update to Afton's offer to run TMC 1005 in the ISM. See Attachment 6. The differences between the limits were reviewed. Afton conducted an ISM test on TMC 1005 which was a M11HST reference oil. A qualitative summary matrix highlights some differences in performance. Afton suggests that the Surveillance Panel review the data presented and thinks that the data suggests the tests are different. Afton will change their negative vote to an abstention with comment. Shawn is willing to let the Surveillance Panel discuss, but is trying to move it forward. There was only one negative which has since been changed to a waive with comment. Since that is the case, this could be forwarded to Subcommittee B.
- 10.2 Chairman McGeehan asked for a confirming motion for the limits that have been discussed and balloted. **Pat Fetterman moved and Shawn Whitacre seconded. This was a voice vote with no negatives and 2 waives.** This will be sent to Subcommittee B.

#### 11.0 New or old business

- 11.1 Joe Franklin of Subcommittee B is asking to move the B meeting to Tuesday afternoon since meetings are short right now. Some time is needed to prepare reports from the classification panels to B. Joe will also probably remove the 3 HD Surveillance Panel meetings from the schedule. Rather than the default be that the panels meet, the default will be that the panels will not meet. This will be tried in to see if it works.

#### 12.0 The meeting was adjourned at 11:30 am.