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Subject: Updated: Mack Surveillance Panel Meeting Minutes - Thursday, March 8, 2018
Date: Thursday, March 15, 2018 15:39:50
Attachments: [180306 Mack SP Meeting Agenda \(March 8 2018 meeting\).docx](#)
[Mack CPD Report T8-T11-T12-T13 3-8-2017.pptx](#)
[180306 Mack SP Scope and Objectives.docx](#)

Everyone,

I was asked to include one point of clarification, which I have done below in **red**. These updated minutes will be the meeting record posted to the TMC website. Thank you.

Respectfully submitted,

Bob Salgueiro

Mack Surveillance Panel Secretary



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From: Salgueiro, Bob

Sent: Sunday, March 11, 2018 8:40 PM

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Subject: Mack Surveillance Panel Meeting Minutes - Thursday, March 8, 2018

Everyone,

The following are the unconfirmed minutes of the Mack Surveillance Panel Meeting held on Thursday March 8, 2018 in Room 103 at Southwest Research Institute in San Antonio, TX. The meeting was also conducted by WebEx. Please feel free to let me know if there are any changes or revisions needed. Thank you.

Participants:

Afton – Bob Campbell, Christian Porter
Chevron Phillips Chemical – Jon VanScoyoc
ExxonMobil – Cliff Salvesen
Infineum – Bob Salgueiro (Secretary), Elisa Santos, Jim Gutzwiller
Intertek – Jim Moritz, Juan Vega, Garrett White, Josh Ward
Lubrizol – Patrick Joyce, Chris Mileti, Kevin O’Malley
Oronite – Mark Cooper (Chairman), Jo Martinez, Matthew Hauschild
SwRI – Bob Warden, Travis Kostan
TEI – Derek Grosch, Mark Sutherland
TMC – Sean Moyer
Volvo – Greg Shank
VP Racing Fuels – Chris Taylor

Mack Surveillance Panel Meeting

The Mack Surveillance Panel meeting was called to order at 8:37 AM Central, by Mark Cooper, Chairman of the Mack Surveillance Panel.

The agenda topics are listed below, with discussions and actions following.

Agenda Topics ([attached Mack SP Meeting Agenda](#)):

- **Surveillance Panel Membership/Attendance**
 - Jo Martinez, is filling in for Jim Rutherford who has retired from Oronite
 - Mathew Hauschild will be the voting member for Oronite
 - Dererk Grosch will replace Mark Sutherland for TEI
 - Chris Mileti will replace Andrew Stevens for Lubrizol
 - Greg Shank shared that Elisa Santos has agreed to be the statistician for the Mack Surveillance Panel

- **General Topics:**
 - Mark reviewed the updated **Scope of Mack Surveillance Panel (SP)** with minor revisions like changing PC-11 into CK-4 and FA-4 and adding the specifications which use the tests under the SP. Based on a later discussion Mark added to the scope two sentences about the SP pursuing replacements for the Mack T-8 and Mack T-12, but these were not shown to the SP but are included in the attachment. ([attached Mack SP Scope and Objectives](#))
 - The ASTM Technical Guidance Committee (TGC) sent a note to SP Chairs requesting comments on the wording for the **Alternative Supplier Protocol**. This identifies how alternative suppliers may start the process to become an alternate supplier of parts used in ASTM test procedures. It will be up to each individual SP to decide if they need an alternate supplier and what testing would be required to demonstrate equivalence of the proposed alternative part. Feedback from the Surveillance Panels will be used to make the language universal for all test types. It was noted that the requirement for a CPD comes from ACC Code of Practice, but where those parts come from is not specified. Critical test parts are already identified for each test type.
 - **Mathew Hauschild motioned and Bob Campbell seconded accepting the Alternative Supplier Protocol wording as distributed by TGC, pending final wording from TGC. With no waives and no objections, the motion carried.**
 - **TGC Fuels Task Force Update** - The task force has several objectives including: developing alternate fuel supplier standards, and reducing logistics complexity for labs regarding fuels handling.
 - The task force is working on standardizing the CofA for PC-10 and PC-9HS fuels.
 - Test procedures have their own small differences in specs for test fuel so the task force is trying to see if one spec can be written to encompass all the requirements.
 - TGC is working on aligning the precision of test results between test procedures and ASTM D4485
 - In ASTM D4485, Table A3.3, for using a Mack T-12 in place of a Mack T-10, liner wear and oil consumption show no decimal places. But in LTMS and candidate test reports show those results to one decimal point precision. There is inconsistency with in D4485

regarding these parameters. In table A5.2, the precision to one decimal point is included. Table A7.2 in the 2010 version of D4485, there was no decimal in the T-12. It was recalled that in the Cat 1K/1N, for oil consumption after the conversion to SI units, the added precision was taken into account (0.5 -> 0.54). Mack T-10 merit calculation using the T-12 exists only in ASTM D4485, not the T-12 or T-10 procedures. The feedback from the SP to TGC will be that there are no inconsistencies between the procedure and reporting. The table A5.2 matches the T-12 procedure. The recommendation of the Mack SP to TGC is to leave the table as-is.

- **Parts Availability Issues**

- **Volvo/Mack CPD Report** by TEI ([attached Mack CPD Report](#))
 - **Engine Blocks** - 51 bare Mack E7 blocks are left in OEM inventory. Bare blocks are no longer in production and Mack requires buying the assembled long block. TEI has 2 bare blocks in inventory. Demand has been low over the last 2 years so concern about blocks becoming unavailable is reduced.
 - **Oversized pistons** - Juan advised that some of the pistons are arriving “oversized” +0.0005” and being rejected.
ACTION: Intertek will advise what area on the Piston seems to consistently be oversized so TEI can measure that spot to better screen for them.
 - T-13 piston rejection rate of 50% was due to difficulties in packaging which are now resolved according to Volvo.
 - **T-8/T-11/T-12 Piston Skirt blemish** – TEI has noted a blemishes on the piston skirts. There is a 20% reject rate.
- **Synchronizing Parts Batches** – Currently, the amounts of the critical parts batches are not aligned and so bringing in new hardware will happen often and require testing. Instead of bringing in new hardware parts as batches of individual parts run out, we could order kits for all critical parts in equal batched quantities for increased consistency until a batch change is required (order 2000 pistons, liners, bearings, rings, etc = 333 kits)
 - Three options considered were:
 1. Use all remaining parts and order new batches as we run out
 2. Dump all remaining inventory and start with synchronized batches. However, there is about \$2,000,000 penalty for that
 3. Labs adopt the new LTMS
 - From a user perspective, each test kit price would likely increase by \$6,000 in order to synchronize the parts batches. The \$2M might be less if use some of the parts for which we have large quantities.

- If T-12 were able to be replaced, that might impact the above decision. But even if the wear parameters were replaced, then T-12 oxidation would need to be replaced somehow. If ACC would allow TMC to show candidate data, that could be a bigger database to look for a correlation between the T-13 and the T-12. If we won't need some of these tests long term, then do we really need a large batches of parts.
 - Not all batched parts require testing to bring in. Piston crown spec dimensions were tightened up. TEI advised that new crowns are not being manufactured but there are several thousand available from Mack parts distributors. Piston crowns are the next batch of parts to run out, but again do we need to reference them. Liners would be next and require testing (522 liners left). Demand for the test is down which makes justifying the spend difficult. If enough crowns were purchased to match the liners that would provide about 2 years' worth of testing which might buy the SP enough time to consider a replacement test for the T-12.
 - **The Mack SP recommendation to TEI was to proceed with purchasing enough piston crowns and skirts to sync up with the number of liners which gives us a 2 years supply of test kits.**
- Long-term need for the T-8, T-11, T-12, T-13?
 - Greg wants the SP to consider working on replacements for the Mack T-8E and T-12.
 - We could look at running TMC-1004 (T-8E reference oil) in the Mack T-11. There may be some candidate data also available between the two tests.
 - The T-12 oxidation parameters may be difficult to correlate for CJ-4
- **LTMS (Lubricant Test Monitoring System)**
 - **Updated LTMS for Mack T-8** - Jim Rutherford's proposed changes for implementing the updated LTMS were reviewed. IAR had questioned why the lambda value was changed from 0.2 to 0.3 when implementing this change this was last proposed but they subsequently learned the impact is minimal. The test becomes a little more responsive. The surveillance panel reviewed the document and made some edits. There was a lengthy discussion around benefits and issues of switching from a Lab based LTMS to a stand based LTMS for the T-8.
 - **Jim Moritz Motioned and Bob Warden seconded to make Viscosity increase at 3.8% Soot a Non-critical parameter in the LTMS for the Mack T-8.**
 - **With no negatives and only TMC waiving, the Motion carried.**

- **Jim Moritz motioned and Bob Campbell seconded to incorporate the ISB LTMS wording into the Mack T-8 LTMS with relevant changes made (reference oils, table, standard deviations).**

During the discussion it was stated that this would make a change from lab based LTMS to Stand base LTMS in the Mack T-8. **With no negatives, and only TEI waiving, the Motion carried.**

Action: Kevin volunteered to write up with revised Mack T-8 LTMS wording for adoption after the 2 week waiting period.

- **Mack T-8**

- Is the **T-8 correction factor** still appropriate? Jim Moritz said he came across an analysis from two years ago which seemed to suggest that there was a mild trend and maybe correction factors could be adjusted.

Action: Elisa agreed to prepare a presentation and review it with the SP.

- Decoupling the **Mack T-8 injection pump** from the reference interval to allow more consistent soot generation
SwRI noted more variability for soot generation through the life of the injection pump and more recent injection pump durability issues since the pump is no longer directly supported by BOSCH. SwRI would like to be able to adjust timing during the reference period to better control soot to target. Previously, an allowance was made to make limited adjustments to timing during the early hours of a reference test but then it remained throughout the duration of the reference period. Volvo was concerned about keeping the same severity throughout the reference period. Other labs are not seeing similar observations. SwRI was proposing that if the soot creeps up during a reference period then in-between candidates an adjustment to injection timing could be made to bring the soot level back closer to target.

ACTION: Bob Warden agreed to check and advise the SP on what range of adjustment would be needed.

- There was a suggestion to look at possibly replacing the T-8/E with a T-11 and what changes would be needed to the T-11 to make the correlation possible. Volvo supports replacing the T-8 hardware with the newer T-11 hardware if possible.

ACTION: Cliff will look back through the work ExxonMobil did on T-8 and T-11 correlation to see what impact temperature played.

- **Mack T-11**

- T-11A MRV reporting when results are <5000 cP. This is a non-numeric value so TMC needs to update the data dictionary to accept non-numeric values for this field.

- **Mack T-12**

- Data from T-8 oil filter head on the T-12 and new oil gallery thermocouple

location

- Intertek have been looking at adapting a Mack T-8 oil filter head to use on a T-12

Action: IAR have collected data on thermocouple location and will share it at a subsequent SP meeting

- **Volvo T-13**

- Humidity Task Force wrap-up

- There was draft wording developed but it was never incorporated formally into the T-13 procedure.

Action: Bob Warden agreed to lead the effort to have the wording added to the T-13 procedure.

- **Review and Update Test Procedures**

- Various engine part numbers are obsolete or have been superseded, including:

- Intake air filter and housing - part numbers listed are no longer available from supplier
- External oil sump tank volume - specific tank volume listed instead of a minimum volume
- Possibility of standardizing intake air filter and external oil sump with other test types?
- Chris made a suggestion to form a small task force to review the procedures and figure out what part numbers are the labs using and update the procedures. Also there is a desire by Lubrizol to standardize the accessory hardware where possible as well. The part list could kept separate from the procedure so the procedure does not need to be updated every time there is a part number change.

Action: Chris agreed to lead task force for this.

- Fix incorrect procedure paragraph which references for Sooted KV and TGA

- **Action: Mark will look back and check the references.**

Other Business

- There was a proposal to have the face to face SP meetings at least once a year.

Next Meeting

- To be scheduled as needed.

The Mack Surveillance Panel adjourned at 2:50 PM Central.

Respectfully submitted,

Bob Salgueiro

Mack Surveillance Panel Secretary



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