

Mack Surveillance Panel

Tuesday July 2, 2013 1:00 pm – 2:00 pm Eastern Time
Dial-in number: 877-344-4239 Passcode: 518311#

Mack Surveillance Panel Meeting Notes

The teleconference convened at 1:00 p.m. Eastern time, with Mark Cooper as Surveillance Panel Chair.

Agenda

- Next steps forward with T-11 and T-12
- Preparation for July 10 face-to-face meeting
- Discussion with Mack T-12 piston manufacturer on improving oil consumption

Membership / Attendance

Bob Campbell	Afton
Riccardo Conti	ExxonMobil
Brian Zhu	Federal Mogul
Elisa Santos	Infineum
Jim Gutzwiller	Infineum
Bob Salgueiro	Infineum
Jim Moritz	Intertek
Luiz Garcia	Intertek
Jim Matasic	Lubrizol
John Ahlborn	Lubrizol
Allison Rajakumar	Lubrizol
Chris Castanien	Lubrizol
Mark Cooper	Oronite
Jim Rutherford	Oronite
Bob Warden	SwRI
Mark Sutherland	TEI
Zack Bishop	TEI
Sean Moyer	TMC
Jeff Clark	TMC
Greg Shank	Volvo
Chris Cauley	Volvo

Discussion around targets for Mack T-11 Reference Oil

Mark Cooper reminded the panel that we had targets for 822-1 established in February 2013. And now we have targets based on recent runs. The panel needed to adopt targets so the floor was opened for any discussion or comments. Jim Rutherford felt the statistical means were straight forward however the Standard deviations were troubling because they were higher. The variability with 822-1 seemed higher than 820. The question was raised should we use these new standard deviations to calculate severity adjustments?

Motion made by Jim Matasic and 2nd by Bob Campbell:

Adopt use of 822-1 targets with severity adjustments as defined on slide 6 of Jim Rutherford's presentation for reference oil runs.

Motion passed with no objections and no waives.

Jim Moritz asked what standard deviation should we use going forward? The possible choices were: 1) keep the standard deviation in LTMS which is based on 820, 2) use the newly calculated 822-1 standard deviation, or 3) a hybrid of one and two.

Motion made by Bob Campbell and 2nd by Greg Shank:

Adopt use of the new 822-1 standard deviation with severity adjustments as defined on slide 6 of Jim Rutherford's presentation.

Motion passed with no objections and no waives.

Sean Moyer reminded the panel that if they wanted TMC to begin recharting that TMC could only initiate that at the request of the panel.

Motion made by Bob Campbell and 2nd by Greg Shank:

Request for TMC to begin recharting with an effective date for severity Adjustment change beginning for tests with an EOT of July 3rd.

Motion passed with no objections and no waives.

Discussion around Mack T-11 Reference Oil TMC 822-1

TMC informed the panel that there was no more 822-1 reference oil available. Bob Campbell asked how much the labs had. It was determined that each lab had 2 samples. All the labs have enough to run two references. A discussion started about whether it was better for the TMC to make a smaller batch of reference oil which could be done quickly (~1 week) or wait until a larger batch could be made available (timing uncertain). TMC was concerned with committing the components for a big batch if the surveillance panel was not certain that the performance of the 822-1 reference oil was acceptable. Making 1 big batch reduced variability but TMC do not want to run the risk of running industry out of 822 reference oil. This discussion was placed on hold as the panel was joined by the piston manufacturer Federal Mogul (FM), represented by Brian Zhu.

Discussion with piston manufacturer Federal Mogul on improving oil consumption

Greg Shank gave Brian Zhu some background on what the Surveillance Panel was trying to accomplish working with key parts suppliers that could improve the oil consumption of the Mack engine tests. Brian Zhu shared that he was not around at Federal Mogul when the last 3,000 piston batch was made. He said production had ceased in 2010. When FM received the order for 3,000 pistons they took the remaining production pistons they had and proceeded to get the remainder from Federal Mogul aftermarket supplier and were made in Mexico. Those pistons which have letters or numbers cast into the under crown are from the aftermarket forging batches. Those pistons without the markings are left over production pistons. All of the pistons were finished machined on the same line by the same process. The chamfer on the tops of the pistons was to deburr them. The chamfer size differences noticed were due to slight variations in compression differences between the pistons which could vary by as much as +/- 100 um. The piston ring grooves have normal FM production tolerances the Top angle is +/- 10 minutes while the bottom angle is +/- 5 minutes. These pistons were just standard production. Brian shared that FM does manufacture pistons for another OEM for use in oil testing and those pistons are manufactured to much tighter tolerances and purchased in smaller batch sizes. Chris Cauley asked FM how tight could the tolerances be made.

Action: Brian Zhu of Federal Mogul agreed to markup piston drawings and send them to Chris Cauley at Volvo.

Brian said the tight tolerance pieces would be made in their South bend IN pilot facility which can produce batches of 200. Brian shared that the pilot facility could make up to 500 pieces max output but demand on the facility is variable. It was asked of FM if they could find out if the earlier batches of pistons were micro-alloy or 4140 steel. Brian thought that production pistons would have been micro-alloy. Brian confirmed that the piston skirts were the same, whether micro alloy or 4140 steel. Bob Campbell asked if TEI could send old pistons back to FM for them to analyze and determine if there were any differences between those pistons from time periods when the tests were operating with higher accuracy. Brian agreed that FM could do this analysis.

Action: Brian Zhu of Federal Mogul agreed to have FM analyze pistons sent to FM to see if there was any difference between those pistons from time periods when the tests were operating with more accuracy vs. the pistons used in in the most recent batch.

Brian was asked if he could participate by telecom in the face to face meeting on July 10, however, Brian said he would not be able to participate due to vacation plans. At this point with no further questions for Brian Zhu, Federal Mogul left the teleconference. Greg Shank agreed that Volvo would try to get the ring manufacturer to call in to the July 10 meeting since the piston manufacturer was not available.

Action: Greg Shank/Chris Cauley to try and arrange for the ring manufacturer to call in to the July 10 meeting and discuss how to improve oil consumption.

Discussion resumed around Mack T-11 Reference Oil TMC 822-1

The discussion resumed around what to do about the making the next batch of T11 reference oil TMC 822. TMC confirmed that they had enough components to blend 4600 gallons of 1 batch or they could blend 560 gallons of a small batch first, leaving enough components for a 4000 gallon batch afterward. After some discussion it was felt that the path of least risk to the industry would be to blend the small batch first. There were no objections.

Action: TMC to blend pilot batch of 560 gallons of T11 reference oil which will be labeled TMC 822-2.

TEI was asked if they could sort the 3,000 pistons to separate out the aftermarket pistons. TEI confirmed that they had sorted the pistons already and had 469 pistons without under crown markings that would have been from the left over production forgings. The labs are going to go back and look at what pistons they used in the recent reference runs with TUXO and UUXO hardware.

Action: Engine test labs are to confirm at July 10 meeting, what pistons they used in the recent reference runs with TUXO and UUXO hardware.

TEI said they had looked at the piston chamfer differences and sorted the pistons first by casting identifications then by chamfer size. What they found was that chamfer size ranged all over with in all the different castings.

Old Business / New Business

None/None

Next Meeting

Next meeting of the Mack Surveillance Panel is scheduled for July 10th, in San Antonio Texas, exact location to be announced. On July 11th there will be a meeting of the Mack T13 test development task force. The day will start at 8:00 AM with a review of the test stand at the non-hosting lab (to be determined). After the review, at 10:00 AM, the face to face meeting will begin at the hosting lab (to be determined).

Meeting was adjourned at 2:28 p.m. Eastern time.