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Unapproved minutes of the ASTM Cummins ISB Test Development Task Force Teleconference call on June 1st, 2004

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Call to Order: Mark Sarlo called the meeting to order at 02:00 PM EDT.

Meeting Minutes: Approval of the minutes from the April 27th meeting was not voted on due to loss of electronic copy. Minutes from the May 17th meeting was approved as distributed.

Review of Agenda: *Attachment 1* shows a copy of the meeting agenda.

Review of Membership: The current official membership list for the ISB Test Development Task Force is as follows:

NAME	COMPANY
Mark K Sarlo – Chairman	Southwest Research Institute
Joseph Huang – Secretary	Valvoline
Warren Totten	Cummins
Riccardo Conti	ExxonMobil
Jim Matasic	Lubrizol
Jeff Clark	TMC
Greg Shank	Mack/Volvo
Jim Moritz	PerkinElmer
Bob Campbell	Ethyl
Mark Cooper	Chevron Oronite
Ron Buck	TEI
Pat Fetterman	Infineum

The following members were present at the conference call: Mark Sarlo, Joseph Huang, Dan Nyman, Riccardo Conti, Jim Matasic, Jeff Clark, Jim Moritz, John Haegelin, Bob Campbell, Ron Buck, Jim Gutzwiller, Pat Fetterman, Nancy Diggs, and Mark Cooper.

Old Business

Status of Engine Installation:

LZ stand construction started, and progressing as expected. Engine should be ready for shakedown end of this month.

ExxonMobil has no major news. Expected completion around July to August.

Ethyl also has no major news.

Valvoline stand is running. No instrumentation of the engine yet. Will have a Caterpillar oil adder system in the test cell soon.

PerkinElmer is in the process of finishing installation of the engine. Installing the remote filter mounting.

SwRI has completed the installation of the external oil adder complete with tap locations. We will run the engine to make sure that the correct amount of oil is pulled into the external reservoir (it only has a max of 6 quart capacity) so the location of the suction on the pan is real critical

Oil cooler bypass plate:

No new news. Worst case scenario is SwRI and PE will have cooler bypass plates ready.

Oil consumption measurement system:

SwRI has added valves to the 1P, 1R (1P spec is D6681) oil adder system in order to isolate the system when it is not needed during the 250-hour cyclic portion. SwRI should be able to distribute a proposed tap location on the oil pan within one week. Currently, the "return" location is as far away from the engine suction, and far away from the "suction." More details and pictures will be available by next conference call. It was also noted that in the oil adder tank, the "return" oil needs to pull from the bottom of the tank.

Tappet weight gain research:

SwRI continues to work on the Tappet Weight Gain matrix. First two sets of tappets have been engraved, weighed before and after cleaning, and are currently soaking in Premium Blue and the Cummins specified oil. After the pentane cleaning, the weight loss averaged around 9/10 of a milligram, and after the EnSolve® cleaning, the weight loss was around a few grams, up to 3 milligrams in one case. SwRI will distribute actual measurements when it is compiled.

Alternate cam profile measurement method:

LZ is still finalizing the setup of where to take the dial indicator measurement. The largest wear, based on the new and used cams, is in the 5 ten-thousands range, so LZ will have to upgrade their dial indicator. Initial results show good repeatability, with maximum wear at the ramps and little to no wear at the base circle.

Update on batch of pre-measured camshafts:

Cummins reported that a batch of 50 cams has been set aside for the matrix. The first 10 have been premeasured using the Adcole and received by TEI last Friday. The other 40 should be ready for premeasurement in 2 to 3 weeks.

Update on batch of oil filters:

Cummins is waiting on FleetGuard for update on batch of oil filters.

Pressure and thermocouple locations:

Jim Moritz sent out updated photos of oil and air thermocouple locations. There was discussion regarding the location of the intake manifold temperature thermocouple. One recommendation is to remove the intake manifold plate and attach a thermocouple into the injector hold-down boss. However, the general consensus was to continue as previously described. Danny from SwRI has a list of all needed adapter to fit the intake thermocouple into the intake manifold.

Comments on thorough master list of part number:

The general consensus is that the master list is excellent. No changes nor modifications were recommended.

New Business

Consider using external oil adder system to pressure charge engine:

SwRI recommended using the oil adder system's pump to pressure fill the engine. A three-way valve and a removable hose can then be attached to the pump to allow the pump to pull oil from a drum to the oil gallery for pressure filling. However, the general consensus, as supported by Dan Nyman of Cummins, is that each lab can devise their own pressure charge technique.

Matrix Design – Cummins:

Cummins presented data to the HDEOCP showing the discrimination between oil E from PC-9 matrix and TMC 1004. The class panel was concerned that all the data presented came from only two laboratories. The discussion at this task force level is that TMC 1004 is based on outdated technology, and neither oils are within the proposed chemical limits of PC-10. The TF leaned towards having PC-10 type oils for the discrimination matrix. Dan Nyman will work with Warren Totten and Jerry Wang of Cummins to obtain feedback. In addition, the issue of funding was brought up. Dan will check with Cummins to see if any funds are available for fuel.

Fuel:

It was reaffirmed that the ISB Cam Wear Test will run on PC-10 ultra-low sulfur fuel. It was brought to the task force's attention that Halterman has two types of fuel, a regular ultra-low sulfur fuel and a PC-10 ultra-low sulfur fuel, with the main difference being the cetane number. There is potentially the same issue with other suppliers. The general consensus is to use the PC-10 ultra-low sulfur fuel.

Future Meetings: The next meeting will be held on June 15th, at 1 PM CST/2 PM EDT. Dan or Warren will secure a phone number.

Adjournment: The meeting was adjourned approximately 3:15 PM EDT.

For comments or questions regarding the minutes, please feel free to contact:

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ATTACHMENT 1

Cummins 5.9L ISB Valvetrain Wear Test
Conference Call, June 1, 2004
1:00-2:00 a.m., CST, 2-3:00 EST
812-377-6118

Proposed Topics

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Review and approval of minutes from 27 Apr 04 conference call (not complete)

Review and approval of minutes from 17 May 04 conference call

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Old Business:

Update status of installation at each lab

Status of oil cooler bypass plates (SwRI & TEI)

Completion of oil consumption measurement system,

Cat-type oil adder going in at PE and SwRI (All)

Update on tappet weight gain research (SwRI)

Alternate cam profile measurement method to replace Adcole (All)

Update on batch of pre-measured camshafts (Cummins & TEI)

Update on batch of oil filters (Cummins)

Pressure and thermocouple locations Selected (SwRI & PE)

Comments on thorough master list of part numbers

by Jim Gutzwiller

New Business

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Consider using external oil adder system to also
pressure charge the engine (add 3-way valve and
removable hose)

Need direction from Cummins on design of matrix

Reminder to use Cummins Compleat PG coolant

May modify intake manifold plat to relocate thermocouple

Next call, June 15 at 1 pm CST, 2 pm EST???