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# Unconfirmed Minutes of the February 19, 2010 Sequence III ACLW Task Force Conference Call

The teleconference convened at 2:00 p.m. Central.

Attendance -Ed Altman, Jason Bowden, Rich Grundza, Charlie Leverett, Mark Mosher, Greg Seman, Matthew Snider, Adam Bowden, Matthew Bowden, Dwight Bowden, Bruce Matthews, Bob Olree

Adam Bowden agreed to record action items.

There were no comments received on the 02/11/10 Minutes.A copy of the conference call agenda is included as attachment 1

Action items from previous meeting were reviewed Wear tracks were reviewed bylabs and the general consensus was that there were little if any changes in wearpatterns.

Hardness and dimensional checks were performed on hardware that had been run forreference tests. One cam from 07 batch, run on reference oil 438 had hardness onlobe 1 of 45, 47 on lobe 7 and 47 on lobe 12.Corresponding lifters (mated to same lobes) were 61, 61 and 62. A test run in2008 on batch 070316 and reference oil 434 gave 44 on the same lobes (1, 7 & 12)and corresponding lifters were measured as 61, 66, and 60.After some discussion, OHT agreed to send a number of lifters and a cam that hadbeen rejected for rust to Lubrizol for measurement.

Block data review had not been completed. Matt Snider noted that the2005 block data was not available.

Discussion of end play measurements was next and it was noted that at least twolabs have not been recording this information. Charlie requested that labs beginrecording this information.

Handling/cleaning of cams was discussed. OHT explained that there were somerusting issues where the protective coating had dried out, allowing rust tooccur. OHT adjusted the packaging process to include the recoating of newcamshafts with the same rust inhibitor product and sealing these parts in plasticbags. When asked about the last occurrence of a cam being returned for rusting,it was stated that the last occurrence was in October of 2008.

Change in solvent occurred in 2005 and so it was determined that it probably has had ~~an~~ no effect on the mild cam wear issue.
Considerable discussion took place regarding severity of cam batches. A number of batches

were felt to be mild, while others were felt to be on or near target and some severe. No strong consensus was obtained on individual batches. When reviewing candidate data, not all labs were looking at severity adjusted results. Discussion on how ACLW was determined to be charted parameter in the IIIG method, where it had been a max value for test acceptance in the IIIF method ensued and members could not remember a conclusive reason for doing this. Charlie asked OHT about whether there were any trends on the coupon weight that OHT uses to verify phosphating batch processes. Dwight commented that OHT has not seen a correlation between batches.

Cleaning procedures were discussed. Not all labs conduct cleaning in the same manner. Some labs clean and measure, then coat with EF-411 until they are ready to be used for a build, while at least one lab cleans and measures prior to installation. At least two labs were not available to comment. Of the labs that clean and measure, at least one lab places the cams in a desiccator while the others return them to the packaging they were received. Charlie reiterated the need for labs to send their written procedures for cleaning and handling cams.

Review of reference oil blend differences was discussed. The viscosities for between 434-1 and 434 differ by 1.83 cst a 40 deg C and by 3.15 cst for 435 vs 435-1. Charlie suggested that statisticians might suggest these blends are different. It was suggested the statisticians be contacted for their input and possible correlation with reblends.

The solvent change took place in 2005 and does not appear to correlate with the mild results.

Measurement round robin is progressing. Cam and lifters have been measured by Lubrizol and Ashland and are on their way to Mobil for measurement.

Labs to review candidate data was discussed and not all results in all labs were reviewed. Labs will continue to document and review during future call(s).

No new business was added.

Due to the uncertainty pertaining to the TGC meeting, the next conference call will be Friday, 2/26/10 and 10 am EST, 9 CST.

A list of action items from this call are attached.

The conference call ended at 4:10 PM (eastern)

## Action Item Summary

**Seq. IIIG Cam Wear Task Force**

**Action Item 1:** Labs to review retained EOT camshafts for changes wear track location. (Complete)

**Action Item 2:** OHT to determine availability of old lifter material for analysis of

dimensions and hardness. Available lifter(s) to be measured at Lubrizol.

**Action Item 3:** Lubrizol to check hardness of retained EOT lifters and review initial height measurements taken prior to use min engine testing. (Complete)

**Action Item 4:** Bruce Matthews/GM to review block data for any shifts.

**Action Item 5:** Labs to review camshaft end play data. (Complete)

**Action Item 6:** OHT to modify Intertek $Y_i$ chart to include dateline representing implementation of enhanced packaging procedure. (Complete)

**Action Item 7:** Labs to document camshaft handling procedures from time of receipt to installation into test engine.

**Action Item 8:** TMC to review reference oil viscosity data for any shifts. (Complete)

**Action Item 9:** Determine when solvent change occurred. (Complete) **Action Item 10:** Conduct a measurement round robin on one new IIIG test camshaft and a set of test lifters. (Note: Round robin hardware delivered by OHT to Lubrizol on 2/12/2010)

**Action Item 11:** Labs to review candidate data. Charlie Leverett to distribute data selection process used by his laboratory.

**Action Item 12:** OHT to send sample of new lifters and a scrap camshaft from the news “H” (Pour Code 15) batch to Lubrizol for hardness analysis.

**Action Item 13:** Labs to record and retain camshaft endplay data going forward to

determine what range exists.

**Action Item 14:** TMC to review recent reference data run on re-blended oils for correlation between wear and viscosity.

**Action Item 15:** Charlie to contact statisticians to review new re-blended reference oils and compare with original reference oil data.