

The Sequence IIIG precision matrix was started on May 1 and is expected to be complete by early June. The matrix is being conducted at PE and SwRI utilizing three test stands at each laboratory. The ASTM TMC administrator John Zalar is also the IIIG matrix program test manager. John is issuing and posting regular data updates on the ASTM Web page as it is reported to the TMC. (ftp.astmtmc.cmu.edu/docs/gas/GF-4_matrix)

A summary of the data is also included here on page D-4G. The next Sequence III surveillance panel meeting is tentatively scheduled for June 10, 2003.

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5/03

The Sequence IIIF/IIIG surveillance panel met in Detroit on June 10, 2003 to review the IIIG precision matrix test results and the statistical teams' analyses. There was lengthy discussion of the data as precision of most parameters was poorer than desired by ACC. Ultimately the group approved the following motion with a vote of 9 for, 0 against, 2 waive. "Recommend to the PCEOCP that the Sequence IIIG test be considered for inclusion in the GF-4 specification based on matrix data". This recommendation was unanimously endorsed by the PCEOCP at their meeting of June 17. The IIIF/IIIG surveillance panel requested the statistical group to pursue further matrix data analysis to better understand laboratory differences in oil consumption and WPD performance, correlations between KV40 and MRV, influence of oil consumption, NOx and blowby on rated parameters. This additional analysis is expected to be complete by June 30.

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12/03

The Sequence IIIG panel held a telephone conference on August 1, 2003 to discuss a recently discovered variation in second ring face roughness that appears to have an impact oil consumption. The critical parts supplier (OHTechnologies) with the support of GM recommended that all current supplies of second piston rings be recalled and sorted by face roughness, and that only those in the lower one third of the current roughness specification be used. Secondly, they recommended that a new batch of rings be produced immediately with a new roughness specification to reflect the smoother face surface desired. These recommendations were endorsed by the IIIG surveillance panel. A review of the IIIG matrix data indicates that rings with a face finish on the

smoother side of the original specification tend to give directionally lower oil consumption. It was agreed that all future IIG tests will use the new smoother specification second ring, and OHT plans to have hardware available by August 7.

The Sequence IIG panel meet on October 29 in San Antonio, Texas, to conduct semi-annual business. The issue of IIG oil consumption variability was discussed at length, and Perkin Elmer reported that they now had reduced oil consumption via a revised honing technique. The group considered the honing technique to be within test procedure guidelines. The group requested the honing task force to continue work on establishing a proposal for a standardized engine block honing technique so that laboratory reproducibility of oil consumption could be further improved. The statistical work group had met via telephone conference on October 15 and concluded that a statistically based severity adjustment of viscosity results for oil consumption variability would not be needed due to the use of smooth rings and recent honing refinements. The statistical group did, however, recommend to the IIG surveillance panel that the following actions be considered:

1. Adopt a standardized block honing and cleaning process. Report the bore finish in each test report.
2. Confirm that the oil consumption performance of smooth rings for engine bore sizes 1 thru 4 is equivalent to that experienced with bore sizes 5 and 6.
3. Develop an operationally invalid limit on oil consumption for early test hours to eliminate unacceptable engine builds.
4. Develop a non-interpretable definition for tests that experience end of test oil consumption above a defined high limit.

The IIG surveillance panel agreed to complete items one and two before year end 2003 and items four and five were added to the group's objectives.

The IIIG panel reviewed a request from ACC that a separate test procedure 'IIIGA' be established for evaluation of MRV performance and that MRV performance be removed from the standard IIIG procedure. This action was taken.

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12/03

The Sequence IIIG surveillance panel held a telephone conference on December 15 to receive the honing task force report and take appropriate action. The main recommended update to the honing process was a requirement to have the laboratory honing machine's load setting calibrated by the machine manufacturer. This was agreed and most laboratories have had this done recently. The following motion was approved:

'Implement the honing task force recommendation with an operationally valid calibration test. All tests thereafter must use the new honing process. The effective date is December 15 and must be implemented within 100 days. Notation of the honing procedure change must be noted in the first calibration test report.'

PERFORMANCE TESTS

Sequence IIIGA

SCOPE:

The Sequence IIIGA is the same procedure as the Sequence IIIG but is used only to measure low temperature used oil viscosity (MRV) performance. Test operating conditions and special test hardware modifications are the same as for the IIIG test.

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12/03

Rated Parameter:

- Low Temperature Viscosity (MRV)

The Sequence IIIGA test is separate from the IIIG and thus both are treated as individual procedures by ILSAC, ASTM and API. The ACC code of practice rules are applied separately to each of the IIIG and IIIGA tests. This means that repeat testing can be run with the IIIG and/or IIIGA as required for Multiple Test Acceptance (MTAC) and minor formulation modification of each test type. MTAC does not apply to used oil pumpability measured by the MRV-TP1 test.