

Chain Wear Task Force Conference Call

May 26, 2015

Attendees:

SWRI – Felt Mounce

Intertek - Al Lopez, Jason Soto, Bill Buscher

Ford – Ron Romano

Afton – Christian Porter, Ed Altman

Lubrizol – George Szappanos, Alex Michlberger

Infineum – Gordon Farnsworth, Ryan Rieth

TEI – Zach Bishop, Dan Lanctot

TMC – Rich Grundza

Oronite – Kustav Sinha, Mahboob Hosseini

Ashland – Tim Caudill, Amol Savant

OHT – Jason Bowden

Chain Wear New Test Type Template:

The group went over the entire template and it is attached.

OW16:

Al asked if there will be a OW16 reference oil. Ron says there will not, we're planning to run the OW16 for research only. There will be no differing chain wear limits based on oil viscosity. The "low wear" oil we're currently testing is what he feels will meet GF6 requirements.

Parts:

Since the current test engine will no longer be built in the US, and will be built in Valencia Spain for only a short period longer, Ron suggests the labs make another large group parts purchase. Al asked Ron to get the group a lead time on parts. Ron will also try to get a drop dead date for end of production.

LTMS:

Stats group and SP should begin discussions on Chain Wear LTMS development. A suggestion was made to use the Sequence IV LTMS as a template as it has only one parameter.

Field Correlation:

Ron presented data showing initial development using a chain made half of one metal (Orange Chain) and half of another (Green Chain). Some suggested Ron make the presentation a bit more clear. Need to show the difference between the chains, and the difference between the oils on those chains. The current test is using the "Orange" chain which exhibited lower wear on the development tests. Ron feels the we need an oil which is statistically milder on Orange chain than the GF5 oil.

Testing:

Ashland has begun their next test, and it's currently at 48 hours. Afton will begin another test once the group determines which oil is needed.

Lab Visits:

The group will complete lab audit visits the week of June 16th. Ashland on the 16th, and Afton on the 17th.

Task Force Vote:

Al recommends the group have an internal vote recommending the test is "Ready for Matrix" testing. He feels we need to have this in place a couple of weeks before the AOAP meeting July 9th. The group will review operational data during the SP meetings in Texas on the 3rd of June, and plan to have a vote by June 25th.

Next Meeting: Surveillance Panel Meetings June 3rd

ASTM New Test Type Introduction Template
Chain Wear Test

Items rated as "A" status and marked with * require supporting documentation to be attached

1.0 Action Plan

1.1 Reference Oils

1.1.1 Do the majority of reference oils represent current technology? A
Failing oil is GF-5. Passing oil is prototype GF-6 should meet most GF-5 requirements

1.1.2 Are the majority of reference oils of passing or borderline pass/fail performance? A
Yes

1.1.3 Is reference oil supply and distribution handled through ASTM/TMC? A
Yes

1.1.4 Is a quality control plan defined and in place? A
Same as VG

1.1.5 Is a turnover plan defined/in place to ensure uninterrupted supply of reference oil and an orderly transition to rebends? A
Same as VG

1.1.6 Is a process for introducing replacement reference oils defined and in place? A
Same as VG

1.1.7 Are oils blended in a homogeneous quantity to last 5 years? A
TMC process

1.1.8 How many reference oil are there and what are the identifying oil codes?
One failing identified, and one pass oil. No TMC codes yet. Oil blending in progress _____

Comments:

Typical TMC process

2.0 Test Parts

2.1 Are all critical parts identified? A

2.1.1 List the parts consider as critical. Shown in procedure _____

2.2 Is a system defined/in place to maintain uniform hardware? A *
Parts are batch supplied

2.3 Is there a system for engineering support and test parts supply? A
Same as VG

2.3.1 How many tests can be run with the supply of parts currently in stock?
 2 years worth, about 500 tests _____

2.4 Are critical parts distributed through a Central Parts Distributor (CPD)? D
Critical parts are at the labs. Rest available through suppliers in the procedure.

2.5 Are critical parts serialized, and their use documented in test report? A
Handled same as VG. Chains contain batch number

2.6 Are all parts used on a first in/first out basis? A
Yes. Process will be part of procedure and identification on test forms

2.7 Are all rejected critical parts accounted for and returned to the CPD? D

RATING SCALE: A - Completed; B - In Progress; C - Planned; D - No Action; E - TBD

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2.8 Does the CPD make status reports to the test surveillance body at least semi-annually? A

2.9 Is there a quality control and turnover plan in place for critical test parts, including identification and measurement of key part attributes, a system for parts quality accountability, a turnover plan in place for simultaneous industry-wide use of new parts or supply sources? A *

Part batches will be segregated by the labs and batches identified on test forms for critical parts. Measurements are identified in the procedure.

2.10 Is the CPD active in industry surveillance panel/group, and in industry sponsored test matrices? A

Yes (Task Force at this point)

Comments:

3.0 Test Fuel

3.1 Is the fuel specified and the supplier(s) identified? A

3.1.1 Who is the fuel supplier? Halterman

3.2 Is a process in place to monitor fuel stability over time? A *

3.3 Are approval guidelines in place for fuel certification? A *

Must meet EEE spec.

3.4 If the test fuel is treated as a critical part of the test procedure:

Is an approval plan and severity monitoring plan for each fuel batch in place? D *

Not critical part

3.5 Is a quality control plan defined and in place to assure long term quality of the fuel? A *

Must meet EEE spec.

3.6 Is a turnover plan defined, in place and demonstrated to ensure uninterrupted supply of fuel? A *

Comments: EEE fuel is used for the test and will be handled as is for other tests using EEE fuel.

4.0 Test Procedure

4.1 Is a technical report published documenting, per ASTM Flow Plan:

4.1.1 Test precision for reference oils? B *

When Precision matrix is done

4.1.2 Field correlation? A *

Yes. Test developed using two different chain materials and shows the same performance with these materials as seen in the field.

4.1.3 Test development history? B *

When research report is complete.

4.2 Are test preparation and operation clearly documented in a ASTM standard format? B *

Draft test procedure is posted on the TMC website. ASTM formatting is in progress, facilitator assigned.

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- 4.3 Are test stand configuration requirements documented and standardized? A *
In procedure
- 4.4 Are milestones for precision improvements established? B *
Will be done by SP when in place
- 4.5 Are routine engine builder workshops planned/conducted? A
First build workshop occurred in February 2015
- 4.5.1 How often and by whom? Task Force/Surveillance to determine

Comments:

5.0 Rating and Reporting of Results

- 5.1 Are the reported ratings from single raters (i.e. not averages from various raters)? D
No subjective ratings. Measurements only
- 5.2 Is a suitable severity adjustment system in place? B *
Will be part of LTMS. This test needs to be written into LTMS
- 5.3 Is each pass/fail parameter unique and have a significant purpose for judging engine oil performance? A
- 5.3.1 List the pass/fail parameters. Chain elongation
- 5.4 Do all rate and report parameters judge operational validity, help in test interpretation or judge engine oil performance? A
- 5.5 Are routine rater workshops conducted/planned? A
Chain measurements round robins will be done as soon as all measurement rigs are up and running. All labs used a standardized measurement apparatus.
- 5.5.1 How often and by whom? Task Force to determine once all labs have measurement rig

Comments:

6.0 Calibration, Monitoring and Surveillance

- 6.1 Is a process in place for independent monitoring of severity and precision with an action plan for maintaining calibration of all laboratories? B *
Will be part of LTMS. Needs to be set up for this test after PM
- 6.2 Are stand, lab, and industry reference oil control charts of all pass/fail criteria parameters used to judge calibration status? B *
Will be part of LTMS.
- 6.3 Does the specified calibration test interval allow no more than 15 non-reference oil tests between successful calibration tests? B
Will be part of LTMS.
- 6.4 Is an ASTM Surveillance Panel in place? B
Task Force in place
- 6.4.1 Who is chairman? ED Altman

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Comments:

7.0 Test prove out data

7.1 Has a test development Task Force/TMC visit been made to each of the labs that will participate in the industry precision matrix? B

Two labs had visits, two will be conducted before the PM.

7.2 Have prove out tests been run with the finalized test procedure and test parts? A *

Yes and more testing in progress

7.2.1 How many labs and stands? 5 labs presently running the test and 4 plan to participate in the precision matrix