

T13 Task Force Call – 9/28/15

Attendance:

Chevron: Jim Rutherford , Mark Cooper

Infineum: Bob Salgueiro, Elisa Santos, Jim Gutzwiller, Pat Fetterman

Volvo: Greg Shank

Lubrizol: Jim Matasic, Kevin OMalley, Michael Conrad

Intertek: Luiz Garcia

TEI: Mark Sutherland

Exxon: Mike Alessi, Riccardo Conti

TMC: Sean Moyer

SwRI: Bob Warden, Jim McCord

Afton: Christian Porter

Neste: Chris Castanien

Correction Factors Background

Jim Matasic asked for some background on where the need for correction factors came from. Jim Rutherford obliged, but started with a photo. When working on a presentation for the last NCDT meeting, Jim noted a few instances of large SA values developing in many of the labs and started to investigate if correction factors were appropriate. Nothing is to be voted on today, but ideas presented to show how we might address things moving forward.

Overview

- OC calculations on matrix tests are nearly resolved. Labs have been resubmitting old tests to match the format and calculations voted upon later
- 5 tests on the new reference oil batch
- Fuel flow control appears to be providing improved precision

What's Next?

The goal was somewhat to decide what is going on and look at possible solutions; ICFs, transformations, etc.

48 useable tests, 3/5 labs have run at least 2 fuel flow tests, 5 tests on TMC 823

Transformations

Jim's analysis showed that IRPH and OC don't particularly need a transformation, but KV40 values may benefit from a square root transformation. His models took into account predictors for lab, oil, and control strategy.

IR Peak Height

The estimate of standard deviation has shrunk from 12.4 to 11.0. There is evidence of a severity shift with fuel flow control of around -10.3 abs/cm. There was not a significant difference between 823, PC11A, and PC11D. The industry did not have any oil A runs on fuel flow control. Oils D, B, and E ran

both fuel flow and torque control tests. Oil B showed that there may be one torque controlled test from lab G that was driving a major difference in the torque/fuel flow conversion. There is not a consistent shift from oil to oil, or lab to lab.

Another analysis was run using the ICF of 10.3 to see what happened. The LSMEAN for 823 came up to ~130 abs/cm.

Showing the Yi values over time, we had them centered around target when running torque control. Since converting, the majority of values have been below target. When looking at the fuel flow values for tests with the theoretical ICF applied, it may not work quite right for all oils at all labs. Oil D at Lab G would be pushed further away from the apparent target.

KV40

Similar improvement in standard deviation (18.4 vs 23.2). The analysis in square root space develops an ICF of 1.16 to be applied. The LSMEAN of 823 goes up slightly, but goes down slightly for many of the others.

Again, the Yi values have been trending lower since the conversion to fuel flow control.

Oil Consumption

Overall 823 has a lower OC rate than anything we saw in the matrix.

KV40 vs. IRPH

There is a fairly strong correlation between the two parameters until you get out very high. This may be another sign that we need a transformation on KV40

Ballot Criteria

Using revised standard deviations, there is very little change to the MTAC values. Values were shown for oil consumption, but they will not be a part of the PC-11 exit ballot (per Greg). KV40 was shown using the transformed value standard deviation.

If we believe that a transformation is appropriate for KV40, Greg would like us to make that decision sooner rather than later. With a few key players missing on the call, it was noted that no vote should be made today, but an e-mail ballot to allow for discussion would be acceptable.

Motion to be made, Response due: 10/5/15

Task Force recommends: Use the transformed KV40 in square-root space and associated standard deviations. Effective date will be tests that start on or after 10/19/15 for both candidate SA application and reference results generation.

More 823 data

Will be a while before any data on TMC823 comes out of lab B. All stands recently referenced before 823 was available. Same issue for Lab D. This indicates that whatever decision is made, it will need to be made with the data we now have.

Face to face meeting

A tentative date of Oct 22nd is set for the next face to face meeting in San Antonio. Please provide Mike Alessi, Mark Cooper, and Bob Warden with planned attendance.