Mack / Volvo Surveillance Panel Meeting

November 11, 2024

David Brass (chair)

Agenda

- Volvo T-13 oil consumption with Brazil Rings
- Volvo T-13 Batched Parts Timelines
- Volvo T-13 New Reference Oil Testing
- Mack T-12 Reference Testing with Chevron Delo 50/50 Coolant
- Volvo T-13 Procedure Wording
- AOB

Volvo T-13 oil consumption

 Candidate tests have been tested at multiple labs. Labs provided OC measurements to help bring comfort with the new Brazil Rings

	Lab A	Lab G
48 hr	42.4 (external oil leak repaired at 48 hr)	17.9
72 hr	25.0	17.7
96 hr	22.6	17.8
120 hr	28.3	17.5
144 hr	22.4	18.5
168 hr	23.0	18.7
192 hr	21.1	17.8
Avg 48-96 hr	30.0 (23.8 w/o 48hr sample)	17.8
Avg 48-192 hr	26.4 (23.7 w/o 48hr sample)	18.0

Volvo T-13 Parts Batching

TEI is actively trying to obtain batches of the following parts:

Part	Batch	Part Number	Production Expectation
Liner	Е	21334768	Produced Early November
Piston	Α	21170742	January 31, 2025
Piston Pin	Α	20569833	5-6 Weeks from PO received
Top Ring	Α	21251596	February 28, 2025
2 nd Ring	Α	20590309	February 28, 2025
Oil Ring	Α	20568155	To be provided after PO received

All parts batches are expected to be delivered by March 2025. Goal would be to reference all new parts batches together.

TEI is having difficulty with order fulfillment from Jegs.com. Orders have had delays due to lack of one of the rings. At the moment we might have to revert to Portugal rings for some or all of the rings used for tests.

TEI recently received 66 more ring kits, to make 11 more engine kits.

Volvo T-13 Reference Oil Matrix Testing

Lab A / Stand 1	Lab B / Stand 1	Lab D / Stand 1	Lab G / Stand 1
New Reference Oil	New Reference Oil	New Reference Oil	New Reference Oil
New Reference Oil	New Reference Oil	New Reference Oil	New Reference Oil

Both tests must be conducted in the same stand and run consecutively (no candidates in between)

Current Reference Status

Lab	Stand	Reference Date	Date Reference Expires
Α	2	3/5/24	1/16/25
Α	4	4/20/23	3/23/24
Α	8	10/4/24	8/4/25
В	3	6/3/24	4/3/25
D	1	3/3/25	1/3/25
D	2	5/4/24	3/4/25
G	1	7/4/24	5/4/25
G	2	7/22/23	5/22/24
G	3	5/2/25	3/2/25

Mack T-12 Reference Testing with Chevron Delo 50/50 Coolant

- A4 completed acceptable calibration reference using Chevron Delo Extended Life Coolant 50/50 on 9/11/24
- G4 completed out of calibration reference using Chevron Delo Extended Life Coolant 50/50 on 9/9/24
- G4 completed acceptable calibration reference using Chevron Delo Extended Life Coolant 50/50 on 10/9/24
- D1 completed **out of calibration** reference using Chevron Delo Extended Life Coolant 50/50 on 10/27/24
- D1 will need to complete another test to gain calibration status
- All tests have been mild of target on the Pb parameters
- Suggest that an operational and statistical review of recent Mack T-12 reference tests
 - Can labs include Coolant in and out temps as part of this analysis (not in LTMS)

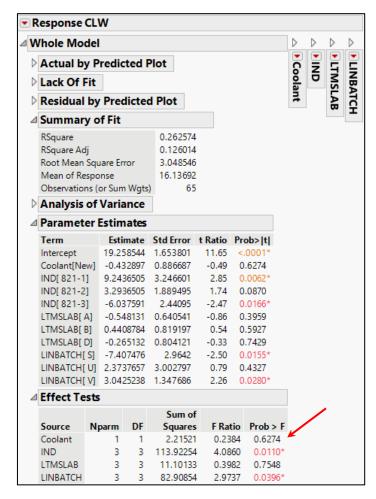
T12 Data Review

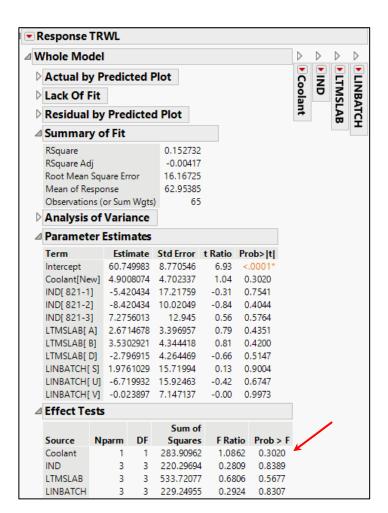
With Emphasis on 4 Test Results with New Coolant

By: Todd Dvorak

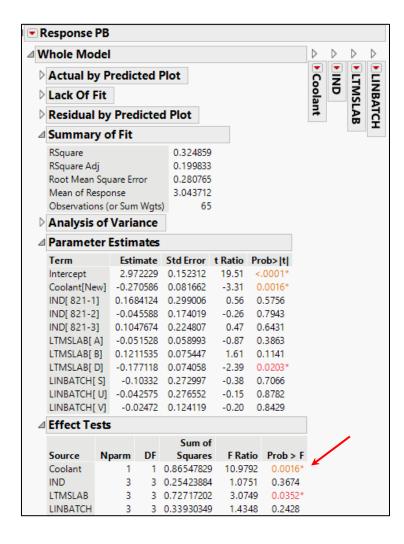
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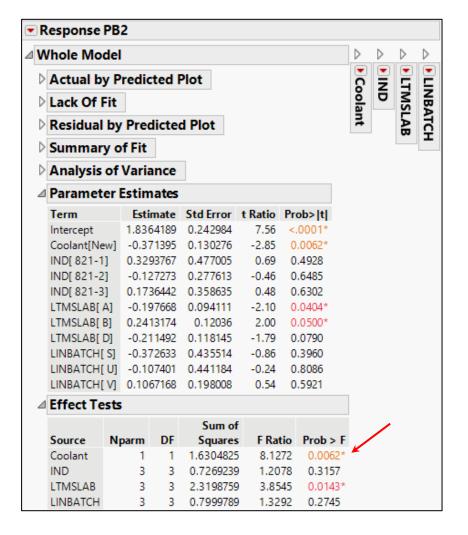
- For the 4 new coolant test results, no significant shift found in terms of the Cylinder Liner Wear or Top Ring Weight Loss
 - Includes all chartable data (n = 65) with Ring/Liner Hardware ID Factor
 - Note: Cylinder Liner confounded with Ring Hardware



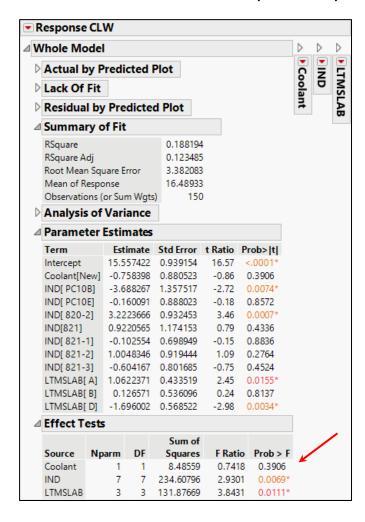


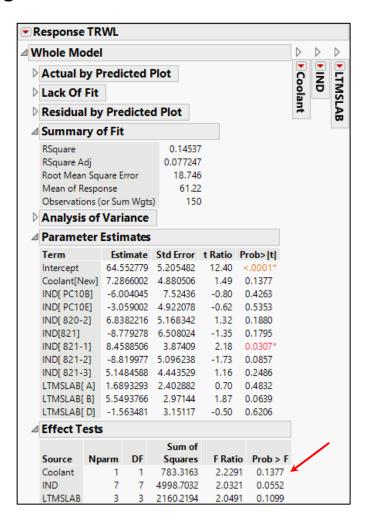
- For the 4 new coolant test results, a significant shift has occurred with the 2 Pb parameters
 - Includes all chartable data (n = 65) observations with Liner/Ring Hardware ID factor





- For the 4 new coolant test results, no significant shift found in terms of the Cylinder Liner Wear or Top Ring Weight Loss
 - Includes all chartable data (n = 150) without Liner/Ring Hardware ID Factor





- For the 4 new coolant test results, a significant shift has occurred with the 2 Pb parameters
 - Includes all chartable data (n = 150) without Liner/Ring Hardware ID factor

