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Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS

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May 7th, 2018

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ASTM D02.B0.03 L-42 Surveillance Panel
Members and Guests:

Attached for your review and comment are the unconfirmed minutes of the:

February 7, 2018 Surveillance Panel Meeting (Performance Review Institute – Warrendale, PA)

Please direct any corrections or comments to my attention.

Very Respectfully,

Eric Donovan, Chairman
L-42 Surveillance Panel

L-42 Surveillance Panel Meeting Minutes

PRI – Warrendale, PA

February 7, 2018

Attendees: voting members in **bold**, * indicates called in via teleconference

R. Banas (XOM)	B. Kearney (Afton)	R. Slocum (LZ)
D. Beck (TMC)	V. Marsic (LZ)*	M. Stevens (SwRI)
D. Bell (Afton)	J. Milner (Tianhe)*	A. Trader (Intertek)
E. Donovan (Afton/C)	D. Mosher (BASF)	W. Venhoff (LZ)
K. Drlja (LZ)	S. Parke (TMC)	R. Warden (SwRI)
B. Foecking (LZ)	J. Rucker (Meritor)	
A. Goyal (BASF)	D. Smith (Intertek)	

Call to Order

Review of Agenda

The meeting agenda is attached.

Review of Membership

No changes at this time.

Approval of Meeting Minutes

Meeting minutes for approval:

- "20171108_SP" → November 8, 2017 – Troy, MI

Motion to approve by W. Venhoff, second by A. Goyal to approve meeting minutes as presented.

Unanimous approval, no abstentions.

L-42 Hardware – 2017 order updates

All axles were shipped to the labs in October/November 2017. Build data spreadsheets were also sent to the labs for their axles.

90 axles remained due to a 10% overrun which is done to mitigate production issues. Afton and Lubrizol discussed buying the extra axles, 45 each. Afton expressed a desire to not purchase 45 overrun axles and the group discussed a possible contractual requirement that the labs have to purchase remaining hardware. E. Donovan to research and discuss with Dana.

L-42-1 Development

E. Donovan stated that Afton has not been able to perform more development due to rig availability. Once the test rig becomes available for more development, Afton will continue and share progress with the panel.

Drive-by-wire throttle

As of 11/9/2017, both Afton and Lubrizol still need to perform research on drive-by-wire throttle bodies as a replacement for current, old throttle technology.

TMC 113 Dropout / Discrimination oil replacement

TMC 113 is an old formulation and it is highly unlikely that a new drum can be produced. The TMC currently has 52 USG in stock which is about 104 L-42 tests. The panel agreed that a new discrimination oil needs to be developed. Afton and Lubrizol to ask internally for possible new discrimination oil candidates.

New/Open Issues

Lubrizol to update L-42 spray nozzle diagram to include an angle tolerance of $\pm 5^\circ$.

Adjournment

Motion by R. Warden, second by D. Smith. All in favor, meeting adjourned.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'E. Donovan', with a long horizontal line extending to the right.

Eric Donovan

L-42 Surveillance Panel Chairman



L-42 Surveillance Panel Meeting

Performance Review Institute
Warrendale, PA
February 7, 2018
10:00 am - 10:30 am EST

Passion for Solutions™

Agenda

 **Call to Order**

 **Agenda**

 **Membership Review & Update**



 **Approval of Meeting Minutes**

 **L-42 Hardware – 2017 order update**

 **L-42-1 Development**


-  Possible update to drive-by-wire throttle

 **New/Open Issues**

-  TMC 113 dropout / New discrimination oil development
-  Spray nozzle angle tolerance

 **Adjournment**

L-42 SP Voting Members

-  Rob Banas - ExxonMobil
-  Allen Comfort – US Army
-  John Dharte – AAM
-  Eric Donovan – Afton Chemical (Chair)
-  Arjun Goyal - BASF
-  Scott Parke – TMC
-  Jule Rucker – Meritor
-  Dale Smith – Intertek
-  Wes Venhoff– Lubrizol
-  Rebecca Warden – SwRI

Approval of Meeting Minutes

SP Meeting Minutes

- ▲ “20171108_SP” → November 8, 2017 – Troy, MI

L-42 Hardware – 2017 order updates

- ▲ **May 2016 – The SP agreed the best idea is to continue with Dana hardware until L-42-1 is complete**

- ▲ **August 2016 – Labs were to review current hardware status and report back to plan timing for next hardware order**
 - ▲ Afton – 2 years
 - ▲ Intertek – 2 years
 - ▲ Lubrizol – 5 years
 - ▲ SwRI – 1 year (conservatively)

- ▲ **November 2016 – The SP agreed on using the previous 2014 order batch requirements that Dana currently has on hand**

- ▲ **January 2017 – The 3 labs participating in the order sent Pos to Dana. This met previously set deadlines in order to receive axles by early 4Q2017**

L-42 Hardware – 2017 order updates cont'd

- 📌 February 2017 – The SP agreed to have a small batch of 9 axles produced and 3 axles sent to each of the 3 participating labs. Each lab will run two passing reference oil and one discrimination oil run on a currently referenced stand. Tests shall be run and results shared with the SP and Dana within approximately 2 weeks, no more than 30 days, after receiving the axles.
- 📌 September/October 2017 – Labs received and ran initial 9 axles. E. Donovan shared positive results with Dana and gave the green light for production of the remaining axles.
- 📌 November 2017 – Axles delivered to labs

L-42-1 Development

Summary

- ▶ Electric T-rig (input and outputs)
- ▶ Dana 44 mounted without springs

Goal is to have the rig follow L-42 setpoints first then use mathematical model for setpoints

Development to date

- ▶ Data from L-42 run was used to create 100 Hz setpoints for initial L-42-1 testing
- ▶ Initial testing shows good progress, fine tuning still needed to hit exact setpoints consistently

On hold at Afton for the near future due to rig availability

Drive-by-wire throttle

- ▶ During the August 2017 meeting, the panel discussed options of a drive-by-wire throttle body to replace the current, old design using the Jordan.
- ▶ Is it possible to use a mid-2000s Corvette or Chevy truck throttle body?
- ▶ Lubrizol and Afton to research

TMC 113 Dropout / New Discrimination Oil Development

From the August 2017 meeting:

- ▲ Additive dropout was found in latest QC testing
- ▲ Gear oil drums are mixed prior to shipment. Homogenization may be limiting the impact that this has on the performance of the oil.

From November 2017 meeting:

- ▲ Not possible to make new drum of TMC 113
 - 52 USG remaining – 104 tests worth
- ▲ Afton and Lubrizol to research possible new discrimination oils

New/Open Issues

Thanks!



Passion for Solutions™

CALL IN
 VERA MARSIC
 JEFF MILNER

L-42 Surveillance Panel Membership/Attendance
Automation Alley - Troy, MI
November 8, 2017

Initials	Name	Voting Non-Voting	Company Name Company Address	Contact information	
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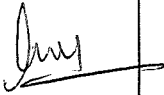

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Automation Alley - Troy, MI
November 8, 2017**

Initials	Name	Voting Non-Voting	Company Name Company Address	Contact information	
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Automation Alley - Troy, MI
November 8, 2017**

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Automation Alley - Troy, MI
November 8, 2017**

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Automation Alley - Troy, MI
November 8, 2017**

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Automation Alley - Troy, MI
November 8, 2017**

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November 8, 2017**

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Automation Alley - Troy, MI
November 8, 2017**

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