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**Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS**

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August 12<sup>th</sup>, 2019

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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:

**August 7, 2019 Surveillance Panel Meeting (PRI – 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

August 7, 2019

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

R. Banas (Exxon)	K. Drlja (LZ)	M. Sangpeal (Afton)
<b>D. Beck (TMC)</b>	B. Foecking (LZ)	E. Sattler (Army)
D. Bell (Afton)	P. Kanga (ExxonMobil)	<b>D. Smith (Intertek)</b>
M. Cabaj (Linamar)	B. Kearney (Afton)	<b>R. Slocum (LZ)</b>
<b>A. Comfort (Army)</b>	A. Lange (Intertek)	<b>M. Stevens (SwRI)</b>
J. Clark (TMC)	<b>T. Muransky (AAM)</b>	W. Venhoff (LZ)
<b>E. Donovan (Afton/C)</b>	D. Rabinowitz (Meritor)	<b>A. Zyski (Dana)</b>

Call to Order

Review of Agenda

The meeting agenda is attached.

Review of Membership

A motion was made by E. Donovan to make the following membership changes:

- Add Mike Cabaj (Linamar) as a voting member
- Replace J. Rucker (Meritor) with Daniel Rabinowitz (Meritor)
- Replace E. Donovan (Afton/C) with Matt Sangpeal (Afton)

The motion was seconded by T. Muransky. Unanimous approval, no abstentions.

Approval of Meeting Minutes

Meeting minutes for approval:

- "20190508\_SP" → May 8, 2019 – Troy, MI

Motion to approve by D. Smith, second by W. Venhoff to approve meeting minutes as presented.  
Unanimous approval, no abstentions.

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**

The group reviewed the previous meeting's progress update from R. Slocum where he shared that Lubrizol had success with a cheap and readily available control card that moved the drive-by-wire throttle blade as desired. However no further development time has been available to make more progress. All panel members agreed that there is hesitation to test this theory due to test demand and fear of modifying the test stand while it is working well.

#### **TMC 113 Dropout / New Discrimination Oil Development**

The SP discussed results from acceptance testing for TMC 119. Results are as follows:

- Lab A – EOT pinion scoring of 58
- Lab B – EOT pinion scoring of 38
- Lab B – EOT pinion scoring of 62
- Lab D – EOT pinion scoring of 95
- Lab G – EOT pinion scoring of 48

The panel agreed to have labs A, D, and G run one more test each to generate more data due to the low result of 38 from Lab B. The same guidelines for testing apply and E. Donovan restated labs are permitted to use a candidate run at any point during the reference period, or are allowed to use the 21st run of the reference sequence.

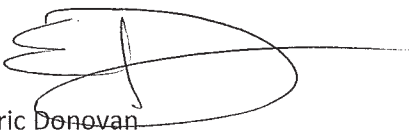
#### **New/Open Issues**

No new issues were raised at this time.

#### **Adjournment**

Motion by M. Stevens, second by W. Venhoff. All in favor, meeting adjourned.

Respectfully submitted,

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

Eric Donovan

L-42 Surveillance Panel Chairman



## L-42 Surveillance Panel Meeting

PRI  
Warrendale, PA  
August 7, 2019  
2:00 pm - 2:30 pm EST

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# Agenda

- ▶ **Call to Order**
- ▶ **Agenda**
- ▶ **Membership Review & Update**
- ▶ **Approval of Meeting Minutes**
- ▶ **L-42-1 Development**
- ▶ **Drive-by-wire throttle update**
- ▶ **New/Open Issues**
  - ▶ TMC 113 dropout / New discrimination oil development
- ▶ **Adjournment**

## L-42 SP Voting Members

-  Rob Banas – Exxon Mobil
-  Dylan Beck – TMC
-  Allen Comfort – US Army
-  Eric Donovan – Afton Chemical (Chair)
-  Arjun Goyal – BASF
-  Troy Muranky – AAM
-  Julie Rucker – Meritor
-  Robert Slocum – Lubrizol
-  Dale Smith – Intertek
-  Mary Stevens – SwRI
-  Amy Zyski - Dana

## Approval of Meeting Minutes

### **SP Meeting Minutes**

- ▶ “20190508\_SP” → May 8, 2019 – Automation Alley – Troy, MI



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# 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 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




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## Drive-by-wire throttle

 During the August 2017 meeting, options of a drive-by-wire throttle current, old design using the

 R. Slocum (Lz) found an off the drive-by-wire throttle body but

 Updates?

# 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
- 
**From May 2018 meeting:**
  - ▶ Lubrizol has direction towards potential new discrimination oil
  - ▶ The SP clarified that the new oil needs to consistently have double the scoring of the current passing oil
- 
**From August 2018 meeting:**
  - ▶ Lubrizol to blend 55 USG drum and send to TMC
  - ▶ Each lab will run this oil on a currently referenced test stand and report results
- 
**From November 2018 meeting:**
  - ▶ A drum of oil was sent to the TMC the week of 11/5/18
  - ▶ D. Beck will let E. Donovan know when the oil is ready to be shipped to labs
- 
**February 2019 meeting:**
  - ▶ Acceptance testing for TMC 119
    - 1 test on a currently referenced test stand per lab?



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## TMC 113 Dropout / New Discrimination Oil Development

### **From February 2019 meeting:**

- ▶ Acceptance testing for TMC 119
  - 1 test on a currently referenced test stand per lab. Run as 2<sup>nd</sup> discrimination run in 4 test calibration sequence or any time during a reference period

### **May 2019**

- ▶ Updates on TMC 119 runs from each lab?
  - Afton – EOT pinion 95, EOT ring 77
  - Intertek –
  - Lubrizol –
  - SwRI – EOT pinion 58, EOT ring 51
- ▶ 35 USG of TMC 113 remain at the TMC

### **August 2019**

- ▶ Updates from Intertek and Lubrizol?



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# New/Open Issues

Thanks!



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142244-L4	G	NI	119	20190730	48	0333	C1L925	P8AD078X
142249-L4	B	NI	119	20190514	62	1070	C1L925	P8AD078X
142248-L4	B	NI	119	20190509	38	1068	C1L925	P8AD078X
142252-L4	A	NI	119	20190404	58	0709	C1L925	P8AD078X
142250-L4	D	NI	119	20190318	95	2141	C1L925	P8AD078X

**Mean** 60.200  
**Std.** 21.568

**N Size** 5



**L-42 Surveillance Panel Membership/Attendance**  
**PRI - Warrendale, PA**  
**August 7, 2019**

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<i>DRB</i>	Bell, Don	NV	Afton Chemical 500 Spring St. Richmond, VA 23219	804-788-6332	<a href="mailto:don.bell@aftonchemical.com">don.bell@aftonchemical.com</a>

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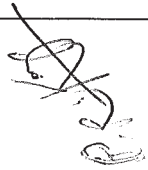
Initials	Name	Voting Non-Voting	Company Name Company Address	Phone: E-mail:	Contact information
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	Camposo, Lucas	NV	Evonik  723 Electronic Dr Horsham, PA 19044	Phone: 215-706-5809 E-mail: <a href="mailto:lucas.camposo@evonik.com">lucas.camposo@evonik.com</a>	
<i>ASC</i>	Comfort, Allen	V	US Army CCDC-- <i>GV5C</i>	Phone: 586-282-4225 E-mail: <a href="mailto:allen.s.comfort.civ@mail.mil">allen.s.comfort.civ@mail.mil</a>	
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<i>ERD</i>	Donovan, Eric	V/Chair	Afton Chemical  500 Spring St. Richmond, VA 23219	Phone: 804-788-5097 E-mail: <a href="mailto:eric.donovan@aftonchemical.com">eric.donovan@aftonchemical.com</a>	

**L-42 Surveillance Panel Membership/Attendance**  
**PRI - Warrendale, PA**  
**August 7, 2019**

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	Dwornick, Bridget	NV	US Army CCDC 6501 E. 11 Mile Rd. RDTA-DP MS 110 Warren, MI 48397	Phone: 586-282-4221 E-mail: <a href="mailto:bridget.l.dwornick.civ@mail.mil">bridget.l.dwornick.civ@mail.mil</a>
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**L-42 Surveillance Panel Membership/Attendance**  
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				E-mail: