



Address 100 Barr Harbor Drive
PO Box C700
W. Conshohocken, PA
19428-2959 | USA

Phone 610.832.9500
Fax 610.832.9666
Web www.astm.org

Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS

Chairman: KENNETH O. HENDERSON, Cannon Instrument Co., 2139 High Tech Road, State College, PA 16803, (814) 353-8000, Fax: (814) 353-8007, e-mail: kenohenderson@worldnet.att.net
First Vice-Chairman: BEN R. BONAZZA, TI Group Automotive Systems, Caro Research Center, 326 Green Street, Caro, MI, 48723 (989) 673-8181 ext. 227, Fax: (989) 673-3241, e-mail: bbonazza@us.tiauto.com
Second Vice-Chairman: JANET L. LANE, ExxonMobil Research & Engrg., 600 Billingsport Rd, Paulsboro, NJ 08066-0480 (856) 224-3302, Fax: (856) 224-3616, e-mail: janet.l.lane@exxonmobil.com
First Secretary: RALPH A. CHERRILLO, Shell Global Solutions (US) Inc., Westhollow Tech Ctr., 3333 Highway 6 South, Houston, TX 77082 (281) 544-8789, Fax: (281) 544-8150, e-mail: ralph.cherrillo@shell.com
Second Secretary: MICHAEL A. COLLIER, Petroleum Analyzer Co. LP, PO Box 206, Wilmington, IL 60481, (815) 458-0216, Fax: (815) 458-0217, e-mail: macvarlen@aol.com
Staff Manager: DAVID R. BRADLEY, (610) 832-9681, Fax: (610) 832-9668, e-mail: dbradley@astm.org

October 30th, 2017

Reply to:
Eric Donovan
Afton Chemical Corporation
500 Spring St.
Richmond, VA 23219
(804) 788-5097
(804) 788-6239 [FAX]
eric.donovan@aftonchemical.com

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

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

August 9, 2017 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 9, 2017

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

| | | |
|-----------------------------|------------------------|----------------------------|
| R. Banas (XOM) | A. Ebner (LZ) | D. Mosher (BASF) |
| D. Beck (TMC) | R. Fitzpatrick (Dana)* | S. Parke (TMC) |
| D. Bell (Afton) | B. Foecking (LZ) | G. Schmalbach (Dana)* |
| H. Bollman (Dana)* | A. Goyal (BASF) | D. Smith (Intertek) |
| J. Dharte (AAM) | P. Kanga (XOM) | A. Trader (Intertek) |
| T. Deany (Dana)* | B. Kearney (Afton) | W. Venhoff (LZ) |
| E. Donovan (Afton/C) | V. Marsic (LZ)* | R. Warden (SwRI) |
| K. Drlja (LZ) | J. Milner (Tianhe)* | |

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:

- "20170503_SP" → May 3, 2017 – Troy, MI

Motion to approve by W. Venhoff, second by J. Dharte to approve meeting minutes as presented.

Unanimous approval, no abstentions.

L-42 Hardware – 2017 order updates

Dana provided an update on the order build stating that material were arriving. The bottleneck in production would be the pinions and they are slated to arrive the first week of September. The Lugoff plant is expecting to ship the initial 9 axles on the 2nd or 3rd week of September. This would have the 3 participating labs providing feedback to Dana by the middle of October so they can finish production.

Dana asked the labs to send their carrier information to T. Deany for shipping the axles.

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.

Several panel members expressed concern over the age of the current throttle controls stating the controls are difficult to work with due to age and old designs. Both Lubrizol and Afton panel members will look into using newer drive-by-wire throttle bodies from other testing to see if that would work for our application.

New/Open Issues

S. Parke shared that during regular quality testing of the reference oils, dropout was found in TMC 113. This oil drum is from 2002 and the panel agreed that a new drum should be made as a replacement if possible. S. Parke will look into having a new drum made.

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 'Eric 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

August 9, 2017


11:00 am - 11:30 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
- 📌 TMC 113 Dropout
- 📌 New/Open Issues
- 📌 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

- ▲ “20170503_SP” → May 3, 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 2017 – Labs to run initial 9 axles and share data with Dana to give the green light for production of the remaining axles.

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

TMC 113 Dropout

- Additive dropout was found in latest QC testing
- Some settling in the drum is evident in the visual analysis, emissions, and the FTIR in both bottom quantitative (BQT) and qualitative (BQL) samples.
- There seems to be a concentration of additive at the bottom which is most notably impacting the concentration of Boron in the BQT sample (2.5X greater than the lab reference).
- Gear oil drums are mixed prior to shipment. Homogenization may be limiting the impact that this has on the performance of the oil.

New/Open Issues

Thanks!



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PHONE
 ✓ JEFF MILLER
 ✓ VERA MARŠIĆ
 ✓ GARY SCHMABACH
 ✓ TIM DEANY
 ✓ RANDY FITZPATRICK
 ✓ HALEY BOLLMAN

| L-42 Surveillance Panel Membership/Attendance | | | | | |
|---|------------------|-------------------|--|---------------------|--|
| PRI - Warrendale, PA | | | | | |
| February 8, 2017 | | | | | |
| Initials | Name | Voting Non-Voting | Company Name Company Address | Contact information | |
| DB | Banas, Rob | V | ExxonMobil Fuels, Lubricants & Specialties | Phone: | 678-493-3930 |
| | | | 114 Arcadia Park Dr. Canton, GA 30114 | E-mail: | rob.a.banas@exxonmobil.com |
| | Barrera, Tony | NV | Intertek Automotive Research | Phone: | 210-523-4653 |
| | | | 5404 Bandera Rd. San Antonio, TX 78238 | E-mail: | tony.barrera@intertek.com |
| DB | Bell, Don | NV | Afton Chemical | Phone: | 804-788-6332 |
| | | | 500 Spring St. Richmond, VA 23219 | E-mail: | don.bell@aftonchemical.com |
| | Bubonic, Brad | NV | The Lubrizol Corporation | Phone: | |
| | | | | E-mail: | babu@lubrizol.com |
| | Chambers, Harold | NV | Linamar Driveline Systems | Phone: | 248-358-6038 |
| | | | Travelers Tower 1 26555 Evergreen Rd. Ste 900 Southfield, MI 48076 | E-mail: | harold.chambers@linamar.com |
| | Comfort, Allen | V | US Army TARDEC | Phone: | 586-282-4225 |
| | | | | E-mail: | allen.s.comfort.civ@mail.mil |
| JAD | Dharte, John | V | AAM | Phone: | 313-758-4687 |
| | | | 1 Dauch Drive Detroit, MI 48211 | E-mail: | dhartej@aam.com |
| ERI | Donovan, Eric | V/Chair | Afton Chemical | Phone: | 804-788-5097 |
| | | | 500 Spring St. Richmond, VA 23219 | E-mail: | eric.donovan@aftonchemical.com |

L-42 Surveillance Panel Membership/Attendance
PRI - Warrendale, PA
February 8, 2017

| Initials | Name | Voting Non-Voting | Company Name Company Address | Contact information | |
|-----------|-------------------|----------------------|---|---------------------|--|
| | Duho, Kwame | NV | Valvoline | Phone: | |
| | | | | E-mail: | jkduho@ashland.com |
| ✓ K.D. | Drlja, Kristijan | NV | The Lubrizol Corporation | Phone: | 440-391-6374 |
| | | | 29400 Lakeland Boulevard Wickliffe, OH 44092 | E-mail: | krdr@lubrizol.com |
| | Dwornick, Bridget | NV | US Army TARDEC | Phone: | 586-282-4221 |
| | | | 6501 E. 11 Mile Rd. RDTA-DP MS 110 Warren, MI 48397 | E-mail: | bridget.l.dwornick.civ@mail.mil |
| ✓ BSF | Foecking, Brian | NV | The Lubrizol Corporation | Phone: | 440-347-2130 |
| | | | 29400 Lakeland Boulevard Wickliffe, OH 44092 | E-mail: | loif@lubrizol.com |
| | Gottwald, Thomas | NV | Afton Chemical | Phone: | 804-788-5230 |
| | | | 500 Spring St. Richmond, VA 23219 | E-mail: | thomas.gottwald@aftonchemical.com |
| ✓ L | Goyal, Arjun | V | BASF | Phone: | 914-785-2083 |
| | | | 500 White Plains Rd Tarrytown, NY 10591 | E-mail: | arjun.goyal@basf.com |
| | Hobson, Kevin | NV | Afton Chemical | Phone: | 804-788-5307 |
| | | | 500 Spring St. Richmond, VA 23219 | E-mail: | kevin.hobson@aftonchemical.com |
| | Jackson, Matt | NV | Southwest Research Institute | Phone: | 210-522-6981 |
| | | | | E-mail: | matt.jackson@swri.org |

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| Initials | Name | Voting Non-Voting | Company Name Company Address | Contact information | |
|--------------|--------------------------|----------------------|--|---------------------|---|
| | Joy, Tisha | NV | BASF | Phone: | |
| | | | | E-mail: | |
| PRK | Kanga, Percy | NV | ExxonMobil Research & Engineering | Phone: | 856-224-2094 |
| | | | 600 Billingsport Rd. Paulsboro, NJ 08066 | E-mail: | percy.r.kanga@exxonmobil.com |
| WAK | Kearney, Bill | NV | Afton Chemical | Phone: | 248-350-0640 |
| | | | 2000 Town Center, Suite 1160 Southfield, MI 48075 | E-mail: | bill.kearney@aftonchemical.com |
| U | Keisler, Marc | NV | Afton Chemical | Phone: | 804-788-5617 |
| | | | 500 Spring St. Richmond, VA 23219 | E-mail: | marc.keisler@aftonchemical.com |
| | Klein, Rick | NV | Valvoline | Phone: | 248-513-2538 |
| | | | | E-mail: | rmklein@ashland.com |
| | Koehler, Brian | NV | Southwest Research Institute | Phone: | 210-522-3588 |
| | | | P.O. Drawer 28510 San Antonio, TX 78228-0510 | E-mail: | Bkoehler@swri.org |
| | Lonsway, Chris | NV | The Lubrizol Corporation | Phone: | 440-347-4517 |
| | | | 29400 Lakeland Boulevard Wickliffe, OH 44092 | E-mail: | chris.lonsway@lubrizol.com |
| | Minke, Andreas | NV | BASF | Phone: | |
| | | | | E-mail: | andreas.minke@basf.com |

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February 8, 2017

| Initials | Name | Voting Non-Voting | Company Name Company Address | Contact information | |
|------------|-----------------|----------------------|---|---------------------|--|
| ✓ Phone | Marsic, Vera | NV | The Lubrizol Corporation | Phone: | 440-347-8024 |
| | | | 29400 Lakeland Boulevard Wickliffe, OH 44092 | E-mail: | vera.marsic@lubrizol.com |
| ✓ Phone | Milner, Jeff | NV | Tianhe Chemical | Phone: | 804-252-6928 |
| | | | | E-mail: | jilmilner@tianhe-us.com |
| ✓ Emm | Mosher, Donna | NV | BASF | Phone: | 269 217 1715 |
| | | | 100 Park Ave Florham Park, NJ 07932 | E-mail: | donna.mosher@basf.com |
| | Opperman, Rob | NV | Meritor | Phone: | 248-435-1544 |
| | | | 2135 W. Maple Rd Troy, MI 48084 | E-mail: | Robert.opperman@meritor.com |
| ✓ Sp | Parke, Scott | V | ASTM Test Monitoring Center | Phone: | 412-365-1036 |
| | | | 6555 Penn Ave Pittsburg, PA 15206 | E-mail: | sdp@astmtmc.cmu.edu |
| | Pregaman, Chris | NV | The Lubrizol Corporation | Phone: | 440-347-4225 |
| | | | 29400 Lakeland Boulevard Wickliffe, OH 44092 | E-mail: | crpr@lubrizol.com |
| | Rucker, Jule | V | Meritor | Phone: | 248-435-1430 |
| | | | 2135 W. Maple Rd Troy, MI 48084 | E-mail: | jule.rucker@meritor.com |
| | Sattler, Eric | NV | US Army | Phone: | 586-282-2272 |
| | | | Warren, MI | E-mail: | eric.r.sattler.civ@mail.mil |

L-42 Surveillance Panel Membership/Attendance
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February 8, 2017

| Initials | Name | Voting Non-Voting | Company Name Company Address | Contact information | |
|----------|-----------------|----------------------|---|---------------------|--|
| | Schwenk, Daniel | NV | Afton Chemical | Phone: | 804-788-6326 |
| | | | 500 Spring St. Richmond, VA 23219 | E-mail: | daniel.schwenk@aftonchemical.com |
| AS | Smith, Dale | V | Intertek Automotive Research | Phone: | 412-855-6854 |
| | | | 5404 Bandera Rd. San Antonio, TX 78238 | E-mail: | dale.smith@intertek.com |
| AT | Trader, Angela | NV | Intertek Automotive Research | Phone: | 210-706-1533 |
| | | | 5404 Bandera Rd. San Antonio, TX 78238 | E-mail: | angela.trader@intertek.com |
| WV | Venhoff, Wes | V | The Lubrizol Corporation | Phone: | 440-347-4879 |
| | | | 29400 Lakeland Boulevard Wickliffe, OH 44092 | E-mail: | wve@lubrizol.com |
| RW | Warden, Rebecca | V | Southwest Research Institute | Phone: | 210-522-6266 |
| | | | | E-mail: | rebecca.warden@swri.org |
| | Zreik, Khaled | NV | General Motors | Phone: | 248-977-9214 |
| | | | 823 Joslyn Ave Pontiac, MI 48340-2925 | E-mail: | khaled.zreik@gm.com |
| AE | Ebner, Alex | NV | The Lubrizol Corporation | Phone: | 440-347-2664 |
| | | | 29400 Lakeland Blvd Wickliffe, OH 44092 | E-mail: | alex.ebner@lubrizol.com |
| DB | Dylan Beck | NV | ASTM TMC | Phone: | 724-355-1854 |
| | | | | E-mail: | djb@astmtmc.cmu.edu |