

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, 3457 WOODVALLEY DRIVE, LAPEER, MI 48446 (810) 664-6769

e-mail: bbonazza@charter.net

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 (ÚS) 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: Michael.collier@paclp.com

Staff Manager: DAVID R. BRADLEY, (610) 832-9681, Fax: (610) 832-9668, e-mail: dbradley@astm.org

October 20th, 2015

Reply to: Chris Prengaman The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092 (440) 347-4225 (440) 347-2377 (FAX) crpr@lubrizol.com

ASTM D02.B0.03 L-37-1 Surveillance Panel Members and Guests:

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

August 12th 2015, Surveillance Panel Meeting

Please direct any corrections or comments to my attention.

Sincerely,

Chris Prengaman, Chairman L-37-1 Hardware Taskforce Chairman

Report of Meeting L-37-1 Surveillance Panel Meeting August 12th, 2015 Meeting

Attendees:

Voting Members in **BOLD**

Dharte, John – AAM

Gottwald, Thomas – Afton Chemical

Keisler, Marc – Afton Chemical

Bell, Don – Afton Chemical

Parke, Scott - ASTM TMC

Goyal, Arjun - BASF

Zakarian, Jack - Chevron Products

Guzikowski, Joe – Dana

Banas, Rob - ExxonMobil

Kanga, Percy – ExxonMobil

Smith, Dale - Intertek Automotive Research

Trader, Angela – Intertek Automotive Research

Prengaman, Chris - Lubrizol

Gropp, Jerry – Lubrizol

Umerley, Matt - Lubrizol

Hamilton, Larry - Lubrizol

Lonsway, Chris – Lubrizol

Muransky, Troy - Meritor

Warden, Rebecca - Southwest Research Institute

Call to Order – 13:30 EST.

- 1.0 Approval of Meeting Minutes
 - May 13th Automation Alley, Detroit
 - June 30th Teleconference
 - July 9th Teleconference
 - Thomas Motion
 - Rebecca 2nd
 - Unanimous Pass
- 2.0 Data Dictionary / Uploading Tests
 - 4/9/15 data dictionary was converted to Metric
 - Labs should start uploading data as they have time
- 3.0 Data Review/Update
 - 3.1 Current data summary was presented for discussion, including historic data on TMC 117 Additive in Dana hardware showing strong tendency to pass
 - J. Guzakowski, representing Dana, does not want pass/fail limits to change but OK with +1 correction factor

3.2 Motion #1

Adopt L-37-1 as replacement L-37 test based initial matrix and current running conditions with Gleason gears

Thomas Motion Rebecca 2nd

Discussion

3.3 Motion #2

Approve this batch of hardware with a +1 correction factor for all Ridging results on pinion and ring for this batch of Gleason hardware (2014-04), targets to be set by TMC Thomas Motion

Argent 2nd

Discussion

- -The group discussed whether or not a +1 correction factor should be used
- -Motion #1 and Motion #2 were tabled after it became apparent that the motions would not pass

3.4 Actions

Labs were requested to look into alternative test conditions Labs were asked to talk to their builders about pattern template

- 4.0 Rating Workshop follow up/Data Review
 - 4.1 Data Sheet Attached
 - 4.2 Raters in good agreement on Ripple/Ridge topic
 - 4.3 Raters recommended to insert "removal of shot-peen..." comment in wear definition section of procedure to distinguish from historical wear definition "removal of tooling marks"

5.0 Other

- 5.1 Replacement Housings
 Afton was requested to distribute data on aftermarket housing
- 5.2 Procedure C. Prengaman will distribute final copy for review

6.0 Adjournment

Motion to adjourn 15:40

Respectfully Submitted Chris Prengaman

L-37-1

8/12/2015 1:30 PM

Warrendale, PA; PRI Headquarters

Agenda

- Minutes
 - May 13th Automation Alley, Detroit
 - June 30th Teleconference
 - July 9th Teleconference
 - (7/23 still needs posted)

- Data Dictionary / Uploading Tests
 - 4/9 we converted to Metric

Agenda

Data Review/update

- Rating Workshop follow up
- Rating Discussion

Data / Test condition Discussion

Data Review

- 134 100% Fails
- 155-1 100% Pass
- 152-2 2/8 Fail (Rippling) 1/6 Fail (Rippling) Can
- 117 6/12 Fails (~50%)

Oil			Pinion					Ring		
	Wear	Ripple	Ridge	Spitt	Score	Wear	Ripple	Ridge	Spitt	Score
117	7	7	6	9.9	10	8	9	7	9.9	10
117	8	9	9	9.9	10	8	9	10	9.9	10
117	7	8	7	9.9	10	7	10	8	9.9	10
117	7	8	8	9.9	10	7	10	9	9.9	10
117	7	6	6	9.9	10	7	9	7	9.9	10
117	9	10	9	9.9	9	9	10	10	10	10
117	8	9	9	9.9	10	9	10	9	9.9	10
117	7	8	8	9.9	10	7	10	9	9.9	10
117	7	8	7	9.9	10	7	10	8	9.9	10
117	7	8	7	9.9	10	7	9	7	9.9	10
117	9	10	9	9.9	10	9	10	10	9.9	10
117	9	10	9	9.9	10	9	10	10	9.9	10

117 Additive

Dana L-37 Data supplied by supplier

L37 Data for TMC 117 performance additive approved by LI

LJ/ Dala	101 1	IAIC TI	· / hei	1011116	ilice a	uuitiv	c ahl	JIOVE	A DY LI
Viscosity Grade	80W-90	80W-90	80W-90	80W-90	80W-140	80W-90	80W-90	80W-90	
PRI QPL#	0715	0707	0664	0644	Not Applied For	Not Applied For	0553	0551	
Meeting #	176/EC/13	176/EC/03	174/EC/03	173/EC/06	172/EC/05	172/EC/03	168/EC/05	168/EC/03	
Coating	Lubrited	Lubrited	Lubrited	Lubrited	Lubrited	Lubrited	Green	Green	
Test Type	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	
Run Number	2A-1380	2A-1372	2A-1237	2A-1241	2A-1148	2A-1147	2A-921	2A-922	
Pinion Code	V1L528	V1L528	V1L528	V1L528	V1L528	V1L528	V1L500	V1L500	
	Ring/Pinion	Ring/Pinion	Ring/Pinion	Ring/Pinion	Ring/Pinion	Ring/Pinion	Ring/Pinion	Ring/Pinion	
Ridging	8/8	10/8.7	9/8	8/8	9/8.7	10/9.4	10/9	10/9	
Rippling	10/9	10/10	10/8	10/9	10/9.4	10/9.4	10/9.0	10/9	
Wear	8/7	8/7	7/6	7/6	9/6	7/6	8/8	8/7	
Scoring	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	
Pitting/Spalling	9.9/9.9	9.9/9.9	9.9/9.9	9.9/9.9	9.9/9.9	9.9/9.9	9.9/9.9	9.9/9.9	
Viscosity Grade	80W-90	85W-140	80W-90	80W-90	80W-90	80W-90	85W-140	80W-90	
PRI QPL#	0514	0512	0511	0480	Not Applied For	0405	0412	0411	
Meeting #	165/EC/06	165/EC/04	164/EC/03	162/EC/06	158/EC/03	157/EC/10	157/EC/09	157/EC/08	
Coating	Green	Green	Green	Green	Green	Green	Green	Green	
Test Type	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	
Run Number	2A-758	2A-777	2A-745	2A-653	3A-1107	04-421	04-420	04-419	
Pinion Code	V1L500	V1L500	V1L500	V1L500	V1L500	V1L500	V1L500	V1L500	
	Ring/Pinion	Ring/Pinion	Ring/Pinion	Ring/Pinion	Ring/Pinion	Ring/Pinion	Ring/Pinion	Ring/Pinion	
Ridging	10/9	10/9	10/8	10/9	10/8	10/9	10/9	10/9	
Rippling	10/9	10/10	10/10	10/10	10/10	10/9	10/8	10/9	
Wear	8/8	8/8	8/7	8/8	8/8	8/7	8/7	8/8	
Scoring	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	
Pitting/Spalling	9.9/9.9	10/9.9	9.9/9.9	9.9/9.7	9.9/9.9	9.9/9.8	9.9/9.8	9.9/9.9	
									New data found
Viscosity Grade	80W-90	80W-90	80W-90	80W-90	80W-90	80W-90	80W-90	80W-90	85W-140
PRI QPL#	Not Applied For	Not Applied For	Not Applied For	Not Applied For	0381	0383	0379	0364	0712
Meeting #	156/EC/13	156/EC/11	156/EC/09	156/EC/07	155/EC/08	155/EC/06	155/EC/04	154/EC/10	154/EC/07
Coating	Green	Green	Green	Green	Green	Green	Green	Green	Green
Test Type	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Run Number	1-969	3A-1007	04-403	04-402	1-950	1-948	1-949	3A-1025	3A-1011
Pinion Code	V1L417	V1L417	V1L417	V1L417	V1L417	V1L417	V1L417	V1L417	V1L417
	Ring/Pinion	Ring/Pinion	Ring/Pinion	Ring/Pinion	Ring/Pinion	Ring/Pinion	Ring/Pinion	Ring/Pinion	Ring/Pinion
Ridging	10/9	10/9	10/10	10/9	10/9	9/9	10/9	10/8	10/9
Rippling	10/10	10/9	10/10	10/8	10/9	9/9	10/9	10/9	10/9
Wear	8/8	8/8	8/8	8/7	7/7	7/7	7/7	9/8	9/8
	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40

10/10

9.9/9.9

Pitting/Spalling

10/10

9.9/9.9

10/10

9.9/9.9

10/10

9.9/9.9

10/10

9.9/9.9

10/10

9.9/9.9

10/10

9.9/9.9

9.9/9.9

10/10

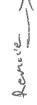
9.9/9.9

Agenda

- Other
 - Pattern Template We need to address this still...
 - Replacement Housings?
 - Procedure Final review. Chris will send out minor tweaks from last version. Preparation for final steps.
- L-37 precision (figure out what needs done for a L-37 telecon)

ASTM L-37-1 Hardware Taskforce Membership / Sign In List Meeting Date: $\frac{1}{8}$

Initials*	Name	Voting Status	Company Name & Address		Phone/Email Info
	Athey, Allison	Voting	Volvo GGT 13302 Pennsylvania Avenue Hagerstown, Maryland 21740	Phone: Fax: E-Mail:	301-573-5684 allison.athey@volvo.com
Cond	Banas, Rob	Voting	ExxonMobil Fuels, Lubriacrits & Specialities 114 Arcadia Park Dr. Canton, GA 30114	Phone: Fax: E-Mail:	678-493-3930 rob.a.banas@exxonmobil.com
- 2	Bell, Don	Non Voting	Afton Chemical SOO Spring Street Richmond, VA 23219	Phone: Fax; E-Mail;	804-788-6332 804-788-6243 don.bell@aftonchemical.com
	Boschert, Tom	Non Voting	Afton Chemical 500 Spring Street Richmond, VA 23219	Phone: Fax: E-Mail:	804-788-5202 tom.boschert@affonchemical.com
	Bubonic, Brad	Non Voting	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: Fax: E-Mail:	440-347-5325 brad.bubonic@lubrizol.com
	Chalkley, Jay	Voting	Afton Chemical 500 Spring Street Richmond, VA 23219	Phone: Fax: E-Mail:	jarrod.chalkley@aftonchemical.com
	Clark, Jeff	Non Voting	ASTM Test Monitoring Center 6555 Penn Avenue Pittsburgh, Pennsylvania 15206	Phone: Fax: E-Mail:	412-365-1032 412-365-1047 jac@astmtmc.cmu.edu
	Chambers, Harold	Non-Voting	Linamar Driveline Systems 26555 Evergreen Rd Southfield 48076	Phone: Fax: E-Mail:	248-368-6038 hchambers@linamer.com
	Comfort, Allen	Voting	US Army RDECOM/TARDEC 6501 East 11 Mile road Warren, MI 48397-5000	Phone: Fax: E-Mail:	586-282-4225 586-282-4244 allen.s.comfort.civ@mail.mil
2	Dharte, John	Voting	American Axle & Manufacturing 1 Dauch Drive Detroit, MI 48211	Phone: Fax: E-Mall:	313-758-4687 313-758-4237 Dhartej@aam.com
	Oykhno, Olga	Non-Voting.	Non-Voting 500-Whike Pishes Rd Tarytown NY	Phone: Fax: E-Mail:	olga.dykhno@BASF.com KSAS



ASTM L-37-1 Hardware Taskforce Membership / Sign In List Meeting Date:

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Initials*	Name	Voting Status	Company Name & Address		Phone/Email Info
	Dwornick, Bridget	Non-Voting	US Army RDECOM/TARDEC 6501 East 11 Mile road Fr. Warren, MI 48397-5000 E.	Phone: 586 Fax: 586 E-Mail: brid	586-282-4221 586-282-4244 bridget.dwornick@us.army.mil
	Farber, Frank	Non Voting	ASTM Test Monitoring Center FF 6555 Penn Avenue Prittsburgh, Pennsylvania 15206 E	Phone: 412 Fax: 412 E-Mail: fmf(412-365-1030 412-365-1047 fmf@astmtmc.cmu.edu
	Foeking, Brian	Non Voting	The Lubrizol Corporation 29400 Lakeland Boulevard Fa Wickliffe, Ohio 44092 E.	Phone: 440 Fax: 440 E-Mail: bria	440-347-2130 440-347-9011 brian.foeking@lubrizol.com
	Gao, Hong	Non-Voting	Conoco Philips 100 s Pine St. Fa Ponca City, OK 74602	Phone: 580 Fax: 580 E-Mail: hong	580-767-2126 580-767-4534 hong.gao@conocophillips.com
B	Gottwald, Thomas	Non-Voting	Afton Chemical 500 Spring Street Richmond, VA 23219	Phone: 804 Fax: E-Mail: thor	804-788-5230 thomas gottwald@affonchemical.com
3	Goyal, Arjun	Voting	BASF 500 White Plaines Rd Fa Tarrytown NY E	Phone: 914 Fax: E-Mail: Arju	914-785-2083 Arjun. Goyal@BASF.com
THE	Gropp, Jerry	Non Voting	The Lubrizol Corporation F29400 Lakeland Boulevard F2 Wickliffe, Ohio 44092 E.	Phone: 440 Fax: E-Mail: JLG	440-347-1223 JLG@lubrizol.com
	Guzikowski, Joe	Voting	Dana Corporation 3939 Technology Drive Fr Maumee, OH 43537 E.	Phone: 419 Fax: E-Mail: joe.	419-887-3425 joe.guzikowski@dana.com
4 H	Hamilton, Larry	Non Voting	The Lubrizol Corporation 29400 Lakeland Boulevard Fe Wickliffe, Ohio 44092	Phone: 440 Fax: 440 E-Mail: Idha	440-347-2326 440-347-2878 Idha@lubrizol.com
	Hobson, Kevin	Non Voting	Afron Chemical Fr 500 Spring Street Fr Richmond, VA 23218 E-	Phone: 804 Fax: E-Mail: kevin	804-788-5307 kevin.hobson@aftonchemical.com

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Initials*	Name	Voting Status	Company Name & Address		Phone/Email Info
MGK	MG/L Keisler, Marc	Non Voting	Afton Chemical 500 Spring Street Richmond, VA 23218	Phone: Fax: E-Mail:	804-788-5617 804-788-6358 @aftonchemical.com
	Huron, John	Non Voting	Chevron Oronite Company LLC Suite 210 San Antonio, Texas 78228-1374	Phone: Fax: E-Mail:	210-731-5609 210 731 5699 huro@dhevrontexaco.com
,	Jackson, Matt	Non Voting	Southwest Research Institute PO Drawer 28510 San Antonio, Texas 78228-0510	Phone: Fax: E-Mail:	210-522-6981 210-522-6858 matt.jackson@swn.org
PRITE PARTY	Kanga, Percy	Non Voting	ExxonMobil Research & Engineering 600 Billingsport Road Paulsboro, New Jersey 08066	Phone: Fax: E-Mail:	856-224-2094 856-224-3613 percy.r.kanga@exxonmobil.com
	Kearney, BIII	Non Voting	Afton Chemical Southfield, MI	Phone: Fax: E-Mall:	
	Koehler, Brian	Non Voting	Southwest Research Institute PO Drawer 28510 San Antonio, Texas 78228-0510	Phone: Fax: E-Mail:	210-522-3588 210-684-7523 bkoehler@swri.org
	Lind, Don	Non Voing	ASTM Test Monitoring Center 6555 Penn Avenue Pittsburgh, Pennsylvania 15206	Phone: Fax: E-Mail:	412-365-1034 412-365-1047 dml@astntmc.cmu.edu
	Lochte, Michael	Non Voting	Southwest Research Institute PO Drawer 28510 San Antonio, Texas 78228-0510	Phone: Fax: E-Mail:	210-522-5430 210-684-7523 Mochte@swri.org
	Marougy, Thelma	Voting	Eaton Corporation 26201 Northwestern Highway Southfield, MI 48076	Phone: Fax: E-Mail:	248-226-6985 248-226-2739 thelmaemarougy@eaton.com
	McGlone, Bruce	Voting	Meritor Automotive 2135 West Maple Troy, Michigan 48084	Phone: Fax: E-Mail:	248-435-9929 248-435-9902 Bruce.McGlone@Meritor.com

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Initials*	Name	Voting Status	Company Name & Address		Phone/Email Info
Š	Muransky, Troy	Non-Voting	Meritor Automotive Voting 2135 West Maple Land Troy, Michigan 48084	Phone: 24 Fax: 24 E-Mail: tro	248-435-1401 248-435-6602 troy.muransky@Meritor.com
	Mosher, Donna	Non Voting	Eaton Corporation 26201 Northwestern Highway Southfield, MI 48034	Phone: 26 Fax: E-Mail: doi	269-342-3039 donnammosher@eaton.com
	O'Brien, Cheryl	Non Voting	General Motors 823 Joslyn Ave. Pontiac, MI 48340-2925	Phone: 24 Fax: 24 E-Mail: ch	248-343-7347 248-576-7146 cheryl.obrien@gm.com
	Pappademos, Lou	Non Voting	Dana Corporation Fort Wayne, IN	Phone: Fax: E-Mail: lot	lou.pappademos@dana.com
N	Parke, Scott	Voting	ASTM Test Monitoring Center 6555 Penn Avenue Pittsburgh, Pennsylvania 15206	Phone: 41 Fax: E-Mail: sd	412-365-1036 sdp@astmtmc.cmu.edu
	Prengaman, Chris	Voting/Chai	The Lubrizol Corporation Voting/Chai 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 44 Fax: E-Mail: ch	440-347-4225 chris.prengaman@lubrizol.com
14	Radonich, Peter	Non Voting	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 44 Fax: 44 E-Mail: pe	440-347-2184 440-347-9011 peter.radonich@lubrizol.com
	Recinos, Will	Non Voting	Afton Chemical 500 Spring Street Richmond, VA 23218	Phone: 804 Fax: E-Mail: will	804-788-5323 william.recinos@aftonchemical.com
	Sanchez, Art	Non Voting	Southwest Research Institute PO Drawer 28510 San Antonio, Texas 78228-0510	Phone: 21 Fax: 21 E-Mail: as	210-522-3445 210-680-1777 asanchez@swri.org
W.	Smith, Dale	Voting	Intertek Automotive Research 5404 Bandera Rd San Antonio, Texas	Phone: 41; Fax: 21 E-Mail: Dale	412-855-6854 210-684-6074 Dale,Smith@intertek.com

ASTM L-37-1 Hardware Taskforce Membership / Sign In List Meeting Date:

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Initials*	Name	Voting Status	Company Name & Address		Phone/Email Info
	Song, HaiQing	Non Voting	Research Institue of Petroleum Processing No. 18, Xue Yan Road, PO Box 914-19 Beijing 10083 P.R. China	Phone: Fax: E-Mail:	011-86-10-8236-8182 011-86-10-6231-1290 songhq@ripp-sinopec.com
	Sulivan, Bill	Non Voting	William T. Sullivan, Inc. 5 Scheiber Drive Brick, NJ 08723	Phone: Fax: E-Mall:	908-930-3512 267-220-7750 wtsullivan@comcast.net
	Suresh, Arunya	Non Voting	BASF	Phone; Fax: E-Mail:	914-262-8715 arunya.suresh@basf.com
KA	Trader, Angela	Non Voting	Intertek Automotive Research 5404 Bandera Rd San Antonio, Texas	Phone: Fax: E-Mail:	210-706-1533 angela trader@intertek.com
)W	MU Umerley, Matt	Non Voting	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohlo 44092	Phone: Fax: E-Mall:	440-347-4589 440-347-2878 mtue@lubrizol.com
3	Warden, Rebecca	Voting	Southwest Research Institute PO Drawer 28510 San Antonio, Texas 78228-0510	Phone: Fax: E-Mail:	210-522-6266 rebecca.warden@swri.org
	Xie, JingChun	Non Voting	Lanzhou Lube Oil R&D Institute No. 369 Yumen Streat, XiGu District Lanshou 730060, GanSu Province P.R. China	Phone: Fax: E-Mail:	011-86-931-793-3713 011-86-139-9319-2560 xlejingchun_rhy@petrochina.com.cn
CK	Zakarian, Jack	Voting	Chevron Products 100 Chevron Way Richmond, CA 94802	Phone: Fax: E-Mail:	510-242-3595 510-242-3758 jaza@chevron.com
ļ	Zreik, Khaled	Voting	General Motors 823 Joslyn Ave Pontiac, MI 48340-2925	Phone: Fax: E-Mail:	248-877-9214 248-857-2550 khaled.zreik@gm.com
	Chris			Phone: Fax: E-Mail:	247-4517

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nitials*	Name	Voting	Company Name & Address	Phone/Email Info
		,		Phone: Fax: E-Mail:
				Phone: Fax: E-Mail:
				Phone: Fax: E-Mall:
				Phone: Fax: E-Mail: