



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

May 27th, 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:

- **May 13th 2015, Surveillance Panel Meeting; Automation Alley, Troy, Michigan**

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
Automation Alley, Troy, Michigan
May 13th, 2015 Meeting

Attendees:

Voting Members in **BOLD**

Chalkley, Jay – Afton Chemical

Keisler, Marc – Afton Chemical

Matthews, Brad – Afton Chemical

Parke, Scott – ASTM TMC

Guzikowski, Joe – Dana

Banas, Rob – ExxonMobil

Kanga, Percy - ExxonMobil

Dennis, Mike – The Gleason Works

Trader, Angela – Intertek Automotive Research

Pregaman, Chris – Lubrizol

Gropp, Jerry – Lubrizol

Umerley, Matt – Lubrizol

Hamilton, Larry - Lubrizol

McGlone, Bruce – Meritor

Muransky, Troy - Meritor

Warden, Rebecca – Southwest Research Institute

Dwornick, Bridget - USArmy

The meeting was called to order at 1320 EST.

1.0 Agenda Review

The agenda was reviewed

2.0 Meeting Minute Approval

The following minutes were approved by voice vote, no abstentions, no opposition.

- 2/18/15
- 3/19/15
- 4/9/15

3.0 Data Discussion

Data generated to date was discussed.

Discussion on sheet peening, a change to the shot was made prior to running the first part, all parts have used the same shot peen while being manufactured.

J. Guzikowsky shared that he and G. Fett feels the need for the new pass/fail criteria to be same as L-37.

TMC 117 “parent” fluid performance has not been publicly presented besides from a few data points. TMC 117 is a J2360 approved fluid.

The group discussed the ratings on the parts.

Several individuals point out that the test is meant to push an oil to it’s limit and that might be what we are seeing with the 117 results.

L-37 Gleason gears should be major focus at next rating workshop
S. Parke – the TMC will contact the TMC 117 supplier to review the historical data from TMC 117.

4.0 Lubrited Hardware Update

Reddish hue on outer edge of ring gear. This is still be investigated.
C. Prengaman will set up a group phone call with Custom Coating to discuss findings and future actions

5.0 Alternative Housings

2 alternative housing suppliers are being investigated. Strange Engineering and Gear Tech HD.
2 runs have been made using dana hardware running a L-37 in Strange Engineering Housings. The initial data looks promising. Labs will continue to work on this topic in advance of running out of

6.0 Draft Procedure Wording

Wording will be updated to clarify reference period end date like other ASTM procedures.
Rust Preventative Total Osyris 211S will be added in the build section.

7.0 Pattern Photo Templates

Labs are requested to provide feedback on the pattern photo templates distributed as additional axles are built.

8.0 Adjournment

Motion to adjourn.
Respectfully Submitted
Chris Prengaman

being essential



L-37-1

May 13th 2015 Automation Alley, MI

Agenda

- Meeting Minutes
 - 2/18/15
 - 3/19/15
 - 4/9/15
- Data Review
- Lubrified Hardware Update
- Alternative Housings
- Procedure Wording
- Pattern Photo Templates

Alternative Housings

- Strange Engineering
 - . <http://www.strangeengineering.net/dragrace/housings-components/s60-housings/s60-with-ends-and-leaf-spring-mounts.html>
- GearTech HD
 - <http://www.geartechhd.com/home>
- Some “Strange” comments:
 - Off the shelf, we had two custom made in a few weeks. Total cost for one axle (not including internals): \$785-housing, \$470-axle kit with bearings, studs and press rings, \$50 retaining plates and \$39 for the spanner wrench.
 - Housing is beefier, this is great for durability but may change housing deflection and therefore as-designed surface contact profile under load, only testing them will tell.
 - We are not sure how the internal profile differences will alter the test, or if they will. Again, need to test them.
 - The axle tubes are fully welded to the housing, so very robust and no silicone needed.
 - Saving the best for last; the building of this axle is considerably easier/quicker and solves a few issues I think the labs will see with the current OEM axles. The spanners eliminate the differential shims (so no spitting shims) as well as allow the differential to be dropped in verses having to use a case spreader. Obviously, adjusting backlash & preload is quick and easy. In the future, I can see a rack of differentials with bearings (because there are no shims), ring attached and matching pinion with bearing installed all paired up and ready for building.
 - Normal shim stack for Dana has been in the neighborhood of .040”, this axle was .020” so it took a little more time to get the turning torque correct. We have a baseline so the next axle will be easier.

Strange Testing Results

					Ring					Pinion				
Housing	Type	Pinion	Oil	EOT Date	Wear	Rippling	Ridging	Pitt/Spall	Scoring	Wear	Rippling	Ridging	Pitt/Spall	Scoring
Strange 1	Standard	528	155-1	5/2/2015	8	10	10	9.9	10	7	9	9	9.9	10
Strange 2	Standard	528	134	5/6/2015	6	10	6	9.9	10	6	9	7	3	10

Pinion - Individual teeth spalling						
9.9	9.9	9.9	9.9	9.9	9.9	9.9
6	7	4	3	3	4	9.8

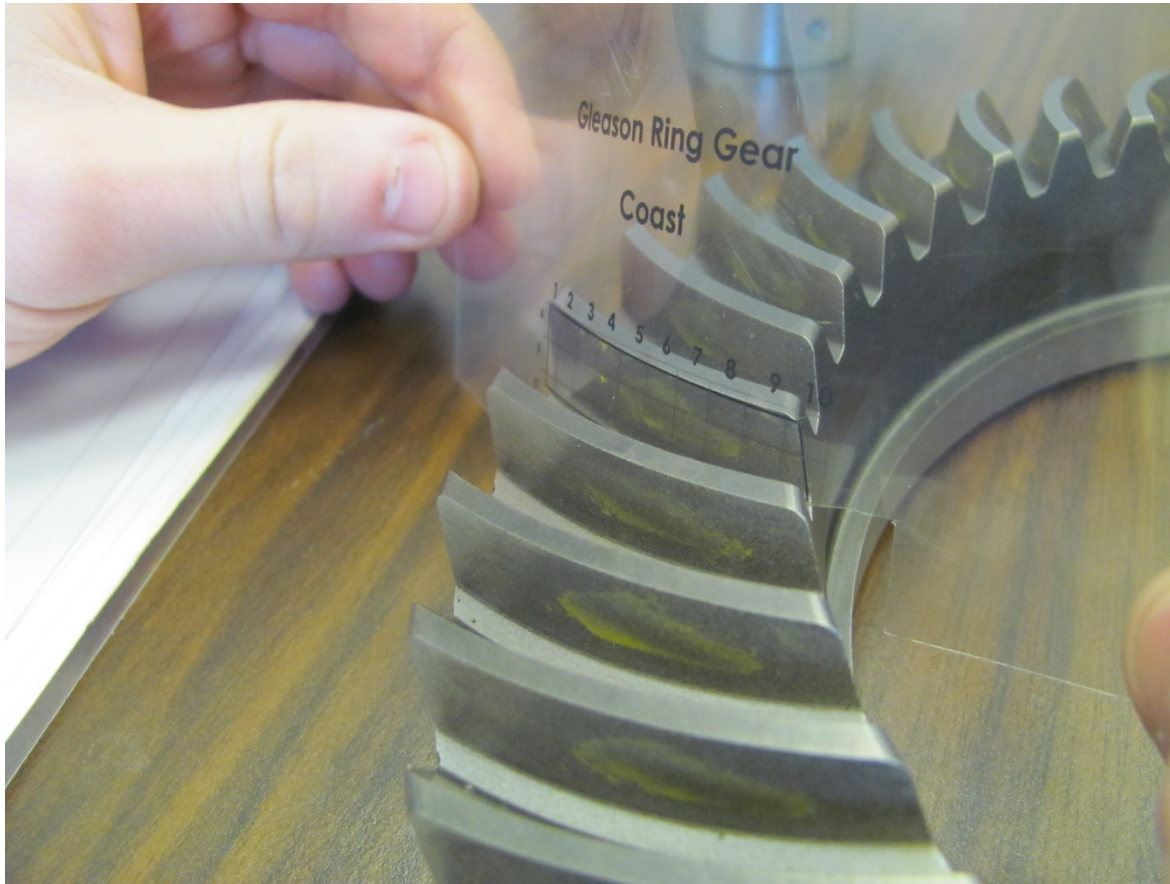
Procedure Wording

- “ L37
- 9.2.3 *Reference Test Frequency*—One reference test is required every four months or after 650 test hours on non reference fluids, whichever occurs first. Any test started on or before the stand calibration expiration date is defined to have been run on a calibrated stand.”

- Total RP needs added.

- Build Instructions

Pattern Photo Template



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

Meeting Date: 5/13/15

Initials*	Name	Voting Status	Company Name & Address	Phone/Email Info
	Athey, Allison	Voting	Volvo GGT 13302 Pennsylvania Avenue Hagerstown, Maryland 21740	Phone: 301-573-5684 Fax: E-Mail: allison.athey@volvo.com
RB	Banas, Rob	Voting	ExxonMobil Fuels, Lubricants & Specialties 114 Arcadia Park Dr. Canton, GA 30114	Phone: 678-493-3930 Fax: E-Mail: rob.a.banas@exxonmobil.com
	Bell, Don	Non Voting	Afton Chemical 500 Spring Street Richmond, VA 23219	Phone: 804-788-6332 Fax: 804-788-6243 E-Mail: don.bell@aftonchemical.com
	Boschert, Tom	Non Voting	Afton Chemical 500 Spring Street Richmond, VA 23219	Phone: 804-788-5202 Fax: E-Mail: tom.boschert@aftonchemical.com
	Bubonic, Brad	Non Voting	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-5325 Fax: E-Mail: brad.bubonic@lubrizol.com
JW	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: 412-365-1032 Fax: 412-365-1047 E-Mail: jac@astmtmc.cmu.edu
	Chambers, Harold	Non-Voting	Linamar Driveline Systems 26555 Evergreen Rd Southfield 48076	Phone: 248-358-6038 Fax: E-Mail: hchambers@linamar.com
	Comfort, Allen	Voting	US Army RDECOM/TARDEC 6501 East 11 Mile road Warren, MI 48397-5000	Phone: 586-282-4225 Fax: 586-282-4244 E-Mail: allen.s.comfort.civ@mail.mil
	Dharte, John	Voting	American Axle & Manufacturing 1 Dauch Drive Detroit, MI 48211	Phone: 313-758-4687 Fax: 313-758-4237 E-Mail: Dhartej@aam.com
	Dykhno, Olga	Non-Voting	BASF 500 White Plains Rd Tarrytown NY	Phone: Fax: E-Mail: olga.dykhno@BASF.com

* Initial to indicate attendance at subject meeting

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

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

* Initial to indicate attendance at subject meeting

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

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

* Initial to indicate attendance at subject meeting

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

Initials*	Name	Voting Status	Company Name & Address	Phone/Email Info
	Muransky, Troy	Non Voting	Meritor Automotive 2135 West Maple Troy, Michigan 48084	Phone: 248-435-1401 Fax: 248-435-6602 E-Mail: troy.muransky@Meritor.com
	Mosher, Donna	Non Voting	Eaton Corporation 26201 Northwestern Highway Southfield, MI 48034	Phone: 269-342-3039 Fax: E-Mail: donnamosher@eaton.com
	O'Brien, Cheryl	Non Voting	General Motors 823 Joslyn Ave. Pontiac, MI 48340-2925	Phone: 248-343-7347 Fax: 248-676-7146 E-Mail: cheryl.obrien@gm.com
	Pappademos, Lou	Non Voting	Dana Corporation Fort Wayne, IN	Phone: Fax: E-Mail: lou.pappademos@dana.com
	Parke, Scott	Voting	ASTM Test Monitoring Center 6555 Penn Avenue Pittsburgh, Pennsylvania 15206	Phone: 412-365-1036 Fax: E-Mail: sdp@astmtmc.cmu.edu
	Prengaman, Chris	Voting/Chair	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-4225 Fax: E-Mail: chris.prengaman@lubrizol.com
	Radonich, Peter	Non Voting	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-2184 Fax: 440-347-9011 E-Mail: peter.radonich@lubrizol.com
	Recinos, Will	Non Voting	Afton Chemical 500 Spring Street Richmond, VA 23218	Phone: 804-788-5323 Fax: E-Mail: william.recinos@aftonchemical.com
	Sanchez, Art	Non Voting	Southwest Research Institute PO Drawer 28510 San Antonio, Texas 78228-0510	Phone: 210-522-3445 Fax: 210-680-1777 E-Mail: asanchez@swri.org
	Smith, Dale	Voting	Intertek Automotive Research 5404 Bandera Rd San Antonio, Texas	Phone: 412-855-6854 Fax: 210-684-6074 E-Mail: Dale.Smith@intertek.com

* Initial to indicate attendance at subject meeting

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

Initials*	Name	Voting Status	Company Name & Address	Phone/Email Info
	Song, HaiQing	Non Voting	Research Institute of Petroleum Processing No. 18, XueYan Road, PO Box 914-19 Beijing 10083 P.R. China	Phone: 011-86-10-8236-8182 Fax: 011-86-10-6231-1290 E-Mail: songhq@ripp-sinopec.com
	Sullivan, Bill	Non Voting	William T. Sullivan, Inc. 5 Scheiber Drive Brick, NJ 08723	Phone: 908-930-3512 Fax: 267-220-7750 E-Mail: wtsullivan@comcast.net
	Suresh, Arunya	Non Voting	BASF	Phone: 914-262-8715 Fax: E-Mail: arunya.suresh@basf.com
ATI	Trader, Angela	Non Voting	Intertek Automotive Research 5404 Bandera Rd San Antonio, Texas	Phone: 210-706-1533 Fax: E-Mail: angela.trader@intertek.com
MTUE	Umerley, Matt	Non Voting	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-4589 Fax: 440-347-2878 E-Mail: mtue@lubrizol.com
RW	Warden, Rebecca	Voting	Southwest Research Institute PO Drawer 28510 San Antonio, Texas 78228-0510	Phone: 210-522-6266 Fax: E-Mail: rebecca.warden@swri.org
	Xie, JingChun	Non Voting	Lanzhou Lube Oil R&D Institute No. 369 Yumen Street, XiGu District Lanshou 730060, GanSu Province P.R. China	Phone: 011-86-931-793-3713 Fax: 011-86-139-9319-2560 E-Mail: xiejingchun_rhy@petrochina.com.cn
	Zakarian, Jack	Voting	Chevron Products 100 Chevron Way Richmond, CA 94802	Phone: 510-242-3595 Fax: 510-242-3758 E-Mail: jaza@chevron.com
	Zreik, Khaled	Voting	General Motors 823 Joslyn Ave Pontiac, MI 48340-2925	Phone: 248-977-9214 Fax: 248-857-2550 E-Mail: khaled.zreik@gm.com
GBM	Matthews, Brad	Non-voting	Afton Chemical	Phone: Fax: E-Mail: Brad.Matthews@AftonChemical.com

* Initial to indicate attendance at subject meeting