

**Report of Meeting
L-37-1 Task Force Meeting
Automation Alley
Troy, MI**

November 7th, 2012

Attendees:

SwRI -	Koehler
Lubrizol -	Venhoff , Bubonic, Gropp, Hamilton, Prengaman, Umerley
Afton -	Gottwald , Bell, Boschert, Kearney
Intertek -	Smith , Trader
US Army -	Comfort , Dwornick
TMC -	Parke
Dana -	Guzikowski
Meritor -	McGlone
ExxonMobil -	Banas, Kanga
BASF -	Greene
AAM -	Dharte
Volvo GGT -	Athey
GM -	O'Brien

Voting Members in **BOLD**

The meeting was called to order at 3:40 pm EST.

1.0 Approval of Meeting Minutes

- **August 8, 2012 (PRI Headquarters – Warrendale, PA)**

Motion # 1 → T. Gottwald / 2nd J. Dharte to approve the minutes as presented. Motion for approval was passed with a unanimous vote, 9-0-0.

2.0 Summary of Meeting Discussions

2.1 Review of recent test data

Afton expressed concerns that the two submitted field oils (1-A & 1-B) show similar/close performance levels to that of the TMC 134 (fail) reference oil and not the passing TMC reference fluids. Historic L-37 data on traditional Dana Model 60 hardware shows 38 good passing results on both TMC 155 & TMC 152 fluids.

A discussion ensued covering many ideas. Should we overcharge the axle (increase fill volume) and see if that has any effect? How about running the test phase at a lower temperature? Do we need to look at test runs on the lubrified hardware before making changes in our direction?

Motion # 1 → T. Gottwald / 2nd D. Smith

1. Afton to sponsor two tests (one for each field oil) at SwRI. Tests will run at current L-37-1 conditions, however oil temperature will be run at current L-37 Canadian test conditions.
2. Afton to sponsor two tests (one for each field oil) at Intertek. Tests will be run at current L-37-1 conditions, however fill volume will be increased to 1450mL (0.5L increase).

Some additional discussions over test length and wheel torque ensued. J. Gropp would like to see the test length increase back to the original test duration. It was in general agreement that shorter durability tests tend to look at hardware while longer tests show more oil performance. This topic will continue to be discussed as the task force narrows in test conditions for the L-37-1 test.

3.0 Adjournment

Motion to Adjourn by D. Smith / 2nd T. Gottwald. Meeting adjourned at 4:20 pm EST.

Respectfully submitted,

Wes Venhoff
L-37 Next Generation Task Force Chairman

Industry Oil Code (TMC Oil)	Test Version (Standard or Canadian)	Hardware Identification	Lab	Stand	Test Hardware	EOT Date	Pinion Rating					Ring Rating					Free-form Comment
							WEAR	RIDG	RIPP	SPIT	SCOR	WEARR	RIDGR	RIPPR	SPITR	SCORR	
IND	TVERSION	SERIALNO	LTMSLAB	LTMSAPP	TESTHARD	LTMSDATE	WEAR	RIDG	RIPP	SPIT	SCOR	WEARR	RIDGR	RIPPR	SPITR	SCORR	COMMENT
16.5 hour, 1650 lb-ft torque																	
134	STANDARD	GGAD120036- - - -	B		NONLUBRITED	20120413											AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure. Test ran for 11hrs. - all teeth broken, catastrophic failure. Last 5 digits of serial number missing
134	STANDARD	GGAD12063093932	A	5	NONLUBRITED	20120414	6	6	8	9.9	10	6	6	10	9.9	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure.
134	STANDARD	GGAD12063092414	B		NONLUBRITED	20120427						5	6	10	9.9	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure. Test ran for 11.25hrs. - all teeth broken, pinion unrateable.
134	STANDARD	GGAD12047090125	D	3	NONLUBRITED	20120515	7	7	7	9.9	10	7	8	9	10	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure. Broken teeth on pinion. Damage to ring. Shut down due to vibration at 15 hrs 37 min (on test).
134	STANDARD	GGAD12063112723	D	3	NONLUBRITED	20120519	7	7	9	9.9	10	7	7	9	9.9	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure.
134	STANDARD	GGAD12063134922	B		NONLUBRITED	20120521	6	4	7	5	10	6	4	10	9.9	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure. High vibration at 8.5hrs. - pinion teeth cracked.
134	STANDARD	GGAD12047081449	D	3	NONLUBRITED	20120524	7	7	10	9.9	10	7	8	10	9.9	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure. Shutdown due to excessive vibration at 5:01 test hours.
134	STANDARD		G		NONLUBRITED	20120822	7	5	9	9.9	10	7	5	9	9.9	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure. Light coast side scoring observed
152-1	STANDARD		B		NONLUBRITED	20121101	7	10	10	9.9	10	7	10	10	9.9	10	Non-lubrited AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure.
152-1	CANADIAN		B		NONLUBRITED	20121103	7	10	10	9.9	10	7	10	10	9.9	10	Non-lubrited AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure.
155	STANDARD	GGAD12047090210	D	3	NONLUBRITED	20120504	7	7	10	10	10	7	7	10	10	10	Non-lubrited AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure. Cracked tooth on ring gear
155	STANDARD	GGAD12063093332	B		NONLUBRITED	20120621	8	9	10	9.9	9	8	9	10	9.9	10	Non-lubrited AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure.
155	STANDARD	GGRD12063092600	A	5	NONLUBRITED	20120721	7	8	10	9.9	10	7	8	10	9.9	10	This is a non-lubrited AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure.
1-A	STANDARD		A	5	NONLUBRITED	20120804	6	6	8	9.9	10	6	7	9	9.9	10	Non-lubrited AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure.
1-A	STANDARD		G		NONLUBRITED	20120830						6	6	8			Non-lubrited AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure. Non-interpretible. Distress - Heavy to Catastrophic. Broken teeth on pinion and ring.
1-B	STANDARD		A	5	NONLUBRITED	20120807	3	6	7	9.9	10	5	6	9	10	10	Non-lubrited AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure.
1-B	STANDARD		G		NONLUBRITED	20120905	5	3	9	9.8	10	6	5	8	9	10	Non-lubrited AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure.
11 hour, 1650 lb-ft torque																	
134	STANDARD	GGAD12063111151	G		NONLUBRITED	20120912	6	4	8	9.9	10	7	5	9	9.9	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure. This ran at 1650 lb-ft torque for 11hrs.
134	STANDARD	GGAD12063094027	A	5	NONLUBRITED	20120912	7	5	8	9.9	10	7	6	9	9.9	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure. This ran a special test length of 11 hours.
152-1	STANDARD	GGAD12063112939	G		NONLUBRITED	20120915	8	9	9	9.9	10	8	9	8	9.9	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure. This ran a special test length of 11 hours.
152-1	STANDARD	GGAD12063123814	A	5	NONLUBRITED	20120917	7	7	10	10	10	7	10	10	10	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure. This ran a special test length of 11 hours.
152-1	CANADIAN	GGAD12063112848	G		NONLUBRITED	20120921	7	9	10	9.9	10	7	10	9	9.9	10	1650 torque, 11 hours, Problems controlling to Canadian conditions with current valve setup (3 nozzles @ 100% on)
152-1	CANADIAN	GGAD12063110037	B		NONLUBRITED	20120925	7	10	10	9.9	10	7	10	10	10	10	AAM Zeta axle - Batch 2012. 11 hr test length, 1650 lb-ft torque.
152-1	CANADIAN	GGAD12063113138	G		NONLUBRITED	20121009	7	9	8	9.9	10	8	10	9	9.9	10	1650 torque, 11 hours, Problems controlling to Canadian conditions with current valve setup (3 nozzles @ 100% on)
155	STANDARD	GGAD12063111331	G		NONLUBRITED	20120922	7	8	9	9.9	10	7	9	9	9.9	10	1650 torque, 11 hours
155	STANDARD	GGAD12063094334	B		NONLUBRITED	20120925	7	7	9	9.9	10	7	9	10	9.9	10	AAM Zeta axle - Batch 2012. 11 hr test length, 1650 lb-ft torque.
1-A	STANDARD	GGAD12063092127	A	5	NONLUBRITED	20120926	6	5	5	10	10	7	7	9	10	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure. 11 hrs.
1-A	STANDARD	GGAD12063111115	G		NONLUBRITED	20121006	7	7	8	9.9	10	7	7	8	9.9	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure. 11 hrs.
1-B	STANDARD	GGAD12063093822	A	5	NONLUBRITED	20120927	6	6	7	9.9	10	6	7	10	10	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure. 11 hrs.
1-B	STANDARD	GGAD12063103742	G		NONLUBRITED	20121005	5	4	9	9.7	10	6	5	9	9.7	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure. 11 hrs.

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							WEAR	RIDG	RIPP	SPIT	SCOR	WEARR	RIDGR	RIPPR	SPITR	SCORR	
IND	TVERSION	SERIALNO	LTMSLAB	LTMSAPP	TESTHARD	LTMSDATE	WEAR	RIDG	RIPP	SPIT	SCOR	WEARR	RIDGR	RIPPR	SPITR	SCORR	COMMENT
16.5 hour, 1650 lb-ft torque																	
134	STANDARD	GGAD12063130725	D	3	LUBRITED	20120505	7	6	9	9.9	10	7	7	10	10	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure. 7 spat on inner cone of head bearing.
134	STANDARD	GGAD12063122708	A	5	LUBRITED	20120720	6	5	10	10	10	6	6	10	10	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure.
134	STANDARD		G		LUBRITED	20120804	6	5	9	9.9	10	7	6	8	9.9	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure.
155	STANDARD	GGAD12063132945	B		LUBRITED	20120406	7	7	9	9.9	10	7	8	10	9.9	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure.
155	STANDARD	GGAD12063124110	A	5	LUBRITED	20120425	7	8	9	9.9	10	8	9	10	9.9	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure.
155	STANDARD	GGAD12063140809	D	3	LUBRITED	20120517	7	7	10	9.9	10	7	8	10	10	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure.
155	STANDARD	GGAD120631- - - -	D	3	LUBRITED	20120518	7	8	10	9.9	10	7	8	10	9.9	10	AAM Zeta axle - Batch 2012. Conducted per Lubrizol proposed procedure. Last 5 digits of serial number missing.

ASTM L-37 Surveillance Panel Membership/Mailing List





Meeting Date: November 7th, 2012

Initials*	Name	Voting Status	Company Name & Address	Phone/Email Info
AA (HCO)	Athey, Allison	Voting	Volvo GGT 13302 Pennsylvania Avenue Hagerstown, Maryland 21740	Phone: 301-573-5684 Fax: E-Mail: allison.athey@volvo.com
Rob	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
DB	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
Tom	Boschert, Tom	Non Voting	Afton Chemical 500 Spring Street Richmond, VA 23219	Phone: 804-788-5202 Fax: E-Mail: tom.boschert@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
A.C.	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.comfort@us-army.mil <i>allen.a.s.comfort.civ@mail.mil</i>
JD	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
BS	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

* Initial to indicate attendance at subject meeting

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Initials*	Name	Voting Status	Company Name & Address	Phone/Email Info
	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	Voting	Afton Chemical 500 Spring Street Richmond, VA 23219	Phone: 804-788-5230 Fax: E-Mail: thomas.gottwald@atfonchemical.com
	Gropp, Jerry	Non Voting	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-1223 Fax: 440-347-1555 E-Mail: jerrold.gropp@lubrizol.com
	Guzikowski, Joe	Voting	Dana Corporation Maumee, IN	Phone: Fax: E-Mail: joe.guzikowski@dana.com
	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
	Higuchi, Sam	Non Voting	Afton Chemical 500 Spring Street Richmond, VA 23218	Phone: 804-788-5375 Fax: 804-788-6358 E-Mail: samuel.higuchi@atfonchemical.com

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Initials*	Name	Voting Status	Company Name & Address	Phone/Email Info
	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>P.R. Kanga</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
<i>W.K.</i>	Kearney, Bill	Non Voting	Afton Chemical Southfield, MI	Phone: Fax: E-Mail:
<i>[Signature]</i>	Koehler, Brian	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 Voting	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 48034	Phone: 248-226-6985 Fax: 248-226-2739 E-Mail: thelmaemarougy@eaton.com

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Initials*	Name	Voting Status	Company Name & Address	Phone/Email Info
	Martin, Dan	Non Voting	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-4723 Fax: 440-347-2878 E-Mail: dan.martin@lubrizol.com
	McGlone, Bruce	Voting	Meritor Automotive 2135 West Maple Troy, Michigan 48084	Phone: 248-435-9929 Fax: 248-435- 9929 9902 E-Mail: Bruce.McGlone@Meritor.com
	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
	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@astrmtmc.cmu.edu
	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

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Initials*	Name	Voting Status	Company Name & Address	Phone/Email Info
	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
<i>DSB</i>	Smith, Dale	Voting	Intertek Automotive Research San Antonio, Texas	Phone: 412-855-6854 Fax: 210-684-6074 E-Mail: Dale.Smith@intertek.com
	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
	Thorpe, Ryan	Non Voting	Southwest Research Institute PO Drawer 28510 San Antonio, Texas 78228-0510	Phone: 210-522-6409 Fax: ryan.thorpe@swri.org E-Mail:
<i>AT</i>	Trader, Angela	Non Voting	Intertek Automotive Research San Antonio, Texas	Phone: 210-706-1533 Fax: angela.trader@intertek.com E-Mail:
<i>MU</i>	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
<i>WHV</i>	Venhoff, Wes	Voting/Chair	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-4879 Fax: 440-347-8061 E-Mail: wve@lubrizol.com

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Initials*	Name	Voting Status	Company Name & Address	Phone/Email Info
	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
CRP	Cris Prewgaman	NV	Lubrizol	Phone: 440-347-4725 Fax: E-Mail:
BB	BRAD Bobovic	NV	Lubrizol	Phone: 440-347-5325 Fax: E-Mail:
bl	Galer Greene	V	BASF	Phone: 973-873-4816 Fax: E-Mail: galer.greene@BASF.com
				Phone: Fax: E-Mail:
				Phone: Fax: E-Mail:
				Phone: Fax: E-Mail:

* Initial to indicate attendance at subject meeting